

Session	Components	Examples of Questions Used	Teaching and Learning Activities
1	ORGANISING DATA USING EXCEL FUNCTIONS		
	<ul style="list-style-type: none"> Using conditional formatting to highlight selected cells 	<i>How would you highlight cells to get an overview of data trend in a 96-well plate?</i>	Instructors used EXCEL with mocked-up data to demonstrate use of conditional formatting.
2	BASIC STATISTICS		
	<ul style="list-style-type: none"> Introducing descriptive statistics: mean, standard deviation (SD), standard error (SE), confidence interval, 	<i>How well do your mean values fall within the true mean?</i>	Instructors used slides with question prompts to introduce basic statistical concepts. Instructors then demonstrated steps to obtain descriptive and inferential statistics using EXCEL functions.
	<ul style="list-style-type: none"> Introducing inferential statistics: p-value by paired t-test, confidence intervals 	<i>Is there a significant difference for each of the treated sample?</i>	
ORGANISING DATA USING EXCEL FUNCTIONS			
2	<ul style="list-style-type: none"> Transforming quantitative data to qualitative data using the 'IF' function 	<i>Are you able to convert the MIC values to the categories "S", "I" or "R" using a reference table of breakpoint values?</i>	Instructors shared with students Google sheet for students to record their results generated from a previous practical session. Instructors added demographic information in the whole-class data sheet making it more complicated. Instructors demonstrated 'IF', 'COUNTIF' and pivot table functions. Students practised these EXCEL functions.
	<ul style="list-style-type: none"> Transforming qualitative data to quantitative data using the 'COUNTIF' function 	<i>Are you able to calculate the percentage of samples showing positive ELISA results?</i>	
	<ul style="list-style-type: none"> Summarising large data set using pivot table in EXCEL 	<i>Can you obtain the percentage of males, from North America, who were infected with C. tropicalis using a pivot table?</i>	
2	BASIC STATISTICS		
	<ul style="list-style-type: none"> Summarising data with mean, SD or SE when appropriate Interpreting data (minimum inhibitory concentration, MIC) in context of the module 	<i>Given triplicate values for drug X each group member, and with 3 members per group, what is the MIC value for drug X? Likewise, for drugs Y and Z. What can you say about the readings with reference to SD or SE values, if there were significant differences to the control?</i>	Students were asked to perform analysis on the large data set and to present their interpretation, as an individual or as a group, based on questions.
3	INTEGRATING STATISTICS AND GRAPHICAL REPRESENTATIONS		
	<ul style="list-style-type: none"> Introducing types of data: categorical and numerical Introducing types of graph: pie chart, bar chart, histogram, line graph Deciding, constructing and justifying which type of graph to be used to communicate certain information 	<i>Which graph would you use for representation of quantitative data on:</i> <ul style="list-style-type: none"> <i>fungus pathogen species from positive ELISA cases?</i> <i>regional distribution of positive ELISA cases?</i> <i>age distribution of C. albicans cases?</i> <i>MIC of Drug X in C. auris?</i> <i>Comparison of growth inhibition of drug X, Y and Z in C. auris</i> 	Instructors used slides with question prompts to introduce basics of data types and graphical representations. Students were given certain criteria and were required to decide and construct corresponding graphs to represent the data. Students were also asked to justify their choice in discussions during the tutorial.