

APPENDIX 2. BIWEEKLY LESSON PLAN FOR BLOCK CLASSES IN PC1/OC AND PC2 PHASES, ILLUSTRATING THE WEEKS WHICH THE CORE INTEGRATION TOOK PLACE.

| PC1 and OC | | PC2 | |
|------------|--|------|--|
| Week | Laboratory activities | Week | Laboratory activities |
| 11 | PIPC1 <ul style="list-style-type: none"> • Solution stoichiometry 1, discuss LBQ in tutorial sheet (Appendix 1) • Laboratory task, NaOH and KHP titration (Appendix 1) • Post-laboratory test | 1 | Dry laboratory exercise (Appendix 1) <ul style="list-style-type: none"> • Excel calculation on quantities of buffer components at fixed pH |
| 12 | OC <ul style="list-style-type: none"> • LBQ (Appendix 1) • Model Construction (Appendix 1) • Post-laboratory test | 2 | Preparation of buffer (Appendix 1) <ul style="list-style-type: none"> • Review buffer tutorial question • Draft protocol for buffer preparation • Benchwork |
| 17 | PIPC1 <ul style="list-style-type: none"> • LBQ in tutorial sheet • Laboratory task on selection of indicators in titration | 3 | Explore buffer properties (Appendix 1) <ul style="list-style-type: none"> • Measure pH • Write equations to account for pH behavior • Molecular explanation for pH behaviour |
| NA | NA | 13 | Transition metal stereochemistry (Appendix 1) <ul style="list-style-type: none"> • Model construction • Reflection questions on relationship between structure, isomerism and ligand types • Post-laboratory test |

EXAMPLE OF LESSON PLAN FOR TRADITIONAL CLASSES IN PC1 AND PC2.

| PC1 | | | PC2 | | |
|-------------------|---|---|-------------------|---------------------------------------|--|
| Lesson Activities | | | Lesson Activities | | |
| Week | Tutorial | Laboratory | Week | Tutorial | Laboratory |
| 11 | Solution stoichiometry 1 <ul style="list-style-type: none"> • Debrief LBQ in tutorial • Other questions | <ul style="list-style-type: none"> • Laboratory task, NaOH and KHP titration 1 • Post-laboratory test | 1 | pH calculation 1 (acids, bases, salt) | Dry laboratory exercise <ul style="list-style-type: none"> • Excel calculations |
| 12 | Solution stoichiometry 2 <ul style="list-style-type: none"> • Debrief LBQ in tutorial • Other questions | <ul style="list-style-type: none"> • Laboratory task, NaOH and KHP titration 2 • Post-laboratory test | 2 | pH calculation 2 (Buffers) | Preparation of buffer with known protocol |