

BIOL2006 Concepts 2016 (variations due to PBLs taught on Monday)\*

Week/ Lecturer	Lecture concepts	Concepts in Exam Q's
1 DOB	Probability Distributions Parameter versus estimate R introduction	
2 DOB	Hypothesis Testing Type I and Type II error, Power t-test example R exercises	
3 DOB	Hypothesis Testing Introduction to linear models F-test example R exercises	
4 DOB	Hypothesis Testing Specified cell probabilities Contingency tables Goodness-of-fit tests (Poisson distribution) Chi-Square test R exercises	
5 MB	Types of experiments Experimental design Randomisation Replication and pseudo-replication Experimental error R exercises	
6 MB	ANOVA, Model I ANOVA, Model II Fixed versus Random effects One-, Two-Way ANOVA; interactions General Linear Model Crossed Factors Nested Factors R exercises	
7 SC	ANCOVA Regression and ANOVA together Assumptions of ANCOVA R exercises	
8	MID-TERM	
9 SC	Data Presentation Beyond Bar and line graphs Writing figure legends Reporting statistical results	
10 SC	Multiple linear regression Review of linear regression, and Model Fit, $R^2$ Basic Additive Model Interactions in multiple regression Assumptions of multiple regression Multicollinearity R exercises	
11 MB	Multivariate statistics The variance-covariance matrix Diagonalization of a symmetrical matrix Eigenvalues Eigenvectors	

12 MB	Multivariate statistics Multiple regression, structured and unstructured covariances Partial regression slopes	
13 ALL	<i>Review Session</i>	
CENTRAL	Final examination	

\*\*\* An extra week on ANOVA and one on MANOVA are added on years with greater access to contact hours.