

Curriculum

COURSE CODE	COURSE TITLE	COURSE CODE	COURSE TITLE	COURSE CODE	COURSE TITLE
General Education Requirements: 27 Credit Hours					
ARL101(A)	Communication Skills in Arabic I	ENG 200	English II	FWS 305	Technical Communications for Work Place
FWS 310	Fundamentals of Innovations & Entrepreneurship	ISL100(A)	Islamic Culture	MTT 102	Calculus I
FWS 205	UAE and GCC Society	STT 100	General Statistics	FWS 100	Academic Skills for Success
Degree Requirements: 36 Credit Hours					
MTT 200	Calculus II	MTT 205	Differential Equations	PHY 102	Physics & Engineering Applications I
PHY 102L	Physics & Engineering Applications I Lab	BIO 205	General Biology I	BIO 205L	General Biology I Lab
CHE 205	General Chemistry I	CHE 201L	Chemistry Lab	ECS 200	Introduction to Engineering and Computing
CSC 201	Computer Programming I	GEN 201	Engineering Economy	GEN 400	Engineering Ethics
BME 301	Applied Molecular and Cellular Biology for Engineers	GEN 101	Introductory Artificial Intelligence	MTT 204	Introduction to Linear Algebra
Major Requirements: 64 Credit Hours					
CEN 201	Electric Circuits I	EEN 210	Digital Circuits	CEN 304	Electronic Devices and Circuits
CEN 330	Probability and Stochastic Processes	CEN 324	Digital and Analog Electronics	BME 310	Biomedical Instrumentation
BME 320	Bio-systems and Signals	BME 330	Physiological Modeling	BME 325	IoT for Bioengineers: Foundations and Design
BME 380	Human Biology I	BME 381	Human Biology II	EEN 365	Control Systems
BME 401	Introduction to Biotechnology	BME 310L	Biomedical Instrumentation Lab	BME 413	Biomedical Sensors and Transducers
CEN 454	Computer Vision and Machine Learning	BME 425	IoT for Bioengineers: Applications and Security	BME 464	Digital Bio-Signal Processing
BME 441	Medical Imaging Systems	BME 399i	Internship in Biomedical Engineering	BME 312	Medical Device Design
BME 491	Biomedical Engineering Design Project I	BME 492	Biomedical Engineering Design Project II		
Electives: 9 Credit Hours					
ME 1	Major Elective I	ME 2	Major Elective II	OE 1	Open Elective I
Major Electives: 9 Credit Hours					
BME 445	Biomedical Ultrasound	BME420	Medical Image Processing	BME 431	Bioinformatics
BME 432	Healthcare Management Systems	BME433	Medical Mobile Applications	BME 440	Magnetic Resonance Imaging
BME 460	Therapeutic Devices	BME 490	Special Topics in Biomedical Engineering		



BACHELOR OF SCIENCE IN BIOMEDICAL ENGINEERING

Program Overview

Biomedical Engineering is the application of engineering principles and design concepts to medicine and biology for diagnostic or therapeutic purposes within the healthcare industry.

Through this program, the first in the UAE to focus on the roles of AI, wearables, mobile applications, and the Internet of Things in healthcare, you will study courses in biomedical instrumentation, biosensors and transducers, medical imaging, medical device design, AI in medicine, physiological modelling, mobile medical applications, and magnetic resonance imaging.

Developed in collaboration with the Bioengineering Department of the University of Louisville in Kentucky, USA, and designed to meet international ABET standards, the program benefits from an international research laboratory dedicated to applying machine learning and artificial intelligence to create computer-aided diagnosis systems.



Student's Testimonial

Yazan Mutasem Al Risheh - Current Student

The beauty of engineering is that you learn by doing things practically and not theoretically. All our labs are equipped with cutting-edge equipment to ensure the best practical experience for us. Our Bioimaging Research Lab is affiliated with the University of Louisville's Bioimaging Lab, which makes it one-of-a-kind in the UAE. Biomedical engineering is often known to people as the application of engineering principles to research on medical and biological issues. In reality, Biomedical engineering extends beyond that varying from marine biology to artificial intelligence in medicine. Biomedical Engineering at ADU is targeting mainly its students to teach practically the applications of artificial intelligence in healthcare sector which is the current trend in today's world and will continue to advance. Personally, I would love to make a remarkable impact in others' lives by utilizing what I learned to diagnose a disease or design a medical equipment that can save many lives.



Career Prospects

A recent study projects the UAE healthcare market to grow 12.7% to AED71.56 billion and the number of hospital beds to increase to 13,881 by 2020. Biomedical Engineers are needed to sustain such growth by maintaining and improving the quality of healthcare services in the country and reducing their cost through the use of smart technologies. You will have many diverse career opportunities in the following fields:

- Hospitals and clinics
- Healthcare government entities
- Pharmaceutical companies
- Medical equipment companies
- Training and technical support for medical equipment
- Healthcare support services
- Sales of medical equipment and supplies

Graduates of the program will be able to:

- Design biomedical equipment and devices including artificial organs, smart body parts, and computer-aided medical diagnosis systems
- Install, configure, maintain, and technically support biomedical devices and equipment
- Assess the safety and effectiveness of biomedical devices and equipment
- Train doctors and other healthcare professionals on the proper use of biomedical devices and equipment
- Solve problems through the investigation of the biological systems of humans and animals with life scientists, chemists, and medical scientists