

University of Pretoria Yearbook 2022

Cell structure and function 367 (BCM 367)

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| Qualification | Undergraduate |
| Faculty | Faculty of Natural and Agricultural Sciences |
| Module credits | 18.00 |
| NQF Level | 07 |
| Programmes | BSc (Biochemistry) |
| | BSc (Biotechnology) |
| | BSc (Chemistry) |
| | BSc (Entomology) |
| | BSc (Genetics) |
| | BSc (Human Genetics) |
| | BSc (Human Physiology) |
| | BSc (Microbiology) |
| | BSc (Plant Science) |
| | BSc (Zoology) |
| Prerequisites | BCM 251 and BCM 257 and BCM 261 GS and BCM 252 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 2 |

Module content

Visualising cell structure and localisation of proteins within cells. Cell ultrastructure. Purification of subcellular organelles. Culturing of cells. Biomembrane structure. Transmembrane transport of ions and small molecules and the role of these processes in disease. Moving proteins into membranes and organelles. Vesicular traffic, secretion, exocytosis and endocytosis. Cell organisation and movement motility based on the three types of cytoskeletal structures including microfilaments, microtubules and intermediate filaments as well as their associated motor proteins. Cell-cell and cell-matrix adhesion through corresponding proteins and morphological structures. Practical training includes tutorials on cytometry and microscopy, mini-research projects where students are introduced and guided through aspects of research methodology, experimental planning techniques associated with cellular assays, buffer preparation, active transport studies in yeast cells, structure-function analyses of actin and binding partners.

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