

Archived NUS Bulletin 2018-19  
Section 22: Bulletin Updates

(A) Updates included in NUS Bulletin 2018-19 before archival (i.e., up to 30 June 2019)

- FASS
- BIZ
- SoC
- SCALE
- SDE
- FoE
- LAW
- NUSMed
- FoS
- Duke-NUS
- Yale-NUS
- YSTCM
- ISS
- RVRC
- RO
- RMI

(B) Updates for NUS Bulletin 2018-19 after archival (i.e., from 1 July 2019 onwards)

- SoC
- FoS

| S/N | Date       | Faculty/<br>School/ | (A) Updates included in NUS Bulletin 2018-19 before archival (i.e., up to 30 June 2019)   |
|-----|------------|---------------------|---|
| 1.  | 1 Aug 2018 | FASS                | <p><b>Amendments were made as follows:</b></p> <p>URL: <a href="http://www.nus.edu.sg/nusbulletin/faculty-of-arts-and-social-sciences/">http://www.nus.edu.sg/nusbulletin/faculty-of-arts-and-social-sciences/</a></p> <p>2.3.1.1 <a href="#">Aquatic Ecology</a></p> <p>2.3.1.2 <a href="#">Art History</a></p> <p>2.3.1.3 <a href="#">China Studies</a></p> <p>2.3.1.4 <a href="#">Cultural Studies</a></p> <p>2.3.1.5 <a href="#">English Studies</a></p> <p><del>2.3.1.6 <a href="#">Film Production</a></del></p> <p>2.3.1.6 <a href="#">Film Studies</a><br/> <i>(Due to deletion of the section on Film Production, other than the change on the content page, please also amend the numbering in the individual section from here onwards.)</i></p> <p>2.3.1.7 <a href="#">Gender Studies</a></p> <p>2.3.1.8 <a href="#">Geographical Information Systems (GIS)</a></p> <p>2.3.1.9 <a href="#">Geosciences</a></p> <p>2.3.1.10 <a href="#">Health and Social Sciences</a></p> <p>2.3.1.11 <a href="#">Interactive Media Development</a></p> <p>2.3.1.12 <a href="#">Religious Studies</a></p> |

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|---|--------|---------------------|--|--------------|-----|----------------------|--------|------------------|--|--------------------------|----|---------------------|----|--|--|---|---|---|--------|-------------------------------|--|
|   |        |                     | <p>2.3.1.13 <a href="#">Science, Technology, and Society</a></p> <p>2.3.1.14 <a href="#">Urban Studies</a></p> <p>URL: <a href="http://www.nus.edu.sg/nusbulletin/faculty-of-arts-and-social-sciences/undergraduate-education/multidisciplinary-opportunities/minor-programmes/film-studies/">http://www.nus.edu.sg/nusbulletin/faculty-of-arts-and-social-sciences/undergraduate-education/multidisciplinary-opportunities/minor-programmes/film-studies/</a></p> <p><b>2.3.1.6 Film Studies</b></p> <p>URL: <a href="http://www.nus.edu.sg/nusbulletin/faculty-of-arts-and-social-sciences/undergraduate-education/degree-requirements/curriculum-structure-and-graduation-requirements/b-a-hons-or-b-soc-sci-hons-degree-usp-students/">http://www.nus.edu.sg/nusbulletin/faculty-of-arts-and-social-sciences/undergraduate-education/degree-requirements/curriculum-structure-and-graduation-requirements/b-a-hons-or-b-soc-sci-hons-degree-usp-students/</a></p> <table><tr><th>REQUIREMENTS</th><th>MCs</th></tr><tr><td>(1) USP Requirements</td><td>40-48*</td></tr><tr><td><b>Programme</b></td><td></td></tr><tr><td>(2) Faculty Core modules</td><td>12</td></tr><tr><td>i) Exposure modules</td><td>12</td></tr><tr><td><del>ii) Writing, Expression and Communication (WEC) modules**</del></td><td></td></tr><tr><td><del>• FAS1102 Public Writing and Communication</del></td><td>4</td></tr><tr><td>(3) Single Major***<br/><br/>(not including the Major's Exposure module which is counted in Faculty Core or Unrestricted Electives)</td><td>84****</td></tr><tr><td><b>Unrestricted Electives</b></td><td></td></tr></table> | REQUIREMENTS | MCs | (1) USP Requirements | 40-48* | <b>Programme</b> |  | (2) Faculty Core modules | 12 | i) Exposure modules | 12 | <del>ii) Writing, Expression and Communication (WEC) modules**</del> |  | <del>• FAS1102 Public Writing and Communication</del> | 4 | (3) Single Major***<br><br>(not including the Major's Exposure module which is counted in Faculty Core or Unrestricted Electives) | 84**** | <b>Unrestricted Electives</b> |  |
| REQUIREMENTS  | MCs    |                     |  |              |     |                      |        |                  |  |                          |    |                     |    |  |  |   |   |   |        |                               |  |
| (1) USP Requirements  | 40-48* |                     |  |              |     |                      |        |                  |  |                          |    |                     |    |  |  |   |   |   |        |                               |  |
| <b>Programme</b>  |        |                     |  |              |     |                      |        |                  |  |                          |    |                     |    |  |  |   |   |   |        |                               |  |
| (2) Faculty Core modules  | 12     |                     |  |              |     |                      |        |                  |  |                          |    |                     |    |  |  |   |   |   |        |                               |  |
| i) Exposure modules   | 12     |                     |  |              |     |                      |        |                  |  |                          |    |                     |    |  |  |   |   |   |        |                               |  |
| <del>ii) Writing, Expression and Communication (WEC) modules**</del>  |        |                     |  |              |     |                      |        |                  |  |                          |    |                     |    |  |  |   |   |   |        |                               |  |
| <del>• FAS1102 Public Writing and Communication</del>   | 4      |                     |  |              |     |                      |        |                  |  |                          |    |                     |    |  |  |   |   |   |        |                               |  |
| (3) Single Major***<br><br>(not including the Major's Exposure module which is counted in Faculty Core or Unrestricted Electives) | 84**** |                     |  |              |     |                      |        |                  |  |                          |    |                     |    |  |  |   |   |   |        |                               |  |
| <b>Unrestricted Electives</b>   |        |                     |  |              |     |                      |        |                  |  |                          |    |                     |    |  |  |   |   |   |        |                               |  |

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|--|-------------|---------------------|---|-----------------------------------|--------|------------|---|--------------|---|-------------------------------------|------|--|---|--------------|------------|--|
|  |             |                     | <table><tr><td>(4) Unrestricted elective modules</td><td>20-12*</td></tr><tr><td>i) GER1000</td><td>4</td></tr><tr><td>ii) GET1031A</td><td>4</td></tr><tr><td>iii) Modules read outside the major</td><td>8-0*</td></tr><tr><td>iv) Modules read within or outside the major</td><td>8</td></tr><tr><td><b>Total</b></td><td><b>160</b></td></tr></table>  | (4) Unrestricted elective modules | 20-12* | i) GER1000 | 4 | ii) GET1031A | 4 | iii) Modules read outside the major | 8-0* | iv) Modules read within or outside the major | 8 | <b>Total</b> | <b>160</b> |  |
| (4) Unrestricted elective modules            | 20-12*      |                     |   |                                   |        |            |   |              |   |                                     |      |  |   |              |            |  |
| i) GER1000                                   | 4           |                     |   |                                   |        |            |   |              |   |                                     |      |  |   |              |            |  |
| ii) GET1031A                                 | 4           |                     |   |                                   |        |            |   |              |   |                                     |      |  |   |              |            |  |
| iii) Modules read outside the major          | 8-0*        |                     |   |                                   |        |            |   |              |   |                                     |      |  |   |              |            |  |
| iv) Modules read within or outside the major | 8           |                     |   |                                   |        |            |   |              |   |                                     |      |  |   |              |            |  |
| <b>Total</b>                                 | <b>160</b>  |                     |   |                                   |        |            |   |              |   |                                     |      |  |   |              |            |  |
| 2.   | 12 Sep 2018 | FASS                | <p><b><u>Updates submitted by FASS – new Minor in Language Studies – 12 Sep 2018</u></b></p> <p><b>Created a new page for this new Minor in Language Studies</b><br/><a href="http://www.nus.edu.sg/nusbuletin/faculty-of-arts-and-social-sciences/undergraduate-education/degree-requirements/department-degree-requirements/centre-for-language-studies/MinorinLanguageStudies/">http://www.nus.edu.sg/nusbuletin/faculty-of-arts-and-social-sciences/undergraduate-education/degree-requirements/department-degree-requirements/centre-for-language-studies/MinorinLanguageStudies/</a><br/><i>and a lin at the FASS main content pag to it.</i></p> <p><b>I. Minor in Language Studies</b><br/>Students from cohort 2017 onwards are eligible for Minor in Language Studies.<br/>To graduate with a Minor in Language Studies, students have to accumulate at least 24 Modular Credits.<br/>Students who declare the Minor in Language Studies can choose one of the following options:</p> <ol style="list-style-type: none"><li>1) 6 CLS language modules of the same language (e.g. all the levels from the first to the sixth level language modules), <u>OR</u></li><li>2) 5 CLS language modules of the same language, including the sixth level language module, and 1 recognized modules for that language track, <u>OR</u></li><li>3) 4 CLS language modules of the same language, including the sixth level language module, and 2 recognized modules for that language track.</li></ol> <p>Students can start to declare for Minor in Language Studies in AY2018-2019 semester 2.<br/><b>Note:</b></p> |                                   |        |            |   |              |   |                                     |      |  |   |              |            |  |

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|---------|---|---------------------|---|--------|------------------------|--------|----------------------------------|--------|----------------------------------|--------|------------------------|---------|---------------------------|--------|-----------------------------------|--------|---|--------|----------------------------|
|         |   |                     | <ul style="list-style-type: none"><li>• In order to take the lowest level 1000 CLS language module, the student must not have any prior knowledge of the language concerned.</li><li>• Students who have prior knowledge in a language and have been placed directly in the fourth language module or any higher level will not be able to minor in that language as they will not be able to obtain the required number of modular credits from eligible language modules in that language. Such students are encouraged to work towards a minor in another language offered by the Centre.</li></ul> <p><b>Available language minors:</b></p> <p><u>Arabic as a Foreign Language</u><br/>Eligible language modules: LAR1201 Arabic 1, LAR2201 Arabic 2, LAR3201 Arabic 3, LAR3202 Arabic 4, LAR4201 Arabic 5, LAR4202 Arabic 6<br/>Students may read and pass<br/>a) all 6 eligible language modules (including LAR4202 Arabic 6), or<br/>b) at least 4-5 of the eligible language modules (including LAR4202 Arabic 6) and one or two of the following modules:</p> <table><tr><td>PH2242</td><td>Philosophy of Language</td></tr><tr><td>HY3246</td><td>History of Muslim Southeast Asia</td></tr><tr><td>MS3218</td><td>The Religious Life of the Malays</td></tr></table> <p><u>Bahasa Indonesia as a Foreign Language</u><br/>Eligible language modules: LAB1201 Bahasa Indonesia 1, LAB2201 Bahasa Indonesia 2, LAB3201 Bahasa Indonesia 3, LAB3202 Bahasa Indonesia 4, LAB4201 Bahasa Indonesia 5, LAB4202 Bahasa Indonesia 6<br/>Students may read and pass<br/>a) all 6 eligible language modules (including LAB4202 Bahasa Indonesia 6), or<br/>b) at least 4-5 of the eligible language modules (including LAB4202 Bahasa Indonesia 6) and one or two of the following modules:</p> <table><tr><td>PH2242</td><td>Philosophy of Language</td></tr><tr><td>HY1101E</td><td>Asia and the Modern World</td></tr><tr><td>SE2210</td><td>Popular Culture in Southeast Asia</td></tr><tr><td>SE2212</td><td>Cities and Urban Life in Southeast Asia</td></tr><tr><td>SE2213</td><td>Politics in Southeast Asia</td></tr></table> | PH2242 | Philosophy of Language | HY3246 | History of Muslim Southeast Asia | MS3218 | The Religious Life of the Malays | PH2242 | Philosophy of Language | HY1101E | Asia and the Modern World | SE2210 | Popular Culture in Southeast Asia | SE2212 | Cities and Urban Life in Southeast Asia | SE2213 | Politics in Southeast Asia |
| PH2242  | Philosophy of Language                  |                     |   |        |                        |        |                                  |        |                                  |        |                        |         |                           |        |                                   |        |   |        |                            |
| HY3246  | History of Muslim Southeast Asia        |                     |   |        |                        |        |                                  |        |                                  |        |                        |         |                           |        |                                   |        |   |        |                            |
| MS3218  | The Religious Life of the Malays        |                     |   |        |                        |        |                                  |        |                                  |        |                        |         |                           |        |                                   |        |   |        |                            |
| PH2242  | Philosophy of Language                  |                     |   |        |                        |        |                                  |        |                                  |        |                        |         |                           |        |                                   |        |   |        |                            |
| HY1101E | Asia and the Modern World               |                     |   |        |                        |        |                                  |        |                                  |        |                        |         |                           |        |                                   |        |   |        |                            |
| SE2210  | Popular Culture in Southeast Asia       |                     |   |        |                        |        |                                  |        |                                  |        |                        |         |                           |        |                                   |        |   |        |                            |
| SE2212  | Cities and Urban Life in Southeast Asia |                     |   |        |                        |        |                                  |        |                                  |        |                        |         |                           |        |                                   |        |   |        |                            |
| SE2213  | Politics in Southeast Asia              |                     |   |        |                        |        |                                  |        |                                  |        |                        |         |                           |        |                                   |        |   |        |                            |

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|     |      |                     | SE2214   | Arts of Southeast Asia                                   |  |
|     |      |                     | SE2217   | War and Southeast Asia                                   |  |
|     |      |                     | SE2221   | Old and New Music in Southeast Asia                      |  |
|     |      |                     | SE2223   | Doing Research in Southeast Asia                         |  |
|     |      |                     | SE2224   | Unmasked! An Introduction to Traditional Dance in SEA    |  |
|     |      |                     | SE2225   | Forbidden Pleasures: Vice in Southeast Asia              |  |
|     |      |                     | SE2229   | Southeast Asia as a Field of Study                       |  |
|     |      |                     | SE3214   | Heritage and Heritagescapes in Southeast Asia            |  |
|     |      |                     | SE3233   | Martial Arts in Southeast Asia                           |  |
|     |      |                     | MS3210   | Modern Indonesian Literature                             |  |
|     |      |                     | <u>Chinese for non-natives</u><br>Eligible language modules: LAC1201 Chinese 1, LAC2201 Chinese 2, LAC3201 Chinese 3, LAC3202 Chinese 4, LAC4201 Chinese 5, LAC4202 Chinese 6<br>a) all 6 eligible language modules (including LAC4202 Chinese 6), or<br>b) at least 4-5 of the eligible language modules (including LAC4202 Chinese 6) and one or two of the following modules: |  |  |
|     |      |                     | PH2242   | Philosophy of Language                                   |  |
|     |      |                     | CH2293   | Introduction to Chinese Art (Taught in English)          |  |
|     |      |                     | CH2299   | Art of Modern and Contemporary China (Taught in English) |  |
|     |      |                     | CH3298   | Chinese in Southeast Asia (Taught in English)            |  |

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|---------|--|---------------------|---|--------|------------------------|---------|-------------------------|--------|------------------------------|--------|-----------------------------------|--------|--------------------------------|--------|--|--------|------------------------|---------|-------------------------|--------|------------------------------|--------|-----------------------------------|--------|--------------------------------|--------|--|
|         |  |                     | <p><u>French as a Foreign Language</u><br/>Eligible language modules: LAF1201 French 1, LAF2201 French 2, LAF3201 French 3, LAF3202 French 4, LAF3203 French for Academic Purposes, LAF4201 French 5, LAF4202 French 6, LAF4203 French Studies 1, LAF4204 French Studies 2<br/>Students may read and pass<br/>a) at least 6 of the eligible language modules (including LAF4202 French 6), or<br/>b) at least 4-5 of the eligible language modules (including LAF4202 French 6) and one or two of the following modules:</p> <table><tr><td>PH2242</td><td>Philosophy of Language</td></tr><tr><td>EU1101E</td><td>Making of Modern Europe</td></tr><tr><td>EU2213</td><td>Upheaval in Europe 1848-1918</td></tr><tr><td>EU2221</td><td>Empires, Colonies and Imperialism</td></tr><tr><td>EU3224</td><td>Social Thought &amp; Social Theory</td></tr><tr><td>HY2210</td><td>State and Society in Early-Modern Europe</td></tr></table> <p><u>German as a Foreign Language</u><br/>Eligible language modules: LAG1201 German 1, LAG2201 German 2, LAG3201 German 3, LAG3202 German 4, LAG3203 German for Academic Purposes, LAG4201 German 5, LAG4202 German 6, LAG4203 German Studies 1, LAG4204 German Studies 2<br/>Students may read and pass<br/>a) at least 6 of the eligible language modules (including LAG4202 German 6), or<br/>b) at least 4-5 of the eligible language modules (including LAG4202 German 6) and one or two of the following modules:</p> <table><tr><td>PH2242</td><td>Philosophy of Language</td></tr><tr><td>EU1101E</td><td>Making of Modern Europe</td></tr><tr><td>EU2213</td><td>Upheaval in Europe 1848-1918</td></tr><tr><td>EU2221</td><td>Empires, Colonies and Imperialism</td></tr><tr><td>EU3224</td><td>Social Thought &amp; Social Theory</td></tr><tr><td>HY2210</td><td>State and Society in Early-Modern Europe</td></tr></table> <p><u>Hindi as a Foreign Language</u><br/>Eligible language modules: LAH1201 Hindi 1, LAH2201 Hindi 2, LAH3201 Hindi 3, LAH3202 Hindi 4, LAH4201 Hindi 5, LAH4202 Hindi 6</p> | PH2242 | Philosophy of Language | EU1101E | Making of Modern Europe | EU2213 | Upheaval in Europe 1848-1918 | EU2221 | Empires, Colonies and Imperialism | EU3224 | Social Thought & Social Theory | HY2210 | State and Society in Early-Modern Europe | PH2242 | Philosophy of Language | EU1101E | Making of Modern Europe | EU2213 | Upheaval in Europe 1848-1918 | EU2221 | Empires, Colonies and Imperialism | EU3224 | Social Thought & Social Theory | HY2210 | State and Society in Early-Modern Europe |
| PH2242  | Philosophy of Language                   |                     |   |        |                        |         |                         |        |                              |        |                                   |        |                                |        |  |        |                        |         |                         |        |                              |        |                                   |        |                                |        |  |
| EU1101E | Making of Modern Europe                  |                     |   |        |                        |         |                         |        |                              |        |                                   |        |                                |        |  |        |                        |         |                         |        |                              |        |                                   |        |                                |        |  |
| EU2213  | Upheaval in Europe 1848-1918             |                     |   |        |                        |         |                         |        |                              |        |                                   |        |                                |        |  |        |                        |         |                         |        |                              |        |                                   |        |                                |        |  |
| EU2221  | Empires, Colonies and Imperialism        |                     |   |        |                        |         |                         |        |                              |        |                                   |        |                                |        |  |        |                        |         |                         |        |                              |        |                                   |        |                                |        |  |
| EU3224  | Social Thought & Social Theory           |                     |   |        |                        |         |                         |        |                              |        |                                   |        |                                |        |  |        |                        |         |                         |        |                              |        |                                   |        |                                |        |  |
| HY2210  | State and Society in Early-Modern Europe |                     |   |        |                        |         |                         |        |                              |        |                                   |        |                                |        |  |        |                        |         |                         |        |                              |        |                                   |        |                                |        |  |
| PH2242  | Philosophy of Language                   |                     |   |        |                        |         |                         |        |                              |        |                                   |        |                                |        |  |        |                        |         |                         |        |                              |        |                                   |        |                                |        |  |
| EU1101E | Making of Modern Europe                  |                     |   |        |                        |         |                         |        |                              |        |                                   |        |                                |        |  |        |                        |         |                         |        |                              |        |                                   |        |                                |        |  |
| EU2213  | Upheaval in Europe 1848-1918             |                     |   |        |                        |         |                         |        |                              |        |                                   |        |                                |        |  |        |                        |         |                         |        |                              |        |                                   |        |                                |        |  |
| EU2221  | Empires, Colonies and Imperialism        |                     |   |        |                        |         |                         |        |                              |        |                                   |        |                                |        |  |        |                        |         |                         |        |                              |        |                                   |        |                                |        |  |
| EU3224  | Social Thought & Social Theory           |                     |   |        |                        |         |                         |        |                              |        |                                   |        |                                |        |  |        |                        |         |                         |        |                              |        |                                   |        |                                |        |  |
| HY2210  | State and Society in Early-Modern Europe |                     |   |        |                        |         |                         |        |                              |        |                                   |        |                                |        |  |        |                        |         |                         |        |                              |        |                                   |        |                                |        |  |

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|---------|--|---------------------|---|--------|------------------------|---------|---------------------------|---------|--|--------|---------------------------------------|--------|----------------------------------|--------|------------------------------------|--------|---------------------------------------|--------|---------------------------------------|--------|--------------------------------------|--------|-----------------------------|--------|--------------------|--------|------------------------|---------|---------------------------|--------|----------------------------|--------|---------------------------------------|--------|---------------------------------|
|         |  |                     | <p>Students may read and pass</p> <p>a) all 6 eligible language modules (including LAH4202 Hindi 6), or</p> <p>b) at least 4-5 of the eligible language modules (including LAH4202 Hindi 6) and one or two of the following modules:</p> <table><tr><td>PH2242</td><td>Philosophy of Language</td></tr><tr><td>HY1101E</td><td>Asia and the Modern World</td></tr><tr><td>SN1101E</td><td>South Asia: People Culture and Development</td></tr><tr><td>SN2213</td><td>Governance and Politics in South Asia</td></tr><tr><td>SN2234</td><td>Gender and Society in South Asia</td></tr><tr><td>SN2271</td><td>Religion and Society in South Asia</td></tr><tr><td>SN2274</td><td>South Asian Cultures: An Introduction</td></tr><tr><td>SN2277</td><td>Indian Communities in South-East Asia</td></tr><tr><td>SN2280</td><td>Marriage, Sex and Love in South Asia</td></tr><tr><td>SN3272</td><td>Issues in Indian Philosophy</td></tr><tr><td>SN3274</td><td>South Asian Cinema</td></tr></table> <p><u>Japanese as a Foreign Language</u></p> <p>Eligible language modules: LAJ1201 Japanese 1, LAJ2201 Japanese 2, LAJ2202 Japanese 3, LAJ2203 Japanese 4, LAJ3201 Japanese 5, LAJ3202 Japanese 6, LAJ3203 Business Japanese 1, LAJ3204 Business Japanese 2, LAJ4203 Newspaper Reading, LAJ4205 Expository Writing &amp; Public Speaking</p> <p>Students may read and pass</p> <p>a) at least 6 of the eligible language modules (including LAJ3202 Japanese 6 or LAJ3204 Business Japanese 2), or</p> <p>b) at least 4-5 of the eligible language modules (including LAJ3202 Japanese 6 or LAJ3204 Business Japanese 2) and one or two of the following modules:</p> <table><tr><td>PH2242</td><td>Philosophy of Language</td></tr><tr><td>HY1101E</td><td>Asia and the Modern World</td></tr><tr><td>JS2203</td><td>Sound, Grammar and Meaning</td></tr><tr><td>JS2213</td><td>Popular Culture in Contemporary Japan</td></tr><tr><td>JS2216</td><td>Postwar Japanese Film and Anime</td></tr></table> | PH2242 | Philosophy of Language | HY1101E | Asia and the Modern World | SN1101E | South Asia: People Culture and Development | SN2213 | Governance and Politics in South Asia | SN2234 | Gender and Society in South Asia | SN2271 | Religion and Society in South Asia | SN2274 | South Asian Cultures: An Introduction | SN2277 | Indian Communities in South-East Asia | SN2280 | Marriage, Sex and Love in South Asia | SN3272 | Issues in Indian Philosophy | SN3274 | South Asian Cinema | PH2242 | Philosophy of Language | HY1101E | Asia and the Modern World | JS2203 | Sound, Grammar and Meaning | JS2213 | Popular Culture in Contemporary Japan | JS2216 | Postwar Japanese Film and Anime |
| PH2242  | Philosophy of Language                     |                     |   |        |                        |         |                           |         |  |        |                                       |        |                                  |        |                                    |        |                                       |        |                                       |        |                                      |        |                             |        |                    |        |                        |         |                           |        |                            |        |                                       |        |                                 |
| HY1101E | Asia and the Modern World                  |                     |   |        |                        |         |                           |         |  |        |                                       |        |                                  |        |                                    |        |                                       |        |                                       |        |                                      |        |                             |        |                    |        |                        |         |                           |        |                            |        |                                       |        |                                 |
| SN1101E | South Asia: People Culture and Development |                     |   |        |                        |         |                           |         |  |        |                                       |        |                                  |        |                                    |        |                                       |        |                                       |        |                                      |        |                             |        |                    |        |                        |         |                           |        |                            |        |                                       |        |                                 |
| SN2213  | Governance and Politics in South Asia      |                     |   |        |                        |         |                           |         |  |        |                                       |        |                                  |        |                                    |        |                                       |        |                                       |        |                                      |        |                             |        |                    |        |                        |         |                           |        |                            |        |                                       |        |                                 |
| SN2234  | Gender and Society in South Asia           |                     |   |        |                        |         |                           |         |  |        |                                       |        |                                  |        |                                    |        |                                       |        |                                       |        |                                      |        |                             |        |                    |        |                        |         |                           |        |                            |        |                                       |        |                                 |
| SN2271  | Religion and Society in South Asia         |                     |   |        |                        |         |                           |         |  |        |                                       |        |                                  |        |                                    |        |                                       |        |                                       |        |                                      |        |                             |        |                    |        |                        |         |                           |        |                            |        |                                       |        |                                 |
| SN2274  | South Asian Cultures: An Introduction      |                     |   |        |                        |         |                           |         |  |        |                                       |        |                                  |        |                                    |        |                                       |        |                                       |        |                                      |        |                             |        |                    |        |                        |         |                           |        |                            |        |                                       |        |                                 |
| SN2277  | Indian Communities in South-East Asia      |                     |   |        |                        |         |                           |         |  |        |                                       |        |                                  |        |                                    |        |                                       |        |                                       |        |                                      |        |                             |        |                    |        |                        |         |                           |        |                            |        |                                       |        |                                 |
| SN2280  | Marriage, Sex and Love in South Asia       |                     |   |        |                        |         |                           |         |  |        |                                       |        |                                  |        |                                    |        |                                       |        |                                       |        |                                      |        |                             |        |                    |        |                        |         |                           |        |                            |        |                                       |        |                                 |
| SN3272  | Issues in Indian Philosophy                |                     |   |        |                        |         |                           |         |  |        |                                       |        |                                  |        |                                    |        |                                       |        |                                       |        |                                      |        |                             |        |                    |        |                        |         |                           |        |                            |        |                                       |        |                                 |
| SN3274  | South Asian Cinema                         |                     |   |        |                        |         |                           |         |  |        |                                       |        |                                  |        |                                    |        |                                       |        |                                       |        |                                      |        |                             |        |                    |        |                        |         |                           |        |                            |        |                                       |        |                                 |
| PH2242  | Philosophy of Language                     |                     |   |        |                        |         |                           |         |  |        |                                       |        |                                  |        |                                    |        |                                       |        |                                       |        |                                      |        |                             |        |                    |        |                        |         |                           |        |                            |        |                                       |        |                                 |
| HY1101E | Asia and the Modern World                  |                     |   |        |                        |         |                           |         |  |        |                                       |        |                                  |        |                                    |        |                                       |        |                                       |        |                                      |        |                             |        |                    |        |                        |         |                           |        |                            |        |                                       |        |                                 |
| JS2203  | Sound, Grammar and Meaning                 |                     |   |        |                        |         |                           |         |  |        |                                       |        |                                  |        |                                    |        |                                       |        |                                       |        |                                      |        |                             |        |                    |        |                        |         |                           |        |                            |        |                                       |        |                                 |
| JS2213  | Popular Culture in Contemporary Japan      |                     |   |        |                        |         |                           |         |  |        |                                       |        |                                  |        |                                    |        |                                       |        |                                       |        |                                      |        |                             |        |                    |        |                        |         |                           |        |                            |        |                                       |        |                                 |
| JS2216  | Postwar Japanese Film and Anime            |                     |   |        |                        |         |                           |         |  |        |                                       |        |                                  |        |                                    |        |                                       |        |                                       |        |                                      |        |                             |        |                    |        |                        |         |                           |        |                            |        |                                       |        |                                 |



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|         |   |                     | <table><tr><td>JS2225</td><td>Marketing and Consumer Culture in Japan</td></tr><tr><td>JS2230</td><td>Itadakimasu – Food in Japan</td></tr><tr><td>JS3213</td><td>Alternative Lives in Contemporary Japan</td></tr><tr><td>JS3214</td><td>Japanese Philosophy and Thought</td></tr><tr><td>JS3223</td><td>Japan and the Asia-Pacific Region</td></tr><tr><td>JS3227</td><td>Entrepreneurship: Self-made in Japan</td></tr><tr><td>JS3230</td><td>Men and Women in Modern Japanese Literature</td></tr></table>   | JS2225 | Marketing and Consumer Culture in Japan | JS2230  | Itadakimasu – Food in Japan | JS3213 | Alternative Lives in Contemporary Japan | JS3214  | Japanese Philosophy and Thought         | JS3223 | Japan and the Asia-Pacific Region | JS3227 | Entrepreneurship: Self-made in Japan | JS3230 | Men and Women in Modern Japanese Literature |
| JS2225  | Marketing and Consumer Culture in Japan     |                     |  |        |   |         |                             |        |   |         |   |        |                                   |        |                                      |        |   |
| JS2230  | Itadakimasu – Food in Japan                 |                     |  |        |   |         |                             |        |   |         |   |        |                                   |        |                                      |        |   |
| JS3213  | Alternative Lives in Contemporary Japan     |                     |  |        |   |         |                             |        |   |         |   |        |                                   |        |                                      |        |   |
| JS3214  | Japanese Philosophy and Thought             |                     |  |        |   |         |                             |        |   |         |   |        |                                   |        |                                      |        |   |
| JS3223  | Japan and the Asia-Pacific Region           |                     |  |        |   |         |                             |        |   |         |   |        |                                   |        |                                      |        |   |
| JS3227  | Entrepreneurship: Self-made in Japan        |                     |  |        |   |         |                             |        |   |         |   |        |                                   |        |                                      |        |   |
| JS3230  | Men and Women in Modern Japanese Literature |                     |  |        |   |         |                             |        |   |         |   |        |                                   |        |                                      |        |   |
|         |   |                     | <p><u>Korean as a Foreign Language</u><br/>Eligible language modules: LAK1201 Korean 1, LAK2201 Korean 2, LAK3201 Korean 3, LAK3202 Korean 4, LAK3203 Korean for Academic Purposes, LAK4201 Korean 5, LAK4202 Korean 6</p> <p>Students may read and pass<br/>a) at least 6 of the eligible language modules (including LAK4202 Korean 6), or<br/>b) at least 4-5 of the eligible language modules (including LAK4202 Korean 6) and one or two of the following modules:</p> <table><tr><td>PH2242</td><td>Philosophy of Language</td></tr><tr><td>HY1101E</td><td>Asia and the Modern World</td></tr><tr><td>HY3206</td><td>East Asian International Relations</td></tr></table>   | PH2242 | Philosophy of Language                  | HY1101E | Asia and the Modern World   | HY3206 | East Asian International Relations      |         |   |        |                                   |        |                                      |        |   |
| PH2242  | Philosophy of Language                      |                     |  |        |   |         |                             |        |   |         |   |        |                                   |        |                                      |        |   |
| HY1101E | Asia and the Modern World                   |                     |  |        |   |         |                             |        |   |         |   |        |                                   |        |                                      |        |   |
| HY3206  | East Asian International Relations          |                     |  |        |   |         |                             |        |   |         |   |        |                                   |        |                                      |        |   |
|         |   |                     | <p><u>Malay as a Foreign Language</u><br/>Eligible language modules: LAM1201 Malay 1, LAM2201 Malay 2, LAM3201 Malay 3, LAM3202 Malay 4, LAM4201 Malay 5, LAM4202 Malay 6</p> <p>Students may read and pass<br/>a) all 6 eligible language modules (including LAM4202 Malay 6), or<br/>b) at least 4-5 of the eligible language modules (including LAM4202 Malay 6) and one or two of the following modules:</p> <table><tr><td>PH2242</td><td>Philosophy of Language</td></tr><tr><td>HY1101E</td><td>Asia and the Modern World</td></tr><tr><td>HY3246</td><td>History of Muslim Southeast Asia</td></tr><tr><td>MS1102E</td><td>Malays – Tradition, Conflict and Change</td></tr><tr><td>MS2210</td><td>Malay Culture and Society</td></tr></table> | PH2242 | Philosophy of Language                  | HY1101E | Asia and the Modern World   | HY3246 | History of Muslim Southeast Asia        | MS1102E | Malays – Tradition, Conflict and Change | MS2210 | Malay Culture and Society         |        |                                      |        |   |
| PH2242  | Philosophy of Language                      |                     |  |        |   |         |                             |        |   |         |   |        |                                   |        |                                      |        |   |
| HY1101E | Asia and the Modern World                   |                     |  |        |   |         |                             |        |   |         |   |        |                                   |        |                                      |        |   |
| HY3246  | History of Muslim Southeast Asia            |                     |  |        |   |         |                             |        |   |         |   |        |                                   |        |                                      |        |   |
| MS1102E | Malays – Tradition, Conflict and Change     |                     |  |        |   |         |                             |        |   |         |   |        |                                   |        |                                      |        |   |
| MS2210  | Malay Culture and Society                   |                     |  |        |   |         |                             |        |   |         |   |        |                                   |        |                                      |        |   |

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|---------|---|---------------------|---|--------|---------------------------------|------------------------|----------------------------|-------------------------|---|------------------------------|---------------------------|-----------------------------------|----------------------------------|--------------------------------|-----------------------------------|--|---|--------|----------------------------|--------|------------------------|--------|------------------------|--------|-------------------------------------|--------|----------------------------------|--------|---|--------|---|--------|------------------------------------|--------|---|--------|--------------------------------|--|
|         |   |                     | <table><tr><td>MS3211</td><td>Political Culture of the Malays</td></tr><tr><td>MS3212</td><td>Classical Malay Literature</td></tr><tr><td>MS3213</td><td>Ideology and Ideas on Malay Development</td></tr><tr><td>MS3216</td><td>Gender in Malay Societies</td></tr><tr><td>MS3218</td><td>The Religious Life of the Malays</td></tr><tr><td>SE2210</td><td>Popular Culture in Southeast Asia</td></tr><tr><td>SE2212</td><td>Cities and Urban Life in Southeast Asia</td></tr><tr><td>SE2213</td><td>Politics in Southeast Asia</td></tr><tr><td>SE2214</td><td>Arts of Southeast Asia</td></tr><tr><td>SE2217</td><td>War and Southeast Asia</td></tr><tr><td>SE2221</td><td>Old and New Music in Southeast Asia</td></tr><tr><td>SE2223</td><td>Doing Research in Southeast Asia</td></tr><tr><td>SE2224</td><td>Unmasked! An Introduction to Traditional Dance in SEA</td></tr><tr><td>SE2225</td><td>Forbidden Pleasures: Vice in Southeast Asia</td></tr><tr><td>SE2229</td><td>Southeast Asia as a Field of Study</td></tr><tr><td>SE3214</td><td>Heritage and Heritagescapes in Southeast Asia</td></tr><tr><td>SE3233</td><td>Martial Arts in Southeast Asia</td></tr></table> | MS3211 | Political Culture of the Malays | MS3212                 | Classical Malay Literature | MS3213                  | Ideology and Ideas on Malay Development | MS3216                       | Gender in Malay Societies | MS3218                            | The Religious Life of the Malays | SE2210                         | Popular Culture in Southeast Asia | SE2212                                   | Cities and Urban Life in Southeast Asia | SE2213 | Politics in Southeast Asia | SE2214 | Arts of Southeast Asia | SE2217 | War and Southeast Asia | SE2221 | Old and New Music in Southeast Asia | SE2223 | Doing Research in Southeast Asia | SE2224 | Unmasked! An Introduction to Traditional Dance in SEA | SE2225 | Forbidden Pleasures: Vice in Southeast Asia | SE2229 | Southeast Asia as a Field of Study | SE3214 | Heritage and Heritagescapes in Southeast Asia | SE3233 | Martial Arts in Southeast Asia |  |
| MS3211  | Political Culture of the Malays                       |                     |   |        |                                 |                        |                            |                         |   |                              |                           |                                   |                                  |                                |                                   |  |   |        |                            |        |                        |        |                        |        |                                     |        |                                  |        |   |        |   |        |                                    |        |   |        |                                |  |
| MS3212  | Classical Malay Literature                            |                     |   |        |                                 |                        |                            |                         |   |                              |                           |                                   |                                  |                                |                                   |  |   |        |                            |        |                        |        |                        |        |                                     |        |                                  |        |   |        |   |        |                                    |        |   |        |                                |  |
| MS3213  | Ideology and Ideas on Malay Development               |                     |   |        |                                 |                        |                            |                         |   |                              |                           |                                   |                                  |                                |                                   |  |   |        |                            |        |                        |        |                        |        |                                     |        |                                  |        |   |        |   |        |                                    |        |   |        |                                |  |
| MS3216  | Gender in Malay Societies                             |                     |   |        |                                 |                        |                            |                         |   |                              |                           |                                   |                                  |                                |                                   |  |   |        |                            |        |                        |        |                        |        |                                     |        |                                  |        |   |        |   |        |                                    |        |   |        |                                |  |
| MS3218  | The Religious Life of the Malays                      |                     |   |        |                                 |                        |                            |                         |   |                              |                           |                                   |                                  |                                |                                   |  |   |        |                            |        |                        |        |                        |        |                                     |        |                                  |        |   |        |   |        |                                    |        |   |        |                                |  |
| SE2210  | Popular Culture in Southeast Asia                     |                     |   |        |                                 |                        |                            |                         |   |                              |                           |                                   |                                  |                                |                                   |  |   |        |                            |        |                        |        |                        |        |                                     |        |                                  |        |   |        |   |        |                                    |        |   |        |                                |  |
| SE2212  | Cities and Urban Life in Southeast Asia               |                     |   |        |                                 |                        |                            |                         |   |                              |                           |                                   |                                  |                                |                                   |  |   |        |                            |        |                        |        |                        |        |                                     |        |                                  |        |   |        |   |        |                                    |        |   |        |                                |  |
| SE2213  | Politics in Southeast Asia                            |                     |   |        |                                 |                        |                            |                         |   |                              |                           |                                   |                                  |                                |                                   |  |   |        |                            |        |                        |        |                        |        |                                     |        |                                  |        |   |        |   |        |                                    |        |   |        |                                |  |
| SE2214  | Arts of Southeast Asia                                |                     |   |        |                                 |                        |                            |                         |   |                              |                           |                                   |                                  |                                |                                   |  |   |        |                            |        |                        |        |                        |        |                                     |        |                                  |        |   |        |   |        |                                    |        |   |        |                                |  |
| SE2217  | War and Southeast Asia                                |                     |   |        |                                 |                        |                            |                         |   |                              |                           |                                   |                                  |                                |                                   |  |   |        |                            |        |                        |        |                        |        |                                     |        |                                  |        |   |        |   |        |                                    |        |   |        |                                |  |
| SE2221  | Old and New Music in Southeast Asia                   |                     |   |        |                                 |                        |                            |                         |   |                              |                           |                                   |                                  |                                |                                   |  |   |        |                            |        |                        |        |                        |        |                                     |        |                                  |        |   |        |   |        |                                    |        |   |        |                                |  |
| SE2223  | Doing Research in Southeast Asia                      |                     |   |        |                                 |                        |                            |                         |   |                              |                           |                                   |                                  |                                |                                   |  |   |        |                            |        |                        |        |                        |        |                                     |        |                                  |        |   |        |   |        |                                    |        |   |        |                                |  |
| SE2224  | Unmasked! An Introduction to Traditional Dance in SEA |                     |   |        |                                 |                        |                            |                         |   |                              |                           |                                   |                                  |                                |                                   |  |   |        |                            |        |                        |        |                        |        |                                     |        |                                  |        |   |        |   |        |                                    |        |   |        |                                |  |
| SE2225  | Forbidden Pleasures: Vice in Southeast Asia           |                     |   |        |                                 |                        |                            |                         |   |                              |                           |                                   |                                  |                                |                                   |  |   |        |                            |        |                        |        |                        |        |                                     |        |                                  |        |   |        |   |        |                                    |        |   |        |                                |  |
| SE2229  | Southeast Asia as a Field of Study                    |                     |   |        |                                 |                        |                            |                         |   |                              |                           |                                   |                                  |                                |                                   |  |   |        |                            |        |                        |        |                        |        |                                     |        |                                  |        |   |        |   |        |                                    |        |   |        |                                |  |
| SE3214  | Heritage and Heritagescapes in Southeast Asia         |                     |   |        |                                 |                        |                            |                         |   |                              |                           |                                   |                                  |                                |                                   |  |   |        |                            |        |                        |        |                        |        |                                     |        |                                  |        |   |        |   |        |                                    |        |   |        |                                |  |
| SE3233  | Martial Arts in Southeast Asia                        |                     |   |        |                                 |                        |                            |                         |   |                              |                           |                                   |                                  |                                |                                   |  |   |        |                            |        |                        |        |                        |        |                                     |        |                                  |        |   |        |   |        |                                    |        |   |        |                                |  |
|         |   |                     | <p><u>Spanish as a Foreign Language</u><br/>Eligible language modules: LAS1201 Spanish 1, LAS2201 Spanish 2, LAS3201 Spanish 3, LAS3202 Spanish 4, LAS4201 Spanish 5, LAS4202 Spanish 6</p> <p>Students may read and pass</p> <p>a) all 6 eligible language modules (including LAS4202 Spanish 6), or</p> <p>b) at least 4-5 of the eligible language modules (including LAS4202 Spanish 6) and one or two of the following modules:</p> <table><tr><td>PH2242</td><td>Philosophy of Language</td></tr><tr><td>EU1101E</td><td>Making of Modern Europe</td></tr><tr><td>EU2213</td><td>Upheaval in Europe 1848-1918</td></tr><tr><td>EU2221</td><td>Empires, Colonies and Imperialism</td></tr><tr><td>EU3224</td><td>Social Thought &amp; Social Theory</td></tr><tr><td>HY2210</td><td>State and Society in Early-Modern Europe</td></tr></table>   |        | PH2242                          | Philosophy of Language | EU1101E                    | Making of Modern Europe | EU2213                                  | Upheaval in Europe 1848-1918 | EU2221                    | Empires, Colonies and Imperialism | EU3224                           | Social Thought & Social Theory | HY2210                            | State and Society in Early-Modern Europe |   |        |                            |        |                        |        |                        |        |                                     |        |                                  |        |   |        |   |        |                                    |        |   |        |                                |  |
| PH2242  | Philosophy of Language                                |                     |   |        |                                 |                        |                            |                         |   |                              |                           |                                   |                                  |                                |                                   |  |   |        |                            |        |                        |        |                        |        |                                     |        |                                  |        |   |        |   |        |                                    |        |   |        |                                |  |
| EU1101E | Making of Modern Europe                               |                     |   |        |                                 |                        |                            |                         |   |                              |                           |                                   |                                  |                                |                                   |  |   |        |                            |        |                        |        |                        |        |                                     |        |                                  |        |   |        |   |        |                                    |        |   |        |                                |  |
| EU2213  | Upheaval in Europe 1848-1918                          |                     |   |        |                                 |                        |                            |                         |   |                              |                           |                                   |                                  |                                |                                   |  |   |        |                            |        |                        |        |                        |        |                                     |        |                                  |        |   |        |   |        |                                    |        |   |        |                                |  |
| EU2221  | Empires, Colonies and Imperialism                     |                     |   |        |                                 |                        |                            |                         |   |                              |                           |                                   |                                  |                                |                                   |  |   |        |                            |        |                        |        |                        |        |                                     |        |                                  |        |   |        |   |        |                                    |        |   |        |                                |  |
| EU3224  | Social Thought & Social Theory                        |                     |   |        |                                 |                        |                            |                         |   |                              |                           |                                   |                                  |                                |                                   |  |   |        |                            |        |                        |        |                        |        |                                     |        |                                  |        |   |        |   |        |                                    |        |   |        |                                |  |
| HY2210  | State and Society in Early-Modern Europe              |                     |   |        |                                 |                        |                            |                         |   |                              |                           |                                   |                                  |                                |                                   |  |   |        |                            |        |                        |        |                        |        |                                     |        |                                  |        |   |        |   |        |                                    |        |   |        |                                |  |

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|---------|---|---------------------|---|--------|------------------------|---------|---------------------------|--------|-----------------------------------|--------|---|--------|----------------------------|--------|------------------------|--------|------------------------|--------|-------------------------------------|--------|----------------------------------|--------|---|--------|---|--------|------------------------------------|--------|---|--------|---------------------------|--------|--------------------------------|--------|------------------------|
|         |   |                     | <p><u>Thai as a Foreign Language</u><br/>Eligible language modules: LAT1201 Thai 1, LAT2201 Thai 2, LAT3201 Thai 3, LAT3202 Thai 4, LAT4201 Thai 5, LAT4202 Thai 6</p> <p>Students may read and pass<br/>a) all 6 eligible language modules (including LAT4202 Thai 6), or<br/>b) at least 4-5 of the eligible language modules (including LAT4202 Thai 6) and one or two of the following modules:</p> <table><tr><td>PH2242</td><td>Philosophy of Language</td></tr><tr><td>HY1101E</td><td>Asia and the Modern World</td></tr><tr><td>SE2210</td><td>Popular Culture in Southeast Asia</td></tr><tr><td>SE2212</td><td>Cities and Urban Life in Southeast Asia</td></tr><tr><td>SE2213</td><td>Politics in Southeast Asia</td></tr><tr><td>SE2214</td><td>Arts of Southeast Asia</td></tr><tr><td>SE2217</td><td>War and Southeast Asia</td></tr><tr><td>SE2221</td><td>Old and New Music in Southeast Asia</td></tr><tr><td>SE2223</td><td>Doing Research in Southeast Asia</td></tr><tr><td>SE2224</td><td>Unmasked! An Introduction to Traditional Dance in SEA</td></tr><tr><td>SE2225</td><td>Forbidden Pleasures: Vice in Southeast Asia</td></tr><tr><td>SE2229</td><td>Southeast Asia as a Field of Study</td></tr><tr><td>SE3214</td><td>Heritage and Heritagescapes in Southeast Asia</td></tr><tr><td>SE3224</td><td>Thai Drawing and Painting</td></tr><tr><td>SE3233</td><td>Martial Arts in Southeast Asia</td></tr></table> <p><u>Vietnamese as a Foreign Language</u><br/>Eligible language modules: LAV1201 Vietnamese 1, LAV2201 Vietnamese 2, LAV3201 Vietnamese 3, LAV3202 Vietnamese 4, LAV4201 Vietnamese 5, LAV4202 Vietnamese 6</p> <p>Students may read and pass<br/>a) all 6 eligible language modules (including LAV4202 Vietnamese 6) or<br/>b) at least 4-5 of the eligible language modules (including LAV4202 Vietnamese 6) and one or two of the following modules:</p> <table><tr><td>PH2242</td><td>Philosophy of Language</td></tr></table> | PH2242 | Philosophy of Language | HY1101E | Asia and the Modern World | SE2210 | Popular Culture in Southeast Asia | SE2212 | Cities and Urban Life in Southeast Asia | SE2213 | Politics in Southeast Asia | SE2214 | Arts of Southeast Asia | SE2217 | War and Southeast Asia | SE2221 | Old and New Music in Southeast Asia | SE2223 | Doing Research in Southeast Asia | SE2224 | Unmasked! An Introduction to Traditional Dance in SEA | SE2225 | Forbidden Pleasures: Vice in Southeast Asia | SE2229 | Southeast Asia as a Field of Study | SE3214 | Heritage and Heritagescapes in Southeast Asia | SE3224 | Thai Drawing and Painting | SE3233 | Martial Arts in Southeast Asia | PH2242 | Philosophy of Language |
| PH2242  | Philosophy of Language                                |                     |   |        |                        |         |                           |        |                                   |        |   |        |                            |        |                        |        |                        |        |                                     |        |                                  |        |   |        |   |        |                                    |        |   |        |                           |        |                                |        |                        |
| HY1101E | Asia and the Modern World                             |                     |   |        |                        |         |                           |        |                                   |        |   |        |                            |        |                        |        |                        |        |                                     |        |                                  |        |   |        |   |        |                                    |        |   |        |                           |        |                                |        |                        |
| SE2210  | Popular Culture in Southeast Asia                     |                     |   |        |                        |         |                           |        |                                   |        |   |        |                            |        |                        |        |                        |        |                                     |        |                                  |        |   |        |   |        |                                    |        |   |        |                           |        |                                |        |                        |
| SE2212  | Cities and Urban Life in Southeast Asia               |                     |   |        |                        |         |                           |        |                                   |        |   |        |                            |        |                        |        |                        |        |                                     |        |                                  |        |   |        |   |        |                                    |        |   |        |                           |        |                                |        |                        |
| SE2213  | Politics in Southeast Asia                            |                     |   |        |                        |         |                           |        |                                   |        |   |        |                            |        |                        |        |                        |        |                                     |        |                                  |        |   |        |   |        |                                    |        |   |        |                           |        |                                |        |                        |
| SE2214  | Arts of Southeast Asia                                |                     |   |        |                        |         |                           |        |                                   |        |   |        |                            |        |                        |        |                        |        |                                     |        |                                  |        |   |        |   |        |                                    |        |   |        |                           |        |                                |        |                        |
| SE2217  | War and Southeast Asia                                |                     |   |        |                        |         |                           |        |                                   |        |   |        |                            |        |                        |        |                        |        |                                     |        |                                  |        |   |        |   |        |                                    |        |   |        |                           |        |                                |        |                        |
| SE2221  | Old and New Music in Southeast Asia                   |                     |   |        |                        |         |                           |        |                                   |        |   |        |                            |        |                        |        |                        |        |                                     |        |                                  |        |   |        |   |        |                                    |        |   |        |                           |        |                                |        |                        |
| SE2223  | Doing Research in Southeast Asia                      |                     |   |        |                        |         |                           |        |                                   |        |   |        |                            |        |                        |        |                        |        |                                     |        |                                  |        |   |        |   |        |                                    |        |   |        |                           |        |                                |        |                        |
| SE2224  | Unmasked! An Introduction to Traditional Dance in SEA |                     |   |        |                        |         |                           |        |                                   |        |   |        |                            |        |                        |        |                        |        |                                     |        |                                  |        |   |        |   |        |                                    |        |   |        |                           |        |                                |        |                        |
| SE2225  | Forbidden Pleasures: Vice in Southeast Asia           |                     |   |        |                        |         |                           |        |                                   |        |   |        |                            |        |                        |        |                        |        |                                     |        |                                  |        |   |        |   |        |                                    |        |   |        |                           |        |                                |        |                        |
| SE2229  | Southeast Asia as a Field of Study                    |                     |   |        |                        |         |                           |        |                                   |        |   |        |                            |        |                        |        |                        |        |                                     |        |                                  |        |   |        |   |        |                                    |        |   |        |                           |        |                                |        |                        |
| SE3214  | Heritage and Heritagescapes in Southeast Asia         |                     |   |        |                        |         |                           |        |                                   |        |   |        |                            |        |                        |        |                        |        |                                     |        |                                  |        |   |        |   |        |                                    |        |   |        |                           |        |                                |        |                        |
| SE3224  | Thai Drawing and Painting                             |                     |   |        |                        |         |                           |        |                                   |        |   |        |                            |        |                        |        |                        |        |                                     |        |                                  |        |   |        |   |        |                                    |        |   |        |                           |        |                                |        |                        |
| SE3233  | Martial Arts in Southeast Asia                        |                     |   |        |                        |         |                           |        |                                   |        |   |        |                            |        |                        |        |                        |        |                                     |        |                                  |        |   |        |   |        |                                    |        |   |        |                           |        |                                |        |                        |
| PH2242  | Philosophy of Language                                |                     |   |        |                        |         |                           |        |                                   |        |   |        |                            |        |                        |        |                        |        |                                     |        |                                  |        |   |        |   |        |                                    |        |   |        |                           |        |                                |        |                        |

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|     |      |                     | HY1101E  | Asia and the Modern World                             |  |
|     |      |                     | SE2210   | Popular Culture in Southeast Asia                     |  |
|     |      |                     | SE2212   | Cities and Urban Life in Southeast Asia               |  |
|     |      |                     | SE2213   | Politics in Southeast Asia                            |  |
|     |      |                     | SE2214   | Arts of Southeast Asia                                |  |
|     |      |                     | SE2217   | War and Southeast Asia                                |  |
|     |      |                     | SE2221   | Old and New Music in Southeast Asia                   |  |
|     |      |                     | SE2223   | Doing Research in Southeast Asia                      |  |
|     |      |                     | SE2224   | Unmasked! An Introduction to Traditional Dance in SEA |  |
|     |      |                     | SE2225   | Forbidden Pleasures: Vice in Southeast Asia           |  |
|     |      |                     | SE2229   | Southeast Asia as a Field of Study                    |  |
|     |      |                     | SE3214   | Heritage and Heritagescapes in Southeast Asia         |  |
|     |      |                     | SE3233   | Martial Arts in Southeast Asia                        |  |
|     |      |                     | <p><b>The insertion of the information above only needs to affect the following 2 content pages. Changes made in red</b></p> <p>URL: <a href="http://www.nus.edu.sg/nusbulletin/faculty-of-arts-and-social-sciences/">http://www.nus.edu.sg/nusbulletin/faculty-of-arts-and-social-sciences/</a></p> <p>2.2.2.3 <a href="#">Centre for Language Studies</a></p> <p>A. <a href="#">Arabic Language</a></p> <p>B. <a href="#">Bahasa Indonesia, Malay, Thai, Vietnamese Languages</a></p> <p>C. <a href="#">Chinese Language</a></p> <p>D. <a href="#">French and German Languages</a></p> |   |  |

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|     |      |                     | <p>E. <a href="#">Hindi and Tamil Languages</a></p> <p>F. <a href="#">Japanese Language</a></p> <p>G. <a href="#">Korean Language</a></p> <p>H. <a href="#">Spanish Language</a></p> <p>I. <b>Minor in Language Studies</b></p> <p>-----</p> <p>URL: <a href="http://www.nus.edu.sg/nusbulletin/faculty-of-arts-and-social-sciences/undergraduate-education/degree-requirements/department-degree-requirements/centre-for-language-studies/">http://www.nus.edu.sg/nusbulletin/faculty-of-arts-and-social-sciences/undergraduate-education/degree-requirements/department-degree-requirements/centre-for-language-studies/</a></p> <p>A. <a href="#">Arabic Language</a></p> <p>B. <a href="#">Bahasa Indonesia, Malay, Thai, Vietnamese Languages</a></p> <p>C. <a href="#">Chinese Language</a></p> <p>D. <a href="#">French and German Languages</a></p> <p>E. <a href="#">Hindi and Tamil Languages</a></p> <p>F. <a href="#">Japanese Language</a></p> <p>G. <a href="#">Korean Language</a></p> <p>H. <a href="#">Spanish Language</a></p> <p>I. <b>Minor in Language Studies</b></p> |

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| 3.  | 12 Sep 2018 | FASS                | <p>Created new page for this new major – PPE and a link at the FASS main content page to it.</p> <p>-----</p> <p>U. Philosophy, Political Science, and Economics (PPE) Programme</p> <p>The PPE programme, jointly established by the Departments of Philosophy, Political Science, and Economics in 2018, focuses on the multidimensional study of social and political phenomena, using the intellectual tools from three long-established disciplines in the humanities and social sciences. The goal is to train a generation of strategy analysts and policy formulators with the capability to approach social and political issues from multiple disciplinary angles, and thereby add value to their organisations and society at large.</p> <p>PPE students will:</p> <ul style="list-style-type: none"> <li>• Acquire foundational disciplinary knowledge and skills from the three disciplines of Philosophy, Political Science, and Economics as they relate to the study of social and political phenomena;</li> <li>• Achieve a degree of depth in one of the constituting disciplines; and</li> <li>• Be introduced to multidisciplinary integration between the three disciplines.</li> </ul> <p>These learning outcomes are achieved through different aspects of the programme structure:</p> <ul style="list-style-type: none"> <li>• <b>Foundational disciplinary knowledge</b> (common to all PPE students): Through a curated suite of intellectual tools taught through selected modules from the three disciplines.</li> <li>• <b>Depth</b> (in one discipline): Through wider and deeper exposure in one of the three disciplines both at the pre-honors and honors levels.</li> <li>• <b>Integration:</b> Through a “gateway” module introducing PPE at the 2000 level, a module at the 3000 level on PPE methodology, and two capstone seminars at the 4000 level where students work on topics utilizing what they have learned from the three disciplines in the foundation. Students who choose to read the Honours Thesis module are also expected to work on topics that bring together methods or insights from more than one discipline.</li> </ul> <p><b><u>Entry Requirements</u></b><br/> <b>Apply to enter at the point of admission</b></p> |

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|     |      |                     | <p>Students may indicate their desire to enter the program when applying to NUS FASS (applicable for Cohort 2019 onwards) on the NUS Admissions Portal. Applicants will be selected on the basis of their entry score, essay, and interview.</p> <p><b>Apply to enter from the end of your second semester onwards—</b></p> <p>Students may indicate their desire to enter the programme after their first year of study in NUS FASS (applicable for Cohort 2018 onwards), using the Application Portal (under construction). They will need to attain a <b>CAP of at least 4.0</b> with at least <b>40MCs</b> graded modules ('S' modules may be included), and score at least an <b>average of A-</b> (with no grade lower than a B+) for the exposure modules of Philosophy (GET1029), Political Science (PS1101E), and Economics (EC1101E). A personal statement or interview may be required..</p> <p>Applicants must indicate their intended Specialization discipline (Philosophy, Political Science, or Economics); they may apply for a change of Specialization at a later point in time.</p> <p><b><u>Subject Requirements</u></b></p> <p><b>Single Major [BA (Hons)]</b></p> <p>For the BA (Hons) degree, PPE students will read at least 160MCs over four years:</p> <ol style="list-style-type: none"> <li>1. 20MCs for University Level Requirements (General Education).</li> <li>2. 4MCs for Faculty Core Requirement FAS1102 Public Writing and Communication.*</li> <li>3. 16MCs for exposure modules in Philosophy, Political Science, and Economics, and Asian Studies</li> <li>4. 32MCs for Unrestricted Electives.#</li> <li>5. 88MCs for the PPE major, consisting of: <ol style="list-style-type: none"> <li>a. Specialisation: 24MCs, with at least 12MCs at the 3000 level (6 modules).</li> <li>b. 2 x Non-Specialisations: Each 12MCs, with at least 4MCs at the 3000 level (3 modules in each discipline).</li> </ol> </li> </ol> |

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|     |      |                     | <p>c. PPE Capstone Seminars: 10MCs at the 4000 level (2 modules).</p> <p>d. Specialisation (Hons): 15-30MCs at the 4000 level (6 modules; 3 modules if writing Honours Thesis).</p> <p>e. Multidisciplinary Honours Thesis: 15MCs at the 4000 level (optional).</p> <p>*Students who have gained entrance to PPE at the point of admission to NUS FASS with a submitted essay will not need to read FAS1101 Writing Academically. Students who have read and passed FAS1101 (and are thus exempted from taking the writing test) at point of entrance to PPE will count that module towards Unrestricted Electives.</p> <p>#Of the 32MCs in the PPE students' Unrestricted Elective Space, 4MCs may be used for the their PPE specialisation. (The rest should come from outside the PPE specialisation.)</p> <p><b>Single Major (BA)</b></p> <p>For the BA degree, PPE students will read at least 120MCs over three years:</p> <ol style="list-style-type: none"> <li>1. 20MCs for University Level Requirements (General Education).</li> <li>2. 4MCs for Faculty Core Requirement FAS1102 Public Writing and Communication.*</li> <li>3. 16MCs for exposure modules in Philosophy, Political Science, and Economics, and Asian Studies</li> <li>4. 32MCs for Unrestricted Electives.#</li> <li>5. 48MCs for the PPE major, consisting of: <ol style="list-style-type: none"> <li>a. Specialisation: 24MCs, with at least 12MCs at the 3000 level (6 modules).</li> <li>b. 2 x Non-Specialisations: Each 12MCs, with at least 4MCs at the 3000 level (3 modules in each discipline).</li> </ol> </li> </ol> <p>*Students who have gained entrance to PPE at the point of admission to NUS FASS with a submitted essay will not need to read FAS1101 Writing Academically. Students who have read and passed FAS1101 (and are thus exempted from taking the writing test) at point of entrance to PPE will count that module towards Unrestricted Electives.</p> |



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|     |      |                     | <p>#Of the 32MCs in the PPE students' Unrestricted Elective Space, 4MCs may be used for the their PPE specialisation. (The rest should come from outside the PPE specialisation.)</p> <p><b><u>Note on Second Major pairings</u></b></p> <p>Students are not allowed to pair PPE with their PPE specialisation field as a second major. They may, however, pair PPE with either of their non-specialisation fields to form a double major. The three modules taken under the relevant PPE non-specialisation will be double-counted towards both majors. Students desiring to pair PPE with any other majors will need to seek approval for their study plan by writing to the admin of the specialisation department.</p> <p>For the latest updates, please visit the Department website at: <a href="https://www.fas.nus.edu.sg/ppe.html">https://www.fas.nus.edu.sg/ppe.html</a></p> <p><b>The insertion of the information above only needs to affect the following 2 content pages. Changes made in red</b></p> <p>URL: <a href="http://www.nus.edu.sg/nusbulletin/faculty-of-arts-and-social-sciences/">http://www.nus.edu.sg/nusbulletin/faculty-of-arts-and-social-sciences/</a></p> <p>2.2.2 <a href="#">Department Degree Requirements</a></p> <p>2.2.2.1 <a href="#">Regular Programmes</a></p> <p>A. <a href="#">Chinese Language</a></p> <p>B. <a href="#">Chinese Studies</a></p> <p>C. <a href="#">Communications and New Media</a></p> <p>D. <a href="#">Economics</a></p> |

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|     |      |                     | <p>E. <a href="#">English Language</a></p> <p>F. <a href="#">English Literature</a></p> <p>G. <a href="#">European Studies</a></p> <p>H. <a href="#">Geography</a></p> <p>I. <a href="#">Global Studies</a></p> <p>J. <a href="#">History</a></p> <p>K. <a href="#">Japanese Studies</a></p> <p>L. <a href="#">Malay Studies</a></p> <p>M. <a href="#">Philosophy</a></p> <p>N. <a href="#">Political Science</a></p> <p>O. <a href="#">Psychology</a></p> <p>P. <a href="#">Social Work</a></p> <p>Q. <a href="#">Sociology</a></p> <p>R. <a href="#">South Asian Studies</a></p> <p>S. <a href="#">Southeast Asian Studies</a></p> <p>T. <a href="#">Theatre Studies</a></p> |

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|     |      |                     | <p>U. Philosophy, Political Science, and Economics (PPE) Programme</p> <p>-----</p> <p>URL: <a href="http://www.nus.edu.sg/nusbulletin/faculty-of-arts-and-social-sciences/undergraduate-education/degree-requirements/department-degree-requirements/regular-programmes/">http://www.nus.edu.sg/nusbulletin/faculty-of-arts-and-social-sciences/undergraduate-education/degree-requirements/department-degree-requirements/regular-programmes/</a></p> <p>A. <a href="#">Chinese Language</a></p> <p>B. <a href="#">Chinese Studies</a></p> <p>C. <a href="#">Communications and New Media</a></p> <p>D. <a href="#">Economics</a></p> <p>E. <a href="#">English Language</a></p> <p>F. <a href="#">English Literature</a></p> <p>G. <a href="#">European Studies</a></p> <p>H. <a href="#">Geography</a></p> <p>I. <a href="#">Global Studies</a></p> <p>J. <a href="#">History</a></p> <p>K. <a href="#">Japanese Studies</a></p> <p>L. <a href="#">Malay Studies</a></p> |

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|     |            |                     | <p>M. <a href="#">Philosophy</a></p> <p>N. <a href="#">Political Science</a></p> <p>O. <a href="#">Psychology</a></p> <p>P. <a href="#">Social Work</a></p> <p>Q. <a href="#">Sociology</a></p> <p>R. <a href="#">South Asian Studies</a></p> <p>S. <a href="#">Southeast Asian Studies</a></p> <p>T. <a href="#">Theatre Studies</a></p> <p>U. Philosophy, Political Science, and Economics (PPE) Programme</p>   |
| 4.  | 1 Aug 2018 | BIZ                 | <p><b>NUS Bulletin AY2018/19</b></p> <p>NUS Bulletin updated as follows:<br/> <a href="http://www.nus.edu.sg/nusbuletin/school-of-business/undergraduate-education/degree-requirements/curriculum-structure-and-requirements/bachelor-of-business-administration-b-b-a-bachelor-of-business-administration-with-honours-b-b-a-hons/">http://www.nus.edu.sg/nusbuletin/school-of-business/undergraduate-education/degree-requirements/curriculum-structure-and-requirements/bachelor-of-business-administration-b-b-a-bachelor-of-business-administration-with-honours-b-b-a-hons/</a></p> <p><b>(III) Career Preparation Module</b></p> <p>In nurturing leaders for marketplace impact, the Career Preparation module consists of the following 3 components to focus on exposure and skills and complement the formal programme.</p> <ol style="list-style-type: none"> <li>1. Leadership Seminar Series: To provide greater exposure to industry leaders, students will be required to attend a minimum of <b>2</b> seminars delivered by industry leaders each year (<b>1 per semester</b>).</li> </ol> |

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|     |             |                     | <p>2. Global Immersion and Study: A requirement for all students, this segment ensures all students receive direct and significant international exposure through participation in a global initiative. This may be a semester abroad, an overseas internship, a case competition or a study trip.</p> <p>3. Career Creation Programme: This will comprise a series of activities designed and coordinated by NUS BIZ Career Services to provide students with practical skills. Students will learn job search strategies, resume writing, interviewing skills, understanding one's strengths and job motivations, networking techniques as well as business etiquette and corporate dressing.</p>  |
| 5.  | 29 Nov 2018 | BIZ                 | <p><b>Included New programme -</b></p> <p><b>Executive Master of Science in Investments and Portfolio Risk Management</b></p> <p><b><u>Admission Requirements</u></b></p> <ul style="list-style-type: none"> <li>• A good undergraduate degree in technical or related discipline (e.g. Engineering, Computer Science, Financial Engineering, Finance, etc.) from a 4-year degree programme. A good 3-year degree with strong academic results may also be considered on a case-by-case basis.</li> <li>• 3 to 5 years of working experience in a senior role within the organisation in a relevant industry.</li> <li>• Good TOEFL or IELTS scores if English is not the mother tongue or medium of prior undergraduate instruction.</li> <li>• A letter of motivation (not more than 500 words) outlining the reasons why the candidate wants to enrol in the programme.</li> <li>• GMAT is not mandatory, but a good GMAT score will strengthen the application. Singaporean candidates for the MAS Financial Scholarship Programme are required to submit GMAT scores.</li> </ul> <p><b><u>Graduation Requirements</u></b></p> |

