HEALTH & APPLIED SCIENCES

People are becoming more conscious about their health, especially with increased life expectancy and improved quality of life. The demand for medical and health professionals is increasing and a wealth of career opportunities is available. 2005 Statistics from the Ministry of Health Malaysia indicate that the ratio of health professionals to the population was still low compared with developed countries.

**Popular majors / partial list of majors available**

**MEDICAL TECHNOLOGY**
Medical Technology involves the study of micro-organisms through the examination of body fluids, tissues, cells, chemical content of fluids, and blood samples. Medical technology professionals, also known as clinical laboratory scientists, perform routine and complex tests via sophisticated instrumentation to detect, diagnose and treat diseases as well as monitor new patients to ensure quality patient care.

*Employment opportunities*
- Medical Laboratories or Offices, Clinics, Blood Banks, Research & Testing Laboratories, Government & Public Health Agencies
- Occupations include Analytical Chemist, Bacteriologist, Blood Banking Technologist, Medical Technologist, Public Health Specialist, Microbiologist, Parasitologist, Toxicologist

**NEUROSCIENCE**
This study is a multidisciplinary field that includes psychology, computer science, statistics, physics and medicine in the scientific study of the nervous system and its components as well as functional activities at the molecular, cellular, system, behavioral and cognitive levels.

*Employment opportunities*
- Medical Laboratories, Hospitals, Universities, Research & Testing Laboratories, Government & Public Health Agencies

**FOOD SCIENCE AND NUTRITION**
The multidisciplinary study of food and the application of knowledge to the development of food products and processes, the preservation and storage of foods, and the assurance of food safety and quality. Nutritional Science also examines the effects of food components on the metabolism, health, performance and disease resistance of humans and animals, including the study of human behaviors related to foods.

*Employment opportunities*
- Fitness Centers, Food or Pharmaceutical Companies, Public Health Agencies or Educational Institutions

**DIETETICS**
This study involves the planning of food and nutrition as well as supervising the preparation and serving of meals. Dieticians also help prevent and treat illnesses by promoting healthy eating habits, scientifically evaluating clients’ diets and suggesting diet medications.

*Employment opportunities*
- Schools, Clinics, Hospitals, Nursing Homes, Cafeterias, Food Manufacturing, Marketing, Advertising, Wellness Programs, Sports Teams, Supermarkets or Healthcare Facilities

**NURSING**
Jobs for nurses are abundant world-wide. The shortage of over 300,000 nurses world-wide is expected to grow to over 800,000 in the next 15 to 20 years. BSN (Bachelor of Nursing) is a four-year program that focuses on the practical applications of nursing and expands into the theoretical realms of patient care.

*Employment opportunities*
- Hospitals, Clinics, Physician Offices, Schools, Private Duty & Home Health
- Nurses also work in the legal arena as Consultants & Lawyers with a Nursing Degree, for Insurance Companies, as Clinical Researchers, Sales Representatives for Drug Companies & Medical Equipment Firms, or Teachers in Nursing Schools

**NANOTECHNOLOGY**
This study is the development of new devices, materials and structures that are well below the one micron size scale. Nanotechnology advances enable the development of fundamental building blocks in the electronics, photonics, and materials sectors, sensors, biomimetic and biocompatible platforms throughout the biomedical and health sector. The science explores the possibilities of detecting molecules of chemical warfare agents, creating a new generation of computer components, or making medical strides on the molecular level.

*Employment opportunities*
- Electronics / Semiconductor Industry, Materials Science including Textiles, Polymers & Packaging, Auto & Aerospace Industries, Sports Equipment, Pharmaceuticals including Drug Delivery, Cosmetics, Biotechnology, Medical Fields, Optoelectronics, Environmental Monitoring & Control, Food Science including Quality Control & Packaging, Forensics, University & Federal Lab Research
ASTROPHYSICS
This study focuses on the theoretical and observational study of the structure, properties, and behavior of stars, star systems and clusters, stellar life cycles, and related phenomena. Astrophysicists interpret observational data with the laws of physics and mathematics and include areas in cosmology, plasma kinetics, stellar physics, convolution and non-equilibrium radiation transfer theory, non-Euclidean geometries, mathematical modeling, galactic structure theory, and relativistic astronomy.

Employment opportunities
University Researcher, Research Equipment Designer, Planetarium Technician, Computational Astrophysicist, Solar Astronomer, Cosmologist, Planetary Scientist, Telescope Engineer, Support Astronomer, Professor

FORENSICS
This interdisciplinary study draws from chemistry, biology, agriculture, physics, psychology and law to apply techniques and principles of the natural and physical sciences to the analysis of evidence collected during criminal investigations. Students learn to perform tests on substances like glass, fiber, tissue, hair and body fluids. Some programs allow for a specialization in specific areas such as DNA, ballistics, blood or firearms.

Employment opportunities
Crime Laboratories, Specialized Private Laboratories, Law Enforcement Agencies, Forensic Laboratories, Research Scientists, Medical Laboratories, Medical Examiner Offices, Hospitals, Private Firms or Universities

Popular universities for Health & Applied Sciences

**US Universities**
- Iowa State University
- Kansas State University
- Louisiana State University
- Michigan State University
- Ohio State University
- Purdue University
- Rutgers, State University of New Jersey
- University at Buffalo
- University of Iowa
- University of Missouri-Columbia
- University of Nebraska-Lincoln
- University of Oklahoma-Norman
- University of Wisconsin-Madison

**Canadian Universities**
- University of Lethbridge
- University of Manitoba
- University of Saskatchewan
- University of Windsor
- Memorial University of Newfoundland

Sample curriculum for Year 1 & 2
- Calculus with Analytic Geometry 1
- Calculus with Analytic Geometry 2
- Cell Biology, Lab
- English Composition 1
- English Composition 2
- Essentials of Public Speaking
- Fine Arts Electives
- Genetics 1, Lab
- Genetics 2, Lab
- General Biochemistry 1, Lab
- General Biochemistry 2, Lab
- General Chemistry 1, Lab
- General Chemistry 2, Lab
- General Immunology, Lab
- General Microbiology, Lab
- General Physics 1, Lab
- General Physics 2, Lab
- Humanities Electives
- Introduction to Computer & Information Processing
- Non-Science General Electives
- Organic Chemistry 1, Lab
- Organic Chemistry 2, Lab
- Principles of Biology 1, Lab
- Principles of Biology 2, Lab
- Social Sciences Electives