



جامعة أبوظبي  
Abu Dhabi University

# COLLEGE OF ENGINEERING

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**There is nothing I believe more strongly than getting young people interested in science and engineering, for a better tomorrow, for all humankind.**

**Bill Nye**

”



**Dr. Hamdi Sheibani**  
Dean, College of  
Engineering

## Message from the Dean

Welcome to the College of Engineering at Abu Dhabi University. I am very excited to serve the College of Engineering (COE) and its community as your Dean. In the COE, we aim to foster a community of learners who are devoted to solving some of the most multifaceted engineering challenges - from global warming to financial uncertainty. We welcome students to a purpose-built academic facility and state-of-the-art laboratories and prepare them to be leading independent thinkers, problem solvers, and innovators in engineering.

As a leading engineering college in the UAE, we provide a vibrant learning culture and many leadership opportunities for our students, equipping them with advanced skills and expertise to give them a competitive edge. As Dean, I feel humbled and honored to lead this College - a place where imagination, empathy, integrity, and intellect merge to create, innovate, and discover ways that will improve our quality of life.

Adhering to the highest international standards, we offer a wide variety of undergraduate and postgraduate programs with engaging curricula complemented by co-curricular and extra-curricular activities. These programs have been developed in partnership with industry and according to the standards of international professional engineering and architecture bodies such as the Accreditation Board for Engineering and Technology (ABET) and the Royal Institute of British Architects (RIBA). Students can join professional societies including the Institute of Electrical & Electronic Engineers (IEEE), the American Society of Civil Engineers (ASCE), the American Society of Mechanical Engineers (ASME), and the American Institute of Chemical Engineers (AIChE). Our Aviation Department in particular has also received the accreditation as an Authorized Training Center (ATC) from the International Air Transport Association (IATA).

Our highly qualified professors and researchers partner with international universities and research centers, providing us with effective internship programs that enable our students to gain practical work experience, build their networks, and find challenging real-world problems for capstone design projects.

In the College of Engineering, we strive to become a nationwide leader in developing new engineering and technical education ideas as well as research and innovation development. We are a robust and resourceful community of students, faculty, alumni, and professional and academic partners. I invite you to learn more about our transformative engineering programs and the numerous opportunities that we provide. Please join us on this journey.



## Vision

To be internationally recognized for high quality engineering education, applied research, innovation and contributions to advancing regional development.

## Mission

To educate highly qualified engineering graduates and conduct innovative applied research, meeting the industrial and economic development needs of the UAE, the region, and the international community.

## Why the College of Engineering

- All programs are developed according to international standards and accredited by the UAE Ministry of Education - Higher Education Affairs.
- Become marketable! The graduates of our well-designed programs will easily find jobs in the Gulf region, in general, and in the UAE in particular, whether it is the high-tech internet, computer and telecommunication industries, petrochemical companies, oil & gas industry, water treatment & desalination sector, aviation industry, or construction and design companies.
- All our engineering courses are taught exclusively by more than 58 international full-time experienced faculty, all of whom have Ph.D. degrees from well-recognized North American, European, and other universities and many of whom are scholars with international reputations.
- We offer you modern facilities and specialized labs, furnished with state-of-the-art equipment.
- Our job is to help you connect: professional clubs, career days, trips to visit industrial sites, and participating in competitions/exhibitions.
- We don't only teach ... We care! Our faculty and advisors want you to grow and succeed. From extra help with a tough course, help in academic guidance or a reference for a job, our faculty and advisors are here for you.
- We constantly review and update our portfolio of programs in response to future market needs. Among the new programs that have been developed recently and will be offered soon, pending approval of our accrediting bodies, are Bachelor of Science in Cyber Security Engineering, Bachelor of Science in Artificial Intelligence and Robotics Engineering, Bachelor of Science in Biomedical Engineering, Bachelor of Science in Industrial Engineering, and Bachelor of Science in Software Engineering.

## Diversity

The College of Engineering has students from 58 nations across the globe. Nearly 24% of the undergraduate students and 69% of the graduate students are UAE nationals. The student profile reflects the diversity of Abu Dhabi University and of the UAE. Learning in a diverse environment prepares students to succeed in the global marketplace.

## Students' Activities

A rich variety of social, artistic, cultural, athletic, and engineering programs and competitions are organized regularly at the college and university levels creating a vibrant campus life. Students of the College of Engineering have won major awards at many national and international competitions. Examples of awards won by the College of Engineering students include: first place in the Middle East - Future Generation Competition; Top Place in the IEEE SS12 Competition; 2nd Place Nationally in 2-Categories in Think Science Competition.

## Job Placement & Internships

90% of the graduates of the College of Engineering are employed within one year of graduation. Our students have access to an all-inclusive approach to career development beginning with career awareness and career decision making which helps students and graduates in developing, evaluating and executing their career plans. For students to get job opportunities in top companies, the following services are available:

- Career services that offer guidance from professional career advisors.
- Career fairs that are attended by local and international companies.
- Employer talks that allow students to get acquainted with professional career paths.
- On-campus student employment program.

The Internship program increases student's employability which makes it an important part of student's graduation requirements. By undertaking a supervised compulsory training course, students will have the opportunity to put into practice what they have learned in theory. The

internship is a supervised training course which carries credit. Each internship is planned and organized by the Career Development Department, in conjunction with the respective college, in such a way as to ensure the efficient execution of the program.

## Financial Aid & Scholarships

The University offers a number of scholarships and provides financial aid assistance to eligible students. Details are available at the Financial Aid and Scholarships Office.

## Accreditation



ADU is internationally accredited by the Senior College and University Commission of the **Western Association of Schools and Colleges (WSCUC)**.

**WSCUC** is the highest form of accreditation available in the USA, and accredits such prestigious institutions as Stanford University, California Institute of Technology, The University of California System, and the California State University system.

The top priority at the College of Engineering is to offer quality education to our students, and we prove it by action and tangible results. At this time the following programs are accredited by the **Engineering Accreditation Commission of ABET**: Bachelor of Science in Civil Engineering, Bachelor of Science in Electrical Engineering, Bachelor of Science in Computer Engineering, and Bachelor of Science in Mechanical Engineering. The Bachelor of Science in Information Technology is accredited by the **Computing Accreditation Commission of ABET**. Recently, the Bachelor of Architecture program was validated (accredited) by the Royal Institute of British Architects (RIBA). Other programs that started to have graduates are also seeking accreditation from the relevant international accrediting boards (ABET, CIDA, RAS, etc.).

ADU has recently received the accreditation as an Authorized Training Center (ATC) from the **International Air Transport Association (IATA)**. This applies in particular to the Department of Aviation and selected courses.

YOU CAN BUILD  
A WORLD OF  
DIFFERENCE



# For more information

 **600550003**

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 **[www.adu.ac.ae](http://www.adu.ac.ae)**

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V: 062022

# Curriculum

COURSE CODE	COURSE TITLE	COURSE CODE	COURSE TITLE	COURSE CODE	COURSE TITLE
<b>General Education Requirements: 30 Credit Hours</b>					
ARL 100	Communication Skills in Arabic I	ENG 200	English II	FWS 305	Technical Communication for Work Place
ISL 100	Islamic Culture	MTT 101	Pre-Calculus	MTT 102	Calculus 1
FWS 205	UAE and GCC Society	STT 100	General Statistics	FWS 310	Fundamentals of Innovation and Entrepreneur
<b>Degree Requirements: 7 Credit Hours</b>					
PHY 102	Physics and Engineering Applications I	PHY 102 L	Physics and Engineering Applications I Lab	GEN 101	Introductory to Artificial Intelligence
GEN 102	Introduction to Big Data Analytics				
<b>Major Requirements: 110 Credit Hours</b>					
DES 110	Design Communication I	DES 120	Design Communication II	DES 130	Design Foundations
ARC 210	Architectural Design I	ARC 220	Architectural History I	ARC 230	Building Technology I
ARC 240	Architecture and the Environment	ARC 250	Architectural Design II	ARC 260	Architectural and Interior Design History II
ARC 270	Building Technology II	ARC 280	Computer-aided Design (CAD)	ARC 310	Architectural Design III
ARC 320	Env. Design I: Lighting & Acoustics	ARC 330	Structures for Architects I	ARC 340	Building Technology III
ARC 350	Architectural Design IV	ARC 360	Urban Planning	ARC 370	Professional Practice & Ethics
ARC 399	Internship	ARC 410	Architectural Design V	ARC 420	Env. Design II: Energy and Systems
ARC 430	Working Drawings I	ARC 450	Architectural Design VI	ARC 460	Structures for Architects II
ARC 470	Urban Design	ARC 510	Graduation Project I	ARC 520	Research Methods & Programming
ARC 530	Working Drawings II	ARC 540	Sustainable Design	ARC 550	Graduation Project II
<b>Professional Electives &amp; Open Electives: 18 Credit Hours</b>					
PRE 1	Professional Elective I	PRE 2	Professional Elective II	PRE 3	Professional Elective III
OE 1	Open Elective I	OE 2	Open Elective II		
<b>Professional Elective Themes: 9 Credit Hours</b>					
<b>Special Design Focus</b>					
ARC 581	Landscape Architecture	ARC 584	Housing	ARC 585	Islamic Architecture
ARC 586	Architectural Conservation	ARC 588	Interior Architecture	ARC 589	Architecture in Extreme environments
DES 580	Architectural Photography				
<b>Computer Applications</b>					
ARC 582	3D Modeling	ARC 583	Building Information Modeling	ARC 591	Geographical Information Systems
<b>Management</b>					
ARC 587	Project Management	ARC 590	Building Economics		

\*Note: \*English Proficiency Specified Score: Score of 1250+ & B2 (CEFR) in Writing Component for EmSat or/ 5.5 overall average & 5.5 specific score in Writing Component for IELTS, equivalent in other English Proficiency Test



## BACHELOR OF ARCHITECTURE

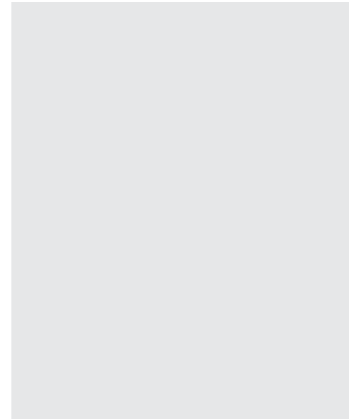
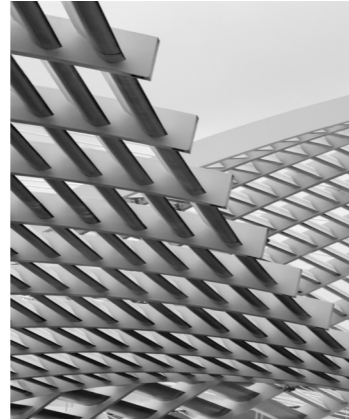


## Program Overview

The Architecture program at ADU aims to produce graduates that are well-rounded academically, equipped with sufficient knowledge and skills to be competitive on the job market, and to become professionals who will contribute to the socio-economic, cultural and urban development of the community on local, regional and global levels. The Architecture Program, is Internationally Accredited by RIBA and provides its graduates with the essential skills and knowledge needed to efficiently develop architectural designs, prepare working drawings and contractual documents, and supervise the construction of buildings.

### Graduates of the program will be able to

- Communicate effectively, orally, in writing as well as graphically using manual techniques as well as computers tools to generate, evaluate, develop and communicate ideas
- Gather, assess, record, and apply relevant information and raise clear precise questions, interpret information, consider diverse points of view, reach well-reasoned conclusions, and test them against relevant criteria
- Resolve the needs of the client, owner and user taking into consideration the relationship between human behavior and the physical environment and the diverse needs, values, norms, abilities, and socioeconomic patterns that characterize different locations, cultures and individuals
- Prepare a comprehensive program for an architectural project, including assessment of client and user needs, critical review of appropriate precedents, an inventory of space requirements, an analysis of site conditions, a review.



## Student's Testimonial

**I HAVE BECOME MORE CONFIDENT AND INVOLVED IN MANY ACTIVITIES**

**Jenan N. Alas'ad** - Bachelor of Architecture Student

The Faculty in Architecture are very supportive from the moment you join the university and as you progress in the Architecture Program they are always there for you. I think studying at ADU has definitely changed me as a person, I have become more confident and involved in many activities.



## Career Prospects

- Jobs for graduates of Architecture are available in many venues such as Engineering and Architectural offices.
- Consulting firms and construction companies hire architects as designers, planners and project managers.
- Graduates are equally prepared to pursue M.Sc. and Ph.D. degrees in allied fields of architecture and design.

