University of Pretoria Yearbook 2023

BEngHons (Mechanical Engineering) (12240052)

Department	Mechanical and Aeronautical Engineering
Minimum duration of study	1 year
Total credits	128
NQF level	08

Programme information

Refer also to G16-G29.

The curriculum is determined in consultation with the relevant heads of departments. A student is required to pass modules to the value of at least 128 credits.

The degree is awarded on the basis of examinations only.

Admission requirements

1. BEng degree awarded by the University of Pretoria **or** equivalent degree **or** relevant four-year bachelor's degree in engineering that the Engineering Council of South Africa (ECSA) regards as acceptable for registration as a candidate engineer and for eventual registration as a professional engineer
2. An entrance examination may be required
3. Comprehensive intellectual CV

Other programme-specific information

All students must complete the module MSS 732 Research study 732.

A limited number of appropriate modules from other departments are allowed. Not all modules listed are presented each year. Please consult the postgraduate brochure found on the departmental website for further information.

Examinations and pass requirements

Refer also to G18 and G26.

i. The examination in each module for which a student is registered, takes place during the normal examination period after the conclusion of lectures (i.e. October/November or May/June).
ii. G18(1) applies with the understanding that under exceptional circumstances an extension of a maximum of three years may be approved: provided that the Dean, on reccommendation of the relevant head of department, may approve a stipulated limited extension of this period.
iii. A student must obtain at least 50% in an examination for each module where no semester or year mark is

required. A module may only be repeated once.

iv. In modules where semester or year marks are awarded, a minimum examination mark of 40% and a final mark of 50% is required.

v. No supplementary or special examinations are granted at postgraduate level.

Pass with distinction

A student passes with distinction if he or she obtains a weighted average of at least 75% (not rounded) in the first 128 credits for which he or she has registered (excluding modules which were discontinued timeously). The degree is not awarded with distinction if a student fails any one module (excluding modules which were discontinued timeously). The degree must be completed within the prescribed study period.

General information

University of Pretoria Programme Qualification Mix (PQM) verification project

The higher education sector has undergone an extensive alignment to the Higher Education Qualification Sub-Framework (HEQF) across all institutions in South Africa. In order to comply with the HEQSF, all institutions are legally required to participate in a national initiative led by regulatory bodies such as the Department of Higher Education and Training (DHET), the Council on Higher Education (CHE), and the South African Qualifications Authority (SAQA). The University of Pretoria is presently engaged in an ongoing effort to align its qualifications and programmes with the HEQSF criteria. Current and prospective students should take note that changes to UP qualification and programme names, may occur as a result of the HEQSF initiative. Students are advised to contact their faculties if they have any questions.

Curriculum: Final year

Minimum credits: 128

MSS 732 is a compulsory module and should be selected by all students as a core module.

When selecting your elective modules, please consult the Departmental Brochure.

Elective modules

Non-destructive testing 780 (MCT 780) - Credits: 16.00
Advanced finite element methods 781 (MEE 781) - Credits: 16.00
Mechatronics 780 (MEG 780) - Credits: 16.00
Vibration-based condition monitoring 781 (MEV 781) - Credits: 16.00
Advanced heat and mass transfer 780 (MHM 780) - Credits: 16.00
Condition-based maintenance 780 (MIC 780) - Credits: 16.00
Engineering modelling 780 (MIL 780) - Credits: 16.00
Maintenance practice 780 (MIP 780) - Credits: 16.00
Maintenance logistics 782 (MIP 782) - Credits: 16.00
Reliability engineering 781 (MIR 781) - Credits: 16.00
Aerodynamics 780 (MLD 780) - Credits: 16.00
Unmanned aircraft systems technology 783 (MLD 783) - Credits: 16.00
Avionics 784 (MLD 784) - Credits: 16.00
Air conditioning and refrigeration 780 (MLR 780) - Credits: 16.00
Optimum design 780 (MOO 780) - Credits: 16.00
Dynamics 780 (MSD 780) - Credits: 16.00
Fracture mechanics 780 (MSF 780) - Credits: 16.00
Numerical thermoflow 780 (MSM 780) - Credits: 16.00
Numerical thermoflow 781 (MSM 781) - Credits: 16.00
Research study 732 (MSS 732) - Credits: 32.00
Fatigue 780 (MSV 780) - Credits: 16.00
Fluid mechanics 780 (MSX 780) - Credits: 16.00
Specialised structural mechanics 781 (MSY 781) - Credits: 16.00
Advanced thermodynamics and energy systems 781 (MTX 781) - Credits: 16.00
Reactor coolant flow and heat transfer 782 (MUA 782) - Credits: 16.00
Reactor engineering science 783 (MUA 783) - Credits: 16.00
Reactor physics 784 (MUA 784) - Credits: 16.00
Reactor materials engineering 785 (MUA 785) - Credits: 16.00
Reactor materials engineering 786 (MUA 786) - Credits: 16.00
Fossil fuel power stations 781 (MUU 781) - Credits: 16.00
Vehicle dynamics 780 (MVI 780) - Credits: 16.00
Numerical methods 780 (MWN 780) - Credits: 16.00

Regulations and rules

The regulations and rules for the degrees published here are subject to change and may be amended after the publication of this information.

The General Academic Regulations (G Regulations) and General Student Rules apply to all faculties and registered students of the University, as well as all prospective students who have accepted an offer of a place at the University of Pretoria. On registering for a programme, the student bears the responsibility of ensuring that they familiarise themselves with the General Academic Regulations applicable to their registration, as well as the relevant faculty-specific and programme-specific regulations and information as stipulated in the relevant yearbook. Ignorance concerning these regulations will not be accepted as an excuse for any transgression, or basis for an exception to any of the aforementioned regulations.

University of Pretoria Programme Qualification Mix (PQM) verification project

The higher education sector has undergone an extensive alignment to the Higher Education Qualification Sub-Framework (HEQF) across all institutions in South Africa. In order to comply with the HEQSF, all institutions are legally required to participate in a national initiative led by regulatory bodies such as the Department of Higher Education and Training (DHET), the Council on Higher Education (CHE), and the South African Qualifications Authority (SAQA). The University of Pretoria is presently engaged in an ongoing effort to align its qualifications and programmes with the HEQSF criteria. Current and prospective students should take note that changes to UP qualification and programme names, may occur as a result of the HEQSF initiative. Students are advised to contact their faculties if they have any questions.