

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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