# Curriculum

COURSE CODE	COURSE TITLE	COURSE CODE	COURSE TITLE	COURSE CODE	COURSE TITLE
<b>General Education Requirements: 33 Credit Hours</b>					
ARL 100	Communication Skills in Arabic I	ENG 200	English II	FWS 100	Academic Skills for Success
FWS 205	UAE and GCC Society	FWS 305	Technical Communication for Work Place	FWS 310	Fundamentals of Innovation and Entrepreneurship
GES 201	General Sciences	ISL 100	Islamic Culture	ITD 100	Introduction to Information and Digital Technology
MTT 101	Pre-Calculus	STT 100	General Statistics		
<b>College Requirements: 6 Credit Hours</b>					
GEN 101	Introduction to Artificial Intelligence	GEN 102	Introductory Big Data Analyticzs		
<b>Major Requirements: 75 Credit Hours</b>					
AVS 101	Introduction to Aviation	AVS 120	Introduction to Aeronautics	AVS 120L	Introduction to Aeronautics Lab
AVS 209	Aerodynamics	AVS 211	Aircraft Jet Engines	AVS 254	Aviation Law
AVS 287	Crew Resource Management	AVS 289	Airline Management	AVS 303	Aviation Security
AVS 310	Aircraft Performance	AVS 350	Flight Navigation	AVS 350L	Flight Navigation Lab
AVS 356	Aircraft Syetems I	AVS 357	Flight Physiology	AVS 399	Internship
AVS 402	Aviation Meterology	AVS 403	Introduction to Space	AVS 408	Aviation Safety
AVS 410	Air Traffic Management	AVS 411	Aircraft Systems II	AVS 412	Unmanned Aircraft Systems Operation
AVS 415	Airport Operations	AVS 422	Instrument and Commercial Pilot Operations	AVS 422L	Instrument and Commercial Pilot Operations Lab
AVS 435	Advanced Flight Guidance and Control Systems	AVS 435L	Advanced Flight Guidance and Control Systems Lab	AVS 472	Aviation Human Factors
AVS 499	Aviation Capstone Project				
<b>Open Electives: 12 Credit Hours</b>					
OE 1	Open Elective I	OE 2	Open Elective II	OE 3	Open Elective III
OE 4	Open Elective IV				



## BACHELOR OF SCIENCE IN AVIATION

## Program Overview

The growth of the aviation industry, both in the region and internationally, has driven the demand for skilled personnel. The aim of the Bachelor of Science in Aviation is to produce graduates sought after in all sectors of the aviation industry.

The educational mission of the program is to provide students with a multidisciplinary curriculum that is fundamental yet broad and flexible. The program produces graduates equipped with the knowledge and skills to become aviation professionals, able to pursue careers in the field of aviation and affiliated industries.

The aviation courses are delivered by faculty with international expertise and professional experience in aviation. They include practical experience using our own flight training devices and various simulation platforms complemented by field visits.

Students enrolled in the program benefit from the Department of Aviation's extensive network within the Aviation sector. This includes collaborations and partnerships with key industry players such as Etihad Airways, the International Air Transport Association (IATA), the UAE Space Agency, the UAE General Civil Aviation Authority (GCAA), and several others within the UAE and abroad. Given the UAE's status as a major regional and global aviation hub, students also have the opportunity to bridge their academic activities to the "real world" through practical internships, capstone projects, and major industry conferences and events.

ADU has recently been accredited as an Authorized Training Center (ATC) from the **International Air Transport Association (IATA)**. This applies to the Department of Aviation and selected courses in particular.

## Student's Testimonial

**Adhari Al Blooshi** - Bachelor of Science in Aviation Program Senior Student

Sometimes simple decisions change your whole life in a way you never thought of; sometimes you look back and realize that you are halfway there to your dream. Looking to the sky as a child waiting for airplanes to pass over my head made me smile, waving and hoping that the pilot sees my tiny hand, imagining myself on board that aircraft but being a passenger wouldn't satisfy me because my place is in the cockpit. Now as a mature person, I took my first step to become that person who I was waving to. By joining the Etihad cadet pilot program and with the help of Abu Dhabi University; one day children will wave to the person who is sitting in the cockpit and that will be me.



## Career Prospects

The Bachelor of Science in Aviation is designed to provide students with the opportunity to learn relevant aspects of aviation to pursue a career within operational sectors of the aviation industry. These include:

- Airline Flight Operations
- Airport Operations - Ground Support Services
- Safety and Security Management
- Air Navigation Services - including Air Traffic Management
- Operation of Unmanned Aircraft Systems (Drones)
- Operation of Space Vehicles

## Graduates of the program will be able to:

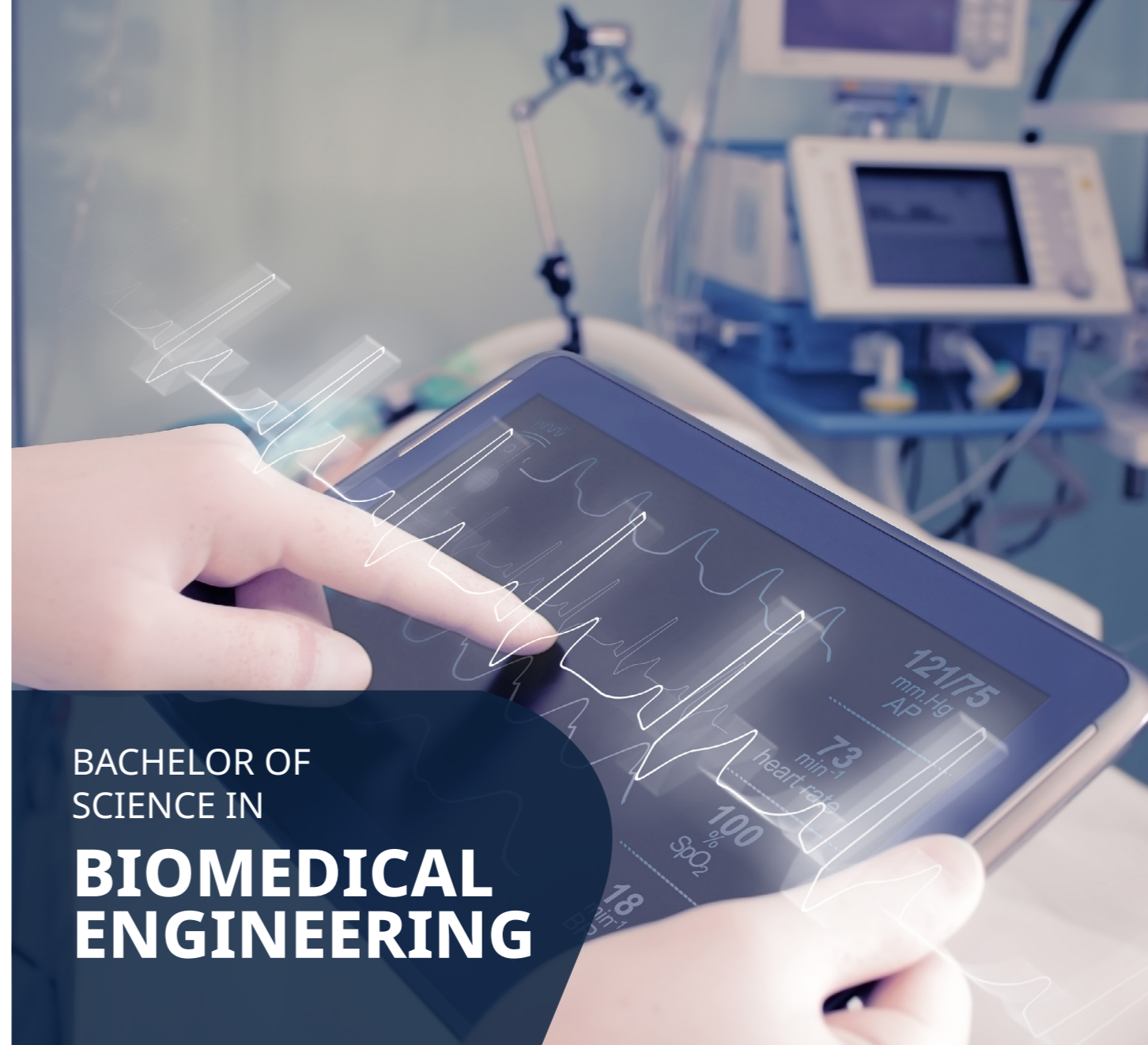
- a. Comprehend the aviation system as an integrated and multidisciplinary environment and the role of professionals working in this sector
- b. Function in multidisciplinary teams and develop leadership capabilities
- c. Identify, formulate, and solve problems encountered in the practice of performing the role of an aviation practitioner
- d. Demonstrate an understanding of the professional and ethical responsibility of licensed and non-licensed aviation personnel with regard to safety
- e. Communicate effectively by written, oral and visual means
- f. Demonstrate an understanding of the impact of the aviation industry in a global, economic, environmental, and societal context
- g. Develop research capabilities and independent information retrieval strategies
- h. Demonstrate knowledge of contemporary issues in aviation





# Curriculum

COURSE CODE	COURSE TITLE	COURSE CODE	COURSE TITLE	COURSE CODE	COURSE TITLE
<b>General Education Requirements: 27 Credit Hours</b>					
ARL101(A)	Communication Skills in Arabic I	ENG 200	English II	FWS 305	Technical Communications for Workplace
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
<b>Degree Requirements: 36 Credit Hours</b>					
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	COE 202	Engineering Ethics, Economy, and Law	BME 301	Applied Molecular and Cellular Biology for Engineers
COE 101	Introductory Artificial Intelligence	MTT 204	Introduction to Linear Algebra		
<b>Major Requirements: 64 Credit Hours</b>					
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 I	BME399ii	Internship in Biomedical Engineering II
BME312	Medical Device Design	BME 491	Biomedical Engineering Design Project I	BME 492	Biomedical Engineering Design Project II
<b>Electives: 9 Credit Hours</b>					
ME 1	Major Elective I	ME 2	Major Elective II	OE 1	Open Elective I
<b>Major Electives: 9 Credit Hours</b>					
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 Rishah** - 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

# Curriculum

COURSE CODE	COURSE TITLE	COURSE CODE	COURSE TITLE	COURSE CODE	COURSE TITLE
<b>General Education Requirements: 24 Credit Hours</b>					
ARL 101(A)	Communication Skills in Arabic I	ENG 200	English II	FWS 205	UAE and GCC Society
FWS 305	Technical Communications for the work place	FWS 310	Fundamentals of Innovation and Entrepreneurship	ISL 100	Islamic Culture
MTT 102	Calculus I	STT 100	General Statistics	USS 001	University Study Skills Seminar
<b>Degree Requirements: 39 Credit Hours</b>					
MTT 200	Calculus II	MTT 201	Calculus III	MTT 204	Introduction to Linear Algebra
MTT 205	Differential Equations	PHY 102	Physics and Engineering Applications I	PHY 102 L	Physics and Engineering Applications I Lab
PHY 201	Physics and Engineering Applications II	PHY 201 L	Physics and Engineering Applications II Lab	CHE 205	General Chemistry I
CHE 201L	Chemistry Lab	CME 200	Introduction to Chemical Engineering	CSC 201	Structured Programming
COE 202	Engineering Ethics, Law and Economy	COE 102	Introductory Big Data Analytics	COE 101	Introductory Artificial Intelligence
<b>Major Requirements: 58 Credit Hours</b>					
CHE 206	General Chemistry II	CHE 206L	General Chemistry II Lab	CHE 305	Organic Chemistry
CHE 330	Physical Chemistry	MEC 300	Materials Science	CME 210	Principles of Chemical Engineering
CME 220	Chemical Engineering Thermodynamics I	CME 300	Chemical Engineering Thermodynamics II	CME 301	Mass Transfer
CME 305	Modeling and Simulation in Chemical Engineering (with Embedded Lab)	CME 212	Fluid Mechanics for Chemical Engineers	CME 320	Chemical Engineering Laboratory I
CME 321	Process Dynamics and Control	CME 331	Chemical Reaction Engineering	CME 341	Heat Transfer
CME 400	Separation Processes	CME 430	Chemical Engineering Laboratory II	CME 450	Process Design
CME 398	Internship I	CME 399	Internship II	CME 455	Industrial Software for Chemical Engineers
CME 498	Capstone Design Project I	CME 499	Capstone Design Project II		
<b>Water Technology Concentration Courses: 15 credit hours</b>					
CME 480	Physical and Chemical Processes for water and wastewater treatment	CME 481	Desalination Technologies	CME 482	Sludge Treatment
CME 483	Industrial Wastewater Treatment	CME 484	Industrial Water Pollution & Control		



## BACHELOR OF SCIENCE IN **CHEMICAL ENGINEERING** WATER TECHNOLOGY CONCENTRATION



## Program Overview

B.Sc. in Chemical Engineering - Water Technology Concentration

Chemical engineering (ChE) is the branch of engineering that deals with the conversion of raw materials to useful products by applying the principles of science and engineering. It involves the design, operation, and maintenance of facilities ranging from refineries, petrochemical, pharmaceutical plants, and nuclear-waste processing plants, to food and materials processing facilities.

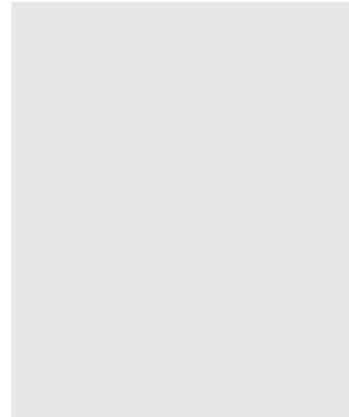


## Graduates of the program will be able to

- Design, analyze, and test wide-ranging solutions for state-of-the-art chemical engineering systems and processes
- Evaluate all aspects of modern chemical engineering systems
- Apply modern practical techniques to areas of chemical engineering technology
- Diagnose problems and develop a variety of solutions
- Apply hands-on experience and ideas in a variety of real-life situations
- Integrate professional responsibility and ethics in the workplace

According to Forbes, chemical engineering was the highest paying job in 2016. Graduate Chemical Engineers are in high demand throughout the world with roles including operation of plants, troubleshooting manufacturing processes, and research to develop new and improved manufacturing processes.

