



CAREER INFORMATION 2021

BACHELOR OF ENGINEERING TECHNOLOGY IN MECHANICAL ENGINEERING



FACULTY OF
ENGINEERING
& THE BUILT
ENVIRONMENT

DEPARTMENT OF
MECHANICAL
ENGINEERING

01 JAN - 31 DEC 2021



NQF 7

SAQA ID: 99599

Bachelor of Engineering Technology in Mechanical Engineering

Location

Steve Biko Campus, Mechanical Engineering Department. (S5 Level 3)

Description of the Programme:

What Is Mechanical Engineering?

In almost every aspect of modern life, from the air-conditioned offices to the modern industrial plants, from the simplest components to the aerospace industry, one sees the work of mechanical engineers who continue to develop and apply new knowledge and technology to improve the quality of life of mankind. Mechanical Engineering is one of the widest forms of all industrial based occupations, ranging across every stage of the manufacturing process and includes design, draughting, assembly, quality assurance, plant operation, maintenance and management.

Today's mechanical engineer is heavily involved in the development and use of new materials and technologies, especially in computer aided engineering, robotics and advanced manufacturing systems. A rapidly growing field for mechanical engineers is environmental control, comprising the development of machines and processes that will produce fewer pollutants, as well as the development of new equipment and techniques to reduce or remove existing pollution.

Who Is a Mechanical Engineer?

A mechanical engineer is an individual, who is highly motivated, has good analytical and quantitative skills, wants to be in a challenging and rewarding career, and sees themselves as future leaders in industry.

Mechanical engineers will find themselves dealing with all aspects of production, manufacturing, management and development. They will be involved with artisans, tradesmen, technicians, production managers and many others who work in teams to keep industry turning. In the past engineers were purely the products of universities, who worked with their brains and computers but their role has widened and the scope changed.

Mechanical Engineers can be found at the highest rungs of the industrial ladder, designing racing cars, running companies and conducting research programmes.

But Can He/She also Specialise?

Yes, and some of them do. In recognising this, we at the Durban University of Technology offer an appropriate mix of subjects, laboratory sessions and project work which will enable him/her to become, for example, a mechanical engineering designer or plant engineer. For the design specialisation, he/she will make use of a comprehensive draughting and computer-aided design facility. Specialisation is also the emphasis of further education programmes where the subject choices should enable him/her to hold his/her own in a very challenging engineering environment. Further studying can be undertaken to do a Masters and even a Doctorate if he/she wishes.

Career opportunities Where Does He/she Work? Graduates of this programme would be eligible to register with ECSA as a Professional Engineering Technologist. Owing to the ubiquitous nature, he/she is to be found in all manner of industries: those making steel and bricks; building dams and dams, refining and sugar; offering services, such as those provided by Eskom, in the automotive industry such as Toyota, and the water boards and other government organisations. Opportunities also exist in the Maritime industry. In each of these industrial sectors you will find him/her employed as production engineers, maintenance engineers and design engineers in developmental work. Mechanical engineers can also be found in the sales of hi-tech equipment.

Entry Requirements

The minimum entry requirement is the National Senior Certificate or the National Certificate (Vocational) with appropriate subject combinations and levels of achievement as defined in the Government Gazette, Vol 751, No 32131 of 11 July 2008, and in the Government Gazette, Vol. 533, No. 32743, November 2009.

In addition, the minimum admission requirements, rule G7, is stipulated in the General Rules Handbook. Further to the above, the following are required for admission into Mechanical Engineering.

Entry Requirements BET (Mechanical Engineering)

**NATIONAL SENIOR
CERTIFICATE (NSC) (01
January 2009)**

**SENIOR CERTIFICATE (SC) (PRE
2009)**

**NATIONAL CERTIFICATE
(VOCATIONAL) (NCV)**

NSC DEGREE ENTRY		SENIOR CERTIFICATE (SC)			NATIONAL CERTIFICATE VOCATIONAL (NCV) – LEVEL 4	
Compulsory Subjects	NSC Rating Code	Compulsory Subjects	HG	SG	Compulsory Subjects	Mark
English	4	English	E	C	English	60%
					Life Orientation	60%
Mathematics	4	Mathematics	E	C	Mathematics	70%
Physical Science	4	Physical Science	E	C	Physical Science	70%
					In addition, two other additional vocational subjects at a minimum of 70%.	
<p>NB:</p> <ol style="list-style-type: none"> NSC Mathematical Literacy will not be accepted as a substitute for the subject NSC Mathematics The exit certificate of the candidate must qualify the candidate for degree study at an institution of higher learning. Applicants with a NSC will be ranked according to the sum of their scores for Mathematics and Physical Science, subject to a minimum combined score of 120%. Prospective applicants may also present an NQF level 6 Diploma in Engineering for entry into the degree programme. A possibility of transfer of credits for cognitive previous studies would be considered dependent on the discipline and nature of the Diploma being presented. Thereafter, selections is made at the full discretion of the Head of Department based on a number of factors including class size, equity etc. <p>Other:</p> <p>Applicants, that qualify for degree study (Bachelor's Pass) at an institution of higher learning, but do not meet the departmental mathematics and/or physical science requirements, may present the following N4 subjects, for consideration for entry to the BET programme:</p> <ul style="list-style-type: none"> Mathematics and Engineering Science, plus any two of the following: Mechanotechnics Engineering Drawing Electrotechnics <p>The above subjects must be passed with a minimum of 50% and all in the same sitting. Students will then be considered alongside the NSC students according to the sum of their marks for N4 Mathematics and Engineering Science, subject to a minimum combined score of 120.</p>						