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|     |             |                     | <p>In order to graduate, students must complete all 42 Modular Credits (MCs) of courses offered for the programme and achieve a Cumulative Average Point (CAP) of at least 3.0 (out of 5.0).</p> <p><b><u>Individual in Charge</u></b></p> <p>Aaron Goh<br/> Director, MSc Programmes Office<br/> <a href="mailto:aaron.goh@nus.edu.sg">aaron.goh@nus.edu.sg</a>   +65 6601 6231</p>   |
| 6.  | 30 Apr 2019 | BIZ                 | <p>URL:<br/> <a href="http://www.nus.edu.sg/nusbulletin/school-of-business/graduate-education/research-programmes/degree-requirements/">http://www.nus.edu.sg/nusbulletin/school-of-business/graduate-education/research-programmes/degree-requirements/</a></p> <p>Updates made for NUS Bulletin AY 2018/2019 (highlighted in red)</p> <p><b>Please note that you will need to upload the following supporting documents (size limit: 10MB) as part of your online application.</b></p> <ol style="list-style-type: none"> <li>1. Your Research Proposal or Statement of Purpose *</li> <li>2. A copy of your undergraduate/graduate degree scroll</li> <li>3. A copy of your undergraduate/graduate degree transcripts/mark sheets **</li> <li>4. A copy of your Test Taker's GMAT/GRE score report ***</li> <li>5. A copy of your IELTS/TOEFL score report (if the medium of instructions for your university studies is not in English) ***</li> <li>6. A copy of your resume *</li> <li>7. A copy of your passport or NRIC *</li> <li>8. A passport-size photograph</li> <li>9. Publications (if any) *</li> <li>10. Two Referee Reports *****</li> </ol> |

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|-----|-------------|----------------------|--|--------------|-------------|-------------|-----|--------------|--------|--|---------|----------------------|---|----------|--|
|     |             |                      | <p><b>*Documents will have to be combined into a single file and upload to "Work Experience" section.</b></p> <p><b>**</b>The official transcripts and attested copy of degree scroll for your application will be required after you are offered a place in the NUS PhD programme. The official transcripts must be sent to NUS Business School directly from the University and the official transcripts must be in English.</p> <p><b>***</b>You also need to indicate your GMAT/GRE and TOEFL/IELTS results in the application portal under the "Other Tests" section. Your official score report must be sent to the NUS Business School directly. GMAT/GRE code is 7219. TOEFL code is 9082 Department Code 02. IELTS code is 0677.</p> <p><b>****</b>Two referee reports are required to complete your application. The two referees can come from either the academic sector or from the industry sector. Once referee has been assigned, an automated email will be sent to the referee. You could also initiate to send out the online referee form to your two referees before you complete your online application. The referee will have to complete a referee report form within a 14 days timeline.</p> <p><b>For supporting documents that has been uploaded as part of your online application, please do not mail hardcopy documents to the PhD Programme office.</b></p> <p>Please fill in the declaration section last. Please ensure ALL sections are complete before you submit the application.</p> |              |             |             |     |              |        |  |         |                      |   |          |  |
| 7.  | 29 May 2019 | BIZ                  | <p><b>NUS Bulletin (AY2018/2019) – Updates from BIZ (29 May 2019)</b></p> <p>4.2.2.1 Master of Business Administration<br/><a href="http://www.nus.edu.sg/nusbulletin/school-of-business/graduate-education/coursework-programmes/degree-requirements/master-of-business-administration/">http://www.nus.edu.sg/nusbulletin/school-of-business/graduate-education/coursework-programmes/degree-requirements/master-of-business-administration/</a></p> <table><tr><th></th><th>MODULE CODE</th><th>MODULE NAME</th><th>M C</th><th>REQUIREMEN T</th><th>REMARK</th></tr><tr><td></td><td>BMA5001</td><td>Managerial Economics</td><td>4</td><td>Required</td><td></td></tr></table>  |              | MODULE CODE | MODULE NAME | M C | REQUIREMEN T | REMARK |  | BMA5001 | Managerial Economics | 4 | Required |  |
|     | MODULE CODE | MODULE NAME          | M C  | REQUIREMEN T | REMARK      |             |     |              |        |  |         |                      |   |          |  |
|     | BMA5001     | Managerial Economics | 4  | Required     |             |             |     |              |        |  |         |                      |   |          |  |

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|     |      |                     | Core  | <del>BMA5002</del>  | <del>Analytics for Managers</del>               | <del>4</del> | <del>Required</del> | <del>Recommend to do prior to BMA5013</del>   |
|     |      |                     |   | <b>BMA5003</b>      | <b>Financial Accounting</b>                     | <b>4</b>     | <b>Required</b>     | <b>This is a pre-requisite module for BMA5005 &amp; BMA5013</b>   |
|     |      |                     |   | <del>BMA5004A</del> | <del>Management and Organisation</del>          | <del>2</del> | <del>Required</del> |   |
|     |      |                     |   | <del>BMA5005</del>  | <del>Management Accounting</del>                | <del>2</del> | <del>Required</del> | <del>Pre-requisite module: BMA5003</del>  |
|     |      |                     |   | <b>BMA5008</b>      | <b>Financial Management</b>                     | <b>4</b>     | <b>Required</b>     | <b>This is a pre-requisite for most finance electives</b><br>Recommend to take prior to finance electives                     |
|     |      |                     |   | <b>BMA5009</b>      | <b>Marketing Management</b>                     | <b>4</b>     | <b>Required</b>     | <b>This is a pre-requisite for BMA5013 &amp; most marketing electives</b><br>Recommend to take prior to marketing electives   |
|     |      |                     |   | <del>BMA5010A</del> | <del>Managing Operations</del>                  | <del>2</del> | <del>Required</del> |   |
|     |      |                     |   | <del>BMA5011</del>  | <del>Macroeconomics in the Global Economy</del> | <del>4</del> | <del>Required</del> | <del>This is a pre-requisite for some related electives</del>   |
|     |      |                     |   | <b>BMA5013</b>      | <b>Corporate Strategy</b>                       | <b>4</b>     | <b>Required</b>     | <b>Pre-requisite modules: BMA5003 &amp; BMA5009</b><br>Strongly recommended to take only after completing BMA5003 and BMA5009 |



| S/N | Date | Faculty/<br>School/ | (A) Updates included in NUS Bulletin 2018-19 before archival (i.e., up to 30 June 2019)   |                                |  |                   |           |  |
|-----|------|---------------------|---|--------------------------------|--|-------------------|-----------|--|
|     |      |                     |   | <del>BMA5016A</del><br>BMA5016 | <del>Leadership in Organisation</del><br>Leading with Impact | <del>2</del><br>4 | Required  |  |
|     |      |                     |   | BMA5017                        | Managerial Operations and Analytics                          | 4                 | Required  |  |
|     |      |                     |   | BMA5801                        | Management Communication                                     | 0                 | Required  |  |
|     |      |                     |   | BMA5802                        | Management Skills  | 0                 | Required  |  |
|     |      |                     |   | BMA5901                        | Management Practicum   | 4                 | Required  |  |
|     |      |                     |   | Total Core Requirements        |  |                   | 40 32 MCs |  |
|     |      |                     |   | Total Elective Requirements    |  |                   | 28 36 MCs |  |
|     |      |                     |   | Total MBA Requirements         |  |                   | 68 MCs    |  |
|     |      |                     | 4.2.2.2 The NUS – Peking University Double Degree Master of Business Administration   |                                |  |                   |           |  |
|     |      |                     | <a href="http://www.nus.edu.sg/nusbulletin/school-of-business/graduate-education/coursework-programmes/degree-requirements/the-nus-pekings-university-double-degree-master-of-business-administration/">http://www.nus.edu.sg/nusbulletin/school-of-business/graduate-education/coursework-programmes/degree-requirements/the-nus-pekings-university-double-degree-master-of-business-administration/</a> |                                |  |                   |           |  |

| S/N | Date | Faculty/<br>School/ | (A) Updates included in NUS Bulletin 2018-19 before archival (i.e., up to 30 June 2019)  |  |                   |   |
|-----|------|---------------------|--|--|-------------------|---|
|     |      |                     | <b>MODULE<br/>CODE</b>   | <b>MODULE NAME</b>   | <b>MC</b>         | <b>REMARK</b>   |
|     |      |                     | <del>BMA5005</del>   | Management Accounting  | 2                 | <del>Students who read Managerial Accounting elective at PKU may apply to waive this requirement.</del>   |
|     |      |                     | BMA5016A   | <del>Leadership in<br/>Organisation</del><br>Leading with Impact | <del>2</del><br>4 | Students who read Leadership in Organization elective at PKU may apply to waive this requirement          |
|     |      |                     | BMA5801  | Management<br>Communication                                      | 0                 | Students who read Management Communication elective at PKU may apply to waive this requirement            |
|     |      |                     | BMA5802  | Management Skills  | 0                 |   |
|     |      |                     | BMA5901  | Management Practicum   | 4                 | Students who has done an Integrated Practicum Project module in PKU may apply to waive this requirement   |
|     |      |                     | <del>BMA5801</del>   | <del>Management<br/>Communication</del>                          | 0                 | <del>Students who read Management Communication elective at PKU may apply to waive this requirement</del> |
|     |      |                     | <b>Total Core</b>  |  | <b>8</b>          |   |
|     |      |                     | <b>Total Elective</b>  |  | <b>36</b>         | <b>Total elective MCs would depend on the core modules that are waived.</b>                               |
|     |      |                     | <b>Total Requirements for NUS</b>  |  | <b>44</b>         |   |
|     |      |                     | 4.2.2.3 The NUS – HEC Paris Double Degree Master of Business Administration<br><a href="http://www.nus.edu.sg/nusbulletin/school-of-business/graduate-education/coursework-programmes/degree-requirements/the-nus-hec-paris-double-degree-master-of-business-administration/">http://www.nus.edu.sg/nusbulletin/school-of-business/graduate-education/coursework-programmes/degree-requirements/the-nus-hec-paris-double-degree-master-of-business-administration/</a> |  |                   |   |

| S/N                        | Date                                | Faculty/<br>School/  | (A) Updates included in NUS Bulletin 2018-19 before archival (i.e., up to 30 June 2019)  |        |  |  |             |             |             |        |                    |                           |         |                      |         |                          |   |  |         |                   |   |  |         |                      |   |  |                    |                                     |   |  |            |  |                |  |                |  |                  |  |                            |  |    |  |
|----------------------------|-------------------------------------|----------------------|--|--------|--|--|-------------|-------------|-------------|--------|--------------------|---------------------------|---------|----------------------|---------|--------------------------|---|--|---------|-------------------|---|--|---------|----------------------|---|--|--------------------|-------------------------------------|---|--|------------|--|----------------|--|----------------|--|------------------|--|----------------------------|--|----|--|
|                            |                                     |                      | <u>Starting at HEC Paris:</u><br>Students starting at HEC Paris are required to meet the following credit requirements at NUS:   |        |  |  |             |             |             |        |                    |                           |         |                      |         |                          |   |  |         |                   |   |  |         |                      |   |  |                    |                                     |   |  |            |  |                |  |                |  |                  |  |                            |  |    |  |
|                            |                                     |                      | <table><tr><th>MODULE CODE</th><th>MODULE NAME</th><th>MC</th><th>REMARK</th></tr><tr><td><del>BMA5011</del></td><td><del>Macroeconomics</del></td><td>4</td><td></td></tr><tr><td>BMA5801</td><td>Management Communication</td><td>0</td><td>Students who read Communication Management Center workshop (Act Your Success) may apply to waive this module</td></tr><tr><td>BMA5802</td><td>Management Skills</td><td>0</td><td></td></tr><tr><td>BMA5901</td><td>Management Practicum</td><td>4</td><td></td></tr><tr><td><del>BMA5801</del></td><td><del>Management Communication</del></td><td>0</td><td><del>Students who read Communication Management Center workshop (Act Your Success) may apply to waive this module.</del></td></tr><tr><td colspan="2">Total Core</td><td><del>8</del> 4</td><td></td></tr><tr><td colspan="2">Total Elective</td><td><del>48</del> 52</td><td></td></tr><tr><td colspan="2">Total Requirements for NUS</td><td>56</td><td></td></tr></table> |        |  |  | MODULE CODE | MODULE NAME | MC          | REMARK | <del>BMA5011</del> | <del>Macroeconomics</del> | 4       |                      | BMA5801 | Management Communication | 0 | Students who read Communication Management Center workshop (Act Your Success) may apply to waive this module | BMA5802 | Management Skills | 0 |  | BMA5901 | Management Practicum | 4 |  | <del>BMA5801</del> | <del>Management Communication</del> | 0 | <del>Students who read Communication Management Center workshop (Act Your Success) may apply to waive this module.</del> | Total Core |  | <del>8</del> 4 |  | Total Elective |  | <del>48</del> 52 |  | Total Requirements for NUS |  | 56 |  |
| MODULE CODE                | MODULE NAME                         | MC                   | REMARK   |        |  |  |             |             |             |        |                    |                           |         |                      |         |                          |   |  |         |                   |   |  |         |                      |   |  |                    |                                     |   |  |            |  |                |  |                |  |                  |  |                            |  |    |  |
| <del>BMA5011</del>         | <del>Macroeconomics</del>           | 4                    |  |        |  |  |             |             |             |        |                    |                           |         |                      |         |                          |   |  |         |                   |   |  |         |                      |   |  |                    |                                     |   |  |            |  |                |  |                |  |                  |  |                            |  |    |  |
| BMA5801                    | Management Communication            | 0                    | Students who read Communication Management Center workshop (Act Your Success) may apply to waive this module   |        |  |  |             |             |             |        |                    |                           |         |                      |         |                          |   |  |         |                   |   |  |         |                      |   |  |                    |                                     |   |  |            |  |                |  |                |  |                  |  |                            |  |    |  |
| BMA5802                    | Management Skills                   | 0                    |  |        |  |  |             |             |             |        |                    |                           |         |                      |         |                          |   |  |         |                   |   |  |         |                      |   |  |                    |                                     |   |  |            |  |                |  |                |  |                  |  |                            |  |    |  |
| BMA5901                    | Management Practicum                | 4                    |  |        |  |  |             |             |             |        |                    |                           |         |                      |         |                          |   |  |         |                   |   |  |         |                      |   |  |                    |                                     |   |  |            |  |                |  |                |  |                  |  |                            |  |    |  |
| <del>BMA5801</del>         | <del>Management Communication</del> | 0                    | <del>Students who read Communication Management Center workshop (Act Your Success) may apply to waive this module.</del>   |        |  |  |             |             |             |        |                    |                           |         |                      |         |                          |   |  |         |                   |   |  |         |                      |   |  |                    |                                     |   |  |            |  |                |  |                |  |                  |  |                            |  |    |  |
| Total Core                 |                                     | <del>8</del> 4       |  |        |  |  |             |             |             |        |                    |                           |         |                      |         |                          |   |  |         |                   |   |  |         |                      |   |  |                    |                                     |   |  |            |  |                |  |                |  |                  |  |                            |  |    |  |
| Total Elective             |                                     | <del>48</del> 52     |  |        |  |  |             |             |             |        |                    |                           |         |                      |         |                          |   |  |         |                   |   |  |         |                      |   |  |                    |                                     |   |  |            |  |                |  |                |  |                  |  |                            |  |    |  |
| Total Requirements for NUS |                                     | 56                   |  |        |  |  |             |             |             |        |                    |                           |         |                      |         |                          |   |  |         |                   |   |  |         |                      |   |  |                    |                                     |   |  |            |  |                |  |                |  |                  |  |                            |  |    |  |
|                            |                                     |                      | <u>Starting at NUS:</u><br>Students starting at NUS will need to complete the following NUS MBA curriculum requirements at NUS:  |        |  |  |             |             |             |        |                    |                           |         |                      |         |                          |   |  |         |                   |   |  |         |                      |   |  |                    |                                     |   |  |            |  |                |  |                |  |                  |  |                            |  |    |  |
|                            |                                     |                      | <table><tr><th></th><th>MODULE CODE</th><th>MODULE NAME</th><th>MC</th><th>REMARK</th></tr><tr><td>Core</td><td>BMA5001</td><td>Managerial Economics</td><td>4</td><td></td></tr></table>  |        |  |  |             | MODULE CODE | MODULE NAME | MC     | REMARK             | Core                      | BMA5001 | Managerial Economics | 4       |                          |   |  |         |                   |   |  |         |                      |   |  |                    |                                     |   |  |            |  |                |  |                |  |                  |  |                            |  |    |  |
|                            | MODULE CODE                         | MODULE NAME          | MC   | REMARK |  |  |             |             |             |        |                    |                           |         |                      |         |                          |   |  |         |                   |   |  |         |                      |   |  |                    |                                     |   |  |            |  |                |  |                |  |                  |  |                            |  |    |  |
| Core                       | BMA5001                             | Managerial Economics | 4  |        |  |  |             |             |             |        |                    |                           |         |                      |         |                          |   |  |         |                   |   |  |         |                      |   |  |                    |                                     |   |  |            |  |                |  |                |  |                  |  |                            |  |    |  |

| S/N | Date | Faculty/<br>School/ | (A) Updates included in NUS Bulletin 2018-19 before archival (i.e., up to 30 June 2019) |                     |  |                   |   |
|-----|------|---------------------|---|---------------------|--|-------------------|---|
|     |      |                     |   | <del>BMA5002</del>  | <del>Analytics for Managers</del>                            | <del>4</del>      | <del>Recommend to do prior to BMA5013</del>   |
|     |      |                     |   | BMA5003             | Financial Accounting   | 4                 | <del>This is a pre-requisite module for BMA5005 &amp; BMA5013</del>   |
|     |      |                     |   | <del>BMA5004A</del> | <del>Management and Organisation</del>                       | <del>2</del>      |   |
|     |      |                     |   | <del>BMA5005</del>  | <del>Management Accounting</del>                             | <del>2</del>      | <del>Pre-requisite module: BMA5003</del>  |
|     |      |                     |   | BMA5008             | Financial Management   | 4                 | <del>This is a pre-requisite for most finance electives</del><br>Recommend to take prior to finance electives                     |
|     |      |                     |   | BMA5009             | Marketing Management   | 4                 | <del>This is a pre-requisite for BMA5013 &amp; most marketing electives</del><br>Recommend to take prior to marketing electives   |
|     |      |                     |   | <del>BMA5010A</del> | <del>Managing Operations</del>                               | <del>2</del>      |   |
|     |      |                     |   | <del>BMA5011</del>  | <del>Macroeconomics in the Global Economy</del>              | <del>4</del>      | <del>This is a pre-requisite for some related electives</del>   |
|     |      |                     |   | BMA5013             | Corporate Strategy   | 4                 | <del>Pre-requisite modules: BMA5003 &amp; BMA5009</del><br>Strongly recommended to take only after completing BMA5003 and BMA5009 |
|     |      |                     |   | <del>BMA5016A</del> | <del>Leadership in Organisation</del><br>Leading with Impact | <del>2</del><br>4 |   |

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|-----|------|---------------------|--|------------------------------------|--|------------------------|---|
|     |      |                     |  | <b>BMA5017</b>                     | <b>Managerial Operations and Analytics</b> | <b>4</b>               |   |
|     |      |                     |  | BMA5801                            | Management Communication                   | 0                      |   |
|     |      |                     |  | <b>BMA5802</b>                     | <b>Management Skills</b>                   | <b>0</b>               |   |
|     |      |                     |  | BMA5901                            | Management Practicum                       | 4                      |   |
|     |      |                     |  | <b>Total Core Requirements</b>     |  | <b>40</b><br><b>32</b> |   |
|     |      |                     |  | <b>Total Elective Requirements</b> |  | <b>16</b><br><b>24</b> |   |
|     |      |                     |  | <b>Total MBA Requirements</b>      |  | <b>56</b>              |   |
|     |      |                     | 4.2.2.4 S3 Asia MBA<br><a href="http://www.nus.edu.sg/nusbulletin/school-of-business/graduate-education/coursework-programmes/degree-requirements/s3-asia-mba/">http://www.nus.edu.sg/nusbulletin/school-of-business/graduate-education/coursework-programmes/degree-requirements/s3-asia-mba/</a> |                                    |  |                        |   |
|     |      |                     |  | <b>MODULE CODE</b>                 | <b>MODULE NAME</b>                         | <b>MC</b>              | <b>REMARK</b>   |
|     |      |                     |  | <del>BMA5011</del>                 | <del>Macroeconomics</del>                  | <del>4</del>           |   |
|     |      |                     |  | BMA5013                            | Corporate Strategy                         | 4                      | <del>Pre-requisite modules: BMA5003 &amp; BMA5009. Students should have completed the equivalent modules at Fudan University &amp; Korea University</del> |

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|-----|------|---------------------|---|--|-----------------------|---|
|     |      |                     | BMA5901   | Management Practicum                   | 4                     | Compulsory for students opting to graduate with an NUS MBA degree |
|     |      |                     | Total Core  |  | <del>12</del><br>8    |   |
|     |      |                     | Total Elective  |  | <del>10</del><br>14   |   |
|     |      |                     | Total Requirements for NUS  |  | 22                    |   |
|     |      |                     | <p>4.2.2.5 The NUS Master of Business Administration–Master in Public Policy (with Lee Kuan Yew School of Public Policy)</p> <p><a href="http://www.nus.edu.sg/nusbulletin/school-of-business/graduate-education/coursework-programmes/degree-requirements/the-nus-master-of-business-administration-master-in-public-policy-with-lee-kuan-yew-school-of-public-policy/">http://www.nus.edu.sg/nusbulletin/school-of-business/graduate-education/coursework-programmes/degree-requirements/the-nus-master-of-business-administration-master-in-public-policy-with-lee-kuan-yew-school-of-public-policy/</a></p> |  |                       |   |
|     |      |                     |   |  | NO MPP SPECIALIZATION | WITH MPP SPECIALIZATION   |
|     |      |                     | MODULE CODE   | MODULE NAME                            | MC                    | MC  |
|     |      |                     | <del>BMA5002</del>  | <del>Analytics for Managers</del>      | 4                     | 4   |
|     |      |                     | BMA5003   | Financial Accounting                   | 4                     | 4   |
|     |      |                     | <del>BMA5004A</del>   | <del>Management and Organisation</del> | 2                     | 2   |
|     |      |                     | <del>BMA5005</del>  | <del>Management Accounting</del>       | 2                     | 2   |

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|-----|------|---------------------|---|--|---------------------|---------------------|
|     |      |                     | BMA5008   | Financial Management   | 4                   | 4                   |
|     |      |                     | BMA5009   | Marketing Management   | 4                   | 4                   |
|     |      |                     | <del>BMA5010A</del>   | <del>Managing Operations</del>                               | <del>2</del>        | <del>2</del>        |
|     |      |                     | <del>BMA5011</del>  | <del>Macroeconomics</del>                                    | <del>4</del>        | <del>4</del>        |
|     |      |                     | BMA5013   | Corporate Strategy   | 4                   | 4                   |
|     |      |                     | BMA5016A  | <del>Leadership in Organisation</del><br>Leading with Impact | <del>2</del><br>4   | <del>2</del><br>4   |
|     |      |                     | BMA5017   | Managerial Operations and Analytics                          | 4                   | 4                   |
|     |      |                     | BMA5801   | Management Communication                                     | 0                   | 0                   |
|     |      |                     | BMA5802   | Management Skills  | 0                   | 0                   |
|     |      |                     | BMA5901   | Management Practicum   | 4                   | 4                   |
|     |      |                     | Total MBA Core  |  | <del>36</del><br>28 | <del>36</del><br>28 |
|     |      |                     | Total MBA Electives   |  | <del>16</del><br>24 | <del>16</del><br>24 |
|     |      |                     | Total MBA Requirement   |  | 52                  | 52                  |
|     |      |                     | PP5401  | Policy Challenges  | 4                   | 4                   |
|     |      |                     | PP5402  | Policy Institution and Processes                             | 2                   | 2                   |

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|-----|------|---------------------|---|---|------------|------------|
|     |      |                     | PP5403  | Economic Foundations for Public Policy            | 4          | 4          |
|     |      |                     | PP5405  | Public Administration & Politics                  | 2          | 2          |
|     |      |                     | PP5406  | Quantitative Research Method for Public Policy I  | 4          | 4          |
|     |      |                     | PP5407  | Quantitative Research Method for Public Policy II | 4          | 4          |
|     |      |                     | PP5408  | Qualitative Research Method for Public Policy     | 4          | 4          |
|     |      |                     | PP5110A   | Policy Analysis Exercise                          | 4          | 4          |
|     |      |                     | <b>Total MPP Core</b>   |   | <b>28</b>  | <b>28</b>  |
|     |      |                     |   | Specialization Electives                          | 0          | 20         |
|     |      |                     |   | Public Policy Electives                           | 16         | 0          |
|     |      |                     |   | Free Electives                                    | 8          | 4          |
|     |      |                     | <b>Total MPP Electives</b>  |   | <b>24</b>  | <b>24</b>  |
|     |      |                     | <b>Total MPP Requirement</b>  |   | <b>52</b>  | <b>52</b>  |
|     |      |                     | <b>Total MBA-MPP Double Degree Graduate Requirement</b>                                 |   | <b>104</b> | <b>104</b> |



4.2.2.6 The NUS Master of Business Administration –Master in Public Administration (with Lee Kuan Yew School of Public Policy)  
<http://www.nus.edu.sg/nusbulletin/school-of-business/graduate-education/coursework-programmes/degree-requirements/the-nus-master-of-business-administration-master-in-public-administration-with-lee-kuan-yew-school-of-public-policy/>

|             |      | MODULE CODE         | MODULE NAME  | MC                |
|-------------|------|---------------------|--|-------------------|
| MBA Modules | Core | <del>BMA5002</del>  | <del>Analytics for Managers</del>                            | 4                 |
|             |      | BMA5003             | Financial Accounting   | 4                 |
|             |      | <del>BMA5004A</del> | <del>Management and Organisation</del>                       | 2                 |
|             |      | <del>BMA5005</del>  | <del>Management Accounting</del>                             | 2                 |
|             |      | BMA5008             | Financial Management   | 4                 |
|             |      | BMA5009             | Marketing Management   | 4                 |
|             |      | <del>BMA5010A</del> | <del>Managing Operations</del>                               | 2                 |
|             |      | <del>BMA5011</del>  | <del>Macroeconomics</del>                                    | 4                 |
|             |      | BMA5013             | Corporate Strategy   | 4                 |
|             |      | BMA5016A            | <del>Leadership in Organisation</del><br>Leading with Impact | <del>2</del><br>4 |
|             |      | BMA5017             | Managerial Operation and Analytics                           | 4                 |
|             |      | BMA5801             | Management Communication                                     | 0                 |

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|-----|------|---------------------|---|------|--|------------------------------|---------------------|
|     |      |                     |   |      | BMA5802  | Management Skills            | 0                   |
|     |      |                     |   |      | BMA5901  | Management Practicum         | 4                   |
|     |      |                     |   |      | Total MBA Core                                   |                              | <del>36</del><br>28 |
|     |      |                     |   |      | Total MBA Elective                               |                              | <del>20</del><br>28 |
|     |      |                     |   |      | Total MBA Requirements                           |                              | 56                  |
|     |      |                     | MBA Modules   | Core | PP5801   | Economic Analysis            | 4                   |
|     |      |                     |   |      | PP5802   | Policy Analysis              | 4                   |
|     |      |                     |   |      | PP5803   | Public Management            | 4                   |
|     |      |                     |   |      | PP5804   | The Governance Study Project | 4                   |
|     |      |                     |   |      | Total MPA Core                                   |                              | 16                  |
|     |      |                     |   |      | Total MPA Elective                               |                              | 16                  |
|     |      |                     |   |      | Total MPA Requirements                           |                              | 32                  |
|     |      |                     |   |      | Total MBA-MPA Double Degree Graduate Requirement |                              | 88                  |

4.2.2.7 The NUS Master of Business Administration–Master of Advanced Management Double Degree (with Yale School of Management)  
<http://www.nus.edu.sg/nusbulletin/school-of-business/graduate-education/coursework-programmes/degree-requirements/the-nus-master-of-business-administration-master-of-advanced-management-double-degree-with-yale-school-of-management/>

|      | MODULE CODE         | MODULE NAME                                     | MC           | REMARK   |
|------|---------------------|---|--------------|--|
| Core | BMA5001             | Managerial Economics                            | 4            |  |
|      | <del>BMA5002</del>  | <del>Analytics for Managers</del>               | <del>4</del> | <del>Recommend to do prior to BMA5013</del>                            |
|      | BMA5003             | Financial Accounting                            | 4            | <del>This is a pre-requisite module for BMA5005 &amp; BMA5013</del>    |
|      | <del>BMA5004A</del> | <del>Management and Organisation</del>          | <del>2</del> |  |
|      | <del>BMA5005</del>  | <del>Management Accounting</del>                | <del>2</del> | <del>Pre-requisite module: BMA5003</del>                               |
|      | BMA5008             | Financial Management                            | 4            | Recommend to take prior to finance electives                           |
|      | BMA5009             | Marketing Management                            | 4            | Recommend to take prior to marketing electives                         |
|      | <del>BMA5010A</del> | <del>Managing Operations</del>                  | <del>2</del> |  |
|      | <del>BMA5011</del>  | <del>Macroeconomics in the Global Economy</del> | <del>4</del> | <del>This is a pre-requisite for some related electives</del>          |
|      | BMA5013             | Corporate Strategy                              | 4            | Strongly recommended to take only after completing BMA5003 and BMA5009 |

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|-----|------|---------------------|--|-----------------------------|--|----------|--------|
|     |      |                     |  | BMA5016A                    | Leadership in Organisation<br>Leadership with Impact | 2<br>4   |        |
|     |      |                     |  | BMA5017                     | Managerial Operations and<br>Analytics               | 4        |        |
|     |      |                     |  | BMA5801                     | Management Communication                             | 0        |        |
|     |      |                     |  | BMA5802                     | Management Skills                                    | 0        |        |
|     |      |                     |  | BMA5901                     | Management Practicum                                 | 4        |        |
|     |      |                     |  | Total Core Requirements     |  | 40<br>32 |        |
|     |      |                     |  | Total Elective Requirements |  | 4<br>12  |        |
|     |      |                     |  | Total MBA Requirements      |  | 44       |        |
|     |      |                     | 4.2.2.9 PhD-Master of Business Administration (with NUS Graduate School for Integrative Sciences and Engineering)<br><a href="http://www.nus.edu.sg/nusbulletin/school-of-business/graduate-education/coursework-programmes/degree-requirements/phd-master-of-business-administration-with-nus-graduate-school-for-integrative-sciences-and-engineering/">http://www.nus.edu.sg/nusbulletin/school-of-business/graduate-education/coursework-programmes/degree-requirements/phd-master-of-business-administration-with-nus-graduate-school-for-integrative-sciences-and-engineering/</a> |                             |  |          |        |
|     |      |                     |  | MODULE<br>CODE              | MODULE NAME  | MC       | REMARK |
|     |      |                     | Core   | BMA5001                     | Managerial Economics                                 | 4        |        |

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|-----|------|---------------------|---|---------------------|--|-------------------|---|
|     |      |                     |   | <del>BMA5002</del>  | <del>Analytics for Managers</del>                            | <del>4</del>      | <del>Recommend to do prior to BMA5013</del>   |
|     |      |                     |   | BMA5003             | Financial Accounting   | 4                 | <del>This is a pre-requisite module for BMA5005 &amp; BMA5013</del>   |
|     |      |                     |   | <del>BMA5004A</del> | <del>Management and Organisation</del>                       | <del>2</del>      |   |
|     |      |                     |   | <del>BMA5005</del>  | <del>Management Accounting</del>                             | <del>2</del>      | <del>Pre-requisite module: BMA5003</del>  |
|     |      |                     |   | BMA5008             | Financial Management   | 4                 | <del>This is a pre-requisite for most finance electives</del><br>Recommend to take prior to finance electives                   |
|     |      |                     |   | BMA5009             | Marketing Management   | 4                 | <del>This is a pre-requisite for BMA5013 &amp; most marketing electives</del><br>Recommend to take prior to marketing electives |
|     |      |                     |   | <del>BMA5010A</del> | <del>Managing Operations</del>                               | <del>2</del>      |   |
|     |      |                     |   | <del>BMA5011</del>  | <del>Macroeconomics in the Global Economy</del>              | <del>4</del>      | <del>This is a pre-requisite for some related electives</del>   |
|     |      |                     |   | BMA5013             | Corporate Strategy   | 4                 | Strongly recommended to take only after completing BMA5003 and BMA5009  |
|     |      |                     |   | <del>BMA5016A</del> | <del>Leadership in Organisation</del><br>Leading with Impact | <del>2</del><br>4 |   |
|     |      |                     |   | <b>BMA5017</b>      | <b>Managerial Operations and Analytics</b>                   | <b>4</b>          |   |

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|-----|-------------|---------------------|--|-----------------------------|--------------------------|----------|--|
|     |             |                     |  | BMA5801                     | Management Communication | 0        |  |
|     |             |                     |  | BMA5802                     | Management Skills        | 0        |  |
|     |             |                     |  | BMA5901                     | Management Practicum     | 4        |  |
|     |             |                     |  | Total Core Requirements     |                          | 40<br>32 |  |
|     |             |                     |  | Total Elective Requirements |                          | 20<br>28 |  |
|     |             |                     |  | Total MBA Requirements      |                          | 60       |  |
| 8.  | 12 Sep 2018 | SoC                 | <b>NUS Bulletin 2018-19 Updates submitted by SoC (12 Sep 2018)</b><br><br>(A) The section 3.3.5 of the content page has been amended as follows (highlighted in yellow):<br>(link: <a href="http://www.nus.edu.sg/nusbulletin/school-of-computing/">http://www.nus.edu.sg/nusbulletin/school-of-computing/</a> )<br><br>3.3.5 Double Major Programmes<br><br>3.3.5.1 Double Major in either Management or Management (Technology)<br><br>3.3.5.2 Double Majors in the Faculty of Arts and Social Sciences<br><br>3.3.5.3 Double Majors in the Faculty of Science<br><br>3.3.5.4 Double Majors in the School of Computing |                             |                          |          |  |

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|-----|------|---------------------|--|
|     |      |                     | <p>3.3.5.4.1 Double Major in Business Analytics</p> <p>3.3.5.4.2 Double Major in Computer Science</p> <p>3.3.5.4.3 Double Major in Information Security</p> <p>(B) <b><u>Section 3.3.5 Updates</u></b></p> <p>3.3.5 Double Major Programmes</p> <p>(link: <a href="http://www.nus.edu.sg/nusbuletin/school-of-computing/undergraduate-education/multidisciplinary-programmes/double-major-programmes/">http://www.nus.edu.sg/nusbuletin/school-of-computing/undergraduate-education/multidisciplinary-programmes/double-major-programmes/</a>)</p> <p>3.3.5.1 Double Major in either Management or Management (Technology)</p> <p>3.3.5.2 Double Majors in the Faculty of Arts and Social Sciences</p> <p>3.3.5.3 Double Majors in the Faculty of Science</p> <p>3.3.5.4 Double Majors in the School of Computing</p> <p>(C) <b><u>Section 3.3.5.1 amendments</u></b></p> <p>(link: <a href="http://www.nus.edu.sg/nusbuletin/school-of-computing/undergraduate-education/multidisciplinary-programmes/double-major-programmes/double-major-in-either-management-or-management-technology/">http://www.nus.edu.sg/nusbuletin/school-of-computing/undergraduate-education/multidisciplinary-programmes/double-major-programmes/double-major-in-either-management-or-management-technology/</a>)</p> <p>The heading for 3.3.5.1 should be changed from: Double Major in either Management or Management (Technology) to Double Major in Management and the texts as follows:</p> |

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|-----|-------------|---------------------|--|
|     |             |                     | <p><b>3.3.5.1 Double Major in either Management or Management (Technology)</b></p> <p><a href="#">Home</a> / <a href="#">NUS Bulletin AY2018/19</a> / <a href="#">School of Computing</a> / <a href="#">Undergraduate Education</a> / <a href="#">Multidisciplinary Programmes</a> / <a href="#">Double Major Programmes</a> / Double Major in either Management or Management (Technology)</p> <p>SoC students interested in doing a double major programme from the School of Business may refer to section B3 of Part II of this bulletin for double major in either Management or Management (Technology). Details on these two double major programmes are available at: <a href="http://bba.nus.edu/academic-programmes/bba-majors-minors/for-non-business-students/major-minor-in-mgmt">http://bba.nus.edu/academic-programmes/bba-majors-minors/for-non-business-students/major-minor-in-mgmt</a> and <a href="http://bba.nus.edu/academic-programmes/bba-majors-minors/for-non-business-students/major-in-mgmt-tech">http://bba.nus.edu/academic-programmes/bba-majors-minors/for-non-business-students/major-in-mgmt-tech</a> respectively. Students are required to apply for the second major and each application will be reviewed on a case-by-case basis.</p> |
| 9.  | 1 Jan 2018  | SCALE               | Included SCALE in the drop down list in the <a href="#">Module Search Engine</a> .   |
|     | 31 Jan 2018 | RO                  | <p>Updated the the drop down list in alphabetical order:</p> <p>--- Select Faculty/School ---</p> <ul style="list-style-type: none"> <li>Arts &amp; Social Sciences</li> <li>Business</li> <li>Computing</li> <li>Continuing and Lifelong Education</li> <li>Dentistry</li> <li>Design &amp; Environment</li> <li>Engineering</li> <li>Law</li> <li>Medicine</li> <li>Music</li> <li>Public Health</li> <li>Science</li> <li>Yale-NUS College</li> <li>U-Wide Programme</li> </ul>   |



| S/N                                   | Date  | Faculty/<br>School/ | (A) Updates included in NUS Bulletin 2018-19 before archival (i.e., up to 30 June 2019)  |                                       |  |        |  |        |   |         |  |                                       |  |
|---------------------------------------|---|---------------------|--|---------------------------------------|--|--------|--|--------|---|---------|--|---------------------------------------|--|
| 10.                                   | 11 JuL 2018   | SCALE               | <p>URL: <a href="http://www.nus.edu.sg/nusbulletin/school-of-continuing-and-lifelong-education/undergraduate-education/btech-engineering/bachelor-of-technology-electronics-engineering/">http://www.nus.edu.sg/nusbulletin/school-of-continuing-and-lifelong-education/undergraduate-education/btech-engineering/bachelor-of-technology-electronics-engineering/</a></p> <p><b>A. Sample Study Schedule (4-year candidature beginning in Semester 1 of an AY):</b><br/><b>1. The number of Modular Credits (MC) of a module is denoted by the number in the bracket.</b><br/><b>2. Modules marked with an asterisk (*) are modules stretching over more than one semester and the total number of MCs will only be given upon completion of the module.</b></p> <table><tr><td colspan="2"><b>1<sup>st</sup> Year of studies</b></td></tr><tr><td>Sem 1:</td><td>General Education Module 1 (4)<br/>TTG1401 Engineering Mathematics I (4)<br/>TEE2027 Electronic Circuits (4)</td></tr><tr><td>Sem 2:</td><td>TEE2002 Engineering Mathematics II (4)<br/>TEE2026 Digital Design (4)<br/>TEE2101 Programming Methodology (4)</td></tr><tr><td>SpTerm:</td><td>General Education Module 2 (4)<br/>General Education Module 3 (4)</td></tr><tr><td colspan="2"><b>2<sup>nd</sup> Year of studies</b></td></tr></table> | <b>1<sup>st</sup> Year of studies</b> |  | Sem 1: | General Education Module 1 (4)<br>TTG1401 Engineering Mathematics I (4)<br>TEE2027 Electronic Circuits (4) | Sem 2: | TEE2002 Engineering Mathematics II (4)<br>TEE2026 Digital Design (4)<br>TEE2101 Programming Methodology (4) | SpTerm: | General Education Module 2 (4)<br>General Education Module 3 (4) | <b>2<sup>nd</sup> Year of studies</b> |  |
| <b>1<sup>st</sup> Year of studies</b> |   |                     |  |                                       |  |        |  |        |   |         |  |                                       |  |
| Sem 1:                                | General Education Module 1 (4)<br>TTG1401 Engineering Mathematics I (4)<br>TEE2027 Electronic Circuits (4)  |                     |  |                                       |  |        |  |        |   |         |  |                                       |  |
| Sem 2:                                | TEE2002 Engineering Mathematics II (4)<br>TEE2026 Digital Design (4)<br>TEE2101 Programming Methodology (4) |                     |  |                                       |  |        |  |        |   |         |  |                                       |  |
| SpTerm:                               | General Education Module 2 (4)<br>General Education Module 3 (4)  |                     |  |                                       |  |        |  |        |   |         |  |                                       |  |
| <b>2<sup>nd</sup> Year of studies</b> |   |                     |  |                                       |  |        |  |        |   |         |  |                                       |  |

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|-----|------|---------------------|---|---|
|     |      |                     | Sem 1:  | General Education Module 4 (4)<br>TEE2003 Advanced Mathematics for Engineers (4)<br>TEE2028 Microcontroller Programming and Interfacing (4) |
|     |      |                     | Sem 2:  | TEE2011 Engineering Electromagnetics (4)<br>TEE2023 Signals & Systems (4)<br>Unrestricted Elective Module (4)                               |
|     |      |                     | SpTerm:   | General Education Module 5 (4)  |
|     |      |                     | 3 <sup>rd</sup> Year of studies   |   |
|     |      |                     | Sem 1:  | *TTG3002 Industrial Practice<br>Elective Module 1 (4)<br>Elective Module 2 (4)<br>Unrestricted Elective Module (4)                          |
|     |      |                     | Sem 2:  | *TTG3002 Industrial Practice (8)<br>TEE2033 Integrated System Lab (4)<br>TEE3031 Innovation & Enterprise I (4)<br>Elective Module 3 (4)     |
|     |      |                     | SpTerm:   | TTG2415 Ethics in Engineering (4)   |
|     |      |                     | 4 <sup>th</sup> Year of studies   |   |
|     |      |                     |   |   |
|     |      |                     |   |   |

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|---------------------------------|---|---------------------|--|--------|---|--------|---|--|---------|--|--------|---|
|                                 |   |                     | <table><tr><td>Sem 1:</td><td>*TEE4001 BTech Dissertation<br/>Elective Module 4 (4)<br/>Elective Module 5 (4)</td></tr><tr><td>Sem 2:</td><td>*TEE4001 BTech Dissertation (12)<br/>Elective Module 6 (4)</td></tr></table>   | Sem 1: | *TEE4001 BTech Dissertation<br>Elective Module 4 (4)<br>Elective Module 5 (4) | Sem 2: | *TEE4001 BTech Dissertation (12)<br>Elective Module 6 (4) |  |         |  |        |   |
| Sem 1:                          | *TEE4001 BTech Dissertation<br>Elective Module 4 (4)<br>Elective Module 5 (4)                               |                     |  |        |   |        |   |  |         |  |        |   |
| Sem 2:                          | *TEE4001 BTech Dissertation (12)<br>Elective Module 6 (4)   |                     |  |        |   |        |   |  |         |  |        |   |
|                                 |   |                     | <p><b>B. Sample Study Schedule (4-year candidature beginning in Semester 2 of an AY):</b><br/><b>1. The number of Modular Credits (MC) of a module is denoted by the number in the bracket.</b><br/><b>2. Modules marked with an asterisk (*) are modules stretching over more than one semester and the total number of MCs will only be given upon completion of the module.</b></p> <table><tr><td colspan="2">1<sup>st</sup> Year of studies</td></tr><tr><td>Sem 2:</td><td>TEE2026 Digital Design (4)<br/>TEE2101 Programming Methodology (4)<br/>TTG1401 Engineering Mathematics I (4)</td></tr><tr><td>SpTerm:</td><td>General Education Module 1 (4)<br/>General Education Module 2 (4)</td></tr><tr><td>Sem 1:</td><td>General Education Module 3 (4)<br/>TEE2002 Engineering Mathematics II (4)<br/>TEE2027 Electronic Circuits (4)</td></tr></table> |        | 1 <sup>st</sup> Year of studies   |        | Sem 2:  | TEE2026 Digital Design (4)<br>TEE2101 Programming Methodology (4)<br>TTG1401 Engineering Mathematics I (4) | SpTerm: | General Education Module 1 (4)<br>General Education Module 2 (4) | Sem 1: | General Education Module 3 (4)<br>TEE2002 Engineering Mathematics II (4)<br>TEE2027 Electronic Circuits (4) |
| 1 <sup>st</sup> Year of studies |   |                     |  |        |   |        |   |  |         |  |        |   |
| Sem 2:                          | TEE2026 Digital Design (4)<br>TEE2101 Programming Methodology (4)<br>TTG1401 Engineering Mathematics I (4)  |                     |  |        |   |        |   |  |         |  |        |   |
| SpTerm:                         | General Education Module 1 (4)<br>General Education Module 2 (4)  |                     |  |        |   |        |   |  |         |  |        |   |
| Sem 1:                          | General Education Module 3 (4)<br>TEE2002 Engineering Mathematics II (4)<br>TEE2027 Electronic Circuits (4) |                     |  |        |   |        |   |  |         |  |        |   |

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|-----|------|---------------------|---|---|
|     |      |                     | <b>2<sup>nd</sup> Year of studies</b>   |   |
|     |      |                     | Sem 2:  | TEE2003 Advanced Mathematics for Engineers (4)<br>TEE2011 Engineering Electromagnetics (4)<br>TEE2023 Signals and Systems (4)                                 |
|     |      |                     | SpTerm:   | General Education Module 4 (4)  |
|     |      |                     | Sem 1:  | General Education Module 5 (4)<br>TEE2028 Microcontroller Programming and Interfacing (4)<br>*TTG3002 Industrial Practice<br>Unrestricted Elective Module (4) |
|     |      |                     | <b>3<sup>rd</sup> Year of studies</b>   |   |
|     |      |                     | Sem 2:  | TEE2033 Integrated System Lab (4)<br>TEE3031 Innovation & Enterprise I (4)<br>*TTG3002 Industrial Practice (8)<br>Elective Module 1 (4)                       |
|     |      |                     | SpTerm:   | TTG2415 Ethics in Engineering (4)   |
|     |      |                     | Sem 1:  | Elective Module 2 (4)<br>Elective Module 3 (4)<br>Unrestricted Elective Module (4)  |

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|-----|------------|---------------------|---|---|
|     |            |                     | <b>4<sup>th</sup> Year of studies</b>   |   |
|     |            |                     | Sem 2:  | *TEE4001 BTech Dissertation<br>Elective Module 4 (4)<br>Elective Module 5 (4) |
|     |            |                     | SpTerm:   | *TEE4001 BTech Dissertation   |
|     |            |                     | Sem 1:  | *TEE4001 BTech Dissertation (12)<br>Elective Module 6 (4)                     |
| 11. | 8 Aug 2018 | SCALE               | URL: <a href="http://www.nus.edu.sg/nusbulletin/school-of-continuing-and-lifelong-education/undergraduate-education/btech-engineering/bachelor-of-technology-supply-chain-management/">http://www.nus.edu.sg/nusbulletin/school-of-continuing-and-lifelong-education/undergraduate-education/btech-engineering/bachelor-of-technology-supply-chain-management/</a><br><br><i>Study Schedule</i><br><br>There is one intake per academic year, in Semester 1 (i.e. August). The sample study schedule for a four-year candidature are presented below. These assume the students' work and other commitments allow them sufficient time to properly cope with their studies. Students are strongly advised to slow down if necessary so that they progress at their own comfortable pace.<br><br><b>Sample Study Schedule (4-year candidature beginning in Semester 1 of an AY):</b> <ol style="list-style-type: none"> <li>The number of Modular Credits (MC) of a module is denoted by the number in the bracket.</li> <li>Modules marked with an asterisk (*) are modules stretching over more than one semester and the total number of MCs will only be given upon completion of the module.</li> </ol> |   |

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|-----|------|---------------------|---|---|
|     |      |                     | <b>1<sup>st</sup> Year of studies</b>   |   |
|     |      |                     | Sem 1:  | TIE2110 Operations Research I (4)<br>TIE2120 Probability & Statistics (4)<br>TTG1401 Engineering Mathematics I (4)  |
|     |      |                     | Sem 2:  | TIE2100 Probability Models with Applications (4)<br>TIE2140 Engineering Economy (4)<br><b>TEE2101 Programming Methodology</b>   |
|     |      |                     | SpTerm:   | General Education Module 1 (4)<br>General Education Module 2 (4)  |
|     |      |                     | <b>2<sup>nd</sup> Year of studies</b>   |   |
|     |      |                     | Sem 1:  | <b>TSC3222 Global Sourcing &amp; Supply Management (4)</b><br>TSC3224 Distribution and Warehousing (4)<br>Elective Module 1 (4)   |
|     |      |                     | Sem 2:  | <del><b>TSC3223 Supply Chain Financial Analysis &amp; Management (4)</b></del><br>TSC3226 Transportation Management (4)<br><b>TSC4225 Port Logistics</b><br>Elective Module 2 (4) |

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|-----|------|---------------------|---|---|
|     |      |                     | SpTerm:<br>General Education 3 (4)<br>TTG2415 Ethics in Engineering (4)                 |   |
|     |      |                     | <b>3<sup>rd</sup> Year of studies</b>   |   |
|     |      |                     | Sem 1:  | TIE3101 Statistics for Engineering Application (4)<br>*TSC3100 Systems Chain Design<br>*TTG3001 Industrial Practice         |
|     |      |                     | Sem 2:  | TIE4220 Supply Chain Modelling (4)<br>*TSC3100 Systems Chain Design (8MCs)<br>*TTG3001 Industrial Practice (12MC)           |
|     |      |                     | SpTerm:<br>General Education 4 (4)<br>General Education 5 (4)                           |   |
|     |      |                     | <b>4<sup>th</sup> Year of studies</b>   |   |
|     |      |                     | Sem 1:  | <b>TSC3223 Supply Chain Financial Analysis &amp; Management (4)</b><br>*TSC4101 BTech Dissertation<br>Elective Module 3 (4) |

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|-----|-------------|---------------------|---|--|
|     |             |                     | Sem 2:  | *TSC4101 BTech Dissertation (8)<br>Elective Module 4 (4) |
| 12. | 29 Aug 2018 | SCALE               | <p>URL: <a href="http://www.nus.edu.sg/nusbulletin/school-of-continuing-and-lifelong-education/undergraduate-education/btech-engineering/bachelor-of-technology-electronics-engineering/">http://www.nus.edu.sg/nusbulletin/school-of-continuing-and-lifelong-education/undergraduate-education/btech-engineering/bachelor-of-technology-electronics-engineering/</a></p> <p>3.4.3 Bachelor of Technology (Electronics Engineering)</p> <p>The BTech (Electronics Engineering) is offered in partnership with the Department of Electrical &amp; Computer Engineering. The programme aims to graduate professional electronics engineers who have a strong foundation in the relevant sciences and technology and who are able to contribute to society through innovation, enterprise and leadership. The programme provides students with an education that enhances and complements their knowledge and experiences, offers the requisite balance of breadth and depth for a professional electrical engineering education, and seeks to establish a solid foundation for lifelong learning throughout an electronics engineer's career.</p> <p>The programme comprises of three components – a strong core in mathematics, computing and engineering; technical competence through a minimum of breadth and depth modules; and general education. The core – which includes group projects, a product design and innovations project, and individual research and design projects – provides knowledge and skills considered essential for electronics engineers. A minimum number of breadth modules ensures that each</p> |  |



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|-----|------|---------------------|---|
|     |      |                     | <p>student is exposed to many aspects of the state-of-the-art areas; in addition, students can achieve depth in one or two areas of their choice. General education modules complement the technical education through a wide array of modules in humanities, social sciences and professionalism to make our graduates educated members of the global community.</p> <p>The programme is accredited by the Engineering Accreditation Board (EAB) of the Institution of Engineers Singapore (IES). Via this accreditation, all signatories in the Washington Accord recognise the substantial equivalence of this programme in satisfying the academic requirements for the practice of engineering at the professional level in many countries including Canada, United States of America, United Kingdom, Hong Kong, New Zealand, Australia and others.</p> <p>The structure of the BTech (Electronics Engineering) programme is designed to achieve the following <b>educational objectives</b> to prepare engineers who will have the following attributes:</p> <ul style="list-style-type: none"> <li>• <b>Technical Skills: are</b> technically competent to solve complex problems in electronics engineering and can adapt effectively in a fast changing environment.</li> <li>• <b>Critical Thinking: are</b> able to critically think, analyse and make decisions that give due consideration to global issues in business, ethics, society and the environment.</li> <li>• <b>Leadership &amp; Team Building: are</b> able to communicate effectively, act with integrity, and have the inter-personal skills needed to engage in, lead, and nurture diverse teams.</li> <li>• <b>Attitude: are</b> committed to lifelong learning, resourceful, resilient and embrace global challenges and opportunities to make a positive impact in society.</li> </ul> |

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|-----|------|---------------------|---|
|     |      |                     | <p>The above objectives are achieved by a curriculum designed to graduate students who have attained the following <b>learning outcomes</b>:</p> <ul style="list-style-type: none"> <li>(a) <b>Engineering knowledge:</b> Apply the knowledge of mathematics, natural science, engineering fundamentals, and an engineering specialisation to the solution of complex engineering problems.</li> <li>(b) <b>Problem Analysis:</b> Identify, formulate, research literature, and analyse complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.</li> <li>(c) <b>Design/development of Solutions:</b> Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for public health and safety, cultural, societal, and environmental considerations.</li> <li>(d) <b>Investigation:</b> Conduct investigations of complex problems using research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.</li> <li>(e) <b>Modern Tool Usage:</b> Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex engineering activities with an understanding of the limitations.</li> <li>(f) <b>The engineer and Society:</b> Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal, and cultural issues and the consequent responsibilities relevant to the professional engineering practice.</li> <li>(g) <b>Environment and Sustainability:</b> Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for the sustainable development.</li> <li>(h) <b>Ethics:</b> Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.</li> </ul> |

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|-----|------|---------------------|---|
|     |      |                     | <p>(i) <b>Individual and Team Work:</b> Function effectively as an individual, and as a member or leader in diverse teams and in multidisciplinary settings.</p> <p>(j) <b>Communication:</b> Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.</p> <p>(k) <b>Project Management and Finance:</b> Demonstrate knowledge and understanding of the engineering and management principles and economic decision-making, and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.</p> <p>(l) <b>Life-long Learning:</b> Recognise the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.</p> <p>(m) <b>EE Specific Programme Criteria:</b> Have the knowledge to analyse and design complex electronic devices, software, and systems containing hardware and software components; and understand the principles and applications of the basic sciences, engineering science and advanced mathematics, including probability and statistics, differential and integral calculus, linear algebra and complex variables.</p> <p><b>A. Study Schedules</b></p> <p>There are two intakes per academic year, in Semester 1 (i.e. August) and in Semester 2 (i.e. January). The respective sample study schedules for a four-year candidature are presented below. These assume the students' work and other commitments allow them sufficient time to properly cope with their studies. Students are strongly advised to slow down if necessary so that they progress at their own comfortable pace.</p> |

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|---------------------------------------|---|---------------------|---|---------------------------------------|--|--------|--|--------|---|---------|--|
|                                       |   |                     | <p><b>A. Sample Study Schedule (4-year candidature beginning in Semester 1 of an AY):</b></p> <p>1. The number of Modular Credits (MC) of a module is denoted by the number in the bracket.</p> <p>2. Modules marked with an asterisk (*) are modules stretching over more than one semester and the total number of MCs will only be given upon completion of the module.</p> <table><tr><td colspan="2"><b>1<sup>st</sup> Year of studies</b></td></tr><tr><td>Sem 1:</td><td>General Education Module 1 (4)<br/>TTG1401 Engineering Mathematics I<br/>(4) TEE2027 Electronic Circuits (4)</td></tr><tr><td>Sem 2:</td><td>TEE2002 Engineering Mathematics II<br/>(4) TEE2026 Digital Design (4)<br/>TEE2101 Programming Methodology (4)</td></tr><tr><td>SpTerm:</td><td>General Education Module 2<br/>(4) General Education Module</td></tr></table> | <b>1<sup>st</sup> Year of studies</b> |  | Sem 1: | General Education Module 1 (4)<br>TTG1401 Engineering Mathematics I<br>(4) TEE2027 Electronic Circuits (4) | Sem 2: | TEE2002 Engineering Mathematics II<br>(4) TEE2026 Digital Design (4)<br>TEE2101 Programming Methodology (4) | SpTerm: | General Education Module 2<br>(4) General Education Module |
| <b>1<sup>st</sup> Year of studies</b> |   |                     |   |                                       |  |        |  |        |   |         |  |
| Sem 1:                                | General Education Module 1 (4)<br>TTG1401 Engineering Mathematics I<br>(4) TEE2027 Electronic Circuits (4)  |                     |   |                                       |  |        |  |        |   |         |  |
| Sem 2:                                | TEE2002 Engineering Mathematics II<br>(4) TEE2026 Digital Design (4)<br>TEE2101 Programming Methodology (4) |                     |   |                                       |  |        |  |        |   |         |  |
| SpTerm:                               | General Education Module 2<br>(4) General Education Module  |                     |   |                                       |  |        |  |        |   |         |  |
| 13.                                   | 17 Sep 2018   | SCALE               | <p><b>NUS Bulletin 2018/19 – Updates submitted by SCALE (17 Sep 2018)</b></p> <p><b>Changes needed to AY1819 NUS bulletin at:</b></p> <p>1. <a href="http://www.nus.edu.sg/nusbulletin/faculty-of-engineering/undergraduate-education/bachelor-of-engineering-degree-programmes/bachelor-of-engineering-electrical-engineering/degree-requirements/">http://www.nus.edu.sg/nusbulletin/faculty-of-engineering/undergraduate-education/bachelor-of-engineering-degree-programmes/bachelor-of-engineering-electrical-engineering/degree-requirements/</a></p>   |                                       |  |        |  |        |   |         |  |

| S/N                                      | Date                                 | Faculty/<br>School/  | (A) Updates included in NUS Bulletin 2018-19 before archival (i.e., up to 30 June 2019)   |  |  |                                 |                                     |   |                                 |                                      |   |       |            |  |                       |         |   |                           |         |                       |   |         |                          |                                       |         |                          |                                       |         |                                      |                        |                    |  |  |         |                           |                       |          |                                |
|--|--------------------------------------|--|---|--|--|---------------------------------|-------------------------------------|---|---------------------------------|--------------------------------------|---|-------|------------|--|-----------------------|---------|---|---------------------------|---------|-----------------------|---|---------|--------------------------|---------------------------------------|---------|--------------------------|---------------------------------------|---------|--------------------------------------|------------------------|--------------------|--|--|---------|---------------------------|-----------------------|----------|--------------------------------|
|  |                                      |  | <p>We need to <b>change ‘EG1111 to EE1111’ &amp; change ‘EG1112 to EE1112’ as</b> this is a new module code wef AY1819. Approved in R.O.116/18.</p> <p><b>Table 3.2.5a: Summary of EE Modular Requirements and Credits</b></p> <table><tr><td><del>EG1111</del> <b>EE1111</b></td><td>Engineering Principles &amp; Practice I</td><td>6</td></tr><tr><td><del>EG1112</del> <b>EE1112</b></td><td>Engineering Principles &amp; Practice II</td><td>6</td></tr></table> <p>We have also recently revamped out Technical Electives &amp; changes need to be done to the below tables (those in red):</p> <p><b>Table 3.2.5b: List of Outer Core Modules in the Various Areas</b></p> <table><tr><th>Areas</th><th colspan="2">Outer Core</th></tr><tr><td>Microwave &amp; RF System</td><td>EE3104C</td><td>Introduction to RF and Microwave Systems and Circuits</td></tr><tr><td>Communications &amp; Networks</td><td>EE3131C</td><td>Communication Systems</td></tr><tr><td>Control, Intelligent Systems &amp; Robotics</td><td>EE3331C</td><td>Feedback Control Systems</td></tr><tr><td>Integrated Circuit &amp; Embedded Systems</td><td>EE3408C</td><td>Integrated Analog Design</td></tr><tr><td>Microelectronics Technology &amp; Devices</td><td>EE3431C</td><td>Microelectronics Materials &amp; Devices</td></tr><tr><td>Power &amp; Energy Systems</td><td><del>EE3505C</del></td><td><del>Electrical Energy Systems</del><br/><b>EE3506C Introduction to Electrical Energy Systems</b></td></tr><tr><td>Signal Analysis and Machine Intelligence</td><td>EE3731C</td><td>Signal Processing Methods</td></tr><tr><td>Engineering Computing</td><td>CS2040/C</td><td>Data Structures and Algorithms</td></tr></table> |  |  | <del>EG1111</del> <b>EE1111</b> | Engineering Principles & Practice I | 6 | <del>EG1112</del> <b>EE1112</b> | Engineering Principles & Practice II | 6 | Areas | Outer Core |  | Microwave & RF System | EE3104C | Introduction to RF and Microwave Systems and Circuits | Communications & Networks | EE3131C | Communication Systems | Control, Intelligent Systems & Robotics | EE3331C | Feedback Control Systems | Integrated Circuit & Embedded Systems | EE3408C | Integrated Analog Design | Microelectronics Technology & Devices | EE3431C | Microelectronics Materials & Devices | Power & Energy Systems | <del>EE3505C</del> | <del>Electrical Energy Systems</del><br><b>EE3506C Introduction to Electrical Energy Systems</b> | Signal Analysis and Machine Intelligence | EE3731C | Signal Processing Methods | Engineering Computing | CS2040/C | Data Structures and Algorithms |
| <del>EG1111</del> <b>EE1111</b>          | Engineering Principles & Practice I  | 6  |   |  |  |                                 |                                     |   |                                 |                                      |   |       |            |  |                       |         |   |                           |         |                       |   |         |                          |                                       |         |                          |                                       |         |                                      |                        |                    |  |  |         |                           |                       |          |                                |
| <del>EG1112</del> <b>EE1112</b>          | Engineering Principles & Practice II | 6  |   |  |  |                                 |                                     |   |                                 |                                      |   |       |            |  |                       |         |   |                           |         |                       |   |         |                          |                                       |         |                          |                                       |         |                                      |                        |                    |  |  |         |                           |                       |          |                                |
| Areas                                    | Outer Core                           |  |   |  |  |                                 |                                     |   |                                 |                                      |   |       |            |  |                       |         |   |                           |         |                       |   |         |                          |                                       |         |                          |                                       |         |                                      |                        |                    |  |  |         |                           |                       |          |                                |
| Microwave & RF System                    | EE3104C                              | Introduction to RF and Microwave Systems and Circuits  |   |  |  |                                 |                                     |   |                                 |                                      |   |       |            |  |                       |         |   |                           |         |                       |   |         |                          |                                       |         |                          |                                       |         |                                      |                        |                    |  |  |         |                           |                       |          |                                |
| Communications & Networks                | EE3131C                              | Communication Systems  |   |  |  |                                 |                                     |   |                                 |                                      |   |       |            |  |                       |         |   |                           |         |                       |   |         |                          |                                       |         |                          |                                       |         |                                      |                        |                    |  |  |         |                           |                       |          |                                |
| Control, Intelligent Systems & Robotics  | EE3331C                              | Feedback Control Systems   |   |  |  |                                 |                                     |   |                                 |                                      |   |       |            |  |                       |         |   |                           |         |                       |   |         |                          |                                       |         |                          |                                       |         |                                      |                        |                    |  |  |         |                           |                       |          |                                |
| Integrated Circuit & Embedded Systems    | EE3408C                              | Integrated Analog Design   |   |  |  |                                 |                                     |   |                                 |                                      |   |       |            |  |                       |         |   |                           |         |                       |   |         |                          |                                       |         |                          |                                       |         |                                      |                        |                    |  |  |         |                           |                       |          |                                |
| Microelectronics Technology & Devices    | EE3431C                              | Microelectronics Materials & Devices   |   |  |  |                                 |                                     |   |                                 |                                      |   |       |            |  |                       |         |   |                           |         |                       |   |         |                          |                                       |         |                          |                                       |         |                                      |                        |                    |  |  |         |                           |                       |          |                                |
| Power & Energy Systems                   | <del>EE3505C</del>                   | <del>Electrical Energy Systems</del><br><b>EE3506C Introduction to Electrical Energy Systems</b> |   |  |  |                                 |                                     |   |                                 |                                      |   |       |            |  |                       |         |   |                           |         |                       |   |         |                          |                                       |         |                          |                                       |         |                                      |                        |                    |  |  |         |                           |                       |          |                                |
| Signal Analysis and Machine Intelligence | EE3731C                              | Signal Processing Methods  |   |  |  |                                 |                                     |   |                                 |                                      |   |       |            |  |                       |         |   |                           |         |                       |   |         |                          |                                       |         |                          |                                       |         |                                      |                        |                    |  |  |         |                           |                       |          |                                |
| Engineering Computing                    | CS2040/C                             | Data Structures and Algorithms   |   |  |  |                                 |                                     |   |                                 |                                      |   |       |            |  |                       |         |   |                           |         |                       |   |         |                          |                                       |         |                          |                                       |         |                                      |                        |                    |  |  |         |                           |                       |          |                                |

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|     |      |                     | <p><b>Table 3.2.5c: List of Electives in the Various Areas</b></p> <p><b>Communications &amp; Networks</b></p> <p><del>EE3204</del> <del>Computer Communication Networks I</del><br/> <b>EE4204</b>     <b>Computer Networks</b></p> <p><del>EE4210</del>     <del>Computer Communication Networks II</del>     <b>Network Protocols and Applications</b><br/> <b>EE4211</b>     <b>Data Science for the Internet of Things</b> (<i>New, please add</i>)</p> <p>EE5135     Digital Communications</p> <p><b>Integrated Circuits &amp; Embedded Systems</b></p> <p>CG3207     Computer Architecture</p> <p><del>EE3407</del> <del>Analog Electronics</del><br/> <b>EE4407</b>     Analog Electronics</p> <p>EE4218     Embedded Hardware System Design</p> <p>EE4415     Integrated Digital Design</p> <p>EE4434     Integrated Circuit Technology, Design and Testing</p> <p>EE5903     Real-Time Systems</p> <p><b>Control, Intelligent Systems &amp; Robotics</b></p> <p>EE4302     Advanced Control Systems</p> <p><del>EE3302</del> <del>Industrial Control Systems</del><br/> <b>EE4303</b>     Industrial Control Systems</p> |