Our students have taken up internships in a wide range of companies including Altaweela Power and desalination complex, Corodex wastewater treatment and purification, Abu Dhabi Ports, ADCO, ADGAS, Al Masood Oil & Gas, Arab Geotech Laboratories, Bureau Veritas, Gulf Laboratory, Masder Institue, Schlumberger, Union Chemicals Factory, Worley Parsons and others.



## Student's Testimonial

# IT BECAME MY ULTIMATE DREAM

**Sana Mohammad Eid** - Alumna, BSc. in Chemical Engineering

I completed my B.Sc. in Chemical Engineering at ADU and graduated among its first batch, and I further completed my M.Sc. in Water Resources at UAEU. Currently, I am pursuing my Ph.D. in Chemical Engineering at Khalifa University while also working as a Graduate Teaching/Research Assistant. I owe a lot of my self-growth and success to my time at ADU under the supervision and support of an elite and dedicated faculty. To all the new students who want to pursue Chemical Engineering, there is no major I could recommend more! Just remember failures are part of the path. May it be a failed exam or a failed subject, this should not be a hindrance to your success. You can move past it through not only your analytical and logical skills but also through determination and passion. Just have the will and work harder. Good luck!



## Career Prospects

Graduates of the Chemical Engineering with Water Technology Concentration program can work in a variety of sectors including water desalination, wastewater treatment, food and drinking water industry, the oil and gas industry, petrochemicals, materials (aluminum, steel, plastics), electronics industry, pharmaceuticals, and the cosmetics industry. Chemical Engineers can work as Project Engineers, Design Engineers, Operations Engineers, Research and Development (R&D), Product Engineers, Quality Control Engineers, Sales and Marketing Engineers, and Health and Safety Engineers.



# Curriculum

COURSE CODE	COURSE TITLE	COURSE CODE	COURSE TITLE	COURSE CODE	COURSE TITLE
<b>General Education Requirements: 24 Credit Hours</b>					
ARL 101(A)	Communication Skills in Arabic I	ENG 200	English II	FWS 205	UAE and GCC Society
ISL 100	Islamic Culture	FWS 310	Fundamentals of Innovation and Entrepreneurship	FWS 305	Technical Communications for the work place
MTT 102	Calculus I	STT 100	General Statistics	USS 001	University Study Skills Seminar
<b>Degree Requirements: 39 Credit Hours</b>					
MTT 200	Calculus II	MTT 201	Calculus III	MTT 204	Introduction to Linear Algebra
MTT 205	Differential Equations	PHY 102	Physics and Engineering Applications I	PHY 102 L	Physics and Engineering Applications I Lab
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COE 202	Engineering Ethics, Law and Economy	COE 102	Introductory Big Data Analytics	COE 101	Introductory Artificial Intelligence
<b>Major Requirements: 58 Credit Hours</b>					
CHE 206	General Chemistry II	CHE 206L	General Chemistry II Lab	CHE 305	Organic Chemistry
CHE 330	Physical Chemistry	MEC 300	Materials Science	CME 210	Principles of Chemical Engineering
CME 220	Chemical Engineering Thermodynamics I	CME 300	Chemical Engineering Thermodynamics II	CME 301	Mass Transfer
CME 305	Modeling and Simulation in Chemical Engineering (With Embedded Lab)	CME 212	Fluid Mechanics for Chemical Engineers	CME 320	Chemical Engineering Laboratory I
CME 321	Process Dynamics and Control	CME 331	Chemical Reaction Engineering	CME 341	Heat Transfer
CME 400	Separation Processes	CME 430	Chemical Engineering Laboratory II	CME 450	Process Design
CME 398	Internship I	CME 399	Internship II	CME 455	Industrial Software for Chemical Engineers
CME 498	Capstone Design Project I	CME 499	Capstone Design Project II		
<b>Major and Open Electives: 15 Credit Hours</b>					
ME1	Major Elective I	ME2	Major Elective II	ME 3	Major Elective III
OE1	Open Elective I	OE 2	Open Elective II		
<b>Chemical Engineering Electives / Themes*</b>					
<small>*A student in BSc. in ChME program will satisfy the 15 cr. hrs of Electives in 2 ways: 3 courses (9 credit hours) from the Major Elective courses and 2 Open Elective courses (6 credit hours) OR 5 courses (15 credit hours) from the Major Elective courses.</small>					
<b>Gas Processing and Petrochemicals</b>					
CME 460	Natural Gas Processing	CME 461	Petroleum Refining Processes	CME 462	Chemical Process Industries
CME 463	Corrosion Engineering	CME 464	Chemical Process Safety	CME 465	Process Heat Transfer
<b>Polymer Materials</b>					
CME 470	Introduction to Polymer Science and Engineering	CME 472	Polymer Properties, Testing and Characterization	CME 471	Polymer Chemistry and Reaction Engineering
CME 473	Polymer Processing and Material Design				
<b>Water Treatment</b>					
CME 480	Physical and Chemical Processes for Water and Wastewater treatment	CME 481	Desalination Technologies	CME 482	Sludge Treatment
CME 483	Industrial Wastewater Treatment	CME 484	Industrial Water Pollution & Control		
<b>Biotechnology</b>					
CME 490	Chemical Engineering Biology	CME 491	Biochemical Engineering	CME 492	Biochemical Treatment
CME 493	Biofuels Technology				



## BACHELOR OF SCIENCE IN CHEMICAL ENGINEERING



## Program Overview

B.Sc in Chemical Engineering

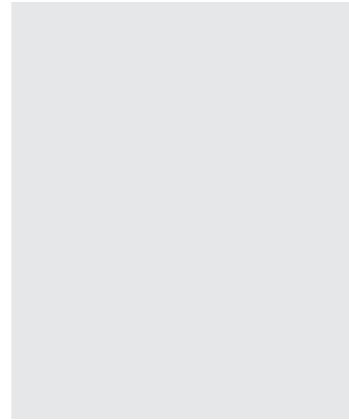
Chemical engineering (ChE) is the branch of engineering that deals with the conversion of raw materials to useful products by applying the principles of science and engineering. It involves the design, operation, and maintenance of facilities ranging from refineries, petrochemical, pharmaceutical plants, and nuclear-waste processing plants, to food and materials processing facilities.

## Graduates of the program will be able to

- Design, analyze, and test wide-ranging solutions for state-of-the-art chemical engineering systems and processes
- Evaluate all aspects of modern chemical engineering systems
- Apply modern practical techniques to areas of chemical engineering technology
- Diagnose problems and develop a variety of solutions
- Apply hands-on experience and ideas in a variety of real-life situations
- Integrate professional responsibility and ethics in the workplace

According to Forbes, chemical engineering was the highest paying job in 2016. Graduate Chemical Engineers are in high demand throughout the world with roles including operation of plants, troubleshooting manufacturing processes, and research to develop new and improved manufacturing processes.

Our students have taken up internships in a wide range of companies including Abu Dhabi Ports, ADCO, ADGAS, Al Masood Oil & Gas, Arab Geotech Laboratories, Bureau Veritas, Gulf Laboratory, Masdar Institute, Schlumberger, Union Chemicals Factory, Worley Parsons and others.



## Student's Testimonial

### MY DREAM BECAME A REALITY AT ADU

**Noora Al Mansoori** - Alumna, BSc. in Chemical Engineering

As a graduate from ADU, I was exposed to high-quality education and hands-on experience. The state-of-the-art Chemical Engineering laboratories include a plethora of cutting-edge technology and advanced equipment that simulate the real-industrial experience. As a result, the students gain not just theoretical knowledge, but also high-level practical skills that are essential for a Chemical Engineer. I owe my success to the esteemed Chemical Engineering faculty members who imparted their vast knowledge and wisdom through their exceptional teaching. In addition, they encourage the students to work on novel research and motivate us to dive deep into innovative ideas. Being a Chemical Engineer means that we have opportunities in various industries since it is a very broad major that incorporates numerous sectors. The knowledge and skills I have gained from my education at ADU has paved the way for my professional career. I work in academia as a Teaching Assistant in Chemical Engineering at ADU and I am currently pursuing my Master's degree in Chemical Engineering.

## Career Prospects

Graduates of the Chemical Engineering program can work in a variety of sectors including the oil and gas industry, petrochemicals, materials (aluminum, steel, plastics), water desalination, food and drinking water industry, electronics industry, pharmaceuticals, and the cosmetics industry. Chemical Engineers can work as Project Engineers, Design Engineers, Operations Engineers, Research and Development (R&D), Product Engineers, Quality Control Engineers, Sales and Marketing Engineers, and Health and Safety Engineers.



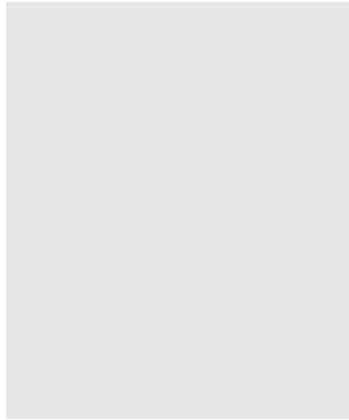
# Curriculum

COURSE CODE	COURSE TITLE	COURSE CODE	COURSE TITLE	COURSE CODE	COURSE TITLE
<b>General Education Requirements: 24 Credit Hours</b>					
ARL 100	Communication Skills in Arabic I	ENG 200	English II	FWS 305	Technical Communications for Workplace
ISL 100(A)	Islamic Culture	FWS 310	Fundamentals of Innovation and Entrepreneurship	MTT 102	Calculus 1
FWS 205	UAE and GCC Society	STT 100	General Statistics		
<b>Degree Requirements: 42 Credit Hours</b>					
MTT 200	Calculus 2	MTT 201	Calculus 3	MTT 204	Introduction to Linear Algebra
MTT 205	Differential Equations	PHY 102	Physics and Engineering Applications I	PHY 102L	Physics and Engineering Applications I Lab
PHY 201	Physics and Engineering Applications II	PHY 201L	Physics and Engineering Applications II Lab	CHE 205	Chemistry
CHE 201L	Chemistry Lab	GOL 205	Physical Geology	CSC201	Computer Programming I
COE 102	Introductory Big Data Analytics	COE 101	Introductory Artificial Intelligence	COE202	Engineering Ethics, Economy and law
COE 300	Numerical Methods				
<b>Major Requirements: 67 Credit Hours</b>					
CIV 102	Computer-Aided Drawing	CIV 104	Introduction to Civil Engineering	CIV 205	Introduction to Geomatics
CIV 201	Statics	CIV 242	Fluid Mechanics	CIV 242L	Fluid Mechanics Lab
CIV 206	Mechanics of Materials	CIV 314	Structural Analysis	CIV 313	Construction Materials
CIV 313L	Construction Materials Lab	CIV 343	Hydraulics	CIV 331	Highway Engineering
CIV 332	Fundamentals of Transportation Engineering	CIV 324	Geotechnical Engineering	CIV 324L	Geotechnical Engineering Lab
CIV 316	Structural Systems	CIV 352	Fundamentals of Environmental Engineering	CIV 362	Construction Management
CIV 413	Structural Steel Design	CIV 318	Reinforced Concrete Design I	CIV 421	Foundation Engineering
CIV 442	Hydrology and Urban Systems	CIV 399i	Internship in Civil Engineering	CIV 497	Capstone Design Project I
CIV 498	Capstone Design Project II				
<b>Major Electives: 6 Credit Hours</b>					
CIV 405	Sustainability in the Built Environment	CIV 403	Fundamentals of Geographic Information Systems	CIV 430	Traffic Engineering
CIV 416	Matrix Methods of Structural Analysis	CIV 490	Special Topics in Civil Engineering		
<b>Open Elective: 3 Credit Hours</b>					
OE	Open Elective <sup>2</sup>				

<sup>2</sup> Civil engineering students are required to take any three-credit hour course from a major other than civil engineering.



## BACHELOR OF SCIENCE IN CIVIL ENGINEERING



## Program Overview

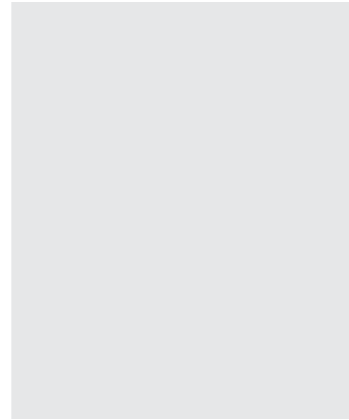
Civil engineering is about the planning, design, construction, and operation of facilities essential to modern life ranging from bridges to transit systems. Civil engineers are problem solvers, meeting the challenges of community planning, water supply, structures, traffic congestion, energy needs, pollution, and infrastructure improvements. Societal needs, protection, and restoration of the environment, as well as economic conditions and public safety, are paramount in work carried out by civil engineers. High-tech tools such as computer-aided design (CAD), geographical information systems (GIS), and 3-D computer modeling are a necessity in all areas of civil engineering.

Graduates of the civil engineering program are prepared to pursue postgraduate degrees in civil engineering as well as in other fields, such as business, management, and law.

The educational mission of the Bachelor of Science in Civil Engineering is to provide students with a multidisciplinary curriculum that is fundamental, yet broad and flexible. The program aims to produce graduates who are well-rounded in mathematical, scientific, and technical knowledge and who can analyze, evaluate, and design civil engineering systems. They will also have the ability to communicate effectively, have experienced meaningful opportunities for undergraduate research, and have acquired an understanding and appreciation for global and societal issues, preparing them for leadership positions in industry, government, and academia.

