

ES7031 Population Genetic Theory & Its Application (3AUs)

This course helps you develop a strong theoretical and practical foundation in population genetics, enabling you to analyse genetic variation, infer evolutionary processes, and apply modern computational tools to real genomic datasets. You will learn how to measure genetic diversity and how to estimate demography and detect selection. This course is designed for graduate students who aim to apply population genetic principles to research in evolution, genomics, biodiversity, population genetics, or related fields. By taking this course, you will gain skills that are essential for interpreting population genome datasets, conducting population genetic analyses, and designing your own research strategies in academic setting.

This course will cover the principle of population genetics and its application to research projects. The course will start by introducing essential theories and proving the theories through actual data. The students will then define their own independent projects and analyzing their dataset. Students will be expected to have the essential knowledge about population genetics and learn to employ tools or carry programming to analyze population genetic data.