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|-----|------|---------------------|--|
|     |      |                     | <del>EE3304</del> Digital Control Systems<br><b>EE4304</b> Digital Control Systems<br><br>EE4305 Introduction to Fuzzy/Neural Systems<br><br>EE4307 Control Systems Design and Simulation<br><br>EE4308 Advances in Intelligent Systems and Robotics<br><br>ME4245 Robot Mechanics and Control<br><br>EE5101R Linear Systems<br><br><b>Microelectronic Technologies &amp; Devices</b><br><br><del>EE3409</del> Microelectronic Applications for Modern Life<br><b>EE4409</b> Microelectronic Applications for Modern Life<br><br>EE4435 Modern Transistors and Memory Devices<br><br>EE4436 Fabrication Process Technology<br><br>EE4437 Photonics – Principles and Applications<br><br>EE4438 Solar Cells and Modules<br><br>EE5440 Magnetic Data Storage for Big Data<br><br><b>Power &amp; Energy Systems</b><br><br>EE4501 Power System Management & Protection<br><br>EE4502 Electric Drives and Control<br><br><b>EE4503 Advanced Power Electronics</b> <i>(New, please add)</i> |

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|     |      |                     | <p>EE4505 Power Semiconductor Devices and ICs</p> <p>EE4509 Silicon Microsystems</p> <p><del>EE4511 Sustainable Energy Systems</del></p> <p><b>EE4511 Renewable Generation and Smart Grid</b></p> <p>EE5702 Advanced Power System Analysis</p> <p>EE5703 Modelling and Control of Electrical Actuators</p> <p>EE5711 Modelling and Control of Power Electronic Converters</p> <p><b>Signal Analysis and Machine Intelligence</b></p> <p><del>EE3701 Digital Media Technologies</del></p> <p><b>EE4703 Digital Media Technologies</b></p> <p><del>EE3206 Introduction to Computer Vision and Image Processing</del></p> <p><b>EE4704 Introduction to Computer Vision and Image Processing</b></p> <p>EE4212 Computer Vision</p> <p>EE5907 Pattern Recognition</p> <p><b>Microwave &amp; RF</b></p> <p>EE4101 RF Communications</p> <p>EE4104 Microwave Circuits &amp; Devices</p> <p>EE4112 <del>HF Techniques</del> <b>Radio Frequency Design and Systems</b></p> <p>EE5303 Microwave Electronics</p> <p><b>Bioelectronic Systems</b></p> |



| S/N | Date | Faculty/<br>School/ | (A) Updates included in NUS Bulletin 2018-19 before archival (i.e., up to 30 June 2019)   |
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|     |      |                     | <p>EE4603    Biomedical Imaging Systems</p> <p><del>BN4404 — BioMEMS (To remove)</del></p> <p><del>BN4406 — Biophotonics and Bioimaging (To remove)</del></p> <p>EE4604    Biological Perception in Digital Media</p> <p>EE4605    Bio-Instrumentation &amp; Signal Analysis</p> <p><b>General (To add)</b></p> <p>EE4031    Intellectual Property: Harnessing Innovation (to add)</p> <p><b>Information Processing (To remove)</b></p> <p><del>CS2103 — Software Engineering</del></p> <p><del>CS2106 — Introduction to Operating Systems</del></p> <p><del>CS3230 — Design and Analysis of Algorithms</del></p> <p><del>CS3233 — Competitive Programming</del></p> <p><del>CS4231 — Parallel and Distributed Algorithms</del></p> <p><b>Table 3.2.5d: Possible Industrial Tracks in Electrical Engineering</b></p> <p><b>Wireless Communication Systems</b></p> <p><b>Computational Intelligence</b></p> <p><b>Microelectronic Devices and Technologies</b></p> <p><b>Control and Intelligent Systems</b></p> <p><b>Integrated Circuits and Systems</b></p> <p><b>Power and Energy</b></p> <p>Remove these:</p> |

| S/N | Date | Faculty/<br>School/ | (A) Updates included in NUS Bulletin 2018-19 before archival (i.e., up to 30 June 2019)   |
|-----|------|---------------------|---|
|     |      |                     | <p>Advanced Control</p> <p>Biomedical Systems</p> <p>Distributed Autonomous Systems</p> <p>Embedded Systems</p> <p>Computational Intelligence</p> <p>Integrated Circuit Technology</p> <p>Information Storage Materials and Devices</p> <p>Mechatronics and Automation</p> <p>Microelectronic Devices</p> <p>Microwave and RF CAD</p> <p>Microwave and RF Systems</p> <p>Networking &amp; Distributed Systems</p> <p>Power Systems Analysis and Control</p> <p>Power Electronics, Electric Drives &amp; Semiconductor Devices</p> <p>Process Control</p> <p>Renewable Energy Materials &amp; Devices</p> <p>Sustainable Energy Devices and Systems</p> <p>VLSI design</p> |

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|---------------|---|---------------------|---|--------------------------------------|-----|--|--|--|-----|---------|--|-----|------------|--|--|------------|--|--|--------|----------------------|---|---------|--------------------------------|---|--------|--|---|--|--|--|--------|---|---|--------|-----------------------------|---|---------------|-------------------------------------|---|---------------|--------------------------------------|---|---------|--------------------|---|---------|------------------|---|--|------------------------|---|--------|----------------|---|-----------|--|----|-----------|--|----|
|               |   |                     | <p><del>Wireless Communications</del></p> <p>For details on module selections based on possible specialisation set of modules, please refer to:<br/><a href="http://www.ece.nus.edu.sg/education/undergraduate/ee/Specialization.html">www.ece.nus.edu.sg/education/undergraduate/ee/Specialization.html</a></p> <p><b>For details on Industrial tracks, please refer to:</b> <a href="http://ece.nus.edu.sg/drupal/?q=node/231">http://ece.nus.edu.sg/drupal/?q=node/231</a></p> <p>2. <a href="http://www.nus.edu.sg/nusbulletin/faculty-of-engineering/undergraduate-education/bachelor-of-engineering-degree-programmes/bachelor-of-engineering-electrical-engineering/recommended-semester-schedule/">http://www.nus.edu.sg/nusbulletin/faculty-of-engineering/undergraduate-education/bachelor-of-engineering-degree-programmes/bachelor-of-engineering-electrical-engineering/recommended-semester-schedule/</a></p> <ul style="list-style-type: none"><li>- <b>Change 'EG1111 to EE1111' &amp; change 'EG1112 to EE1112'</b></li><li>- <b>Change 'EG3611 to EG3611A</b></li><li>- <b>Change 'EG2401 to EG2401A</b></li></ul> <table><tr><th colspan="2"></th><th>MCS</th><th colspan="2">MODULES</th><th>MCS</th></tr><tr><td colspan="2">Semester 1</td><td></td><td colspan="2">Semester 2</td><td></td></tr><tr><td>MA1511</td><td>Engineering Calculus</td><td>2</td><td>MA1508E</td><td>Linear Algebra for Engineering</td><td>4</td></tr><tr><td>MA1512</td><td>Differential Equations for Engineering</td><td>2</td><td></td><td></td><td></td></tr><tr><td>IT1007</td><td>Introduction to Programming with Python and C</td><td>4</td><td>ES1531</td><td>Critical Thinking &amp; Writing</td><td>4</td></tr><tr><td><b>EE1111</b></td><td>Engineering Principles &amp; Practice I</td><td>6</td><td><b>EE1112</b></td><td>Engineering Principles &amp; Practice II</td><td>6</td></tr><tr><td>GER1000</td><td>Quantity Reasoning</td><td>4</td><td>GEQ1000</td><td>Asking Questions</td><td>4</td></tr><tr><td></td><td>ES1103 or GES/GEH/GET*</td><td>4</td><td>EE2026</td><td>Digital Design</td><td>4</td></tr><tr><td colspan="2">Sub-total</td><td>22</td><td colspan="2">Sub-total</td><td>22</td></tr></table> |                                      |     |  |  |  | MCS | MODULES |  | MCS | Semester 1 |  |  | Semester 2 |  |  | MA1511 | Engineering Calculus | 2 | MA1508E | Linear Algebra for Engineering | 4 | MA1512 | Differential Equations for Engineering | 2 |  |  |  | IT1007 | Introduction to Programming with Python and C | 4 | ES1531 | Critical Thinking & Writing | 4 | <b>EE1111</b> | Engineering Principles & Practice I | 6 | <b>EE1112</b> | Engineering Principles & Practice II | 6 | GER1000 | Quantity Reasoning | 4 | GEQ1000 | Asking Questions | 4 |  | ES1103 or GES/GEH/GET* | 4 | EE2026 | Digital Design | 4 | Sub-total |  | 22 | Sub-total |  | 22 |
|               |   | MCS                 | MODULES   |                                      | MCS |  |  |  |     |         |  |     |            |  |  |            |  |  |        |                      |   |         |                                |   |        |  |   |  |  |  |        |   |   |        |                             |   |               |                                     |   |               |                                      |   |         |                    |   |         |                  |   |  |                        |   |        |                |   |           |  |    |           |  |    |
| Semester 1    |   |                     | Semester 2  |                                      |     |  |  |  |     |         |  |     |            |  |  |            |  |  |        |                      |   |         |                                |   |        |  |   |  |  |  |        |   |   |        |                             |   |               |                                     |   |               |                                      |   |         |                    |   |         |                  |   |  |                        |   |        |                |   |           |  |    |           |  |    |
| MA1511        | Engineering Calculus                          | 2                   | MA1508E   | Linear Algebra for Engineering       | 4   |  |  |  |     |         |  |     |            |  |  |            |  |  |        |                      |   |         |                                |   |        |  |   |  |  |  |        |   |   |        |                             |   |               |                                     |   |               |                                      |   |         |                    |   |         |                  |   |  |                        |   |        |                |   |           |  |    |           |  |    |
| MA1512        | Differential Equations for Engineering        | 2                   |   |                                      |     |  |  |  |     |         |  |     |            |  |  |            |  |  |        |                      |   |         |                                |   |        |  |   |  |  |  |        |   |   |        |                             |   |               |                                     |   |               |                                      |   |         |                    |   |         |                  |   |  |                        |   |        |                |   |           |  |    |           |  |    |
| IT1007        | Introduction to Programming with Python and C | 4                   | ES1531  | Critical Thinking & Writing          | 4   |  |  |  |     |         |  |     |            |  |  |            |  |  |        |                      |   |         |                                |   |        |  |   |  |  |  |        |   |   |        |                             |   |               |                                     |   |               |                                      |   |         |                    |   |         |                  |   |  |                        |   |        |                |   |           |  |    |           |  |    |
| <b>EE1111</b> | Engineering Principles & Practice I           | 6                   | <b>EE1112</b>   | Engineering Principles & Practice II | 6   |  |  |  |     |         |  |     |            |  |  |            |  |  |        |                      |   |         |                                |   |        |  |   |  |  |  |        |   |   |        |                             |   |               |                                     |   |               |                                      |   |         |                    |   |         |                  |   |  |                        |   |        |                |   |           |  |    |           |  |    |
| GER1000       | Quantity Reasoning                            | 4                   | GEQ1000   | Asking Questions                     | 4   |  |  |  |     |         |  |     |            |  |  |            |  |  |        |                      |   |         |                                |   |        |  |   |  |  |  |        |   |   |        |                             |   |               |                                     |   |               |                                      |   |         |                    |   |         |                  |   |  |                        |   |        |                |   |           |  |    |           |  |    |
|               | ES1103 or GES/GEH/GET*                        | 4                   | EE2026  | Digital Design                       | 4   |  |  |  |     |         |  |     |            |  |  |            |  |  |        |                      |   |         |                                |   |        |  |   |  |  |  |        |   |   |        |                             |   |               |                                     |   |               |                                      |   |         |                    |   |         |                  |   |  |                        |   |        |                |   |           |  |    |           |  |    |
| Sub-total     |   | 22                  | Sub-total   |                                      | 22  |  |  |  |     |         |  |     |            |  |  |            |  |  |        |                      |   |         |                                |   |        |  |   |  |  |  |        |   |   |        |                             |   |               |                                     |   |               |                                      |   |         |                    |   |         |                  |   |  |                        |   |        |                |   |           |  |    |           |  |    |

| S/N | Date | Faculty/<br>School/ | (A) Updates included in NUS Bulletin 2018-19 before archival (i.e., up to 30 June 2019) |    |   |    |
|-----|------|---------------------|---|----|---|----|
|     |      |                     | Semester 3  |    | Semester 4  |    |
|     |      |                     | EE2023 Signals and Systems  | 4  | EE2012 Analytical Methods in ECE                        | 4  |
|     |      |                     | EE2027 Electronic Circuits  | 4  | PC2020 Electromagnetics for Electrical Engineers        | 4  |
|     |      |                     | EE2028 Microcontroller Programming and Interfacing                                      | 4  | EE2033 Integrated Systems Lab                           | 4  |
|     |      |                     | GES/GEH/GET*  | 4  | Outer core Technical Elective x 1                       | 4  |
|     |      |                     | UE* x 2   | 8  | UE* x 1   | 4  |
|     |      |                     | Sub-total   | 24 | Sub-total   | 20 |
|     |      |                     | Semester 5  |    | Semester 6  |    |
|     |      |                     | EG3611A Industrial Attachment   | 10 | EE3031 Innovation & Enterprise I                        | 4  |
|     |      |                     |   |    | EG2401A Engineering Professionalism                     | 2  |
|     |      |                     |   |    | Outer core Technical Elective x 2                       | 8  |
|     |      |                     |   |    | GES/GEH/GET*  | 4  |
|     |      |                     |   |    | Technical Elective x 1                                  | 4  |
|     |      |                     | Sub-total   | 10 | Sub-total   | 22 |
|     |      |                     | Semester 7  |    | Semester 8  |    |
|     |      |                     | EE4002D or EE4002R Capstone Project (over 2 semesters)                                  | 4  | EE4002D or EE4002R Capstone Project (over 2 semesters)) | 4  |
|     |      |                     | Technical Electives x 2   | 8  | Technical Electives x 2                                 | 8  |

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|-----|-------------|---------------------|---|----|-----------|-----|
|     |             |                     | UE* x 2   | 8  | UE* x 2   | 8   |
|     |             |                     | Sub-total   | 20 | Sub-total | 20  |
|     |             |                     | Total MCs   |    |           | 160 |
|     |             |                     | <p>3. at <a href="http://www.nus.edu.sg/nusbuletin/faculty-of-engineering/undergraduate-education/bachelor-of-engineering-degree-programmes/bachelor-of-engineering-electrical-engineering/overview/">http://www.nus.edu.sg/nusbuletin/faculty-of-engineering/undergraduate-education/bachelor-of-engineering-degree-programmes/bachelor-of-engineering-electrical-engineering/overview/</a><br/>(Can we add one sentence in red as below?)</p> <p>Accreditation of engineering academic programmes is a key foundation for the practice of engineering at the professional level. The BEng (Computer Engineering) programme undergone a re-accreditation exercise by the Engineering Accreditation Board (EAB) of Singapore in 2013 and is currently accredited for students graduating from the programme up to AY2017/18. <b>The programme will be undergoing re-accreditation in the third quarter of 2018.</b> Via the accreditation from the EAB, all signatories in the Washington Accord recognise the substantial equivalence of our programmes in satisfying the academic requirements for the practice of engineering at the professional level. This means that our graduates can be accepted for engineering practice in the countries that are part of the Washington Accord. Signatories in the Washington Accord include Canada, USA, UK, Hong Kong, New Zealand, Australia and others.</p> |    |           |     |
| 14. | 21 Mar 2019 | SCALE               | <p>3.3.2 Bachelor of Technology (Cybersecurity)</p> <p><a href="http://www.nus.edu.sg/nusbuletin/school-of-continuing-and-lifelong-education/undergraduate-education/btech-computing/bachelor-of-technology-cybersecurity/">http://www.nus.edu.sg/nusbuletin/school-of-continuing-and-lifelong-education/undergraduate-education/btech-computing/bachelor-of-technology-cybersecurity/</a></p> <p>-----</p> <p><b>Study Schedule</b></p> <p>There is only one intake per academic year in Semester 1 (i.e. August). One sample study schedule for a four-year candidature is shown below. This assumes the students' work and other commitments allow them sufficient time to properly cope with their studies. Students are strongly advised to slow down if necessary so that they progress at their own comfortable pace.</p>  |    |           |     |

| S/N                                   | Date   | Faculty/<br>School/ | (A) Updates included in NUS Bulletin 2018-19 before archival (i.e., up to 30 June 2019)  |                                       |  |        |  |        |   |         |  |                                       |  |        |   |
|---------------------------------------|--|---------------------|--|---------------------------------------|--|--------|--|--------|---|---------|--|---------------------------------------|--|--------|---|
|                                       |  |                     | <p><b>A. Sample Study Schedule (4-year candidature beginning in Semester 1 of an AY):</b></p> <p>1. The number of Modular Credits (MC) of a module is denoted by the number in the bracket.</p> <p>2. Modules marked with an asterisk (*) are modules stretching over more than one semester and the total number of MCs will only be given upon completion of the module.</p> <table><tr><td colspan="2"><b>1<sup>st</sup> Year of studies</b></td></tr><tr><td>Sem 1:</td><td>TIC1001 Introduction to Computing and Programming I (4)<br/>TIC1101 Professional, Ethical, and Social Issues in Computing (4)<br/>TMA1001 Introductory Mathematics (4)</td></tr><tr><td>Sem 2:</td><td>TIC1002 Introduction to Computing and Programming II (4)<br/>TIC1201 Discrete Structures (4)<br/>TMA2101 Calculus for Computing (4)</td></tr><tr><td>SpTerm:</td><td>General Education Module 1 (4)<br/>TMA2102 Linear Algebra (4)</td></tr><tr><td colspan="2"><b>2<sup>nd</sup> Year of studies</b></td></tr><tr><td>Sem 1:</td><td>TIC2001 Data Structures and Algorithms (4)<br/>TIC2301 Introduction to Information Security (4)<br/>TIC2601 Database and Web Applications (4)</td></tr></table> | <b>1<sup>st</sup> Year of studies</b> |  | Sem 1: | TIC1001 Introduction to Computing and Programming I (4)<br>TIC1101 Professional, Ethical, and Social Issues in Computing (4)<br>TMA1001 Introductory Mathematics (4) | Sem 2: | TIC1002 Introduction to Computing and Programming II (4)<br>TIC1201 Discrete Structures (4)<br>TMA2101 Calculus for Computing (4) | SpTerm: | General Education Module 1 (4)<br>TMA2102 Linear Algebra (4) | <b>2<sup>nd</sup> Year of studies</b> |  | Sem 1: | TIC2001 Data Structures and Algorithms (4)<br>TIC2301 Introduction to Information Security (4)<br>TIC2601 Database and Web Applications (4) |
| <b>1<sup>st</sup> Year of studies</b> |  |                     |  |                                       |  |        |  |        |   |         |  |                                       |  |        |   |
| Sem 1:                                | TIC1001 Introduction to Computing and Programming I (4)<br>TIC1101 Professional, Ethical, and Social Issues in Computing (4)<br>TMA1001 Introductory Mathematics (4) |                     |  |                                       |  |        |  |        |   |         |  |                                       |  |        |   |
| Sem 2:                                | TIC1002 Introduction to Computing and Programming II (4)<br>TIC1201 Discrete Structures (4)<br>TMA2101 Calculus for Computing (4)                                    |                     |  |                                       |  |        |  |        |   |         |  |                                       |  |        |   |
| SpTerm:                               | General Education Module 1 (4)<br>TMA2102 Linear Algebra (4)   |                     |  |                                       |  |        |  |        |   |         |  |                                       |  |        |   |
| <b>2<sup>nd</sup> Year of studies</b> |  |                     |  |                                       |  |        |  |        |   |         |  |                                       |  |        |   |
| Sem 1:                                | TIC2001 Data Structures and Algorithms (4)<br>TIC2301 Introduction to Information Security (4)<br>TIC2601 Database and Web Applications (4)                          |                     |  |                                       |  |        |  |        |   |         |  |                                       |  |        |   |

| S/N | Date | Faculty/<br>School/ | (A) Updates included in NUS Bulletin 2018-19 before archival (i.e., up to 30 June 2019) |   |  |
|-----|------|---------------------|---|---|--|
|     |      |                     | Sem 2:  | TIC2101 Information Systems and Organisations (4)<br>TIC2401 Introduction to Computer Systems (4)<br>TIC2501 Computer Networks and Applications (4)                                 |  |
|     |      |                     | SpTerm:   | General Education Module 2 (4)<br>General Education Module 3 (4)  |  |
|     |      |                     | <b>3<sup>rd</sup> Year of studies</b>   |   |  |
|     |      |                     | Sem 1:  | TIC2002 Introduction to Software Engineering (4)<br>TIC2901 Communication for Computing Professionals (4)<br>TMA2103 Probability and Statistics (4)<br>*TIC3901 Industrial Practice |  |
|     |      |                     | Sem 2:  | TIC3301 Information Security Management (4)<br>TIC3302 Computer Systems Security (4)<br>*TIC3901 Industrial Practice (12)<br>Unrestricted Elective Module 1 (4)                     |  |
|     |      |                     | SpTerm:   | General Education Module 4 (4)<br>General Education Module 5 (4)  |  |
|     |      |                     | <b>4<sup>th</sup> Year of studies</b>   |   |  |

| S/N                                   | Date  | Faculty/<br>School/ | (A) Updates included in NUS Bulletin 2018-19 before archival (i.e., up to 30 June 2019)  |        |   |        |   |         |  |  |
|---------------------------------------|---|---------------------|--|--------|---|--------|---|---------|--|--|
|                                       |   |                     | <table><tr><td>Sem 1:</td><td>TIC4301 Information Security Practicum I (4)<br/>Elective Module 1 (4)<br/>Unrestricted Elective Module 2 (4)</td></tr><tr><td>Sem 2:</td><td>TIC4302 Information Security Practicum II (4)<br/>Elective Module 2 (4)<br/>Elective Module 3 (4)</td></tr><tr><td>SpTerm:</td><td>Unrestricted Elective Module 3 (4)<br/>Unrestricted Elective Module 4 (4)</td></tr></table>   | Sem 1: | TIC4301 Information Security Practicum I (4)<br>Elective Module 1 (4)<br>Unrestricted Elective Module 2 (4) | Sem 2: | TIC4302 Information Security Practicum II (4)<br>Elective Module 2 (4)<br>Elective Module 3 (4) | SpTerm: | Unrestricted Elective Module 3 (4)<br>Unrestricted Elective Module 4 (4) |  |
| Sem 1:                                | TIC4301 Information Security Practicum I (4)<br>Elective Module 1 (4)<br>Unrestricted Elective Module 2 (4) |                     |  |        |   |        |   |         |  |  |
| Sem 2:                                | TIC4302 Information Security Practicum II (4)<br>Elective Module 2 (4)<br>Elective Module 3 (4)             |                     |  |        |   |        |   |         |  |  |
| SpTerm:                               | Unrestricted Elective Module 3 (4)<br>Unrestricted Elective Module 4 (4)                                    |                     |  |        |   |        |   |         |  |  |
| 15.                                   | 21 Mar 2019   | SCALE               | <p>3.3.1 Bachelor of Technology (Business Analytics)<br/><a href="http://www.nus.edu.sg/nusbulletin/school-of-continuing-and-lifelong-education/undergraduate-education/btech-computing/bachelor-of-technology-business-analytics/">http://www.nus.edu.sg/nusbulletin/school-of-continuing-and-lifelong-education/undergraduate-education/btech-computing/bachelor-of-technology-business-analytics/</a></p> <hr/> <p><b>Study Schedule</b><br/>There is only one intake per academic year in Semester 1 (i.e. August). One sample study schedule for a four-year candidature is shown below. This assumes the students' work and other commitments allow them sufficient time to properly cope with their studies. Students are strongly advised to slow down if necessary so that they progress at their own comfortable pace.</p> <p><b>A. Sample Study Schedule (4-year candidature beginning in Semester 1 of an AY):</b><br/>1. The number of Modular Credits (MC) of a module is denoted by the number in the bracket.<br/>2. Modules marked with an asterisk (*) are modules stretching over more than one semester and the total number of MCs will only be given upon completion of the module.</p> <table><tr><td><b>1<sup>st</sup> Year of studies</b></td></tr></table> |        | <b>1<sup>st</sup> Year of studies</b>   |        |   |         |  |  |
| <b>1<sup>st</sup> Year of studies</b> |   |                     |  |        |   |        |   |         |  |  |



| S/N | Date | Faculty/<br>School/ | (A) Updates included in NUS Bulletin 2018-19 before archival (i.e., up to 30 June 2019) |   |
|-----|------|---------------------|---|---|
|     |      |                     | Sem 1:  | TIC1001 Introduction to Computing and Programming I (4)<br>TIC1101 Professional, Ethical and Social Issues in Computing (4)<br>TMA1001 Introductory Mathematics (4) |
|     |      |                     | Sem 2:  | TBA2102 Introduction to Business Analytics (4)<br>TIC1002 Introduction to Computing and Programming II (4)<br>TMA2101 Calculus for Computing (4)                    |
|     |      |                     | SpTerm:   | General Education Module 1 (4)<br>TBA2101 Building an Analytics Organisation (4)  |
|     |      |                     | <b>2<sup>nd</sup> Year of studies</b>   |   |
|     |      |                     | Sem 1:  | TIC2001 Data Structures and Algorithms (4)<br>TIC2601 Database and Web Applications (4)<br>TMA2103 Probability and Statistics (4)                                   |
|     |      |                     | Sem 2:  | TBA2103 Data Visualisation (4)<br>TBA2104 Predictive Analytics (4)<br>TBA3204 Web Analytics (4)   |
|     |      |                     | SpTerm:   | General Education Module 2 (4)<br>General Education Module 3 (4)  |

| S/N | Date | Faculty/<br>School/ | (A) Updates included in NUS Bulletin 2018-19 before archival (i.e., up to 30 June 2019) |  |
|-----|------|---------------------|---|--|
|     |      |                     | <b>3<sup>rd</sup> Year of studies</b>   |  |
|     |      |                     | Sem 1:  | TBA2105 Web Mining (4)<br>TBA4212 Search Engine Optimisation and Analytics (4)<br>TIC2901 Communications for Computing Professionals (4)<br>*TIC3901 Industrial Practice |
|     |      |                     | Sem 2:  | TBA3102 Text Analytics (4)<br>*TIC3901 Industrial Practice (12)<br>Elective Module 1 (4)<br>Elective Module 2 (4)  |
|     |      |                     | SpTerm:   | General Education Module 4 (4)<br>General Education Module 5 (4)   |
|     |      |                     | <b>4<sup>th</sup> Year of studies</b>   |  |
|     |      |                     | Sem 1:  | TBA3103 Application Systems Development for Business Analytics (4)<br>Elective Module 3 (4)<br>Unrestricted Elective Module 1 (4)  |
|     |      |                     | Sem 2:  | Elective Module 4 (4)<br>Elective Module 5 (4)<br>Unrestricted Elective Module 2 (4)   |

| S/N    | Date   | Faculty/<br>School/ | (A) Updates included in NUS Bulletin 2018-19 before archival (i.e., up to 30 June 2019)  |  |        |  |        |   |
|--------|--|---------------------|--|--|--------|--|--------|---|
|        |  |                     | SpTerm:  | Unrestricted Elective Module 3 (4)<br>Unrestricted Elective Module 4 (4) |        |  |        |   |
| 16.    | 21 Mar 2019  | SCALE               | <div>3.3.3 Bachelor of Technology (Software Engineering)<br/><a href="http://www.nus.edu.sg/nusbulletin/school-of-continuing-and-lifelong-education/undergraduate-education/btech-computing/bachelor-of-technology-software-engineering/">http://www.nus.edu.sg/nusbulletin/school-of-continuing-and-lifelong-education/undergraduate-education/btech-computing/bachelor-of-technology-software-engineering/</a></div> <div><b>Study Schedule</b><br/>There is only one intake per academic year in Semester 1 (i.e. August). One sample study schedule for a four-year candidature is shown below. This assumes the students' work and other commitments allow them sufficient time to properly cope with their studies. Students are strongly advised to slow down if necessary so that they progress at their own comfortable pace.</div> <div><b>A. Sample Study Schedule (4-year candidature beginning in Semester 1 of an AY):</b><br/>1. The number of Modular Credits (MC) of a module is denoted by the number in the bracket.<br/>2. Modules marked with an asterisk (*) are modules stretching over more than one semester and the total number of MCs will only be given upon completion of the module.</div> <div><b>1<sup>st</sup> Year of studies</b><table><tr><td>Sem 1:</td><td>TIC1001 Introduction to Computing and Programming I (4)<br/>TIC1101 Professional, Ethical, and Social Issues in Computing (4)<br/>TMA1001 Introductory Mathematics (4)</td></tr><tr><td>Sem 2:</td><td>TIC1002 Introduction to Computing and Programming II (4)<br/>TIC1201 Discrete Structures (4)<br/>TMA2101 Calculus for Computing (4)</td></tr></table></div> |  | Sem 1: | TIC1001 Introduction to Computing and Programming I (4)<br>TIC1101 Professional, Ethical, and Social Issues in Computing (4)<br>TMA1001 Introductory Mathematics (4) | Sem 2: | TIC1002 Introduction to Computing and Programming II (4)<br>TIC1201 Discrete Structures (4)<br>TMA2101 Calculus for Computing (4) |
| Sem 1: | TIC1001 Introduction to Computing and Programming I (4)<br>TIC1101 Professional, Ethical, and Social Issues in Computing (4)<br>TMA1001 Introductory Mathematics (4) |                     |  |  |        |  |        |   |
| Sem 2: | TIC1002 Introduction to Computing and Programming II (4)<br>TIC1201 Discrete Structures (4)<br>TMA2101 Calculus for Computing (4)                                    |                     |  |  |        |  |        |   |

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|-----|------|---------------------|---|--|
|     |      |                     | SpTerm:   | General Education Module 1 (4)<br>TMA2102 Linear Algebra (4)   |
|     |      |                     | <b>2<sup>nd</sup> Year of studies</b>   |  |
|     |      |                     | Sem 1:  | TIC2001 Data Structures and Algorithms (4)<br>TIC2301 Introduction to Information Security (4)<br>TIC2601 Database and Web Applications (4)  |
|     |      |                     | Sem 2:  | TIC2002 Introduction to Software Engineering (4)<br>TIC2401 Introduction to Computer Systems (4)<br>TIC2501 Computer Networks and Applications (4)                                 |
|     |      |                     | SpTerm:   | General Education Module 2 (4)<br>General Education Module 3 (4)   |
|     |      |                     | <b>3<sup>rd</sup> Year of studies</b>   |  |
|     |      |                     | Sem 1:  | TIC2701 Principles of Programming Languages (4)<br>TIC2901 Communication for Computing Professionals (4)<br>*TIC3901 Industrial Practice<br>TMA2103 Probability and Statistics (4) |

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|-----|-------------|---------------------|--|--|
|     |             |                     | Sem 2:   | TIC3002 User Interface Design and Implementation (4)<br>TIC3001 Software Requirements Analysis and Design (4)<br>*TIC3901 Industrial Practice (12)<br>Unrestricted Elective Module 1 (4) |
|     |             |                     | SpTerm:  | General Education Module 4 (4)<br>General Education Module 5 (4)   |
|     |             |                     | <b>4<sup>th</sup> Year of studies</b>  |  |
|     |             |                     | Sem 1:   | TIC4001 Software Engineering Practicum I (4)<br>Elective Module 1 (4)<br>Unrestricted Elective Module 2 (4)  |
|     |             |                     | Sem 2:   | TIC4002 Software Engineering Practicum II (4)<br>Elective Module 2 (4)<br>Elective Module 3 (4)  |
|     |             |                     | SpTerm:  | Unrestricted Elective Module 3 (4)<br>Unrestricted Elective Module 4 (4)   |
| 17. | 24 Aug 2018 | SDE                 | <b>NUS Bulletin AY2018/19 - Updates by SDE (Aug 2018)</b><br><br><b>URL:</b> <a href="http://www.nus.edu.sg/nusbuletin/school-of-design-and-environment/undergraduate-education/degree-requirements/b-sc-project-facilities-management-hons-programme/">http://www.nus.edu.sg/nusbuletin/school-of-design-and-environment/undergraduate-education/degree-requirements/b-sc-project-facilities-management-hons-programme/</a> |  |

| S/N      | Date  | Faculty/<br>School/ | (A) Updates included in NUS Bulletin 2018-19 before archival (i.e., up to 30 June 2019)  |     |         |     |          |                                |           |     |   |  |   |                              |   |   |                                |   |   |                                      |   |   |                                 |   |   |                                       |   |          |                               |            |   |                   |    |   |                            |         |   |                               |         |   |                 |         |   |  |   |          |                                    |           |  |              |            |
|----------|---|---------------------|--|-----|---------|-----|----------|--------------------------------|-----------|-----|---|--|---|------------------------------|---|---|--------------------------------|---|---|--------------------------------------|---|---|---------------------------------|---|---|---------------------------------------|---|----------|-------------------------------|------------|---|-------------------|----|---|----------------------------|---------|---|-------------------------------|---------|---|-----------------|---------|---|--|---|----------|------------------------------------|-----------|--|--------------|------------|
|          |   |                     | <p>Amendments are shaded in yellow/red below.</p> <p><b>Table 1: Curriculum Structure of the B.Sc. (Project and Facilities Mgt.) (Hons.) Programme for students admitted from AY2018/19 onwards</b></p> <table><tr><th>No.</th><th>Modules</th><th>MCs</th></tr><tr><td><b>1</b></td><td><b>UNIVERSITY REQUIREMENTS</b></td><td><b>20</b></td></tr><tr><td>1.1</td><td>General Education Modules (GEM)^<br/>Students will be required to read one GEM from each of the following five pillars</td><td></td></tr><tr><td>a</td><td><u>H</u>uman Cultures (GEH)</td><td>4</td></tr><tr><td>b</td><td>Asking <u>Q</u>uestions (GEQ)</td><td>4</td></tr><tr><td>c</td><td>Quantitative <u>R</u>easoning (GER)</td><td>4</td></tr><tr><td>d</td><td><u>S</u>ingapore Studies (GES)</td><td>4</td></tr><tr><td>e</td><td><u>T</u>hinking and Expression (GET)</td><td>4</td></tr><tr><td><b>2</b></td><td><b>PROGRAMME REQUIREMENTS</b></td><td><b>108</b></td></tr><tr><td>a</td><td>Essential modules</td><td>56</td></tr><tr><td>b</td><td>Project Management modules</td><td>16 min.</td></tr><tr><td>c</td><td>Facilities Management modules</td><td>16 min.</td></tr><tr><td>d</td><td>Technology Core</td><td>12 min.</td></tr><tr><td>e</td><td>*1 Dissertation OR<br/>**Any 2 Programme Electives (for students who are not taking Dissertation)</td><td>8</td></tr><tr><td><b>3</b></td><td><b>UNRESTRICTED ELECTIVES (UE)</b></td><td><b>32</b></td></tr><tr><td></td><td><b>Total</b></td><td><b>160</b></td></tr></table> | No. | Modules | MCs | <b>1</b> | <b>UNIVERSITY REQUIREMENTS</b> | <b>20</b> | 1.1 | General Education Modules (GEM)^<br>Students will be required to read one GEM from each of the following five pillars |  | a | <u>H</u> uman Cultures (GEH) | 4 | b | Asking <u>Q</u> uestions (GEQ) | 4 | c | Quantitative <u>R</u> easoning (GER) | 4 | d | <u>S</u> ingapore Studies (GES) | 4 | e | <u>T</u> hinking and Expression (GET) | 4 | <b>2</b> | <b>PROGRAMME REQUIREMENTS</b> | <b>108</b> | a | Essential modules | 56 | b | Project Management modules | 16 min. | c | Facilities Management modules | 16 min. | d | Technology Core | 12 min. | e | *1 Dissertation OR<br>**Any 2 Programme Electives (for students who are not taking Dissertation) | 8 | <b>3</b> | <b>UNRESTRICTED ELECTIVES (UE)</b> | <b>32</b> |  | <b>Total</b> | <b>160</b> |
| No.      | Modules   | MCs                 |  |     |         |     |          |                                |           |     |   |  |   |                              |   |   |                                |   |   |                                      |   |   |                                 |   |   |                                       |   |          |                               |            |   |                   |    |   |                            |         |   |                               |         |   |                 |         |   |  |   |          |                                    |           |  |              |            |
| <b>1</b> | <b>UNIVERSITY REQUIREMENTS</b>  | <b>20</b>           |  |     |         |     |          |                                |           |     |   |  |   |                              |   |   |                                |   |   |                                      |   |   |                                 |   |   |                                       |   |          |                               |            |   |                   |    |   |                            |         |   |                               |         |   |                 |         |   |  |   |          |                                    |           |  |              |            |
| 1.1      | General Education Modules (GEM)^<br>Students will be required to read one GEM from each of the following five pillars |                     |  |     |         |     |          |                                |           |     |   |  |   |                              |   |   |                                |   |   |                                      |   |   |                                 |   |   |                                       |   |          |                               |            |   |                   |    |   |                            |         |   |                               |         |   |                 |         |   |  |   |          |                                    |           |  |              |            |
| a        | <u>H</u> uman Cultures (GEH)  | 4                   |  |     |         |     |          |                                |           |     |   |  |   |                              |   |   |                                |   |   |                                      |   |   |                                 |   |   |                                       |   |          |                               |            |   |                   |    |   |                            |         |   |                               |         |   |                 |         |   |  |   |          |                                    |           |  |              |            |
| b        | Asking <u>Q</u> uestions (GEQ)  | 4                   |  |     |         |     |          |                                |           |     |   |  |   |                              |   |   |                                |   |   |                                      |   |   |                                 |   |   |                                       |   |          |                               |            |   |                   |    |   |                            |         |   |                               |         |   |                 |         |   |  |   |          |                                    |           |  |              |            |
| c        | Quantitative <u>R</u> easoning (GER)  | 4                   |  |     |         |     |          |                                |           |     |   |  |   |                              |   |   |                                |   |   |                                      |   |   |                                 |   |   |                                       |   |          |                               |            |   |                   |    |   |                            |         |   |                               |         |   |                 |         |   |  |   |          |                                    |           |  |              |            |
| d        | <u>S</u> ingapore Studies (GES)   | 4                   |  |     |         |     |          |                                |           |     |   |  |   |                              |   |   |                                |   |   |                                      |   |   |                                 |   |   |                                       |   |          |                               |            |   |                   |    |   |                            |         |   |                               |         |   |                 |         |   |  |   |          |                                    |           |  |              |            |
| e        | <u>T</u> hinking and Expression (GET)   | 4                   |  |     |         |     |          |                                |           |     |   |  |   |                              |   |   |                                |   |   |                                      |   |   |                                 |   |   |                                       |   |          |                               |            |   |                   |    |   |                            |         |   |                               |         |   |                 |         |   |  |   |          |                                    |           |  |              |            |
| <b>2</b> | <b>PROGRAMME REQUIREMENTS</b>   | <b>108</b>          |  |     |         |     |          |                                |           |     |   |  |   |                              |   |   |                                |   |   |                                      |   |   |                                 |   |   |                                       |   |          |                               |            |   |                   |    |   |                            |         |   |                               |         |   |                 |         |   |  |   |          |                                    |           |  |              |            |
| a        | Essential modules   | 56                  |  |     |         |     |          |                                |           |     |   |  |   |                              |   |   |                                |   |   |                                      |   |   |                                 |   |   |                                       |   |          |                               |            |   |                   |    |   |                            |         |   |                               |         |   |                 |         |   |  |   |          |                                    |           |  |              |            |
| b        | Project Management modules  | 16 min.             |  |     |         |     |          |                                |           |     |   |  |   |                              |   |   |                                |   |   |                                      |   |   |                                 |   |   |                                       |   |          |                               |            |   |                   |    |   |                            |         |   |                               |         |   |                 |         |   |  |   |          |                                    |           |  |              |            |
| c        | Facilities Management modules   | 16 min.             |  |     |         |     |          |                                |           |     |   |  |   |                              |   |   |                                |   |   |                                      |   |   |                                 |   |   |                                       |   |          |                               |            |   |                   |    |   |                            |         |   |                               |         |   |                 |         |   |  |   |          |                                    |           |  |              |            |
| d        | Technology Core   | 12 min.             |  |     |         |     |          |                                |           |     |   |  |   |                              |   |   |                                |   |   |                                      |   |   |                                 |   |   |                                       |   |          |                               |            |   |                   |    |   |                            |         |   |                               |         |   |                 |         |   |  |   |          |                                    |           |  |              |            |
| e        | *1 Dissertation OR<br>**Any 2 Programme Electives (for students who are not taking Dissertation)                      | 8                   |  |     |         |     |          |                                |           |     |   |  |   |                              |   |   |                                |   |   |                                      |   |   |                                 |   |   |                                       |   |          |                               |            |   |                   |    |   |                            |         |   |                               |         |   |                 |         |   |  |   |          |                                    |           |  |              |            |
| <b>3</b> | <b>UNRESTRICTED ELECTIVES (UE)</b>  | <b>32</b>           |  |     |         |     |          |                                |           |     |   |  |   |                              |   |   |                                |   |   |                                      |   |   |                                 |   |   |                                       |   |          |                               |            |   |                   |    |   |                            |         |   |                               |         |   |                 |         |   |  |   |          |                                    |           |  |              |            |
|          | <b>Total</b>  | <b>160</b>          |  |     |         |     |          |                                |           |     |   |  |   |                              |   |   |                                |   |   |                                      |   |   |                                 |   |   |                                       |   |          |                               |            |   |                   |    |   |                            |         |   |                               |         |   |                 |         |   |  |   |          |                                    |           |  |              |            |

| S/N               | Date                         | Faculty/<br>School/ | (A) Updates included in NUS Bulletin 2018-19 before archival (i.e., up to 30 June 2019)  |                   |  |            |        |                              |            |        |                       |            |        |                   |            |
|-------------------|------------------------------|---------------------|--|-------------------|--|------------|--------|------------------------------|------------|--------|-----------------------|------------|--------|-------------------|------------|
|                   |                              |                     | <p><b>Note:</b><br/>^ Please refer to GEM website (<a href="http://www.nus.edu.sg/registrar/gem/important-information-students">http://www.nus.edu.sg/registrar/gem/important-information-students</a>) for more details on the GEM requirements.</p> <p>* Dissertation track (students with CAP 3.50 and above upon completion of 80 MCs):<br/>- 25 modules (100 MCs) + 1 Dissertation (8 MCs) = 26 modules (108 MCs)<br/>- Minimum 20 MCs of Level 4000 modules = PF4102 (4 MCs) + PF4101 (8 MCs) + 2 other Level 4000 Programme Electives/ non-PFM modules (8 MCs)</p> <p>**Non-dissertation track (students with CAP below 3.50 upon completion of 80 MCs):<br/>- 25 modules (100MCs) + 2 programme electives (8 MCs) = 27 modules (108 MCs)<br/>- Minimum 20 MCs of Level 4000 modules = PF4102 (4 MCs) + 4 other Level 4000 Programme Electives/ non-PFM modules (16 MCs)</p>  |                   |  |            |        |                              |            |        |                       |            |        |                   |            |
| 18.               | 17 Oct 2018                  | SDE                 | <p><b>NUS Bulletin 2018/19 – Updates submitted by SDE (17 Oct 2018)</b></p> <p>(1) NUS Bulletin 2018/2019 – Master of Science (Environmental Management) Syllabus:<br/><a href="http://www.nus.edu.sg/nusbuletin/school-of-design-and-environment/graduate-education/coursework-programmes/degree-requirements/master-of-science-in-environmental-management/">http://www.nus.edu.sg/nusbuletin/school-of-design-and-environment/graduate-education/coursework-programmes/degree-requirements/master-of-science-in-environmental-management/</a></p> <p><b>Period of Candidature</b><br/>Full-time candidates must complete the requirements of the programme within a maximum candidature period of four semesters (two years), and part-time candidates, a maximum period of six semesters (three years).</p> <p><b>Syllabus</b></p> <table><tr><th colspan="2">Essential Modules</th><th>Offered in</th></tr><tr><td>BX5101</td><td>Business and the Environment</td><td>Semester 2</td></tr><tr><td>BL5102</td><td>Environmental Science</td><td>Semester 1</td></tr><tr><td>LX5103</td><td>Environmental Law</td><td>Semester 1</td></tr></table> | Essential Modules |  | Offered in | BX5101 | Business and the Environment | Semester 2 | BL5102 | Environmental Science | Semester 1 | LX5103 | Environmental Law | Semester 1 |
| Essential Modules |                              | Offered in          |  |                   |  |            |        |                              |            |        |                       |            |        |                   |            |
| BX5101            | Business and the Environment | Semester 2          |  |                   |  |            |        |                              |            |        |                       |            |        |                   |            |
| BL5102            | Environmental Science        | Semester 1          |  |                   |  |            |        |                              |            |        |                       |            |        |                   |            |
| LX5103            | Environmental Law            | Semester 1          |  |                   |  |            |        |                              |            |        |                       |            |        |                   |            |

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|-----|-------------|---------------------|--|---|------------|
|     |             |                     | ESE5901  | Environmental Technology                  | Semester 2 |
|     |             |                     | PP5269   | Environmental Economics and Public Policy | Semester 1 |
|     |             |                     | DE5106   | Environmental Management and Assessment   | Semester 1 |
|     |             |                     | DE5107   | Environmental Planning                    | Semester 2 |
| 19. | 30 Aug 2018 | FoE<br>(CEG)        | <p>JMDP/CEG – Updates for Bulletin AY2018/19</p> <p><a href="http://www.nus.edu.sg/nusbulletin/other-multidisciplinaryspecial-programmes/bachelor-of-engineering-computer-engineering-programme/overview/">http://www.nus.edu.sg/nusbulletin/other-multidisciplinaryspecial-programmes/bachelor-of-engineering-computer-engineering-programme/overview/</a></p> <p>The success of the CEG programme is assessed through the following student learning outcomes:</p> <p><b>Engineering Knowledge:</b> apply the knowledge of mathematics, natural science, engineering fundamentals, and an engineering specialisation to the solution of complex engineering problems</p> <p><b>Engineering Knowledge:</b> identify, formulate, research literature, and analyse complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences</p> <p><b>Design/development of Solutions:</b> design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for public health and safety, cultural, societal, and environmental considerations</p> <p><b>Investigation:</b> conduct investigations of complex problems using research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of information to provide valid conclusions</p> <p><b>Modern Tool Usage:</b> create, select and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex engineering activities with an understanding of the limitations</p> <p><b>The Engineer and Society:</b> apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal, and cultural issues and consequent responsibilities relevant to the professional engineering practice</p> <p><b>Environment and Sustainability:</b> understand the impact of the professional solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for the sustainable development</p> |   |            |



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|-----|------------|---------------------|--|
|     |            |                     | <p><b>Ethics:</b> apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice</p> <p><b>Individual and Team Work:</b> function effectively as an individual, and as a member or leader in diverse teams and in multidisciplinary settings</p> <p><b>Communication:</b> communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions</p> <p><b>Project Management and Finance:</b> demonstrate knowledge and understanding of the engineering and management principles and economic decision-making, and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments</p> <p><b>Life-long Learning:</b> recognise the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change</p> <p><del>understand the principles and applications of advanced mathematics, including probability and statistics, differential and integral calculus, discrete mathematics, linear algebra and complex variables.</del></p> <p><b>Specific Programme Criteria for Computer Engineering:</b> have knowledge of probability and statistics, differential and integral calculus, discrete mathematics, basic sciences, computer science, and engineering sciences for the analysis and design of complex electrical and electronic devices, software, and systems containing hardware and software components.</p> |
| 20. | 8 Nov 2018 | FoE                 | <p><a href="http://www.nus.edu.sg/nusbulletin/faculty-of-engineering/undergraduate-education/minor-programmes/minor-in-management-of-technology-hosted-by-the-division-of-engineering-and-technology-management/">http://www.nus.edu.sg/nusbulletin/faculty-of-engineering/undergraduate-education/minor-programmes/minor-in-management-of-technology-hosted-by-the-division-of-engineering-and-technology-management/</a></p> <p>3.3.4 Minor in Management of Technology</p> <p><a href="#">Home</a> / <a href="#">NUS Bulletin AY2018/19</a> / <a href="#">Faculty of Engineering</a> / <a href="#">Undergraduate Education</a> / <a href="#">Minor Programmes</a> / Minor in Management of Technology</p> <p>Technology plays a key role in the growth of a business. The Minor in Management of Technology (MOT) aims to bridge the gap between engineering and business undergraduate education through a prescribed set of modules. The objective is to enable graduates to function effectively in a technical and interdisciplinary</p>  |

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|-----|------|---------------------|---|
|     |      |                     | <p>environment typical to technology-oriented business. Graduates would know business implications of technology and be able to appropriately use technology. They will understand market forces and the financial implications of technology investment.</p> <p>This minor programme is open to students from the Faculty of Engineering, Faculty of Science and School of Computing. Students who are in the Minor in Business, Minor in Management or Minor in Technopreneurship programmes are not eligible to apply for the Minor in MOT Programme. More details of the programme can be found at: <a href="https://isem.nus.edu.sg/minorMOT/">https://isem.nus.edu.sg/minorMOT/</a>.</p> <p><b>Requirements</b></p> <p>To be awarded a Minor in Management of Technology, students must pass six modules, equivalent to 24 Modular Credits (MCs). These 24 MCs are divided into two sets of modules: Set 1 and Set 2. Students are to choose two modules from Set 1, and the remaining from Set 2. Students are recommended to take Set 1 modules first before taking Set 2 modules.</p> <p>For students admitted prior to AY2014/2015, modules counted towards fulfilment of the Minor requirements must be letter graded. A module taken on Satisfactory/Unsatisfactory basis cannot be used to satisfy the Minor requirements.</p> <p>For students admitted from AY2014/5 onwards, a minimum 16 MCs of the Minor requirements must be earned from modules read in NUS. Modules read at NUS include all modules taught, co-taught, supervised or co-supervised by one or more NUS faculty members. These would consist of graded modules with assigned grade points, or modules with an 'S' or 'CS' grade. The other 8 MCs may be earned through credit transfers, advanced</p> |

| S/N | Date | Faculty/<br>School/ | (A) Updates included in NUS Bulletin 2018-19 before archival (i.e., up to 30 June 2019)   |
|-----|------|---------------------|---|
|     |      |                     | <p>placement and exemptions, provided these MCs are earned from modules deemed relevant to the Minor programme.</p> <p><u>Curriculum for students in cohort AY2016/2017 and prior</u></p> <p><u>(A) Set 1 Modules</u> (Choose any 2)</p> <p><del>MNO1706(X) Organisational Behavior</del> or MNO1001(X) Management and Organisation</p> <p><del>ACC1701(X) Accounting for Decision Makers</del> or ACC1002(X) Financial Accounting</p> <p><del>MKT1705(X) Principles of Marketing</del> or MKT1003(X) Principles of Marketing</p> <p><del>BSP1702(X)</del> or BSP1004(X) Legal Environment and Business</p> <p><del>DAO2703 Operations &amp; Technology Management</del> or DSC2006 Operations Management</p> <p><u>(B) Set 2 Modules</u> (Take 4, including 2 compulsory*)</p> <p>MT3001 Systems Thinking and Engineering*</p> <p>MT4002 Technology Management Strategy*</p> <p>MT4001 Innovation and Entrepreneurial Strategy or TR3008/TR2202 Technological Innovation</p> <p>MT4003 Engineering Product Development or TR3001 New Product Development or EE3031 Innovation &amp; Enterprise I</p> <p><u>Curriculum for students in cohort AY2017/2018 and after</u></p> <p><u>(A) Set 1 Modules</u> (choose any 2)</p> <p>MNO1706(X) Organisational Behavior</p> <p>ACC1701(X) Accounting for Decision Makers</p> |

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|-----|-------------|---------------------|--|
|     |             |                     | <p>MKT1705(X) Principles of Marketing<br/> BSP1702(X) Legal Environment and Business<br/> DAO2703 Operations &amp; Technology Management or DSC2006 Operations Management</p> <p><u>(B) Set 2 Modules</u> (Take 4, including 2 compulsory*)<br/> MT3001 Systems Thinking and Engineering*<br/> MT4001 Innovation and Entrepreneurial Strategy*<br/> MT4002 Technology Management Strategy or TR3008 Technological Innovation<br/> MT4003 Engineering Product Development or TR3001 New Product Development or EE3031 Innovation &amp; Enterprise I</p>   |
| 21. | 12 Nov 2018 | LAW                 | <p>FAQs for DDP, CDP and DM: (Concurrent Degree Programmes (CDPs))</p> <p>(a) <a href="http://www.nus.edu.sg/registrar/education-at-nus/undergraduate-education/special-undergraduate-programmes/faqs-for-ddp-cdp-and-dm.html#cdp02">http://www.nus.edu.sg/registrar/education-at-nus/undergraduate-education/special-undergraduate-programmes/faqs-for-ddp-cdp-and-dm.html#cdp02</a><br/> <del>• Bachelor of Laws / Graduate Bachelor of Laws (Honours) from NUS and Master of Laws from New York University</del><br/> <del>NUS Law students may apply for admission to the NYU LLM in their second or exceptionally in their third year of studies. The admission decision will be made entirely by NYU.</del></p> <p>(b) <a href="http://www.nus.edu.sg/registrar/education-at-nus/undergraduate-education/special-undergraduate-programmes/faqs-for-ddp-cdp-and-dm.html#cdp11">http://www.nus.edu.sg/registrar/education-at-nus/undergraduate-education/special-undergraduate-programmes/faqs-for-ddp-cdp-and-dm.html#cdp11</a><br/> <del>c. NUS-NYU Bachelor of Laws / Graduate Bachelor of Laws (Honours) (LLB) and Master of Laws (LLM) Programme</del><br/> <del>Students in the NUS-NYU LLB and LLM programme are responsible for the payment of tuition fees charged by NUS for the LL.B. programme and the tuition and fees charged by NYU School of Law for the</del></p> |

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|---------------------------|----------------------------|--------------------------|--|------|----------------------------|--------------------------|----------------------------|---------------------------|------|------|---------|
|                           |                            |                          | <p><del>LL.M. programme. Admitted students are eligible for consideration for NYU's <u>merit-based scholarships</u> for the LL.M. portion of the programme.</del></p> <p>(c) <a href="http://www.nus.edu.sg/registrar/education-at-nus/undergraduate-education/special-undergraduate-programmes/faqs-for-ddp-cdp-and-dm.html#cdp12">http://www.nus.edu.sg/registrar/education-at-nus/undergraduate-education/special-undergraduate-programmes/faqs-for-ddp-cdp-and-dm.html#cdp12</a></p> <p><del>□ For the <u>NUS-NYU Bachelor of Laws / Graduate Bachelor of Laws (Honours) (LLB) and Master of Laws (LLM):</u> Students' eligibility to continue in the LLM will be governed by NYU's regulations governing the LLM. Students who exit from the LLM will be entitled to have any credits successfully completed at NYU (to a maximum of 40 credits) transferred back to NUS towards the LLB on a pro rata basis. Subject to NUS's regulations concerning maximum candidature, they will be permitted to read their remaining credits, if any, toward the LLB at NUS. Students who leave the CDP are permitted to work towards BBA or BBA (Hons) (and for those in the USP, subject to approval, remaining with the USP), while adhering to prevailing regulations. Modular credits completed in the CDP will be counted towards the fulfillment of the degree requirements for BBA or BBA (Hons) (and the programme requirements of the USP, if applicable), subject to the normal limits of the curriculum.</del></p> |      |                            |                          |                            |                           |      |      |         |
| 22.                       | 1 Jul 2018                 | NUSMed                   | <p>Yong Loo Lin School of Medicine</p> <p>Key Contact Information (<a href="http://www.nus.edu.sg/nusbulletin/yong-loo-lin-school-of-medicine/key-contact-information/">http://www.nus.edu.sg/nusbulletin/yong-loo-lin-school-of-medicine/key-contact-information/</a>)</p> <p>For up-to-date information, please visit the School's website at <a href="http://nusmedicine.nus.edu.sg/about">http://nusmedicine.nus.edu.sg/about</a>)</p> <table border="1"> <thead> <tr> <th>NAME</th><th>DESIGNATION/RESPONSIBILITY</th><th>TELEPHONE<br/>(6772-XXXX)</th><th>EMAIL<br/>(XXXX@NUS.EDU.SG)</th></tr> </thead> <tbody> <tr> <td>Assoc Prof YEOH Khay Guan</td><td>Dean</td><td>3732</td><td>meddean</td></tr> </tbody> </table>   | NAME | DESIGNATION/RESPONSIBILITY | TELEPHONE<br>(6772-XXXX) | EMAIL<br>(XXXX@NUS.EDU.SG) | Assoc Prof YEOH Khay Guan | Dean | 3732 | meddean |
| NAME                      | DESIGNATION/RESPONSIBILITY | TELEPHONE<br>(6772-XXXX) | EMAIL<br>(XXXX@NUS.EDU.SG)   |      |                            |                          |                            |                           |      |      |         |
| Assoc Prof YEOH Khay Guan | Dean                       | 3732                     | meddean  |      |                            |                          |                            |                           |      |      |         |

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|-----|------|---------------------|---|-------------------------------|------|---------|
|     |      |                     | Assoc Prof LAU Tang Ching   | Vice-Dean (Education)         | 6193 | mdcltc  |
|     |      |                     | Prof CHNG Wee Joo<br><i>(With effect from 1 Jul 2018)</i>   | Vice-Dean (Research)          | 4612 | mdccwj  |
|     |      |                     | Assoc Prof SU Lin Lin   | Vice-Dean (Academic Affairs)  | 4273 | obgsll  |
|     |      |                     | Assoc Prof CHONG Yap Seng   | Vice-Dean (Academic Medicine) | 4272 | obgcys  |
|     |      |                     | Mr TEO Kheng Lin Stewart  | Vice-Dean (Finance)           | 3811 | medtkls |
|     |      |                     | Mr SIM Tiong Kian   | Director (Administration)     | 3788 | medsimt |
|     |      |                     | Mr LIM Teck Hau, Michael  | Director (Communications)     | 3988 | medlthm |
|     |      |                     | Departments/Divisions<br>The following departments are involved in teaching the undergraduate courses and/or graduate programmes. In addition, clinical staff practise and teach in NUH and other restructured hospitals and national centres in Singapore. Medical undergraduates are also rotated to hospitals and selected clinics as part of their clinical teaching. |                               |      |         |

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|     |      |                     | <b>TITLE &amp; NAME</b>   | <b>DESIGNATION/RESPONSIBILITY</b>               | <b>TELEPHONE</b> | <b>EMAIL<br/>(XXXX@NUS.EDU.SG)</b> |
|     |      |                     | Assoc Prof TI Lian Kah  | Head, Department of Anaesthesia                 | 6772 4200        | anahead                            |
|     |      |                     | Assoc Prof Shaikali Thameem DHEEN   | Head, Department of Anatomy                     | 6516 3127        | anthead                            |
|     |      |                     | <del>Assoc</del> Prof Markus R WENK   | Head, Department of Biochemistry                | 6516 3624        | bchhead                            |
|     |      |                     | Assoc Prof QUEK Swee Tian   | Head, Department of Diagnostic Radiology        | 6772 4211        | dnrhead                            |
|     |      |                     | Assoc Prof DAN Yock Young   | Head, Department of Medicine                    | 6772 4362        | mdchead                            |
|     |      |                     | Prof Nicholas Robert John GASCOIGNE   | Head, Department of Microbiology and Immunology | 6516 3275        | michead                            |
|     |      |                     | Prof Emily ANG Neo Kim  | Head, Alice Lee Centre for Nursing Studies      | 6516 5088        | nurhead                            |
|     |      |                     | Prof YONG Eu Leong  | Head, Department of Obstetrics and Gynaecology  | 6772 4285        | obghead                            |
|     |      |                     | Assoc Prof Clement TAN<br>Woon Teck   | Head, Department of Ophthalmology               | 6772 5338        | ophhead                            |
|     |      |                     | Assoc Prof WANG Ee Jen Wilson   | Head, Department of Orthopaedic Surgery         | 6772 2477        | doshead                            |
|     |      |                     | Assoc Prof LOH Woei Shyang  | Head, Department of Otolaryngology              | 6772 5372        | enthead                            |
|     |      |                     | Assoc Prof LEE Yung Seng  | Head, Department of Paediatrics                 | 6772 4112        | paehead                            |

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|     |             |                     | Assoc Prof TAN Soo Yong   | Head, Department of Pathology                  | 6772 4300 | pathead |
|     |             |                     | Assoc Prof Fred WONG Wai-Shiu   | Head, Department of Pharmacology               | 6516 3266 | phchead |
|     |             |                     | Assoc Prof LIM Kah Leong  | Head, Department of Physiology                 | 6516 3222 | phshead |
|     |             |                     | Assoc Prof WONG Chee Meng John  | Head, Department of Psychological Medicine     | 6772 4511 | pcmhead |
|     |             |                     | Prof Krishnakumar MADHAVAN  | Head, Department of Surgery                    | 6772 4220 | surhead |
|     |             |                     | Assoc Prof CHEN Fun Gee, Edward   | Director, Division of Graduate Medical Studies | 6601 4949 | gsmhead |
| 23. | 23 Aug 2018 | NUSMed              | <b><u>Request to update NUS Bulletin AY2018/19 (Post Launch)</u></b><br><br>Section to update: NUS Bulletin AY2018/19 > Yong Loo School of Medicine > 2 Key Contact Information<br><br>URL: <a href="http://www.nus.edu.sg/nusbulletin/yong-loo-lin-school-of-medicine/key-contact-information/">http://www.nus.edu.sg/nusbulletin/yong-loo-lin-school-of-medicine/key-contact-information/</a><br><br><b>Phase Directors</b> |  |           |         |



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|     |             |                     | <b>TITLE &amp; NAME</b>   | <b>DESIGNATION/<br/>RESPONSIBILITY</b> | <b>TELEPHONE</b>             | <b>EMAIL</b><br><br>(XXXX@NUS.EDU.SG)                    |
|     |             |                     | <del>Assoc Prof NG Yee Kong Dr</del><br>Kenneth BAN   | Year 1 (Phase I)                       | 6516<br><del>3689</del> 3246 | <del>antngkbchbhkk</del>                                 |
|     |             |                     | Assoc Prof TAN Kong Bing  | Year 2 (Phase II)                      | 6772 2057                    | pattankb   |
|     |             |                     | Asst Prof Bettina LIESKE  | Year 3 (Phase III)                     | 6772 2399                    | surbl  |
|     |             |                     | <del>Assoc Prof Malcolm</del><br>MAHADEVANAsst Asst Prof<br>Gene CHAN   | Year 4 (Phase IV)                      | 6772<br><del>5002</del> 6229 | <del>malcolm_mahadevangene_wh_chan</del><br>@nuhs.edu.sg |
|     |             |                     | Asst Prof Derek SOON  | Year 5 (Phase V)                       | <del>6772</del> 2002         | mdcstld  |
| 24. | 13 Feb 2019 | NUSMed              | <b>Yong Loo Lin School of Medicine</b><br><br>Key Contact Information ( <a href="http://www.nus.edu.sg/nusbuletin/yong-loo-lin-school-of-medicine/key-contact-information/">http://www.nus.edu.sg/nusbuletin/yong-loo-lin-school-of-medicine/key-contact-information/</a> )<br><br>For up-to-date information, please visit the School's website at <a href="http://nusmedicine.nus.edu.sg/about">http://nusmedicine.nus.edu.sg/about</a> ) |  |                              |  |

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|     |      |                     | <del>Assoc Prof YEOH Khay Guan</del>  |  |                          |                            |
|     |      |                     | <del>Assoc Prof CHONG Yap Seng</del> (with effect from 1 Jan 2019)                      | Dean                                     | 3732                     | meddean                    |
|     |      |                     | Assoc Prof LAU Tang Ching   | Vice-Dean (Education)                    | 6193                     | mdcltc                     |
|     |      |                     | Prof CHNG Wee Joo   | Vice-Dean (Research)                     | 4612                     | mdccwj                     |
|     |      |                     | Assoc Prof SU Lin Lin   | Vice-Dean (Academic Affairs)             | 4273                     | obgsll                     |
|     |      |                     | <del>Assoc Prof CHONG Yap Seng</del> (to remove from 1-Jan 2019)                        | <del>Vice-Dean (Academic Medicine)</del> | <del>4272</del>          | <del>obgeys</del>          |
|     |      |                     | Mr TEO Kheng Lin Stewart  | Vice-Dean (Finance)                      | 3811                     | medtkls                    |
|     |      |                     | Mr SIM Tiong Kian   | Director (Administration)                | 3788                     | medsimt                    |

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|-----|------------|---------------------|--|
|     |            |                     | Mr LIM Teck Hau, Michael      Director (Communications)      3988      medlthm   |
| 25. | 2 Jul 2018 | FoS                 | <p><b>NUS Bulletin 2018/19: FoS-Updates (2 Jul 2018)</b></p> <p>a) Under AY2018/19 Bulletin <a href="http://www.nus.edu.sg/nusbulletin/faculty-of-science/">http://www.nus.edu.sg/nusbulletin/faculty-of-science/</a> , please add in two new programmes - JDP with Dundee and CDP with Melbourne DVM under the content page, as indicated in tracked changes below:</p> <p>...</p> <p>3.4.3.13 <a href="#">Minor in Pharmaceutical Sciences</a></p> <p>3.4.3.14 <a href="#">Minor in Physics</a></p> <p>3.4.3.15 <a href="#">Minor in Statistics</a></p> <p>3.4.4 <a href="#">Double Degree Programmes in [LLB (Hons)] and Life Sciences [BSc/BSc (Hons)]</a></p> <p>3.4.5 <a href="#">Double Degree Programmes in Computing (BComp) and Mathematics [BSc/BSc (Hons)]</a></p> <p>3.4.6 <a href="#">NUS-ANU Joint Degree Programme: Bachelor of Science (Hons) from National University of Singapore and Bachelor of Philosophy (Hons) from Australian National University</a></p> <p>3.4.7 <a href="#">Joint Bachelor of Science (Honours) in Life Sciences from National University of Singapore and Bachelor of Science in Biology from The University of North Carolina at Chapel Hill</a></p> <p>3.4.8 <a href="#">Joint Bachelor of Science (Honours) in Life Sciences from National University of Singapore and Bachelor of Science (Honours) in Biological Sciences/Biomedical Sciences from University of Dundee</a><br/>(Please add in this programme, and create a new web page to include the relevant content indicated below and link to it.)</p> <p>3.4.9 <a href="#">Concurrent Programme in Bachelor of Science in Life Sciences of National University of Singapore and Doctor of Veterinary Medicine of University of Melbourne</a> ((Please add in this programme, and create a new web page to include the relevant content indicated below and link to it.)</p> <p>3.4.10 <a href="#">8 Concurrent MSc (Mgt) and BSc (Hons) / BApplSc (Hons)</a></p> <p>-----</p> <p>b) In the newly created web pages for sections 3.4.8 and 3.4.9 above, kindly include the following content and do the relevant link as indicated below:</p> <p>3.4.8 Joint Bachelor of Science (Honours) in Life Sciences from National University of Singapore and Bachelor of Science (Honours) in Biological Sciences/Biomedical Sciences from University of Dundee<br/>More information on this joint degree programme is available at “Other Multidisciplinary / Special Programmes” (Please link to <a href="http://www.nus.edu.sg/nusbulletin/other-multidisciplinaryspecial-programmes/joint-degree-programmes-concurrent-degree-programmes-double-degree-programmes-with-">http://www.nus.edu.sg/nusbulletin/other-multidisciplinaryspecial-programmes/joint-degree-programmes-concurrent-degree-programmes-double-degree-programmes-with-</a></p> |