The Bachelor of Science in Civil Engineering is accredited by the Engineering Accreditation Commission of ABET, as well as the UAE Commission for Academic Accreditation.

Furthermore, our B.Sc. program in Civil Engineering offers you the opportunity to earn a master's degree from prestigious universities through our unique 3+2 program with the University of Illinois at Urbana-Champaign in the USA as well as our 4+1 pathway program with Trinity College Dublin in Ireland.



## Student's Testimonial

**I CAN SUCCEED AND MAKE  
A MEANINGFUL IMPACT ON  
THE PUBLIC**

**Nour Ghazal Aswad** - Alumna, Bachelor of Science in Civil Engineering

I am grateful for the amazing time and experience that I had in ADU. Four years in the civil engineering program were beneficial in shaping my professional life. ADU provided me with all the knowledge and skills to convert my aspirations into reality. I was surrounded by supportive faculty, staff, and colleagues who inspired me to achieve my goals.



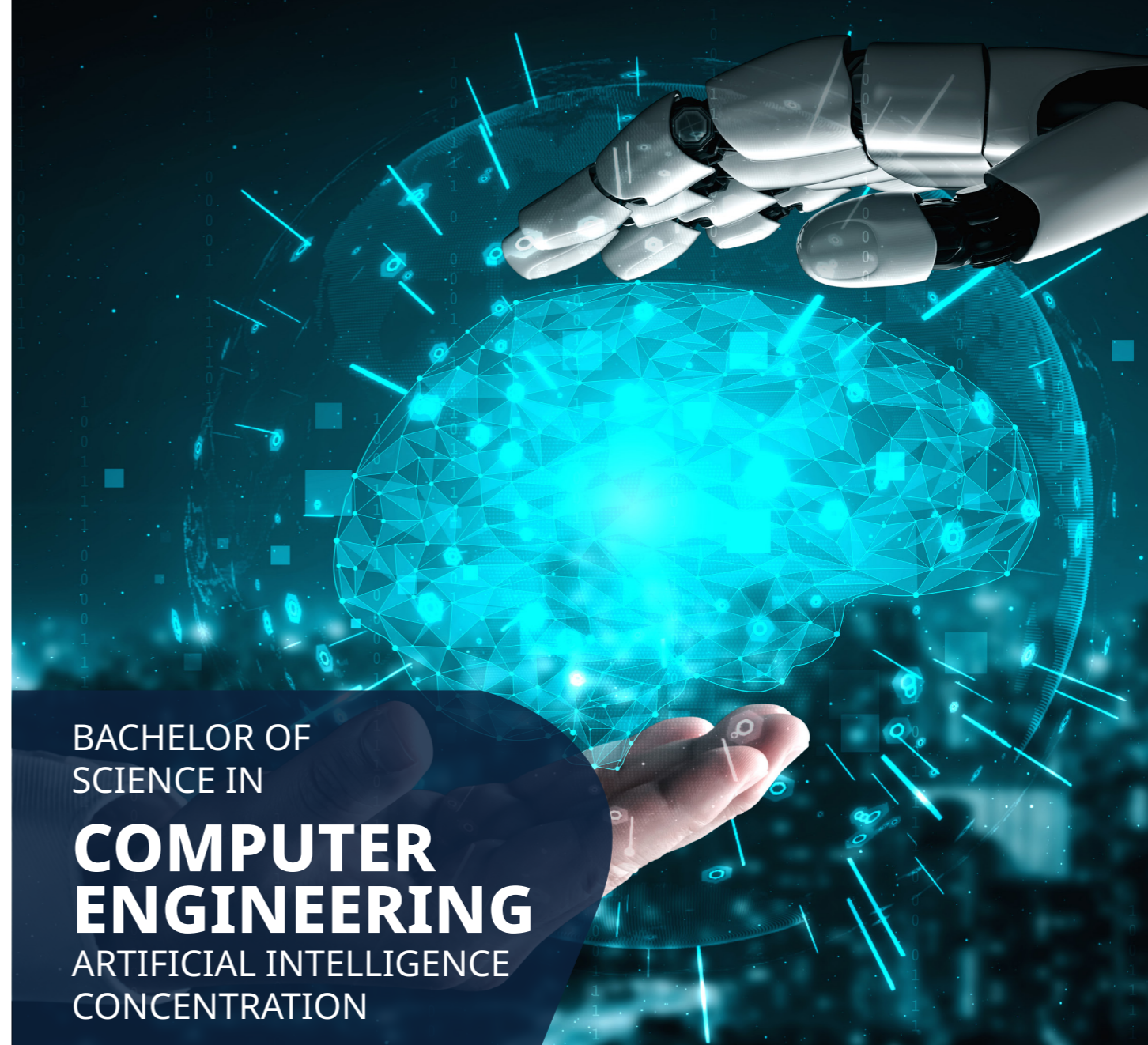
## Career Prospects

- Apply knowledge of mathematics, science, and engineering
- Design and conduct experiments, as well as analyze and interpret data
- Design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability
- Function in multidisciplinary teams
- Identify, formulate, and solve civil engineering problems
- Understand professional and ethical responsibilities
- Communicate effectively
- Obtain the broad education necessary to understand the impact of engineering solutions in global, economic, environmental, and societal contexts, especially under the current global climate change conditions



# Curriculum

COURSE CODE	COURSE TITLE	COURSE CODE	COURSE TITLE	COURSE CODE	COURSE TITLE
<b>General Education Requirements: 21 Credit Hours</b>					
ARL 101(A)	Communication Skills in Arabic I	ENG 200	English II	FWS 205	UAE and GCC Society
FWS 310	Fundamentals of Innovation & Entrepreneurship	ISL 100(A)	Islamic Culture	MTT 102	Calculus I
STT 100	General Statistics				
<b>Degree Requirements: 35 Credit Hours</b>					
ECS 200	Introduction to Engineering and Computing	MTT 200	Calculus II	MTT 202	Discrete Structures and Applications
MTT 204	Introduction to Linear Algebra	MTT 205	Differential Equations	PHY 102	Physics & Engineering Applications I
PHY 102L	Physics & Engineering Applications I Lab	PHY 201	Physics & Engineering Applications II	PHY 201L	Physics & Engineering Applications II Lab
CSC 201	Computer Programming I	GEN 300	Numerical Methods	COE101	Introductory Artificial Intelligence
COE202	Engineering Ethics, Economy, and Law				
<b>Major Requirements: 66 Credit Hours</b>					
CSC 303	Digital Logic Design	CSC 305	Data Communications and Networks	CSC 202	Computer Programming II
CSC 301	Data Structures and Algorithms	CEN 330	Probability and Stochastic Processes	CEN 201	Electric Circuits I
CEN 320	Signals and Systems	CEN 304	Electronic Devices and Circuits	CEN 333	Cross-platform Mobile Application Develop.
CEN 324	Digital and Analog Electronics	CEN 325	Internet of Things: Foundations and Design	CSC 308	Operating Systems
CEN 464	Digital Signal Processing	CSC 408	Distributed Information Systems	CEN 425	Internet of Things: Applications & Networking
EEN 365	Control Systems	CEN 466	Advanced Digital System Design	CEN 455	Fund. of Sec. for Computer & Embedded Systems
CEN 468	Computer Architecture and Organization	CEN 454	Computer Vision and Machine Learning	CEN399i	Internship in Computer Engineering I
CEN399ii	Internship in Computer Engineering II	CEN451	Computer Engineering Design Project I	CEN452	Computer Engineering Design Project II
<b>Concentration Core Courses: 9 Credit Hours</b>					
AIRE 305	Artificial Intelligence for Engineers	AIRE 310	Machine Learning and Pattern Recognition	AIRE 410	Deep Learning
<b>Concentration Elective Courses: 6 Credit Hours</b>					
AIRE 325	Ultra-low Power AI on Microcontrollers	AIRE 482	Natural Language Processing	AIRE 475	Self-Driving Cars



## BACHELOR OF SCIENCE IN **COMPUTER ENGINEERING** ARTIFICIAL INTELLIGENCE CONCENTRATION

# Program Overview

Computer Engineering involves the design and analysis of computer hardware, software, and networks. Thus, computer engineers work on the hardware, software, and networking aspects of systems design, development, and maintenance in all areas served by technology today including government, education, health, industry, commerce, tourism, and infrastructure. Some of these computerized systems are as small as the ones found in thermostats or mobile phones and others are as large as the ones found in industrial robots, cars, or data centers. As computer engineers' work emphasizes innovation and hands-on experience, they are also involved in building prototypes to solve problems wherever they arise in society.

Computer engineers support the information technology infrastructure of institutions and companies, which is a key resource for success today. Computer hardware engineers usually design, develop, test, and supervise the manufacturing of computer hardware such as chips or device controllers. Software engineers, on the other hand, can be involved in the design and development of software systems for control and automation of manufacturing, business, management processes, or mobile devices. They also analyze clients' needs and design or customize existing mobile, web, or standalone applications software to serve these needs. Computer network engineers design, implement, maintain, secure, and support wired and wireless digital communication for institutions and companies without which the core business is disrupted.

Abu Dhabi University is accredited by the Western Association of Schools and Colleges in the United States of America. Moreover, the Bachelor of Science in Computer Engineering program at Abu Dhabi University is accredited by the Engineering Accreditation Commission of ABET. It has been developed according to the standards of international professional bodies such as the Institute of Electrical and Electronic Engineering (IEEE), the Computer Society (IEEE-CS), and the Association for Information Technology Professionals (AITP). This ensures that the graduates of the program will be uniquely qualified to design, analyze, and test wide-ranging solutions using state-of-the-art technologies.

Computer Engineering students who pursue the Artificial Intelligence concentration will participate in engineering a future highly dependent on AI in all aspects of our daily lives including governance, health, education, industry, business, tourism, security, and military. They will enjoy increasing demand for their unique set of skills.

## Student's Testimonial

**Tasnim Basmaji - Alumna**

"Graduating from ADU helped me acquire the knowledge and skills in demand for a future powered by Artificial Intelligence. I was able to realize my dream of becoming an AI Engineer thanks to receiving a high-quality education in state-of-the-art facilities."

Tasnim Basmaji has graduated from Abu Dhabi University with a BSc in Computer Engineering in 2018.



## Career Prospects

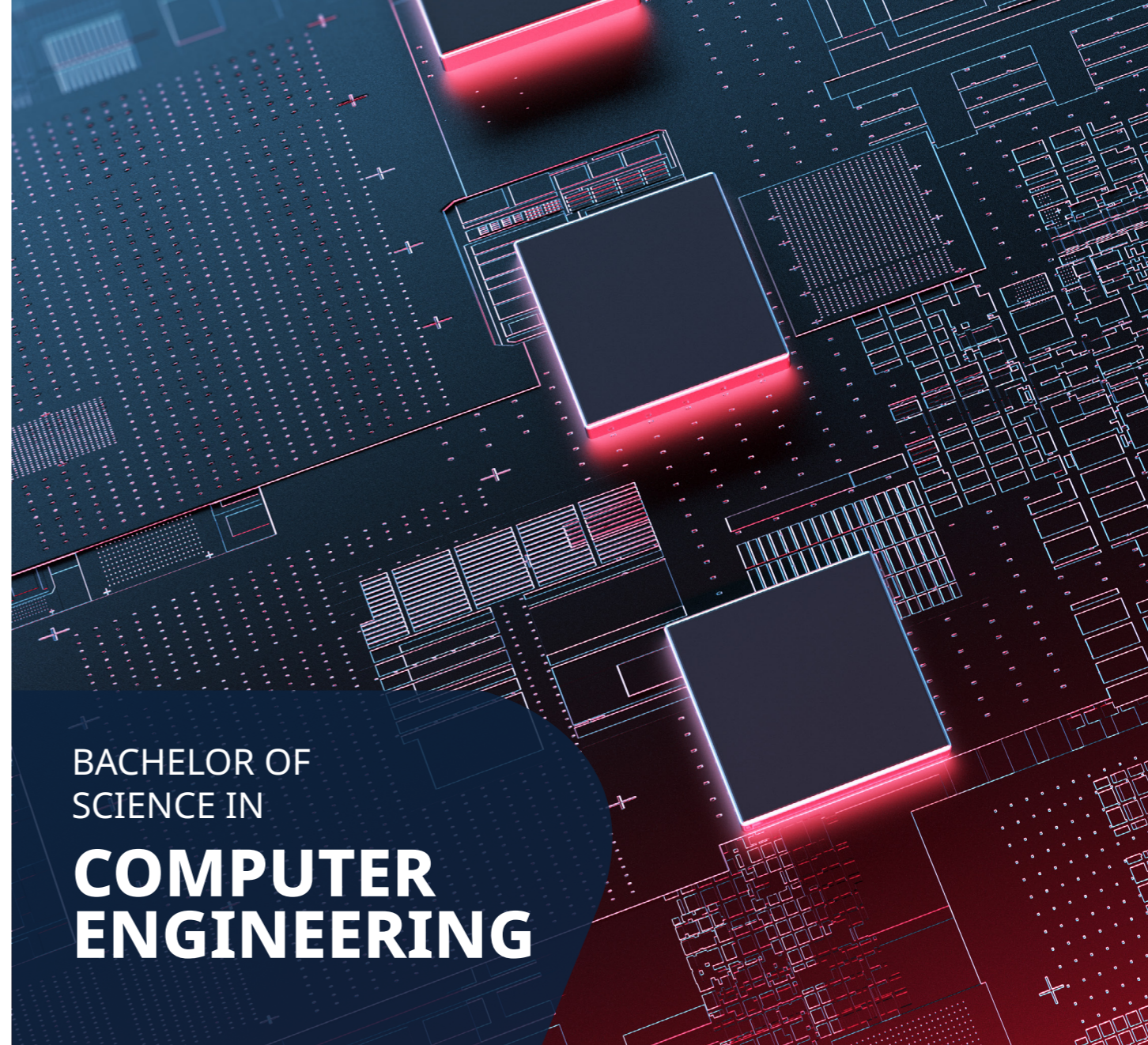
- Artificial Intelligence engineers work in the government, healthcare, education, industry, business, tourism, security, and military sectors.
- Computer Engineers in high-tech telecommunication, oil companies, or the government
- Applications designers and developers in a wide range of companies and government institutions
- Hardware and smart systems designers and developers in high-tech companies
- Network Engineers who develop and manage secure network systems for businesses and organizations
- System configuration/testing/maintenance engineers in multinational companies
- Researcher in laboratories to design, build and test various types of computer systems
- System engineer who design and manage complex engineering systems such as robotics machinery and computer chips
- Security Analysts who manage the security of the organization computer networks, database, and information systems
- Consultants who plan, coordinate, and recommend software and system choices to meet the organization's business requirements
- Technical solutions account managers for high-tech contractors such as Google, Microsoft, Oracle, and Cisco



