

BIOMEDICAL SCIENCES

CAREER INFORMATION BIOMEDICAL ENGINEER

Biomedical Sciences is a program aimed at training and developing high calibre scientists who will conduct research in the arena of biomedical sciences with a view to reduce the many lifestyle associated diseases. To prepare students, the Biomedical Sciences program educates students in the areas of Anatomy, Medical Microbiology and Physiology. Anatomy includes the study of human tissues and organs for example bones, muscles and heart. Medical Microbiology describes how bacteria, viruses and fungi infect humans, cause diseases and how the body protects (immunity) itself against them. Physiology describes how the body functions e.g., how the heart pumps blood repetitively.

Biomedical engineers implement engineering principles and techniques in the solution of problems in biology, medicine, dentistry and veterinary science. They design and develop instruments and devices like cardiac valves, surgical implants and mobility aids for the handicapped. Biomedical engineers also undertake research to determine blood flow patterns in the diagnosis of heart and other disorders. This work requires the use of computers which are applied in the medical field.

QUALIFICATIONS UNIVERSITIES

BSc (Medical Biosciences) BSc Honours (Medical Biosciences)
MSc (Medical Biosciences) PhD (Medical Biosciences)

CAREER OPPORTUNITIES

Medical scientist, postgraduate studies in Medical Biosciences, university lecturer, lecturer at a university of technology, medical journalist, pharmaceutical or medical sales representative etc.

BIOMEDICAL TECHNOLOGIST

Biomedical technology involves the analysis of, among other things, blood, sputum, urine, faeces and histological samples. As sophisticated instruments and techniques are used to analyse samples, a medical technologist must acquire a sound understanding of the procedures and a high level of competence, in order to perform the analyses accurately. Medical technologists work in different medical disciplines and usually specialize in one of his/her preferences e.g. Chemical Pathology, Haematology, Microbiology, Histology, Cytology, Virology, Blood Transfusion or Clinical Pathology.

SCHOOL SUBJECTS

Mathematics, Physical Science and Biology.

QUALIFICATIONS

NDip: Biomedical Technology BTech: Biomedical Technology
MTech: Biomedical Technology DTech: Biomedical Technology

CAREER OPPORTUNITIES

Company representative for medical and laboratory products or as research assistant, in government and provincial hospital laboratories, pathology institutions at universities, private pathology practices, the National Health Laboratory Services, veterinary practices and several other industries e.g. pharmaceutical companies.

BIOMEDIESE WETENSKAPPE

BEROEPSINLICHTING BIOMEDIESE INGENIEUR

Die Biomediese Wetenskappe program is daarop gemik is om opleiding te verskaf aan wetenskaplikes wie navorsing wil doen in die biomediese wetenskappe met die oog daarop om die vele leefwys-geasosieerde siektes te bekamp. Om studente voor te berei, lei die Biomediese Wetenskappe studente op in Anatomie, Mediese Mikrobiologie en Fisiologie. Anatomie sluit die studie van menslike weefsel en organe soos been, spiere en die hart in. Mediese Mikrobiologie beskryf hoe bakterie, virusse en fungie mense besmet, siektes veroorsaak en hoe die liggaam homself beskerm (immunitet). Fisiologie beskryf hoe die liggaam funksioneer byvoorbeeld hoe die hart herhaaldelik bloed pomp.

Biomediese ingenieurs implimenteer ingenieursbeginsels en -tegnieke tydens die oplossing van probleme in biologiese, mediese, tandheelkundige en veeartseny wetenskappe. Hulle ontwerp en ontwikkel instrumente en apparate soos hartkleppe, chirurgiese inplantings en mobiele hulpmiddels vir gestemdes. Hulle doen navorsing om die vloeiopname van bloed in die hart en ander kwale vas te stel. Die werk vereis die gebruik van rekenars wat in die mediese veld aangewend word.

KWALIFIKASIES UNIVERSITEITE

BSc (Mediese Biowetenskappe) BSc Honeurs (Med Bio)
MSc (Mediese Biowetenskappe) PhD (Med Bio)

BEROEPSMOONTLIKHEDE

Mediese wetenskaplike, nagraadse studie in Biomediese wetenskappe, lektor by universiteite en universiteite vir tegnologie, mediese joernalis, farmaseutiese of mediese verteenwoordiger, gesondheidsverwante werk.

BIOMEDIESE TEGNOLOOG

Biomediese tegnologie behels die analise van, onder meer, bloed, speeksel, urine, faeces en histologiese monsters. Omdat gesofistikeerde instrumente en tegnieke gebruik word om monsters te ontleed, moet 'n mediese tegnoloog oor 'n grondige begrip van die prosedure en 'n hoë vlak van bekwaamheid beskik ten einde die analises akkuraat uit te voer. Mediese tegnoloë werk in verskillende mediese dissiplines en spesialiseer gewoonlik in een van sy/haar voorkeure, bv. Chemiese Patologie, Hematologie, Mikrobiologie, Histologie, Sitologie, Virologie, bloedoortapping, of Kliniese Patologie.

SKOOLVAKKE

Wiskunde, Wetenskap en Biologie.

KWALIFIKASIES

NDip: Biomediese Tegnologie BTech: Biomediese Tegnologie
MTech: Biomediese Tegnologie DTech: Biomediese Tegnologie

BEROEPSMOONTLIKHEDE

Maatskappyverteenwoordiger vir mediese- en laboratoriumprodukte, of as navorsingsassistent, in regerings- en provinsiale hospitaal-laboratoriums, patologiese instansies by universiteite, privaat patologiese praktyke, die Nasionale Gesondheid Laboratorium Dienste, veeartsenykundige praktyke, ens.