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|     |      |                     | <p><a href="#">overseas-universities/joint-bachelor-of-science-honours-in-life-sciences-from-national-university-of-singapore-and-bachelor-of-science-honours-in-biological-sciences-biomedical-sciences-from-university-of-dundee/</a>) of the Bulletin.</p> <p>-----</p> <p><b>3.4.9 Concurrent Programme in Bachelor of Science in Life Sciences of National University of Singapore and Doctor of Veterinary Medicine of University of Melbourne</b><br/> More information on this concurrent degree programme is available at “Other Multidisciplinary / Special Programmes” (Please link to <a href="http://www.nus.edu.sg/nusbulletin/other-multidisciplinaryspecial-programmes/joint-degree-programmes-concurrent-degree-programmes-double-degree-programmes-with-overseas-universities/concurrent-programme-in-bachelor-of-science-in-life-sciences-of-national-university-of-singapore-and-doctor-of-veterinary-medicine-of-university-of-melbourne/">http://www.nus.edu.sg/nusbulletin/other-multidisciplinaryspecial-programmes/joint-degree-programmes-concurrent-degree-programmes-double-degree-programmes-with-overseas-universities/concurrent-programme-in-bachelor-of-science-in-life-sciences-of-national-university-of-singapore-and-doctor-of-veterinary-medicine-of-university-of-melbourne/</a>) of the Bulletin.</p> <p>-----</p> <p>c) Below is an existing web page, please amend the numbering as indicated in red:<br/> <b>3.4.108 Concurrent MSc (Mgt) and BSc (Hons) / BAppSc (Hons)</b><br/> <a href="#">Home</a> / <a href="#">NUS Bulletin AY2018/19</a> / <a href="#">Faculty of Science</a> / <a href="#">Undergraduate Education</a> / <a href="#">Multidisciplinary Opportunities</a> / Concurrent MSc (Mgt) and BSc (Hons) / BAppSc (Hons)<br/> More information on this concurrent degree programme is available at “<a href="#">Other Multidisciplinary / Special Programmes</a>” of the Bulletin.</p> <p>-----</p> <p>d) Please amend the link in the web pages as indicated below:<br/> <a href="http://www.nus.edu.sg/nusbulletin/faculty-of-science/undergraduate-education/multidisciplinary-opportunities/double-degree-programmes-in-law-ll-b-and-life-sciences-b-sc-b-sc-hons/">http://www.nus.edu.sg/nusbulletin/faculty-of-science/undergraduate-education/multidisciplinary-opportunities/double-degree-programmes-in-law-ll-b-and-life-sciences-b-sc-b-sc-hons/</a><br/> <b>3.4.4 Double Degree Programme in Law [LLB (Hons)] and Life Sciences [BSc (Hons)]</b><br/> <a href="#">Home</a> / <a href="#">NUS Bulletin AY2018/19</a> / <a href="#">Faculty of Science</a> / <a href="#">Undergraduate Education</a> / <a href="#">Multidisciplinary Opportunities</a> / Double Degree Programme in Law [LLB (Hons)] and Life Sciences [BSc (Hons)]<br/> The intersection between Law and Life Sciences is an expansive one, cutting across many critical and controversial areas including biotechnology, bioethics, environmental regulation, forensic science, and the protection of intellectual property. The Double Degree Programme in Law and Life Sciences leverages on the strength of the Faculty of Law in the legal dimensions of these issues and the depth of technical expertise of NUS Life Sciences, Faculty of Science and Yong Loo Lin School of Medicine in these areas. It will enable students to discover the broad connections between law and life sciences and acquire a broad expertise occupying the niche position linking up both disciplines.<br/> For more information, please refer to the URL <a href="http://www.nus.edu.sg/prog/lawlifesciences">http://www.nus.edu.sg/prog/lawlifesciences</a> and “<a href="#">Other Multidisciplinary / Special Programmes</a>” (Please link to <a href="http://www.nus.edu.sg/nusbulletin/other-multidisciplinaryspecial-programmes/double-degree-programmes/double-degree-in-law-and-life-sciences/">http://www.nus.edu.sg/nusbulletin/other-multidisciplinaryspecial-programmes/double-degree-programmes/double-degree-in-law-and-life-sciences/</a>) of the Bulletin.</p> |

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|     |      |                     | <p>-----</p> <p><a href="http://www.nus.edu.sg/nusbuletin/faculty-of-science/undergraduate-education/multidisciplinary-opportunities/double-degree-programmes-in-computing-b-comp-and-mathematics-b-sc-b-sc-hons/">http://www.nus.edu.sg/nusbuletin/faculty-of-science/undergraduate-education/multidisciplinary-opportunities/double-degree-programmes-in-computing-b-comp-and-mathematics-b-sc-b-sc-hons/</a><br/> <b>3.4.5 Double Degree Programmes in Computing (BComp) and Mathematics [BSc/BSc (Hons)]</b><br/> <a href="#">Home</a> / <a href="#">NUS Bulletin AY2018/19</a> / <a href="#">Faculty of Science</a> / <a href="#">Undergraduate Education</a> / <a href="#">Multidisciplinary Opportunities</a> / Double Degree Programmes in Computing (BComp) and Mathematics [BSc/BSc (Hons)]<br/> Computer Science and Mathematics share a synergistic relationship in many ways — the foundation of computer science has its roots in mathematics, starting from the notion of computation (the Turing machine); discrete mathematics is an indispensable tool in understanding structures and systems in computer science. On the other hand, inventions and advances in computer science have generated new frontiers for research in mathematics. As a result, many fundamental areas in Computer Science such as computability and computational complexity are very much part of Mathematics and vice versa. The Double Degree Programmes in Computer Science and Mathematics/Applied Mathematics celebrate and leverage the synergistic relationship between the two disciplines.<br/> For more information, please refer to the URL<br/> <a href="http://www.comp.nus.edu.sg/undergraduates/dd_cs_math.html">http://www.comp.nus.edu.sg/undergraduates/dd_cs_math.html</a> and <a href="#">“Other Multidisciplinary / Special Programmes”</a> (Please link to <a href="http://www.nus.edu.sg/nusbuletin/other-multidisciplinaryspecial-programmes/double-degree-programmes/double-degree-in-computer-science-and-mathematics-applied-mathematics/">http://www.nus.edu.sg/nusbuletin/other-multidisciplinaryspecial-programmes/double-degree-programmes/double-degree-in-computer-science-and-mathematics-applied-mathematics/</a>) of the Bulletin.</p> <p>-----</p> <p><a href="http://www.nus.edu.sg/nusbuletin/faculty-of-science/undergraduate-education/multidisciplinary-opportunities/nus-anu-joint-degree-programme-bachelor-of-science-hons-from-national-university-of-singapore-and-bachelor-of-philosophy-hons-from-australian-national-university/">http://www.nus.edu.sg/nusbuletin/faculty-of-science/undergraduate-education/multidisciplinary-opportunities/nus-anu-joint-degree-programme-bachelor-of-science-hons-from-national-university-of-singapore-and-bachelor-of-philosophy-hons-from-australian-national-university/</a><br/> <b>3.4.6 NUS-ANU Joint Degree Programme: Bachelor of Science (Hons) from National University of Singapore and Bachelor of Philosophy (Hons) from Australian National University</b><br/> <a href="#">Home</a> / <a href="#">NUS Bulletin AY2018/19</a> / <a href="#">Faculty of Science</a> / <a href="#">Undergraduate Education</a> / <a href="#">Multidisciplinary Opportunities</a> / NUS-ANU Joint Degree Programme: Bachelor of Science (Hons) from National University of Singapore and Bachelor of Philosophy (Hons) from Australian National University<br/> More information on this double degree programme is available in at<br/> <a href="http://usp.nus.edu.sg/curriculum/special-programmes/nus-anu-fos-joint-degree-programme">http://usp.nus.edu.sg/curriculum/special-programmes/nus-anu-fos-joint-degree-programme</a> <a href="#">“Other Multidisciplinary / Special Programmes”</a> of the Bulletin.</p> |

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| 26. | 8 Aug 2018 | FoS                 | <p><b>11. NUS Bulletin 2018-19 Updates submitted by FoS</b></p> <p>The Revision to the Requirements of the Joint Minor Programme in Environmental Chemistry with University of Toronto, to include CHM210H Chemistry of Environmental Change as an alternative to CHM310H Environmental Chemistry at UofT, for the fulfilment of the Minor programme requirement, with effect from students selected into the JMP from AY2018/19, (from Cohorts 2016/17 and after), has been approved via BUS Circular 24 of AY2017/18.</p> <p>Following amendments are made to the bulletins:</p> <p><b>AY2018/19 Bulletin</b><br/> Under 3.6.3 Joint Minor Programme with University of Toronto <a href="http://www.nus.edu.sg/nusbulletin/faculty-of-science/undergraduate-education/study-abroad-programmes/joint-minor-programme-with-university-of-toronto/">http://www.nus.edu.sg/nusbulletin/faculty-of-science/undergraduate-education/study-abroad-programmes/joint-minor-programme-with-university-of-toronto/</a> , kindly make the following amendments shown in red:</p> <p><b>Joint Minor in Environmental Chemistry</b><br/> Host Departments: Department of Chemistry (U of T), the School of the Environment (U of T), and Department of Chemistry (NUS).<br/> To be awarded the joint minor in Environmental Chemistry, a student is required to read and pass the modules as prescribed:</p> <ul style="list-style-type: none"> <li>• CM2121 Organic Chemistry</li> <li>• ENV237H/ENV238H Physics of the Changing Environment (U of T Module)</li> <li>• CHM317H Introduction to Instrumental Methods of Analysis (U of T Module) or CM3242 Instrumental Analysis II</li> <li>• CM3261 Environmental Chemistry</li> <li>• CHM210H Chemistry of Environmental Change (UofT module) or CHM310H Environmental Chemistry (U of T Module)</li> <li>• CHM415H Topics in Atmospheric Chemistry (U of T Module)</li> </ul> <p>For NUS students whose major includes the CM modules taken for this minor, not more than 8 MCs are allowed to be double-counted.</p> |
| 27. | 4 Jul 2018 | FoS                 | <p><b>NUS Bulletin 2018/19 – FoS (Faculty Requirements 2014/15 to 2018/19) – 4 Jul 2018</b><br/> To update the FoS Faculty Requirements due to introduction of new modules:</p> <ul style="list-style-type: none"> <li>• SP2201 – to fall in Multidisciplinary &amp; Interdisciplinary Sciences’ subject group of Faculty requirements, for all cohorts – to update AY2014/15 bulletin and after</li> </ul>  |

| S/N                | Date   | Faculty/<br>School/                                     | (A) Updates included in NUS Bulletin 2018-19 before archival (i.e., up to 30 June 2019)  |               |        |                    |                    |                            |   |                           |                   |                |                  |  |  |
|--------------------|--|---|--|---------------|--------|--------------------|--------------------|----------------------------|---|---------------------------|-------------------|----------------|------------------|--|--|
|                    |  |   | <ul style="list-style-type: none"><li>CM3267 - offered wef Sem 2 AY2018/19. Counts as a module from the Computing Sciences subject group, or from the Chemical Sciences subject group of the FoS Faculty requirements. For Chemistry majors, CM3267 is an Energy and Environment specialisation elective for Chemistry majors from cohort AY2014/15 and after. For Food Science and Technology majors, CM3267 is added to the Level 3000 elective module basket for fulfilment of the major requirements for cohorts AY2017/18 and after. – to update AY2014/15 bulletin and after</li><li>New modules for Forensic Science minor, to be placed under the Multidisciplinary and Interdisciplinary subject group of FoS Faculty Requirements for all cohorts – to update AY2014/15 bulletin and after<ul style="list-style-type: none"><li>SP4261</li><li>SP4262</li><li>SP4263</li><li>SP4264</li><li>SP4265</li></ul></li></ul> <p>AY2018/19 Bulletin<br/>Under 3.3.1.6 Faculty Requirements <a href="http://www.nus.edu.sg/nusbuletin/faculty-of-science/undergraduate-education/degree-requirements/curriculum-structure-and-graduation-requirements/faculty-requirements/">http://www.nus.edu.sg/nusbuletin/faculty-of-science/undergraduate-education/degree-requirements/curriculum-structure-and-graduation-requirements/faculty-requirements/</a> , kindly make the following amendments highlighted in red:</p> <p>Table 2: Table of Subject Groups</p> <table><tr><th>Subject Group</th><th>Majors</th><th>Module Code Prefix</th></tr><tr><td rowspan="2">Computing Sciences</td><td>Computational Biology (ZB)</td><td rowspan="2">CS*, COS2000, IT1001*, IT1002*, IT1006*, QF, ZB, CM3267</td></tr><tr><td>Quantitative Finance (QF)</td></tr><tr><td rowspan="3">Chemical Sciences</td><td>Chemistry (CM)</td><td rowspan="3">CM, FST, PHS, PR</td></tr><tr><td>Chemistry (Specialisation in Materials Chemistry) (CM)</td></tr><tr><td>Chemistry (Specialisation in Medicinal Chemistry) (CM)</td></tr></table> | Subject Group | Majors | Module Code Prefix | Computing Sciences | Computational Biology (ZB) | CS*, COS2000, IT1001*, IT1002*, IT1006*, QF, ZB, CM3267 | Quantitative Finance (QF) | Chemical Sciences | Chemistry (CM) | CM, FST, PHS, PR | Chemistry (Specialisation in Materials Chemistry) (CM) | Chemistry (Specialisation in Medicinal Chemistry) (CM) |
| Subject Group      | Majors   | Module Code Prefix                                      |  |               |        |                    |                    |                            |   |                           |                   |                |                  |  |  |
| Computing Sciences | Computational Biology (ZB)                             | CS*, COS2000, IT1001*, IT1002*, IT1006*, QF, ZB, CM3267 |  |               |        |                    |                    |                            |   |                           |                   |                |                  |  |  |
|                    | Quantitative Finance (QF)                              |   |  |               |        |                    |                    |                            |   |                           |                   |                |                  |  |  |
| Chemical Sciences  | Chemistry (CM)   | CM, FST, PHS, PR  |  |               |        |                    |                    |                            |   |                           |                   |                |                  |  |  |
|                    | Chemistry (Specialisation in Materials Chemistry) (CM) |   |  |               |        |                    |                    |                            |   |                           |                   |                |                  |  |  |
|                    | Chemistry (Specialisation in Medicinal Chemistry) (CM) |   |  |               |        |                    |                    |                            |   |                           |                   |                |                  |  |  |

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|     |      |                     |   | Chemistry (Specialisation in Environment and Energy) (CM)<br>Food Science & Technology (FST)<br>Pharmaceutical Science (PHS)<br>Pharmacy (PR)  |                     |  |
|     |      |                     | Life Sciences   | Food Science & Technology (FST)<br>Life Sciences (LSM)<br>Life Sciences (Specialisation in Biomedical Science) (LSM)<br>Life Sciences (Specialisation in Molecular & Cell Biology) (LSM)<br>Life Sciences (Specialisation in Environmental Biology) (LSM)<br>Pharmaceutical Science (PHS)<br>Pharmacy (PR)   | FST, LSM, PHS, PR   |  |
|     |      |                     | Mathematical & Statistical Sciences   | Applied Mathematics (MA)<br>Applied Mathematics (Specialisation in Mathematical Modelling and Data Analytics) (MA)<br>Applied Mathematics (Specialisation in Operations Research and Financial Mathematics) (MA)<br>Data Science and Analytics (DSA)<br>Mathematics (MA)<br>Quantitative Finance (QF)<br>Statistics (ST)<br>Statistics (with specialisation in Biostatistics) (ST) | CZ, DSA, MA, QF, ST |  |



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|     |                               |                     |  | Statistics (with specialisation in Finance and Business Statistics) (ST) |   |  |
|     |                               |                     | Physical Sciences  | Physics (PC)   | PC  |  |
|     |                               |                     |  | Physics (with specialisation in Astrophysics) (PC)                       |   |  |
|     |                               |                     |  | Physics (with specialisation in Nanophysics) (PC)                        |   |  |
|     |                               |                     | Multidisciplinary & Interdisciplinary Sciences   | —  | FMS12XXB, FMS12XXC, FMS12XXM, FMS12XXP, FMS12XXR, FMS12XXS, SP1202, SP1203, SP1541, SP2251, SP3201, SP3202, SP3203, SP3277, SP2201, <b>SP4261, SP4262, SP4263, SP4264, SP4265</b> |  |
|     |                               |                     | * Modules CSxxxx, IT1001, IT1002 and IT1006 are offered by the School of Computing but if read, may be counted towards Faculty requirements from the Computing Sciences Subject Group.   |  |   |  |
| 28. | 4 Jul 2018<br><br>11 Oct 2018 | FoS                 | <p>The FoS: Department of Biological Sciences – Revision of Requirements for the Minor Programme in Forensic Science proposal was approved via BUS Circular 19 of AY2017/18. The revised requirements for the Minor in Forensic Science applies to all existing and future cohorts, with effect from Special Term 1 of AY2017/18. The various bulletins need to be updated.</p> <p>Revision of the Minor in Forensic Science, BUS Circular 4 of AY2018/19 - The requirement of “a minimum of 4 MC from Level 4000 modules in the list”, under the Elective Requirements, will only be applicable from Cohort AY2017/18 onwards.</p> <p><u>AY2018/19 Bulletin</u><br/> Under 3.4.3.6 Minor in Forensic Science <a href="http://www.nus.edu.sg/nusbulletin/faculty-of-science/undergraduate-education/multidisciplinary-opportunities/minor-programmes/minor-in-forensic-science/">http://www.nus.edu.sg/nusbulletin/faculty-of-science/undergraduate-education/multidisciplinary-opportunities/minor-programmes/minor-in-forensic-science/</a> , kindly help to make the following amendment:<br/> Host Department: <b>Chemistry</b> and Biological Sciences and <b>Chemistry</b></p> |  |   |  |

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| 29. | 16 Jul 2018 | FoS                 | <p>The new module title for ES1000 is now called <a href="#">Foundation Academic English</a> with effect from AY2018/19 Semester 1. To make the amendment for AY2018/19 FoS bulletin.</p> <p>Amended AY2016/17 Bulletin and after to indicate that ES1103 is excluded from the limit on Level 1000 modules.</p> <p><u>AY2018/19 Bulletin</u></p> <p>Under 3.3.1.9 English Skills (ES) Requirements <a href="http://www.nus.edu.sg/nusbulletin/faculty-of-science/undergraduate-education/degree-requirements/curriculum-structure-and-graduation-requirements/english-skills-es-requirements/">http://www.nus.edu.sg/nusbulletin/faculty-of-science/undergraduate-education/degree-requirements/curriculum-structure-and-graduation-requirements/english-skills-es-requirements/</a> , kindly make the following amendments:</p> <p><b>3.3.1.9 English Skills (ES) Requirements</b></p> <p>Based on the Qualifying English Test results, students who do not meet exemption criteria have to take and pass ES1103 English for Academic Purposes. In addition, <u>very</u> weak students have to take and pass ES1000 <del>Foundation Academic English Basic English Course</del> before proceeding to ES1103.</p> <p>ES1000 is not counted towards Modular Credits and CAP. However, it is counted as part of the workload for every semester. (Please refer to section 3.3.2)</p> <p>ES1103 is worth 4MC and letter-graded (with the option to convert to S/U grade). <b>ES1103 is excluded from the limit on Level 1000 modules.</b></p> <p>Students who need to clear ES requirements for graduation are strongly encouraged to do so by their <u>second semester</u> at the latest.</p> |
| 30. | 19 Jul 2018 | FoS                 | <p>The following updates for the Computational Thinking Requirement for FoS Pharmacy and Pharmaceutical Science majors from the AY2018/19 cohort were made:</p>   |

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|---|--|---------------------|---|--------|--|-------------------------------|--|--------------------------------------|---|---------------------------------------|-------------------|---|
|   |  |                     | <p><u>AY2018/19 Bulletin</u></p> <p>Under <a href="http://www.nus.edu.sg/nusbuletin/faculty-of-science/undergraduate-education/degree-requirements/curriculum-structure-and-graduation-requirements/computational-thinking-requirement/">http://www.nus.edu.sg/nusbuletin/faculty-of-science/undergraduate-education/degree-requirements/curriculum-structure-and-graduation-requirements/computational-thinking-requirement/</a> , kindly make the following updates shown in tracked changes:</p> <p><b>3.3.1.7 Computational Thinking Requirement</b></p> <p><a href="#">Home</a> / <a href="#">NUS Bulletin AY2018/19</a> / <a href="#">Faculty of Science</a> / <a href="#">Undergraduate Education</a> / <a href="#">Degree Requirements</a> / <a href="#">Curriculum Structure and Graduation Requirements</a> / Computational Thinking Requirement</p> <p><b>Computational Thinking Requirement</b></p> <p>To remain relevant in the workplace of tomorrow, undergraduates should acquire basic computational skills, i.e. computational thinking (CT).</p> <p>For FoS Students admitted in AY2017/18 onwards, the options to fulfil the CT requirement, by the respective Major Programmes are described below:</p> <table><tr><th>Majors</th><th>Options to fulfil Computational Thinking requirement</th></tr><tr><td><b>Computational Biology,</b></td><td rowspan="2">These Majors will continue to acquire higher-order computational and programming skills in the form of CS1010S Programming Methodology (or its variants)</td></tr><tr><td><b>Data Science &amp; Analytics,</b></td></tr><tr><td><b>Mathematics &amp; Applied Maths, Quantitative Finance,</b></td><td>(within the Major’s core requirement)</td></tr><tr><td><b>Statistics</b></td><td>Where the major allows CS1101S Programming Methodology to be read in place of CS1010S (or its variants), CS1101S will also fulfil the</td></tr></table> | Majors | Options to fulfil Computational Thinking requirement | <b>Computational Biology,</b> | These Majors will continue to acquire higher-order computational and programming skills in the form of CS1010S Programming Methodology (or its variants) | <b>Data Science &amp; Analytics,</b> | <b>Mathematics &amp; Applied Maths, Quantitative Finance,</b> | (within the Major’s core requirement) | <b>Statistics</b> | Where the major allows CS1101S Programming Methodology to be read in place of CS1010S (or its variants), CS1101S will also fulfil the |
| Majors  | Options to fulfil Computational Thinking requirement   |                     |   |        |  |                               |  |                                      |   |                                       |                   |   |
| <b>Computational Biology,</b>                                 | These Majors will continue to acquire higher-order computational and programming skills in the form of CS1010S Programming Methodology (or its variants) |                     |   |        |  |                               |  |                                      |   |                                       |                   |   |
| <b>Data Science &amp; Analytics,</b>                          |  |                     |   |        |  |                               |  |                                      |   |                                       |                   |   |
| <b>Mathematics &amp; Applied Maths, Quantitative Finance,</b> | (within the Major’s core requirement)  |                     |   |        |  |                               |  |                                      |   |                                       |                   |   |
| <b>Statistics</b>   | Where the major allows CS1101S Programming Methodology to be read in place of CS1010S (or its variants), CS1101S will also fulfil the                    |                     |   |        |  |                               |  |                                      |   |                                       |                   |   |

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|     |      |                     |   | higher-order computational and programming skills requirement for the student from that major.   |
|     |      |                     | <b>Life Sciences,</b><br><a href="#">Pharmaceutical Science,</a><br><b>Physics</b>      | Option 1: COS2000 – Computational Thinking for Scientists<br>or<br>Option 2: CS1010S (or its variants) – Programming Methodology or CS1101S Programming Methodology  |
|     |      |                     | <b>Chemistry,</b><br><b>Food Science &amp; Technology</b>                               | Option 1: COS2000 – Computational Thinking for Scientists<br>or<br>Option 2: CM3267 – Computational Thinking and Programming in Chemistry*<br>or<br>Option 3: CS1010S (or its variants) – Programming Methodology or CS1101S Programming Methodology   |
|     |      |                     | <b>Pharmacy</b>   | <a href="#">For Cohort AY2018/19 and after, to read one of the following as an Unrestricted Elective module:</a><br><br><a href="#">Option 1: COS2000 – Computational Thinking for Scientists</a><br>or<br><a href="#">Option 2: CS1010S (or its variants) – Programming Methodology or CS1101S Programming Methodology</a><br><br><a href="#">To be announced</a> |

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|     |            |                     | <div> <div> <b>Bachelor of Environmental Studies (BES)</b> </div> <div> All undergraduates (from FASS and FoS, in BES, inclusive of BES students in the UTCP or USP programme), will be required to do GET1031A.<br/><br/> BES students doing the UTCP at Residential College 4 (RC4) are exempted from GET1031A as the RC4 programme encourages explicit use of representing thinking, using computer models. </div> </div>   |  |
|     |            |                     | <p>Notes:</p> <ul style="list-style-type: none"> <li>For all FoS majors, the option to take “CS1010S (or its variants), or CS1101S – Programming Methodology” is open (even if it is not within your major programme requirements), and can be used to fulfil the CT requirement. However, do note that the availability of this module is subject to successful bidding.</li> <li>COS2000 will count as a module from the Computing Sciences subject group of the FoS Faculty requirements.</li> <li>CM3267 will be offered with effect from Sem 2 AY2018/19, and can count as a module from the Computing Sciences subject group, or from the Chemical Sciences subject group of the FoS Faculty requirements.</li> </ul>  |  |
| 31. | 6 Aug 2018 | FoS                 | <p><b>NUS Bulletin 2018/19 – Updates submitted by FoS</b></p> <p><b>Change #1</b><br/> Page: <a href="http://www.nus.edu.sg/nusbulletin/faculty-of-science/graduate-education/research-programmes/degree-requirements/">http://www.nus.edu.sg/nusbulletin/faculty-of-science/graduate-education/research-programmes/degree-requirements/</a></p> <p>2. Department of Chemistry<br/> PhD</p> <ul style="list-style-type: none"> <li>•Complete a minimum of twenty-four (24) modular credits (MCs) consisting of <ul style="list-style-type: none"> <li>•CM5198 Graduate Seminar Module in Chemistry</li> <li>•CM5161 Advanced Chemical Laboratory Safety</li> <li>•Four (4) CM-coded graduate modules</li> </ul> </li> <li>•Students may read up to two graduate-level modules from other departments (subject to approval)</li> </ul> <p>MSc</p> |  |

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|     |      |                     | <ul style="list-style-type: none"> <li>•Complete a minimum of twelve (12) modular credits (MCs) consisting of <ul style="list-style-type: none"> <li>•CM5198 Graduate Seminar Module in Chemistry</li> <li>•CM5161 Advanced Chemical Laboratory Safety</li> </ul> </li> <li>•<del>Two (2)</del> <b>One (1)</b> CM-coded graduate modules</li> <li>•Students may read up to one graduate-level modules from other departments (subject to approval)</li> </ul> <hr/> <p><b>Change #2</b><br/> Page: <a href="http://www.nus.edu.sg/nusbulletin/faculty-of-science/">http://www.nus.edu.sg/nusbulletin/faculty-of-science/</a><br/> 4.2 Coursework Programmes</p> <p>4.2.1 Degrees Offered</p> <p>4.2.2 Degree Requirements</p> <p>4.2.2.1 Master of Science in Applied Physics (Full-Time and Part-Time)</p> <p>4.2.2.2 Master of Science in Chemistry (Full-Time and Part-Time)</p> <p>4.2.2.3 Master of Science in Chemistry for Energy and Environment (Full-Time and Part-Time)</p> <p>4.2.2.4 Master of Science in Financial Engineering (Full-Time, Part-Time and Distance Learning)</p> <p><b>4.2.2.5 Master of Science in Food Science and Human Nutrition (Full-Time and Part-Time)</b> [ link is not working. Should be linked to <a href="http://www.nus.edu.sg/nusbulletin/faculty-of-science/graduate-education/coursework-programmes/degree-requirements/master-of-science-in-food-science-and-human-nutrition-part-time-or-full-time-2/">http://www.nus.edu.sg/nusbulletin/faculty-of-science/graduate-education/coursework-programmes/degree-requirements/master-of-science-in-food-science-and-human-nutrition-part-time-or-full-time-2/</a> ]</p> <p>4.2.2.6 Master of Science in Mathematics (Full-Time and Part-Time)</p> <p>4.2.2.7 Master of Science in Pharmaceutical Sciences and Technology (Part-Time)</p> <p>4.2.2.8 Master of Science in Physics (Full-Time and Part-Time)</p> <p>4.2.2.9 Master of Science in Quantitative Finance (Full-Time and Part-Time)</p> |

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|     |             |                     | <p>4.2.2.10 Master of Science in Statistics (Full-Time and Part-Time)</p> <p>4.2.2.11 Joint Master of Science in Industrial Chemistry (NUS-TUM) (Full-Time)</p> <p>4.2.2.12 Joint Master of Science in Science Communication (NUS – ANU) (Full-Time and Part-Time)</p> <p>4.2.2.13 Doctor of Pharmacy (PharmD) (Full-Time and Part-Time)</p> <hr/> <p><b>Change #3</b><br/> Page: <a href="http://www.nus.edu.sg/nusbulletin/faculty-of-science/graduate-education/coursework-programmes/degree-requirements/master-of-science-in-quantitative-finance-part-time-or-full-time/">http://www.nus.edu.sg/nusbulletin/faculty-of-science/graduate-education/coursework-programmes/degree-requirements/master-of-science-in-quantitative-finance-part-time-or-full-time/</a></p> <p>2. Read and pass four elective modules chosen from the following list: i. MA5233 Computational Mathematics<br/> ii. MA5248 Stochastic Analysis in Mathematical Finance<br/> iii. QF5204 Numerical Methods in Quantitative Finance<br/> iv. QF5205 Topics in Quantitative Finance I<br/> v. QF5206 Topics in Quantitative Finance II<br/> vi. QF5207 Investment and Portfolio Selection<br/> vii. EC5102 Macroeconomic Theory<br/> viii. EC5103 Econometric Modelling &amp; Applications I<br/> ix. EC5332R Money and Banking<br/> x. ECA5315 Financial Econometrics<br/> xi. ECA5334 Corporate Finance<br/> xii. ST5207 Non-parametric regression<br/> xiii. ST5210 Multivariate Data Analysis<br/> xiv. ST5218 Advanced Statistical Methods in Finance</p> |
| 32. | 21 Aug 2018 | FoS                 | <p>NUS Bulletin 2018/19 – Updates submitted by FoS</p> <p><b>Change #1</b><br/> Page: <a href="http://www.nus.edu.sg/nusbulletin/faculty-of-science/graduate-education/research-programmes/degree-requirements/">http://www.nus.edu.sg/nusbulletin/faculty-of-science/graduate-education/research-programmes/degree-requirements/</a></p>  |

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|     |      |                     | <p>2. Department of Chemistry</p> <p>PhD</p> <ul style="list-style-type: none"> <li>•Complete a minimum of twenty-four (24) modular credits (MCs) consisting of</li> <li>•CM5198 Graduate Seminar Module in Chemistry</li> <li>•CM5161 Advanced Chemical Laboratory Safety</li> <li>•Four (4) CM-coded graduate modules</li> <li>•Students may read up to two graduate-level modules from other departments (subject to approval)</li> </ul> <p>MSc</p> <ul style="list-style-type: none"> <li>•Complete a minimum of twelve (12) modular credits (MCs) consisting of</li> <li>•CM5198 Graduate Seminar Module in Chemistry</li> <li>•CM5161 Advanced Chemical Laboratory Safety</li> <li>•Two (2) One (1) CM-coded graduate modules</li> <li>•Students may read up to one graduate-level modules from other departments (subject to approval)</li> </ul> <p>Change #2<br/>Page: <a href="http://www.nus.edu.sg/nusbulletin/faculty-of-science/">http://www.nus.edu.sg/nusbulletin/faculty-of-science/</a></p> <p>4.2 Coursework Programmes</p> <p>4.2.1 Degrees Offered</p> <p>4.2.2 Degree Requirements</p> <p>4.2.2.1 Master of Science in Applied Physics (Full-Time and Part-Time)</p> <p>4.2.2.2 Master of Science in Chemistry (Full-Time and Part-Time)</p> <p>4.2.2.3 Master of Science in Chemistry for Energy and Environment (Full-Time and Part-Time)</p> <p>4.2.2.4 Master of Science in Financial Engineering (Full-Time, Part-Time and Distance Learning)</p> <p>4.2.2.5 Master of Science in Food Science and Human Nutrition (Full-Time and Part-Time) [ link is not working. Should be linked to <a href="http://www.nus.edu.sg/nusbulletin/faculty-of-science/graduate-education/coursework-programmes/degree-requirements/master-of-science-in-food-science-and-human-nutrition-part-time-or-full-time-2/">http://www.nus.edu.sg/nusbulletin/faculty-of-science/graduate-education/coursework-programmes/degree-requirements/master-of-science-in-food-science-and-human-nutrition-part-time-or-full-time-2/</a> ]</p> |



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|     |      |                     | <p>4.2.2.6 Master of Science in Mathematics (Full-Time and Part-Time)</p> <p>4.2.2.7 Master of Science in Pharmaceutical Sciences and Technology (Part-Time)</p> <p>4.2.2.8 Master of Science in Physics (Full-Time and Part-Time)</p> <p>4.2.2.9 Master of Science in Quantitative Finance (Full-Time and Part-Time)</p> <p>4.2.2.10 Master of Science in Statistics (Full-Time and Part-Time)</p> <p>4.2.2.11 Joint Master of Science in Industrial Chemistry (NUS-TUM) (Full-Time)</p> <p>4.2.2.12 Joint Master of Science in Science Communication (NUS – ANU) (Full-Time and Part-Time)</p> <p>4.2.2.13 Doctor of Pharmacy (PharmD) (Full-Time and Part-Time)</p> <p>Change #3<br/> Page: <a href="http://www.nus.edu.sg/nusbulletin/faculty-of-science/graduate-education/coursework-programmes/degree-requirements/master-of-science-in-quantitative-finance-part-time-or-full-time/">http://www.nus.edu.sg/nusbulletin/faculty-of-science/graduate-education/coursework-programmes/degree-requirements/master-of-science-in-quantitative-finance-part-time-or-full-time/</a></p> <p>2.Read and pass four elective modules chosen from the following list: i.MA5233 Computational Mathematics<br/> ii.MA5248 Stochastic Analysis in Mathematical Finance<br/> iii.QF5204 Numerical Methods in Quantitative Finance<br/> iv.QF5205 Topics in Quantitative Finance I<br/> v.QF5206 Topics in Quantitative Finance II<br/> vi.QF5207 Investment and Portfolio Selection<br/> vii.EC5102 Macroeconomic Theory<br/> viii.EC5103 Econometric Modelling &amp; Applications I<br/> ix.EC5332R Money and Banking<br/> x.ECA5315 Financial Econometrics<br/> xi.ECA5334 Corporate Finance<br/> xii.ST5207 Non-parametric regression<br/> xiii.ST5210 Multivariate Data Analysis<br/> xiv.ST5218 Advanced Statistical Methods in Finance</p> |

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| 33. | 24 Aug 2018 | FoS                 | <p>CS1101S has been reduced from 5 to 4MC with effect from Sem 1 AY2018/19. This was approved via BUS Circular 18 of AY2017/18. The AY2017/18 and AY2018/19 FoS bulletins will be updated to reflect this for the Computational Biology major.</p> <p><b><u>AY2018/19 Bulletin</u></b></p> <p>Under 3.3.3.2 Computational Biology <a href="http://www.nus.edu.sg/nusbulletin/faculty-of-science/undergraduate-education/degree-requirements/bachelor-of-sciencebachelor-of-science-hons-programme-requirements-b-sc-b-sc-hons/computational-biology/">http://www.nus.edu.sg/nusbulletin/faculty-of-science/undergraduate-education/degree-requirements/bachelor-of-sciencebachelor-of-science-hons-programme-requirements-b-sc-b-sc-hons/computational-biology/</a> , kindly make the following amendments:</p> <p>Note 1:<br/>Modules are part of the lower division requirements for the Computational Biology Programme.</p> <p>Note 2:<br/>The following groups of students who are precluded from reading SP1541/ES1541:</p> <ul style="list-style-type: none"> <li>• Students who are UTown residents and have read and passed the IEM, UTW and UWC modules</li> <li>• Students who are RVRC residents and have read and passed ES1601 module</li> <li>• Students who are in SPS and have read and passed the SP2171</li> <li>• Students who are in USP and have read and passed the UWC2101% modules</li> </ul> <p>will have to read another module instead of SP1541 to fulfil 4 MCs of Faculty requirements, except for students in SPS who have read and passed SP2171 as SP2171 can be used to fulfil 4 MCs of Faculty Requirements.</p> <p>Note 3:<br/>CS1101S Programming Methodology (5 MCS <b>prior to AY2018/19, 4MC wef AY2018/19</b>) may be read as an alternative to CS1010S. This module is suitable for those with prior experience in Python. Do note that registration to this module is subject to host availability.</p> <p>Note 4:<br/>ZB3288 UOPS in Computational Biology can be taken in fulfilment of 4 MCs from any of the options in the level-3000 elective list.</p> <p>Note 5:<br/>Students may wish to read PC2267 Biophysics I as an unrestricted elective module to meet the prerequisites required for PC3267 Biophysics II (Level-3000 major elective module).</p> |

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| 34.                    | 11 Oct 2018   | FoS                  | <p><b>NUS Bulletin 2018/19 Updates submitted by FoS – 11 Oct 2018</b></p> <p><u>Changes to Requirements for the Major in Physics Programme, BUS Circular 4 of AY2018/19</u></p> <p>This is to include PC3294 among the Level 3000 electives to satisfy the requirements of the Major Programme in Physics, from Cohort AY2015/16 onwards.</p> <p><u>AY2018/19 Bulletin</u><br/>Under 3.3.3.8 Physics (<a href="http://www.nus.edu.sg/nusbulletin/faculty-of-science/undergraduate-education/degree-requirements/bachelor-of-sciencebachelor-of-science-hons-programme-requirements-b-sc-b-sc-hons/physics/">http://www.nus.edu.sg/nusbulletin/faculty-of-science/undergraduate-education/degree-requirements/bachelor-of-sciencebachelor-of-science-hons-programme-requirements-b-sc-b-sc-hons/physics/</a>),<br/>T<br/>he following amendments were made</p> <p><b>Graduation Requirements</b><br/>To be awarded a B.Sc. or B.Sc. (Hons.) with a primary major in Physics, candidates must satisfy the following:</p> <table><tr><th>Module Level</th><th>Major Requirements</th><th>Cumulative Major MCs</th></tr><tr><td>Level-1000<br/>(24 MCs)</td><td>Pass<br/>PC1141 Introduction to Classical Mechanics<br/>PC1142 Introduction to Thermodynamics and Optics<br/>PC1143 Introduction to Electricity &amp; Magnetism<br/>PC1144 Introduction to Modern Physics<br/>MA1101R Linear Algebra I<br/>MA1102R Calculus</td><td>24</td></tr><tr><td>Level-2000<br/>(24 MCs)</td><td>Pass<br/>PC2130 Quantum Mechanics I<br/>PC2131 Electricity and Magnetism I<br/>PC2134 Mathematical Methods in Physics I<br/>PC2132 Classical Mechanics<br/>PC2193 Experimental Physics I<br/>PC2230 Thermodynamics and Statistical Mechanics</td><td>48</td></tr><tr><td>Level-3000<br/>(20 MCs)</td><td>Pass<br/>PC3130 Quantum Mechanics II</td><td>68</td></tr></table> | Module Level | Major Requirements | Cumulative Major MCs | Level-1000<br>(24 MCs) | Pass<br>PC1141 Introduction to Classical Mechanics<br>PC1142 Introduction to Thermodynamics and Optics<br>PC1143 Introduction to Electricity & Magnetism<br>PC1144 Introduction to Modern Physics<br>MA1101R Linear Algebra I<br>MA1102R Calculus | 24 | Level-2000<br>(24 MCs) | Pass<br>PC2130 Quantum Mechanics I<br>PC2131 Electricity and Magnetism I<br>PC2134 Mathematical Methods in Physics I<br>PC2132 Classical Mechanics<br>PC2193 Experimental Physics I<br>PC2230 Thermodynamics and Statistical Mechanics | 48 | Level-3000<br>(20 MCs) | Pass<br>PC3130 Quantum Mechanics II | 68 |
| Module Level           | Major Requirements  | Cumulative Major MCs |  |              |                    |                      |                        |   |    |                        |  |    |                        |                                     |    |
| Level-1000<br>(24 MCs) | Pass<br>PC1141 Introduction to Classical Mechanics<br>PC1142 Introduction to Thermodynamics and Optics<br>PC1143 Introduction to Electricity & Magnetism<br>PC1144 Introduction to Modern Physics<br>MA1101R Linear Algebra I<br>MA1102R Calculus | 24                   |  |              |                    |                      |                        |   |    |                        |  |    |                        |                                     |    |
| Level-2000<br>(24 MCs) | Pass<br>PC2130 Quantum Mechanics I<br>PC2131 Electricity and Magnetism I<br>PC2134 Mathematical Methods in Physics I<br>PC2132 Classical Mechanics<br>PC2193 Experimental Physics I<br>PC2230 Thermodynamics and Statistical Mechanics            | 48                   |  |              |                    |                      |                        |   |    |                        |  |    |                        |                                     |    |
| Level-3000<br>(20 MCs) | Pass<br>PC3130 Quantum Mechanics II   | 68                   |  |              |                    |                      |                        |   |    |                        |  |    |                        |                                     |    |

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|-----|------|---------------------|---|---|-----|--|
|     |      |                     |   | PC3193 Experimental Physics II<br>And any three modules from the following electives: <ul style="list-style-type: none"> <li>• PC3231 Electricity and Magnetism II</li> <li>• PC3232 Nuclear and Particle Physics</li> <li>• PC3233 Atomic and Molecular Physics I</li> <li>• PC3235 Solid State Physics I</li> <li>• PC3236 Computational Methods in Physics</li> <li>• PC3238 Fluid Dynamics</li> <li>• PC3241 Solid State Devices</li> <li>• PC3242 Physics of Semiconductor Processing</li> <li>• PC3243 Photonics</li> <li>• PC3246 Astrophysics I</li> <li>• PC3247 Modern Optics</li> <li>• PC3251 Nanophysics</li> <li>• PC3267 Biophysics II</li> <li>• PC3274 Mathematical Methods in Physics II</li> <li>• PC3239 Special Problems in Undergraduate Physics II</li> <li>• PC3288 UROPS in Physics I^</li> <li>• PC3289 Advanced UROPS in Physics II^</li> <li>• <b>PC3294 Radiation Laboratory</b></li> <li>• MLE3101 Materials Characterisation</li> <li>• MLE3105 Dielectric and Magnetic Materials</li> </ul> |     |  |
|     |      |                     | Level-4000<br>(32 MCs)  | Pass<br>PC4199 Honours Project in Physics<br>And any five modules from the following electives: <ul style="list-style-type: none"> <li>• PC4230 Quantum Mechanics III</li> <li>• PC4236 Computational Condensed Matter Physics</li> <li>• PC4240 Solid State Physics II</li> <li>• PC4241 Statistical Mechanics</li> <li>• PC4242 Electrodynamics</li> <li>• PC4243 Atomic and Molecular Physics II</li> <li>• PC4245 Particle Physics</li> </ul>   | 100 |  |

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|-----|-------------|---------------------|--|--|--|--|
|     |             |                     |  | <ul style="list-style-type: none"> <li>• PC4246 Quantum Optics</li> <li>• PC4248 General Relativity</li> <li>• PC4249 Astrophysics II</li> <li>• PC4253 Thin Film Technology</li> <li>• PC4259 Surface Physics</li> <li>• PC4262 Remote Sensing</li> <li>• PC4264 Advanced Solid State Devices</li> <li>• PC4267 Biophysics III</li> <li>• PC4268 Biophysical Instrumentation and Biomolecular Electronics</li> <li>• PC4274 Mathematical Methods in Physics III</li> <li>• EE4437 Photonics – Principles and Applications</li> <li>• EE4413 Low-dimensional Electronic Devices</li> <li>• MLE4201 Advanced Materials Characterisation<sup>#</sup></li> <li>• MLE4204 Synthesis and Growth of Nanostructures<sup>#</sup></li> <li>• MLE4205 Theory and Modelling of Materials Properties<sup>#</sup></li> <li>• an approved module offered by other Departments</li> </ul> |  |  |
| 35. | 11 Oct 2018 | FoS                 | <p><b>NUS Bulletin 2018/19 Updates submitted by FoS – 11 Oct 2018</b></p> <p><u>Inclusion of Placement Project as an Essential Level 4000 Requirement for Life Sciences Major Honours Programme, BUS Circular 4 of AY2018/19</u></p> <p>This is the inclusion of a placement project in the form of either LSM4199 Honours Project in Life Sciences or LSM4299 Applied Project in Life Sciences, as an essential component for Life Sciences Major Honours Level 4000 requirements, with effect from Cohort AY2018/19 onwards.</p> <p><u>New Module LSM4259 Evolutionary Genetics of Reproduction, BUS Circular 4 of AY2018/19</u></p> |  |  |  |

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|------------------------|---|----------------------|--|-------|----------------------------------|----------------------|------------------------|---|----|------------------------|--|----|
|                        |   |                      | <p>This module serves as an elective option for the Environmental Biology specialisation for Life Sciences Major for cohort AY2013/14 onwards.</p> <p><u>AY2018/19 Bulletin</u></p> <p>Under 3.3.3.5 Life Sciences <a href="http://www.nus.edu.sg/nusbulletin/faculty-of-science/undergraduate-education/degree-requirements/bachelor-of-sciencebachelor-of-science-hons-programme-requirements-b-sc-b-sc-hons/life-sciences/">http://www.nus.edu.sg/nusbulletin/faculty-of-science/undergraduate-education/degree-requirements/bachelor-of-sciencebachelor-of-science-hons-programme-requirements-b-sc-b-sc-hons/life-sciences/</a> , kindly make the following amendments in red:</p> <p>To be awarded a B.Sc. (Hons.) with a primary major in Life Sciences or Life Sciences (with specialisation in Biomedical Science, Molecular and Cell Biology or Environmental Biology), candidates must satisfy the following:</p> <table><tr><th>Level</th><th>Life Sciences Major Requirements</th><th>Cumulative Major MCs</th></tr><tr><td>Level 1000<br/>(20 MCs)</td><td>Pass all<br/>LSM1102 Molecular Genetics<br/>LSM1105 Evolutionary Biology<br/>LSM1106 Molecular Cell Biology<br/>CM1401* Chemistry for Life Sciences*<br/>ST1232 Statistics for Life Sciences<br/>*If a precluding module to CM1401 (i.e. CM1121 or CM1501) is passed, the precluding module is accepted to be fulfilling the Life Sciences Major in lieu of CM1401.</td><td>20</td></tr><tr><td>Level 2000<br/>(16 MCs)</td><td>Pass<br/>LSM2191 Laboratory Techniques in Life Sciences<br/><br/>Pass <b>3</b><br/>LSM2211 Metabolism and Regulation<br/>LSM2212 Human Anatomy<br/>LSM2231 General Physiology<br/>LSM2232 Genes, Genomes and Biomedical Implications<br/>LSM2233 Cell Biology<br/>LSM2241 Introductory Bioinformatics<br/>LSM2234 Physical Concepts in Biology</td><td>36</td></tr></table> | Level | Life Sciences Major Requirements | Cumulative Major MCs | Level 1000<br>(20 MCs) | Pass all<br>LSM1102 Molecular Genetics<br>LSM1105 Evolutionary Biology<br>LSM1106 Molecular Cell Biology<br>CM1401* Chemistry for Life Sciences*<br>ST1232 Statistics for Life Sciences<br>*If a precluding module to CM1401 (i.e. CM1121 or CM1501) is passed, the precluding module is accepted to be fulfilling the Life Sciences Major in lieu of CM1401. | 20 | Level 2000<br>(16 MCs) | Pass<br>LSM2191 Laboratory Techniques in Life Sciences<br><br>Pass <b>3</b><br>LSM2211 Metabolism and Regulation<br>LSM2212 Human Anatomy<br>LSM2231 General Physiology<br>LSM2232 Genes, Genomes and Biomedical Implications<br>LSM2233 Cell Biology<br>LSM2241 Introductory Bioinformatics<br>LSM2234 Physical Concepts in Biology | 36 |
| Level                  | Life Sciences Major Requirements  | Cumulative Major MCs |  |       |                                  |                      |                        |   |    |                        |  |    |
| Level 1000<br>(20 MCs) | Pass all<br>LSM1102 Molecular Genetics<br>LSM1105 Evolutionary Biology<br>LSM1106 Molecular Cell Biology<br>CM1401* Chemistry for Life Sciences*<br>ST1232 Statistics for Life Sciences<br>*If a precluding module to CM1401 (i.e. CM1121 or CM1501) is passed, the precluding module is accepted to be fulfilling the Life Sciences Major in lieu of CM1401. | 20                   |  |       |                                  |                      |                        |   |    |                        |  |    |
| Level 2000<br>(16 MCs) | Pass<br>LSM2191 Laboratory Techniques in Life Sciences<br><br>Pass <b>3</b><br>LSM2211 Metabolism and Regulation<br>LSM2212 Human Anatomy<br>LSM2231 General Physiology<br>LSM2232 Genes, Genomes and Biomedical Implications<br>LSM2233 Cell Biology<br>LSM2241 Introductory Bioinformatics<br>LSM2234 Physical Concepts in Biology                          | 36                   |  |       |                                  |                      |                        |   |    |                        |  |    |

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|-----|------|---------------------|---|---|----|--|
|     |      |                     |   | LSM2251 Ecology and Environment<br>LSM2252 Biodiversity<br>LSM2253 Applied Data Analysis in Ecology and Evolution<br>LSM2254 Fundamentals of Plant Biology<br>LSM2291 Fundamental Techniques in Microbiology  |    |  |
|     |      |                     | Level 3000<br>(16 MCs)  | Pass four LSM32xx elective modules (except LSM3289), of which up to two (up to 8MC) may be LSM42xx (except LSM4299) and/or LSM-recognised elective modules.<br><br>LSM3201 Research and Communication in Life Sciences<br>LSM3211 Fundamental Pharmacology<br>LSM3212 Human Physiology: Cardiopulmonary System<br>LSM3214 Human Physiology – Hormones and Health<br>LSM3215 Neuronal Signaling and Memory Mechanisms<br>LSM3216 Neuronal Development and Diseases<br>LSM3217 Human Ageing<br>LSM3218 Cardiopulmonary Pharmacology<br>LSM3219 Neuropharmacology<br>LSM3222 Human Neuroanatomy<br>LSM3223 Immunology<br>LSM3224 Molecular Basis of Human Diseases<br>LSM3225 Molecular Microbiology in Human Diseases<br>LSM3226 Medical Mycology and Drug Discovery<br>LSM3227 General Virology<br>LSM3231 Protein Structure and Function<br>LSM3232 Microbiology<br>LSM3233 Developmental Biology<br>LSM3234 Biological Imaging of Growth and Form<br>LSM3235 Epigenetics in Human Health and Diseases<br>LSM3241 Genomic Data Analysis<br>LSM3242 Translational Microbiology<br>LSM3243 Molecular Biophysics<br>LSM3245 RNA Biology and Technology<br>LSM3246 Synthetic Biology<br>LSM3247 Practical Synthetic Biology<br>LSM3252 Evolution and Comparative Genomics | 52 |  |

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|-----|------|---------------------|---|---|-----------------------------|--|
|     |      |                     |   | LSM3254 Ecology of Aquatic Environments<br>LSM3255 Ecology of Terrestrial Environments<br>LSM3256 Tropical Horticulture<br>LSM3258 Comparative Botany<br>LSM3259 Fungal Biology<br>LSM3262 Environmental Animal Physiology<br>LSM3263 Field Studies in Neotropical Ecosystems<br>LSM3264 Environmental Biochemistry<br>LSM3265 Entomology<br>LSM3266 Avian Biology and Evolution<br>LSM3267 Behavioural Biology<br>LSM3272 Global Change Biology<br>LSM3273 Ecology, Conservation and Management of Sri Lankan Ecosystems<br>LSM3288 Advanced UOPS in Life Sciences I   |                             |  |
|     |      |                     | Level 4000<br>(32 MCs)  | Pass at least 32MCs via one of the following options:<br><b>Honours Research Project</b><br>Pass LSM4199 Honours Project in Life Sciences, AND pass another <u>4</u> LSM42xx elective modules. [If one of the three specialisations (BMS/MCB/EVB) is to be pursued, LSM4199 and at least <u>2</u> of the <u>4</u> LSM42xx have to be completed, all listed with the chosen specialisation.]<br><b>Applied Internship Project</b><br>Pass LSM4299 Applied Project in Life Sciences, AND pass another <u>4</u> LSM42xx elective modules.<br><del>Coursework Taught Modules</del><br><del>Pass 8 LSM42xx elective modules.</del> | 84                          |  |
|     |      |                     |   | LSM4199 Honours Project in Life Sciences<br>LSM4299 Applied Project in Life Sciences  |                             |  |
|     |      |                     |   | LSM4210 Topics in Biomedical Science<br>LSM4211 Toxicology<br>LSM4212 Pharmacogenetics and Drug Responses<br>LSM4213 System Neurobiology  | Biomedical<br>Science (BMS) |  |



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|-----|------|---------------------|---|---|-------------------------------------|--|--|
|     |      |                     |   | LSM4214 Cancer Pharmacology<br>LSM4215 Extreme Physiology<br>LSM4216 Molecular Nutrition Science<br>LSM4217 Functional Ageing<br>LSM4221 Drug Discovery and Clinical Trials<br>LSM4222 Advanced Immunology<br>LSM4223 Advances in Antimicrobial<br>Strategies<br>LSM4224 Free Radicals and Antioxidant<br>Biology<br>LSM4225 Genetic Medicine in the Post-<br>Genomic Era<br>LSM4226 Infection and Immunity<br>LSM4227 Stem Cell Biology<br>LSM4228 Experimental Models for Human<br>Disease and Therapy<br>LSM4229 Therapeutic and diagnostic agents<br>from animal toxins<br>LSM4252 Reproductive Biology |                                     |  |  |
|     |      |                     |   | LSM4231 Structural Biology<br>LSM4232 Advanced Cell Biology<br>LSM4234 Mechanobiology<br>LSM4235 Nuclear Mechanics and<br>Genome Regulation<br>LSM4241 Functional Genomics<br>LSM4242 Protein Engineering<br>LSM4243 Tumour Biology<br>LSM4244 Oncogenes and Signal<br>Transduction<br>LSM4245 Advanced Epigenetics<br>and Chromatin Biology<br>LSM4251 Plant Growth and Development  | Molecular and<br>Cell Biology (MCB) |  |  |
|     |      |                     |   | LSM4254 Principles of Taxonomy and<br>Systematics   | Environmental<br>Biology (EVB)      |  |  |

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|-----|--|---------------------|--|--|--|--|--|--|--|--|--|--|
|     |  |                     | <table><tr><td></td><td>LSM4255    Methods in Mathematical Biology<br/>LSM4256    Evolution of Development<br/>LSM4257    Aquatic Vertebrate Diversity<br/>LSM4259    Evolutionary Genetics of Reproduction<br/>LSM4261    Marine Biology<br/>LSM4262    Tropical Conservation Biology<br/>LSM4263    Field Studies in Biodiversity<br/>LSM4264    Freshwater Biology<br/>LSM4265    Urban Ecology<br/>LSM4267    Animal Communications &amp; Sensory Ecology</td><td></td><td></td><td></td><td></td></tr></table>  |  |  |  |  | LSM4255    Methods in Mathematical Biology<br>LSM4256    Evolution of Development<br>LSM4257    Aquatic Vertebrate Diversity<br>LSM4259    Evolutionary Genetics of Reproduction<br>LSM4261    Marine Biology<br>LSM4262    Tropical Conservation Biology<br>LSM4263    Field Studies in Biodiversity<br>LSM4264    Freshwater Biology<br>LSM4265    Urban Ecology<br>LSM4267    Animal Communications & Sensory Ecology |  |  |  |  |
|     | LSM4255    Methods in Mathematical Biology<br>LSM4256    Evolution of Development<br>LSM4257    Aquatic Vertebrate Diversity<br>LSM4259    Evolutionary Genetics of Reproduction<br>LSM4261    Marine Biology<br>LSM4262    Tropical Conservation Biology<br>LSM4263    Field Studies in Biodiversity<br>LSM4264    Freshwater Biology<br>LSM4265    Urban Ecology<br>LSM4267    Animal Communications & Sensory Ecology |                     |  |  |  |  |  |  |  |  |  |  |
| 36. | 11 Oct 2018  | FoS                 | <p><b><u>NUS Bulletin 2018/19 Updates submitted by FoS (11 Oct 2018)</u></b></p> <p>The proposed re-naming of and revision to the Minor Programme in Pharmaceutical Sciences, applicable to cohort AY2015/16 and after, has been circulated for information via Senate Circular 2 of AY2018/19. Amendments to AY2015/16 and after bulletins were made.</p> <p><u>AY2018/19 Bulletin</u></p> <p>a) Under the FoS content page <a href="http://www.nus.edu.sg/nusbulletin/faculty-of-science/">http://www.nus.edu.sg/nusbulletin/faculty-of-science/</a> , the following amendments were made:</p> <p>3.4.3 <a href="#">Minor Programmes</a></p> <p>3.4.3.1 <a href="#">Minor in Analytical Chemistry</a></p> <p>3.4.3.2 <a href="#">Minor in Aquatic Ecology</a></p> <p>3.4.3.3 <a href="#">Minor in Biophysics</a></p> <p>3.4.3.4 <a href="#">Minor in Engineering Materials</a></p> <p>3.4.3.5 <a href="#">Minor in Financial Mathematics</a></p> <p>3.4.3.6 <a href="#">Minor in Forensic Science</a></p> <p>3.4.3.7 <a href="#">Minor in Geosciences</a></p> <p>3.4.3.8 <a href="#">Minor in Life Sciences</a></p> <p>3.4.3.9 <a href="#">Minor in Mathematics</a></p> <p>3.4.3.10 <a href="#">Minor in Medical Physics</a></p> |  |  |  |  |  |  |  |  |  |

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|     |             |                     | <p>3.4.3.11 <a href="#">Minor in Nanoscience</a></p> <p>3.4.3.12 <a href="#">Minor in Optical and Semiconductor Technology</a></p> <p>3.4.3.13 <a href="#">Minor in Pharmaceutical Sciences</a><del>s</del></p> <p>3.4.3.14 <a href="#">Minor in Physics</a></p> <p>3.4.3.15 <a href="#">Minor in Statistics</a></p> <p>b) Under 3.4.3.13 Minor in Pharmaceutical Sciences <a href="http://www.nus.edu.sg/nusbulletin/faculty-of-science/undergraduate-education/multidisciplinary-opportunities/minor-programmes/minor-in-pharmaceutical-sciences/">http://www.nus.edu.sg/nusbulletin/faculty-of-science/undergraduate-education/multidisciplinary-opportunities/minor-programmes/minor-in-pharmaceutical-sciences/</a> , the following amendments were made:</p> <p><b>Curriculum Structure and Requirements</b></p> <p>Candidates accepted into the minor programme are required to pass four (4) essential modules and two (2) elective modules as shown below. Some modules have practical component that will allow students to acquire relevant basic laboratory skills.</p> <p><u>Essential modules:</u></p> <p>PR1110 Foundations for Medicinal Chemistry</p> <p>PR2114 Formulation and Technology I</p> <p>PR2115 Medicinal Chemistry for Drug Design</p> <p>PR3301 Pharmaceutical Dosage Forms</p> <p><u>Choose TWO from the following elective modules:</u></p> <p>PR1301 Complementary Medicine and Health</p> <p><b>PR2143 Pharmaceutical Analysis for Quality Assurance</b></p> <p><b>PR3204 Medicinal Natural Products</b></p> <p>PR4205 Bioorganic Principles of Medicinal Chemistry (a replacement for this module will be announced in AY2018/19)</p> <p>PR4206 Industrial Pharmacy</p> <p>CN4241R Engineering Principles for Drug Delivery</p> |
| 37. | 13 Nov 2018 | FoS                 | <u>Revision to Requirements of Joint Minor Prog in Env Biology with UofT</u>   |

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|     |      |                     | <p>The revised requirements, approved via BUS Circular 4 of AY2018/19, arise from changes made to Life Sciences major modules. The policies and practices of this JMP are also reviewed and revised to improve operational clarity. The changes take effect from the AY2016/17 cohort.</p> <p><u>AY2018/19 Bulletin</u></p> <p><u>Under 3.6.3 Joint Minor Programme with University of Toronto (<a href="http://www.nus.edu.sg/nusbulletin/faculty-of-science/undergraduate-education/study-abroad-programmes/joint-minor-programme-with-university-of-toronto/">http://www.nus.edu.sg/nusbulletin/faculty-of-science/undergraduate-education/study-abroad-programmes/joint-minor-programme-with-university-of-toronto/</a>)</u>, kindly make the following amendments:</p> <p><b>Joint Minor Programme in Environmental Biology</b></p> <p>Host Departments: Department of Ecology &amp; Evolutionary Biology (UofT) and the Department of Biological Sciences (NUS).</p> <p>To be awarded the joint minor in Environmental Biology, a student is currently required to take and pass the modules as prescribed:</p> <ul style="list-style-type: none"> <li>• <del>LSM1103 Biodiversity</del></li> <li>• <del>LSM2251 Ecology and Environment</del></li> <li>• <del>LSM3252 Evolution and Comparative Genomics</del></li> <li>• LSM2252 Biodiversity</li> <li>• LSM2251 Ecology and Environment</li> <li>• LSM1105 Evolutionary Biology</li> </ul> <p>and <u>any four</u> of the following U of T courses:</p> <ul style="list-style-type: none"> <li>• <del>EEB403H Tropical Field Biology (May)</del></li> <li>• <del>EEB405H Temperate Field Biology (May)</del></li> <li>• <del>EEB407H Alpine Ecosystems (July or August)</del></li> <li>• <del>EEB410H Lake Ecosystem Dynamics (August)</del></li> <li>• <del>ENV234H Environmental Biology: Structure and Function of Ecosystems</del></li> </ul> |

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|     |      |                     | <ul style="list-style-type: none"> <li>• <del>EEB318H Principles of Evolution</del></li> <li>• <del>EEB321H Community Ecology</del></li> <li>• <del>EEB322H Behaviour and Behavioural Ecology</del></li> <li>• <del>EEB323H Evolutionary Genetics</del></li> <li>• <del>EEB328H Physiological Ecology</del></li> <li>• <del>EEB331H Introduction to the Fungi</del></li> <li>• <del>EEB362H Introduction to Macroevolution</del></li> <li>• <del>EEB375H Organisms and Their Environment</del></li> <li>• <del>EEB382H Diversity of Fishes</del></li> <li>• <del>EEB388H Biology of Mammals</del></li> <li>• <del>EEB319H Population Ecology</del></li> <li>• <del>EEB324H Evolutionary Ecology</del></li> <li>• <del>EEB330H Systematic Botany</del></li> <li>• <del>EEB356H Insect Biology</del></li> <li>• <del>EEB365H The Biology of Conservation</del></li> <li>• <del>EEB386H Avian Biology</del></li> <li>• ENV234H1 Environmental Biology: Structure and Function of Ecosystems</li> <li>• EEB319H1 Population Ecology</li> <li>• EEB321H1 Community Ecology</li> <li>• EEB322H1 Behaviour and Behavioural Ecology</li> <li>• EEB323H1 Evolutionary Genetics</li> <li>• EEB324H1 Evolutionary Ecology</li> <li>• EEB328H1 Physiological Ecology</li> <li>• EEB330H1 Systematic Botany</li> <li>• EEB331H1 Introduction to the Fungi</li> <li>• EEB362H1 Macroevolution</li> <li>• EEB365H1 Topics in Applied Conservation Biology</li> <li>• EEB375H1 Organisms and Their Environment</li> <li>• EEB380H1 Diversity of Insects</li> <li>• EEB382H1 Diversity of Fishes</li> <li>• EEB386H1 Diversity of Birds</li> <li>• EEB388H1 Diversity of Mammals</li> <li>• EEB403H0/1 Tropical Field Biology</li> <li>• EEB405H0/1 Temperate Field Biology</li> </ul> |