# Curriculum

COURSE CODE	COURSE TITLE	COURSE CODE	COURSE TITLE	COURSE CODE	COURSE TITLE
<b>General Education Requirements: 21 Credit Hours</b>					
ARL 101(A)	Communication Skills in Arabic I	ENG 200	English II	FWS 205	UAE and GCC Society
FWS 310	Fundamentals of Innovation & Entrepreneurship	ISL 100(A)	Islamic Culture	MTT 102	Calculus I
STT 100	General Statistics				
<b>Degree Requirements: 35 Credit Hours</b>					
ECS 200	Introduction to Engineering and Computing	MTT 200	Calculus II	MTT 202	Discrete Structures and Applications
MTT 204	Introduction to Linear Algebra	MTT 205	Differential Equations	PHY 102	Physics & Engineering Applications I
PHY 102L	Physics & Engineering Applications I Lab	PHY 201	Physics & Engineering Applications II	PHY 201L	Physics & Engineering Applications II Lab
CSC 201	Computer Programming I	GEN 300	Numerical Methods	COE 101	Introduction to Artificial Intelligence
COE 202	Engineering Ethics, Economy, and Law				
<b>Major Requirements: 66 Credit Hours</b>					
CSC 303	Digital Logic Design	CSC 305	Data Communications and Networks	CSC 202	Computer Programming II
CSC 301	Data Structures and Algorithms	CEN 330	Probability and Stochastic Processes	CEN 201	Electric Circuits I
CEN 320	Signals and Systems	CEN 304	Electronic Devices and Circuits	CEN 333	Cross-platform Mobile Application Develop.
CEN 324	Digital and Analog Electronics	CEN 325	Internet of Things: Foundations and Design	CSC 308	Operating Systems
CEN 464	Digital Signal Processing	CSC 408	Distributed Information Systems	CEN 425	Internet of Things: Applications & Networking
EEN 365	Control Systems	CEN 466	Advanced Digital System Design	CEN 455	Fund. of Sec. for Computer & Embedded Systems
CEN 468	Computer Architecture and Organization	CEN 454	Computer Vision and Machine Learning	CEN 399i	Internship in Computer Engineering I
CEN 399ii	Internship in Computer Engineering II	CEN 451	Computer Engineering Design Project I	CEN 452	Computer Engineering Design Project II
<b>Electives: 15 Credit Hours</b>					
ME 1	Major Elective I	ME 2	Major Elective II	ME 3	Major Elective III
OE 1	Open Elective I	OE 2	Open Elective II		
<b>Major Electives: 9 Credit Hours</b>					
CSC 302	Database Management Systems	CSC 307	Web Design	CSC 401	Software Engineering
ITE 402	Computer Networks: Design & Implementation	ITE 408	Information Security	CEN 435	Low Power Operation of Embedded Systems
CEN 445	Securing the Internet of Things	EEN 220	Electric Circuits II	CEN 457	Data Science and Big Data Analytics
EEN 337	Analog and Digital Communication	CEN490	Special Topics in Computer Engineering		

\* To satisfy the major elective requirements, students need to take 3 courses from the basket of electives for a total of 9 credits. Students can also take CEN490 Special Topics in Computer Engineering, EEN490 Special Topics in Electrical Engineering, or ITE490 Special Topics in Information Technology upon the recommendation and approval of the department chair.



## BACHELOR OF SCIENCE IN COMPUTER ENGINEERING

## Program Overview

Computer Engineering involves the design and analysis of computer hardware, software, and networks. Thus, computer engineers work on the hardware, software, and networking aspects of systems design, development, and maintenance in all areas served by technology today including government, education, health, industry, commerce, tourism, and infrastructure. Some of these computerized systems are as small as the ones found in thermostats or mobile phones and others are as large as the ones found in industrial robots, cars, or data centers. As computer engineers' work emphasizes innovation and hands-on experience, they are also involved in building prototypes to solve problems wherever they arise in society.

Computer engineers support the information technology infrastructure of institutions and companies, which is a key resource for success today. Computer hardware engineers usually design, develop, test, and supervise the manufacturing of computer hardware such as chips or device controllers. Software engineers, on the other hand, can be involved in the design and development of software systems for control and automation of manufacturing, business, management processes, or mobile devices. They also analyze clients' needs and design or customize existing mobile, web, or standalone applications software to serve these needs. Computer network engineers design, implement, maintain, secure, and support wired and wireless digital communication for institutions and companies without which the core business is disrupted.

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## Student's Testimonial

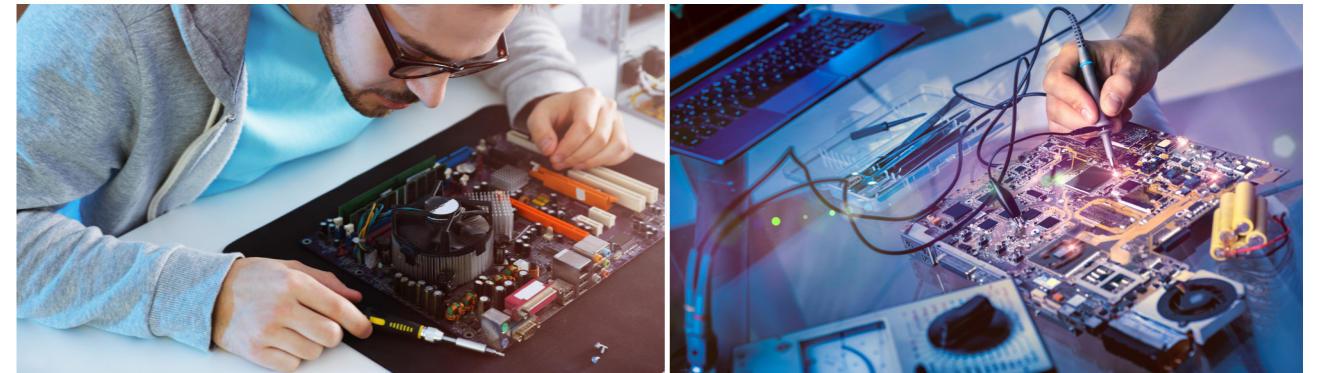
**Maha Yaghi** - graduated from Abu Dhabi University with a BSc in Computer Engineering in 2019

Being in Abu Dhabi University Computer Engineering program has been a great experience. It has offered challenging courses, opportunities to communicate with the faculty and staff within the program, and it has introduced me to new skills that I will use throughout my future career. I currently work as a teaching assistant in the department and I am pursuing my Masters of Science degree in Electrical and Computer Engineering



## Career Prospects

- Computer Engineers in high-tech telecommunication, oil companies, or the government
- Applications designers and developers in a wide range of companies and government institutions
- Hardware and smart systems designers and developers in high-tech companies
- Network Engineers who develop and manage secure network systems for businesses and organizations
- System configuration/testing/maintenance engineers in multinational companies
- Researcher in laboratories to design, build and test various types of computer systems
- System engineer who design and manage complex engineering systems such as robotics machinery and computer chips
- Security Analysts who manage the security of the organization computer networks, database, and information systems
- Consultants who plan, coordinate, and recommend software and system choices to meet the organization's business requirements
- Technical solutions account managers for high-tech contractors such as Google, Microsoft, Oracle, and Cisco



# Curriculum

COURSE CODE	COURSE TITLE	COURSE CODE	COURSE TITLE	COURSE CODE	COURSE TITLE
<b>General Education Requirements: 30 Credit Hours</b>					
ARL 100	Communication Skills in Arabic I	ENG 200	English II	FWS 305	Technical Communications for Work Place
ISL 100	Islamic Culture	MTT 102	Calulus I	FWS 211	Fundamentals of Emotional Intelligence
FWS 205	UAE and GCC Society	STT 100	General Statistics	FWS 100	Academic Skills for Success
FWS 310	Fundamentals of Innovation & Entrepreneurship				
<b>Degree Requirements: 57 Credit Hours</b>					
ECT 200	Intoduction to Computing	CSE 210	Introduciton to Cybersecurity Engineering	STT 201	Intermediate Statistics
MTT 200	Calculus II	MTT 202	Discrete Structures and applications	MTT 204	Introduction to Linear Algebra
PHY 102	Physics and Engineering Application I	PHY 102L	Physics and Engineering Application I Lab	PHY 201	Physics and Engineering Application II
PHY 201L	Physics and Engineering Application II Lab	CHE 205	General Chemistry I	CHE 201L	General Chemistry Lab
SWE 201	Structured Programming	CSC 202	Programming II	CSC 301	Data Structures and Algorithms
CSC 308	Operating systems	CSC 305	Data Communications and Networks	CSE 399	Internship/Project in Cybersecurity
ITE 421	Native Mobile Application Development	ITE 390	Computer Ethics	CSE 499A	Capstone Project in Cybersecurity Engineering-Part A
CSE 499B	Capstone Project in Cybersecurity Engineering-Part B				
<b>Major Requirements: 39 Credit Hours</b>					
CSC 307	Web Design	CSC 302	Database Management Systems	CSE 310	Introducion to Cryptography
ITE 408	Information Security	CSC 408	Distributed Information Systems	CSC 303	Digital Logic Design
CEN 325	Internet of Things: Foundation and Design	CEN 425	Internet of Things: Applications and Networking	CEN 445	Securing the Internet of Things
CSE 300	Introduction to Digital Forensics	CSE 400	Network Securiy and Forensics	CSE 410	Mobile Device Security
CSE 420	Ethical Hacking				
<b>Electives: 9 Credit Hours</b>					
ME 1	Major Elective I	ME 2	Major Elective II	OE 1	Open Elective I



## BACHELOR OF SCIENCE IN CYBERSECURITY ENGINEERING

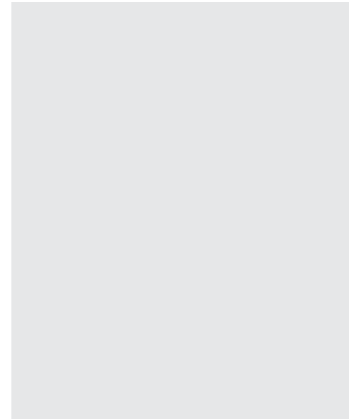


## Program Overview

Cybersecurity Engineering is an emerging field concerned primarily with the protection of computer systems from the theft of or damage to their hardware, software, or electronic data, as well as from the disruption or misdirection of the services they provide.

As a cybersecurity engineer, you will be able to contribute to the development of a cyber-smart nation with secure and resilient online communication as laid out by the National Electronic Security Authority (NESAs) and the Dubai Cybersecurity Strategy. Through this program, you will study courses on cryptography, network security, digital forensics, computer ethics, Internet of Things and mobile devices security, information security, and ethical hacking.

The program is the first undergraduate program in the region that is based on ABET engineering criteria and teaches cybersecurity within an engineering context.



## Student's Testimonial

**I feel that I have attained a solid understanding of the foundations of my major**

**Obada Mhd Haitham Salman** - Bachelor of Science in Cybersecurity Engineering Student

As a Cybersecurity student in ADU, I feel that I have attained a solid understanding of the foundations of my major, which prepares me well to cope with such a rapidly growing field. The instructors were generous with their time and made sure that each class was effective and delivered information in a concise understandable way. The plethora of certificates, accreditations, and competitions that the university provides and encourages us to do helps cement the theoretical information we gathered into a much more practical sense. This builds our cybersecurity skills and makes us much more desirable candidates for future jobs.



