

# University of Pretoria Yearbook 2019

## Genome evolution and phylogenetics 354 (GTS 354)

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| <b>Qualification</b>          | Undergraduate  |
| <b>Faculty</b>                | Faculty of Natural and Agricultural Sciences                         |
| <b>Module credits</b>         | 18.00  |
| <b>Programmes</b>             | BSc Information and Knowledge Systems                                |
|                               | BSc Biochemistry   |
|                               | BSc Biotechnology  |
|                               | BSc Genetics   |
|                               | BSc Human Genetics   |
|                               | BSc Human Physiology   |
|                               | BSc Human Physiology, Genetics and Psychology                        |
|                               | BSc Medical Sciences   |
|                               | BSc Microbiology   |
|                               | BSc Plant Science  |
|                               | BSc Zoology  |
| <b>Service modules</b>        | Faculty of Engineering, Built Environment and Information Technology |
| <b>Prerequisites</b>          | GTS 251 GS and GTS 261 GS  |
| <b>Contact time</b>           | 1 practical/tutorial per week, 2 lectures per week                   |
| <b>Language of tuition</b>    | Module is presented in English                                       |
| <b>Department</b>             | Biochemistry, Genetics and Microbiology                              |
| <b>Period of presentation</b> | Semester 1   |

### Module content

Mechanisms involved in the evolution of genes, genomes and phenotypes. Comparison of the molecular organisation of viral, archaea, bacterial and eukaryotic genomes. Genome project design, DNA sequencing methods and annotation. Molecular evolution. Phylogenetic inference. Applications of phylogenetics and evolutionary genomics research, including relevance to sustainable development goals for food security, good health and the biosphere.



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