REMARKS

a. **Admission requirements:** A National Senior Certificate with an endorsement of a bachelor's degree or diploma or an equivalent qualification, with at least (4) for English and a (5) for Mathematics and (5) Physical Science. Total APS of 28 will be considered for the ***National Diploma***.

English	Mathematics	Physical Science	Three other subjects, excluding Life Orientation	APS Total
4 (50 – 59%	5 (60 – 69%)	5 (60 – 69%)	14	28

A National Senior Certificate with an endorsement of a bachelor's degree or diploma or an equivalent qualification, with at least (4) for English and (4) Mathematics and (3) for Physical Science. Total APS of 20- 27 will be considered for the ***National Diploma (Extended)***.

English	Mathematics	Physical Science	Three other subjects, excluding Life Orientation	APS Total
4 (50 – 59%)	4 (50 – 59%)	3 (40 – 49%)	9	20 - 27

A National Senior Certificate (Vocational) at NWF4, with an endorsement of a bachelor's degree or diploma or an equivalent qualification, with at least (4) for English and (4) Mathematics and (5) for Physical Science. Total APS of 23 - 27 will be considered for the ***National Diploma (Extended).***

English	Mathematics	Physical Science/ Applied Engineering Technology	Two other subjects, excluding Life Orientation	APS Total
4 (50 – 59%)	4 (50 – 59%)	5 (60 – 69%)	10	23 - 27

Alternative and international qualifications will be assessed on the equivalent issued by the South African Qualifications Authority. Candidates may also apply for recognition of prior learning at the RPL Office (Recognition of Prior Learning Office), Room LG 46, Building 21 (tel. 012 382 4672). The relevant documentation will be requested from these applicants, and these cases will be handled on an ad hoc basis.

Communication of results
Candidates who meet the minimum requirements will be informed accordingly in an official letter from the Office of the Registrar.

b. **Duration: Duration and presentation:** Three years full-time (four semesters of theoretical training and two semesters of experiential learning) for the National Diploma. Three and a half years for the National Diploma (Extended). Two years part-time for the bachelor's degree, offered in block release and four block weeks per semester.

c. **Intake:** For the National Diploma: January and July. For the National Diploma (Extended): January only.



NATIONAL DIPLOMA IN TECHNOLOGY: ENGINEERING: MECHANICAL

Course code: NDME05

FIRST YEAR
FIRST SEMESTER (S1)

CODE	SUBJECTS	PREREQUISITE SUBJECTS
CAI101T	Computer-Aided Draughting I	None
EGN101T	Engineering Communication I	None
ETT101T	Electrotechnology I	None
MAT171T	Mathematics I	None
MDR101T	Mechanical Engineering Drawing I	None
MME101T	Mechanical Manufacturing Engineering I	None
MHC101T	Mechanics I	None

SECOND SEMESTER (S2)

CODE	SUBJECTS	PREREQUISITE SUBJECTS
FMS211T	Fluid Mechanics II	Mathematics I and Mechanics I
MAT271B	Mathematics II	Mathematics I
MMH211T	Mechanics of Machines II	Mechanics I
SMT211T	Strength of Materials II	Mathematics I and Mechanics I
TDN201T	Thermodynamics II	

Plus one of the following subjects:

ETT211T	Electrotechnology II	Electrotechnology I
MME201T	Mechanical Manufacturing Engineering II	Mechanical Manufacturing Engineering I, Mechanical Engineering Drawing I and Computer Aided Draughting I

SECOND YEAR
FIRST SEMESTER (S3)

CODE	SUBJECTS	PREREQUISITE SUBJECTS
FMS331T	Fluid Mechanics III	Engineering Communication I and Fluid Mechanics II
MAT351T	Mathematics III	Mathematics II
MED201T	Mechanical Engineering Design II	Engineering Communication I Mathematics I, Mechanical Engineering Drawing I, Computer-Aided Draughting I, Mechanical Manufacturing Engineering I Strength of Materials II and Mechanics I
MMH331T	Mechanics of Machines III	Engineering Communication I and Mechanics of Machines II
SMT331T	Strength of Materials III	Engineering Communication I and Strength of Materials II
TDN321T	Thermodynamics III	Engineering Communication I and Thermodynamics II

SECOND SEMESTER (S4)

CODE	SUBJECTS	PREREQUISITE SUBJECTS
ASA301T	Applied Strength of Materials III	Mathematics II and Strength of Materials III
HYM301T	Hydraulic Machines III	Fluid Mechanics III and Mathematics II
MED321T	Mechanical Engineering Design III	Mechanical Engineering Design II, Mechanics of Machines II and Mathematics II
SMP301T	Steam Plant III	Mathematics II and Thermodynamics III
TMH301T	Theory of Machines III	Mathematics II and Mechanics of Machines III

Plus one of the following subjects:

CODE	SUBJECTS	PREREQUISITE SUBJECTS
EIE301T	Electric Machines	Electrotechnology II
MME301T	Mechanical Manufacturing	Mechanical Manufacturing Engineering II

THIRD YEAR
FIRST SEMESTER (P1)

CODE	SUBJECT	PREREQUISITE SUBJECT
EXP1ENM	Experiential Learning I	None

The first practical period consists of orientation and training in basic manual skills and general workshop equipment.

