

University of Pretoria Yearbook 2020

Biocatalysis and integration of metabolism 357 (BCM 357)

Qualification	Undergraduate
Faculty	Faculty of Natural and Agricultural Sciences
Module credits	18.00
Programmes	BSc Biochemistry
	BSc Biotechnology
	BSc Chemistry
	BSc Genetics
	BSc Human Genetics
	BSc Human Physiology
	BSc Microbiology
	BSc Plant Science
	BSc Zoology
Prerequisites	BCM 251 GS and BCM 252 GS and BCM 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

Regulation of metabolic pathways. Analysis of metabolic control. Elucidation of metabolic pathways with isotopes. Metabolomics. Coordinated regulation of glycolysis/gluconeogenesis and glycogen breakdown/synthesis. Enzyme defects in metabolism and consequences. Hormonal regulation and integration of mammalian metabolism. Regulation of fuel metabolism after a meal, period between meals and starvation. Metabolic adaptations during diabetes. Obesity and the regulation of body mass. Obesity, metabolic syndrome and Type 2 diabetes (T2D). Management of T2D with diet, exercise and medication. Practical sessions cover tutorials on case studies and biochemical calculations, isolation of an enzyme, determination of pH and temperature optima, determination of Km and Vmax, enzyme activation and enzyme inhibition.

The information published here is subject to change and may be amended after the publication of this information. The [General Regulations \(G Regulations\)](#) apply to all faculties of the University of Pretoria. It is expected of students to



familiarise themselves well with these regulations as well as with the information contained in the [General Rules](#) section. Ignorance concerning these regulations and rules will not be accepted as an excuse for any transgression.