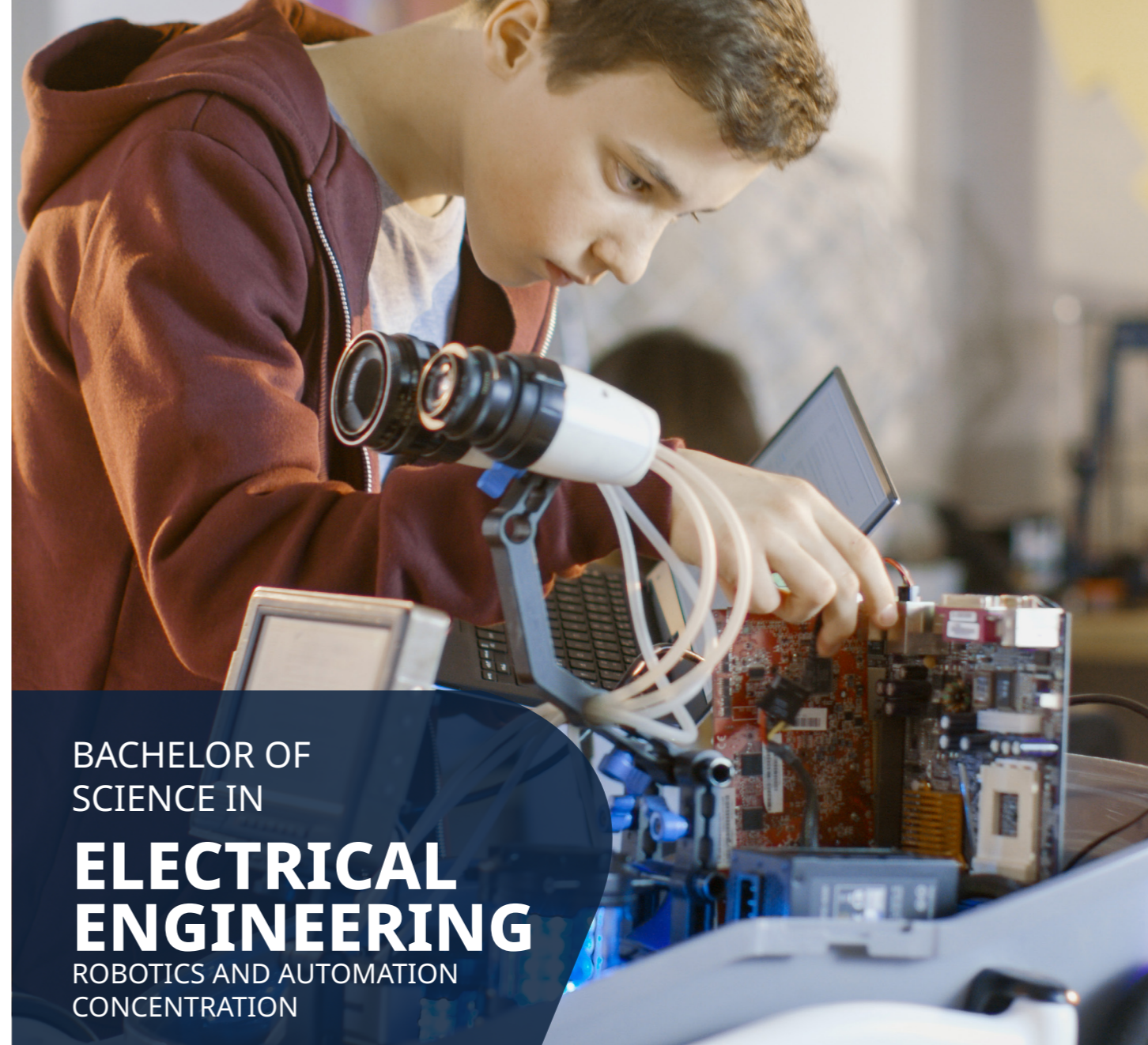
## Career Prospects

In the digital age, almost every industry requires Cybersecurity Engineers. Cybersecurity experts are in high demand in the MENA region to fulfill a variety of roles, including the following:

- Cybersecurity Engineer
- IT security Engineer
- Network Security Engineer
- Security Systems Administrator
- Cybersecurity Architect
- Computer Forensic Expert
- IT Security Consultant
- Penetration Tester

# Curriculum

COURSE CODE	COURSE TITLE	COURSE CODE	COURSE TITLE	COURSE CODE	COURSE TITLE
<b>General Education Requirements: 21 Credit Hours</b>					
ARL101(A)	Communication Skills in Arabic I	ENG 200	English II	FWS 205	UAE and GCC Society
FWS 310	Fundamentals of Innovation & Entrepreneurship	ISL100(A)	Islamic Culture	MTT 102	Calculus I
STT 100	General Statistics				
<b>Degree Requirements: 36 Credit Hours</b>					
ECS 200	Introduction to Engineering and Computing	MTT 200	Calculus II	MTT 201	Calculus III
MTT 204	Introduction to Linear Algebra	MTT 205	Differential Equations	PHY 102	Physics and Engineering Applications I
PHY 102L	Physics and Engineering Applications I Lab	PHY 201	Physics and Engineering Applications II	PHY 201L	Physics and Engineering Applications II Lab
CSC 201	Computer Programming I	CHE 205	General Chemistry I	CHE 201L	Chemistry lab
COE 101	Introductory Artificial Intelligence	COE 202	Engineering Ethics, Economy, and Law		
<b>Major Requirements: 66 Credit Hours</b>					
CEN 333	Cross-platform Mobile Application Development	EEN 210	Digital Circuits	CSC 305	Data Communications and Networks
EEN 330	Random Signals and Noise	CEN 201	Electric Circuits I	EEN 220	Electric Circuits II
CEN 304	Electronic Devices and Circuits	CEN 324	Digital and Analog Electronics	CEN 325	Internet of Things: Foundations and Design
CEN 425	Internet of Things: Application and Networking	EEN 337	Analog and Digital Communications	EEN 339	Communication Systems
EEN 399i	Internship in Electrical Engineering	EEN399ii	Internship in Electrical Engineering II	CEN320	Signals and Systems
CEN464	Digital Signal Processing	EEN338	Electromagnetic Fields and Waves	EEN466	FPGAs and Digital Design
EEN451	Electrical Engineering Design Project I	EEN452	Electrical Engineering Design Project II	EEN365	Control Systems
EEN340	Energy Conversion	EEN345	Power Systems	EEN449	Renewable Energy
<b>Concentration Core Courses: 15 Credit Hours</b>					
EEN 413	Sensors and Transducers	EEN 310	Instrumentation and Measurement	EEN 366	Introduction to Robotics
CEN 454	Computer Vision and Machine Learning	EEN 420	Digital Image Processing		



## BACHELOR OF SCIENCE IN ELECTRICAL ENGINEERING ROBOTICS AND AUTOMATION CONCENTRATION

## Program Overview

Electrical engineering is concerned with electrical and electronic devices and systems essential to contemporary life. It is a rapidly advancing field that has a significant impact on shaping modern societies. Electrical Engineering includes signal processing, control, electrical power and renewable energy, communications, and electronics. It is concerned with the way electrical energy is produced and used in homes, communities and the industry.

Electrical engineers design and build the systems and machines that generate, transmit, measure, control and use electrical energy. They work with various types of equipment ranging from heavy power generators to tiny computer chips, and their work contributes to almost every sector of the society. For example, they may work on the design of communication systems, the operation of electric power stations, the lighting and wiring of buildings, the design of household appliances or the electrical control of industrial machinery or in designing and fabricating integrated circuits.

Abu Dhabi University is accredited by the Western Association of Schools and Colleges (WASC) in the United States of America. Moreover, the Bachelor of Science in Electrical Engineering program at Abu Dhabi University is accredited by the Engineering Accreditation Commission of ABET. The Electrical Engineering program at Abu Dhabi University has been developed according to the standards of international professional bodies such as the Institute of Electrical and Electronic Engineering (IEEE). This ensures that graduates of the program will be uniquely qualified to design, analyze, and test wide-ranging solutions for state-of-the-art electrical and electronic systems.

Electrical Engineering students who pursue the Robotics and Automation concentration will participate in engineering a future highly dependent on robotics and automations in all aspects of our daily lives including governance, health, education, industry, business, tourism, security, and military. They will enjoy increasing demand for their unique set of skills.

## Student's Testimonial

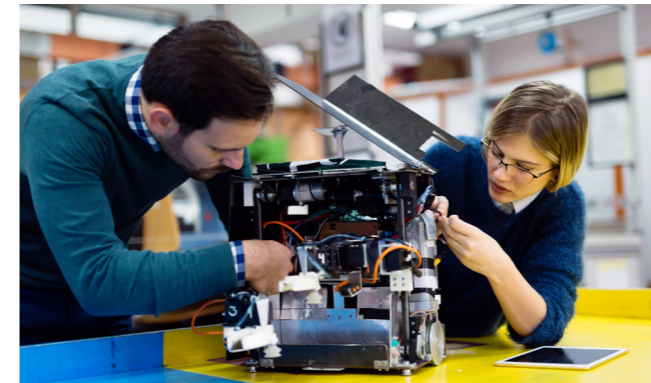
**Maha Yaghi - Alumna**

I am glad to have the opportunity to follow my passion and become a Robotics and Automation Engineer. It is hard to name a field that will not be transformed by automation, and I feel I have a strong advantage and ready to join the 4th Industrial Revolution. Studying at ADU has helped me tackle the future with confidence thanks to a cutting-edge curriculum, dedicated faculty, and excellent practical experiences.



## Career Prospects

- Robotics engineers work in the government, healthcare, education, industry, business, tourism, security, and military sectors.
- Automation engineers work in businesses such as consultancy offices, contractors, factories, manufacturers, and product design firms.
- Electrical Engineers working in the area of smart, sustainable, and renewable energy systems for the government or private sector
- Power Engineers working on the generation, transmission, and the distribution of electrical power for consultants, contractors, power plants, factories, airports, or the oil and gas industry
- Microelectronics Engineers who deal with design and micro-fabrication of tiny electronic circuit components
- Control Engineer working in the retail product manufacturing, biochemical engineering, and software development
- Communications Engineers for international communication companies such as Etisalat, DU, Atlas, etc
- Instrumentation Engineer who design measuring devices for pressure, flow and temperature can be employed by manufacturing firms, defense contractors, or biomedical companies
- Research and development engineers in laboratories to design, build and test various types of electrical systems

