



# University of Pretoria Yearbook 2018

## Plant genetics and crop biotechnology 361 (BTC 361)

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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<br>BSc Biochemistry<br>BSc Biotechnology<br>BSc Genetics<br>BSc Human Genetics<br>BSc Human Physiology<br>BSc Microbiology<br>BSc Plant Science<br>BScAgric Plant Pathology |
| <b>Service modules</b>        | Faculty of Engineering, Built Environment and Information Technology  |
| <b>Prerequisites</b>          | GTS 251 and {GTS 261 GS or BOT 261} and {GTS 351 and GTS 352 are recommended}   |
| <b>Contact time</b>           | 1 practical per week, 2 lectures per week   |
| <b>Language of tuition</b>    | Module is presented in English  |
| <b>Department</b>             | Genetics  |
| <b>Period of presentation</b> | 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: signal perception, cell death, control of cell division. 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

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