



CAREER INFORMATION 2022

BACHELOR OF ENGINEERING TECHNOLOGY IN INDUSTRIAL ENGINEERING



01 JAN - 31 DEC 2022



Bachelor of Engineering Technology in Industrial Engineering (Industrial Engineering)

NQF Level: 7

SAQA ID: 99639

Qualification Code: BNINDI

Location: Steve Biko Campus (S4 Level 0)

Description of the Programme

The purpose of the Bachelor of Engineering Technology in Industrial Engineering (BEng Tech Industrial Engineering) is to equip the students with the necessary knowledge, understanding, skills and abilities in the field of industrial engineering. Graduates from this program would be able to register with the Engineering Council of South Africa as a candidate engineering technologist. The duration of this programme is 3 years fulltime study. The programme will also prepare students for further study at the post-graduate levels.

Why Industrial Engineering?

Industrial engineering is a discipline within the field of engineering that is focused on determining the most effective ways for an organization to use the basic factors of production namely people, machines, materials, information, and energy to make or to process a product. Industrial Engineering, perhaps more than any other engineering discipline, is focused on the human and organizational aspects when developing or analysing a system.

Who is an Industrial Engineering Technologist?

Industrial engineering technologists plan, design, implement and manage integrated systems that assure performance, reliability, maintainability and cost feasibility.

They are people who are able to draw upon the specialized knowledge and skills from various areas within the engineering, management, sciences and commerce domains in order to find optimal solutions to practical problems.

Career Opportunities

Industrial engineering technologists are employed over a vast array of industries operating within various sectors of the economy. Examples of such include: the manufacturing sector, retail sector, banking sector etc. Industrial engineering technologists add value to any organization that they join and as such are much sought after.

Personal Qualities Required

The individual must be:

- Self-motivated, structured and organized.
- A critical thinker with active listening skills and a good verbal communicator.
- Able to function well within a team environment i.e. being a team member or being a team leader
- Able to understand and solve complex problems.
- Responsible and accountable.

Entry Requirements

School leaving or TVET applicants who wish to enrol for the programme must apply through the CAO system by no later than 30 November of the previous year. The number of students enrolled in the programme is determined by the University and departmental growth policies and a ranking system is used to determine the number of candidates as required.

Explanation of Points scale:

Senior Certificate (SC)

| Symbol | Higher Grade | Standard Grade |
|--------|--------------|----------------|
| A | 8 | 6 |
| B | 7 | 5 |
| C | 6 | 4 |
| D | 5 | 3 |
| E | 4 | 2 |
| F | 3 | 1 |

National Senior Certificate (NSC)

| % | Level | Points |
|--------|-------|--------|
| 90-100 | 7 | 8 |
| 80-89% | 7 | 7 |
| 70-79% | 6 | 6 |
| 60-69% | 5 | 5 |
| 50-59% | 4 | 4 |
| 40-49% | 3 | 3 |
| 30-39% | 2 | 2 |
| 20-29% | 1 | 1 |

Entry Requirements BET (Industrial Engineering)

| NATIONAL SENIOR CERTIFICATE (NSC) (01 January 2009) | | SENIOR CERTIFICATE (SC) (PRE 2009) | | | NATIONAL CERTIFICATE (VOCATIONAL) (NCV) | |
|--|-----------------|---------------------------------------|----|----|--|------|
| NSC DEGREE ENTRY | | SENIOR CERTIFICATE (SC) | | | (NCV) – LEVEL 4 | |
| Compulsory Subjects | NSC Rating Code | Compulsory Subjects | HG | SG | Compulsory Subjects | Mark |
| English | 4 | English | E | C | English | 60% |
| Mathematics | 4 | Mathematics | E | C | Mathematics | 70% |
| Physical Science | 4 | Physical Science | E | C | Physical Science | 70% |
| | | | | | Life Orientation | 60% |
| | | | | | In addition, two others vocational subjects at a minimum of 70%. | |

- NB:**
- 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.

This department only considers **first** and **Second** choice CAO applicants.

Other:

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:

- Mathematics and Engineering Science, plus any two of the following:
- Mechanotechnics
- Engineering Drawing
- Electrotechnics

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.

OR

PLEASE NOTE: For semester programmes there would be a single registration for semester 1 and semester 2 at the beginning of each academic year.

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

- (b) A conditional certificate of exemption from the Matriculation Board (when in possession of the Senior Certificate (SC)); OR has met
- (c) 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.
- (d) 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.

Tuition Fees

To assist you with your planning, the **2021** fees have been indicated. An increase for next year to accommodate the inflation rate can be expected.

Please Note: DUT cannot be held liable for the fees in this brochure as the **2022** fees are not yet final.

PLEASE NOTE: Subjects, Subject placement and Subject Codes may change arising from operational requirements. Kindly refer to the current departmental handbook for further information.

