



University of Pretoria Yearbook 2020

Biocatalysis and integration of metabolism 357 (BCM 357)

Qualification Undergraduate

Faculty [Faculty of Natural and Agricultural Sciences](#)

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 K_m and V_{max} , enzyme activation and enzyme inhibition.

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



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