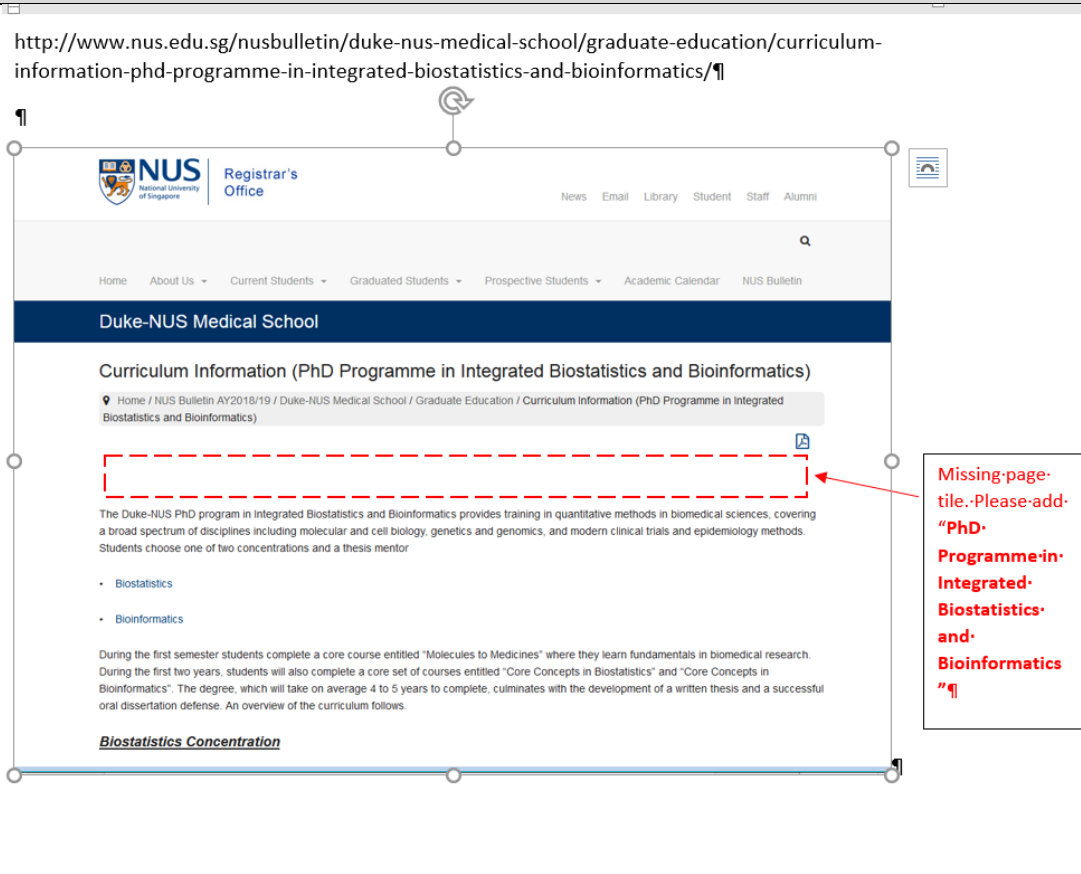
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|     |            |                     | <ul style="list-style-type: none"> <li>• EEB407H0/1 Alpine Ecosystems</li> <li>• EEB410H0/1 Lake Ecosystem Dynamics</li> </ul> <p><del>For NUS students whose major includes the LSM modules taken for this minor, not more than 8 NUS modular credits (MCs) are allowed to be double-counted.</del></p> <p><del>Students specialising in Environmental Biology are allowed to count the U of T modules taken for this JMP to their major requirements but will not be awarded a joint minor in Environmental Biology upon completion of the modules/courses. Module mappings will be advised upon application.</del></p> <p>Students who officially participate in this JMP would transfer both credits and grades for the UofT EEB courses chosen and completed for the programme, and would not be allowed to declare a specialisation in Environmental Biology.</p> <p>Life Sciences Majors who have declared a specialisation in Environmental Biology and Faculty of Science students in the Bachelor of Environmental Studies programme will be considered as regular SEP students, and would transfer credits only for all the UofT courses completed.</p>   |
| 38. | 4 Jul 2018 | Duke-NUS            | <p><a href="http://www.nus.edu.sg/nusbulletin/duke-nus-medical-school/graduate-education/curriculum-information-md-programme/">http://www.nus.edu.sg/nusbulletin/duke-nus-medical-school/graduate-education/curriculum-information-md-programme/</a></p> <p>The Doctor of Medicine (MD) programme at Duke-NUS is a 4-year course comprising of the following phases: pre-clerkship, clerkship, research and advanced clinical.</p> <p>The programme begins with the pre-clerkship curriculum, introducing students to basic sciences and the fundamentals of patient care. Courses cover the basic science content fundamental to clinical core, including: biochemistry, genetics, cell biology, microanatomy, anatomy, physiology, neurobiology, behavioural sciences, pharmacology, microbiology, pathology and immunology. The pre-clerkship curriculum is covered in one year.</p> <p>In their second year, students go through a series of clerkship rotations, gaining broad exposure to core specialties such as Paediatrics, Obstetrics and Gynaecology, Neurology, Psychiatry, Surgery and Medicine. Students are required to complete 6 5 blocks of 8-week clerkship rotations. <del>In 2014, the school launched the new Longitudinal Integrated Clerkship (LIC) which runs core clerkships in an integrated manner throughout the year with greater</del></p> |

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|        |   |                     | <p><del>exposure to outpatient care. The LIC is currently offered as an alternative programme to the regular clerkship rotations for a small number of students.</del></p> <p>The research and advanced clinical phases span the third and fourth years of the MD programme.</p> <p>Students spend approximately <del>9</del> 8 months on scholarly research activities. They get to select a research area of their interest and carry out a research <del>or scholarship</del> project in that area under the supervision of a research mentor. At the end of the research experience, they are required to submit a thesis based on their research <del>or scholarship</del> project. Students may carry out their research <del>or scholarship</del> locally or at our affiliated institution, Duke University.</p> <p>The advanced clinical rotations in the final two years of the MD programme provides students with opportunities to participate in patient care with increased responsibilities. Besides core specialties such as Emergency Medicine, Surgery, Medicine, Musculoskeletal and Critical Care, students are also given elective time to explore areas based on their career interest.</p> <p>Below is a more detailed breakdown of our MD curriculum.</p> <table><tr><td></td><td><ul style="list-style-type: none"><li>• <del>Foundations Course</del> C.A.R.E 1: Joining the Medical Profession</li><li>• Molecules, Cells &amp; Tissues</li><li>• <del>Normal Body</del> Human Structure &amp; Function</li><li>• Brain &amp; Behaviour</li><li>• Body &amp; Disease</li><li>• <del>Practice Course 1</del> Fundamentals of Clinical Practice</li></ul><p>Other Year 1 modules since 2007:</p><ul style="list-style-type: none"><li>• Investigative Methods &amp; Tools</li><li>• Evidence Based Medicine</li><li>• Normal Body</li><li>• Practice Course 1</li><li>• Foundations Course</li></ul></td></tr><tr><td>Year 2</td><td><ul style="list-style-type: none"><li>• <del>Orientation to Clinical Year</del> C.A.R.E 2: Learning From &amp; For Patients</li></ul></td></tr></table> |  | <ul style="list-style-type: none"><li>• <del>Foundations Course</del> C.A.R.E 1: Joining the Medical Profession</li><li>• Molecules, Cells &amp; Tissues</li><li>• <del>Normal Body</del> Human Structure &amp; Function</li><li>• Brain &amp; Behaviour</li><li>• Body &amp; Disease</li><li>• <del>Practice Course 1</del> Fundamentals of Clinical Practice</li></ul> <p>Other Year 1 modules since 2007:</p> <ul style="list-style-type: none"><li>• Investigative Methods &amp; Tools</li><li>• Evidence Based Medicine</li><li>• Normal Body</li><li>• Practice Course 1</li><li>• Foundations Course</li></ul> | Year 2 | <ul style="list-style-type: none"><li>• <del>Orientation to Clinical Year</del> C.A.R.E 2: Learning From &amp; For Patients</li></ul> |
|        | <ul style="list-style-type: none"><li>• <del>Foundations Course</del> C.A.R.E 1: Joining the Medical Profession</li><li>• Molecules, Cells &amp; Tissues</li><li>• <del>Normal Body</del> Human Structure &amp; Function</li><li>• Brain &amp; Behaviour</li><li>• Body &amp; Disease</li><li>• <del>Practice Course 1</del> Fundamentals of Clinical Practice</li></ul> <p>Other Year 1 modules since 2007:</p> <ul style="list-style-type: none"><li>• Investigative Methods &amp; Tools</li><li>• Evidence Based Medicine</li><li>• Normal Body</li><li>• Practice Course 1</li><li>• Foundations Course</li></ul> |                     |  |  |   |        |   |
| Year 2 | <ul style="list-style-type: none"><li>• <del>Orientation to Clinical Year</del> C.A.R.E 2: Learning From &amp; For Patients</li></ul>   |                     |  |  |   |        |   |

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|     |      |                     |   | <ul style="list-style-type: none"> <li>• Medicine Clerkship</li> <li>• Surgery Clerkship</li> <li>• Paediatrics Clerkship</li> <li>• Obstetrics &amp; Gynaecology Clerkship</li> <li>• Neurology Clerkship</li> <li>• Psychiatry Clerkship</li> <li>• <del>Practice Course 2</del> Fundamentals of Research and Scholarship</li> <li>• Innovation &amp; Design Thinking</li> </ul> <p>Other Year 2 modules since 2008:</p> <ul style="list-style-type: none"> <li>• Integrated Anaesthesia Programme</li> <li>• Anaesthesiology Programme</li> <li>• Clinical Core 1 to 5</li> <li>• Cardiology Programme</li> <li>• Radiology Programme</li> <li>• Musculoskeletal Year 2 Programme</li> <li>• Clinical Reflections</li> <li>• Geriatric Medicine/Medical Oncology/Palliative Care</li> <li>• Oncology, Geriatric Medicine &amp; Palliative Care Programme</li> <li>• Geriatrics &amp; Nutrition</li> <li>• Clinical Oncology</li> <li>• Longitudinal Integrated Clerkship</li> <li>• Orientation to Clinical Year</li> <li>• Practice Course 2</li> <li>• Geriatrics Medicine</li> <li>• Fundamentals of Family Medicine</li> </ul> |
|     |      |                     | Year 3 and 4 (Research)   | <ul style="list-style-type: none"> <li>• <del>Research Experience Part 1</del> Research/Scholarship (Part 1)</li> <li>• <del>Research Experience Part 2</del> Research/Scholarship (Part 2)</li> <li>• <del>IRB Modules</del></li> <li>• <del>Research Thesis</del> Research/Scholarship Thesis</li> </ul> <p>Other Research modules since 2009:</p>  |



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|     |             |                     |   | <ul style="list-style-type: none"> <li>• Orientation to Research Year</li> <li>• Research Methods and Analysis</li> <li>• <b>IRB Modules</b></li> </ul>  |
|     |             |                     | Year 3 and 4 (Advanced Clinical)  | <ul style="list-style-type: none"> <li>• <del>Medicine Sub-Internship</del> Advanced Medicine</li> <li>• <del>Surgery Sub-Internship</del> Advanced Surgery</li> <li>• Musculoskeletal Rotation</li> <li>• Critical Care Rotation</li> <li>• Emergency Medicine</li> <li>• Family Medicine Clerkship</li> <li>• <b>Student-In-Practice (Medicine)</b></li> <li>• <b>Student-In-Practice (Surgery)</b></li> <li>• Practice Course 3</li> </ul> <p>Other Advanced Clinical modules since 2010:</p> <ul style="list-style-type: none"> <li>• Practice Course 4</li> <li>• Capstone Course</li> <li>• Student as Future Educator</li> <li>• Independent Study</li> <li>• Advanced Clinical Practice</li> </ul> |
| 39. | 11 Jul 2018 | Duke-NUS            | Missing page title  |  |

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|     |      |                     | <p>http://www.nus.edu.sg/nusbulletin/duke-nus-medical-school/graduate-education/curriculum-information-phd-programme-in-integrated-biostatistics-and-bioinformatics/¶</p>  <p>The screenshot shows the NUS Registrar's Office website. The page title is "Curriculum Information (PhD Programme in Integrated Biostatistics and Bioinformatics)". Below the title, there is a breadcrumb trail: "Home / NUS Bulletin AY2018/19 / Duke-NUS Medical School / Graduate Education / Curriculum Information (PhD Programme in Integrated Biostatistics and Bioinformatics)". A red dashed box highlights a missing page title, and a red arrow points to it with a text box saying "Missing page title. Please add 'PhD Programme in Integrated Biostatistics and Bioinformatics'".</p> <p>The Duke-NUS PhD program in Integrated Biostatistics and Bioinformatics provides training in quantitative methods in biomedical sciences, covering a broad spectrum of disciplines including molecular and cell biology, genetics and genomics, and modern clinical trials and epidemiology methods. Students choose one of two concentrations and a thesis mentor</p> <ul style="list-style-type: none"> <li>• <a href="#">Biostatistics</a></li> <li>• <a href="#">Bioinformatics</a></li> </ul> <p>During the first semester students complete a core course entitled "Molecules to Medicines" where they learn fundamentals in biomedical research. During the first two years, students will also complete a core set of courses entitled "Core Concepts in Biostatistics" and "Core Concepts in Bioinformatics". The degree, which will take on average 4 to 5 years to complete, culminates with the development of a written thesis and a successful oral dissertation defense. An overview of the curriculum follows.</p> <p><b><u>Biostatistics Concentration</u></b></p> |

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| 40. | 21 Aug 2018 | Yale-NUS            | <p>Home/NUS Bulletin AY2018/19/Yale-NUS College<br/> <a href="http://www.nus.edu.sg/nusbulletin/yale-nus-college/the-learning-experience/special-programmes/">http://www.nus.edu.sg/nusbulletin/yale-nus-college/the-learning-experience/special-programmes/</a></p> <p>Original text:</p> <p><b>The promise of an international perspective</b><br/> Each Yale-NUS student is guaranteed to have at least one overseas experience through CIPE, and to participate in exclusive programming such as:</p> <p>was changed to:</p> <p>Revised Text</p> <p><b>Gaining an international perspective</b><br/> Students have the opportunity to gain international perspectives by participating in programming such as:</p>  |
| 41. | 13 Dec 2018 | YSTCM               | <p>NUS Bulletin 2018/19 – Updates submitted by YSTCM (13 Dec 2018)</p> <p><b>1. Faculty's commitment</b><br/> <a href="http://www.nus.edu.sg/nusbulletin/yong-siew-toh-conservatory-of-music/facultys-commitment/">http://www.nus.edu.sg/nusbulletin/yong-siew-toh-conservatory-of-music/facultys-commitment/</a></p> <p>Introduction</p> <p>Singapore's first conservatory of music was established through a collaboration between the National University of Singapore and the Peabody Institute of the Johns Hopkins University. Founded in 2001 as the Singapore Conservatory of Music, the school was named the Yong Siew Toh Conservatory of Music in August 2003 in recognition of a gift from the family of the late Dr Yong Loo Lin. Yong Siew Toh, a music teacher and daughter of the late Dr Yong, found her greatest joy in giving music to others. The Yong family believes this gift is an appropriate way to remember her life and her dedication to music. The Conservatory received its first students in August 2003 and its first orchestral concert took place on 17 September 2003. It moved into its permanent premises in 2006 with an event to mark this occasion taking place on 15 and 16 October. In July 2007, the Conservatory celebrated its first graduating class of 41 students.</p> |

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|     |      |                     | <p>Originally designated the Singapore Conservatory of Music, the Conservatory was officially renamed the Yong Siew Toh Conservatory of Music at its opening, in recognition of a S\$25 million gift by the Yong Loo Lin Trust to honour the late Yong Siew Toh who found her greatest joy teaching piano and helping others to appreciate the world through music. The Trust subsequently made another generous contribution of S\$25 million in 2008, endowing YST Conservatory with a total gift of S\$50 million, which was matched by funding from the Ministry of Education. The gift from Yong Loo Lin Trust, further enhanced with contribution from corporate sponsors, has enabled the YST Conservatory to offer full scholarships to a critical mass of musical talent in Singapore and the region.</p> <p>Within the YST Conservatory's first decade, it quickly established a reputation for world-class musical excellence with students gaining international recognition from leading artists and institutions. As Asia's international conservatory, YST pioneers the possibility of a multi-national, globally relevant music education environment, situated in Singapore which is one of the world's best-connected Asian countries. Music in Singapore and the region has evolved enormously, and YST is proud of the role it has played – through its students, alumni, staff, faculty, events, facilities, programmes, partnerships and advocacy – in inspiring this evolution.</p> <p>Educational Philosophy</p> <p>The Bachelor of Music degree programme is designed to prepare performing and creative musical artists for a diverse range of relevant graduate or professional opportunities, both in the Asia-Pacific region and around the world. The programme aims to help students achieve musical excellence in their specialisation by developing their self-awareness, intuition, imagination and capacity for effective communication.</p> <p>Please visit <a href="http://www.music.nus.edu.sg">www.music.nus.edu.sg</a> for more information and updates.</p> <p>We seek to:</p> <ul style="list-style-type: none"> <li>- Nurture artistic identity as a driver and compass for excellence;</li> <li>- Engage the broader ecosystem and give music greater resonance;</li> <li>- Develop musicians with well-rounded capabilities in performance, composition, production and engagement; and</li> <li>- Make music creatively, convincingly, collaboratively and courageously.</li> </ul> <p>Please visit <a href="http://www.ystmusic.nus.edu.sg">www.ystmusic.nus.edu.sg</a> for more information and updates.</p> |

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|     |      |                     | <p>2. Key Contact Information Conservatory Staff and Faculty<br/> <a href="http://www.nus.edu.sg/nusbulletin/yong-siew-toh-conservatory-of-music/key-contact-information/">http://www.nus.edu.sg/nusbulletin/yong-siew-toh-conservatory-of-music/key-contact-information/</a></p> <p>2. ADMINISTRATION AND FACULTY</p> <p>2.1 ADMINISTRATION</p> <p>2.1.1 Dean's Office<br/> Prof Bernard Lanskey, Dean<br/> Tel: 6516-1107<br/> Mrs Wendy Lee Secretary to the Dean<br/> Tel: 6516-1107 Email: <a href="mailto:mussec@nus.edu.sg">mussec@nus.edu.sg</a><br/> The Dean's Office oversees all aspects of the administrative and academic activities of the Yong Siew Toh Conservatory of Music. In addition, the Dean represents the Conservatory to its stakeholders and the public and reports to the Provost and President of the University.</p> <p>2.1.2 Deputy Director's Office<br/> Assoc Prof Craig De Wilde Deputy Director<br/> Tel: 6516-1107<br/> Mrs Wendy Lee Secretary to the Dean<br/> Tel: 6516-1107 Email: <a href="mailto:mussec@nus.edu.sg">mussec@nus.edu.sg</a><br/> The Dean's Office oversees all aspects of the administrative and academic ac assists the Director in all areas of the management and operation of the Conservatory. In particular, the Deputy Director supervises the academic music offerings and reviews the curricula and teaching programmes. Additionally, the Deputy Director assists the academic faculty with their teaching and research activities, and advises on staff and students issues.</p> <p>2.1.3 HR, Finance &amp; Resources Office<br/> Ms Rachel Tang Associate Dean (Administration)<br/> Tel: 6516-1093 Email: <a href="mailto:mustangr@nus.edu.sg">mustangr@nus.edu.sg</a><br/> Mr Li Zhi Xian Senior Manager (Information Technology)<br/> Tel: 6516-1165 Email: <a href="mailto:lizhixian@nus.edu.sg">lizhixian@nus.edu.sg</a><br/> Mr Adrian Toh Senior Manager (Building)<br/> Tel: 6516-7483 Email: <a href="mailto:mustyca@nus.edu.sg">mustyca@nus.edu.sg</a><br/> Mr Eddie Low Manager<br/> Tel: 6516-8210 Email: <a href="mailto:muslowyw@nus.edu.sg">muslowyw@nus.edu.sg</a></p> |

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|     |      |                     | <p>Ms Michelle Leong Management Assistant Officer<br/>Tel: 6516-8207 Email: <a href="mailto:musmlwy@nus.edu.sg">musmlwy@nus.edu.sg</a><br/>The HR, Finance &amp; Resources Office oversees the Conservatory's fiscal and administrative management systems, financial and business services, human resources, endowment management, property and facilities management, and the security and maintenance of its facilities.<br/>The Information Technology Office is responsible for designing and implementing systems management processes and procedures at the Conservatory and coordinates with the NUS Computer Centre to deliver optimal solutions for the Conservatory's information technology needs.</p> <p>2.1.4 Strategic Planning &amp; External Relations Office<br/>Ms Jenny Ang Senior Associate Director<br/>Tel: 6516-6189 Email: <a href="mailto:musaclj@nus.edu.sg">musaclj@nus.edu.sg</a><br/>Ms Ong Shu Chen Executive<br/>Tel: 6516-7482 Email: <a href="mailto:musosc@nus.edu.sg">musosc@nus.edu.sg</a><br/>The Strategic Planning &amp; External Relations Office is responsible for assisting the Director in strategic initiatives in relation to institutional development, curriculum, research and events planning. The office is in charge of marketing and publicity in the areas of institutional branding and profile-building locally, regionally and internationally, as well as media relations.</p> <p>2.1.5 Office of Student Life<br/>Mr Tan Wei Boon Senior Associate Director (Student Life)<br/>Tel: 6516-4197 Email: <a href="mailto:mustwb@nus.edu.sg">mustwb@nus.edu.sg</a><br/>Ms Chiam Hui Li Associate Director (Admissions &amp; Student Support)<br/>Tel: 6516-8691 Email: <a href="mailto:muschl@nus.edu.sg">muschl@nus.edu.sg</a><br/>Mr Harris Ang Assistant Manager (Alumni Engagement)<br/>Tel: 6516-1191 Email: <a href="mailto:musha@nus.edu.sg">musha@nus.edu.sg</a><br/>The Office of Student Life is in charge of all matters in relation to student resident living, international exchanges, student initiatives, social functions, welfare, counseling and wellness, student activities, freshmen orientation and student cultural engagement projects. The office also coordinates with the NUS CELC department on a specialised English language programme for YST students requiring English language support. In addition, the office also oversees the Admissions and Student Support Office which manages all admission enquiries and the administration of student records, and the Alumni Engagement Office.</p> <p>2.1.6 Academic Affairs and Professional Integration Office<br/>A/P Craig De Wilde Vice Dean (Academic Programmes, Composition &amp; Research)</p> |

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|     |      |                     | <p>Tel: 6516-1107 Email: <a href="mailto:muscjdw@nus.edu.sg">muscjdw@nus.edu.sg</a><br/> A/P Chan Tze Law Vice Dean (Professional Integration)<br/> Tel: 6516-5742 Email: <a href="mailto:musctl@nus.edu.sg">musctl@nus.edu.sg</a><br/> Ms Joanne Soh Senior Manager (Academic Affairs)<br/> Tel: 6516-5559 Email: <a href="mailto:mussohj@nus.edu.sg">mussohj@nus.edu.sg</a><br/> Ms Jenny Lee Manager (Academic Liaison and Professional Integration)<br/> Tel: 6516-1214 Email: <a href="mailto:muslsh@nus.edu.sg">muslsh@nus.edu.sg</a></p> <p>The Academic Affairs Office maintains the academic files and grades for all students enrolled in the Conservatory. The office coordinates module registration for each semester, scheduling of rooms and classes, juries and course examinations, grade processing and report preparation, and academic counselling for students.</p> <p>The Professional Integration Office helps prepare students for entry into the professional world and in relation to potential graduate study.</p> <p>2.1.7 Ensembles &amp; Professional Development Office<br/> Assoc Prof Chan Tze Law Associate Director<br/> Tel: 6516-5742 Email: <a href="mailto:musctl@nus.edu.sg">musctl@nus.edu.sg</a><br/> Ms Yap Zi Qi Orchestra &amp; Ensembles Manager<br/> Tel: 6516-1193 Email: <a href="mailto:musypy@nus.edu.sg">musypy@nus.edu.sg</a></p> <p>The Ensembles &amp; Professional Development Office oversees students in relation to their involvement in ensemble activity in the Conservatory and also helps prepare students for entry into the professional world and in relation to potential graduate study.</p> <p>The Orchestra &amp; Ensembles Manager manages all personnel, materials and activities related to the Conservatory's ensembles, instrumental repertoire classes and instrument loans. The Orchestra &amp; Ensembles Manager also coordinates the placement audition process, schedules ensemble rehearsals, prepares the stage for rehearsals and performances, and supervises the distribution of scores. The office works with the Concerts &amp; Events Office to coordinate set-ups for performances, masterclasses, lectures and competitions.</p> <p>2.1.8 Programming and Productions Office<br/> Ms Tang I Shyan Senior Manager<br/> Tel: 6516-5943 Email: <a href="mailto:mustis@nus.edu.sg">mustis@nus.edu.sg</a><br/> Ms Poo Lai Fong Manager<br/> Tel: 6516-5972 Email: <a href="mailto:musplf@nus.edu.sg">musplf@nus.edu.sg</a></p> |

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|     |      |                     | <p>Mr Howard Ng Su Chee Senior Executive<br/>Tel: 6516-1167 Email: <a href="mailto:musnsch@nus.edu.sg">musnsch@nus.edu.sg</a></p> <p>Mr Mike Tan Specialist Associate<br/>Tel: 6516-8209 Email: <a href="mailto:mustanwb@nus.edu.sg">mustanwb@nus.edu.sg</a></p> <p>Mr Wah Peng Specialist Associate<br/>Tel: 6516-8209 Email: <a href="mailto:muswp@nus.edu.sg">muswp@nus.edu.sg</a></p> <p>The Concerts &amp; Events Office is responsible for coordinating the schedule of Conservatory concerts, recitals, lectures, masterclasses, festivals, and competitions. The office also arranges the logistics involved in the booking and use of concert facilities, equipment and transport. The Concert Office publishes the Conservatory concert calendar and concert programmes, and supervises Box Office management, ticket sales, and the employment of ushers.</p> <p>The Stage Managers work with the Concert Office, the Office of Academic Affairs, and the Facilities Office to coordinate stage setup and instrumental needs for performances, masterclasses, juries, recitals, lectures and competitions.</p> <p>2.1.9 Music Library<br/>Ms Lynette Lim Principal Librarian<br/>Tel: 6516-8128 Email: <a href="mailto:clblimkc@nus.edu.sg">clblimkc@nus.edu.sg</a></p> <p>The Music Library has over 30,679 music scores, 15,575 CD/DVD titles, 8129 book titles and 87 journal titles. The seating capacity is 82. There are multimedia workstations for users to enjoy the library's multimedia titles. Student matriculation cards also serve as library cards for checking out materials.</p> <p>2.2 FACULTY</p> <p>2.2.1 Violin<br/>Professor Qian Zhou Head of Strings<br/>Assoc Prof Zuo Jun, Associate Professor, Violin<br/>Mr Ang Chek Meng Artist Faculty, Violin<br/>Mr Ng Yu-Ying Artist Faculty, Violin<br/>Mr Alexander Souptel Artist Faculty, Violin</p> <p>2.2.2 Viola<br/>Assoc Prof Zhang Manchin, Associate Professor, Viola<br/>Mr Lionel Tan Artist Faculty, Viola</p> |



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|     |      |                     | <p>2.2.3 Cello<br/> Assoc Prof Qin Li-Wei, Associate Professor, Cello<br/> Mr Leslie Tan Artist Faculty, Cello<br/> Mr Ng Pei-Sian Artist Faculty, Cello</p> <p>2.2.4 Double Bass<br/> Mr Guennadi Mouzyka Artist Faculty, Double Bass</p> <p>2.2.5 Woodwinds<br/> Assoc Prof Zhang Jin Min Head of Woodwind Studies<br/> Mr Evgueni Brokmiller, Artist Faculty, Flute<br/> Ms Rachel Walker Artist Faculty, Oboe<br/> Ms Carolyn Hollier Artist Faculty, Oboe<br/> Mr Ma Yue Artist Faculty, Clarinet</p> <p>2.2.6 Brass<br/> Mr Brett Stemple Head of Brass Studies<br/> Mr Han Chang Chou Artist Faculty, Horn<br/> Mr Jamie Hersch Artist Faculty, Horn<br/> Mr Jon Dante Artist Faculty, Trumpet<br/> Mr Allen Meek Artist Faculty, Trombone<br/> Mr Zachary Bond Artist Faculty, Trombone</p> <p>2.2.7 Percussion<br/> Mr Jonathan Fox Artist Faculty, Percussion</p> <p>2.2.8 Harp<br/> Ms Gulnara Mashurova Artist Faculty, Harp</p> <p>2.2.9 Voice<br/> Prof Alan Bennett Head of Vocal Studies</p> <p>2.2.10 Piano<br/> Prof Thomas Hecht Head of Piano Studies<br/> Assoc Prof Albert Tiu Associate Professor, Piano</p> |

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|     |      |                     | <p>Dr Choi Hye-Seon Lecturer<br/> Ms Liu Jia Lecturer<br/> Mr Ge<br/> Xiaozhe Accompanist<br/> Mr Kerim<br/> Vergazov Accompanist<br/> Ms Cherie<br/> Khor Accompanist<br/> Mr Clarence<br/> Lee Accompanist<br/> Ms Beatrice<br/> Lin Accompanist<br/> Mr Nicholas<br/> Loh Accompanist<br/> Mr Matthew<br/> Mak Accompanist<br/> Mr Azariah<br/> Tan Accompanist<br/> Ms Teo Li<br/> ChinAccompanist<br/> Ms Kseniia Vokhmianina Accompanist</p> <p>2.2.11 Recording Arts &amp; Science<br/> Mr Zhou Xiaodong Senior Lecturer</p> <p>2.2.12 Composition<br/> Assoc Prof Ho Chee Kong Associate Professor, Composition<br/> Assoc Prof Peter Edwards Associate Professor, Composition</p> <p>2.2.13 Professional Integration<br/> Assoc Prof Jason Lai Principal Conductor, The Conservatory Orchestra<br/> Assoc Prof Chan Tze Law Conductor, Conservatory New Music Ensemble<br/> Assoc Prof Shane Taylor Constante Associate<br/> Professor</p> |

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|     |      |                     | <p>Ms Bethany May Nette, Professional Integration Co-ordinator<br/> The T'ang Quartet Quartet-in-Residence<br/> Mr Lim Yan Chamber Music Coaching</p> <p>2.2.14 Academic Studies<br/> Assoc Prof Peter Edwards Head of Composition (Compositional Studies)<br/> Assoc Prof Tony Makarome Yue Associate Professor<br/> Assoc Prof Greg Petersen Associate Professor<br/> Dr Koo Siaw-Sing Senior Lecturer<br/> Ms Adeline Wong Lecturer<br/> Dr Lee Pei Ming Adjunct Faculty<br/> Ms Khoo Sim Lyn Adjunct Faculty<br/> Ms Maureen Tan Adjunct Faculty<br/> Mr Frank Demeglio Adjunct Faculty<br/> Ms Julie Tan Adjunct Faculty<br/> Mr Sonny Lim Cheng Yin Adjunct Faculty<br/> Dr Ruth Rodriguez Adjunct Faculty<br/> Dr Marc Rochester Adjunct Faculty<br/> Dr Wong Su Sun Adjunct Faculty<br/> Dr Thomas Manhart Adjunct Faculty<br/> Mr V. Raghuraman Adjunct Faculty<br/> Mr Chong Wai Lun Adjunct Faculty<br/> Mr Daniel Fong Adjunct Faculty<br/> Dr Khoo Hui-Ling Adjunct Faculty<br/> Mr Loh Jun Hong Adjunct Faculty<br/> Mr Gabriel Lee Adjunct Faculty</p> <p>2.1. Senior Management</p> <p>DEAN<br/> Prof Bernard Lanskey</p> |

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|     |      |                     | <p>Tel: 6516-1107</p> <p>VICE-DEAN, ACADEMIC STUDIES &amp; RESEARCH<br/>Assoc Prof Craig De Wilde<br/>Tel: 6516-7507</p> <p>VICE-DEAN, PROFESSIONAL INTEGRATION<br/>Assoc Prof Chan Tze Law<br/>Tel: 6516-5742</p> <p>ASSISTANT DEAN, COMPOSITION &amp; CONTEMPORARY MUSIC<br/>Assoc Prof Peter Edwards<br/>Tel: 6516-6221</p> <p>ASSOCIATE DEAN, ADMINISTRATION<br/>Ms Rachel Tang<br/>Tel: 6516-1093</p> <p>SENIOR ASSOCIATE DIRECTOR, ARTISTIC ADMINISTRATION &amp; STRATEGIC DEVELOPMENT<br/>Ms Jenny Ang<br/>Tel: 6516-6189</p> <p>SENIOR ASSOCIATE DIRECTOR, STUDENT LIFE<br/>Mr Tan Wei Boon<br/>Tel: 6516-4197</p> <p>2.2. Administration</p> <p>SECRETARY (DEAN'S OFFICE)<br/>Mrs Wendy Lee<br/>Tel: 6516-1107</p> <p>ACADEMIC AFFAIRS</p> |

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|     |      |                     | <p>The Academic Affairs Office maintains the academic files and grades for all students enrolled in the Conservatory. The office coordinates module registration for each semester, scheduling of classes, juries and course examinations, grade processing and report preparation, and academic counselling for students.</p> <p>Assoc Prof Craig De Wilde, Vice Dean (Academic Studies &amp; Research)<br/>Tel: 6516-7507</p> <p>Mr Tay Hiong Kiat Marcus</p> <p><b>PROFESSIONAL INTEGRATION</b><br/>The Professional Integration Office helps prepare students for entry into the professional world and potential graduate study.</p> <p>Assoc Prof Chan Tze Law, Vice Dean (Professional Integration)<br/>Tel: 6516-5742</p> <p>Ms Jenny Lee<br/>Tel: 6516-1214</p> <p><b>STUDENT LIFE</b><br/>The Office of Student Life is in charge of all matters in relation to admissions, student records administration, student welfare, student counselling and wellness, student initiatives and activities, student resident living, international exchanges, and alumni engagement.</p> <p>Mr Tan Wei Boon, Senior Associate Director (Student Life)<br/>Tel: 6516-4197</p> <p>Admissions &amp; Student Support<br/>Ms Chiam Hui Li<br/>Tel: 6516-8691</p> <p>Alumni Engagement<br/>Mr Harris Ang<br/>Tel: 6516-1191</p> <p><b>ARTISTIC ADMINISTRATION &amp; STRATEGIC DEVELOPMENT</b></p> |

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|     |      |                     | <p>The Artistic Administration &amp; Strategic Development office manages the following areas:</p> <ul style="list-style-type: none"> <li>- Strategic initiatives in relation to institutional development, curriculum, research and events planning;</li> <li>- Conservatory concerts, recitals, lectures, masterclasses, festivals and competitions, including overseeing scheduling, logistics, publicity and audience management;</li> <li>- Conservatory ensemble activities including personnel, scheduling and logistics;</li> <li>- Institutional branding and profile-building locally and internationally, marketing and publicity, and media relations.</li> </ul> <p>Ms Jenny Ang, Senior Associate Director (Artistic Administration &amp; Strategic Development)<br/>Tel: 6516-6189</p> <p>Programming &amp; Productions<br/>Ms Tang I Shyan<br/>Tel: 6516-5943</p> <p>Ms Poo Lai Fong<br/>Tel: 6516-5972</p> <p>Mr Howard Ng<br/>Tel: 6516-1167</p> <p>Mr Mike Tan<br/>Tel: 6516-8209</p> <p>Mr Wah Peng<br/>Tel: 6516-5367</p> <p>Orchestra &amp; Ensembles<br/>Ms Yap Zi Qi<br/>Tel: 6516-1193</p> <p>Communications &amp; Engagement<br/>Ms Ong Shu Chen<br/>Tel: 6516-7482</p> <p>FINANCE &amp; RESOURCES</p> |

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|     |      |                     | <p>The Finance &amp; Resources Office oversees the Conservatory's fiscal and administrative management systems, financial and business services, human resources, endowment management, information technology solutions, property and facilities management, and the security and maintenance of its facilities.</p> <p>Ms Rachel Tang, Associate Dean (Administration)<br/>Tel: 6516-1093</p> <p>Mr Adrian Toh<br/>Tel: 6516-1300</p> <p>Mr Eddie Low<br/>Tel: 6516-8210</p> <p>Mr Li Zhi Xian<br/>Tel: 6516-1165</p> <p>Ms Lim Pei Min<br/>Tel: 6516-8208</p> <p>Ms Michelle Leong<br/>Tel: 6516-8207</p> <p>MUSIC LIBRARY<br/>Ms Lynette Lim, Principal Librarian<br/>Tel: 6516-8128</p> <p>2.3. Faculty</p> <p>STRINGS<br/>Prof Qian Zhou, Head of Strings &amp; Professor, Violin<br/>Assoc Prof Zuo Jun, Associate Professor, Violin<br/>Assoc Prof Zhang Manchin, Associate Professor, Viola<br/>Assoc Prof Qin Li-Wei, Associate Professor, Cello</p> <p>Adjunct</p> |

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|     |      |                     | <p>Mr Ang Chek Meng, Artist Faculty, Violin<br/> Mr Ng Yu-Ying, Artist Faculty, Violin<br/> Mr Alexander Souptel, Artist Faculty, Violin<br/> Mr Lionel Tan, Artist Faculty, Viola<br/> Mr Ng Pei-Sian, Artist Faculty, Cello<br/> Mr Leslie Tan, Artist Faculty, Cello<br/> Mr Guennadi Mouzyka, Artist Faculty, Double Bass<br/> Ms Gulnara Mashurova, Artist Faculty, Harp<br/> The T'ang Quartet, Quartet in Residence<br/> Ms Cao Can, Teaching Assistant, Violin<br/> Mr Oleksandr Korniev, Teaching Assistant, Violin<br/> Ms Gu Bingjie, Teaching Assistant, Viola<br/> Ms Wu Dai Dai, Teaching Assistant, Cello</p> <p><b>WOODWINDS</b><br/> Assoc Prof Zhang Jin Min, Head of Woodwinds &amp; Associate Professor, Bassoon</p> <p>Adjunct<br/> Mr Evgueni Brokmiller, Artist Faculty, Flute<br/> Dr Cheryl Lim, Artist Faculty, Flute<br/> Mr Ma Yue, Artist Faculty, Clarinet<br/> Ms Carolyn Hollier, Artist Faculty, Oboe<br/> Ms Rachel Walker, Artist Faculty, Oboe</p> <p><b>BRASS &amp; PERCUSSION</b><br/> Assoc Prof Brett Stemple, Head of Brass &amp; Percussion &amp; Associate Professor, Tuba</p> <p>Adjunct<br/> Mr Jon Dante, Artist Faculty, Trumpet<br/> Mr Lau Wen Rong, Artist Faculty, Trumpet<br/> Mr Han Chang Chou, Artist Faculty, Horn<br/> Mr Jamie Hersch, Artist Faculty, Horn<br/> Mr Sam Armstrong, Artist Faculty, Trombone<br/> Mr Allen Meek, Artist Faculty, Trombone<br/> Mr Marques Young, Artist Faculty, Trombone<br/> Mr Jonathan Fox, Artist Faculty, Percussion</p> |



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|     |      |                     | <p>VOICE<br/>Prof Alan Bennett, Head of Vocal Studies</p> <p>PIANO<br/>Prof Thomas Hecht, Head of Keyboard Studies<br/>Assoc Prof Albert Tiu</p> <p>CHAMBER MUSIC &amp; COLLABORATIVE PIANO<br/>Mr Lim Yan, Senior Lecturer<br/>Prof Bernard Lanskey, Dean<br/>Dr Choi Hye-Seon, Lecturer<br/>Ms Liu Jia, Lecturer</p> <p>ACCOMPANISTS (ADJUNCT)<br/>Ms Rachel Chen<br/>Mr Ge Xiaozhe<br/>Ms Evelyn Handrisanto<br/>Dr Cherie Khor<br/>Mr Clarence Lee<br/>Ms Beatrice Lin<br/>Mr Nicholas Loh<br/>Mr Matthew Mak<br/>Ms Teo Li Chin<br/>Mr Kerim Vergazov</p> <p>AUDIO ARTS &amp; SCIENCES<br/>Mr Zhou Xiaodong, Senior Lecturer</p> <p>Adjunct<br/>Mr Gao Yang<br/>Mr Sonny Lim Cheng Yin<br/>Mr Shah Tahir</p> <p>ANALYSIS &amp; COMPOSITION<br/>Assoc Prof Peter Edwards, Assistant Dean, Composition &amp; Contemporary Music</p> |

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|     |      |                     | <p>Assoc Prof Ho Chee Kong<br/> Dr Chen Zhangyi, Assistant Professor<br/> Dr Nick Omiccioli, Assistant Professor<br/> Ms Adeline Wong, Lecturer<br/> Mr Martin Jaggi, Artist Faculty<br/> Dr Chow Jun Yan, Teaching Assistant</p> <p>CONTEMPORARY MUSIC (ADJUNCT)<br/> Mr Martin Jaggi<br/> Mr Max Riefer<br/> Mr Christoph Wichert<br/> Ms Yoon Jung-A</p> <p>CONDUCTING<br/> Assoc Prof Jason Lai, Principal Conductor, YST Conservatory Orchestra<br/> Assoc Prof Chan Tze Law, Vice Dean (Professional Integration)</p> <p>CONTEXTUAL STUDIES<br/> Assoc Prof Craig De Wilde, Vice Dean (Academic Studies &amp; Research)<br/> Assoc Prof Greg Petersen, Associate Professor, Humanities<br/> Dr Koo Siaw Sing, Senior Lecturer<br/> Dr Marc Rochester, Senior Lecturer, Music History &amp; Criticism<br/> Dr Khoo Hui Ling, Instructor<br/> Ms Abigail Sin, Instructor</p> <p>PROFESSIONAL INTEGRATION<br/> Assoc Prof Chan Tze Law, Vice Dean (Professional Integration)<br/> Assoc Prof Shane Taylor Constante<br/> Assoc Prof Tony Makarome Yue<br/> Ms Bethany Nette, Professional Integration Coordinator</p> <p>ADJUNCT FACULTY<br/> Dr Kathleen Agres<br/> Mr Adrian Chiang<br/> Mr Chong Wai Lun<br/> Mr Frank Demeglio</p> |

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|     |      |                     | <p>Dr Sara Florian<br/>Mr Daniel Fong<br/>Ms Khoo Sim Lyn<br/>Mr Gabriel Lee<br/>Mr Loh Jun Hong<br/>Mr Bani Haykal Mohamed<br/>Mr Keane Ong<br/>Mr V. Raghuraman<br/>Dr Ruth Rodrigues<br/>Ms Julie Tan<br/>Mr Michael Tan<br/>Mr Zhu Zhengyi</p> <p>5.1. Conservatory Building<br/> <a href="http://www.nus.edu.sg/nusbulletin/yong-siew-toh-conservatory-of-music/other-administrative-information/conservatory-building/">http://www.nus.edu.sg/nusbulletin/yong-siew-toh-conservatory-of-music/other-administrative-information/conservatory-building/</a><br/> (During Semesters)<br/> Monday though Sunday: 6:00 AM to 12:00 midnight<br/> (Including Public Holidays)<br/> Entrance to most areas of the building is by card access only. Opening hours during vacation will be shorter.<br/> Monday through Sunday during semesters (including public holidays): 6.00am – 12.00am<br/> Entrance to most parts of the building is by card access only.<br/> Opening hours during vacation will be shorter.</p> <p>5.2. Administration Offices Contacts by Department</p> |

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|     |      |                     | <p><a href="http://www.nus.edu.sg/nusbulletin/yong-siew-toh-conservatory-of-music/other-administrative-information/administration-offices/">http://www.nus.edu.sg/nusbulletin/yong-siew-toh-conservatory-of-music/other-administrative-information/administration-offices/</a></p> <p>Opening Hours<br/>Monday - Thursday: 8.30am - 6.00pm<br/>Friday: 8.30am - 5.30pm</p> <p>Closed during lunch from 12.30 to 1.30pm on weekdays, as well as weekends and public holidays.</p> <p>Academic Affairs<br/>Email: <a href="mailto:musmodules@nus.edu.sg">musmodules@nus.edu.sg</a></p> <p>Admissions<br/>Tel: 6516-8691/6516-1191<br/>Email: <a href="mailto:musadmissions@nus.edu.sg">musadmissions@nus.edu.sg</a></p> <p>General Enquiries<br/>Tel: 6516-1167<br/>Email: <a href="mailto:musgeneral@nus.edu.sg">musgeneral@nus.edu.sg</a></p> <p>Giving<br/>Tel: 6516-7482<br/>Email: <a href="mailto:musosc@nus.edu.sg">musosc@nus.edu.sg</a></p> <p>Media Queries<br/>Tel: 6516-7482<br/>Email: <a href="mailto:musosc@nus.edu.sg">musosc@nus.edu.sg</a></p> <p>Programming &amp; Productions<br/>Tel: 6516-1167<br/>Email: <a href="mailto:musconcerts@nus.edu.sg">musconcerts@nus.edu.sg</a></p> <p>Rental of Venues<br/>Tel: 6516-5972<br/>Email: <a href="mailto:musvenues@nus.edu.sg">musvenues@nus.edu.sg</a></p> |

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|     |      |                     | <p>Music Library<br/>Tel: 6516-8130</p> <p>Security Office<br/>Conservatory Fire Command Centre<br/>Tel: 6516-7476</p> <p>General Enquiries<br/>Tel: 6516-7482<br/>Fax: 6872-6915<br/>Email: musgeneral@nus.edu.sg</p> <p>Programming and Productions<br/>Tel: 6516-1167<br/>Email: musconcerts@nus.edu.sg</p> <p>Admissions<br/>Tel: 6516-1191<br/>Email: musadmissions@nus.edu.sg</p> <p>Student Support<br/>Tel: 6516-8691<br/>Email: huili@nus.edu.sg</p> <p>Academic Affairs/Professional Integration<br/>Tel: 6516-1214<br/>Email: musbox17@nus.edu.sg</p> <p>Rental of Venues<br/>Tel: 6516-7482<br/>Email: musvenues@nus.edu.sg</p> <p>(During Semesters)<br/>Monday through Thursday: 8:30 AM to 6:00 PM*<br/>Friday: 8:30 AM to 5:30 PM*</p> |

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|     |      |                     | <p>Saturday, Sunday: Closed<br/>&amp; Public Holiday<br/>*The office is closed for lunch from 12:30 PM to 1:30 PM</p> <p>Music Library<br/>Tel: 6516-8130<br/>(During Semesters)<br/>Monday – Friday: 8.00 AM to 6.00 PM (Week 1 – 13)<br/>8:00 AM to 8.00PM (Week 14 – 16)<br/>Saturday: 9.00 AM to 6.00 PM<br/>Sunday: Closed (Week 1 – 12)<br/>11.00 AM to 6.00 PM (Week 13 – 16)<br/>Public holidays: Closed (Week 1 – 12)<br/>11.00 AM to 6.00 PM (Week 14 – 16)<br/>(During Vacations)<br/>Monday – Friday: 8.30am to 6.00pm<br/>Saturday Sunday: Closed<br/>&amp; Public Holiday</p> <p>Security Office<br/>Opening Hours – 24 hours, 7 days a week.<br/>Conservatory Fire Command Centre<br/>Tel: 6516-7476</p> <p>Campus Security<br/>Tel: 6516-1616</p> <p>Conservatory Offices<br/>Programming and Productions<br/>The Concerts and Events Office oversees and coordinates the scheduling of Conservatory concerts, lectures, master classes, festivals, and competitions. The Office also arranges the logistics involved in the booking and use of concert facilities, equipment and transport. The Concerts and Events Office publishes the Conservatory concert calendar and concert programmes, and supervises Box Office management and ticket sales, and the employment of ushers.</p> |

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|     |      |                     | <p><b>Strategic Planning &amp; External Relations</b><br/>The External Relations Office is responsible for promoting an awareness of the Conservatory to its various constituencies. It handles media relations, produces the Conservatory's corporate brochures, the Conservatory newsletter, manages information on the Conservatory website, and works in consultation with the Concert Office on publicity for concerts and other special events.</p> <p><b>Academic Affairs/Professional Integration</b><br/>The Academic Affairs Office maintains the academic files and grades for all students enrolled in the Conservatory. The Office coordinates module registration for each semester, scheduling of rooms and classes, examinations, grade processing and report preparation, and academic counselling for students.<br/>The Professional Integration Office helps prepare students for entry into the professional world and in relation to potential graduate study.</p> <p><b>Office of Student Life</b><br/>The Office of Student Life is in charge of all matters in relation to student resident living, international exchanges, student initiatives, social functions, welfare, counseling and wellness, student activities, freshmen orientation and student cultural engagement projects. The office also coordinates with the NUS CELC department on a specialised English language programme for YST students requiring English language support. In addition, the office also oversees the Admissions and Student Support Office which manages all admission enquiries and the administration of student records, and the Alumni Engagement Office.</p> <p><b>5.4. Instrument Loans</b><br/><a href="http://www.nus.edu.sg/nusbulletin/yong-siew-toh-conservatory-of-music/other-administrative-information/instrument-loans/">http://www.nus.edu.sg/nusbulletin/yong-siew-toh-conservatory-of-music/other-administrative-information/instrument-loans/</a></p> <p>The Conservatory maintains a set of music instruments for the use of conservatory students. The Orchestra &amp; Ensembles Office is responsible for administering instrument loans to students who wish to borrow instruments for rehearsals, classes or performances. All instrument loans are subject to faculty's recommendation and availability of the instruments. No musical instruments may leave the Conservatory Building except for scheduled Conservatory rehearsals and performances.</p> <p>Additionally, string students have the opportunity to practice and perform on rare instruments from the unique Rin Collection. Currently, over 60 instruments are on loan from this collection from the late Mr Rin Kei Mei and Mrs Rin.</p> <p>Please contact the Orchestra &amp; Ensembles Office for enquiries.</p> |

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|     |             |                     | <p>5.5. Music Library<br/> <a href="http://www.nus.edu.sg/nusbulletin/yong-siew-toh-conservatory-of-music/other-administrative-information/music-library/">http://www.nus.edu.sg/nusbulletin/yong-siew-toh-conservatory-of-music/other-administrative-information/music-library/</a></p> <p>The Music Library has over 25,000 music scores, 14,000 CD/DVD titles, 8,000 book titles and 140 journals titles. The seating capacity is 82. There are multimedia workstations for users to enjoy the library's multimedia titles. Student matriculation cards also serve as library cards for checking out materials.</p> <p>The YST Music Library has over 30,000 music scores, 15,000 CD/DVD titles, 8000 book titles and 80 journal titles. It seats 82, and offers multimedia workstations for use.</p> |
| 42. | 14 Jan 2019 | YSTCM               | <p>Yong Siew Toh Conservatory of Music<br/> 2. Key Contact information<br/> <a href="http://www.nus.edu.sg/nusbulletin/yong-siew-toh-conservatory-of-music/key-contact-information/">http://www.nus.edu.sg/nusbulletin/yong-siew-toh-conservatory-of-music/key-contact-information/</a></p> <p>2.1. Senior Management<br/> DEAN<br/> Prof Bernard Lanskey<br/> Tel: 6516-1107</p> <p>VICE-DEAN, ACADEMIC STUDIES &amp; RESEARCH<br/> Assoc Prof Craig De Wilde<br/> Tel: 6516-7507</p> <p>VICE-DEAN, PROFESSIONAL INTEGRATION<br/> Assoc Prof Chan Tze Law<br/> Tel: 6516-5742</p> <p>ASSISTANT DEAN, COMPOSITION &amp; CONTEMPORARY MUSIC<br/> Assoc Prof Peter Edwards<br/> Tel: 6516-6221</p> <p>ASSOCIATE DEAN, ADMINISTRATION<br/> Ms Rachel Tang<br/> Tel: 6516-1093</p>                           |



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|     |      |                     | <p>SENIOR ASSOCIATE DIRECTOR, ARTISTIC ADMINISTRATION &amp; STRATEGIC DEVELOPMENT DEPUTY DIRECTOR, ARTISTIC ADMINISTRATION &amp; STRATEGIC DEVELOPMENT<br/>Ms Jenny Ang<br/>Tel: 6516-6189</p> <p>SENIOR ASSOCIATE DIRECTOR, STUDENT LIFE DEPUTY DIRECTOR, STUDENT LIFE<br/>Mr Tan Wei Boon<br/>Tel: 6516-4197</p> <p>2.2. Administration</p> <p>SECRETARY (DEAN'S OFFICE)<br/>Mrs Wendy Lee<br/>Tel: 6516-1107</p> <p>ACADEMIC AFFAIRS<br/>The Academic Affairs Office maintains the academic files and grades for all students enrolled in the Conservatory. The office coordinates module registration for each semester, scheduling of classes, juries and course examinations, grade processing and report preparation, and academic counselling for students.<br/>Assoc Prof Craig De Wilde, Vice Dean (Academic Studies &amp; Research)<br/>Tel: 6516-7507<br/>Mr Tay Hiong Kiat Marcus</p> <p>PROFESSIONAL INTEGRATION<br/>The Professional Integration Office helps prepare students for entry into the professional world and potential graduate study.<br/>Assoc Prof Chan Tze Law, Vice Dean (Professional Integration)<br/>Tel: 6516-5742<br/>Ms Jenny Lee<br/>Tel: 6516-1214</p> <p>STUDENT LIFE<br/>The Office of Student Life is in charge of all matters in relation to admissions, student records administration, student welfare, student counselling and wellness, student initiatives and activities, student resident living, international exchanges, and alumni engagement.<br/>Mr Tan Wei Boon, Senior Associate Director (Student Life)</p> |

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|     |      |                     | <p>Mr Tan Wei Boon, Deputy Director (Student Life)<br/>Tel: 6516-4197</p> <p>Admissions &amp; Student Support<br/>Ms Chiam Hui Li<br/>Tel: 6516-8691<br/>Alumni Engagement<br/>Mr Harris Ang<br/>Tel: 6516-1191</p> <p><b>ARTISTIC ADMINISTRATION &amp; STRATEGIC DEVELOPMENT</b><br/>The Artistic Administration &amp; Strategic Development office manages the following areas:<br/>Strategic initiatives in relation to institutional development, curriculum, research and events planning;<br/>Conservatory concerts, recitals, lectures, masterclasses, festivals and competitions, including overseeing scheduling, logistics, publicity and audience management;<br/>Conservatory ensemble activities including personnel, scheduling and logistics;<br/>Institutional branding and profile-building locally and internationally, marketing and publicity, and media relations.</p> <p>Ms Jenny Ang, Senior Associate Director (Artistic Administration &amp; Strategic Development)<br/>Ms Jenny Ang, Deputy Director (Artistic Administration &amp; Strategic Development)<br/>Tel: 6516-6189</p> <p>Programming &amp; Productions<br/>Ms Tang I Shyan<br/>Tel: 6516-594</p> <p>Ms Poo Lai Fong<br/>Tel: 6516-5972</p> <p>Mr Howard Ng<br/>Tel: 6516-1167</p> <p>Mr Mike Tan<br/>Tel: 6516-8209</p> |

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|     |      |                     | <p>Mr Wah Peng<br/>Tel: 6516-5367</p> <p>Orchestra &amp; Ensembles<br/>Ms Yap Zi Qi<br/>Tel: 6516-1193</p> <p>Communications &amp; Engagement<br/>Ms Ong Shu Chen<br/>Tel: 6516-7482</p> <p><b>FINANCE &amp; RESOURCES</b><br/>The Finance &amp; Resources Office oversees the Conservatory's fiscal and administrative management systems, financial and business services, human resources, endowment management, information technology solutions, property and facilities management, and the security and maintenance of its facilities.</p> <p>Ms Rachel Tang, Associate Dean (Administration)<br/>Tel: 6516-1093</p> <p>Mr Adrian Toh<br/>Tel: 6516-1300</p> <p>Mr Eddie Low<br/>Tel: 6516-8210</p> <p>Mr Li Zhi Xian<br/>Tel: 6516-1165</p> <p>Ms Lim Pei Min<br/>Tel: 6516-8208</p> <p>Ms Michelle Leong<br/>Tel: 6516-8207</p> <p><b>MUSIC LIBRARY</b></p> |

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|     |      |                     | <p>Ms Lynette Lim, Principal Librarian<br/>Tel: 6516-8128</p> <p>2.3. Faculty</p> <p><b>STRINGS</b><br/> Prof Qian Zhou, Head of Strings &amp; Professor, Violin<br/> Assoc Prof Zuo Jun, Associate Professor, Violin<br/> Assoc Prof Zhang Manchin, Associate Professor, Viola<br/> Assoc Prof Qin Li-Wei, Associate Professor, Cello</p> <p>Adjunct<br/> Mr Ang Chek Meng, Artist Faculty, Violin<br/> Mr Ng Yu-Ying, Artist Faculty, Violin<br/> Mr Alexander Souptel, Artist Faculty, Violin<br/> Mr Lionel Tan, Artist Faculty, Viola<br/> Mr Ng Pei-Sian, Artist Faculty, Cello<br/> Mr Leslie Tan, Artist Faculty, Cello<br/> Mr Guennadi Mouzyka, Artist Faculty, Double Bass<br/> Ms Gulnara Mashurova, Artist Faculty, Harp<br/> The T'ang Quartet, Quartet in Residence<br/> Ms Cao Can, Teaching Assistant, Violin<br/> Mr Oleksandr Korniev, Teaching Assistant, Violin<br/> Ms Gu Bingjie, Teaching Assistant, Viola<br/> Ms Wu Dai Dai, Teaching Assistant, Cello</p> <p><b>WOODWINDS</b><br/> Assoc Prof Zhang Jin Min, Head of Woodwinds &amp; Associate Professor, Bassoon</p> <p>Adjunct<br/> Mr Evgueni Brokmiller, Artist Faculty, Flute<br/> Dr Cheryl Lim, Artist Faculty, Flute<br/> Mr Ma Yue, Artist Faculty, Clarinet<br/> Ms Carolyn Hollier, Artist Faculty, Oboe<br/> Ms Rachel Walker, Artist Faculty, Oboe</p> |

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|     |      |                     | <p><b>BRASS &amp; PERCUSSION</b><br/> Assoc Prof Brett Stemple, Assistant Dean, Performance &amp; Artistic Research</p> <p>Adjunct<br/> Mr Jon Dante, Artist Faculty, Trumpet<br/> Mr Lau Wen Rong, Artist Faculty, Trumpet<br/> Mr Han Chang Chou, Artist Faculty, Horn<br/> Mr Jamie Hersch, Artist Faculty, Horn<br/> Mr Sam Armstrong, Artist Faculty, Trombone<br/> Mr Allen Meek, Artist Faculty, Trombone<br/> Mr Marques Young, Artist Faculty, Trombone<br/> Mr Jonathan Fox, Artist Faculty, Percussion</p> <p><b>VOICE</b><br/> Prof Alan Bennett, Head of Vocal Studies</p> <p><b>PIANO</b><br/> Prof Thomas Hecht, Head of Keyboard Studies<br/> Assoc Prof Albert Tiu</p> <p><b>CHAMBER MUSIC &amp; COLLABORATIVE PIANO</b><br/> Mr Lim Yan, Senior Lecturer<br/> Prof Bernard Lanskey, Dean<br/> Dr Choi Hye-Seon, Lecturer<br/> Ms Liu Jia, Lecturer</p> <p><b>ACCOMPANISTS (ADJUNCT)</b><br/> Ms Rachel Chen<br/> Mr Ge Xiaozhe<br/> Ms Evelyn Handrisanto<br/> Dr Cherie Khor<br/> Mr Clarence Lee<br/> Ms Beatrice Lin<br/> Mr Nicholas Loh<br/> Mr Matthew Mak<br/> Ms Teo Li Chin</p> |

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|     |      |                     | <p>Mr Kerim Vergazov</p> <p>AUDIO ARTS &amp; SCIENCES<br/>Mr Zhou Xiaodong, Senior Lecturer</p> <p>Adjunct<br/>Mr Gao Yang<br/>Mr Sonny Lim Cheng Yin<br/>Mr Shah Tahir</p> <p>ANALYSIS &amp; COMPOSITION<br/>Assoc Prof Peter Edwards, Assistant Dean, Composition &amp; Contemporary Music<br/>Assoc Prof Ho Chee Kong<br/>Dr Chen Zhangyi, Assistant Professor<br/>Dr Nick Omiccioli, Assistant Professor<br/>Ms Adeline Wong, Lecturer<br/>Mr Martin Jaggi, Artist Faculty<br/>Dr Chow Jun Yan, Teaching Assistant</p> <p>CONTEMPORARY MUSIC (ADJUNCT)<br/>Mr Martin Jaggi<br/>Mr Max Riefer<br/>Mr Christoph Wichert<br/>Ms Yoon Jung-A</p> <p>CONDUCTING<br/>Assoc Prof Jason Lai, Principal Conductor, YST Conservatory Orchestra<br/>Assoc Prof Chan Tze Law, Vice Dean (Professional Integration)</p> <p>CONTEXTUAL STUDIES<br/>Assoc Prof Craig De Wilde, Vice Dean (Academic Studies &amp; Research)<br/>Assoc Prof Greg Petersen, Associate Professor, Humanities<br/>Dr Koo Siaw Sing, Senior Lecturer<br/>Dr Marc Rochester, Senior Lecturer, Music History &amp; Criticism<br/>Dr Khoo Hui Ling, Instructor<br/>Ms Abigail Sin, Instructor</p> |

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|     |             |                     | <p>PROFESSIONAL INTEGRATION<br/> Assoc Prof Chan Tze Law, Vice Dean (Professional Integration)<br/> Assoc Prof Shane Taylor Constante<br/> Assoc Prof Tony Makarome Yue<br/> Ms Bethany Nette, Professional Integration Coordinator</p> <p>ADJUNCT FACULTY<br/> Dr Kathleen Agres<br/> Mr Adrian Chiang<br/> Mr Chong Wai Lun<br/> Mr Frank Demeglio<br/> Dr Sara Florian<br/> Mr Daniel Fong<br/> Ms Khoo Sim Lyn<br/> Mr Gabriel Lee<br/> Mr Loh Jun Hong<br/> Mr Bani Haykal Mohamed<br/> Mr Keane Ong<br/> Mr V. Raghuraman<br/> Dr Ruth Rodrigues<br/> Ms Julie Tan<br/> Mr Michael Tan<br/> Mr Zhu Zhengyi</p>   |
| 43. | 16 Oct 2018 | ISS                 | <p>URL: <a href="http://www.nus.edu.sg/nusbuletin/teaching-institutions/institute-of-systems-science/">http://www.nus.edu.sg/nusbuletin/teaching-institutions/institute-of-systems-science/</a></p> <p>2.1 <a href="#">Institute's Commitment</a><br/> 2.2 <a href="#">Key Contact Information</a><br/> 2.3 <a href="#">Programmes Offered</a><br/> 2.3.1 Master of Technology in Enterprise Business Analytics [<a href="#">MTECH EBAC</a>]<br/> 2.3.2 Master of Technology in Intelligent Systems [<a href="#">MTECH IS</a>] – hyperlink to link to MTECH IS Page<br/> 2.3.3 Master of Technology in IT Leadership [<a href="#">MTECH ITL</a>] – hyperlink no change<br/> 2.3.4 Master of Technology in Software Engineering [<a href="#">MTECH SE</a>]<br/> 2.3.5 Graduate Diploma in Systems Analysis [<a href="#">GDIPSA</a>]</p> |

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|     |      |                     | <p>2.4 <a href="#">Programme Requirements</a></p> <p>2.4.1 <a href="#">Master of Technology</a></p> <p>2.4.2 <a href="#">Graduate Diploma in Systems Analysis</a></p> <p>2.5 <a href="#">Financial Assistance and Awards</a></p> <p>URL: <a href="http://www.nus.edu.sg/nusbulletin/teaching-institutions/institute-of-systems-science/programmes-commitment/">http://www.nus.edu.sg/nusbulletin/teaching-institutions/institute-of-systems-science/programmes-commitment/</a></p> <p>2.1 Institute's Commitment</p> <p>The Institute of Systems Science, National University of Singapore (NUS-ISS) is committed to developing business and digital leaders and professionals for the future economy, through our Graduate &amp; Executive Programmes. Established in 1981, the Institute of Systems Science at the National University of Singapore (NUS-ISS) develops digital talent for the industry through graduate education, professional development programmes, consultancy, applied research and career services. NUS-ISS is widely recognized as a champion of the national Skills Future movement, enabling a digital economy that is always learning and always leading. NUS-ISS has implemented a unique portfolio of multiple learning pathways, with a wide spectrum of programmes in critical industry disciplines such as software development, data science, artificial intelligence, cybersecurity, smart health, digital government and digital innovation.</p> <p>NUS-ISS offers a myriad of pathways to help individuals around the world acquire new skills and knowledge. These holistic pathways enrich lives, grow careers and provide more opportunities for advancement in the industry. We help professionals and students stay relevant and competitive in an increasingly digitised world. With our range of immersive programmes, courses and services, we equip students with the necessary knowledge and relevant skills they need to embark on a lifelong journey of learning.</p> <p>Our practice-oriented graduate programmes create leaders and technology innovators looking to carve out a successful career in the Tech industry. Students learn from experienced lecturers with strong industry background and a record of applying their experience to solve real world problems. A hallmark of our programmes are the key internship and capstone project modules, which allow our students to learn as they deliver real outcomes in organisations in Singapore and overseas. We offer multiple graduate degrees strongly aligned to building the smart nation.</p> <p>Please visit the NUS-ISS website at: <a href="http://www.iss.nus.edu.sg">http://www.iss.nus.edu.sg</a> for more details.</p> <p>URL: <a href="http://www.nus.edu.sg/nusbulletin/teaching-institutions/institute-of-systems-science/programmes-offered/">http://www.nus.edu.sg/nusbulletin/teaching-institutions/institute-of-systems-science/programmes-offered/</a></p> <p>2.3 Programmes Offered</p> |



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|     |      |                     | <p>The Programme offers the following graduate degrees by coursework:</p> <p>2.3.1 Master of Technology in Enterprise Business Analytics [<a href="#">MTECH EBAC</a>]<br/> 2.3.2 Master of Technology in Intelligent Systems [<a href="#">MTECH IS</a>] - hyperlink to link to MTECH IS Page<br/> 2.3.3 Master of Technology in IT Leadership [<a href="#">MTECH ITL</a>]<br/> 2.3.4 Master of Technology in Software Engineering [<a href="#">MTECH SE</a>]<br/> 2.3.5 Graduate Diploma in Systems Analysis [<a href="#">GDIPSA</a>]</p> <p>URL: <a href="http://www.nus.edu.sg/nusbulletin/teaching-institutions/institute-of-systems-science/programmes-offered/master-of-technology-in-knowledge-engineering-mtech-ke/">http://www.nus.edu.sg/nusbulletin/teaching-institutions/institute-of-systems-science/programmes-offered/master-of-technology-in-knowledge-engineering-mtech-ke/</a> - this page deleted</p> <p>Added in a new page for the Master of Technology in Intelligent Systems below:-<br/> 2.3.2 Master of Technology in Intelligent Systems [MTECH IS]<br/> Overview<br/> The MTech IS programme emphasises the concepts, techniques and methods of Artificial Intelligence, and their application to the development of Intelligent Systems applications. The programme provides you with the essential knowledge and practical experience needed to become an Artificial Intelligence and Intelligent Systems specialist, and prepares you to be able to lead the development of Intelligent Systems in providing effective and optimal business solutions for your organisation.<br/> Learning outcomes:</p> <ul style="list-style-type: none"> <li>• Apply Intelligent Systems concepts, techniques and methods to solve varied problems across multiple domains including: business, manufacturing, engineering, healthcare etc.</li> <li>• Lead the development of Intelligent Systems using contemporary tools and techniques, including Artificial Intelligence, Machine Learning, Prediction, Forecasting, Classification, Clustering and Optimisation</li> <li>• Design and customise algorithms to solve complex business problems and create strategic advantage</li> </ul> <p>Recognition:<br/> Top student is awarded the SPH Medal and Prize<br/> Best Project Prize</p> <p>URL: <a href="http://www.nus.edu.sg/nusbulletin/teaching-institutions/institute-of-systems-science/programmes-offered/master-of-technology-in-it-leadership-mtech-itl/">http://www.nus.edu.sg/nusbulletin/teaching-institutions/institute-of-systems-science/programmes-offered/master-of-technology-in-it-leadership-mtech-itl/</a></p> <p>2.3.3 Master of Technology in IT Leadership [MTECH ITL]</p> <p>URL: <a href="http://www.nus.edu.sg/nusbulletin/teaching-institutions/institute-of-systems-science/programmes-offered/master-of-technology-in-software-engineering-mtech-se/">http://www.nus.edu.sg/nusbulletin/teaching-institutions/institute-of-systems-science/programmes-offered/master-of-technology-in-software-engineering-mtech-se/</a></p> |

