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# University of Pretoria Yearbook 2016

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## Fracture mechanics 780 (MSF 780)

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| <b>Qualification</b>          | Postgraduate  |
| <b>Faculty</b>                | <a href="#">Faculty of Engineering, Built Environment and Information Technology</a>                                  |
| <b>Module credits</b>         | 16.00   |
| <b>Programmes</b>             | <a href="#">BEngHons Mechanical Engineering</a><br><a href="#">BScHons Applied Science Applied Science: Mechanics</a> |
| <b>Prerequisites</b>          | No prerequisites.   |
| <b>Contact time</b>           | 21 contact hours per semester   |
| <b>Language of tuition</b>    | English   |
| <b>Academic organisation</b>  | Mechanical and Aeronautical En  |
| <b>Period of presentation</b> | Semester 2  |

### Module content

Historical development; Linear Elastic Fracture Mechanics (LEFM): Stress concentrations and singularities, stress intensity factor, stability of crack propagation; Elasto-plastic fracture mechanics: crack tip plasticity, small scale yielding, measurement of  $K_{Ic}$ , J-integral; Fatigue crack growth: Paris Law; life prediction; combined mode fracture, strain energy density methods.

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