

Bachelor of Engineering Technology (BEngTech): Industrial Engineering

What is Industrial Engineering Technology?

Industrial engineers design and implement systems in organisations to maximise production. They work with other engineers to put the theory of mechanical, chemical and electrical engineering into practice. Industrial engineers are involved in planning for the processes of storage, movement of materials, and layout of factories. They organise and manage the relationship between other planners, plant operators and the plant itself to ensure a coordinated flow of work and optimal productivity. The Department of Industrial Engineering Technology training at UJ produces skilled graduates, who are able to think creatively in a range of workplace settings. The department works closely with industry to develop new interventions to deal with the shortage of process engineering skills, especially in the service sector.

What is the purpose of the BEngTech programme?

The purpose of the BEngTech (Industrial Engineering) is thus to build the necessary knowledge, understanding, abilities and skills required for further learning towards becoming a competent practicing industrial engineering technologist. Specifically, the qualification provides graduates with: • Preparation for careers in engineering itself and areas that potentially benefit from engineering skills, for achieving technological proficiency and to make a contribution to the economy and national development; • The educational base required for registration as a Professional Engineering technologist with ECSA. • For graduates with an appropriate level of achievement, the ability to enter NQF level 8 programmes and then proceed to master's degrees. • For certificated engineers, the education base for achieving proficiency in industrial engineering / plant operations and occupational health and safety.

Minimum admission requirements

Admission to BEngTech (Industrial) is as per the Faculty Rules and Regulations EB3 on the undergraduate yearbook as shown below:

- a) A Senior Certificate or an equivalent qualification of an equivalent standard.
- b) Refer to Faculty Regulation E3 for the minimum admission requirements for the Senior Certificate (until 2008) and the National Senior Certificate (from 2009). Students should have a minimum APS score of 30 consisting of a minimum of 5 for Mathematics and Physics, 4 for English, in order to be admitted.
- c) N3 Certificate, with a minimum pass of 60% in Mathematics and Physical Science, and a pass in two languages.
- d) Students who have passed suitable access programmes may be exempted from the minimum requirements.

Extended programme: Students who have a minimum APS score of 24 are admitted into Extended BEngTech, which takes a duration of 4 years.

Course/Modules to enrol for in BEngTech Industrial Engineering

All the modules are compulsory for the degree.

Curriculum for BEngTech in Industrial Engineering			
First Year			
Semester 1: Compulsory Courses/Modules		Semester 2: Compulsory Courses/Modules	
CPSELA1	Computer Skills 1A	ECS1BB1	Engineering Communication Skills 1B
ELTELA1	Electrotechnology 1A	MATE1B1	Engineering Mathematics 1B
ECS1AA1	Engineering Communication Skills 1A	STAE1B1	Engineering Statistics 1B
MATE1A1	Engineering Mathematics 1A	EWSMIB1	Engineering Work Study 1B
PHYE1A1	Engineering Physics 1A	MANMIB1	Mechanical Manufacturing Engineering 1B
TGRMIA1	Technical Graphics 1A	THFMIB1	Thermofluids 1B
Second Year			
Semester 3: Compulsory Courses/Modules		Semester 4: Compulsory Courses/Modules	
AFINSA1	African Insights	AUTMIB2	Automation 2B
MATE2A2	Engineering Mathematics 2A	FACMIB2	Facility Lay Out And Materials Handling 2B
MFDMIA2	Manufacturing Systems Design 2A	IACMIB2	Industrial Accounting 2B
MATMIA2	Material Science 2A	INFMIB2	Information Systems 2B
PDEMIA2	Production Engineering 2A	OPRMIB2	Operational Research 2B
QUAMIA2	Quality Assurance 2A	-	-
Third Year			
Semester 5: Compulsory Courses/Modules		Semester 6: Compulsory Courses/Modules	
EMGMIA3	Engineering Management (Industrial) 3A	ENTMIB3	Entrepreneurship 3B
PDTMIA3	Production Technology 3A	LOGMIB3	Logistics Engineering 3B
PENMIA3	Project Engineering 3A	SYSMIB3	System Dynamics 3B
PRSMIA3	Project Research 3A	QMSMIB3	Quality Management System 3B
PJIMI3B	Final Year Project 3		