

# University of Pretoria Yearbook 2022

## Fracture mechanics 780 (MSF 780)

<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>NQF Level</b>	08
<b>Programmes</b>	<a href="#">BEngHons Mechanical Engineering</a> <a href="#">BScHons (Applied Science) Mechanics</a>
<b>Prerequisites</b>	No prerequisites.
<b>Contact time</b>	21 contact hours per semester
<b>Language of tuition</b>	Module is presented in English
<b>Department</b>	Mechanical and Aeronautical Engineering
<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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