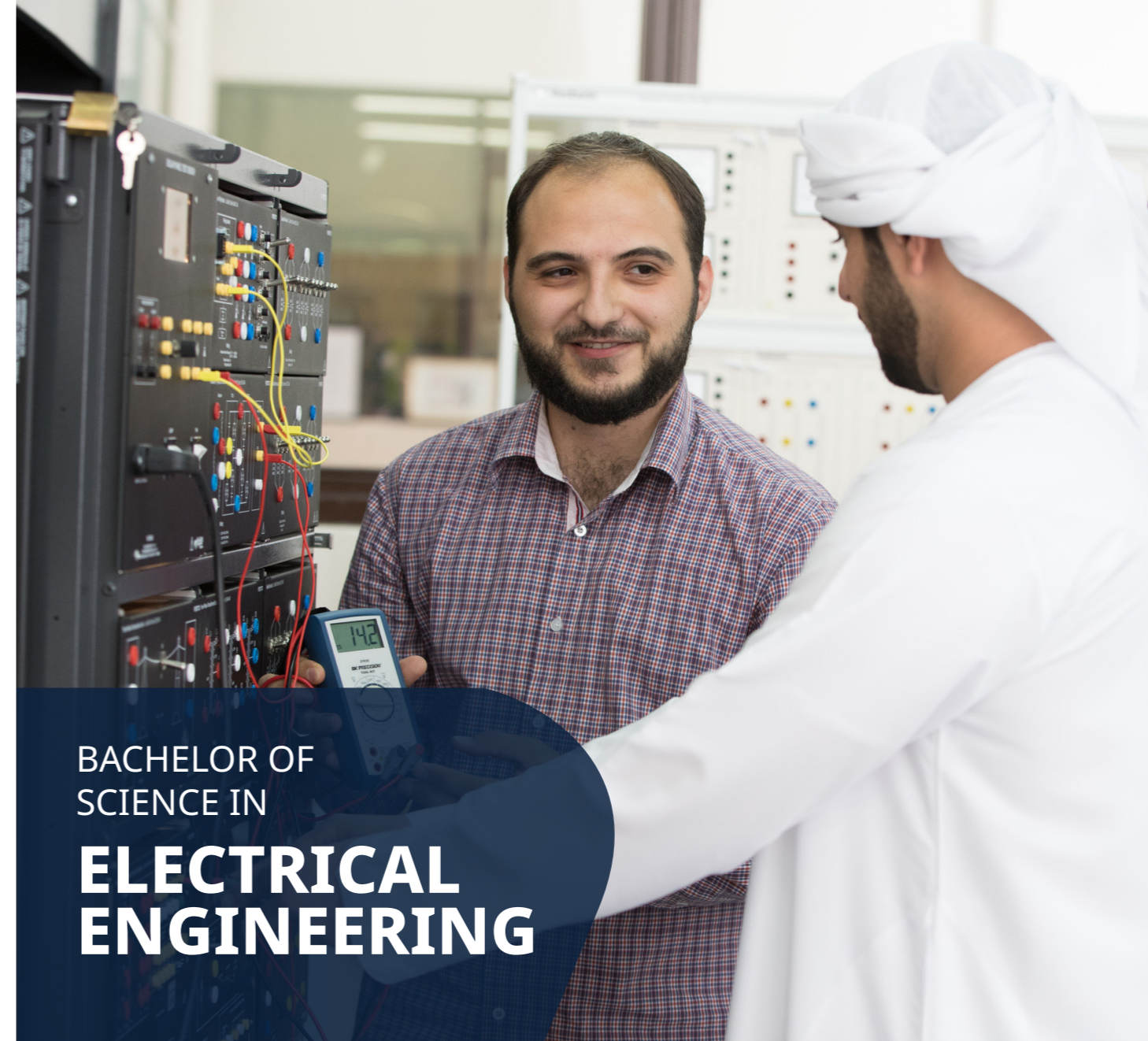




# Curriculum

COURSE CODE	COURSE TITLE	COURSE CODE	COURSE TITLE	COURSE CODE	COURSE TITLE
<b>General Education Requirements: 21 Credit Hours</b>					
ARL 100	Communication Skills in Arabic I	ENG 200	English II	FWS 205	UAE and GCC Society
FWS 305	Technical Communications for Work Place	FWS 310	Fundamentals of Innovation and Entrepreneurship	ISL 100	Islamic Culture
MTT 102	Calculus I	STT 100	General Statistics		
<b>Degree Requirements: 42 Credit Hours</b>					
ECS 200	Introduction to Engineering and Computing	MTT 200	Calculus II	MTT 201	Calculus III
MTT 204	Introduction to Linear Algebra	MTT 205	Differential Equations	PHY 102	Physics and Engineering Applications I
PHY 102L	Physics and Engineering Applications I Lab	PHY 201	Physics and Engineering Applications II	PHY 201L	Physics and Engineering Applications II Lab
CSC 201	Computer Programming I	CHE 205	General Chemistry I	CHE 201L	Chemistry lab
COE101	Introductory Artificial Intelligence	COE 202	Engineering Ethics, Economy, and Law		
<b>Major Requirements: 66 Credit Hours</b>					
CEN 333	Cross-platform Mobile Application Development	EEN210	Digital Circuits	CSC305	Data Communications and Networks
EEN330	Random Signals and Noise	CEN201	Electric Circuits I	EEN220	Electric Circuits II
CEN304	Electronic Devices and Circuits	CEN324	Digital and Analog Electronics	CEN325	Internet of Things: Foundations and Design
CEN425	Internet of Things: Application and Networking	EEN337	Analog and Digital Communications	EEN339	Communication Systems
EEN399i	Internship in Electrical Engineering I	EEN399ii	Internship in Electrical Engineering II	CEN320	Signals and Systems
CEN464	Digital Signal Processing	EEN338	Electromagnetic Fields and Waves	EEN466	FPGAs and Digital Design
EEN451	Electrical Engineering Design Project I	EEN452	Electrical Engineering Design Project II	EEN365	Control Systems
EEN340	Energy Conversion	EEN345	Power Systems	EEN449	Renewable Energy
<b>Major and Open Electives: 15 Credit Hours</b>					
ME1	Major Elective I	ME2	Major Elective II	ME3	Major Elective III
OE1	Open Elective I	OE2	Open Elective II		
<b>Major Electives: 9 Credit Hours</b>					
<b>Communications</b>					
EEN 430	Radiowave Propagation	EEN 444	Optical Communication and Laser Technologies	EEN 435	Wireless Communication
EEN 455	Satellite and Space Communication Systems				
<b>Power Systems and Renewable Energy</b>					
EEN 447	Batteries & Fuel Cells Fundamentals	EEN 441	Photovoltaics	EEN 443	Power Distribution
EEN 445	Power Systems Protection	CEN 435	Low Power Operation of Embedded Systems		
<b>Robotics and Instrumentation</b>					
EEN 310	Instrumentation and Measurement	EEN 413	Sensors and Transducers	EEN 420	Digital Image Processing
CEN 454	Computer Vision and Machine	EEN 366	Introduction to Robotics	EEN490	Special Topics in Electrical Engineering

- Students may also take EEN490 Special Topics in Electrical Engineering or CEN490 Special Topics in Computer Engineering based on the recommendation and approval of the program director.
- Students may take their major elective courses from one option or multiple options.



## BACHELOR OF SCIENCE IN ELECTRICAL ENGINEERING

## Program Overview

Electrical engineering is concerned with electrical and electronic devices and systems essential to contemporary life. It is a rapidly advancing field that has a significant impact on shaping modern societies. Electrical Engineering includes signal processing, control, electrical power and renewable energy, communications, and electronics. It is concerned with the way electrical energy is produced and used in homes, communities and the industry.

Electrical engineers design and build the systems and machines that generate, transmit, measure, control and use electrical energy. They work with various types of equipment ranging from heavy power generators to tiny computer chips, and their work contributes to almost every sector of the society. For example, they may work on the design of communication systems, the operation of electric power stations, the lighting and wiring of buildings, the design of household appliances or the electrical control of industrial machinery or in designing and fabricating integrated circuits.

Abu Dhabi University is accredited by the Western Association of Schools and Colleges (WASC) in the United States of America. Moreover, the Bachelor of Science in Electrical Engineering program at Abu Dhabi University is accredited by the Engineering Accreditation Commission of ABET. The Electrical Engineering program at Abu Dhabi University has been developed according to the standards of international professional bodies such as the Institute of Electrical and Electronic Engineering (IEEE). This ensures that graduates of the program will be uniquely qualified to design, analyze, and test wide-ranging solutions for state-of-the-art electrical and electronic systems.



## Student's Testimonial

**Marah Talal Alhalabi - BSc. in Electrical Engineering Alumni – 2017**

They take your passion and talent and push you even further.

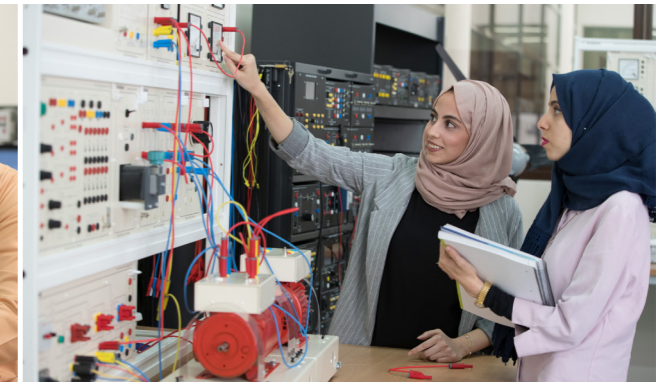
I applied to quite a few universities initially, but ADU gave me a full scholarship based on a score of 99% in my high school certificate. I'm happy that they saw my potential.

My experience in the Electrical & Computer Engineering department has been incredible. The professors' doors are always open, they make you love the courses they're teaching, and they are exceptionally supportive of working students. My professors still encourage me to compete in my field. If you're hard-working, they take your passion and talent and push you even further.



## Career Prospects

- Electrical Engineers working in the area of smart, sustainable, and renewable energy systems for the government or private sector
- Power Engineers working on the generation, transmission, and the distribution of electrical power for consultants, contractors, power plants, factories, airports, or the oil and gas industry
- Microelectronics Engineers who deal with design and micro-fabrication of tiny electronic circuit components
- Control Engineer working in the retail product manufacturing, biochemical engineering, and software development
- Communications Engineers for international communication companies such as Etisalat, DU, Atlas, etc
- Instrumentation Engineer who design measuring devices for pressure, flow and temperature can be employed by manufacturing firms, defense contractors, or biomedical companies
- Research and development engineers in laboratories to design, build and test various types of electrical systems



# Curriculum

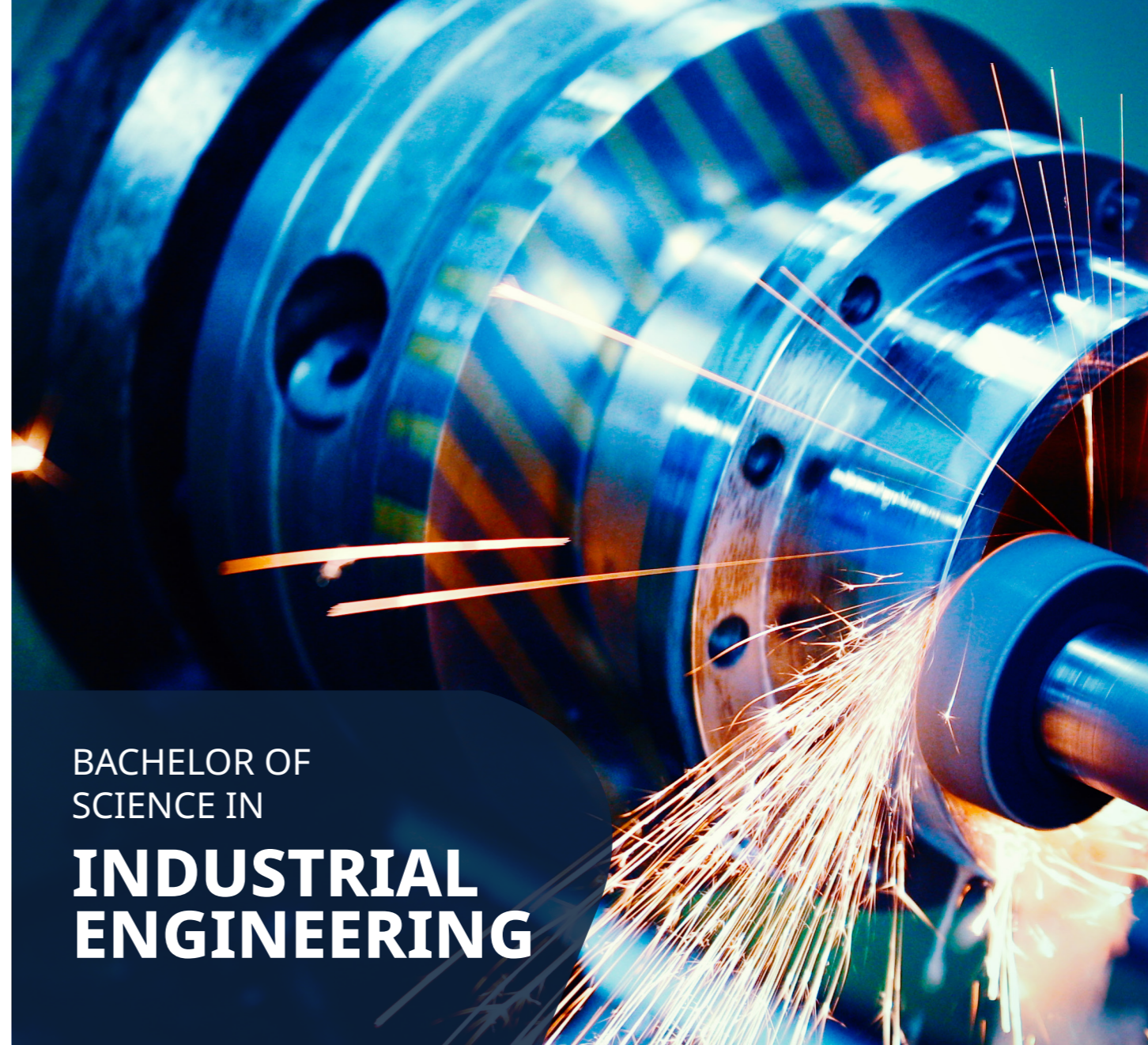
COURSE CODE	COURSE TITLE	COURSE CODE	COURSE TITLE	COURSE CODE	COURSE TITLE
<b>General Education Requirements: 27 Credit Hours</b>					
ARL 101(A)	Communication Skills in Arabic I	ENG 200	English II	FWS 305	Technical Communications for Workplace
FWS 310	Fundamentals of Innovations and Entrepreneurship	ISL 100(A)	Islamic Culture	MTT 102	Calculus 1
FWS 205	UAE and GCC Society	STT 100	General Statistics	FWS 100(E)	Academic Skills for Success
<b>Degree Requirements: 35 Credit Hours</b>					
MTT 200	Calculus II	MTT 201	Calculus III	MTT 204	Introduction to Linear Algebra
MTT 205	Differential Equations	PHY 102	Physics and Engineering Applications I	PHY 102 L	Physics and Engineering Applications I Lab
PHY 201	Physics and Engineering Applications II	PHY 201 L	Physics and Engineering Applications II Lab	CHE 205	General Chemistry I
CHE 201L	Chemistry Lab	MEC 130	Introduction to Mechanical & Industrial Engineering	CSC 201	Structured Programming
GEN 400	Engineering Ethics	GEN 201	Engineering Economy	GEN 101	Introductory Artificial Intelligence
<b>Major Requirements: 67 Credit Hours</b>					
CIV 201	Statics	MIS 200	Introduction to Management Information Systems	IEN 220	Probability and Statistics
MEC 300	Materials Science	MEC 301	Manufacturing Processes	IEN 310	Ergonomics & Work Measurement
MEC 310	Dynamics	IEN 311	Ergonomics & Work Measurement lab	IEN 320	Engineering Data Analysis
MEC 320	Thermodynamics I	IEN 330	Operations Research I	MEC 330	Computer Aided Drawing
IEN 340	Quality Engineering	MEC 340	Machine Design I	IEN 350	Facilities Planning and Asset Management
MEC 350	Fluid Mechanics	IEN 360	Production Planning & Inventory Control	IEN 400	Modeling & Simulation
IEN 401	Modeling & Simulation lab	IEN 402	3D Printing and Additive Manufacturing	IEN 420	Environmental & Safety Engineering
MEC 432	Design and manufacturing lab	IEN 440	Operations Research II	IEN 399i	Internship
IEN 498	Capstone Design Project I	IEN 499	Capstone Design Project II		
<b>Major and Open Electives: 9 Credit Hours</b>					
ME1	Major Elective I	BE1	Business Elective 1	BE2	Business Elective 2

COURSE CODE	COURSE TITLE	COURSE CODE	COURSE TITLE	COURSE CODE	COURSE TITLE
<b>Major Elective Basket*</b>					
IEN 450	Maintenance Management	MGT 411	Project Management	MEC 471	Introduction to Computer Aided Manufacturing
IEN 470	Supply Chain Management	IEN 480	Special Topic in Industrial Engineering		

\*Students need to choose one course from Major Electives.

