

21.6.1 Purpose of the programme

The purpose of the BEngTech (Chemical Engineering) is to build the necessary knowledge, understanding, abilities and skills required for further learning towards becoming a competent practicing chemical 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 Technologist with ECSA; and
- for graduates with an appropriate level of achievement, the ability to enter NQF level 8 programmes and then proceed to Masters degrees.

21.6.2 Outcomes

Students who complete this programme should be able to:

- apply engineering principles to systematically diagnose and solve broadly-defined engineering problems;
- apply knowledge of mathematics, natural science and engineering sciences to defined and applied engineering procedures, processes, systems and methodologies to solve broadly-defined engineering problems;
- perform procedural and non-procedural design of broadly defined components, systems, works, products or processes to meet desired needs, normally within applicable standards, codes of practice and legislation;
- conduct investigations into broadly-defined problems through locating, searching and selecting relevant data from codes, databases and literature, designing and conducting experiments, and analysing and interpreting results in order to provide valid conclusions;
- use appropriate techniques, resources, and modern engineering tools, including information technology, prediction and modelling, for the solution of broadly-defined engineering problems, with an understanding of the limitations, restrictions, premises, assumptions and constraints;
- communicate effectively, both orally and in writing, with engineering audiences and affected parties;
- demonstrate knowledge and understanding of the impact of engineering activity on the society, economy, industrial and physical environment, and address issues by analysis and evaluation;
- demonstrate knowledge and understanding of engineering management principles and apply these to one's own work, as a member and leader in a team and to manage projects;
- engage in independent and life-long learning through well-developed learning skills;
- comprehend and apply ethical principles and commit to professional ethics, responsibilities and norms of engineering technology practice.

21.6.3 Curriculum

CODE	MODULE	CODE	MODULE
First year			
First semester		Second semester	
AFINSA1	African Insights	CEFCHB1	Chemical Engineering Fundamentals 1B
CPTCHA1	Chemical Process Technology 1A	CPTCHB1	Chemical Process Technology 1B

CPSELA1	Computer Skills 1A	CETE1B1	Engineering Chemistry (Chemical) 1B
CETE1A1	Engineering Chemistry (Chemical) 1A	ECS1BB1	Engineering Communication Skills 1B
ECS1AA1	Engineering Communication Skills 1A	EDRMIB1	Engineering Drawing 1B
MATE 1A1	Engineering Mathematics 1A	MATE1B1	Engineering Mathematics 1B
PHYSCA1	Engineering Physics (Chemical) 1A		

Second year

First semester		Second semester	
CEFCHA2	Chemical Engineering Fundamentals 2A	ATDCHB2	Applied Thermodynamics 2B
CELCHA2	Chemical Engineering Laboratory 2A	CELCHB2	Chemical Engineering Laboratory 2B
CTDCHA2	Chemical Thermodynamics 2A	PPFCHB2	-Process Fluid Flow 2B
MATE2A2	Engineering Mathematics 2A	PRDCHB2	Process Design 2B
PRCCHA2	PROCESS CONTROL 2A	UNOCHB2	Unit Operations 2B
TPRCHA2	Transfer Processes 2A		

Third year

First semester		Second semester	
EMGCHA3	Engineering Management (Chemical) 3A	CELCHB3	Chemical Engineering Laboratory 3B
IRDCHA3	Introduction and Reactor Design 3A	ENVCHB3	Environmental Engineering 3B
MSOCHA3	Multistage Operations 3A	IESCHB3	Innovation and Entrepreneurial Skills 3B
PTECHA3	Particle Technology 3A	IPJCHB3	Investigative Project 3B
PRDCHA3	Process Design 3A	PRCCCB3	PROCESS CONTROL 3B