

Syllabus

Bio3950 - Allocation of marks	
Component	% of Mark
Exercise 1 – DNA Isolation	10
Exercise 2 – PCR Amplification	10
Exercise 3 – Primer Design & RE map	10
Exercise 4 – DNA Bioinformatics	15
Exercise 5 – Environmental (eDNA)	5
Exercise 6 – CRISPR	5
Participation	5
Lab Notebook	5
Final Exam: 3 questions , 10% @	30
	95

Bio3950 – Fundamentals of Biotechnology – was originally developed to be a hands-on training course for students who planned to conduct molecular genetics-based experiments as part of their BSc honours or MSc programs. We thought that training new students simultaneously, in the Spring before the beginning of Summer research leading to the two-semester formal honours courses (Biol499A,B) was more efficient than staggered individual training. A lecture / lab format also promoted inclusion of the theory behind the experiments, and also necessary Bioinformatic and computational skills

With the increased application of molecular methods to wider ranges of biology, we have thought it useful to provide the same practical instruction to students as basic skills in modern Biology. While still useful for BSc honours training, the experience is valuable to any student. The concentrated three-week format, with labs every afternoon, allows connected experiments to be done continuously, as DNA extraction, PCR amplification, sequencing (or its equivalent), and bioinformatic analysis in the same manner as a typical week in the lab.