



---

# University of Pretoria Yearbook 2017

---

## Fluid mechanics 780 (MSX 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>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>Academic organisation</b>	Mechanical and Aeronautical En
<b>Period of presentation</b>	Semester 1

### Module content

Mathematical preliminaries: historical overview, scalar, vector and tensor algebra (in context of partial differential equations), Green's lemma and the Divergence theorem, Eulerian/Lagrangian representations, derivative of a function, Reynolds transport theorem. Governing equations: viscous compressible and incompressible flow, derivation of conservation of mass, derivation of conservation of momentum, boundary conditions, mathematical characteristics, non-dimensionalisation. Viscous compressible and incompressible flow: derivation of conservation of mass, derivation of conservation of momentum, boundary conditions, mathematical characteristics, non-dimensionalisation.

---

The information published here is subject to change and may be amended after the publication of this information. The [General Regulations \(G Regulations\)](#) apply to all faculties of the University of Pretoria. It is expected of each student to familiarise himself or herself well with these regulations as well as with the information contained in the [General Rules](#) section. Ignorance concerning these regulations and rules will not be accepted as an excuse for any transgression.