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|     |      |                     | <p>2.3.4 Master of Technology in Software Engineering [MTECH SE]</p> <p>Overview<br/>The MTech SE programme emphasises the skills required for architecting scalable, secure and smart systems and platforms. The focus will also be exploitation of software technologies, methodologies and management techniques. It focuses on the practical and systematic construction of software systems, using innovative and state-of-the-art techniques. The programme will equip you with the essential knowledge and practical experience to architect, design, build and manage the delivery of robust software systems for your organisation and customers.</p> <p>Learning Outcomes:<br/>Become software architects capable of architecting and designing systems that exploit major contemporary software platforms, technologies and methodologies<br/>Become software architects capable of architecting and designing smart and secure systems<br/>Become data architects equipped with data engineering skills to engineer big data from a variety of sources</p> <p>Recognition:<br/>Top student is awarded the Accenture Medal and Prize<br/>Best Project Prize</p> <hr/> <p>URL: <a href="http://www.nus.edu.sg/nusbulletin/teaching-institutions/institute-of-systems-science/programme-requirements/master-of-technology/">http://www.nus.edu.sg/nusbulletin/teaching-institutions/institute-of-systems-science/programme-requirements/master-of-technology/</a></p> <p>2.4.1 Master of Technology</p> <p>Course Objective<br/>The Master of Technology (MTech) programme offers degrees in Enterprise Business Analytics, Intelligent Systems, IT Leadership and Software Engineering. Key elements of the MTech programme are the internship and capstone project modules. All students will undertake a team-based project or internship to acquire relevant real world experiences and gain further insights into the realities and challenges of the industry.<br/>The MTech programme is designed to produce highly employable IT professionals and data scientists who will be comprehensively equipped with the knowledge and skills required by the local and regional industry. In addition to full-time study, they provide IT, science and engineering professionals the opportunity to upgrade their skills by studying part-time while pursuing their careers.<br/>This programme will lead to the award of a Master's degree by the National University of Singapore.</p> |

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|              |  |                     | <p>Admission Requirements</p> <p>To gain admission to the programmes, applicants must possess the following pre-requisites:</p> <ul style="list-style-type: none"><li>• Bachelor's degree preferably in Science or Engineering and a grade point average of at least B</li><li>• Proficiency in the English Language (Written and Spoken)*</li><li>• Have passed an entrance test (applicable only for EBAC/IS/SE)<ul style="list-style-type: none"><li>◦ NUS-ISS may, at its discretion, accept GRE general test in lieu of NUS-ISS entrance test in genuine cases e.g. a candidate lives in a country where NUS-ISS does not administer entrance tests or candidate had valid reasons that prevented him/her from attending the NUS-ISS entrance test when it was administered</li></ul></li><li>• Have received a favourable assessment at admissions interview conducted by NUS-ISS</li></ul> <p>*English Language Proficiency</p> <ul style="list-style-type: none"><li>• Applicants who graduated from universities where English is not the medium of instruction should submit TOEFL (Test of English as a Foreign Language) or IELTS (International English Language Testing System) score as evidence of their proficiency in the English language.</li><li>•<table border="1"><tr><td><b>TOEFL</b></td><td><i>Paper-based test (580)</i><br/><i>Computer-based test (237)</i><br/><i>Internet-based test (85)</i></td></tr><tr><td><b>IELTS</b></td><td><i>Result of 6.0</i></td></tr></table></li><li>• Institution code of NUS-ISS for TOEFL is 2432</li><li>• TOEFL and IELTS are only valid for five years after the test and the validity should not expire before the beginning of the application period for the coursework programme.</li></ul> <p>MTech EBAC:</p> <ul style="list-style-type: none"><li>• Preferably two years relevant working experience<ul style="list-style-type: none"><li>◦ IT, engineering and scientific professionals would make ideal candidates</li><li>◦ Candidates with highly relevant degrees in Mathematics, Statistics, Econometrics, Management Science, Operational Research or similar, with consistently good academic records may be granted a work experience waiver</li></ul></li></ul> <p>MTech IS:</p> | <b>TOEFL</b> | <i>Paper-based test (580)</i><br><i>Computer-based test (237)</i><br><i>Internet-based test (85)</i> | <b>IELTS</b> | <i>Result of 6.0</i> |
| <b>TOEFL</b> | <i>Paper-based test (580)</i><br><i>Computer-based test (237)</i><br><i>Internet-based test (85)</i> |                     |  |              |  |              |                      |
| <b>IELTS</b> | <i>Result of 6.0</i>   |                     |  |              |  |              |                      |

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|     |      |                     | <ul style="list-style-type: none"> <li>• Preferably two years relevant working experience <ul style="list-style-type: none"> <li>○ As an IT professional, e.g. software developer, business analyst, or as a domain expert working in an area where Knowledge Engineering can be applied</li> <li>○ Candidates with highly relevant IT degrees, with consistently good academic records and good practical software development knowledge gained either through course work, course projects or professional IT certifications may be granted a work experience waiver</li> </ul> </li> </ul> <p>MTech ITL:</p> <ul style="list-style-type: none"> <li>• Have an equivalent of a good NUS undergraduate honours degree preferably in IT, Science, Engineering or a related discipline</li> <li>• Have the following relevant work experience or equivalent: <ul style="list-style-type: none"> <li>○ A minimum of 5 years of work experience in IT management or business management</li> <li>○ Experience working in major leading IT roles, such as software development, maintenance, system management etc</li> <li>○ Complete and upload two application essay questions given in the MTech Form</li> </ul> </li> </ul> <p>MTech SE:</p> <ul style="list-style-type: none"> <li>• Preferably four years relevant working experience <ul style="list-style-type: none"> <li>○ As a software engineer e.g. programmer, designer, technical team lead</li> <li>○ Candidates who have lesser than four years relevant experience with good practical software engineering knowledge gained either through course work, course projects or work experience may be considered. Have passed an entrance test administered by ISS.</li> </ul> </li> </ul> <p>Period of Candidature</p> <p>MTech EBAC/IS/SE<br/>The Master's Programmes are available in full-time, part-time and stackable formats. The duration for the full-time programme is 1 year, and for the part-time programme, 2 years. The programmes are also available via the stackable pathway.</p> <p>MTech ITL:<br/>The Master's Programme is available in full-time and part-time. The duration for the full-time programme is 1 year, and for the part-time programme, 2 years.</p> <p>Student Commitment</p> |

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|     |      |                     | <p>MTech EBAC/IS/SE<br/>Candidates must complete and pass the mandatory certificate/s from the fundamental area, any 2 certificates from the specialist areas as well as complete a capstone project.</p> <p>MTech ITL<br/>Candidates must complete and pass 10 compulsory core courses as well as complete a capstone project.</p> <p>Assessment/Examinations</p> <p>MTech EBAC/IS/SE<br/>Students are evaluated through a combination of course work, project work and examinations. All students are required to complete a three-hour examination for each fundamental and specialist module taken.</p> <p>Students who fail a module will be asked to withdraw. A minimum average grade across all examinations and practice assessments must be achieved to be awarded the degree.</p> <p>MTech ITL<br/>All candidates will be assessed by a combination of continuous assessment assignments, class participation and mid-term assessments, as well as the output produced for the capstone project module.<br/>A minimum average grade across all examinations and practice assessments must be achieved to be awarded the degree.</p> <p>URL : <a href="http://www.nus.edu.sg/nusbuletin/teaching-institutions/institute-of-systems-science/financial-assistance-and-awards/">http://www.nus.edu.sg/nusbuletin/teaching-institutions/institute-of-systems-science/financial-assistance-and-awards/</a></p> <p>2.5 Financial Assistance and Awards</p> <p>The Accenture Gold Medal and Book Prize is awarded to the best student successfully completing the Master of Technology (Software Engineering) course. The SPH Gold Medal &amp; Book Prize is awarded to the best student successfully completing the Master of Technology (Intelligent Systems) course.<br/>The IBM Gold Medal &amp; Prize is awarded to the best student in the Graduate Diploma in Systems Analysis course.<br/>The ISS Prize is awarded to the student who is second in the examination. The Accenture Prize is awarded to the best internship team in the course.</p> |

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| 44. | 11 Jul 2018 | RVRC                | An update to the NUS Bulletin 2018/19 for the Ridge View Residential College Programme:   |  |
|     |             |                     | URL for the change  | <a href="http://www.nus.edu.sg/nusbulletin/other-multidisciplinaryspecial-programmes/ridge-view-residential-college-programme/rvrc-and-fulfilment-of-graduation-requirements/">http://www.nus.edu.sg/nusbulletin/other-multidisciplinaryspecial-programmes/ridge-view-residential-college-programme/rvrc-and-fulfilment-of-graduation-requirements/</a>  |
|     |             |                     | Screenshot of current page  |  |
|     |             |                     | Description of change (with changes tracked in red)                                       | <p>GEQ1917 (formerly GEM1917) fulfils the 'Asking Questions' pillar, which is one of the five General Education modules required of all undergraduates. RVRC students who have read and completed this module would have satisfied the "Asking Questions" pillar.</p> <p>ES1601 can be taken in lieu of the compulsory writing and/or communication module(s) in Faculty of Arts &amp; Social Sciences (FAS1102), Faculty of Science (SP1541), Faculty of Engineering (ES1531), NUS Business School (ES2002 or MN O2706), School of Computing (CS2101 or IS2101) and School of Design &amp; Environment (ES2007D). <b>For students in the Architecture, Industrial Design, Project and Facilities Management, Environmental Studies and Pharmacy degree programmes, it qualifies as an Unrestricted Elective Module.</b></p> |
| 45. | 2 Jul 2018  | RO                  | <p>The sections were amended as highlighted in red below:</p> <p>NUS Bulletin 2018/19</p> |  |

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|     |      |                     | <p>General Information<br/>Resources and Services</p> <p>(<a href="http://www.nus.edu.sg/nusbulletin/general-information/resources-and-services/">http://www.nus.edu.sg/nusbulletin/general-information/resources-and-services/</a>)</p> <p><a href="#">Home</a> / <a href="#">NUS Bulletin AY2018/19</a> / <a href="#">General Information</a> / Resources and Services</p> <p>Some of the available resources and services at NUS are as follows:</p> <p><a href="#">Office of Admissions</a><br/>The Office of Admissions oversees all matters pertaining to undergraduate admissions, including recruitment, transfer of degree courses, student financial aid and award of NUS scholarships.</p> <p><a href="#">Campus Services</a><br/>The Office of Campus Amenities oversees the retail and dining services and transport, logistics and car parks in NUS with the aim of delivering quality service and excellence to the stakeholders in campus.</p> <p><a href="#">NUS Centre For the Arts</a></p> <p>Established in 1993, NUS Centre For the Arts (CFA) is a vibrant space for the appreciation of the arts and nurturing of the creative and inquiring spirit. Comprising the NUS Museum, NUS Baba House and a Talent and Development arm that oversees 22 student arts excellence groups, CFA supports student engagement with the arts and the integration of the arts into the life of the University. Through a vibrant arts calendar which features both student and professional talent, CFA activities add to the NUS experience, and help inspire and develop creative talents. CFA also manages the University Cultural Centre, CFA Studios and the rehearsal facilities at University Town. With four permanent collections and over 8,000 artefacts and artworks, the NUS Museum, and the NUS Baba House (located at 157 Neil Road) serve as vital curricular resources to expand the learning experiences for students.</p> <p>Established in 1993, NUS Centre For the Arts (CFA) is a vibrant space for the appreciation of the arts and nurturing of the creative and inquiring spirit. We support student engagement with the arts and the integration of the arts into the life of the University.</p> <p>We comprise the NUS Museum, NUS Baba House and a Talent and Development arm that oversees 22 student arts excellence groups. Through our myriad of programmes, practices, exhibitions, workshops and outreach, such as NUS Arts Festival and the ExxonMobil Campus Concerts, we enrich the university experience and contribute to the building of knowledge and transformation of students.</p> |

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|     |      |                     | <p>We also manage facilities such as the University Cultural Centre, with its 1700-seat Hall and 425-seat Theatre, and rehearsal spaces in Runme Shaw CFA Studios and University Town.</p> <p>For more information, visit <a href="http://cfa.nus.edu.sg">cfa.nus.edu.sg</a></p> <p><u><a href="#">NUS Information Technology</a></u><br/> The NUS Information Technology spearheads the IT development on campus for teaching, learning, research and administration. We collaborate with the faculty, staff and students for innovative IT solutions to meet the diverse needs of the community. Our roles and responsibilities range from governance to campus network, student and administrative systems, mobile solutions, research computing, business analytics, messaging and database services, Cloud computing, cyber security and user support. IT governance to modernization, digital transformation, Cloud adoption, system integration, campus network, research computing, student, mobile and enterprise applications, messaging, data analytics, cyber security and end user computing.</p> <p><u><a href="#">NUS Co-op</a></u><br/> The NUS Multi-purpose Co-operative Society Limited (NUS Co-op) offers a wide range of products including books, course packs, stationery and sundry items, and computer hardware, software and accessories. It has a wide membership in the community. Among the various services it provides are a book assistance scheme and several community service schemes.</p> <p><u><a href="#">Office of Financial Services</a></u><br/> The Office of Financial Services is responsible for the University's financial policies and procedures, billing and collection of tuition fees, shared financial services, treasury, controllerships, financial reporting and stewardship of the University's financial resources.</p> <p><u><a href="#">University Health Centre</a></u><br/> The University Health Centre (UHC) consists of three Divisions, each handling different aspects of health and wellness for the NUS community:</p> <ul style="list-style-type: none"> <li>• Health Service provides comprehensive medical care</li> <li>• Wellness Outreach promotes a healthy and balanced lifestyle</li> <li>• University Counselling &amp; Psychological Services provides mental health support</li> </ul> |



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|     |      |                     | <p>Global International <a href="#">Relations Office</a></p> <p>The Global International Relations Office is responsible for forging and maintaining relations with international partners and collaborators around the world to make available various study abroad and student exchange opportunities. The Office also promotes NUS by developing international initiatives to enhance the University's global standing.</p> <p><a href="#">NUS Libraries</a></p> <p>The NUS Library System comprises seven libraries. It is among the most technologically advanced and its holdings is one of the largest in Asia. The NUS Libraries' multidisciplinary collections are richly diverse and encompass subjects in architecture, business, engineering, humanities and social sciences, law, medicine, science, and other fields. The NUS Libraries play a vital role in supporting the University's mission in research and education. NUS Libraries plays a pivotal role in partnering the NUS community in advancing scholarship and research. It comprises eight libraries, with the Central Library being the largest and C J Koh Law Library and Medical Library serving as the de facto national law and medical libraries in Singapore. It is the largest academic and research library in this region with a rich collection of more than 3 million volumes covering multidisciplinary subjects in architecture, business, engineering, humanities and social sciences, law, medicine, science, and other disciplines. NUS Libraries is a steward and repository of national and regional heritage, hosting a collection that includes treasures that date as far back as the 14th century, irreplaceable material saved from the Japanese invaders during World War 2, the world-renowned Singapore/Malaysia collection, and archival documents from the Colonial Office records.</p> <p><a href="#">Registrar's Office</a></p> <p>The Registrar's Office oversees the administration of academic matters including freshmen registration, module enrolment, curriculum, examinations, award of degrees, commencement, and student discipline. The Office is committed to service excellence and makes use of the latest technology to ensure efficiency and effectiveness in its administrative operations.</p> <p><a href="#">Centre for Future-ready Graduates</a></p> <p>The Centre for Future-ready Graduates' mission is to enhance the employability of students through career preparation and helping students develop future-ready soft skills. Through various career search strategies and career development workshops, students are empowered to take confident steps to build their careers. The Centre also partners employers in their graduate recruitment, and organizes a range of activities such as internship programs, career fairs, recruitment talks, and networking sessions for students to meet company representatives</p> |

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|     |      |                     | <p>for employment opportunities. The Centre has developed from the ground-up, two courses focused on student development: Career Catalyst and Roots &amp; Wings.</p> <p><b>Career Catalyst</b><br/>Career Catalyst will establish an important first touch point as part of a three/four-year roadmap to engage and prepare students in creating multiple pathways for themselves. Students will be equipped with essential skills and knowledge to make informed decisions on specialisations, develop soft skills as well as gain overseas exposure and real-world industry experience. The module will consist of four lectures and two e-seminars spread across six weeks of the freshmen academic year, and is aimed to provide an early introduction to the concepts of career planning, personal branding and industry awareness. Students will learn to design a meaningful career plan, and craft their resume and cover letter, based on their particular competencies and interests. .</p> <p><b>Roots &amp; Wings</b><br/>In partnership with the Department of Psychology, CFG offers a self-awareness and interpersonal effectiveness module called 'Roots &amp; Wings'. The module is based on psychology, neuroscience, and organizational behaviour, is offered as a complement to Career Catalyst. The programme comprises a series of deep dive experiential learning 'modulets', based on future-ready soft skills and healthy mindsets that employers consider important for the workplace. Examples of modulets include 'Cultivating Resilience', 'Cultivating Collaboration', and 'Cultivating the Self', which students can customize and stack depending on an assessment of their needs.</p> <p>For more information, please click <a href="http://nus.edu.sg/cfg/students">here</a>. (Please link the word 'here' to <a href="http://nus.edu.sg/cfg/students">http://nus.edu.sg/cfg/students</a>)</p> <p>The Centre for Future-ready Graduates' mission is to enhance the employability of students through career preparation and helping students develop self-awareness and leadership skills. Through various career search strategies and career development workshops and activities, students are empowered to take confident steps to build their careers. The Centre also partners employers in their graduate recruitment, and organizes a range of activities such as internship programs, career fairs, recruitment talks, networking sessions for students to meet company representatives for employment opportunities. The Centre offers the following module:</p> <p><b>CFG1010 Roots &amp; Wings 1.0:</b><br/>The Roots and Wings programme, which focuses on maximising students' human potential, equips students with foundational future-ready skills so that they can develop healthy mindsets and better navigate and respond adeptly in an unpredictable modern world.</p> <p>Through a blended-learning approach with an emphasis on experiential learning, this innovative course draws inspiration from many fields including neuroscience, psychology, leadership and philosophy, and offers students a</p> |

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|     |             |                     | <p>practical toolbox of personal and interpersonal effectiveness skills e.g. self-awareness, collaboration, and resilience.</p> <p>For more information, please click <a href="#">here</a>.</p> <p><a href="#">Office of Student Affairs</a><br/> The <a href="#">Office of Student Affairs</a> (OSA) is committed to provide a rich and memorable student experience in NUS. OSA considers students' perspectives and needs and creates opportunities to enrich students' campus life and community engagement. OSA endeavours to develop a student-centric environment and administration through a wide range of support services, educational, cultural, social programming, and resources.</p> <p>The type of services, programmes and activities OSA offers include:</p> <ul style="list-style-type: none"> <li>• Student Service Centre: A convenient contact point for students to obtain information and services related to academic/administrative student records, tuition fees and financial matters;</li> <li>• Hostel Admission Services: Manage student housing, application eligibility and procedures;</li> <li>• Residential Life: Assist students to settle in and experience a positive and vibrant residential life through social, cultural and sports activities, and enrichment programmes;</li> <li>• Student Organisations: Provide a framework of governance for NUS student organisations to thrive and contribute to student life and campus vibrancy;</li> <li>• Community Engagement: Promote and support student engagement with the community within the university, and with society beyond the university;</li> <li>• Sports &amp; Recreation: Promote a healthy lifestyle through sports and recreation, and sports excellence;</li> <li>• Disability Support &amp; Services: Provide an inclusive and nurturing academic environment to students with disabilities and special education needs to achieve their fullest potential</li> </ul> |
| 46. | 30 Jul 2018 | RO                  | <p><a href="#">NUS Bulletin 2018/19 (30 Jul 2018)</a></p> <p>At the <a href="#">Module Search</a> website, the schools/programme highlighted in red below are missing in the drop-down menu under the option 'Select Faculty'. Please assist to include them accordingly so as to facilitate anyone searching for modules offered by the individual faculty/school/programme. Thanks.</p> <p>--- Select Faculty ---<br/> <a href="#">Arts &amp; Social Sciences</a></p>  |

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|     |             |                     | <p>Business<br/> Computing<br/> Continuing and Lifelong Education<br/> Dentistry<br/> Design &amp; Environment<br/> Engineering<br/> NGS for Integrative Sciences and Engineering (Faculty code=012)<br/> Law<br/> Medicine<br/> Music<br/> Public Health<br/> Science<br/> University Scholars Programme (Faculty code = 014)<br/> Duke-NUS Medical School (Faculty code = 013)<br/> Public Policy (Faculty code = 011)<br/> Yale-NUS College<br/> U-Wide Programme</p>  |
| 47. | 31 May 2019 | RO                  | <p>Changes are highlighted in red below (see Pgs 3, 4 and 6):</p> <p><a href="http://www.nus.edu.sg/registrar/education-at-nus/undergraduate-education/special-undergraduate-programmes/minor-programmes.html">http://www.nus.edu.sg/registrar/education-at-nus/undergraduate-education/special-undergraduate-programmes/minor-programmes.html</a></p> <p><b>Minor Programmes</b></p> <p>A Minor programme is a coherent course of study in an additional area outside of the Major. By doing this, it contributes to the breadth of learning envisaged for undergraduate education.</p> <p>The modular credit (MC) requirement for a Minor programme is at least 24MCs, of which:</p> <ul style="list-style-type: none"> <li>Up to 8 MCs may be used to meet the requirements for both the Minor and Faculty Requirements, a Major/Second Major, or another Minor, subject to the agreement of the particular department(s)/programme(s) or Faculty/School hosting the Minor.</li> </ul> |

| S/N                               | Date                    | Faculty/<br>School/        | (A) Updates included in NUS Bulletin 2018-19 before archival (i.e., up to 30 June 2019)   |       |                         |                            |                                   |  |  |
|-----------------------------------|-------------------------|----------------------------|---|-------|-------------------------|----------------------------|-----------------------------------|--|--|
|                                   |                         |                            | <ul style="list-style-type: none"><li>At least 12MCs (out of 24MCs) for any Minor programme must be taken from outside the entire set of modules that are listed for the major(s)/another minor that the student is taking/has taken.</li><li>A minimum 16 MCs of the Minor requirements must be earned from modules read in NUS, unless indicated otherwise by Faculties/Departments for specific minors. Modules read at NUS include all modules taught, co-taught, supervised or co-supervised by one or more NUS faculty members. These would consist of graded modules with assigned grade points, or modules with an 'S' or 'CS' grade. The other 8 MCs may be earned through credit transfers, advanced placement and exemptions, provided these MCs are earned from modules deemed relevant to the particular Minor programme.</li></ul> <p>For Students admitted prior to AY2015/16: Relevant General Education Modules (GEMs) may be included in the list of modules approved for a Minor. Students who read such a GEM may count it towards both the General Education and Minor requirements. The MCs under the Breadth and Unrestricted Elective module requirements can also be used to satisfy the Minor programme requirements.</p> <p>For Students admitted from AY2015/16 onwards: Students who read modules coded as GEH/GEQ/GER/GES/GET to fulfil requirements for Minor programmes are not allowed to count these modules towards fulfilling both the General Education and the Major/Minor requirements. For example, if a student had taken a GEH module for his/her Minor programme, he/she would have to take another GEH module to fulfil the Human Cultures pillar of the GE requirement. The MCs under the Unrestricted Elective module requirements may be used to satisfy Minor programme requirements.</p> <p>The Minor programme(s) will be reflected in the student's transcript upon successful completion.</p> <p>Students can be admitted to Minor programmes at the point of admission to NUS, or by applying/declaring to the relevant Faculties/Schools no later than the end of the fifth semester of study. For the combinations of Minor programmes with specific single degree courses available at the point of admission, please refer to the website of the <a href="#">Office of Admissions</a>.</p> <p>The Minor Programmes that are currently on offer at NUS are listed below. For details on the requirements of each Minor, please refer to the relevant sections under each Faculty/School at the <a href="#">NUS Bulletin Online</a>.</p> <table><tr><th>Minor</th><th>Host Faculty/Department</th><th>Type<br/>(see 'Note' below)</th></tr><tr><td colspan="3">Faculty of Arts &amp; Social Sciences</td></tr></table> | Minor | Host Faculty/Department | Type<br>(see 'Note' below) | Faculty of Arts & Social Sciences |  |  |
| Minor                             | Host Faculty/Department | Type<br>(see 'Note' below) |   |       |                         |                            |                                   |  |  |
| Faculty of Arts & Social Sciences |                         |                            |   |       |                         |                            |                                   |  |  |

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|     |      |                     | <b><i>Disciplinary Minors</i></b>  |   |            |
|     |      |                     | Chinese Language   | Department of Chinese Studies                                     | Open       |
|     |      |                     | Chinese Studies  | Department of Chinese Studies                                     | Open       |
|     |      |                     | Chinese Translation  | Department of Chinese Studies<br>(with effect from AY2014/15)     | Open       |
|     |      |                     | Communications and New Media   | Department of Communications and<br>New Media                     | Open       |
|     |      |                     | Economics  | Department of Economics   | Open       |
|     |      |                     | English Language   | Department of English Language &<br>Literature                    | Open       |
|     |      |                     | English Literature   | Department of English Language &<br>Literature                    | Open       |
|     |      |                     | European Studies   | Office of Programmes  | Open       |
|     |      |                     | History  | Department of History   | Open       |
|     |      |                     | Human Services   | Department of Social Work   | Open       |
|     |      |                     | India Studies (formerly Minor in South<br>Asian Studies; offered to Cohort 2006-<br>2007 only) | South Asian Studies Programme<br>(Offered to Cohort 2008 onwards) | Open       |
|     |      |                     | Japanese Studies   | Department of Japanese Studies                                    | Open       |
|     |      |                     | Joint Minor with University of Toronto<br>(UoT)  | Department of Geography   | Restricted |
|     |      |                     | Language Studies   | Centre for Language Studies                                       | Open       |
|     |      |                     | Malay Studies  | Department of Malay Studies                                       | Open       |
|     |      |                     | Philosophy   | Department of Philosophy  | Open       |
|     |      |                     | Political Science  | Department of Political Science                                   | Open       |
|     |      |                     | Psychology   | Department of Psychology  | Open       |
|     |      |                     | Sociology  | Department of Sociology   | Open       |
|     |      |                     | Southeast Asian Studies  | Department of Southeast Asian<br>Studies                          | Open       |

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|     |      |                     | Theatre Studies   | Department of English Language & Literature                                       | Open       |
|     |      |                     | <b>Multidisciplinary Minors</b>   |   |            |
|     |      |                     | Aquatic Ecology   | Department of Geography and<br>Department of Biological Sciences                  | Restricted |
|     |      |                     | Art History   | Department of History   | Open       |
|     |      |                     | China Studies   | Office of Programmes  | Open       |
|     |      |                     | Cultural Studies  | Department of Sociology   | Open       |
|     |      |                     | English Studies   | Department of English Language & Literature                                       | Open       |
|     |      |                     | Film Studies  | Department of English Language & Literature                                       | Open       |
|     |      |                     | Film Production*  | Department of English Language & Literature                                       | Open       |
|     |      |                     | Gender Studies  | Office of Programmes  | Open       |
|     |      |                     | Geographical Information Systems  | Department of Geography   | Open       |
|     |      |                     | Geosciences   | Department of Geography   | Open       |
|     |      |                     | Global Studies  | Department of Political Science   | Open       |
|     |      |                     | Health and Social Sciences  | Office of Programmes  | Open       |
|     |      |                     | Interactive Media Development   | Department of Communications and<br>New Media & Department of<br>Computer Science | Open       |
|     |      |                     | Religious Studies   | Office of Programmes  | Open       |
|     |      |                     | Science, Technology and Society   | Office of Programmes  | Open       |
|     |      |                     | Urban Studies   | Department of Geography and<br>Department of Real Estate                          | Open       |
|     |      |                     | <b>School of Business</b>   |   |            |
|     |      |                     | Management (formerly Minor in Business; prior to AY2007/08)                             | School of Business  | Restricted |

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|     |      |                     | Management of Technology  | School of Business and<br>Faculty of Engineering                                  | Restricted |
|     |      |                     | Technopreneurship   | Department of Business Policy   | Open       |
|     |      |                     | <b>School of Computing</b>  |   |            |
|     |      |                     | <b>Disciplinary Minors</b>  |   |            |
|     |      |                     | Artificial Intelligence   | School of Computing   | Restricted |
|     |      |                     | Business Analytics  | School of Computing   | Restricted |
|     |      |                     | Computer Science  | School of Computing   | Restricted |
|     |      |                     | Information Security  | School of Computing   | Restricted |
|     |      |                     | Information Systems<br>(formerly Management of Information<br>Technology)               | School of Computing   | Restricted |
|     |      |                     | <b>Multidisciplinary Minors</b>   |   |            |
|     |      |                     | Interactive Media Development   | Department of Computer Science &<br>Department of Communications and<br>New Media | Open       |
|     |      |                     | <b>School of Design &amp; Environment</b>   |   |            |
|     |      |                     | Infrastructure Management and Finance   | Departments of Building and Real<br>Estate  | Open       |
|     |      |                     | Project Management  | Department of Building  | Restricted |
|     |      |                     | Real Estate   | Department of Real Estate   | Restricted |
|     |      |                     | Urban Studies   | Department of Real Estate and<br>Department of Geography                          | Open       |
|     |      |                     | <b>Faculty of Engineering</b>   |   |            |
|     |      |                     | <b>Disciplinary Minors</b>  |   |            |
|     |      |                     | Biomedical Engineering (formerly Minor<br>in Bioengineering prior to AY2010/11)         | Department of Biomedical<br>Engineering   | Restricted |
|     |      |                     | Civil Infrastructure  | Department of Civil and<br>Environmental Engineering                              | Restricted |



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|     |      |                     | Systems Engineering   | Faculty of Engineering   | Restricted |
|     |      |                     | Urban Environmental Engineering   | Department of Civil and Environmental Engineering                              | Open       |
|     |      |                     | <b>Multidisciplinary Minors</b>   |  |            |
|     |      |                     | Engineering Materials (formerly Minor in Materials Science and Engineering; prior to AY2005/06) | Faculty of Engineering and Faculty of Science                                  | Restricted |
|     |      |                     | Management of Technology  | Faculty of Engineering and School of Business                                  | Restricted |
|     |      |                     | Medical Physics   | Department of Biomedical Engineering and Department of Physics                 | Restricted |
|     |      |                     | <b>Saw Swee Hock School of Public Health</b>  |  |            |
|     |      |                     | Public Health   | Department of Public Health - Undergraduate Programme                          | Open       |
|     |      |                     | <b>Faculty of Science</b>   |  |            |
|     |      |                     | <b>Disciplinary Minors</b>  |  |            |
|     |      |                     | Analytical Chemistry  | Department of Chemistry  | Open       |
|     |      |                     | Biophysics  | Department of Physics and Life Sciences Programme                              | Open       |
|     |      |                     | Financial Mathematics   | Department of Mathematics  | Open       |
|     |      |                     | Joint Minor in Environmental Biology with University of Toronto                                 | Faculty of Science, NUS and Faculty of Arts and Science, University of Toronto | Restricted |
|     |      |                     | Joint Minor in Environmental Chemistry with University of Toronto                               | Faculty of Science, NUS and Faculty of Arts and Science, University of Toronto | Restricted |
|     |      |                     | Life Sciences   | Department of Biological Sciences  | Open       |

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|-----|------|---------------------|---|--|---|
|     |      |                     | Forensic Science  | Department of Biological Sciences and<br>Department of Chemistry     | Restricted  |
|     |      |                     | Mathematics   | Department of Mathematics  | Open  |
|     |      |                     | Nanoscience   | Department of Physics and<br>Department of Chemistry                 | Open  |
|     |      |                     | <del>Optical &amp; Semiconductor Technology</del>   | <del>Department of Physics</del>                                     | <del>Open</del>   |
|     |      |                     | Pharmaceutical Science  | Department of Pharmacy   | Restricted  |
|     |      |                     | Physics   | Department of Physics  | Open  |
|     |      |                     | Statistics  | Department of Statistics & Probability                               | Open  |
|     |      |                     | <b>Multidisciplinary Minors</b>   |  |   |
|     |      |                     | Aquatic Ecology   | Department of Biological Sciences and<br>Department of Geography     | Restricted  |
|     |      |                     | Engineering Materials (formerly Minor in<br>Materials Science and Engineering;<br>prior to AY2005/06) | Faculty of Science and<br>Faculty of Engineering                     | Restricted  |
|     |      |                     | Medical Physics   | Department of Biomedical<br>Engineering and Department of<br>Physics | Restricted  |
|     |      |                     | <b>Yong Siew Toh Conservatory of<br/>Music</b>  |  |   |
|     |      |                     | Music and Society   | Yong Siew Toh Conservatory of<br>Music                               | Restricted  |
|     |      |                     | <b>University Scholars Programme<br/>(USP)</b>  |  |   |
|     |      |                     | China Studies*  | USP – Faculty of Arts and Social<br>Sciences (FASS)                  | For USP-FASS students<br>in USP-Yuanpei<br>Exchange Programme |

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|-----|-------------|---------------------|---|
|     |             |                     | <p><b>For students who are interested to do a Minor programme during the course of their candidature, please note:</b></p> <p><b>'Open' Minor</b> - students can declare their intention to do an open minor via the Centralised Online Registration System (CORS) <u>without</u> any prior approval from the Host Faculty/Department.</p> <p><b>'Restricted' Minor</b> - students are required to apply to the Host Faculty/Department and obtain approval to read a restricted minor.</p> <p>* These programmes allow for up to 16 MCs of ungraded substitutable modules to be accepted from the partner university.</p>  |
| 48. | 31 May 2019 | RO                  | <p>Changes are highlighted in red below:</p> <p><b>Double Major Programmes</b></p> <p><a href="http://www.nus.edu.sg/registrar/education-at-nus/undergraduate-education/special-undergraduate-programmes/double-major-programmes.html">http://www.nus.edu.sg/registrar/education-at-nus/undergraduate-education/special-undergraduate-programmes/double-major-programmes.html</a></p> <p>A Double Major is a <u>single degree programme</u>, in which a student satisfies the requirements of two Majors. It is conceived as an opportunity for students to broaden their knowledge and capacities by pursuing a second Major alongside their primary Major. The Second Major affords a significant degree of depth, although its MC requirement is set below that of the Major. The Second Major is a non-Honours major. It may be taken in the same Faculty that offers the Major or from a different Faculty. A Second Major consist of at least 48 MCs.</p> <p>For students admitted prior to AY2014/15:</p> <ul style="list-style-type: none"> <li>▶ Up to 8 MCs may be used to meet the requirements for both the Second Major and the Faculty/Major/Minor requirements; and</li> </ul> |

| S/N | Date | Faculty/<br>School/ | (A) Updates included in NUS Bulletin 2018-19 before archival (i.e., up to 30 June 2019)   |
|-----|------|---------------------|---|
|     |      |                     | <p>▶ At least 16 MCs must be at Level 3000.</p> <p>For students admitted from AY2014/15 onwards:</p> <p>Up to 16 MCs may be used to meet the requirements for both the Second Major and the Faculty/Major/Minor requirements (<i>Note: for counting towards a Minor, only a maximum of 8 MCs are allowed</i>);<br/> At least 16 MCs must be at Level 3000; and<br/> A minimum 60% of the Second Major requirements must be earned from modules read in NUS. Modules read at NUS include all modules taught, co-taught, supervised or co-supervised by one or more NUS faculty members. .These would consist of graded modules with assigned grade points, or modules with an 'S' or 'CS' grade. The other 40% of credits may be earned through credit transfers, advanced placement and exemptions, provided these MCs are earned from modules deemed relevant to the particular Major.</p> <p>Students can be admitted to Double Major Programmes at the point of admission to NUS, or by applying to the relevant Faculties/Schools no later than the end of the fifth semester of study. For a list of Double Major Programmes available at the point of admission, please refer to the website of the <a href="#">Office of Admissions</a>.</p> <p>The Second Major will be mentioned in the student's transcript upon successful completion. For more information, please click on the <a href="#">FAQ</a>.</p> <p>The Second Majors that are currently on offer are:</p> <p><i>Audio Arts and Sciences (this has been moved up from below, please retain the hyperlink).</i><br/> <a href="#">Business Analytics</a><br/> <a href="#">Bassoon</a><br/> <a href="#">Cello</a><br/> <a href="#">Chemistry</a><br/> <a href="#">Chinese Language</a><br/> <a href="#">Chinese Studies</a><br/> <a href="#">Communications and New Media</a><br/> <a href="#">Composition</a><br/> <a href="#">Computer Science</a><br/> <a href="#">Clarinet</a><br/> <a href="#">Data Analytics</a></p> |

| S/N | Date | Faculty/<br>School/ | (A) Updates included in NUS Bulletin 2018-19 before archival (i.e., up to 30 June 2019)   |
|-----|------|---------------------|---|
|     |      |                     | <p> Double Bass<br/> Economics<br/> English Language<br/> English Literature<br/> European Studies<br/> Flute<br/> Food Science<br/> Geography<br/> Harp<br/> History<br/> Horn<br/> Information Security<br/> Innovation and Design<br/> Japanese Studies<br/> Life Sciences<br/> Malay Studies<br/> Management<br/> Mathematics<br/> Music and Society<br/> Music, Collaboration and Production<br/> Oboe<br/> Percussion<br/> Philosophy<br/> Physics<br/> Piano<br/> Political Science<br/> Psychology<br/> Real Estate Finance (will let you have the hyperlink to faculty web site when the details are available.)<br/> — <del>Audio Arts and Sciences</del> (please delete this as it has been moved up to the top of the list as indicated above)<br/> Social Work<br/> Sociology<br/> Southeast Asian Studies<br/> South Asian Studies<br/> Statistics<br/> Systems Engineering<br/> Theatre Studies </p> |

| S/N | Date       | Faculty/<br>School/ | (A) Updates included in NUS Bulletin 2018-19 before archival (i.e., up to 30 June 2019)   |
|-----|------------|---------------------|---|
|     |            |                     | <p>Trumpet<br/>Trombone<br/>Tuba<br/>Voice<br/>Violin<br/>Viola</p>   |
| 49. | 4 Jun 2019 | RO                  | <p><b><u>Updates to CDP website (4 Jun 2019)</u></b></p> <p>Additional programmes were inserted in red and linked to the respective faculty website as indicated below:</p> <p><a href="http://www.nus.edu.sg/registrar/education-at-nus/undergraduate-education/special-undergraduate-programmes/concurrent-degree-programmes.html">http://www.nus.edu.sg/registrar/education-at-nus/undergraduate-education/special-undergraduate-programmes/concurrent-degree-programmes.html</a></p> <p><b>Concurrent Degree Programmes</b></p> <p>Concurrent degree programmes (CDPs) involve a combination of a Bachelor's and a Master's degree from the same Faculty or from two different Faculties. Such programmes allow a student to pursue a Bachelor's and a Master's degree concurrently. The programme structure allows some of the requirements for the Bachelor's degree to be also counted towards the Master's degree so that a student could graduate in four and a half to five years with both degrees, instead of five and a half to six years if pursued separately.</p> <p>The following is a list of available CDPs within NUS:</p> <p> <a href="#">Bachelor of Business Administration with Honours/Bachelor of Business Administration (Accountancy) with Honours &amp; Master in Public Policy</a><br/> <a href="#">Bachelor of Business Administration with Honours / Bachelor of Business Administration (Accountancy) with Honours &amp; Master of Science (Management)</a><br/> <a href="#">Bachelor of Computing with Honours &amp; Master of Science (Management)</a><br/> <a href="#">Bachelor of Engineering {any discipline except Engineering Science} and Master of Science (Management)</a><br/> <a href="#">Bachelor of Laws &amp; Master in Public Policy</a><br/> <a href="#">Bachelor of Science (Real Estate) &amp; Master of Urban Planning</a><br/> <a href="#">Bachelor of Arts (Architecture) &amp; Master of Urban Planning</a><br/> <a href="#">Bachelor of Arts (Architecture) &amp; Master of Landscape Architecture</a><br/> <a href="#">Bachelor of Arts (Architecture) &amp; Master of Architecture</a><br/> <a href="#">Bachelor of Social Sciences (Honours) &amp; Master of Social Sciences in Psychology</a> </p> |

| S/N | Date       | Faculty/<br>School/ | (A) Updates included in NUS Bulletin 2018-19 before archival (i.e., up to 30 June 2019)   |
|-----|------------|---------------------|---|
|     |            |                     | <p>Bachelor of Science (Project and Facilities Management)/ Bachelor of Engineering/ Bachelor of Computing (Computer Science or Information Systems)/ Bachelor of Arts (Architecture) / Bachelor of Arts (Industrial Design) and Master of Science (Project Management)</p> <p><b>Bachelor of Arts (Honours)/Bachelor of Social Sciences (Honours) and Master in Public Policy</b> (please link to <a href="https://www.fas.nus.edu.sg/special-programmes/concurrent-degree-programmes.html">https://www.fas.nus.edu.sg/special-programmes/concurrent-degree-programmes.html</a>)</p> <p>Bachelor of Arts/Bachelor of Science with Honours and Master in Public Policy</p> <p><b>Bachelor of Arts/Bachelor of Science (Honours) and Master of Computing</b> (please link this to <a href="https://cipe.yale-nus.edu.sg/career-services/graduate-and-professional-school/five-year-programme-with-nus-school-of-computing/">https://cipe.yale-nus.edu.sg/career-services/graduate-and-professional-school/five-year-programme-with-nus-school-of-computing/</a>)</p> <p>Please also refer to the section, <a href="#">Double/Concurrent/Joint Degree Programmes with Overseas Universities</a>, for the available CDPs with partner universities.</p> <p>For more information on CDPs, including admission process and criteria, please click on the <a href="#">FAQ</a> .</p> <p>For an overview of the various undergraduate courses offered in NUS, please visit <a href="#">Office of Admissions – Course Information</a>.</p> |
| 50. | 4 Dec 2018 | RMI                 | <p><b>NUS Bulletin 2018/19 – Updates by Risk Mgt Institute (RMI) – 4 Dec 2018</b></p> <p><u>From Ms Yati Kum (Ms):</u></p> <p>Amendments were updated as indicated in red below:</p> <p><a href="http://www.nus.edu.sg/nusbulletin/faculty-of-science/graduate-education/coursework-programmes/degree-requirements/master-of-science-in-financial-engineering-part-time-full-time-or-distance-learning/">http://www.nus.edu.sg/nusbulletin/faculty-of-science/graduate-education/coursework-programmes/degree-requirements/master-of-science-in-financial-engineering-part-time-full-time-or-distance-learning/</a></p> <p><b>Admission Requirements</b></p> <ul style="list-style-type: none"> <li>• Good four-year undergraduate degree or an honours degree.</li> <li>• Good GMAT or GRE score (<b>optional</b>).</li> <li>• Good TOEFL or IELTS score if English was not the medium of instruction in undergraduate studies.</li> <li>• Relevant work experience will be an advantage.</li> </ul> <p><b>b. Read and pass four or more elective modules, totaling a minimum of 16 modular credits, from the following list:</b></p> <ul style="list-style-type: none"> <li>• FE 5103 Equity Products and Exotics</li> </ul>  |

| S/N | Date | Faculty/<br>School/ | (A) Updates included in NUS Bulletin 2018-19 before archival (i.e., up to 30 June 2019)  |
|-----|------|---------------------|--|
|     |      |                     | <ul style="list-style-type: none"> <li>• FE 5105 Corporate Financing and Risk</li> <li>• FE 5108 Portfolio Theory and Investments</li> <li>• FE 5208 Term Structure and Interest Rate Derivatives</li> <li>• FE 5210 Research Methods in Finance</li> <li>• FE 5211 Seminar in Financial Engineering</li> <li>• FE 5215 Seminar in Financial Product Innovations</li> <li>• FE 5216 Financial Technology Innovations Seminar</li> <li>• FE 5217 Seminar in Risk Management and Alternative Investment</li> <li>• FE 5218 Credit Risk</li> <li>• FE 5219 Credit Analytics Practicum</li> <li>• FE 5221 Trading Principles &amp; Fundamentals</li> <li>• FE 5222 Advanced Derivatives Pricing</li> <li>• FE 5223 Introduction to Electronic Financial Market</li> <li>• FE 5224 Current Topics in Applied Risk Management</li> <li>• FE 5225 Machine Learning and FinTech</li> <li>• FE 5226 C++ in Financial Engineering</li> <li>• FE5227 Commodities: Fundamentals and Modelling</li> </ul> |



| S/N  | Date        | Faculty/<br>School/ | (B) Updates for NUS Bulletin 2018-19 after archival (i.e., from 1 July 2019 onwards)   |         |     |           |                               |  |    |                        |  |           |                      |    |  |  |   |  |                                |   |  |  |   |  |                                 |   |  |                            |   |  |   |   |  |   |   |  |
|--|-------------|---------------------|--|---------|-----|-----------|-------------------------------|--|----|------------------------|--|-----------|----------------------|----|--|--|---|--|--------------------------------|---|--|--|---|--|---------------------------------|---|--|----------------------------|---|--|---|---|--|---|---|--|
| 1.   | 27 Feb 2020 | SoC                 | <p><b><u>NUS Archived Bulletin 2018-2019</u></b></p> <p><a href="http://www.nus.edu.sg/registrar/info/nusbulletin/AY201819_SoC.pdf">http://www.nus.edu.sg/registrar/info/nusbulletin/AY201819_SoC.pdf</a> Page 4:</p> <p>Please replace with the table 5 with changes highlighted below:</p> <p><b>Table 5: Summary of degree requirements for Bachelor of Computing (Information Security) – Co-operative Education Programme</b></p> <table><tr><th>MODULES</th><th>MCS</th><th>SUBTOTALS</th></tr><tr><td>UNIVERSITY LEVEL REQUIREMENTS</td><td></td><td>20</td></tr><tr><td>PROGRAMME REQUIREMENTS</td><td></td><td>108 -&gt;120</td></tr><tr><td>Computing Foundation</td><td>36</td><td></td></tr><tr><td>CS1010    Programming Methodology <sup>4</sup></td><td>4</td><td></td></tr><tr><td>CS1231S    Discrete Structures</td><td>4</td><td></td></tr><tr><td>CS2040C Data Structures and Algorithms</td><td>4</td><td></td></tr><tr><td>CS2100    Computer Organisation</td><td>4</td><td></td></tr><tr><td>CS2102    Database Systems</td><td>4</td><td></td></tr><tr><td>CS2105    Introduction to Computer Networks</td><td>4</td><td></td></tr><tr><td>CS2106    Introduction to Operating Systems</td><td>4</td><td></td></tr></table> | MODULES | MCS | SUBTOTALS | UNIVERSITY LEVEL REQUIREMENTS |  | 20 | PROGRAMME REQUIREMENTS |  | 108 ->120 | Computing Foundation | 36 |  | CS1010    Programming Methodology <sup>4</sup> | 4 |  | CS1231S    Discrete Structures | 4 |  | CS2040C Data Structures and Algorithms | 4 |  | CS2100    Computer Organisation | 4 |  | CS2102    Database Systems | 4 |  | CS2105    Introduction to Computer Networks | 4 |  | CS2106    Introduction to Operating Systems | 4 |  |
| MODULES  | MCS         | SUBTOTALS           |  |         |     |           |                               |  |    |                        |  |           |                      |    |  |  |   |  |                                |   |  |  |   |  |                                 |   |  |                            |   |  |   |   |  |   |   |  |
| UNIVERSITY LEVEL REQUIREMENTS                  |             | 20                  |  |         |     |           |                               |  |    |                        |  |           |                      |    |  |  |   |  |                                |   |  |  |   |  |                                 |   |  |                            |   |  |   |   |  |   |   |  |
| PROGRAMME REQUIREMENTS                         |             | 108 ->120           |  |         |     |           |                               |  |    |                        |  |           |                      |    |  |  |   |  |                                |   |  |  |   |  |                                 |   |  |                            |   |  |   |   |  |   |   |  |
| Computing Foundation                           | 36          |                     |  |         |     |           |                               |  |    |                        |  |           |                      |    |  |  |   |  |                                |   |  |  |   |  |                                 |   |  |                            |   |  |   |   |  |   |   |  |
| CS1010    Programming Methodology <sup>4</sup> | 4           |                     |  |         |     |           |                               |  |    |                        |  |           |                      |    |  |  |   |  |                                |   |  |  |   |  |                                 |   |  |                            |   |  |   |   |  |   |   |  |
| CS1231S    Discrete Structures                 | 4           |                     |  |         |     |           |                               |  |    |                        |  |           |                      |    |  |  |   |  |                                |   |  |  |   |  |                                 |   |  |                            |   |  |   |   |  |   |   |  |
| CS2040C Data Structures and Algorithms         | 4           |                     |  |         |     |           |                               |  |    |                        |  |           |                      |    |  |  |   |  |                                |   |  |  |   |  |                                 |   |  |                            |   |  |   |   |  |   |   |  |
| CS2100    Computer Organisation                | 4           |                     |  |         |     |           |                               |  |    |                        |  |           |                      |    |  |  |   |  |                                |   |  |  |   |  |                                 |   |  |                            |   |  |   |   |  |   |   |  |
| CS2102    Database Systems                     | 4           |                     |  |         |     |           |                               |  |    |                        |  |           |                      |    |  |  |   |  |                                |   |  |  |   |  |                                 |   |  |                            |   |  |   |   |  |   |   |  |
| CS2105    Introduction to Computer Networks    | 4           |                     |  |         |     |           |                               |  |    |                        |  |           |                      |    |  |  |   |  |                                |   |  |  |   |  |                                 |   |  |                            |   |  |   |   |  |   |   |  |
| CS2106    Introduction to Operating Systems    | 4           |                     |  |         |     |           |                               |  |    |                        |  |           |                      |    |  |  |   |  |                                |   |  |  |   |  |                                 |   |  |                            |   |  |   |   |  |   |   |  |

| S/N | Date | Faculty/<br>School/ | (B) Updates for NUS Bulletin 2018-19 after archival (i.e., from 1 July 2019 onwards)   |           |  |
|-----|------|---------------------|--|-----------|--|
|     |      |                     | CS2113T Software Engineering and Object-Oriented Programming <sup>4</sup>  | 4         |  |
|     |      |                     | IS3103 Information Systems Leadership and Communication  | 4         |  |
|     |      |                     | <b>Information Security Requirements</b>   | <b>32</b> |  |
|     |      |                     | CS2107 Introduction to Information Security  | 4         |  |
|     |      |                     | CS3235 Introduction to Computer Security   | 4         |  |
|     |      |                     | IFS4201 Information Security Industry Capstone Project   | 8         |  |
|     |      |                     | IS4231 Information Security Management   | 4         |  |
|     |      |                     | <b>Programme Electives</b><br>Complete 12 MCs from the following list of modules:<br>CS3236 Introduction to Information Theory<br>Either<br>CS4236 Cryptography Theory and Practice;<br>or<br>MA4261 Coding and Cryptography<br>CS4238 Computer Security Practice<br>CS4239 Software Security<br>CS4257 Algorithmic Foundations of Privacy<br>CS4276 IoT Security<br>CS5231 Systems Security<br>CS5321 Network Security<br>CS5322 Database Security<br>CS5331 Web Security<br>IS4204 IT Governance<br>CS5332 Biometric Authentication<br>IFS4101 Legal Aspects of Information Security<br>IFS4102 Digital Forensics<br>IFS4103 Penetration Testing Practice<br>IS4233 Legal Aspects of Information Technology<br>IS4234 Compliance and Regulation Technology | 12        |  |

| S/N | Date | Faculty/<br>School/ | (B) Updates for NUS Bulletin 2018-19 after archival (i.e., from 1 July 2019 onwards)  |               |           |
|-----|------|---------------------|---|---------------|-----------|
|     |      |                     | IS4302 Blockchain and Distributed Ledger Technologies<br>Other modules approved by the SoC UG Office  |               |           |
|     |      |                     | <b>Computing Breadth</b>  | <b>20</b>     |           |
|     |      |                     | Complete 8 MCs of CP-coded, CS-coded or IS-coded modules at level-3000 or above.  | 8             |           |
|     |      |                     | <del>Industrial Experience Requirement comprising of:<br/>IFS2200 Information Security Immersion Programme<br/>IFS4202 Information Security Practicum Programme</del> | <del>12</del> |           |
|     |      |                     | CP3880 Advanced Technology Attachment Programme <small>Internship II</small>  | 12            |           |
|     |      |                     | <b>Co-operative Scheme Additional Requirements</b>  | <b>12</b>     |           |
|     |      |                     | IFS2200 Information Security Immersion Programme <small>Internship I</small>  | 6             |           |
|     |      |                     | IFS4202 Information Security Practicum Programme <small>Part of Internship III</small>  | 6             |           |
|     |      |                     | <b>IT Professionalism</b>   | <b>8</b>      |           |
|     |      |                     | IS1103/X IS Innovations in Organisation and Society   | 4             |           |
|     |      |                     | CS2101 Effective Communication for Computing Professionals  | 4             |           |
|     |      |                     | <b>Mathematics</b>  | <b>12</b>     |           |
|     |      |                     | MA1101R Linear Algebra I  | 4             |           |
|     |      |                     | MA1521 Calculus for Computing   | 4             |           |
|     |      |                     | ST2334 Probability and Statistics <sup>5</sup>  | 4             |           |
|     |      |                     | <b>UNRESTRICTED ELECTIVES<sup>6</sup></b>   |               | <b>20</b> |

| S/N                | Date  | Faculty/<br>School/ | (B) Updates for NUS Bulletin 2018-19 after archival (i.e., from 1 July 2019 onwards)  |                    |               |              |                                    |                   |   |                  |   |
|--------------------|---|---------------------|---|--------------------|---------------|--------------|------------------------------------|-------------------|---|------------------|---|
|                    |   |                     | <table border="1"><tr><td><b>Grand Total</b></td><td></td><td><b>160</b></td></tr></table> <p><sup>1</sup> Students should consult the CS Deputy Head (CS Programmes) in advance if they are interested in this option as industry courses may not be offered every year.</p> <p><sup>2</sup> For students who opt for iLead or NOC, the additional MCs beyond the 12-MCs allocated to Industry Experience Requirement should be taken from Unrestricted Electives and/or exempted modules.</p> <p><sup>3</sup> CS1010 can be replaced by CS1101S Programming Methodology.</p> <p><sup>4</sup> Students taking CS2113T Software Engineering &amp; Object-Oriented Programming must take CS2101 Effective Communication for Computing Professionals in the same semester.</p> <p><sup>5</sup> Students pursuing a Second Major in Mathematics or Statistics will take ST2131 Probability in place of ST2334 Probability and Statistics. The students will take ST2132 as a core module in the second major in Statistics programme and are highly encouraged to take ST2132 as an elective module in the second major in Mathematics programme. If a student who has already taken ST2131 quits the Second major in Mathematics or Statistics, he/she will have to take ST2132 to fulfil the BComp (Information Security) degree requirements.</p> <p><sup>6</sup> Students without A-level Mathematics are required to complete MA1301 or MA1301X Introductory Mathematics as part of the Unrestricted Electives.</p> | <b>Grand Total</b> |               | <b>160</b>   |                                    |                   |   |                  |   |
| <b>Grand Total</b> |   | <b>160</b>          |   |                    |               |              |                                    |                   |   |                  |   |
| 2.                 | 13 Mar 2020   | FoS                 | <p><b><u>Updates for Bulletin AY2018/19 (as of 13 March 2020)</u></b></p> <p><b>To be changed for cohort number(s): Cohort AY18/19 onwards</b></p> <p><b>Link:</b> Page 140/252 <a href="http://www.nus.edu.sg/registrar/info/nusbuletin/AY201819_FoS.pdf">http://www.nus.edu.sg/registrar/info/nusbuletin/AY201819_FoS.pdf</a></p> <p><b><u>Current text:</u></b></p> <table><tr><th>SECOND MAJOR</th><th>PREREQUISITES</th></tr><tr><td>1. Chemistry</td><td>H2 pass in Chemistry or equivalent</td></tr><tr><td>2. Data Analytics</td><td>A very good pass in H2 Mathematics or equivalent. Existing students from cohort 2016/2017 or later may apply to read a Second Major in Data Analytics after completing CS1010 (or its equivalent), MA1101R (or its equivalent) and MA1102R (or its equivalent) with a B+ grade or above in each of these modules.</td></tr><tr><td>3. Life Sciences</td><td>H2 passes or equivalent in Biology, Chemistry AND either Mathematics or Physics</td></tr></table>  | SECOND MAJOR       | PREREQUISITES | 1. Chemistry | H2 pass in Chemistry or equivalent | 2. Data Analytics | A very good pass in H2 Mathematics or equivalent. Existing students from cohort 2016/2017 or later may apply to read a Second Major in Data Analytics after completing CS1010 (or its equivalent), MA1101R (or its equivalent) and MA1102R (or its equivalent) with a B+ grade or above in each of these modules. | 3. Life Sciences | H2 passes or equivalent in Biology, Chemistry AND either Mathematics or Physics |
| SECOND MAJOR       | PREREQUISITES   |                     |   |                    |               |              |                                    |                   |   |                  |   |
| 1. Chemistry       | H2 pass in Chemistry or equivalent  |                     |   |                    |               |              |                                    |                   |   |                  |   |
| 2. Data Analytics  | A very good pass in H2 Mathematics or equivalent. Existing students from cohort 2016/2017 or later may apply to read a Second Major in Data Analytics after completing CS1010 (or its equivalent), MA1101R (or its equivalent) and MA1102R (or its equivalent) with a B+ grade or above in each of these modules. |                     |   |                    |               |              |                                    |                   |   |                  |   |
| 3. Life Sciences   | H2 passes or equivalent in Biology, Chemistry AND either Mathematics or Physics   |                     |   |                    |               |              |                                    |                   |   |                  |   |

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|-----|-------------|---------------------|---|---|
|     |             |                     | 4. Mathematics  | H2 pass in Mathematics or equivalent  |
|     |             |                     | 5. Physics  | H2 pass in Physics or equivalent  |
|     |             |                     | 6. Statistics   | H2 pass in Mathematics or equivalent  |
|     |             |                     | <b><u>Revised text:</u></b>   |   |
|     |             |                     | <b>SECOND MAJOR</b>   | <b>PREREQUISITES</b>  |
|     |             |                     | 1. Chemistry  | H2 pass in Chemistry or equivalent  |
|     |             |                     | 2. Data Analytics   | A very good pass in H2 Mathematics or equivalent. Existing students from cohort 2016/2017 or later may apply to read a Second Major in Data Analytics after completing CS1010 (or its equivalent), MA1101R (or its equivalent) and MA1102R (or its equivalent) with a B+ grade or above in each of these modules. |
|     |             |                     | 3. Food Science   | Good H2 pass in at least two science subjects; one of them should be Chemistry  |
|     |             |                     | <del>3.</del> 4 Life Sciences   | H2 passes or equivalent in Biology, Chemistry AND either Mathematics or Physics   |
|     |             |                     | <del>4.</del> 5 Mathematics   | H2 pass in Mathematics or equivalent  |
| 3.  | 14 May 2020 | FoS                 | <del>5.</del> 6 Physics   | H2 pass in Physics or equivalent  |
|     |             |                     | <del>6.</del> 7 Statistics  | H2 pass in Mathematics or equivalent  |
|     |             |                     | <b><u>Updates for Archived Bulletin AY18/19</u></b>   |   |
|     |             |                     | <b>Link:</b> <a href="http://www.nus.edu.sg/nusbulletin/archives/ay201819/">http://www.nus.edu.sg/nusbulletin/archives/ay201819/</a><br><a href="http://www.nus.edu.sg/registrar/docs/info/nusbulletin/Bulletin-Updates-AY1819.pdf">http://www.nus.edu.sg/registrar/docs/info/nusbulletin/Bulletin-Updates-AY1819.pdf</a> |   |
|     |             |                     | <b>Circular title:</b> Faculty of Science: Computational Biology Programme – Changes in Major Requirement for B.Sc. (Hons.) in Computational Biology (ZB)   |   |
|     |             |                     | <b>Circular no.:</b> UCEP Circular 5, AY19/20   |   |
|     |             |                     | <b><u>Page 80 to 81 out of 252</u></b>  |   |
|     |             |                     | <b>Current text:</b>  |   |
|     |             |                     | <b>Option A</b>   |   |

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|---|------|---------------------|--|--|---------|-----------------------------|--|--|---|----|----|--|---|-----------------------------|---|
|   |      |                     | CS2102 Database Systems<br>CS3103 Computer Networks Practice<br>CS3230 Design and Analysis of Algorithms<br>CS3240 Interaction Design<br>CS3241 Computer Graphics<br>CS3243 Introduction to Artificial Intelligence<br>CS3244 Machine Learning   |  |         |                             |  |  |   |    |    |  |   |                             |   |
|   |      |                     | <table><tr><td colspan="2"><b>Level-4000 Essential</b></td><td></td></tr><tr><td>ZB4199 Honours Project in Computational Biology</td><td>12</td><td rowspan="3">20</td></tr><tr><td>ZB4171 Advanced Topics in Bioinformatics</td><td>4</td></tr><tr><td>LSM4241 Functional Genomics</td><td>4</td></tr></table>  |  |         | <b>Level-4000 Essential</b> |  |  | ZB4199 Honours Project in Computational Biology | 12 | 20 | ZB4171 Advanced Topics in Bioinformatics | 4 | LSM4241 Functional Genomics | 4 |
| <b>Level-4000 Essential</b>                     |      |                     |  |  |         |                             |  |  |   |    |    |  |   |                             |   |
| ZB4199 Honours Project in Computational Biology | 12   | 20                  |  |  |         |                             |  |  |   |    |    |  |   |                             |   |
| ZB4171 Advanced Topics in Bioinformatics        | 4    |                     |  |  |         |                             |  |  |   |    |    |  |   |                             |   |
| LSM4241 Functional Genomics                     | 4    |                     |  |  |         |                             |  |  |   |    |    |  |   |                             |   |
|   |      |                     | <b>Option A</b><br>CS4220 Knowledge Discovery Methods in Bioinformatics<br>CS4221 Database Applications Design and Tuning<br>CS4231 Parallel and Distributed Algorithms<br>CS4243 Computer Vision and Pattern Recognition<br>CS4244 Knowledge Representation and Reasoning<br>CS4248 Natural Language Processing<br>CS4234 Optimisation Algorithms<br>CS4330 Combinatorial Methods in Bioinformatics |  |         |                             |  |  |   |    |    |  |   |                             |   |
|   |      |                     | <b>Option B</b><br>LSM4211 Toxicology<br>LSM4212 Pharmacogenetics and Drug Responses<br>LSM4213 System Neurobiology<br>LSM4221 Drug Discovery and Clinical Trials<br>LSM4222 Advanced Immunology<br>LSM4224 Free Radicals and Antioxidant Biology<br>LSM4226 Infection and Immunity<br>LSM4231 Structural Biology<br>LSM4232 Advanced Cell Biology<br>LSM4242 Protein Engineering                    |  |         |                             |  |  |   |    |    |  |   |                             |   |
|   |      |                     | Unrestricted Elective Modules <sup>[4]</sup>   |  | 32 – 36 |                             |  |  |   |    |    |  |   |                             |   |

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|---|------|---------------------|---|-----------------------------|--|--|--|---|----|--|---------------|--|---|--|----|--|---|--|
|   |      |                     | <p><b>Revised text:</b></p> <p><b>Option A</b><br/>           CS2102 Database Systems<br/>           CS3103 Computer Networks Practice<br/>           CS3230 Design and Analysis of Algorithms<br/> <del>CS3223 Database Systems Implementation</del><br/>           CS3240 Interaction Design<br/>           CS3241 Computer Graphics<br/>           CS3243 Introduction to Artificial Intelligence<br/>           CS3244 Machine Learning</p> <table border="1"> <tr> <td colspan="3"><b>Level-4000 Essential</b></td><td></td></tr> <tr> <td>ZB4199 Honours Project in Computational Biology <del>OR ZB4299 Applied Project in Computational Biology</del></td><td>12</td><td></td><td><del>20</del></td></tr> <tr> <td>ZB4171 Advanced Topics in Bioinformatics</td><td>4</td><td></td><td rowspan="2">16</td></tr> <tr> <td><del>LSM4241 Functional Genomics</del></td><td>4</td><td></td></tr> </table> <p><b>Option A</b><br/>           CS4220 Knowledge Discovery Methods in Bioinformatics<br/>           CS4221 Database Applications Design and Tuning<br/>           CS4231 Parallel and Distributed Algorithms<br/> <del>CS4224 Distributed Databases</del><br/> <del>CS4225 Big Data Systems for Data Science</del><br/>           CS4243 Computer Vision and Pattern Recognition<br/>           CS4244 Knowledge Representation and Reasoning<br/>           CS4248 Natural Language Processing<br/>           CS4234 Optimisation Algorithms<br/>           CS4330 Combinatorial Methods in Bioinformatics</p> <p><b>Option B</b><br/>           LSM4211 Toxicology<br/>           LSM4212 Pharmacogenetics and Drug Responses</p> | <b>Level-4000 Essential</b> |  |  |  | ZB4199 Honours Project in Computational Biology <del>OR ZB4299 Applied Project in Computational Biology</del> | 12 |  | <del>20</del> | ZB4171 Advanced Topics in Bioinformatics | 4 |  | 16 | <del>LSM4241 Functional Genomics</del> | 4 |  |
| <b>Level-4000 Essential</b>   |      |                     |   |                             |  |  |  |   |    |  |               |  |   |  |    |  |   |  |
| ZB4199 Honours Project in Computational Biology <del>OR ZB4299 Applied Project in Computational Biology</del> | 12   |                     | <del>20</del>   |                             |  |  |  |   |    |  |               |  |   |  |    |  |   |  |
| ZB4171 Advanced Topics in Bioinformatics  | 4    |                     | 16  |                             |  |  |  |   |    |  |               |  |   |  |    |  |   |  |
| <del>LSM4241 Functional Genomics</del>  | 4    |                     |   |                             |  |  |  |   |    |  |               |  |   |  |    |  |   |  |

