

University of Pretoria Yearbook 2022

Population and evolutionary genetics 367 (GTS 367)

Qualification Undergraduate

Faculty Faculty of Natural and Agricultural Sciences

Module credits 18.00

NQF Level 07

Programmes BSc (Information and Knowledge Systems)

BSc (Biochemistry)

BSc (Biotechnology)

BSc (Entomology)

BSc (Genetics)

BSc (Human Genetics)

BSc (Human Physiology)

BSc (Medical Sciences)

BSc (Microbiology)

BSc (Plant Science)

BSc (Zoology)

Service modules Faculty of Engineering, Built Environment and Information Technology

Prerequisites GTS 251 GS and GTS 261 GS.

Contact time 1 practical/tutorial per week, 2 lectures per week

Language of tuition Module is presented in English

Department Biochemistry, Genetics and Microbiology

Period of presentation Semester 1

Module content

Processes that affect genetic evolution: mutation, drift, natural selection and recombination. Fisher-Wright and coalescence models. Groupings of genes: linkage, inbreeding, population structure and gene flow. Neutral and nearly neutral theory. Quantitative genetics and the phenotype. Optimality. Adaptation. Levels of selection in sex ratios and conflict. Reproductive value and life history. Relatedness and kin selection. Sexual reproduction and selection. Genomic complexity and neutrality.

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