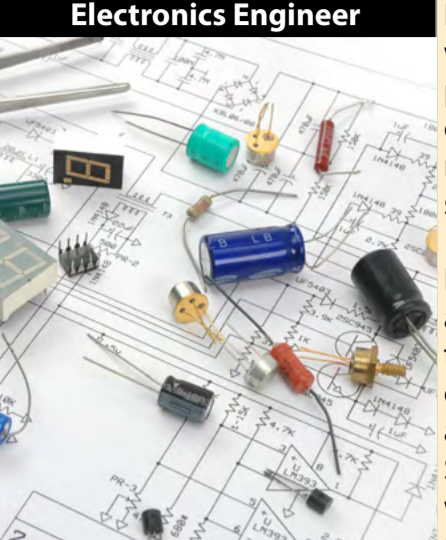




School of Engineering  
**CAREERS**

Career	Description – What do they actually do?	Areas of Employment	Degree Name	Duration	Campus Location	Entry Requirement*	Point Range	CAO Code
 <b>Agricultural Engineer/ Bioresources Engineer</b>	Design agricultural machinery and equipment. Develop methods that improve production by utilizing bioresources and the environment more effectively.  Work with farmers and companies involved in agriculture to develop programmes, methodologies and equipment that could increase production.  Problem solving within the agricultural sector.	Employer - Department of Agriculture - Manufacturers of agricultural remedies and food companies - Manufacturers of farm equipment and supplies - Government and private research institutes, such as SABS and CSIR - Universities, colleges and universities of technology - Consulting firms - Agricultural control boards - Own consulting or manufacturing business	B Sc Eng: Agricultural	4yrs	PMB	NSC - Deg pass with Maths & Phys (65%) & LO Level 4 & 3 other subjects from the designated list	33-48	KN-H-EA KN-P-BEA
 <b>Chemical Engineer</b>	Chemical engineers design, plan and manage plants where chemical products are processed into final or intermediate products of enhanced value.  They are also responsible for plant and equipment design. The manufacturing process entails: selecting the process and type of equipment; compiling mass and energy balances; calculating the capacity and dimensions of the equipment required for the operation of units such as reactors, heating and cooling systems, filters and pipelines.	Employer - Chemical manufacturers and other industries, such as: petroleum refining, synthetic fuel manufacture, food processing, brewing, minerals processing, paper and pulp, pollution control, manufacture of synthetic fibres, fertilizers and explosives - Organizations such as CSIR, AECI, ESKOM, Sasol, AEC, Sentrachem - Council for Mineral Technology (Mintek) - Government departments - Universities	BSc Eng: Chemical	4yrs	HWD	NSC - Deg pass with Maths & Phys (65%) & LO Level 4 & 3 other subjects from the designated list	33-48	KN-H-BEC
 <b>Civil Engineer</b>	Civil engineers are responsible for the planning, design, maintenance and management of projects to do with the construction of roads, buildings, airports, tunnels, dams, bridges, and water supply and sewage systems. Civil engineering may be the oldest of the all the engineering disciplines and today, civil engineering encompasses a range of specialized fields which include structural design, marine, environmental, construction, hydraulic engineering, transportation, and geotechnical engineering.	Employer - Government departments and provincial administrations - Municipalities - Construction companies - Engineering or architectural firms - Companies such as Mittal Steel, Sasol, Eskom and CSIR - Universities of technology and universities - Self-employment, with the necessary experience and initiative, as a consultant	BSc Eng: Civil	4yrs	HWD PMB**	NSC - Deg pass with Maths & Phys (65%) & LO Level 4 & 3 other subjects from the designated list	33-48	KN-H-BEV KN-P-BEV
 <b>Computer Engineer</b>	Computer engineers design, develop, implement, evaluate and maintain computer systems and equipment that forms part of that system. In addition to design and development, computer hardware engineers may supervise the manufacturing and installation of all computer-related equipment. This is basically an Electronics Engineering degree with more computer courses.  Computer hardware engineers were, and sometimes are still, called computer systems engineers. However, computer systems engineers need to know about both hardware and software engineering.	Employer - Companies that supply computers - Government departments - Provincial administrations - Computer bureaus - Organizations such as Spoorntel, Telkom, Denel - Universities and universities of technology - Any company or business using computer systems and networks. - Self-employment, a registered engineer with the necessary experience and initiative, as a consultant	BSc Eng: Computer	4yrs	HWD PMB**	NSC - Deg pass with Maths & Phys (65%) & LO Level 4 & 3 other subjects from the designated list	33-48	KN-H-BEK KN-P-BEK
 <b>Electrical Engineer</b>	Electrical engineering is often associated with power generation and distribution of power which involves transmission lines and sub-stations that are used to distribute electrical energy for power, heating, lighting and other uses.  An electrical engineer researches, designs, installs and tests electrical and electronic equipment and supervises its manufacture. Their work involves the generation, distribution and management of all appliances and installations that generate or use electrical energy.	Employer - Government departments - Mining industry - Organizations such as Transnet, Eskom, Mittal Steel, CSIR, Sasol, Kentron, SABS, SABC - Municipalities - Universities and universities of technology - Manufacturers of electrical equipment - Private engineering consultants - Self-employment, with enough experience and initiative, can work as a consultant or start own electrical or engineering company	BSc Eng: Electrical	4yrs	HWD PMB**	NSC - Deg pass with Maths & Phys (65%) & LO Level 4 & 3 other subjects from the designated list	33-48	KN-H-BEE KN-P-BEE