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|--|------------------------|---------------------|--|--|--|------------------------|
|  |                        |                     | <div>LSM4213 System Neurobiology<br/>LSM4221 Drug Discovery and Clinical Trials<br/>LSM4222 Advanced Immunology<br/>LSM4224 Free Radicals and Antioxidant Biology<br/>LSM4226 Infection and Immunity<br/>LSM4231 Structural Biology<br/>LSM4232 Advanced Cell Biology<br/>LSM4241 Functional Genomics<br/>LSM4242 Protein Engineering</div> <table><tr><td>Unrestricted Elective Modules <sup>[4]</sup></td><td><del>32-36-36-40</del></td></tr></table> <div><p><b>Circular title:</b> Proposed Inclusion of ST4299 (Applied Project) as an Alternative to ST4199 (Honours Project) in the Statistics Major<br/><b>Circular no.:</b> SFCC Circular No. 19, AY2018/19</p><p><b>Page 130 out of 252</b></p><p><b>Current and revised text:</b></p><p>Pass</p><ul style="list-style-type: none"><li>- ST4199 Honours Project in Statistics <i>or</i><br/>ST4299 Applied Project in Statistics</li><li>- ST4231 Computer Intensive Statistical Methods</li><li>- ST4233 Linear Models</li><li>- Two other modules from ST4xxx modules</li><li>- One additional module from ST4xxx, ST5xxx or List B modules</li></ul><p><b>Circular title:</b> Faculty of Science: Department of Chemistry – Revision of Requirements for Minor in Analytical Chemistry Programme<br/><b>Circular no.:</b> BUS Cir05, AY19/20</p></div> |  | Unrestricted Elective Modules <sup>[4]</sup> | <del>32-36-36-40</del> |
| Unrestricted Elective Modules <sup>[4]</sup> | <del>32-36-36-40</del> |                     |  |  |  |                        |



| S/N | Date | Faculty/<br>School/ | (B) Updates for NUS Bulletin 2018-19 after archival (i.e., from 1 July 2019 onwards)   |
|-----|------|---------------------|--|
|     |      |                     | <p><b>Page 160 out of 252</b></p> <p><b>Current text:</b></p> <p>To be awarded a minor in Analytical Chemistry, a student must pass all the following six modules:</p> <ol style="list-style-type: none"> <li><del>1. CM1401 and CM1111 Chemistry for Life Sciences and Inorganic Chemistry 1 OR</del></li> <li><del>2. CM1402 and CM1191 General Chemistry and Experiments in Chemistry 1</del></li> <li><del>3. CM2101 Physical Chemistry 2</del></li> <li><del>4. CM2142 Analytical Chemistry 1 OR CM2192 Experiments in Chemistry 2</del></li> <li><del>5. CM3242 Instrumental Analysis II</del></li> <li><del>6. CM3295 Selected Experiments in Analytical Chemistry</del></li> </ol> <p><b>Revised text:</b></p> <p>To be awarded a minor in Analytical Chemistry, a student must pass all the following six modules:</p> <ol style="list-style-type: none"> <li>1. CM1191 Experiments in Chemistry 1</li> <li>2. CM1111 Inorganic Chemistry 1 <u>or</u> CM1121 Organic Chemistry 1 <u>or</u> CM1131 Physical Chemistry 1 <u>or</u> CM1401 Chemistry for Life Sciences <u>or</u> CM1402 General Chemistry <u>or</u> CM1501 Organic Chemistry for Engineers <u>or</u> CM1502 General and Physical Chemistry for Engineers</li> <li>3. CM2192 Experiments in Chemistry 3 or CM2142 Analytical Chemistry 1</li> <li>4. CM2101 Physical Chemistry 2 <u>or</u> CM3241 Instrumental Analysis I</li> <li>5. CM3242 Instrumental Analysis II</li> <li>6. CM3292 Advanced Experiments in Analytical &amp; Physical Chemistry <u>or</u> CM3295 Selected Experiments in Analytical Chemistry</li> </ol> <hr/> <p><b>Circular title:</b> FoS: Department of Biological Sciences – Addition of Elective Options for Minor Programme in Aquatic Ecology<br/> <b>Circular no.:</b> BUS Cir09, AY19/20</p> <p><b>Page 161</b></p> <p><b>Current text:</b></p> <p>To be awarded a minor in Aquatic Ecology, a student must pass the six modules as set out below:</p> |

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|-----|------|---------------------|--|
|     |      |                     | <ol style="list-style-type: none"> <li>1. LSM2251 Ecology and Environment</li> <li>2. LSM3254 Ecology of Aquatic Environments</li> <li>3. GE2229 Water and Environment</li> <li>4. SP3203 Aquatic Ecology Research</li> <li>5. Choose 2 from the following elective modules:<br/> [For students reading Life Sciences Major, please select at least one non-LSM prefixed module.] <ul style="list-style-type: none"> <li>• GE2215 Introduction to GIS and Remote Sensing</li> <li>• GE2220 Terrestrial and Coastal Environments</li> <li>• GE2228 Weather and Climate</li> <li>• GE3216 Applications of GIS &amp; Remote Sensing</li> <li>• GE3221 Ecological Systems</li> <li>• GE3223 Environmental Change in the Tropics</li> <li>• LSM2253 Applied Data Analysis in Ecology and Evolution</li> <li>• LSM2252 Biodiversity</li> <li>• LSM4257 Aquatic Vertebrate Diversity</li> <li>• LSM4261 Marine Biology</li> <li>• LSM4264 Freshwater Biology</li> </ul> </li> </ol> <p><b>Revised text:</b></p> <p>To be awarded a minor in Aquatic Ecology, a student must pass the six modules as set out below:</p> <ol style="list-style-type: none"> <li>1. LSM2251 Ecology and Environment</li> <li>2. LSM3254 Ecology of Aquatic Environments</li> <li>3. GE2229 Water and Environment</li> <li>4. SP3203 Aquatic Ecology Research</li> <li>5. Choose 2 from the following elective modules:<br/> [For students reading Life Sciences Major, please select at least one non-LSM prefixed module.] <ul style="list-style-type: none"> <li>o GE2215 Introduction to GIS and Remote Sensing</li> <li>o GE2220 Terrestrial and Coastal Environments</li> <li>o GE2228 Weather and Climate</li> <li>o GE3216 Applications of GIS &amp; Remote Sensing</li> <li>o GE3221 Ecological Systems</li> <li>o GE3223 Environmental Change in the Tropics</li> <li>o GE3246 Environmental Pollution</li> <li>o LSM2253 Applied Data Analysis in Ecology and Evolution</li> </ul> </li> </ol> |

| S/N | Date | Faculty/<br>School/ | (B) Updates for NUS Bulletin 2018-19 after archival (i.e., from 1 July 2019 onwards)   |
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|     |      |                     | <ul style="list-style-type: none"> <li>o LSM2252 Biodiversity</li> <li>o LSM4257 Aquatic Vertebrate Diversity</li> <li>o LSM4260 Plankton Ecology</li> <li>o LSM4261 Marine Biology</li> <li>o LSM4264 Freshwater Biology</li> <li>o LSM4266 Aquatic Invertebrate Diversity</li> </ul> <hr/> <p><b>Circular title:</b> FoS: Department of Physics – Proposal to Change the Curriculum for the Minor in Medical Physics<br/> <b>Circular no.:</b> BUS Cir15, AY19/20</p> <p><b>Page 173</b></p> <p><b>Current text:</b></p> <p>The Medical Physics minor programme will consist of the following set of common core modules (12 MCs):</p> <ol style="list-style-type: none"> <li>1. GEH1032 Modern Technology in Medicine and Health</li> <li>2. PC3232 Nuclear &amp; Particle Physics (for physics majors) or PC3232B Applied Nuclear Physics</li> <li>3. PC3294 Radiation Lab</li> </ol> <p>Students in the Medical Physics minor programme are also required to read at least 12 MCs of modules from the following set of electives:</p> <p>Module (4 MC each)</p> <ol style="list-style-type: none"> <li>1. LSM2212 Human Anatomy</li> <li>2. LSM1106 Molecular Cell Biology</li> <li>3. LSM1104 or LSM2231 General Physiology</li> <li>4. LSM1401 Fundamentals of Biochemistry</li> <li>5. LSM2103 or LSM2233 Cell Biology</li> <li>6. LSM4243 Tumour Biology</li> <li>7. LSM3223 Immunology</li> <li>8. LSM3243 Molecular Biophysics</li> </ol> |

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|-----|------|---------------------|--|
|     |      |                     | <p>9. EE4603 Biomedical Imaging Systems</p> <p><b>Revised text:</b></p> <p>The Medical Physics minor programme will consist of the following set of common core modules (12 MCs):</p> <ol style="list-style-type: none"> <li>1. GEH1032 Modern Technology in Medicine and Health</li> <li>2. <del>PC3232 Nuclear &amp; Particle Physics (for physics majors)</del> or <del>PC3232B Applied Nuclear Physics</del><br/>PC3295 Radiation for Imaging and Therapy in Medicine</li> <li>3. PC3294 Radiation Lab</li> </ol> <p>Students in the Medical Physics minor programme are also required to read at least 12 MCs of modules from the following set of electives modules (4 MC each):</p> <ol style="list-style-type: none"> <li>1. LSM2212 Human Anatomy</li> <li>2. LSM1106 Molecular Cell Biology</li> <li>3. LSM1104 or LSM2231 General Physiology</li> <li>4. LSM1401 Fundamentals of Biochemistry</li> <li>5. LSM2103 or LSM2233 Cell Biology</li> <li>6. LSM4243 Tumour Biology</li> <li>7. LSM3223 Immunology</li> <li>8. LSM3243 Molecular Biophysics</li> <li>9. EE4603 Biomedical Imaging Systems</li> </ol> <p>Please note that with effect from Semester 1, AY2020/21:</p> <ul style="list-style-type: none"> <li>• Students who have not read PC3232 or PC3232B will now read PC3295 to satisfy the Minor curriculum requirement in lieu of PC3232/PC3232B, before going on to read PC3294.</li> <li>• Students who have already read PC3232 or PC3232B are considered to have fulfilled the requirement of PC3295 under the new Minor requirements and may proceed to read the module PC3294.</li> </ul> <hr/> <p><b>Circular title:</b> FoS: Biological Sciences – Proposed Revision to the Continuation Requirements of the NUS Bachelor of Science in Life Sciences (BSc)-Doctor of Veterinary Medicine (DVM) Concurrent Degree Programme (CDP) with the University of Melbourne<br/> <b>Circular no.:</b> BUS Cir16, AY19/20</p> |

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|---------------------|---|----------------------|--|--------------|--------------------|----------------------|---------------------|---|----|
|                     |   |                      | <p><b>Page 220 on link:</b> <a href="http://www.nus.edu.sg/registrar/docs/info/nusbulletin/AY201819_OtherProgrammes.pdf">http://www.nus.edu.sg/registrar/docs/info/nusbulletin/AY201819_OtherProgrammes.pdf</a></p> <p><b>Current text:</b></p> <p>NUS students in this CDP must maintain a CAP of 3.50 or above (out of 5.00) for the BSc degree requirements at the completion of three semesters. A student whose CAP falls below 3.50 at the completion of three semesters will be required to exit the programme. The student may then resume and complete the default BSc degree in NUS with or without Honours depending on his or her CAP and desire.</p> <p><b>Revised text:</b></p> <p>NUS students in this CDP must maintain a CAP of <del>3.50</del> 4.0 or above (out of 5.00) for the BSc degree requirements at the completion of three semesters. A student whose CAP falls below <del>3.50</del> 4.0 at the completion of three semesters will be required to exit the programme. The student may then resume and complete the default BSc degree in NUS with or without Honours depending on his or her CAP and desire.</p> <hr/> <p><b>Circular title:</b> Faculty of Science: Department of Pharmacy – Revision to the Bachelor of Science in Pharmaceutical Science (Honours) Programme<br/><b>Circular no.:</b> BUS Circular 16, AY19/20</p> <p><b>Page 112</b></p> <p><b>Current text:</b></p> <table><tr><th>MODULE LEVEL</th><th>MAJOR REQUIREMENTS</th><th>CUMULATIVE MAJOR MCS</th></tr><tr><td>Level 1000 (28 MCs)</td><td>Pass<ul style="list-style-type: none"><li>• PR1110A Foundations for Medicinal Chemistry (new)</li><li>• PR1111A Pharmaceutical Biochemistry (new)</li><li>• PHS1120 Essential Topics in Pharmaceutical Chemistry (new)</li></ul></td><td>28</td></tr></table> | MODULE LEVEL | MAJOR REQUIREMENTS | CUMULATIVE MAJOR MCS | Level 1000 (28 MCs) | Pass <ul style="list-style-type: none"><li>• PR1110A Foundations for Medicinal Chemistry (new)</li><li>• PR1111A Pharmaceutical Biochemistry (new)</li><li>• PHS1120 Essential Topics in Pharmaceutical Chemistry (new)</li></ul> | 28 |
| MODULE LEVEL        | MAJOR REQUIREMENTS  | CUMULATIVE MAJOR MCS |  |              |                    |                      |                     |   |    |
| Level 1000 (28 MCs) | Pass <ul style="list-style-type: none"><li>• PR1110A Foundations for Medicinal Chemistry (new)</li><li>• PR1111A Pharmaceutical Biochemistry (new)</li><li>• PHS1120 Essential Topics in Pharmaceutical Chemistry (new)</li></ul> | 28                   |  |              |                    |                      |                     |   |    |

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|     |      |                     |  | <ul style="list-style-type: none"> <li>• PA1113 Basic Pharmacology</li> <li>• AY1130 Human Anatomy &amp; Physiology I</li> <li>• PY1131 Human Anatomy &amp; Physiology II</li> <li>• ST1232 Statistics for Life Sciences</li> </ul>  |     |  |
|     |      |                     | Level 2000 (28 MCs)  | Pass <ul style="list-style-type: none"> <li>• PR2114A Formulation &amp; Technology I (new)</li> <li>• PR2115A Medicinal Chemistry for Drug Design (new)</li> <li>• PHS2120 Drug Product Development &amp; Lifecycle Management (new)</li> <li>• PR2122 Biotechnology for Pharmacy</li> <li>• PR2143 Pharmaceutical Analysis for Quality Assurance</li> <li>• PHS2191 Laboratory Techniques in Pharmaceutical Science (new)</li> <li>• LSM2241 Introductory Bioinformatics</li> </ul>   | 56  |  |
|     |      |                     | Level-3000(20 MCs)   | Pass <ul style="list-style-type: none"> <li>• PR3144 Principles of Research Methods</li> <li>• PR3145 Compliance &amp; Good Practices in Pharmacy</li> <li>• PR3117 Formulation &amp; Technology II</li> <li>• PHS3122 Pharmaceutical Quality Management</li> </ul> Pass any 1 <ul style="list-style-type: none"> <li>• PR3116 Concepts in Pharmacokinetics and Biopharmaceutics</li> <li>• PR3201 Pharmaceutical Marketing</li> <li>• PR3204 Medicinal Natural Products (new)</li> <li>• LSM3231 Protein Structure and Function</li> <li>• CM3242 Instrumental Analysis II</li> </ul> | 76  |  |
|     |      |                     | Level 4000 (24 MCs)  | Pass <ul style="list-style-type: none"> <li>• PHS4199 Honours Project in Pharmaceutical Science or PHS4299 Applied Project in Pharmaceutical Science (12 MC) (new)</li> <li>• PHS4121 Regulation of Healthcare Products (new)</li> </ul>   | 100 |  |

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|     |      |                     |  | Pass any 2<br>• PR4204 Special Drug Delivery<br>• PR4206 Industrial Pharmacy<br>• PR4207 Applied Pharmacokinetics and Toxicokinetics<br>• PHS4220 Synthetic Strategies for Drug Substances (new)<br>• LSM4242 Protein Engineering<br>• LSM4241 Functional Genomics<br>• CM4241 Trace Analysis<br>• CM4242 Advanced Analytical Techniques<br>• CM4273 Computational Drug Design<br>• CM4227 Chemical Biology |                                 |  |
|     |      |                     | Revised text:  |   |                                 |  |
|     |      |                     | <b>MODULE LEVEL</b>  | <b>MAJOR REQUIREMENTS</b>   | <b>CUMULATIVE<br/>MAJOR MCS</b> |  |
|     |      |                     | Level 1000 (28<br>MCs)   | Pass<br>• PR1110A Foundations for Medicinal Chemistry (new)<br>• PR1111A Pharmaceutical Biochemistry (new)<br>• PHS1120 Essential Topics in Pharmaceutical Chemistry (new)<br>• PA1113 Basic Pharmacology<br>• AY1130 Human Anatomy & Physiology I<br>• PY1131 Human Anatomy & Physiology II<br>• ST1232 Statistics for Life Sciences   | 28                              |  |
|     |      |                     | Level 2000 (28<br>MCs)   | Pass<br>• PR2114A Formulation & Technology I (new)<br>• PR2115A Medicinal Chemistry for Drug Design (new)<br>• PHS2120 Drug Product Development & Lifecycle Management (new)<br>• PR2122 Biotechnology for Pharmacy<br>• PR2143 Pharmaceutical Analysis for Quality Assurance<br>• PHS2191 Laboratory Techniques in Pharmaceutical Science (new)  | 56                              |  |

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|-----|------|---------------------|--|--|----|--|
|     |      |                     |  | • LSM2241 Introductory Bioinformatics  |    |  |
|     |      |                     | Level-3000(20<br>MCs)  | <p><del>Pass</del></p> <ul style="list-style-type: none"> <li><del>• PR3144 Principles of Research Methods</del></li> <li><del>• PR3145 Compliance &amp; Good Practices in Pharmacy</del></li> <li><del>• PR3117 Formulation &amp; Technology II</del></li> <li><del>• PHS3122 Pharmaceutical Quality Management</del></li> </ul> <p><del>Pass any 1</del></p> <ul style="list-style-type: none"> <li><del>• PR3116 Concepts in Pharmacokinetics and Biopharmaceutics</del></li> <li><del>• PR3201 Pharmaceutical Marketing</del></li> <li><del>• PR3204 Medicinal Natural Products (new)</del></li> <li><del>• LSM3231 Protein Structure and Function</del></li> <li><del>• CM3242 Instrumental Analysis II</del></li> </ul> <p>Pass</p> <ul style="list-style-type: none"> <li>• PR3116 Concepts in Pharmacokinetics and Biopharmaceutics</li> <li>• PR3117 Formulation &amp; Technology II</li> <li>• PHS3122 Pharmaceutical Quality Management</li> <li>• PHS3191 Laboratory Techniques in Pharmaceutical Science II</li> </ul> <p>Pass any 1</p> <ul style="list-style-type: none"> <li>• PR3204 Medicinal Natural Products</li> <li>• PHS3220 Microbiology for Pharmaceutical Science</li> <li>• LSM3223 Immunology</li> <li>• LSM3224 Molecular Basis of Human Diseases</li> <li>• LSM3231 Protein Structure and Function</li> <li>• CM3242 Instrumental Analysis II</li> <li>• SPH3102 Public Health Communication</li> <li>• SPH3103 Public Health Economics</li> </ul> | 76 |  |



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|-----|------------|---------------------|--|---|-----|--|
|     |            |                     | Level 4000 (24 MCs)  | Pass <ul style="list-style-type: none"> <li>• PHS4199 Honours Project in Pharmaceutical Science or PHS4299 Applied Project in Pharmaceutical Science (12 MC) (new)</li> <li>• PHS4121 Regulation of Healthcare Products (new)</li> </ul> Pass any 2 <ul style="list-style-type: none"> <li>• PR4204 Special Drug Delivery</li> <li>• PR4205 Bioorganic Principles of Medicinal Chemistry</li> <li>• PR4206 Industrial Pharmacy</li> <li>• PR4207 Applied Pharmacokinetics and Toxicokinetics</li> <li>• PHS4220 Synthetic Strategies for Drug Substances (new)</li> <li>• LSM4241 Functional Genomics</li> <li>• LSM4242 Protein Engineering</li> <li>• CM4227 Chemical Biology</li> <li>• CM4241 Trace Analysis</li> <li>• CM4242 Advanced Analytical Techniques</li> <li>• SP4263 Forensic Toxicology and Poisons</li> <li>• <del>CM4273 Computational Drug Design</del></li> <li>• CS4220 Knowledge Discovery Methods in Bioinformatics</li> </ul> | 100 |  |
| 4.  | 4 Jun 2020 | FoS                 | <b><u>Updates for Archived Bulletin AY2018/19</u></b><br><br><b>Circular title:</b> FoS: Department of Pharmacy – Major Revision to the Minor Programme in Pharmaceutical Science<br><b>Circular no.:</b> Senate Circular No. 14 AY2019-20<br><br><b><u>Page 179 of 252</u></b><br><br><b>Current text:</b><br><br><b>Curriculum Structure and Requirements</b><br>Essential modules:<br>PR1110 Foundations for Medicinal Chemistry<br>PR2114 Formulation and Technology I |   |     |  |

| S/N | Date | Faculty/<br>School/ | (B) Updates for NUS Bulletin 2018-19 after archival (i.e., from 1 July 2019 onwards)  |
|-----|------|---------------------|---|
|     |      |                     | <p>PR2115 Medicinal Chemistry for Drug Design<br/>PR3301 Pharmaceutical Dosage Forms</p> <p>Choose TWO from the following elective modules:<br/>PR1301 Complementary Medicine and Health<br/>PR2143 Pharmaceutical Analysis for Quality Assurance<br/>PR3204 Medicinal Natural Products<br/>PR4205 Bioorganic Principles of Medicinal Chemistry (a replacement for this module will be announced in AY2018/19)<br/>PR4206 Industrial Pharmacy<br/>CN4241R Engineering Principles for Drug Delivery</p> <p><b>Revised text:</b></p> <p>PR1110 Foundations for Medicinal Chemistry <u>or</u> PHS1110 Foundation for Medicinal and Synthetic Chemistry<br/>PR2114 Formulation and Technology I <u>or</u> PHS1114 Principles of Pharmaceutical Formulations I<br/>PR2115 Medicinal Chemistry for Drug Design <u>or</u> PHS2115 Basic Principles of Drug Design and Development<br/>PR3301 Pharmaceutical Dosage Forms or PR3117 Formulations &amp; Technology II <u>or</u> PHS2117 Principles of Pharmaceutical Formulations II</p> <p>Choose TWO from the following elective modules:<br/>PR1301 Complementary Medicine and Health<br/>PR2143 Pharmaceutical Analysis for Quality Assurance <u>or</u> PHS2143 Analytical Techniques and Pharmaceutical Applications<br/>PR2202 Cosmetics and Perfumes<br/>PR3204 Medicinal Natural Products<br/>PR4205 Bioorganic Principles of Medicinal Chemistry<br/>PR4206 Industrial Pharmacy<br/>CN4241R Engineering Principles for Drug Delivery<br/>SP4263 Forensic Toxicology and Poisons</p> |

| 5.       | 29 Jun 2020  | FoS | <p><b><u>Updates for Archived Bulletin AY2018/19</u></b></p> <p><b>Circular title:</b> Faculty of Science: Computational Thinking Requirements<br/><b>Circular no.:</b> Bus Circular 24, AY19/20</p> <p><b>Link:</b> <a href="http://www.nus.edu.sg/registrar/info/nusbulletin/AY201819_FoS.pdf">http://www.nus.edu.sg/registrar/info/nusbulletin/AY201819_FoS.pdf</a><br/>Page: 54</p> <table><tr><th>MAJORS</th><th>OPTIONS TO FULFIL COMPUTATIONAL THINKING REQUIREMENT</th></tr><tr><td>Pharmacy</td><td><p>For Cohort AY2018/19 <del>and after</del>, to read one of the following as an Unrestricted Elective module:</p><p>Option 1: COS2000 – Computational Thinking for Scientists</p><p>or</p><p>Option 2: CS1010S (or its variants) – Programming Methodology or CS1101S Programming Methodology</p><p>or</p><p>Option 3: DYOM via edX MOOCs module - CS50's Introduction to Computer Science</p></td></tr></table> | MAJORS | OPTIONS TO FULFIL COMPUTATIONAL THINKING REQUIREMENT | Pharmacy | <p>For Cohort AY2018/19 <del>and after</del>, to read one of the following as an Unrestricted Elective module:</p> <p>Option 1: COS2000 – Computational Thinking for Scientists</p> <p>or</p> <p>Option 2: CS1010S (or its variants) – Programming Methodology or CS1101S Programming Methodology</p> <p>or</p> <p>Option 3: DYOM via edX MOOCs module - CS50's Introduction to Computer Science</p> |
|----------|--|-----|--|--------|--|----------|--|
| MAJORS   | OPTIONS TO FULFIL COMPUTATIONAL THINKING REQUIREMENT   |     |  |        |  |          |  |
| Pharmacy | <p>For Cohort AY2018/19 <del>and after</del>, to read one of the following as an Unrestricted Elective module:</p> <p>Option 1: COS2000 – Computational Thinking for Scientists</p> <p>or</p> <p>Option 2: CS1010S (or its variants) – Programming Methodology or CS1101S Programming Methodology</p> <p>or</p> <p>Option 3: DYOM via edX MOOCs module - CS50's Introduction to Computer Science</p> |     |  |        |  |          |  |

| 6.                          | 30 Jul 2020   | FoS                  | <p><b><u>Updates for Bulletin AY2018/19</u></b></p> <p><b>Circular title:</b> Faculty of Science: Second Major in Mathematics<br/><b>Circular no.:</b> Bus Circular 26, AY19/20</p> <p><b>Link:</b> <a href="http://www.nus.edu.sg/nusbulletin/archives/ay201819/">http://www.nus.edu.sg/nusbulletin/archives/ay201819/</a> (Page: 149)</p> <table><tr><th>MODULE LEVEL</th><th>SECOND MAJOR REQUIREMENTS</th><th>CUMULATIVE MAJOR MCS</th></tr><tr><td>Level-2000<br/>(20 – 23 MCs)</td><td>Pass<br/>MA2101/ Linear Algebra II<br/>MA2101S<br/><br/>MA2108/ Mathematical Analysis I<br/>MA2108S<br/><br/>MA2216/ Probability<br/>ST2131 or <b>ST2334 Probability and Statistics</b><br/><br/><u>One</u> additional module from List II, III, IV</td><td>32 – 37</td></tr></table> | MODULE LEVEL | SECOND MAJOR REQUIREMENTS | CUMULATIVE MAJOR MCS | Level-2000<br>(20 – 23 MCs) | Pass<br>MA2101/ Linear Algebra II<br>MA2101S<br><br>MA2108/ Mathematical Analysis I<br>MA2108S<br><br>MA2216/ Probability<br>ST2131 or <b>ST2334 Probability and Statistics</b><br><br><u>One</u> additional module from List II, III, IV | 32 – 37 |
|-----------------------------|---|----------------------|--|--------------|---------------------------|----------------------|-----------------------------|---|---------|
| MODULE LEVEL                | SECOND MAJOR REQUIREMENTS   | CUMULATIVE MAJOR MCS |  |              |                           |                      |                             |   |         |
| Level-2000<br>(20 – 23 MCs) | Pass<br>MA2101/ Linear Algebra II<br>MA2101S<br><br>MA2108/ Mathematical Analysis I<br>MA2108S<br><br>MA2216/ Probability<br>ST2131 or <b>ST2334 Probability and Statistics</b><br><br><u>One</u> additional module from List II, III, IV | 32 – 37              |  |              |                           |                      |                             |   |         |

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| 7.  | 17 Aug 2020   | FoS | <p><b>Updates for Bulletin AY2018/19</b><br/><b>Link:</b> <a href="http://www.nus.edu.sg/registrar/docs/info/nusbulletin/AY201819_FoS.pdf">http://www.nus.edu.sg/registrar/docs/info/nusbulletin/AY201819_FoS.pdf</a> (Page 53)</p> <p>Circular title: Faculty of Science: Revision to Computational Thinking Requirement for Chemistry, Food Science and Technology, Life Sciences, Pharmaceutical Science and Physics Majors</p> <p>Circular no.: BUS Circular 01 AY20/21</p> <hr/> <p>3.3.1.7 Computational Thinking Requirement</p> <p><b>Revised text:</b></p> <table><tr><td><b>Life Sciences,<br/>Pharmaceutical<br/>Science,<br/>Physics</b></td><td>Option 1: COS2000 – Computational Thinking for Scientists<br/>or<br/><br/>Option 2: CS1010S (or its variants) – Programming Methodology or CS1101S Programming Methodology<br/>or<br/><br/><b>Option 3: CS50 Introduction to Computer Science DYOM edX MOOCs+</b></td></tr><tr><td><b>Chemistry,<br/>Food Science &amp;<br/>Technology</b></td><td>Option 1: COS2000 – Computational Thinking for Scientists<br/>or<br/><br/>Option 2: CM3267 – Computational Thinking and Programming in Chemistry*<br/>or</td></tr></table> | <b>Life Sciences,<br/>Pharmaceutical<br/>Science,<br/>Physics</b> | Option 1: COS2000 – Computational Thinking for Scientists<br>or<br><br>Option 2: CS1010S (or its variants) – Programming Methodology or CS1101S Programming Methodology<br>or<br><br><b>Option 3: CS50 Introduction to Computer Science DYOM edX MOOCs+</b> | <b>Chemistry,<br/>Food Science &amp;<br/>Technology</b> | Option 1: COS2000 – Computational Thinking for Scientists<br>or<br><br>Option 2: CM3267 – Computational Thinking and Programming in Chemistry*<br>or |
| <b>Life Sciences,<br/>Pharmaceutical<br/>Science,<br/>Physics</b> | Option 1: COS2000 – Computational Thinking for Scientists<br>or<br><br>Option 2: CS1010S (or its variants) – Programming Methodology or CS1101S Programming Methodology<br>or<br><br><b>Option 3: CS50 Introduction to Computer Science DYOM edX MOOCs+</b> |     |  |   |   |   |  |
| <b>Chemistry,<br/>Food Science &amp;<br/>Technology</b>           | Option 1: COS2000 – Computational Thinking for Scientists<br>or<br><br>Option 2: CM3267 – Computational Thinking and Programming in Chemistry*<br>or  |     |  |   |   |   |  |

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|  |  |  | <div> <div> Option 3: CS1010S (or its variants) – Programming Methodology or CS1101S Programming Methodology<br/>or<br/> Option 4: CS50 Introduction to Computer Science DYOM edX MOOCs+ </div> </div> <p>Notes: (to add)</p> <ul style="list-style-type: none"> <li>As CS50's Introduction to Computer Science from EdX is not equivalent to CS1010S (or its variant), CS50's will not serve as pre-requisite for higher computing modules. Also, there is a two-way preclusion between CS1010S (or its variant) and CS50's. Students who are required to read CS1010S (or its variant) as part of their majors/minors are to take CS1010S (or its variant) instead of CS50's. For students who have taken CS50's but requires to read CS1010S (or its variant) as part of their majors/minors, please write in to SOC to be allowed to take CS1010S (or its variant) and credit will be recognised only for CS1010S (or its variant) but not CS50's.</li> </ul> |
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| 8. | 9 Oct 2020 | FoS | <p><b><u>Updates for Bulletin AY2018/19</u></b><br/> <b>Link:</b> <a href="http://nus.edu.sg/registrar/docs/info/nusbulletin/bulletin-updates-ay1819.pdf">http://nus.edu.sg/registrar/docs/info/nusbulletin/bulletin-updates-ay1819.pdf</a></p> <p>Circular title: Faculty of Science: Revision to Computational Thinking Requirement for Chemistry, Food Science and Technology, Life Sciences, Pharmaceutical Science and Physics Majors</p> <p>Circular no.: BUS Circular 01 AY20/21</p> <p>Page 176/177</p> <hr/> <p><b>Revised text:</b></p> <p><b>3.3.1.7 Computational Thinking Requirement</b></p> <p>Notes: (to add)</p> <ul style="list-style-type: none"> <li><del>As CS50's Introduction to Computer Science from EdX is not equivalent to CS1010S (or its variant), CS50's will not serve as pre-requisite for higher computing modules. Also, there is a two-way preclusion between CS1010S (or its variant) and CS50's. Students who are required to read CS1010S (or its variant) as part of their majors/minors are to take CS1010S (or its variant) instead of CS50's. For students who have taken CS50's but requires to read CS1010S (or its variant) as part of their majors/minors, please write in to SOC to be allowed to take CS1010S (or its variant) and credit will be recognised only for CS1010S (or its variant) but not CS50's.</del></li> <li><b>Note: As CS50 Introduction to Computer Science from EdX is not equivalent to CS1010S (or its variant), CS50 will not serve as pre-requisite for higher computing modules. Also, there is a one-way preclusion in place, where students who have read CS50 will be precluded from reading CS1010S. Students who are required to read CS1010S (or its variant) as part of their majors/second majors/minors are to take CS1010S (or its variant) instead of CS50. For students who have taken CS50 but are required to read CS1010S (or its variant) as part of their majors/second majors/minors, please write in to SOC to be allowed to take CS1010S (or its variant) and CS50 will be counted towards the UE.</b></li> </ul> |
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| 9. | 2 Nov 2020 | FoS | <p><b><u>Updates for Bulletin AY2018/19</u></b></p> <p><b>Link:</b> <a href="http://nus.edu.sg/registrar/docs/info/nusbulletin/bulletin-updates-ay1819.pdf">http://nus.edu.sg/registrar/docs/info/nusbulletin/bulletin-updates-ay1819.pdf</a></p> <p>Circular title: Faculty of Science: Revision to Computational Thinking Requirement for Chemistry, Food Science and Technology, Life Sciences, Pharmaceutical Science and Physics Majors</p> <p>Circular no.: BUS Circular 01 AY20/21</p> <p>Page: 176 of 177</p> <hr/> <p>3.3.1.7 Computational Thinking Requirement</p> <p><b>Revised text:</b></p> <p>Notes: (to add in red)</p> <ul style="list-style-type: none"> <li>As CS50's Introduction to Computer Science from EdX is not equivalent to CS1010S (or its variant), CS50's will not serve as pre-requisite for higher computing modules. Also, there is a two-way preclusion between CS1010S (or its variant) and CS50's. Students who are required to read CS1010S (or its variant) as part of their majors/minors are to take CS1010S (or its variant) instead of CS50's. For students who have taken CS50's but requires to read CS1010S (or its variant) as part of their majors/minors, please write in to SOC to be allowed to take CS1010S (or its variant) and credit will be recognised only for CS1010S (or its variant) but not CS50's. <b>Please also note that the number of credits transferred for CS50 is subject to the maximum 8 MCs allowed for DYOM. For example, if a student has already completed 5 MCs worth of edX MOOCs, only 3 MCs (and not 5 MCs) can be counted for CS50.</b></li> </ul> |
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|-------------------------|---|-----|---|-------------------------|------|--|--|---|--|----|
| 10.                     | 24 Nov 2020   | FoS | <p><b>Updates for Bulletin AY2018/19</b><br/><b>Link:</b> <a href="http://www.nus.edu.sg/registrar/docs/info/nusbulletin/AY201819_FoS.pdf">http://www.nus.edu.sg/registrar/docs/info/nusbulletin/AY201819_FoS.pdf</a></p> <p>Circular title: FoS: Department of Food Science and Technology (FST) – Proposal to Revise the List of Elective Modules for the Major in Food Science and Technology</p> <p>Circular no.: BUS Circular 09 AY20/21</p> <p>Page 86 of 252</p> <p>3.3.3.3 Food Science and Technology</p> <p><b>Revised text (additions/changes in red):</b></p> <table><tr><td rowspan="2">4000<br/><br/>(32<br/>MCs)</td><td>Pass</td><td></td><td></td></tr><tr><td><ul style="list-style-type: none"><li>FST4199 Honours Project in Food Science &amp; Technology <u>or</u></li><li>FST4299 Applied Project in Food Science &amp; Technology</li><li>FST4102 Advanced Food Processing Technologies</li><li>FST4103 Food Colloids and Components Science</li></ul><p>At least 8 MCs from following:</p><ul style="list-style-type: none"><li>FST4201 Current Topics in Food Science and Technology</li><li>FST4202 Nutritional Biochemistry</li><li>FST4203 Food Forensics</li><li>CM4241 Trace Analysis</li><li>CM4242 Advanced Analytical Techniques</li><li><del>CM4267</del> <del>Current Topics in Analytical Techniques</del></li><li>FST5201 Rheology and Textural Properties of Biomaterials</li><li>FST5202A <del>Advanced Food Fermentation</del> Modern Food Fermentation</li><li>FST5203A <del>Advanced Food Microbiology and Safety</del> Advanced Food Microbiological Analysis and Food Safety</li><li>FST5301A <del>Evidence-based Functional Foods</del> Scientific Principles of Nutraceuticals</li></ul></td><td></td><td>96</td></tr></table> | 4000<br><br>(32<br>MCs) | Pass |  |  | <ul style="list-style-type: none"><li>FST4199 Honours Project in Food Science &amp; Technology <u>or</u></li><li>FST4299 Applied Project in Food Science &amp; Technology</li><li>FST4102 Advanced Food Processing Technologies</li><li>FST4103 Food Colloids and Components Science</li></ul> <p>At least 8 MCs from following:</p> <ul style="list-style-type: none"><li>FST4201 Current Topics in Food Science and Technology</li><li>FST4202 Nutritional Biochemistry</li><li>FST4203 Food Forensics</li><li>CM4241 Trace Analysis</li><li>CM4242 Advanced Analytical Techniques</li><li><del>CM4267</del> <del>Current Topics in Analytical Techniques</del></li><li>FST5201 Rheology and Textural Properties of Biomaterials</li><li>FST5202A <del>Advanced Food Fermentation</del> Modern Food Fermentation</li><li>FST5203A <del>Advanced Food Microbiology and Safety</del> Advanced Food Microbiological Analysis and Food Safety</li><li>FST5301A <del>Evidence-based Functional Foods</del> Scientific Principles of Nutraceuticals</li></ul> |  | 96 |
| 4000<br><br>(32<br>MCs) | Pass  |     |   |                         |      |  |  |   |  |    |
|                         | <ul style="list-style-type: none"><li>FST4199 Honours Project in Food Science &amp; Technology <u>or</u></li><li>FST4299 Applied Project in Food Science &amp; Technology</li><li>FST4102 Advanced Food Processing Technologies</li><li>FST4103 Food Colloids and Components Science</li></ul> <p>At least 8 MCs from following:</p> <ul style="list-style-type: none"><li>FST4201 Current Topics in Food Science and Technology</li><li>FST4202 Nutritional Biochemistry</li><li>FST4203 Food Forensics</li><li>CM4241 Trace Analysis</li><li>CM4242 Advanced Analytical Techniques</li><li><del>CM4267</del> <del>Current Topics in Analytical Techniques</del></li><li>FST5201 Rheology and Textural Properties of Biomaterials</li><li>FST5202A <del>Advanced Food Fermentation</del> Modern Food Fermentation</li><li>FST5203A <del>Advanced Food Microbiology and Safety</del> Advanced Food Microbiological Analysis and Food Safety</li><li>FST5301A <del>Evidence-based Functional Foods</del> Scientific Principles of Nutraceuticals</li></ul> |     | 96  |                         |      |  |  |   |  |    |

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|  |  |  |  | <ul style="list-style-type: none"> <li>• FST5303A <del>Modern Human Nutrition</del> Science in Clinical Nutrition</li> <li>• FST5225 Advanced Current Topics in Food Science</li> <li>• FST5226 Advanced Current Topics in Food Science II</li> <li>• FST5227 Advanced Current Topics in Food Science III</li> <li>• <del>CM5241</del> <del>Modern Analytical Techniques</del></li> </ul> |  |  |
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| 11.                | 18 Feb 2021   | FoS | <p><b>FoS: Updates for Bulletin AY18/19</b><br/><b>Link:</b> <a href="https://www.nus.edu.sg/registrar/docs/info/nusbulletin/AY201819_FoS.pdf">https://www.nus.edu.sg/registrar/docs/info/nusbulletin/AY201819_FoS.pdf</a></p> <p>Circular no. and title: SFCC Circular 5 AY20/21 FoS: Biological Sciences - Minor Programme in Aquatic Ecology – Conversion from Restricted to Open Minor</p> <p>Page 158 of 252</p> <hr/> <p>3.4.3 Minor Programmes</p> <p><b>Revised text (additions/changes in red):</b></p> <table><tr><th>Minor</th><th>Pre-requisites</th></tr><tr><td>2. Aquatic Ecology</td><td>Open to students from all disciplines, except those who are reading the Bachelor of Environmental Studies degree from Academic Year 2016/2017 cohort and onwards (an interview is required)</td></tr></table> <p>Page 161 of 252</p> <hr/> <p>3.4.3.2 Minor in Aquatic Ecology</p> <p><b>Revised text (additions/changes in red):</b></p> <p><del>This Minor is not awarded with a Bachelor of Environmental Studies degree from Cohort AY2016/17 onwards.</del></p> <p><del>Application is required to read this minor. For the application process and more information, please refer to <a href="http://www.lifesciences.nus.edu.sg/info/AE_Minor.pdf">http://www.lifesciences.nus.edu.sg/info/AE_Minor.pdf</a></del></p> <p><b>Application</b></p> | Minor | Pre-requisites | 2. Aquatic Ecology | Open to students from all disciplines, except those who are reading the Bachelor of Environmental Studies degree from Academic Year 2016/2017 cohort and onwards (an interview is required) |
|--------------------|---|-----|---|-------|----------------|--------------------|---|
| Minor              | Pre-requisites  |     |   |       |                |                    |   |
| 2. Aquatic Ecology | Open to students from all disciplines, except those who are reading the Bachelor of Environmental Studies degree from Academic Year 2016/2017 cohort and onwards (an interview is required) |     |   |       |                |                    |   |

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|  |  |  | <p>This is an open Minor and is available to undergraduate students from all disciplines, <u>except those who are reading the Bachelor of Environmental Studies (BES) degree from Cohorts AY2016/17 onwards</u>. The declaration to join the Minor should be made by the start of the fifth semester of the undergraduate candidature.</p> <p>Declaration is via EduRec. Please refer to the Academic Plan Application/Declaration (APAD) website for more details.</p> <p>For more information, please refer to: <a href="https://www.dbs.nus.edu.sg/education/minor-in-aquatic-ecology/">https://www.dbs.nus.edu.sg/education/minor-in-aquatic-ecology/</a></p> |
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| 12. | 18 Feb 2021 | FoS | <p><b>Updates for Bulletin AY18/19</b><br/> <b>Link:</b> <a href="https://nus.edu.sg/registrar/docs/info/nusbulletin/bulletin-updates-ay1819.pdf">https://nus.edu.sg/registrar/docs/info/nusbulletin/bulletin-updates-ay1819.pdf</a></p> <p>Circular no. and title:<br/> BUS Circular 13 AY20/21 Faculty of Science: Department of Pharmacy – Revision to the Minor Programme in Pharmaceutical Science for Inflight Minor Students</p> <p>Page 188 of 194</p> <hr/> <p>3.4.3.13 Minor in Pharmaceutical Science</p> <p><b>Revised text (additions/changes in red):</b></p> <p><u>Essential modules:</u><br/> PR1110 Foundations for Medicinal Chemistry <u>or</u> PHS1110 Foundation for Medicinal and Synthetic Chemistry <u>or</u> <b>PHS1101 Billion Dollar Pill – Bench to Bedside Drug Development</b><br/> PR2114 Formulation and Technology I <u>or</u> PHS1114 Principles of Pharmaceutical Formulations I <u>or</u> <b>PHS2105 Principles of Pharmaceutical Formulations I</b><br/> PR2115 Medicinal Chemistry for Drug Design <u>or</u> PHS2115 Basic Principles of Drug Design and Development <u>or</u> <b>PHS2102 Physicochemical Principles of Drug Action {placeholder title}</b><br/> PR3301 Pharmaceutical Dosage Forms <u>or</u> PR3117 Formulations &amp; Technology II <u>or</u> PHS2117 Principles of Pharmaceutical Formulations II <u>or</u> <b>PR5304 Fundamental Topics in Pharmaceutical Science</b></p> <p><u>Choose TWO from the following elective modules:</u><br/> PR1301 Complementary Medicine and Health<br/> PR2143 Pharmaceutical Analysis for Quality Assurance <u>or</u> PHS2143 Analytical Techniques and Pharmaceutical Applications <u>or</u> <b>PHS2103 Rational Drug Design and Molecular Characterization {placeholder title}</b><br/> PR2202 Cosmetics and Perfumes<br/> PR3204 Medicinal Natural Products<br/> PR4205 Bioorganic Principles of Medicinal Chemistry<br/> PR4206 Industrial Pharmacy<br/> CN4241R Engineering Principles for Drug Delivery<br/> SP4263 Forensic Toxicology and Poisons</p> |
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|                     |  |     |  |                     |      |  |  |  |  |  |  |                                |  |  |  |  |  |    |
|---------------------|--|-----|--|---------------------|------|--|--|--|--|--|--|--------------------------------|--|--|--|--|--|----|
| 13.                 | 11 Mar 2021  | FoS | <p><b>Updates for Bulletin AY18/19</b><br/><b>Link:</b> <a href="https://nus.edu.sg/registrar/docs/info/nusbulletin/bulletin-updates-ay1819.pdf">https://nus.edu.sg/registrar/docs/info/nusbulletin/bulletin-updates-ay1819.pdf</a></p> <p>Circular title: FoS: Department of Food Science and Technology (FST) – Proposal to Revise the List of Elective Modules for the Major in Food Science and Technology</p> <p>Circular no.: BUS Circular 15 AY20/21</p> <p>Page 194 of 197</p> <p>3.3.3.3 Food Science and Technology</p> <p><b>Revised text (additions/changes in red):</b></p> <table><tr><td rowspan="2">4000<br/>(32<br/>MCs)</td><td>Pass</td><td></td><td></td></tr><tr><td><ul style="list-style-type: none"><li>FST4199 Honours Project in Food Science &amp; Technology <u>or</u></li><li>FST4299 Applied Project in Food Science &amp; Technology</li><li>FST4102 Advanced Food Processing Technologies</li><li>FST4103 Food Colloids and Components Science</li></ul></td><td></td><td></td></tr><tr><td></td><td>At least 8 MCs from following:</td><td></td><td></td></tr><tr><td></td><td><ul style="list-style-type: none"><li>FST4201 Current Topics in Food Science and Technology</li><li>FST4202 Nutritional Biochemistry</li><li>FST4203 Food Forensics</li><li>CM4241 Trace Analysis</li><li>CM4242 Advanced Analytical Techniques</li><li>FST5201 Rheology and Textural Properties of Biomaterials</li><li>FST5202/FST5202A Advanced Food Fermentation/Modern Food Fermentation</li><li>FST5203/FST5203A Advanced Food Microbiology and Safety/Advanced Food Microbiological Analysis and Food Safety</li><li>FST5301/FST5301A Evidence-based Functional Foods/Scientific Principles of Nutraceuticals</li></ul></td><td></td><td>96</td></tr></table> | 4000<br>(32<br>MCs) | Pass |  |  | <ul style="list-style-type: none"><li>FST4199 Honours Project in Food Science &amp; Technology <u>or</u></li><li>FST4299 Applied Project in Food Science &amp; Technology</li><li>FST4102 Advanced Food Processing Technologies</li><li>FST4103 Food Colloids and Components Science</li></ul> |  |  |  | At least 8 MCs from following: |  |  |  | <ul style="list-style-type: none"><li>FST4201 Current Topics in Food Science and Technology</li><li>FST4202 Nutritional Biochemistry</li><li>FST4203 Food Forensics</li><li>CM4241 Trace Analysis</li><li>CM4242 Advanced Analytical Techniques</li><li>FST5201 Rheology and Textural Properties of Biomaterials</li><li>FST5202/FST5202A Advanced Food Fermentation/Modern Food Fermentation</li><li>FST5203/FST5203A Advanced Food Microbiology and Safety/Advanced Food Microbiological Analysis and Food Safety</li><li>FST5301/FST5301A Evidence-based Functional Foods/Scientific Principles of Nutraceuticals</li></ul> |  | 96 |
| 4000<br>(32<br>MCs) | Pass   |     |  |                     |      |  |  |  |  |  |  |                                |  |  |  |  |  |    |
|                     | <ul style="list-style-type: none"><li>FST4199 Honours Project in Food Science &amp; Technology <u>or</u></li><li>FST4299 Applied Project in Food Science &amp; Technology</li><li>FST4102 Advanced Food Processing Technologies</li><li>FST4103 Food Colloids and Components Science</li></ul>   |     |  |                     |      |  |  |  |  |  |  |                                |  |  |  |  |  |    |
|                     | At least 8 MCs from following:   |     |  |                     |      |  |  |  |  |  |  |                                |  |  |  |  |  |    |
|                     | <ul style="list-style-type: none"><li>FST4201 Current Topics in Food Science and Technology</li><li>FST4202 Nutritional Biochemistry</li><li>FST4203 Food Forensics</li><li>CM4241 Trace Analysis</li><li>CM4242 Advanced Analytical Techniques</li><li>FST5201 Rheology and Textural Properties of Biomaterials</li><li>FST5202/FST5202A Advanced Food Fermentation/Modern Food Fermentation</li><li>FST5203/FST5203A Advanced Food Microbiology and Safety/Advanced Food Microbiological Analysis and Food Safety</li><li>FST5301/FST5301A Evidence-based Functional Foods/Scientific Principles of Nutraceuticals</li></ul> |     | 96   |                     |      |  |  |  |  |  |  |                                |  |  |  |  |  |    |

|  |  |  |  |  |  |
|--|--|--|--|--|--|
|  |  |  |  | <ul style="list-style-type: none"><li>• FST5303/FST5303A Modern Human Nutrition/Science in Clinical Nutrition</li><li>• FST5225 Advanced Current Topics in Food Science</li><li>• FST5226 Advanced Current Topics in Food Science II</li><li>• FST5227 Advanced Current Topics in Food Science III</li></ul> |  |
|  |  |  |  |  |  |

| 14.                              | 11 May 2021  | FoS                  | <p><b>Updates for Bulletin AY18/19</b><br/><b>Link:</b> <a href="https://nus.edu.sg/registrar/docs/info/nusbulletin/bulletin-updates-ay1819.pdf">https://nus.edu.sg/registrar/docs/info/nusbulletin/bulletin-updates-ay1819.pdf</a></p> <p>Circular title: FoS: Mathematics – Proposal for Changes to Requirements of Major in Mathematics and in Applied Mathematics, and Second Major in Mathematics for Pre-CHS Cohorts</p> <p>Circular no.: BUS Circular 20 AY20/21</p> <p>Page 189 of 198</p> <p>3.4.2.4 Second Major in Mathematics</p> <p><b>Revised text (additions/changes in red):</b></p> <p>To be awarded a BSc with a second major in Mathematics, candidates must satisfy at least 48 MCs from non-overlapping modules of the following:</p> <table><tr><th>Module Level</th><th>2nd Major Requirements</th><th>Cumulative Major MCs</th></tr><tr><td>1000<br/>(16-18 MCs)<br/>(*12 MCs)</td><td>Pass<ul style="list-style-type: none"><li>MA1100/<b>MA1100T</b> Fundamental Concepts of Mathematics/<b>Basic Discrete Mathematics</b> or CS1231/<b>CS1231S</b> Discrete Structures</li><li>MA1101R/<b>MA2001</b> Linear Algebra I or MA1506 Mathematics II or MA1508 Linear Algebra with Applications or MA1508E Linear Algebra for Engineering or (MA1513 Linear Algebra with Differential Equations and one additional module from List II)</li><li>MA1102R/<b>MA2002</b> Calculus or MA1505 Mathematics I or MA1507 Advanced Calculus or MA1521 Calculus for Computing or (MA1511 Engineering Calculus and MA1512 Differential Equations for Engineering)</li><li>MA1104/MA2104* Multivariable Calculus or MA2501 Differential Equations and Systems</li></ul></td><td>16-18<br/>(*12)</td></tr></table> | Module Level | 2nd Major Requirements | Cumulative Major MCs | 1000<br>(16-18 MCs)<br>(*12 MCs) | Pass <ul style="list-style-type: none"><li>MA1100/<b>MA1100T</b> Fundamental Concepts of Mathematics/<b>Basic Discrete Mathematics</b> or CS1231/<b>CS1231S</b> Discrete Structures</li><li>MA1101R/<b>MA2001</b> Linear Algebra I or MA1506 Mathematics II or MA1508 Linear Algebra with Applications or MA1508E Linear Algebra for Engineering or (MA1513 Linear Algebra with Differential Equations and one additional module from List II)</li><li>MA1102R/<b>MA2002</b> Calculus or MA1505 Mathematics I or MA1507 Advanced Calculus or MA1521 Calculus for Computing or (MA1511 Engineering Calculus and MA1512 Differential Equations for Engineering)</li><li>MA1104/MA2104* Multivariable Calculus or MA2501 Differential Equations and Systems</li></ul> | 16-18<br>(*12) |
|----------------------------------|--|----------------------|--|--------------|------------------------|----------------------|----------------------------------|--|----------------|
| Module Level                     | 2nd Major Requirements   | Cumulative Major MCs |  |              |                        |                      |                                  |  |                |
| 1000<br>(16-18 MCs)<br>(*12 MCs) | Pass <ul style="list-style-type: none"><li>MA1100/<b>MA1100T</b> Fundamental Concepts of Mathematics/<b>Basic Discrete Mathematics</b> or CS1231/<b>CS1231S</b> Discrete Structures</li><li>MA1101R/<b>MA2001</b> Linear Algebra I or MA1506 Mathematics II or MA1508 Linear Algebra with Applications or MA1508E Linear Algebra for Engineering or (MA1513 Linear Algebra with Differential Equations and one additional module from List II)</li><li>MA1102R/<b>MA2002</b> Calculus or MA1505 Mathematics I or MA1507 Advanced Calculus or MA1521 Calculus for Computing or (MA1511 Engineering Calculus and MA1512 Differential Equations for Engineering)</li><li>MA1104/MA2104* Multivariable Calculus or MA2501 Differential Equations and Systems</li></ul> | 16-18<br>(*12)       |  |              |                        |                      |                                  |  |                |



|   |  |       |   |                                     |  |       |                     |  |       |  |  |                 |  |  |  |   |  |  |  |
|---|--|-------|---|-------------------------------------|--|-------|---------------------|--|-------|--|--|-----------------|--|--|--|---|--|--|--|
|   |  |       | <table><tr><td>2000<br/>(16-19 MCs)<br/>(*20-23 MCs)</td><td>Pass<ul style="list-style-type: none"><li>MA2101/MA2101S Linear Algebra II</li><li>MA2108/MA2108S Mathematical Analysis I</li><li>MA2216/MA2116/ST2131 Probability or ST2334 Probability and Statistics</li><li>One additional module from List II, III, IV</li></ul></td><td>32-37</td></tr><tr><td>3000<br/>(16-19 MCs)</td><td>Pass<ul style="list-style-type: none"><li>MA3110/MA3110S/MA3210 Mathematical Analysis II</li><li>MA3111/MA3111S/MA3211/MA3211S Complex Analysis I</li><li>Two additional modules from List III, IV</li></ul></td><td>48-56</td></tr></table> <p>(*adjusted Level and Cumulative Major MCs respectively if taking MA2104 or MA2501 instead of MA1104)</p> | 2000<br>(16-19 MCs)<br>(*20-23 MCs) | Pass <ul style="list-style-type: none"><li>MA2101/MA2101S Linear Algebra II</li><li>MA2108/MA2108S Mathematical Analysis I</li><li>MA2216/MA2116/ST2131 Probability or ST2334 Probability and Statistics</li><li>One additional module from List II, III, IV</li></ul> | 32-37 | 3000<br>(16-19 MCs) | Pass <ul style="list-style-type: none"><li>MA3110/MA3110S/MA3210 Mathematical Analysis II</li><li>MA3111/MA3111S/MA3211/MA3211S Complex Analysis I</li><li>Two additional modules from List III, IV</li></ul>  | 48-56 |  |  |                 |  |  |  |   |  |  |  |
| 2000<br>(16-19 MCs)<br>(*20-23 MCs)   | Pass <ul style="list-style-type: none"><li>MA2101/MA2101S Linear Algebra II</li><li>MA2108/MA2108S Mathematical Analysis I</li><li>MA2216/MA2116/ST2131 Probability or ST2334 Probability and Statistics</li><li>One additional module from List II, III, IV</li></ul> | 32-37 |   |                                     |  |       |                     |  |       |  |  |                 |  |  |  |   |  |  |  |
| 3000<br>(16-19 MCs)   | Pass <ul style="list-style-type: none"><li>MA3110/MA3110S/MA3210 Mathematical Analysis II</li><li>MA3111/MA3111S/MA3211/MA3211S Complex Analysis I</li><li>Two additional modules from List III, IV</li></ul>  | 48-56 |   |                                     |  |       |                     |  |       |  |  |                 |  |  |  |   |  |  |  |
| <table><tr><td colspan="4"><b>List II</b></td></tr><tr><td colspan="4"><ul style="list-style-type: none"><li>All MA modules at level 2000, except those coded MA23XX</li><li>PC2130 Quantum Mechanics I</li><li>PC2132 Classical Mechanics</li><li>ST2132 Mathematical Statistics</li><li>EC2101 Microeconomic Analysis I</li></ul></td></tr><tr><td colspan="4"><b>List III</b></td></tr><tr><td colspan="4"><ul style="list-style-type: none"><li>All MA modules at level 3000, except those coded MA33XX</li><li>BSE3703 Econometrics for Business I</li><li>CS3230 Design &amp; Analysis of Algorithms</li><li>CS3231 Theory of Computation</li><li>CS3234 Logic and Formal Systems</li><li>DSA3102 Essential Data Analytics Tools: Convex Optimisation</li><li>EC3101 Microeconomic Analysis II</li><li>EC3303 Econometrics I</li><li>PC3130 Quantum Mechanics II</li><li>PC3236 Computational Methods in Physics</li><li>PC3238 Fluid Dynamics</li><li>ST3131 Regression Analysis</li></ul></td></tr></table> |  |       |   | <b>List II</b>                      |  |       |                     | <ul style="list-style-type: none"><li>All MA modules at level 2000, except those coded MA23XX</li><li>PC2130 Quantum Mechanics I</li><li>PC2132 Classical Mechanics</li><li>ST2132 Mathematical Statistics</li><li>EC2101 Microeconomic Analysis I</li></ul> |       |  |  | <b>List III</b> |  |  |  | <ul style="list-style-type: none"><li>All MA modules at level 3000, except those coded MA33XX</li><li>BSE3703 Econometrics for Business I</li><li>CS3230 Design &amp; Analysis of Algorithms</li><li>CS3231 Theory of Computation</li><li>CS3234 Logic and Formal Systems</li><li>DSA3102 Essential Data Analytics Tools: Convex Optimisation</li><li>EC3101 Microeconomic Analysis II</li><li>EC3303 Econometrics I</li><li>PC3130 Quantum Mechanics II</li><li>PC3236 Computational Methods in Physics</li><li>PC3238 Fluid Dynamics</li><li>ST3131 Regression Analysis</li></ul> |  |  |  |
| <b>List II</b>  |  |       |   |                                     |  |       |                     |  |       |  |  |                 |  |  |  |   |  |  |  |
| <ul style="list-style-type: none"><li>All MA modules at level 2000, except those coded MA23XX</li><li>PC2130 Quantum Mechanics I</li><li>PC2132 Classical Mechanics</li><li>ST2132 Mathematical Statistics</li><li>EC2101 Microeconomic Analysis I</li></ul>  |  |       |   |                                     |  |       |                     |  |       |  |  |                 |  |  |  |   |  |  |  |
| <b>List III</b>   |  |       |   |                                     |  |       |                     |  |       |  |  |                 |  |  |  |   |  |  |  |
| <ul style="list-style-type: none"><li>All MA modules at level 3000, except those coded MA33XX</li><li>BSE3703 Econometrics for Business I</li><li>CS3230 Design &amp; Analysis of Algorithms</li><li>CS3231 Theory of Computation</li><li>CS3234 Logic and Formal Systems</li><li>DSA3102 Essential Data Analytics Tools: Convex Optimisation</li><li>EC3101 Microeconomic Analysis II</li><li>EC3303 Econometrics I</li><li>PC3130 Quantum Mechanics II</li><li>PC3236 Computational Methods in Physics</li><li>PC3238 Fluid Dynamics</li><li>ST3131 Regression Analysis</li></ul>   |  |       |   |                                     |  |       |                     |  |       |  |  |                 |  |  |  |   |  |  |  |

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|  |  |  | <ul style="list-style-type: none"> <li>• ST3236 Stochastic Processes I</li> </ul> <div> List IV </div> <ul style="list-style-type: none"> <li>• All MA modules at level 4000 or higher</li> <li>• CS4232 Theory of Computation</li> <li>• CS4234 Optimisation Algorithms</li> <li>• CS4236 Cryptography Theory and Practice</li> <li>• CS5230 Computational Complexity</li> <li>• CS5237 Computational Geometry and Applications</li> <li>• DSA4211 High-Dimensional Statistical Analysis</li> <li>• DSA4212 Optimisation for Large-Scale Data-Driven Inference</li> <li>• EC4101 / EC4301 Microeconomic Analysis III</li> <li>• EC5104 / EC5104R Mathematical Economics</li> <li>• PC4248 Relativity</li> <li>• PC4274 Mathematical Methods in Physics III</li> <li>• PC5274 Advanced Mathematical Methods in Physics</li> <li>• ST4238 Stochastic Processes II</li> <li>• ST4245 Statistical Methods for Finance</li> </ul> |  |
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| 15. | 11 May 2021 | FoS | <p><b>Updates for Bulletin AY18/19</b><br/> <b>Link:</b> <a href="https://nus.edu.sg/registrar/docs/info/nusbulletin/bulletin-updates-ay1819.pdf">https://nus.edu.sg/registrar/docs/info/nusbulletin/bulletin-updates-ay1819.pdf</a></p> <p>Circular title: FoS: Biological Sciences – Revision to Pre-CHS Forensic Science Minor Requirements for Cohorts AY2018/19 and earlier</p> <p>Circular no.: BUS Circular 20 AY20/21</p> <p>Page 90 of 198</p> <hr/> <p>3.4.3.6 Minor in Forensic Science</p> <p><b>Revised text (additions/changes in red):</b></p> <p><b>Essential Modules – Pass the following 3 modules (3 x 4MC = 12MC):</b></p> <p><b>FSC2101/</b>LSM1306 Forensic Science<br/> <b>FSC3101/</b>SP3202 Evidence in Forensic Science<br/> <b>FSC4208/</b>CM3301 Advanced Forensic Science</p> <p><b>Elective Modules – Pass 12MCs of the following modules, including:</b></p> <p>a) A maximum of 4MC from Level 1000 modules in the list<br/> b) A minimum of 4MC from Level 4000 modules in the list<br/> c) <b>Up to 4 MC can be replaced with FSC52xx modules</b></p> <p><b>FSC4201/</b>SP4261 Articulating Probability and Statistics in Court<br/> <b>FSC4202/</b>SP4262 Forensic Human Identification<br/> <b>FSC4203/</b>SP4263 Forensic Toxicology and Poisons<br/> <b>FSC4204/</b>SP4264 Criminalistics: Evidence and Proof [This is a 2MC module. Please complete an equivalent of 12 MC of elective modules for the purpose of Minor fulfilment.]<br/> <b>FSC4205/</b>SP4265 Criminalistics: Forgery Exposé with Forensic Science [This is a 2MC module. Please complete an equivalent of 12 MC of elective modules for the purpose of Minor fulfilment.]<br/> <b>FSC4206/LL4362V Advanced Criminal Litigation – Forensics on Trial [5MC]</b><br/> <b>FSC4207/SP4266 Forensic Entomology</b><br/> CM2101 Physical Chemistry 2 <b>or CM3131 Applications of Physical Chemistry</b><br/> CM3242 Instrumental Analysis II<br/> <b>LSM2105/</b>LSM1102 Molecular Genetics<br/> LSM3211 Fundamental Pharmacology</p> |
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|  |  |  | PC1141 Introduction to Classical Mechanics or PC1431 Physics IE<br>PR1110/A Foundations in Medicinal Chemistry<br>PR3116 Concepts in Pharmacokinetics & Biopharmaceutics<br>ST2334 Probability and Statistics; OR MA2116/MA2216/ST2131 Probability<br>CM/FST/LSM/MA/PC/PR/ST/ZB3288 Advanced UOPS I (Forensic-Science related; subject to approval of<br>Minor programme coordinator) |
|--|--|--|---|

| 16.          | 11 May 2021  | FoS       | <p><b>Updates for Bulletin AY18/19</b><br/> <b>Link:</b> <a href="https://www.nus.edu.sg/registrar/docs/info/nusbulletin/AY201819_FoS.pdf">https://www.nus.edu.sg/registrar/docs/info/nusbulletin/AY201819_FoS.pdf</a></p> <p>Circular title: FoS: Mathematics – Proposal for Changes to Requirements of Major in Mathematics and in Applied Mathematics, and Second Major in Mathematics for Pre-CHS Cohorts</p> <p>Circular no.: BUS Circular 20 AY20/21</p> <p>Page 103 of 252</p> <hr/> <p>3.3.3.6 Mathematics and Applied Mathematics</p> <p><b>Revised text (additions/changes in red):</b></p> <p><b>Graduation Requirements (Mathematics)</b><br/> To be awarded a BSc or BSc (Hons) with a primary major in Mathematics, a candidate must satisfy the following:</p> <table border="1"> <thead> <tr> <th>Module Level</th><th>Major Requirements</th><th>Level MCs</th><th>Cumulative Major MCs</th></tr> </thead> <tbody> <tr> <td>1000</td><td>           Pass all the following modules           <ul style="list-style-type: none"> <li>MA1100/<b>MA1100T</b> Fundamental Concepts of Mathematics/<b>Basic Discrete Mathematics</b> or CS1231/<b>CS1231S</b> Discrete Structures</li> <li>MA1101R/<b>MA2001</b> Linear Algebra I</li> <li>MA1102R/<b>MA2002</b> Calculus</li> <li>CS1010/CS1010E/CS1010S/CS1010X /CS1101S* Programming Methodology</li> </ul> <p>*CS1101S (5MCs for AY2017/18; 4 MCs from AY2018/19) may be read as an alternative to CS1010% (4MCs) to facilitate relevant programmes, e.g. Double Degree Programme with School of Computing. Registration for this module is subject to host availability.</p> </td><td>16</td><td>16</td></tr> <tr> <td>2000</td><td>           Pass all the following modules           <ul style="list-style-type: none"> <li>MA2101/MA2101S Linear Algebra II</li> <li>MA2014 Multivariable Calculus</li> <li>MA2108/MA2108S Mathematical Analysis I</li> <li>MA2202/MA2202S Algebra I</li> </ul> </td><td>24-28</td><td>40-44</td></tr> </tbody> </table> | Module Level | Major Requirements | Level MCs | Cumulative Major MCs | 1000 | Pass all the following modules <ul style="list-style-type: none"> <li>MA1100/<b>MA1100T</b> Fundamental Concepts of Mathematics/<b>Basic Discrete Mathematics</b> or CS1231/<b>CS1231S</b> Discrete Structures</li> <li>MA1101R/<b>MA2001</b> Linear Algebra I</li> <li>MA1102R/<b>MA2002</b> Calculus</li> <li>CS1010/CS1010E/CS1010S/CS1010X /CS1101S* Programming Methodology</li> </ul> <p>*CS1101S (5MCs for AY2017/18; 4 MCs from AY2018/19) may be read as an alternative to CS1010% (4MCs) to facilitate relevant programmes, e.g. Double Degree Programme with School of Computing. Registration for this module is subject to host availability.</p> | 16 | 16 | 2000 | Pass all the following modules <ul style="list-style-type: none"> <li>MA2101/MA2101S Linear Algebra II</li> <li>MA2014 Multivariable Calculus</li> <li>MA2108/MA2108S Mathematical Analysis I</li> <li>MA2202/MA2202S Algebra I</li> </ul> | 24-28 | 40-44 |
|--------------|--|-----------|---|--------------|--------------------|-----------|----------------------|------|--|----|----|------|--|-------|-------|
| Module Level | Major Requirements   | Level MCs | Cumulative Major MCs  |              |                    |           |                      |      |  |    |    |      |  |       |       |
| 1000         | Pass all the following modules <ul style="list-style-type: none"> <li>MA1100/<b>MA1100T</b> Fundamental Concepts of Mathematics/<b>Basic Discrete Mathematics</b> or CS1231/<b>CS1231S</b> Discrete Structures</li> <li>MA1101R/<b>MA2001</b> Linear Algebra I</li> <li>MA1102R/<b>MA2002</b> Calculus</li> <li>CS1010/CS1010E/CS1010S/CS1010X /CS1101S* Programming Methodology</li> </ul> <p>*CS1101S (5MCs for AY2017/18; 4 MCs from AY2018/19) may be read as an alternative to CS1010% (4MCs) to facilitate relevant programmes, e.g. Double Degree Programme with School of Computing. Registration for this module is subject to host availability.</p> | 16        | 16  |              |                    |           |                      |      |  |    |    |      |  |       |       |
| 2000         | Pass all the following modules <ul style="list-style-type: none"> <li>MA2101/MA2101S Linear Algebra II</li> <li>MA2014 Multivariable Calculus</li> <li>MA2108/MA2108S Mathematical Analysis I</li> <li>MA2202/MA2202S Algebra I</li> </ul>   | 24-28     | 40-44   |              |                    |           |                      |      |  |    |    |      |  |       |       |