First Year Curriculum

| Name of Module | Subject Code | HEQSF Level | SAQA Credits | 2021 Fees |
|---------------------------------------|--------------|-------------|--------------|------------------|
| Semester One | | | | |
| Engineering Mathematics IA | EMTA101 | 5 | 12 | R4020.00 |
| Engineering Physics IA | EPHA101 | 5 | 12 | R4020.00 |
| Statistics I | STST101 | 6 | 12 | R3500.00 |
| Industrial Drawing and CAD | ICAD101 | 6 | 16 | R5470.00 |
| Cornerstone I01 | CSTN101 | 5 | 12 | R3260.00 |
| Technical Literacy | TLTY101 | 6 | 8 | R2770.00 |
| TOTAL | | | | R23040.00 |
| Semester Two | | | | |
| Engineering Mathematics IB | EMTB101 | 5 | 12 | R4020.00 |
| Engineering Physics IB | EPHB101 | 5 | 12 | R4020.00 |
| Financial Accounting for Engineers | FAEN101 | 6 | 8 | R2770.00 |
| Sociology of Work I | SCWK101 | 6 | 8 | R2770.00 |
| Computing and IT | CMIN101 | 6 | 8 | R2770.00 |
| Electrical Principles I | ELEP101 | 5 | 12 | R4030.00 |
| TOTAL CREDITS SEMESTER 1&2 | | | 132 | |
| TOTAL | | | | R20380.00 |
| Second Year Curriculum | | | | |
| Semester Three | | | | |
| Engineering Mathematics IIA | EMTA201 | 6 | 12 | R4020.00 |
| Strengths of Materials I | STMT102 | 5 | 12 | R2770.00 |
| Mechanics of Machines I | MCHM102 | 6 | 12 | R4030.00 |
| Computer Programming and IT | CPRI101 | 6 | 8 | R2770.00 |
| Management Accounting for Engineers | MACE101 | 6 | 8 | R2770.00 |
| Industrial Design I | IDES101 | 5 | 16 | R5470.00 |
| TOTAL | | | | R21830.00 |
| Semester Four | | | | |
| Engineering Mathematics IIB | EMTB201 | 6 | 12 | R4020.00 |
| Engineering Work Systems I | EWSY101 | 5 | 12 | R4030.00 |
| Production Engineering I | PENG101I | 5 | 12 | R4030.00 |
| Information System Design | ISYD101 | 7 | 16 | R5470.00 |
| Manufacturing Engineering I | MNFE101 | 7 | 8 | R2770.00 |
| Industrial Design II | IDES201 | 6 | 12 | R4030.00 |
| Principles of Management | PMGM102 | 6 | 8 | R2770.00 |
| TOTAL CREDITS SEMESTER 3&4 | | | 148 | |
| TOTAL | | | | R27120.00 |
| Third Year Curriculum | | | | |
| Semester Five | | | | |
| Facilities Planning | FCLP101 | 7 | 12 | R4030.00 |
| Engineering Work Systems II | EWSY201 | 6 | 12 | R4030.00 |

| | | | | |
|---------------------------------------|---------|---|------------|------------------|
| Production Engineering II | PENG201 | 6 | 12 | R4030.00 |
| Operations Research | OPRS101 | 7 | 12 | R4030.00 |
| Project Management | PMANI02 | 6 | 8 | R2770.00 |
| Design Project Part I | DPJT111 | 7 | 12 | R4030.00 |
| TOTAL | | | | 22920.00 |
| Semester Six | | | | |
| Engineering Work Systems III | EWSY301 | 7 | 16 | R5470.00 |
| Production Engineering III | PENG301 | 7 | 16 | R5470.00 |
| Simulation Modelling | SMMDI01 | 7 | 16 | R5470.00 |
| Quality Engineering | QLTEI01 | 7 | 12 | R4030.00 |
| Design Project Part II | DPJT121 | 7 | 12 | R4030.00 |
| TOTAL CREDITS SEMESTER 5&6 | | | 148 | |
| TOTAL | | | | R24470.00 |

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 September 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-BIE

Closing date for applications: 30 September 2021

For Further Information:

Contact the Department of Department of Industrial Engineering
Steve Biko Campus (S4 Level 0)
Durban University of Technology
P O Box 1334
DURBAN, 4000
Tel: (031) 3732445

Email: industrialadmin@dut.ac.za

Financial Aid

For Financial Aid application for a DUT programme please apply online at www.nsfas.org.za or call the NSFAS call centre on 0860 067 327.

For an explanation on how to fill out the application form, please go to www.nsfas.org.za or contact the call centre on the number above.

Please note that completing a form does not guarantee Financial Aid. For further assistance, please consult the Department of Financial Aid and Scholarships on (031)373 2931/2557/2054.

This is for information purposes only and is not binding on the Durban University of Technology