University of Pretoria Yearbook 2021

Plant genetics and crop biotechnology 361 (BTC 361)

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 Chemistry
	BSc Entomology
	BSc Genetics
	BSc Human Genetics
	BSc Human Physiology
	BSc Microbiology
	BSc Plant Science
	BSc Zoology
	BScAgric Plant Pathology
Service modules	Faculty of Engineering, Built Environment and Information Technology
Prerequisites	GTS 251 and {GTS 261 GS or BOT 261}
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 2

Module content

Plant genetics and genomics: gene control in plants, epigenetics, co-suppression, forward and reverse genetics, structural and functional genomics. Plant development: flowering, genetics imprinting. Plant-environment interactions. Crop genetic modification: food security, GMO regulation, plant transformation, whole-chromosome transformation, synthetic biology, homologous recombination. Crop molecular markers: marker types, genotyping, QTL mapping, marker-assisted breeding. Future of crop biotechnology: applications of genomics, biopharming, genetical genomics, systems biology