



# University of Pretoria Yearbook 2019

## Programming and information technology 213 (MPR 213)

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| <b>Qualification</b>          | Undergraduate  |
| <b>Faculty</b>                | Faculty of Engineering, Built Environment and Information Technology   |
| <b>Module credits</b>         | 16.00  |
| <b>Programmes</b>             | BEng Chemical Engineering<br>BEng Chemical Engineering Engage<br>BEng Civil Engineering<br>BEng Civil Engineering Engage<br>BEng Industrial Engineering<br>BEng Industrial Engineering Engage<br>BEng Mechanical Engineering<br>BEng Mechanical Engineering Engage<br>BEng Metallurgical Engineering<br>BEng Metallurgical Engineering Engage<br>BEng Mining Engineering<br>BEng Mining Engineering Engage |
| <b>Prerequisites</b>          | No prerequisites.  |
| <b>Contact time</b>           | 4 lectures per week, 2 practicals per week   |
| <b>Language of tuition</b>    | Separate classes for Afrikaans and English   |
| <b>Department</b>             | Mechanical and Aeronautical Engineering  |
| <b>Period of presentation</b> | Semester 1   |

### Module content

Spreadsheet applications: Formulas and calculations, named ranges, plotting and trend lines, goal seek, linear programming, importing and exporting data, data navigation and filtering. Programming fundamentals: Names and objects, conditional and unconditional looping, branching, functions, modules, packages, reading and writing data files, graphical output (plotting). Solving simple problems using a high level programming language to develop, code and debug programs. Solving complex problems by breaking it down into a number of simple problems using concepts such as functions, modules and available packages. Programming principles are developed through solving mathematics and physics problems.



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