SECOND SEMESTER (P2)

CODE	SUBJECT	PREREQUISITE SUBJECT
EXP2ENM	Experiential Learning II	Experiential Learning I

The second practical period comprises more project-driven and independent work.

BACHELOR'S DEGREE IN TECHNOLOGY: ENGINEERING: MECHANICAL

Course code: BTME05

REMARKS

a. **Admission requirements:** A National Diploma Engineering: Mechanical or an equivalent qualification. Preference will be given to candidates with an average of 60% and more. Candidates who do not meet the 60% requirement will be evaluated by the Department and may be requested to provide a portfolio of relevant work experience (excluding P1 and P2) in order to be considered for selection.

b. **Duration:** The last two semesters of the B Tech programme are offered part-time only, because at that stage, most of those students will be employed already. A minimum of one year and a maximum of three years.

FOURTH YEAR
A student must have completed all requirements for a National Diploma before he or she may continue with the fourth year of study.

CODE	SUBJECTS	PREREQUISITE SUBJECTS
EDP400T	Engineering Design Project IV	Mechanical Engineering Design III

Plus two of the following subjects:

CODE	SUBJECTS	PREREQUISITE SUBJECTS
FMS411T	Fluid Mechanics IV	Hydraulic Machines III
MMH411T	Mechanics of Machines IV	Theory of Machines III and Mathematics III

SMT411T	Strength of Materials IV	Applied Strength of Materials III and Mathematics III
TDN401T	Thermodynamics IV	Steam Plant III and Mathematics III

Plus two additional subjects from the remainder of the subjects above or from the following subjects:

CODE	SUBJECTS	PREREQUISITE SUBJECTS
ATC411T	Automatic Control IV	Theory of Machines III and Mathematics III
MFE401T	Manufacturing Engineering IV	Mechanical Manufacturing Engineering III
RAC401T	Refrigeration and Air-Conditioning IV	Steam Plant III
SAN401T	Stress Analysis IV	Applied Strength of Materials III and Mathematics III
TRM401T	Turbo Machines IV	Hydraulic Machines III

MASTER'S DEGREE IN TECHNOLOGY: ENGINEERING: MECHANICAL

Course code: MTME95

REMARKS

a. **Admission requirements:** A Bachelor's Degree in Technology: Engineering: Mechanical or an equivalent qualification.

b. **Duration:** A minimum of one year and a maximum of three years.

c. **Research Methodology:** Students who have not passed a course in Research Methodology should make arrangements with Ms Adri Coetzer (Building 3-610) for the attendance of and payment for this subject.

CODE	SUBJECTS
MCC510T	Dissertation: Engineering: Mechanical
MCC510R	Dissertation: Engineering: Mechanical (re-registration)

DOCTORATE IN TECHNOLOGY: ENGINEERING: MECHANICAL

Course code: DTME96

Remarks

a. **Admission requirements:** A Master's Degree in Technology: Engineering: Mechanical or an equivalent qualification.

b. **Duration:** A minimum of two years and a maximum of five years.

CODE	SUBJECT
MCC710T	Thesis: Engineering: Mechanical
MCC710R	Thesis: Engineering: Mechanical (re-registration)



JOB OPPORTUNITIES

Professional technologist, technician, entrepreneur and consultant.

JOB DESCRIPTION

Research and design, development, manufacture and production, operation and maintenance of equipment and components and management of projects.

JOB PROFILE

The following aspects of mechanical engineering may be seen as the essential elements of the profession of the technician or technologist in this field:

* Technology management
* Being at the head of an engineering team comprising artisans, technicians, operators and process workers.
* He or she makes innovative use of existing technology in the maintenance task and manufacturing process, as well as in developmental and design projects.

POSSIBLE EMPLOYERS

Spoornet, Sasol, Eskom, Telkom, all mining groups, all manufacturers of vehicles, breweries, an own company, etc.

POSSIBLE FURTHER STUDIES

Master's Degree in Technology and Doctorate in Technology.

COST OF FIRST YEAR OF STUDY

Approximately R26 000 (including tuition fees and books).

ENQUIRIES

Department of Mechanical Engineering
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E-mail: wilbersms@tut.ac.za

https://www.facebook.com/TUTEngineeringFaculty.
https://twitter.com.TUTEngineering

2015/06/29

Tshwane University of Technology
We empower people

Faculty of Engineering and the Built Environment

Department of Mechanical Engineering
Pretoria Campus

National Diploma and B Tech Degree: Mechanical Engineering

2016