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Career	Description – What do they actually do?	Areas of Employment	Degree Name	Duration	Campus Location	Entry Requirement*	Point Range	CAO Code
 <b>Electronics Engineer</b>	Electronics engineering is concerned with the generation, transmission and processing of information and includes computers, software, transmission networks, telephones, radio, television, signal processing and optics.  Electronic engineers design, develop, test and maintain electronic parts and systems for application in the fields of automation, communication, navigation, military arms, data processing and entertainment. Some manage manufacturing processes, while others may be responsible for the marketing of products.	Employer - Organizations such as Eskom, SABS, CSIR, Telkom, Transnet, Denel, Kentron, Portnet, Metro Rail, SABC and Sasol - Manufacturers - Government departments - Electronics companies - Universities and universities of technology - Private electronic engineering consulting firms and development laboratories	BSc Eng: Electronic	4yrs	HWD PMB**	NSC - Deg pass with Maths & Phys (65%) & LO Level 4 & 3 other subjects from the designated list	33-48	KN-H-BEF KN-P-BEF
 <b>Mechanical Engineer</b>	Mechanical engineers research, develop, design, manufacture and maintain machines, machine components and systems in various fields of application.  They work on power-producing machines such as generators, engines, and steam and gas turbines. They also work on power-using machines such as refrigeration and air-conditioners, robots used in manufacturing, elevators and escalators, and industrial production equipment. Mechanical engineering can be considered to be the cornerstone of modern technology because it applies the principles of natural science in a way that leads to the greater convenience, progress and safety of mankind. There are many industries that require the expertise of a Mechanical Engineer and the environment will determine the type of work done.	Employer - Manufacturing industries - Government departments and such organizations as: CSIR, Eskom, NECSA, AECI, Sasol, Genmin, JCI, MINTEK, SABS - Mining companies - Consulting engineering firms - Universities and universities of technology - Self-employment; a registered mechanical engineer with the necessary experience and initiative can work as a consultant in any of the above-mentioned organizations or can also start his or her own manufacturing engineering company.	BSc Eng: Mechanical	4yrs	HWD	NSC - Deg pass with Maths & Phys (65%) & LO Level 4 & 3 other subjects from the designated list	33-48	KN-H-BEM KN-P-BEM
 <b>Land Surveyor</b>	Surveying and land surveying is the measurement and mapping of our surrounding environment using mathematics, specialised technology and equipment. Surveyors measure just about anything on the land, in the sky or on the ocean bed. They even measure polar ice-caps. They are experts in determining land size and measurement. They also give advice and provide information to guide the work of engineers, architects and developers.	Employer - Government departments - Universities - Provincial administrations - Municipalities - Eskom - Private practice	BSc Land Surveying	4yrs	HWD PMB**	NSC - Deg pass with Maths & Phys (65%) & LO Level 4 & 3 other subjects from the designated list	33-48	KN-H-BSL

\* **Chemical, Civil, Electrical and Mechanical Engineering will consider choice 1 applicants only (in other words – the degrees above must reflect as the FIRST CHOICE on the CAO form)**  
\*\* **First year only offered at Pietermaritzburg; thereafter need to transfer to Howard College, Durban (HWD)**