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|---|---|-------|--|--|--|
|   |   |       | <ul style="list-style-type: none"><li>MA2216/MA2116/ST2131 Probability</li><li>One additional module from List II, III, IV</li></ul> |  |  |
| 3000  | Pass all the following modules <ul style="list-style-type: none"><li>MA3110/MA3110S/MA3210 Mathematical Analysis II</li><li>MA3111/MA3111S/MA3211/MA3211S Complex Analysis I</li><li>Two additional modules from list MA3</li><li>One additional module from List III, IV</li></ul> | 20-23 | 60-66  |  |  |
| 4000  | Pass MA4199 Honours Project in Mathematics<br>Pass four modules from List MA4<br>Pass one additional module from List IV  | 32-33 | 92-98  |  |  |
| UOPS  | At most one Mathematics UOPS module may be used to fulfil the requirements of Major in Mathematics  |       |  |  |  |
| List II   |   |       |  |  |  |
| <ul style="list-style-type: none"><li>All MA modules at level 2000, except those coded MA23XX</li><li>PC2130 Quantum Mechanics I</li><li>PC2132 Classical Mechanics</li><li>ST2132 Mathematical Statistics</li><li>EC2101 Microeconomic Analysis I</li></ul>  |   |       |  |  |  |
| List III  |   |       |  |  |  |
| <ul style="list-style-type: none"><li>All MA modules at level 3000, except those coded MA33XX</li><li>BSE3703 Econometrics for Business I</li><li>CS3230 Design &amp; Analysis of Algorithms</li><li>CS3231 Theory of Computation</li><li>CS3234 Logic and Formal Systems</li><li>DSA3102 Essential Data Analytics Tools: Convex Optimisation</li><li>EC3101 Microeconomic Analysis II</li><li>EC3303 Econometrics I</li><li>PC3130 Quantum Mechanics II</li><li>PC3236 Computational Methods in Physics</li><li>PC3238 Fluid Dynamics</li><li>ST3131 Regression Analysis</li></ul> |   |       |  |  |  |

|  |  |  |   |
|--|--|--|---|
|  |  |  | <ul style="list-style-type: none"> <li>• ST3236 Stochastic Processes I</li> </ul>   |
|  |  |  | <b>List IV</b> <ul style="list-style-type: none"> <li>• All MA modules at level 4000 or higher</li> <li>• CS4232 Theory of Computation</li> <li>• CS4234 Optimisation Algorithms</li> <li>• CS4236 Cryptography Theory and Practice</li> <li>• CS5230 Computational Complexity</li> <li>• CS5237 Computational Geometry and Applications</li> <li>• DSA4211 High-Dimensional Statistical Analysis</li> <li>• DSA4212 Optimisation for Large-Scale Data-Driven Inference</li> <li>• EC4301 Microeconomic Analysis III</li> <li>• EC5104 / EC5104R Mathematical Economics</li> <li>• PC4248 Relativity</li> <li>• PC4274 Mathematical Methods in Physics III</li> <li>• <b>PC5274 Advanced Mathematical Methods in Physics</b></li> <li>• ST4238 Stochastic Processes II</li> <li>• ST4245 Statistical Methods for Finance</li> </ul> |
|  |  |  | <b>List MA3</b> <ul style="list-style-type: none"> <li>• MA3201 Algebra II</li> <li>• MA3205 Set Theory</li> <li>• MA3209 Mathematical Analysis III/<b>Metric and Topological Spaces</b></li> <li>• MA3220 Ordinary Differential Equations</li> <li>• MA3265 Introduction to Number Theory</li> <li>• MA3266 Introduction to Fourier Analysis</li> </ul>  |
|  |  |  | <b>List MA4</b> <ul style="list-style-type: none"> <li>• MA4203 Galois Theory</li> <li>• MA4207 Mathematical Logic</li> <li>• MA4211 Functional Analysis</li> <li>• MA4221 Partial Differential Equations</li> <li>• MA4247 Complex Analysis II</li> <li>• MA4262 Measure and Integration</li> <li>• MA4266 Topology</li> </ul>   |

- MA4271 Differential Geometry of Curves and Surfaces

### Graduation Requirements (Applied Mathematics)

To be awarded a BSc or BSc (Hons) with a primary major in Applied Mathematics, a candidate must satisfy the following:

I. BSc or BSc (Hons) with major in Applied Mathematics

| Module Level | Major Requirements   | Level MCs | Cumulative Major MCs |
|--------------|--|-----------|----------------------|
| 1000         | 1. Pass all the following modules: <ul style="list-style-type: none"> <li>• MA1100/MA1100T Fundamental Concepts of Mathematics/Basic Discrete Mathematics or CS1231/CS1231S Discrete Structures</li> <li>• MA1101R/MA2001 Linear Algebra I</li> <li>• MA1102R/MA2002 Calculus</li> <li>• CS1010/CS1010E/CS1010S/CS1010X/CS1101S* Programming Methodology</li> </ul> <p>*CS1101S (5MCs for AY2017/18; 4 MCs from AY2018/19) may be read as an alternative to CS1010% (4MCs) to facilitate relevant programmes, e.g. Double Degree Programme with School of Computing. Registration for this module is subject to host availability.</p> | 16        | 16                   |
| 2000         | 2. Pass all the following modules: <ul style="list-style-type: none"> <li>• MA2101/MA2101S Linear Algebra II</li> <li>• MA2104 Multivariable Calculus</li> <li>• MA2108/MA2108S Mathematical Analysis I</li> <li>• MA2213 Numerical Analysis I</li> <li>• MA2216/MA2116/ST2131 Probability</li> </ul> 3. Pass one additional module from List II, III, IV  | 24-27     | 40-43                |
| 3000         | 4. Pass all the following modules:   | 20-23     | 60-66                |



|      |   |       |       |
|------|---|-------|-------|
|      | <ul style="list-style-type: none"> <li>MA3110/MA3110S/MA3210 Mathematical Analysis II</li> <li>MA3111/MA3111S/MA3211/MA3211S Complex Analysis I</li> </ul>  |       |       |
| 4000 | 5. Pass two modules from List AM3<br>6. Pass one additional module from List III, IV<br>7. Pass MA4199 Honours Project in Mathematics<br>8. Pass four modules from List AM4<br>9. Pass one additional module from List IV | 32-33 | 92-98 |
| UOPS | At most one Mathematics UOPS module may be used to fulfil the requirements of Major in Applied Mathematics  |       |       |

To be awarded a B.Sc.(Hons.) with primary major in Applied Mathematics with **Specialisation in Mathematical Modelling and Data Analytics**, in addition to the University and Faculty requirements, a candidate must satisfy the following:

| Module Level | Major Requirements   | Level MCs | Cumulative Major MCs |
|--------------|--|-----------|----------------------|
| 1000         | 1. Pass all the following modules: <ul style="list-style-type: none"> <li>MA1100/MA1100T Fundamental Concepts of Mathematics/Basic Discrete Mathematics or CS1231/CS1231S Discrete Structures</li> <li>MA1101R/MA2001 Linear Algebra I</li> <li>MA1102R/MA2002 Calculus</li> <li>CS1010/CS1010E/CS1010S/CS1010X/CS1101S* Programming Methodology</li> </ul><br>*CS1101S (5MCs for AY2017/18; 4 MCs from AY2018/19) may be read as an alternative to CS1010% (4MCs) to facilitate relevant programmes, e.g. Double Degree Programme with School of Computing. Registration for this module is subject to host availability. | 16        | 16                   |
| 2000         | 2. Pass all the following modules: <ul style="list-style-type: none"> <li>MA2101/MA2101S Linear Algebra II</li> <li>MA2104 Multivariable Calculus</li> <li>MA2108/MA2108S Mathematical Analysis I</li> </ul>   | 24-27     | 40-43                |

|  |  |  |      |   |       |       |
|--|--|--|------|---|-------|-------|
|  |  |  |      | <ul style="list-style-type: none"><li>MA2213 Numerical Analysis I</li><li>MA2216/MA2116/ST2131 Probability</li><li>Pass one additional module from List II, III, IV</li></ul>   |       |       |
|  |  |  | 3000 | 3. Pass all the following modules: <ul style="list-style-type: none"><li>MA3110/MA3110S/MA3210 Mathematical Analysis II</li><li>MA3111/MA3111S/MA3211/MA3211S Complex Analysis I</li></ul> 4. Pass two modules from List AM3-MMDA | 20-23 | 60-66 |
|  |  |  | 4000 | 5. Pass one additional module from List III, IV   |       |       |
|  |  |  |      | 6. Pass MA4199 Honours Project in Mathematics   | 32-33 | 92-98 |
|  |  |  |      | 7. Pass four modules from List AM4-MMDA   |       |       |
|  |  |  |      | 8. Pass one additional module from List IV  |       |       |
|  |  |  | UOPS | At most one Mathematics UOPS module may be used to fulfil the requirements of Major in Applied Mathematics  |       |       |

To be awarded a B.Sc.(Hons.) with primary major in Applied Mathematics with **Specialisation in Operations Research and Financial Mathematics**, in addition to the University and Faculty requirements, a candidate must satisfy the following:

| Module Level | Major Requirements  | Level MCs | Cumulative Major MCs |
|--------------|---|-----------|----------------------|
| 1000         | 1. Pass all the following modules: <ul style="list-style-type: none"><li>MA1100/MA1100T Fundamental Concepts of Mathematics/Basic Discrete Mathematics or CS1231/CS1231S Discrete Structures</li><li>MA1101R/MA2001 Linear Algebra I</li><li>MA1102R/MA2002 Calculus</li><li>CS1010/CS1010E/CS1010S/CS1010X/CS1101S* Programming Methodology</li></ul> <p>*CS1101S (5MCs for AY2017/18; 4 MCs from AY2018/19) may be read as an alternative to CS1010% (4MCs) to facilitate relevant programmes, e.g. Double Degree Programme with School of Computing. Registration for this module is subject to host availability.</p> | 16        | 16                   |

|          |  |  |  |  |       |       |
|----------|--|--|--|--|-------|-------|
|          |  |  | 2000   | 2. Pass all the following modules: <ul style="list-style-type: none"><li>MA2101/MA2101S Linear Algebra II</li><li>MA2104 Multivariable Calculus</li><li>MA2108/MA2108S Mathematical Analysis I</li><li>MA2213 Numerical Analysis I</li><li>MA2216/MA2116/ST2131 Probability</li><li>Pass one additional module from List II, III, IV</li></ul> | 24-27 | 40-43 |
|          |  |  | 3000   | 3. Pass all the following modules: <ul style="list-style-type: none"><li>MA3110/MA3110S/MA3210 Mathematical Analysis II</li><li>MA3111/MA3111S/MA3211/MA3211S Complex Analysis I</li></ul> 4. Pass two modules from List AM3-ORFM<br>5. Pass one additional module from List III, IV   | 20-23 | 60-66 |
|          |  |  | 4000   | 6. Pass MA4199 Honours Project in Mathematics<br>7. Pass four modules from List AM4-ORFM<br>8. Pass one additional module from List IV   | 32-33 | 92-98 |
|          |  |  | UOPS   | At most one Mathematics UOPS module may be used to fulfil the requirements of Major in Applied Mathematics   |       |       |
| List II  |  |  |  |  |       |       |
|          |  |  | <ul style="list-style-type: none"><li>All MA modules at level 2000, except those coded MA23XX</li><li>PC2130 Quantum Mechanics I</li><li>PC2132 Classical Mechanics</li><li>ST2132 Mathematical Statistics</li><li>EC2101 Microeconomic Analysis I</li></ul>   |  |       |       |
| List III |  |  |  |  |       |       |
|          |  |  | <ul style="list-style-type: none"><li>All MA modules at level 3000, except those coded MA33XX</li><li>BSE3703 Econometrics for Business I</li><li>CS3230 Design &amp; Analysis of Algorithms</li><li>CS3231 Theory of Computation</li><li>CS3234 Logic and Formal Systems</li><li>DSA3102 Essential Data Analytics Tools: Convex Optimisation</li><li>EC3101 Microeconomic Analysis II</li><li>EC3303 Econometrics I</li><li>PC3130 Quantum Mechanics II</li></ul> |  |       |       |

|  |  |  |   |  |
|--|--|--|---|--|
|  |  |  | <ul style="list-style-type: none"> <li>• PC3236 Computational Methods in Physics</li> <li>• PC3238 Fluid Dynamics</li> <li>• ST3131 Regression Analysis</li> <li>• ST3236 Stochastic Processes I</li> </ul>   |  |
|  |  |  | <b>List IV</b> <ul style="list-style-type: none"> <li>• All MA modules at level 4000 or higher</li> <li>• CS4232 Theory of Computation</li> <li>• CS4234 Optimisation Algorithms</li> <li>• CS4236 Cryptography Theory and Practice</li> <li>• CS5230 Computational Complexity</li> <li>• CS5237 Computational Geometry and Applications</li> <li>• DSA4211 High-Dimensional Statistical Analysis</li> <li>• DSA4212 Optimisation for Large-Scale Data-Driven Inference</li> <li>• EC4301 Microeconomic Analysis III</li> <li>• EC5104/EC5104R Mathematical Economics</li> <li>• PC4248 Relativity</li> <li>• PC4274 Mathematical Methods in Physics III</li> <li>• <b>PC5274 Advanced Mathematical Methods in Physics</b></li> <li>• ST4238 Stochastic Processes II</li> <li>• ST4245 Statistical Methods for Finance</li> </ul> |  |
|  |  |  | <b>List AM3</b> <p><b>List AM3 consists of the following 3 baskets AM3-General, AM3-MMDA, AM3-ORFM.</b></p> <p><b>AM3-General</b></p> <ul style="list-style-type: none"> <li>• MA3209 Mathematical Analysis III/<b>Metric and Topological Spaces</b></li> <li>• MA3218 Applied Algebra</li> <li>• MA3220 Ordinary Differential Equations</li> </ul> <p><b>AM3-MMDA</b></p> <ul style="list-style-type: none"> <li>• MA3227 Numerical Analysis II</li> <li>• MA3233 Combinatorics and Graph II</li> <li>• MA3264 Mathematical Modelling</li> <li>• ST3131 Regression Analysis</li> </ul>   |  |

|  |  |  |  |  |
|--|--|--|--|--|
|  |  |  | <p><b>AM3-ORFM</b></p> <ul style="list-style-type: none"> <li>• MA3236 Nonlinear Programming</li> <li>• MA3252 Linear and Network Optimization</li> <li>• MA3269 Mathematical Finance I</li> <li>• ST3131 Regression Analysis</li> </ul> <p><b>List AM4</b></p> <p><b>List AM4 consists of the following 3 baskets AM4-General, AM4-MMDA, AM4-ORFM.</b></p> <p><b>AM4-General</b></p> <ul style="list-style-type: none"> <li>• MA4211 Functional Analysis</li> <li>• MA4221 Partial Differential Equations</li> <li>• MA4235 Topics in Graph Theory</li> <li>• MA4261 Coding and Cryptography</li> </ul> <p><b>AM4-MMDA</b></p> <ul style="list-style-type: none"> <li>• MA4229 Approximation Theory/<b>Fourier Analysis and Approximation</b></li> <li>• MA4230 Matrix Computation</li> <li>• MA4255 Numerical Methods in Differential Equations</li> <li>• MA4268 Mathematics for Visual Data Processing</li> <li>• MA4270 Data Modelling and Computation</li> <li>• MA4272 Mathematical Tools for Data Science</li> <li>• DSA4211 High-Dimensional Statistical Analysis</li> </ul> <p><b>AM4-ORFM</b></p> <ul style="list-style-type: none"> <li>• MA4254 Discrete Optimization</li> <li>• MA4260 Stochastic Operations Research</li> <li>• MA4264 Game Theory</li> <li>• MA4269 Mathematical Finance II</li> <li>• <b>QF4103 Mathematical Models of Financial Derivatives</b></li> <li>• ST4245 Statistical Methods for Finance</li> </ul> |  |
|--|--|--|--|--|

| 17.               | 24 May 2021   | FoS | <p><b>Updates for Bulletin AY18/19</b><br/><b>Link:</b> <a href="https://nus.edu.sg/registrar/docs/info/nusbulletin/bulletin-updates-ay1819.pdf">https://nus.edu.sg/registrar/docs/info/nusbulletin/bulletin-updates-ay1819.pdf</a></p> <p>Circular title: Faculty of Science (FoS): Conversion of Second Majors from Restricted to Open and Revision to Prohibited Combinations</p> <p>Circular no.: BUS Circular 22 AY20/21</p> <p>Page 175 of 198</p> <hr/> <p>3.4.2 Second Major Programmes</p> <p><b>Revised text (additions/changes in red):</b></p> <p>Pre-requisites for Second Major Programmes:</p> <table><tr><th>SECOND MAJOR</th><th>PREREQUISITES</th></tr><tr><td>1. Chemistry</td><td>H2 pass in Chemistry or equivalent</td></tr><tr><td>2. Data Analytics</td><td>A very good H2 pass or equivalent in Mathematics/Further Mathematics.<br/><del>Existing students from cohort 2016/2017 or later may apply to read a Second Major in Data Analytics after completing CS1010 (or its equivalent), MA1101R (or its equivalent) and MA1102R (or its equivalent) with a B+ grade or above in each of these modules.</del></td></tr><tr><td>3. Food Science</td><td>Good H2 pass in at least two science subjects; one of them should be Chemistry</td></tr><tr><td>4. Life Sciences</td><td>H2 passes or equivalent in Biology, Chemistry AND either Mathematics or Physics</td></tr><tr><td>5. Mathematics</td><td>H2 pass in Mathematics or equivalent</td></tr><tr><td>6. Physics</td><td>H2 pass in Physics or equivalent</td></tr><tr><td>7. Statistics</td><td>H2 pass in Mathematics or equivalent</td></tr></table> | SECOND MAJOR | PREREQUISITES | 1. Chemistry | H2 pass in Chemistry or equivalent | 2. Data Analytics | A very good H2 pass or equivalent in Mathematics/Further Mathematics.<br><del>Existing students from cohort 2016/2017 or later may apply to read a Second Major in Data Analytics after completing CS1010 (or its equivalent), MA1101R (or its equivalent) and MA1102R (or its equivalent) with a B+ grade or above in each of these modules.</del> | 3. Food Science | Good H2 pass in at least two science subjects; one of them should be Chemistry | 4. Life Sciences | H2 passes or equivalent in Biology, Chemistry AND either Mathematics or Physics | 5. Mathematics | H2 pass in Mathematics or equivalent | 6. Physics | H2 pass in Physics or equivalent | 7. Statistics | H2 pass in Mathematics or equivalent |
|-------------------|---|-----|--|--------------|---------------|--------------|------------------------------------|-------------------|---|-----------------|--|------------------|---|----------------|--------------------------------------|------------|----------------------------------|---------------|--------------------------------------|
| SECOND MAJOR      | PREREQUISITES   |     |  |              |               |              |                                    |                   |   |                 |  |                  |   |                |                                      |            |                                  |               |                                      |
| 1. Chemistry      | H2 pass in Chemistry or equivalent  |     |  |              |               |              |                                    |                   |   |                 |  |                  |   |                |                                      |            |                                  |               |                                      |
| 2. Data Analytics | A very good H2 pass or equivalent in Mathematics/Further Mathematics.<br><del>Existing students from cohort 2016/2017 or later may apply to read a Second Major in Data Analytics after completing CS1010 (or its equivalent), MA1101R (or its equivalent) and MA1102R (or its equivalent) with a B+ grade or above in each of these modules.</del> |     |  |              |               |              |                                    |                   |   |                 |  |                  |   |                |                                      |            |                                  |               |                                      |
| 3. Food Science   | Good H2 pass in at least two science subjects; one of them should be Chemistry  |     |  |              |               |              |                                    |                   |   |                 |  |                  |   |                |                                      |            |                                  |               |                                      |
| 4. Life Sciences  | H2 passes or equivalent in Biology, Chemistry AND either Mathematics or Physics   |     |  |              |               |              |                                    |                   |   |                 |  |                  |   |                |                                      |            |                                  |               |                                      |
| 5. Mathematics    | H2 pass in Mathematics or equivalent  |     |  |              |               |              |                                    |                   |   |                 |  |                  |   |                |                                      |            |                                  |               |                                      |
| 6. Physics        | H2 pass in Physics or equivalent  |     |  |              |               |              |                                    |                   |   |                 |  |                  |   |                |                                      |            |                                  |               |                                      |
| 7. Statistics     | H2 pass in Mathematics or equivalent  |     |  |              |               |              |                                    |                   |   |                 |  |                  |   |                |                                      |            |                                  |               |                                      |

|     |             |     |   |
|-----|-------------|-----|---|
| 18. | 21 Jun 2021 | FoS | <p><b>Updates for Bulletin AY18/19</b><br/> <b>Link:</b> <a href="https://nus.edu.sg/registrar/docs/info/nusbulletin/bulletin-updates-ay1819.pdf">https://nus.edu.sg/registrar/docs/info/nusbulletin/bulletin-updates-ay1819.pdf</a></p> <p>Circular title: FoS: Department of Biological Sciences – Revised Requirements for the Minor in Aquatic Ecology Programme</p> <p>Circular no.: BUS Circular 24 AY20/21</p> <p>Page 179 of 211</p> <hr/> <p>3.4.3.2 Minor in Aquatic Ecology</p> <p><b>Revised text (additions/changes in red):</b></p> <p>To be awarded a Minor in Aquatic Ecology, a student must pass the six modules as set out below:</p> <ol style="list-style-type: none"> <li>1. LSM2251 Ecology and Environment</li> <li>2. LSM3254 Ecology of Aquatic Environments</li> <li>3. GE2229 Water and Environment <b>or GE3255 Aquatic, Riparian and Coastal Systems</b></li> <li>4. SP3203 Aquatic Ecology Research</li> <li>5. Choose 2 from the following elective modules: [For students reading Life Sciences Major, please select at least one non-LSM prefixed module.]</li> </ol> <p><b>GE2103 Our Planet: An Earth Systems Science Perspective</b><br/> GE2215 Introduction to GIS and Remote Sensing<br/> GE2220 Terrestrial and Coastal Environments<br/> GE2228/<b>GE3253</b> Weather and Climate<br/> GE3216 Applications of GIS &amp; Remote Sensing<br/> GE3221 Ecological Systems<br/> GE3223/<b>GE4234</b> Environmental Change in the Tropics<br/> <b>GE3231 Natural Hazards</b><br/> GE3246/<b>GE4237</b> Environmental Pollution<br/> <b>GE3256 Earth Surface Processes, Landforms and Ecosystems</b><br/> LSM2253 Applied Data Analysis in Ecology and Evolution<br/> LSM2252 Biodiversity<br/> LSM4257 Aquatic Vertebrate Diversity<br/> LSM4260 Plankton Ecology<br/> LSM4261 Marine Biology</p> |
|-----|-------------|-----|---|

|  |  |  |  |
|--|--|--|--|
|  |  |  | LSM4264 Freshwater Biology<br>LSM4266 Aquatic Invertebrate Diversity |
|--|--|--|--|



| 19.                | 21 Jun 2021                           | FoS | <p><b><u>Updates for Bulletin AY18/19</u></b><br/><b>Link:</b> <a href="https://www.nus.edu.sg/registrar/docs/info/nusbulletin/AY201819_FoS.pdf">https://www.nus.edu.sg/registrar/docs/info/nusbulletin/AY201819_FoS.pdf</a></p> <p>Circular title:<br/>Faculty of Science: Department of Biological Sciences – Proposal for a New Minor Programme in Bioinformatics (Senate Circular 11 AY19/20)</p> <p>FoS: Department of Biological Sciences – Revised Requirements for the Minor in Bioinformatics Programme (BUS Circular 9 AY20/21)</p> <p>Page 158 of 252</p> <hr/> <p><b><u>Please insert a new row in the table</u></b></p> <table><tr><th>MINOR</th><th>PREREQUISITES</th></tr><tr><td>15. Bioinformatics</td><td>Open to students from all disciplines</td></tr></table> <p><b><u>Please insert a new title in 3.4.3 Minor Programmes</u></b><br/>To change the numbering as it is in alpha order, insert in 3.4.3.3 Minor in Bioinformatics</p> <p><b>Current text:</b></p> <p>3.4.3.3 Minor in Biophysics<br/>3.4.3.4 Minor in Engineering Materials<br/>3.4.3.5 Minor in Financial Mathematics<br/>3.4.3.6 Minor in Forensic Science<br/>3.4.3.7 Minor in Geosciences<br/>3.4.3.8 Minor in Life Sciences<br/>3.4.3.9 Minor in Mathematics<br/>3.4.3.10 Minor in Medical Physics<br/>3.4.3.11 Minor in Nanoscience<br/>3.4.3.12 Minor in Optical and Semiconductor Technology<br/>3.4.3.13 Minor in Pharmaceutical Science<br/>3.4.3.14 Minor in Physics<br/>3.4.3.15 Minor in Statistics</p> <p><b>Revised text:</b></p> | MINOR | PREREQUISITES | 15. Bioinformatics | Open to students from all disciplines |
|--------------------|---------------------------------------|-----|--|-------|---------------|--------------------|---------------------------------------|
| MINOR              | PREREQUISITES                         |     |  |       |               |                    |                                       |
| 15. Bioinformatics | Open to students from all disciplines |     |  |       |               |                    |                                       |

|  |  |   |
|--|--|---|
|  |  | <p>3.4.3.3 Minor in Bioinformatics</p> <p>3.4.3.4 Minor in Biophysics</p> <p>3.4.3.5 Minor in Engineering Materials</p> <p>3.4.3.6 Minor in Financial Mathematics</p> <p>3.4.3.7 Minor in Forensic Science</p> <p>3.4.3.8 Minor in Geosciences</p> <p>3.4.3.9 Minor in Life Sciences</p> <p>3.4.3.10 Minor in Mathematics</p> <p>3.4.3.11 Minor in Medical Physics</p> <p>3.4.3.12 Minor in Nanoscience</p> <p>3.4.3.13 Minor in Optical and Semiconductor Technology</p> <p>3.4.3.14 Minor in Pharmaceutical Science</p> <p>3.4.3.15 Minor in Physics</p> <p>3.4.3.16 Minor in Statistics</p> <p><b><u>Please insert a new page for 3.4.3.3 Minor in Bioinformatics</u></b></p> <p>Host Department: Department of Biological Sciences</p> <p>Computational analysis of biological data is transforming biomedicine, environmental sciences, and biomedical engineering. The impact of bioinformatics and computational biology is pervasive: it is hard to overstate the impact of big data and computational demands upon the life sciences. In addition to their importance in the life sciences itself, bioinformatics and computational biology are also areas of increasing importance in the pharmaceutical sciences, applied computer science and computer engineering. The growth of these fields are fuelled by advancements in high-throughput, data-rich technologies, none more so than new technologies in DNA sequencing.</p> <p>To be awarded a Minor in Bioinformatics, a student must complete the following modules:</p> <p><b><u>Core Modules (16 MCs)</u></b></p> <p>CS1010 Programming Methodology (or its variant)</p> <p>LSM2241 Introductory Bioinformatics</p> <p>LSM3241 Genomic Data Analysis</p> <p>ZB4171 Advanced Topics in Bioinformatics</p> <p><b><u>Elective Modules (8 MCs)</u></b></p> <p>Pass two modules from the following:</p> <ul style="list-style-type: none"> <li>• CS2040 Data Structures and Algorithms</li> <li>• CS4220 Knowledge Discovery Methods in Bioinformatics</li> </ul> |
|--|--|---|

|  |  |  |  |
|--|--|--|--|
|  |  |  | <ul style="list-style-type: none"> <li>• MA3259 Mathematical Methods in Genomics</li> <li>• ZB3288 Advanced UOPS in Computational Biology I</li> <li>• LSM4241 Functional Genomics</li> </ul> <p>This minor will be open to all majors except Computational Biology.</p> |
|--|--|--|--|

| 20.   | 15 Jul 2021   | FoS | <p><b>Updates for Bulletin AY18/19</b><br/><b>Link:</b> <a href="https://nus.edu.sg/registrar/docs/info/nusbulletin/bulletin-updates-ay1819.pdf">https://nus.edu.sg/registrar/docs/info/nusbulletin/bulletin-updates-ay1819.pdf</a></p> <p>Circular no. and title:<br/>BUS Circular 22 AY18/19 FASS: An Update on Computational Thinking Requirements in the FASS Undergraduate Curriculum</p> <p>BUS Circular 26 AY20/21 FoS: Pharmacy - Change in Bachelor of Pharmacy Programme Requirements</p> <p>Page 189 of 219</p> <hr/> <p>3.3.1.7 Computational Thinking Requirement</p> <p><b>Revised text (additions/changes in red):</b></p> <table><tr><th>MAJORS</th><th>OPTIONS TO FULFIL COMPUTATIONAL THINKING REQUIREMENT</th></tr><tr><td><b>Life Sciences,<br/>Pharmaceutical<br/>Science,<br/>Physics</b></td><td>Option 1: COS2000 – Computational Thinking for Scientists<br/><br/>or<br/><br/>Option 2: CS1010S (or its variants) – Programming Methodology or CS1101S Programming Methodology<br/><br/>or<br/><br/>Option 3: CS50 Introduction to Computer Science DYOM edX MOOCs</td></tr><tr><td><b>Chemistry,<br/>Food Science &amp;<br/>Technology</b></td><td>Option 1: COS2000 – Computational Thinking for Scientists<br/><br/>or<br/><br/>Option 2: CM3267 – Computational Thinking and Programming in Chemistry*<br/><br/>or</td></tr></table> | MAJORS | OPTIONS TO FULFIL COMPUTATIONAL THINKING REQUIREMENT | <b>Life Sciences,<br/>Pharmaceutical<br/>Science,<br/>Physics</b> | Option 1: COS2000 – Computational Thinking for Scientists<br><br>or<br><br>Option 2: CS1010S (or its variants) – Programming Methodology or CS1101S Programming Methodology<br><br>or<br><br>Option 3: CS50 Introduction to Computer Science DYOM edX MOOCs | <b>Chemistry,<br/>Food Science &amp;<br/>Technology</b> | Option 1: COS2000 – Computational Thinking for Scientists<br><br>or<br><br>Option 2: CM3267 – Computational Thinking and Programming in Chemistry*<br><br>or |
|---|---|-----|---|--------|--|---|---|---|--|
| MAJORS  | OPTIONS TO FULFIL COMPUTATIONAL THINKING REQUIREMENT  |     |   |        |  |   |   |   |  |
| <b>Life Sciences,<br/>Pharmaceutical<br/>Science,<br/>Physics</b> | Option 1: COS2000 – Computational Thinking for Scientists<br><br>or<br><br>Option 2: CS1010S (or its variants) – Programming Methodology or CS1101S Programming Methodology<br><br>or<br><br>Option 3: CS50 Introduction to Computer Science DYOM edX MOOCs |     |   |        |  |   |   |   |  |
| <b>Chemistry,<br/>Food Science &amp;<br/>Technology</b>           | Option 1: COS2000 – Computational Thinking for Scientists<br><br>or<br><br>Option 2: CM3267 – Computational Thinking and Programming in Chemistry*<br><br>or  |     |   |        |  |   |   |   |  |

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|  |  |  |  | <p>Option 3: CS1010S (or its variants) – Programming Methodology or CS1101S Programming Methodology</p> <p>or</p> <p>Option 4: CS50 Introduction to Computer Science DYOM edX MOOCs</p>   |
|  |  |  | <b>Pharmacy</b>                          | <p>For Cohort AY2018/19 <del>and after</del> to AY2020/21, to read one of the following as an Unrestricted Elective module:</p> <p>Option 1: COS2000 – Computational Thinking for Scientists</p> <p>or</p> <p>Option 2: CS1010S (or its variants) – Programming Methodology or CS1101S Programming Methodology</p> <p>or</p> <p>Option 3: CS50 Introduction to Computer Science DYOM edX MOOCs</p>  |
|  |  |  | <b>Bachelor of Environmental Studies</b> | <p>All undergraduates (from FASS and FoS, in BES, inclusive of BES students in the UTCP or USP programme), will be required to do GET1031A/GET1050 Computational Reasoning. Students may choose to take the modules below as an alternative to fulfil the CT requirement:</p> <ul style="list-style-type: none"> <li>• NM2207 Computational Media Literacy</li> <li>• PH2113 Computation and Philosophy</li> <li>• EC3305 Programming Tools for Economics</li> </ul> <p>Higher-level computing modules (e.g. CS1010x, COS2000, CM3267) can also be taken in place of GET1050.</p> <p>BES students doing the UTCP at Residential College 4 (RC4) and have read a Junior Seminar module (i.e., UTC1702%) are exempted from GET1031A/GET1050 as the RC4 programme encourages explicit use of representing thinking, using computer models.</p> |

| 21.                                 | 15 Jul 2021   | FoS   | <p><b>Updates for Bulletin AY18/19</b><br/><b>Link:</b> <a href="https://nus.edu.sg/registrar/docs/info/nusbulletin/bulletin-updates-ay1819.pdf">https://nus.edu.sg/registrar/docs/info/nusbulletin/bulletin-updates-ay1819.pdf</a></p> <p>Circular no. and title:<br/>SFCC Circular 35 AY20/21 FoS: Proposal to Recognise FSC Prefix Modules in the Science Faculty Requirements</p> <p>Page 87 of 219</p> <hr/> <p>3.3.1.6 Faculty Requirement</p> <p><b>To replace the Table of Subject Groups with the following:</b></p> <table><tr><th>Subject Group</th><th>Majors in this Group</th><th>Module Codes in this Group</th></tr><tr><td>Computing Sciences</td><td>Quantitative Finance, Computational Science, Computational Biology</td><td>CZXXXX, CSXXXX*, COS2000, IT1001*, IT1002*, IT1006*, QFXXXX, ZBXXXX, CM3267</td></tr><tr><td>Chemical Sciences</td><td>Applied Chemistry, Chemistry, Food Science &amp; Technology, Pharmaceutical Science, Pharmacy</td><td>CMXXXX, FSTXXXX, PHSXXXX, PRXXXX, FSC4208</td></tr><tr><td>Life Sciences</td><td>Food Science &amp; Technology, Life Sciences, Pharmaceutical Science, Pharmacy</td><td>FSTXXXX, LSMXXXX, PHSXXXX, PRXXXX, FSC2101</td></tr><tr><td>Mathematical &amp; Statistical Sciences</td><td>Applied Mathematics, Quantitative Finance, Computational Science, Mathematics, Statistics, Data Science and Analytics</td><td>CZXXXX, MAXXXX, STXXXX, QFXXXX, DSXXXX</td></tr><tr><td>Physical Sciences</td><td>Physics</td><td>PCXXXX</td></tr></table> | Subject Group | Majors in this Group | Module Codes in this Group | Computing Sciences | Quantitative Finance, Computational Science, Computational Biology | CZXXXX, CSXXXX*, COS2000, IT1001*, IT1002*, IT1006*, QFXXXX, ZBXXXX, CM3267 | Chemical Sciences | Applied Chemistry, Chemistry, Food Science & Technology, Pharmaceutical Science, Pharmacy | CMXXXX, FSTXXXX, PHSXXXX, PRXXXX, FSC4208 | Life Sciences | Food Science & Technology, Life Sciences, Pharmaceutical Science, Pharmacy | FSTXXXX, LSMXXXX, PHSXXXX, PRXXXX, FSC2101 | Mathematical & Statistical Sciences | Applied Mathematics, Quantitative Finance, Computational Science, Mathematics, Statistics, Data Science and Analytics | CZXXXX, MAXXXX, STXXXX, QFXXXX, DSXXXX | Physical Sciences | Physics | PCXXXX |
|-------------------------------------|---|---|---|---------------|----------------------|----------------------------|--------------------|--|---|-------------------|---|---|---------------|--|--|-------------------------------------|---|--|-------------------|---------|--------|
| Subject Group                       | Majors in this Group  | Module Codes in this Group  |   |               |                      |                            |                    |  |   |                   |   |   |               |  |  |                                     |   |  |                   |         |        |
| Computing Sciences                  | Quantitative Finance, Computational Science, Computational Biology  | CZXXXX, CSXXXX*, COS2000, IT1001*, IT1002*, IT1006*, QFXXXX, ZBXXXX, CM3267 |   |               |                      |                            |                    |  |   |                   |   |   |               |  |  |                                     |   |  |                   |         |        |
| Chemical Sciences                   | Applied Chemistry, Chemistry, Food Science & Technology, Pharmaceutical Science, Pharmacy                             | CMXXXX, FSTXXXX, PHSXXXX, PRXXXX, FSC4208                                   |   |               |                      |                            |                    |  |   |                   |   |   |               |  |  |                                     |   |  |                   |         |        |
| Life Sciences                       | Food Science & Technology, Life Sciences, Pharmaceutical Science, Pharmacy  | FSTXXXX, LSMXXXX, PHSXXXX, PRXXXX, FSC2101                                  |   |               |                      |                            |                    |  |   |                   |   |   |               |  |  |                                     |   |  |                   |         |        |
| Mathematical & Statistical Sciences | Applied Mathematics, Quantitative Finance, Computational Science, Mathematics, Statistics, Data Science and Analytics | CZXXXX, MAXXXX, STXXXX, QFXXXX, DSXXXX                                      |   |               |                      |                            |                    |  |   |                   |   |   |               |  |  |                                     |   |  |                   |         |        |
| Physical Sciences                   | Physics   | PCXXXX  |   |               |                      |                            |                    |  |   |                   |   |   |               |  |  |                                     |   |  |                   |         |        |

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|  |  |  | <div> <div>Multidisciplinary &amp; Interdisciplinary Sciences</div> <div>----</div> <div>           SP1201 or FMS12XX(B, C, M, P, S), FMS1201D (for Pre-Med students only), SP1202 (or one of the University Town pilot Writing Programme modules coded as WPxxxx, only applicable to cohorts who matriculated prior to AY2011/12)**, SP1203**, SP2251, SP3201, SP3202, SP3203, SP3277, SP1541^, SP2201, SP4261, SP4262, SP4263, SP4264, SP4265, SP4266, FSC3101, FSC4201, FSC4202, FSC4203, FSC4204, FSC4205, FSC4206, FSC4207         </div> </div> |
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\* Modules CSxxxx, IT1001, IT1002 and IT1006 are offered by the School of Computing but if read, may be counted towards Faculty requirements from the Computing Sciences Subject Group. Please note that edX MOOCs CS50's Introduction to Computer Science cannot be used to satisfy the faculty requirement.

\*\* FoS students who have not read SP1202 may take one of these pilot UTWP modules to fulfil the Faculty Requirements. Students who have read SP1202 may still take one of these pilot UTWP modules and have it counted as a Unrestricted Electives (UE). Students who choose to read SP1202 and one of these pilot UTWP modules will only have SP1202 counted as Faculty Requirements and the pilot UTWP module as UE. Pharmacy students, who are required to read SP1203 for their Faculty Requirements, may only count SP1202 and the pilot UTWP module as UE. Students who intend to use the pilot UTWP module to fulfil the Faculty Requirements should not exercise S/U option on the module. Otherwise, the pilot UTWP module will be counted as UE.

^SP1541 is meant for student Cohort 2015 and after.

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| 22. | 16 Aug 2021 | FoS | <p><b><u>Updates for Bulletin AY18/19</u></b><br/> <b>Link:</b> <a href="https://nus.edu.sg/registrar/docs/info/nusbulletin/bulletin-updates-ay1819.pdf">https://nus.edu.sg/registrar/docs/info/nusbulletin/bulletin-updates-ay1819.pdf</a></p> <p>Circular title: FoS: Department of Biological Sciences – Removal of FSC52xx from the Requirements of the Minor Programme in Forensic Science</p> <p>Circular no.: BUS Circular 1 AY21/22</p> <p>Page 203 of 223</p> <hr/> <p>3.4.3.6 Minor in Forensic Science</p> <p><b>Revised text (additions/changes in red):</b></p> <p><b>Essential Modules – Pass the following 3 modules (3 x 4MC = 12MC):</b></p> <p>FSC2101/LSM1306 Forensic Science<br/> FSC3101/SP3202 Evidence in Forensic Science<br/> FSC4208/CM3301 Advanced Forensic Science</p> <p><b>Elective Modules – Pass 12MCs of the following modules, including:</b></p> <p>a) A maximum of 4MC from Level 1000 modules in the list<br/> b) A minimum of 4MC from Level 4000 modules in the list<br/> <del>c) Up to 4 MC can be replaced with FSC52xx modules</del></p> <p>FSC4201/SP4261 Articulating Probability and Statistics in Court<br/> FSC4202/SP4262 Forensic Human Identification<br/> FSC4203/SP4263 Forensic Toxicology and Poisons<br/> FSC4204/SP4264 Criminalistics: Evidence and Proof [This is a 2MC module. Please complete an equivalent of 12 MC of elective modules for the purpose of Minor fulfilment.]<br/> FSC4205/SP4265 Criminalistics: Forgery Exposé with Forensic Science [This is a 2MC module. Please complete an equivalent of 12 MC of elective modules for the purpose of Minor fulfilment.]<br/> FSC4206/LL4362V Advanced Criminal Litigation – Forensics on Trial [5MC]<br/> FSC4207/SP4266 Forensic Entomology<br/> CM2101 Physical Chemistry 2 or CM3131 Applications of Physical Chemistry<br/> CM3242 Instrumental Analysis II</p> |
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|  |  |  | LSM2105/LSM1102 Molecular Genetics<br>LSM3211 Fundamental Pharmacology<br>PC1141 Introduction to Classical Mechanics or PC1431 Physics IE<br>PR1110/A Foundations in Medicinal Chemistry<br>PR3116 Concepts in Pharmacokinetics & Biopharmaceutics<br>ST2334 Probability and Statistics; OR MA2116/MA2216/ST2131 Probability<br>CM/FST/LSM/MA/PC/PR/ST/ZB3288 Advanced UROPS I (Forensic-Science related; subject to approval of<br>Minor programme coordinator) |
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| 23.                    | 9 Sep 2021  | FoS                  | <p><b>Updates for Bulletin AY18/19</b><br/><b>Link:</b> <a href="https://www.nus.edu.sg/registrar/docs/info/nusbulletin/AY201819_FoS.pdf">https://www.nus.edu.sg/registrar/docs/info/nusbulletin/AY201819_FoS.pdf</a></p> <p>Circular title: FoS: Department of Physics – Proposed Revisions to the Second Major in Physics, Minors in Astronomy, Biophysics and Physics</p> <p>Circular no.: BUS Circular 4 AY21/22</p> <p>Page 153 of 252</p> <p>3.4.2.5 Second Major in Physics</p> <p><b>Revised text (additions/changes in red):</b></p> <p>To be awarded a second major in Physics, candidates must satisfy the following:</p> <table><tr><th>MODULE LEVEL</th><th>SECOND MAJOR REQUIREMENTS</th><th>CUMULATIVE MAJOR MCS</th></tr><tr><td>Level-1000<br/>(16 MCs)</td><td>Pass<br/>PC1141 Introduction to Classical Mechanics<br/>PC1142 Introduction to Thermodynamics and Optics<br/>PC1143 Introduction to Electricity &amp; Magnetism<br/>PC1144 Introduction to Modern Physics</td><td>16</td></tr><tr><td>Level-2000<br/>(16 MCs)</td><td>Pass:<br/>• PC2130 Quantum Mechanics I<br/>• PC2131/<b>PC2031</b> Electricity and Magnetism I<br/>• PC2193 Experimental Physics I<br/><br/>Any <u>one</u> from the following:<br/>• PC2132 Classical Mechanics <b>or PC2032 Classical Mechanics I</b><br/>• PC2134 Mathematical Methods in Physics I<br/>• PC2230 Thermodynamics and Statistical Mechanics</td><td>32</td></tr><tr><td>Level-3000<br/>(16 MCs)</td><td>Pass<br/>Any <u>four</u> from the following<br/>• PC3130 Quantum Mechanics II</td><td>48</td></tr></table> | MODULE LEVEL | SECOND MAJOR REQUIREMENTS | CUMULATIVE MAJOR MCS | Level-1000<br>(16 MCs) | Pass<br>PC1141 Introduction to Classical Mechanics<br>PC1142 Introduction to Thermodynamics and Optics<br>PC1143 Introduction to Electricity & Magnetism<br>PC1144 Introduction to Modern Physics | 16 | Level-2000<br>(16 MCs) | Pass:<br>• PC2130 Quantum Mechanics I<br>• PC2131/ <b>PC2031</b> Electricity and Magnetism I<br>• PC2193 Experimental Physics I<br><br>Any <u>one</u> from the following:<br>• PC2132 Classical Mechanics <b>or PC2032 Classical Mechanics I</b><br>• PC2134 Mathematical Methods in Physics I<br>• PC2230 Thermodynamics and Statistical Mechanics | 32 | Level-3000<br>(16 MCs) | Pass<br>Any <u>four</u> from the following<br>• PC3130 Quantum Mechanics II | 48 |
|------------------------|---|----------------------|--|--------------|---------------------------|----------------------|------------------------|---|----|------------------------|---|----|------------------------|---|----|
| MODULE LEVEL           | SECOND MAJOR REQUIREMENTS   | CUMULATIVE MAJOR MCS |  |              |                           |                      |                        |   |    |                        |   |    |                        |   |    |
| Level-1000<br>(16 MCs) | Pass<br>PC1141 Introduction to Classical Mechanics<br>PC1142 Introduction to Thermodynamics and Optics<br>PC1143 Introduction to Electricity & Magnetism<br>PC1144 Introduction to Modern Physics   | 16                   |  |              |                           |                      |                        |   |    |                        |   |    |                        |   |    |
| Level-2000<br>(16 MCs) | Pass:<br>• PC2130 Quantum Mechanics I<br>• PC2131/ <b>PC2031</b> Electricity and Magnetism I<br>• PC2193 Experimental Physics I<br><br>Any <u>one</u> from the following:<br>• PC2132 Classical Mechanics <b>or PC2032 Classical Mechanics I</b><br>• PC2134 Mathematical Methods in Physics I<br>• PC2230 Thermodynamics and Statistical Mechanics | 32                   |  |              |                           |                      |                        |   |    |                        |   |    |                        |   |    |
| Level-3000<br>(16 MCs) | Pass<br>Any <u>four</u> from the following<br>• PC3130 Quantum Mechanics II   | 48                   |  |              |                           |                      |                        |   |    |                        |   |    |                        |   |    |

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| <ul style="list-style-type: none"> <li>• PC3193 Experimental Physics II</li> <li>• ALL PC32XX and PC42XX modules that can be used to fulfil the requirements for the Major Programme in Physics.</li> </ul> |
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#### 3.4.3.3 Minor in Biophysics

##### **Revised text (additions/changes in red):**

To be awarded a minor in Biophysics, the following are the requirements:

##### For students undertaking a major in Life Sciences

1. Read and pass the following three essential modules:
  - a. PC2267 Biophysics I
  - b. PC3267 Biophysics II
  - c. LSM3243 Molecular Biophysics
2. Read and pass three modules from the following (Maximum of two Level-1000 modules):
  - a. PC1142 Introduction to Thermodynamics and Optics or PC1431/PC1431X Physics IE
  - b. PC1143 Introduction to Electricity & Magnetism or PC1432 Physics IIE
  - c. CM1402 General Chemistry
  - d. PC2131/PC2031 Electricity & Magnetism
  - e. PC2230 Thermodynamics & Statistical Mechanics
  - f. LSM2102 Molecular Biology or LSM2232 Genes, Genomes and Biomedical Implications
  - g. LSM2241 Introductory Bioinformatics
  - h. PC4267 Biophysics III
  - i. PC4268 Biophysical Instrumentation and Biomolecular Electronics

##### For students undertaking a major in Physics

1. Read and pass the following three essential modules:
  - a. PC2267 Biophysics I
  - b. PC3267 Biophysics II
  - c. LSM3243 Molecular Biophysics
2. Read and pass three modules from the following (Maximum of two Level-1000 modules):
  - a. LSM1101 Biochemistry of Biomolecules or LSM1106 Molecular Cell Biology

- b. LSM1102 Molecular Genetics
- c. CM1131 Physical Chemistry 1
- d. PC2131/**PC2031** Electricity & Magnetism
- e. PC2230 Thermodynamics & Statistical Mechanics
- f. LSM2102 Molecular Biology or LSM2232 Genes, Genomes and Biomedical Implications
- g. LSM2241 Introductory Bioinformatics
- h. PC4267 Biophysics III
- i. PC4268 Biophysical Instrumentation and Biomolecular Electronics

For students not undertaking a major in Life Sciences or Physics

1. Read and pass the following three essential modules:
  - a. PC2267 Biophysics I
  - b. PC3267 Biophysics II
  - c. LSM3243 Molecular Biophysics
2. Read and pass three modules from the following (Maximum of two Level-1000 modules):
  - a. PC1142 Introduction to Thermodynamics and Optics or PC1431/PC1431X Physics IE
  - b. PC1143 Introduction to Electricity & Magnetism or PC1432 Physics IIE
  - c. LSM1101 Biochemistry of Biomolecules or LSM1106 Molecular Cell Biology
  - d. LSM1102 Molecular Genetics
  - e. CM1131 Physical Chemistry 1
  - f. PC2131/**PC2031** Electricity & Magnetism
  - g. PC2230 Thermodynamics & Statistical Mechanics
  - h. LSM2102 Molecular Biology or LSM2232 Genes, Genomes and Biomedical Implications
  - i. LSM2241 Introductory Bioinformatics
  - j. PC4267 Biophysics III
  - k. PC4268 Biophysical Instrumentation and Biomolecular Electronics

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3.4.3.14 Minor in Physics

**Revised text (additions/changes in red):**

To be awarded a minor in Physics, a student must pass the following six modules:

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|  |  |  | <ol style="list-style-type: none"> <li>1. Any <u>one</u> from the following: <ul style="list-style-type: none"> <li>• PC1141 Introduction to Classical Mechanics</li> <li>• PC1142 Introduction to Thermodynamics and Optics</li> <li>• PC1143 Introduction to Electricity &amp; Magnetism</li> <li>• PC1431 Physics IE or PC1431X Physics IE</li> </ul> </li> <li>2. Any <u>one</u> from the following: <ul style="list-style-type: none"> <li>• PC1144 Introduction to Modern Physics</li> <li>• PC1432/PC1432X Physics IIE</li> <li>• PC2232 Physics for Electrical Engineers</li> </ul> </li> <li>3. Any <u>four</u> modules from the following of which at least two modules must be Level-3000 &amp; above: <ul style="list-style-type: none"> <li>• PC2130 Quantum Mechanics I</li> <li>• PC2131/PC2031 Electricity and Magnetism I</li> <li>• PC2132 Classical Mechanics or PC2032 Classical Mechanics I</li> <li>• PC2134 Mathematical Methods in Physics I</li> <li>• PC2230 Thermodynamics and Statistical Mechanics</li> <li>• PC2193 Experimental Physics I</li> <li>• PC3130 Quantum Mechanics II</li> <li>• PC3193 Experimental Physics II</li> <li>• ALL PC32XX and PC42XX modules</li> </ul> </li> </ol> |
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| 24.   | 2 Dec 2021   | FoS | <p><b>Updates for Bulletin AY18/19</b><br/><b>Link:</b> <a href="https://nus.edu.sg/registrar/docs/info/nusbulletin/bulletin-updates-ay1819.pdf">https://nus.edu.sg/registrar/docs/info/nusbulletin/bulletin-updates-ay1819.pdf</a></p> <p>Circular title: FoS_Physics – Proposed Changes to Existing Module (COS2000)</p> <p>Circular No.: BUS Circular 10 AY21/22</p> <p>Page 220 of 229</p> <p>3.3.1.7 Computational Thinking Requirement</p> <p><b>Revised text (additions/changes in red):</b></p> <table><tr><th>MAJORS</th><th>OPTIONS TO FULFIL COMPUTATIONAL THINKING REQUIREMENT</th></tr><tr><td><b>Life Sciences,<br/>Pharmaceutical<br/>Science,<br/>Physics</b></td><td>Option 1: <b>COS1000</b>/COS2000 – Computational Thinking for Scientists<br/><br/>or<br/><br/>Option 2: CS1010S (or its variants) – Programming Methodology or CS1101S Programming Methodology<br/><br/>or<br/><br/>Option 3: CS50 Introduction to Computer Science DYOM edX MOOCs</td></tr><tr><td><b>Chemistry,<br/>Food Science &amp;<br/>Technology</b></td><td>Option 1: <b>COS1000</b>/COS2000 – Computational Thinking for Scientists<br/><br/>or<br/><br/>Option 2: CM3267 – Computational Thinking and Programming in Chemistry*<br/><br/>or<br/><br/>Option 3: CS1010S (or its variants) – Programming Methodology or CS1101S Programming Methodology</td></tr></table> | MAJORS | OPTIONS TO FULFIL COMPUTATIONAL THINKING REQUIREMENT | <b>Life Sciences,<br/>Pharmaceutical<br/>Science,<br/>Physics</b> | Option 1: <b>COS1000</b> /COS2000 – Computational Thinking for Scientists<br><br>or<br><br>Option 2: CS1010S (or its variants) – Programming Methodology or CS1101S Programming Methodology<br><br>or<br><br>Option 3: CS50 Introduction to Computer Science DYOM edX MOOCs | <b>Chemistry,<br/>Food Science &amp;<br/>Technology</b> | Option 1: <b>COS1000</b> /COS2000 – Computational Thinking for Scientists<br><br>or<br><br>Option 2: CM3267 – Computational Thinking and Programming in Chemistry*<br><br>or<br><br>Option 3: CS1010S (or its variants) – Programming Methodology or CS1101S Programming Methodology |
|---|--|-----|---|--------|--|---|---|---|--|
| MAJORS  | OPTIONS TO FULFIL COMPUTATIONAL THINKING REQUIREMENT   |     |   |        |  |   |   |   |  |
| <b>Life Sciences,<br/>Pharmaceutical<br/>Science,<br/>Physics</b> | Option 1: <b>COS1000</b> /COS2000 – Computational Thinking for Scientists<br><br>or<br><br>Option 2: CS1010S (or its variants) – Programming Methodology or CS1101S Programming Methodology<br><br>or<br><br>Option 3: CS50 Introduction to Computer Science DYOM edX MOOCs          |     |   |        |  |   |   |   |  |
| <b>Chemistry,<br/>Food Science &amp;<br/>Technology</b>           | Option 1: <b>COS1000</b> /COS2000 – Computational Thinking for Scientists<br><br>or<br><br>Option 2: CM3267 – Computational Thinking and Programming in Chemistry*<br><br>or<br><br>Option 3: CS1010S (or its variants) – Programming Methodology or CS1101S Programming Methodology |     |   |        |  |   |   |   |  |

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|  |  |  |  | <p>or</p> <p>Option 4: CS50 Introduction to Computer Science DYOM edX MOOCs</p>   |  |
|  |  |  | <b>Pharmacy</b>                          | <p>For Cohort AY2018/19 to AY2020/21, to read one of the following as an Unrestricted Elective module:</p> <p>Option 1: <b>COS1000</b>/COS2000 – Computational Thinking for Scientists</p> <p>or</p> <p>Option 2: CS1010S (or its variants) – Programming Methodology or CS1101S Programming Methodology</p> <p>or</p> <p>Option 3: CS50 Introduction to Computer Science DYOM edX MOOCs</p>  |  |
|  |  |  | <b>Bachelor of Environmental Studies</b> | <p>All undergraduates (from FASS and FoS, in BES, inclusive of BES students in the UTCP or USP programme), will be required to do GET1031A/GET1050 Computational Reasoning. Students may choose to take the modules below as an alternative to fulfil the CT requirement:</p> <ul style="list-style-type: none"> <li>• NM2207 Computational Media Literacy</li> <li>• PH2113 Computation and Philosophy</li> <li>• EC3305 Programming Tools for Economics</li> </ul> <p>Higher-level computing modules (e.g. CS1010x, COS2000, CM3267) can also be taken in place of GET1050.</p> <p>BES students doing the UTCP at Residential College 4 (RC4) and have read a Junior Seminar module (i.e., UTC1702%) are exempted from GET1031A/GET1050 as the RC4 programme encourages explicit use of representing thinking, using computer models.</p> |  |

| 25.   | 13 Jan 2022   | FoS | <p><b>Updates for Bulletin AY18/19</b><br/><b>Link:</b> <a href="https://nus.edu.sg/registrar/docs/info/nusbulletin/bulletin-updates-ay1819.pdf">https://nus.edu.sg/registrar/docs/info/nusbulletin/bulletin-updates-ay1819.pdf</a></p> <p>Circular title: FoS_Biological Sciences – Proposal for New Module (LSM2302)</p> <p>Circular No.: BUS Circular 24 AY20/21</p> <p>Page 230 of 231</p> <p>3.3.1.7 Computational Thinking Requirement</p> <p><b>Revised text (additions/changes in red):</b></p> <table><tr><th>MAJORS</th><th>OPTIONS TO FULFIL COMPUTATIONAL THINKING REQUIREMENT</th></tr><tr><td>Life Sciences,<br/>Pharmaceutical<br/>Science,<br/>Physics</td><td>Option 1: COS1000/COS2000 – Computational Thinking for Scientists<br/><br/>or<br/><br/>Option 2: CS1010S (or its variants) – Programming Methodology or CS1101S Programming Methodology<br/><br/>or<br/><br/>Option 3: LSM2302 – Computational Thinking for Life Sciences<br/><br/>or<br/><br/>Option 3 4: CS50 Introduction to Computer Science DYOM edX MOOCs</td></tr><tr><td>Chemistry,<br/>Food Science &amp;<br/>Technology</td><td>Option 1: COS1000/COS2000 – Computational Thinking for Scientists<br/><br/>or<br/><br/>Option 2: CM3267 – Computational Thinking and Programming in Chemistry*</td></tr></table> | MAJORS | OPTIONS TO FULFIL COMPUTATIONAL THINKING REQUIREMENT | Life Sciences,<br>Pharmaceutical<br>Science,<br>Physics | Option 1: COS1000/COS2000 – Computational Thinking for Scientists<br><br>or<br><br>Option 2: CS1010S (or its variants) – Programming Methodology or CS1101S Programming Methodology<br><br>or<br><br>Option 3: LSM2302 – Computational Thinking for Life Sciences<br><br>or<br><br>Option 3 4: CS50 Introduction to Computer Science DYOM edX MOOCs | Chemistry,<br>Food Science &<br>Technology | Option 1: COS1000/COS2000 – Computational Thinking for Scientists<br><br>or<br><br>Option 2: CM3267 – Computational Thinking and Programming in Chemistry* |
|---|---|-----|---|--------|--|---|---|--|--|
| MAJORS  | OPTIONS TO FULFIL COMPUTATIONAL THINKING REQUIREMENT  |     |   |        |  |   |   |  |  |
| Life Sciences,<br>Pharmaceutical<br>Science,<br>Physics | Option 1: COS1000/COS2000 – Computational Thinking for Scientists<br><br>or<br><br>Option 2: CS1010S (or its variants) – Programming Methodology or CS1101S Programming Methodology<br><br>or<br><br>Option 3: LSM2302 – Computational Thinking for Life Sciences<br><br>or<br><br>Option 3 4: CS50 Introduction to Computer Science DYOM edX MOOCs |     |   |        |  |   |   |  |  |
| Chemistry,<br>Food Science &<br>Technology              | Option 1: COS1000/COS2000 – Computational Thinking for Scientists<br><br>or<br><br>Option 2: CM3267 – Computational Thinking and Programming in Chemistry*  |     |   |        |  |   |   |  |  |



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|--|--|--|-----------------------------------|---|--|
|  |  |  |                                   | <p>or</p> <p>Option 3: CS1010S (or its variants) – Programming Methodology or CS1101S Programming Methodology</p> <p>or</p> <p>Option 4: LSM2302 – Computational Thinking for Life Sciences</p> <p>or</p> <p>Option 4 5: CS50 Introduction to Computer Science DYOM edX MOOCs</p>   |  |
|  |  |  | Pharmacy                          | <p>For Cohort AY2018/19 to AY2020/21, to read one of the following as an Unrestricted Elective module:</p> <p>Option 1: COS1000/COS2000 – Computational Thinking for Scientists</p> <p>or</p> <p>Option 2: CS1010S (or its variants) – Programming Methodology or CS1101S Programming Methodology</p> <p>or</p> <p>Option 3: LSM2302 – Computational Thinking for Life Sciences</p> <p>or</p> <p>Option 3 4: CS50 Introduction to Computer Science DYOM edX MOOCs</p> |  |
|  |  |  | Bachelor of Environmental Studies | <p>All undergraduates (from FASS and FoS, in BES, inclusive of BES students in the UTCP or USP programme), will be required to do</p>   |  |

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|  |  |  | <p>GET1031A/GET1050 Computational Reasoning. Students may choose to take the modules below as an alternative to fulfil the CT requirement:</p> <ul style="list-style-type: none"> <li>• NM2207 Computational Media Literacy</li> <li>• PH2113 Computation and Philosophy</li> <li>• EC3305 Programming Tools for Economics</li> </ul> <p>Higher-level computing modules (e.g. CS1010x, <b>COS1000</b>/COS2000, CM3267, <b>LSM2302</b>) can also be taken in place of GET1050.</p> <p>BES students doing the UTCP at Residential College 4 (RC4) and have read a Junior Seminar module (i.e., UTC1702%) are exempted from GET1031A/GET1050 as the RC4 programme encourages explicit use of representing thinking, using computer models.</p> |  |
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| 26. | 13 Jan 2022 | FoS | <p><b><u>Updates for Bulletin AY18/19</u></b><br/> <b>Link:</b> <a href="https://www.nus.edu.sg/registrar/docs/info/nusbulletin/AY201819_FoS.pdf">https://www.nus.edu.sg/registrar/docs/info/nusbulletin/AY201819_FoS.pdf</a></p> <p>Circular title:<br/> FoS: Department of Biological Sciences – Delisting ZB4171 as an LSM-Recognised Elective Module and Changes to Requirements of the Minor in Bioinformatics</p> <p>Circular No.: BUS Circular 11 AY21/22</p> <p>Page 217 of 231</p> <hr/> <p><b><u>3.4.3.3 Minor in Bioinformatics</u></b></p> <p>To be awarded a Minor in Bioinformatics, a student must complete the following modules:</p> <p><b><u>Core Modules (16 MCs)</u></b><br/> CS1010/<del>CS1101S</del> Programming Methodology (or its variant)<br/> LSM2241 Introductory Bioinformatics<br/> LSM3241 Genomic Data Analysis<br/> ZB4171 Advanced Topics in Bioinformatics</p> <p><b><u>Elective Modules (8 MCs)</u></b><br/> Pass two modules from the following:</p> <ul style="list-style-type: none"> <li>• CS2040 Data Structures and Algorithms (<del>or its variant</del>)</li> <li>• CS4220 Knowledge Discovery Methods in Bioinformatics</li> <li>• MA3259 Mathematical Methods in Genomics</li> <li>• ZB3288 Advanced UOPS in Computational Biology I</li> <li>• LSM4241 Functional Genomics</li> </ul> <p>This minor will be open to all majors except Computational Biology.</p> |
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| 27. | 13 Jan 2022 | FoS | <p><b><u>Updates for Bulletin AY18/19</u></b><br/> <b>Link:</b> <a href="https://nus.edu.sg/registrar/docs/info/nusbulletin/bulletin-updates-ay1819.pdf">https://nus.edu.sg/registrar/docs/info/nusbulletin/bulletin-updates-ay1819.pdf</a></p> <p>Circular title: FoS_Pharmacy – Proposal to Revise the Minor in Pharmaceutical Science for Cohorts AY2020/21 and Before</p> <p>Circular no.: BUS Circular 11 AY21/22</p> <p>Page 197 of 231</p> <hr/> <p>3.4.3.12 Minor in Pharmaceutical Science</p> <p><b>Revised text (additions/changes in red):</b></p> <p>Essential modules:</p> <ul style="list-style-type: none"> <li>• PR1110 Foundations for Medicinal Chemistry or PHS1110 Foundation for Medicinal and Synthetic Chemistry or PHS1101 Billion Dollar Pill – Bench to Bedside Drug Development</li> <li>• PR2114 Formulation and Technology I or PHS1114 Principles of Pharmaceutical Formulations I or PHS2105 Principles of Pharmaceutical Formulations I</li> <li>• PR2115 Medicinal Chemistry for Drug Design or PHS2115 Basic Principles of Drug Design and Development or PHS2102 Physicochemical Principles of Drug Action</li> <li>• PR3301 Pharmaceutical Dosage Forms or PR3117 Formulations &amp; Technology II or PHS2117 Principles of Pharmaceutical Formulations II or PR5304 Fundamental Topics in Pharmaceutical Science</li> </ul> <p>Any two of the following modules:</p> <ul style="list-style-type: none"> <li>• PR1301 Complementary Medicine and Health</li> <li>• PR2143 Pharmaceutical Analysis for Quality Assurance or PHS2143 Analytical Techniques and Pharmaceutical Applications or PHS2103 <del>Rational Drug Design and Molecular Characterization</del> <b>(placeholder title) Essentials of Pharmaceutical and Synthetic Chemistry</b></li> <li>• PR2202 Cosmetics and Perfumes</li> <li>• PR3204 Medicinal Natural Products</li> <li>• PR4205 Bioorganic Principles of Medicinal Chemistry</li> <li>• PR4206 Industrial Pharmacy</li> <li>• CN4241R Engineering Principles for Drug Delivery</li> <li>• SP4263/<b>FSC4203</b> Forensic Toxicology and Poisons</li> </ul> |
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(13 Jan 2022)