Admission Requirement based upon Work Experience, Age and Maturity

For admission to entry level DEGREE studies:

A person may, subject to such requirements as the Senate may determine, be admitted if such a person is in possession of a National Senior Certificate, Senior Certificate or an equivalent certificate, but lacks the minimum requirements for admission to the degree provided that:

- The person shall have reached the age of 23 in the first year of registration and shall have at least: three years' appropriate work experience; and/or capacity for the proposed instructional programme, which shall be assessed by a Senate-approved admission assessment comprising of a DUT Standardised Assessment Test for Access and Placement (SATAP), Academic Literacies (AL) & English for Academic Purposes (EAP) (2,5 hours) and/or an appropriate subject or programme specific written assessment designed and marked by the relevant Department; and the person has obtained
- A conditional certificate of exemption from the Matriculation Board (when in possession of the Senior Certificate (SC)); OR has met
- The requirements for Senate discretionary admission (when in possession of the NSC or equivalent), where Senate is satisfied the applicant has shown sufficient academic ability to ensure success, and that the person's standard of communication skills, and/or work experience are such that the person, in the opinion of the Senate, should be able to complete the proposed instructional programme successfully.
- The person's application for admission in terms of with work experience, age and maturity is approved prior to registration.

Applicants intending to gain admission through work experience, age and maturity must submit their applications at least four months before commencement of the academic year.

NB: These minimum admission requirements may be subject to more restrictive departmental admission requirements where applicable.

NB: For semester programmes there is a single registration for semester 1 and semester 2 at the beginning of each academic year.

First Year Curriculum

Name of Module	Subject Code	HEQSF Level	SAQA Credits
Semester 1			
Engineering Mathematics 1A	EMTA101	5	12
Engineering Physics 1A	EPHA101	5	12

Technical Literacy	TCLT101	5	8
Computing & IT	CMIT101	6	8
Cornerstone 101	CSTN101	5	12
Design I	DESG101	5	16
Semester 2			
Electrical Principles I	ELEP101	5	12
Mechanics of Machines I	MCHM102	6	12
Engineering Mathematics 1B	EMTB10	5	12
Thermofluids I	THFL101	5	12
Strength of Materials I	SMTL101	6	12
Engineering Physics 1B	EPHB101	5	12
TOTAL CREDITS SEMESTER 1&2			140

Second Year Curriculum

Semester 3			
Computer Aided Design	CADR101	5	12
Analogue Electronics 1A	ANLE101	5	12
Electrical Principles 2	ELEP201	6	12
Fluid Mechanics 2	FLDM201	6	12
5Engineering Mathematics 2A	EMTA201	6	12
Materials Science	MTLS101	5	12
Semester 4			
Mechanics of Machines 2	MCHM201	6	12
Strength of Materials 2	SMTL201	6	12
Design 2	DESG201	6	12
Thermodynamics 2	THRM202	6	12
Digital Electronics 1A	DGTE102	5	12
Project Management	PROM101	7	12
Other:			
(1) FRENCH Language,			
(2) MANDARIN Language, and			
(3) SOCIOLOGY OF WORK			
TOTAL CREDITS SEMESTER 3&4			144

Third Year Curriculum

Semester 5			
Design 3	DESG301	7	12
Strength of Materials 3	SMTL301	7	12
Mechanics of Machines 3	MCHM301	7	12
Thermodynamics 3	THRM302	7	12
Fluid Mechanics 3	FLDM301	7	12
Instrumentation and Control I	INCT101	6	12
Other:			
(1) FRENCH Language,			
(2) MANDARIN Language, and			
(3) SOCIOLOGY OF WORK			
Semester 6			
Advanced Mechanical Manufacturing	AMNF101	7	12
Electrical Technology Applications	ELTA101	7	12
Principles of Management	PMNT101	7	8
Environmental Engineering	EVLE101	7	8
Capstone Design Project	CDSP101	7	16
Numerical methods	NMRM101	7	12
TOTAL CREDITS SEMESTER 5&6			140

In addition to passing all the modules students are required to be competent in the 10 Exit Level Outcomes (ELO) below:

Exit Level Outcome 1: Problem Solving
Exit Level Outcome 2: Application of scientific and engineering knowledge Exit Level Outcome
Exit Level Outcome 3: Engineering Design
Exit Level Outcome 4: Investigation
Exit Level Outcome 5: Engineering methods, skills, tools, including Information technology
Exit Level Outcome 6: Professional and Technical Communication
Exit Level Outcome 7: Impact of Engineering Activity Exit Level Outcome
Exit Level Outcome 8: Individual and Teamwork
Exit Level Outcome 9: Independent Learning
Exit Level Outcome 10: Engineering Professionalism

NB: The course structure and requisite modules are subject to alteration.

Application

Applicants who wish to enrol for the programme must apply through the CAO system by no later than 30 November of the previous year.

Application Forms

Contact the **Central Applications Office (CAO)**

Address letters to:

Central Applications Office
Private Bag X06
Dalbridge,
4014

Tel: (031) 2684444

Fax: (031) 2684422

OR

Apply Online: <http://www.cao.za>

CAO Code: DU-D-BGM

Closing date for applications: 30 November 2020

For Further Information

Contact the Department of Mechanical Engineering

Steve Biko Campus (S5 Level 3)

Durban University of Technology

P O Box 1334

DURBAN, 4000

Tel: (031) 3732115

Fax: (031) 3732139

Email: adelev@dut.ac.za

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