COURSE CODE	COURSE TITLE	COURSE CODE	COURSE TITLE	COURSE CODE	COURSE TITLE
<b>Business Elective Basket*</b>					
ACC 200	Principles of Financial Accounting	MKT 200	Principles of Marketing	MIS 304	Business System Analysis and Design
MGT 255	Management and Organizational Behavior	MGT 314	Entrepreneurship Management	HRM 422	Management & Leadership Development

\*Students need to choose two courses from Business Electives.



## BACHELOR OF SCIENCE IN INDUSTRIAL ENGINEERING

## Program Overview

Industrial Engineering is concerned with the optimization of complex processes, systems, or organizations. This is done through the development, improvement and implementation of integrated systems of people, money, materials, equipment, and energy. It is an engineering approach to the detailed analysis of the use and cost of these resources. Industrial Engineers play a pivotal role in increasing productivity and profit, improving quality, and streamlining operations.

This program combines natural sciences, mathematics, computing, social sciences, and management with mechanical engineering and design. You will study courses in 3D Printing/Additive Manufacturing, Facilities Planning & Asset Management, Project & Supply Chain Management, Entrepreneurship, and Environmental & Safety Engineering in state-of-the-art industrial engineering laboratories and mechanical engineering facilities.

## Student's Testimonial

### Eng. Mohammed Alavi

Joining the Mechanical and Industrial Engineering department was always my dream due to my passion and interest in turbomachinery, automobiles, and mechatronics. I had accomplished my dream successfully when I graduated from Abu Dhabi University with Bachelor of Science in Mechanical Engineering. This great achievement wouldn't have been possible without the help of highly qualified faculty, their incredible teaching style, and support. The program at Abu Dhabi University with excellent quality of academic curriculum prepared me to excel my skills, knowledge, and developed me to work environment as well as to pursue higher studies. While studying at Abu Dhabi University, I also had the opportunity to participate on major research projects, and competitions held in the region. Moreover, I would like to highlight that the faculty members support, guide, and help in publishing the papers and project works in journals and conferences which I cannot see in other universities.



## Career Prospects

Industrial engineers will find employment in a variety of organizations in both the public and private sectors. They are in high demand due to the versatility of their skills and their technical and management capabilities. Industrial engineers can also work in the following areas:

- Operations Research
- Systems Engineering
- Manufacturing Engineering
- Production Engineering
- Management Engineering
- Financial Engineering
- Ergonomics/Human Factors Engineering
- Safety Engineering

## Graduates of the program will be able to:

- Develop methods to improve operations and control production costs, improve the quality of products and services, ensure worker health and safety, protect the environment, and comply with government regulations
- Design and conduct experiments, and analyze and interpret data
- Design sustainable systems, components, and processes to meet desired needs within constraints such as economic, environmental, social, political, ethical, health & safety, and manufacturability
- Identify, formulate, and solve industrial engineering problems
- Understand the impact of engineering solutions in a global and societal context
- Use techniques, skills, and modern engineering tools necessary for engineering practices

# Curriculum

COURSE CODE	COURSE TITLE	COURSE CODE	COURSE TITLE	COURSE CODE	COURSE TITLE
<b>General Education Requirements: 33 Credit Hours</b>					
ARL 100	Communication Skills in Arabic I	ENG 200	English II	FWS 305	Technical Communication for Work Place
FWS 310	Fundamentals of Innovation & Entrepreneurship	ISL100	Islamic Culture	STT 100	General Statistics
MTT 101	Pre-Calculus	GES 201	General Sciences	FWS 205	UAE and GCC Society
<b>Degree Requirements: 33 Credit Hours</b>					
GEN 101	Introductory Artificial Intelligence	GEN 102	Introduction to Big Data Analytics		
<b>Major Requirements: 93 Credit Hours</b>					
IND 100	Introduction to Interior Design	DES 100	Graphic Thinking and Freehand drawing	DES 110	Design Communication I
DES 120	Design Communication II	DES 130	Design Foundations	DES 210	Computer Aided Design
IND 215	Interior Design Studio I	DES 220	Architectural History I	IND 235	Building Technology I
IND 255	Building Technology II	IND 240	Color Theory in Design Applications	IND 280	History of Interior Design
IND 260	Interior Construction	IND 275	Interior Design Studio II	IND 290	Furniture Design
IND 315	Interior Design Studio III	ARC 320	Env. Design I: Lighting & Acoustics	IND 335	Textiles
IND 340	Interior Design Studio IV	IND 350	Materials and Specifications	ARC 420	Env. Design II: Energy and Systems
DES 410	Research Methods & Programming	IND 390	Professional Practice & Ethics	IND 399	Internship
IND 415	Interior Design Studio V	IND 430	Graduation Project I	IND 460	Working Drawings
IND 470	Graduation Project II	PRE 001	Professional Elective 1	PRE 002	Professional Elective 2
<b>Professional Electives: 21 Credit Hours</b>					
IND 581	Advanced Furniture Design and Detailing	IND 582	Islamic Interiors	DES 580	Architectural Photography
ARC 540	Sustainable Design	ARC 582	3D Modeling	ARC 583	Building Information Modeling
ARC 590	Building Economics				
<b>Open Electives: 6 Credit Hours</b>					
OPE 001	Open Elective I	OPE 002	Open Elective II		

Students choose PRE 001 and PRE 002 from the above list of proposed professional electives



## BACHELOR OF SCIENCE IN INTERIOR DESIGN

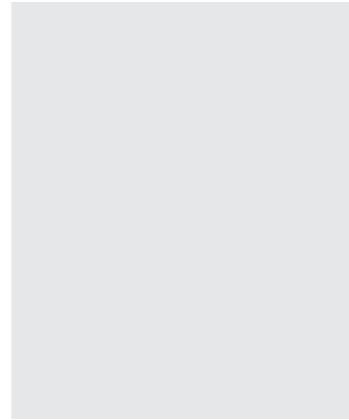


## Program Overview

The Interior Design Program prepares students to design interior spaces, both residential and commercial. Students learn about spatial configurations and how social, emotional, and physical considerations affect the design. They analyze lighting, sound, furniture design, fixtures, surface treatments, textiles and materials. Building codes and ethics of interior design, internships and design projects are an integral part of the curriculum. Upon graduation, students have compiled an elaborate portfolio that they can use to seek employment in the interior design field.

### Graduates of the program will be able to

- Prepare a comprehensive program for an interior design project, including assessment of client and user needs, critical review of appropriate precedents, an inventory of space requirements, an analysis of site conditions, a review of relevant codes, laws and standards, and a definition of design assessment criteria
- Produce a comprehensive interior design project solution that includes the development of programmed spacing while integrating lighting, color schemes, furniture, life-safety provisions and the principles of sustainability
- Select and apply construction materials, products, components, furniture and building assemblies to prepare technically precise drawings, outline specifications and estimates of construction costs and life-cycle cost for a proposed design



## Student's Testimonial

**I HAVE BECOME MORE CONFIDENT AND INVOLVED IN MANY ACTIVITIES**

Hiba Al Kilani - Interior Design Student

Being a part of the interior design program has helped me discover my capabilities in art and design. Studying interior design has enabled me to think outside the box and motivated me to work harder in order to strive to reach a goal and become a strong designer. The Interior design program in Abu Dhabi University is not only about lecturing and studying, it is about exploring new ideas, concepts, and approaches. Visiting the latest galleries, meeting designers, and participating in workshops all have eased and opened my eyes to see things differently and think creatively.



## Career Prospects

- Commercial & Industrial Designers
- Office Designers
- Lighting Consultants
- Furniture Designers
- Commercial & Industrial Designers
- Architectural & Design Renderers
- Visual Merchandising Specialists
- Set and Exhibit Designers
- Model Makers
- Teaching

# Curriculum

COURSE CODE	COURSE TITLE	COURSE CODE	COURSE TITLE	COURSE CODE	COURSE TITLE
<b>General Education Requirements: 33 Credit Hours</b>					
ARL 100	Communication Skills in Arabic I	ENG 200	English II	ENG 305	Technical Communications for Eng. & Science
FWS 100	Academic Skills for Success	FWS 205	UAE and GCC Society	FWS 211	Fundamentals of Emotional Intelligence
FWS 310	Fundamentals of Innovation and Entrepreneurship	ISL 100	Islamic Culture	MTT 101	Mathematics for Science and Technology
GES 201	General Science	STT 100	General Statistics		
<b>Degree Requirements: 36 Credit Hours</b>					
SWE 201	Structured Programming	CSC 202	Programming II	CSC 301	Data Structures and Algorithms
CSC 302	Database Management Systems	CSC 305	Data Communications and Networks	CSE 210	Introduction to Cybersecurity Engineering
ECT 200	Introduction to Computing	ITE 390	Computer Ethics	ITE 399	Internship/Project in IT
ITE 499A	Capstone Design Project I	ITE 499B	Capstone Design Project II	MTT 202	Discrete Structures and Applications
STT 201	Intermediate Statistics and Research Methods				
<b>Major Requirements: 42 Credit Hours</b>					
CSE 420	Ethical Hacking	CIS 404	Data Warehousing and Data Mining	CSC 307	Web Design
CSC 308	Operating systems	CSC 401	Software Engineering	CSC 408	Distributed Information Systems
ITE 401	IT Project Management	ITE 402	Computer Networks Design and Implementation	ITE 408	Information Security
ITE 409	Human Computer Interactions	ITE 414	Introduction to E-commerce	ITE 421	Native Mobile Application Development
ITE 422	System and Network Administration	ITE 442	Data Science and Big Data Analytics		
<b>Electives: 15 Credit Hours</b>					
ME 1	Major Elective I	ME 2	Major Elective II	ME 3	Major Elective III
OE 1	Open Elective I	OE 2	Open Elective II		
<b>Concentrations</b>					
<b>C1: Web Technologies and Applications</b>					
CSC 404	Computer Graphics and Animation	ITE 415	Advanced E-commerce Applications Design	ITE 410	Web programming
ITE 490	Selected Topics in IT				
<b>C2: Networking, Mobile and Security</b>					
CSE 400	Network Security and Forensics	CSE 410	Mobile Device Security	ITE 423	Advanced Mobile Application Development
ITE 490	Selected Topics in IT				
<b>C3: Interactive Media, Game Programming and Simulation</b>					
CSC 406	Artificial Intelligence	ITE 430	Mobile Game Development	ITE 432	Collaborative Game Design
ITE 490	Selected Topics in IT				

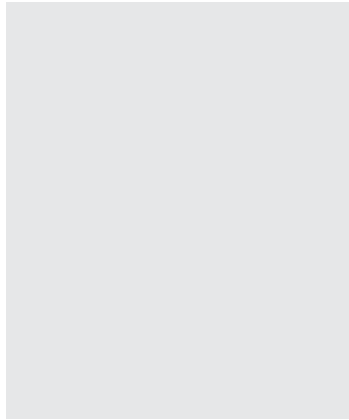


## BACHELOR OF SCIENCE IN INFORMATION TECHNOLOGY

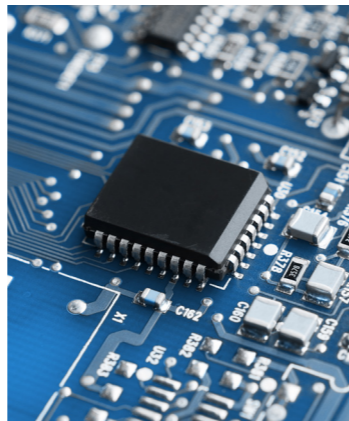
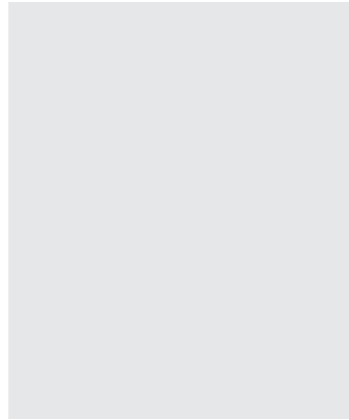


## Program Overview

Information Technology (IT) is concerned with studying various areas that are related to meeting user's needs in various activities of computing technology. The Information Technology (IT) program is designed to educate students about the current trends of IT that offer better potential for employability. Students will acquire the core knowledge needed for IT professionals and, at the same time, have specific knowledge in specialized areas. The program is structured as a set of core courses and three concentrations. Through these concentrations, students will learn up-to-date knowledge in this fast-growing field and increase their chances to find jobs. These concentrations will focus on web technology and internet applications, networking, mobile applications and security, and interactive media, game programming and simulation. Moreover, students will be offered the opportunity to do a practical project. This project-oriented approach will improve their learning curve and help them have a hands-on experience. Moreover, the IT program at Abu Dhabi University is designed in conformance to international standards and guidelines. This ensures that graduates of the program will be uniquely qualified to design, analyze, integrate, and administer computing technologies.



The educational mission of the Information Technology undergraduate program is to provide students with a multidisciplinary curriculum that is fundamental, yet broad and flexible. The program seeks to produce graduates who are well-rounded in knowledge and practices of Information Technology; who have the ability to analyze, evaluate, and design Information Technology systems; who have the ability to communicate effectively; who have had meaningful opportunities for undergraduate research; and who have acquired an understanding and appreciation for global and societal issues and are thus prepared for a career path toward leadership in industry, government, and academia.

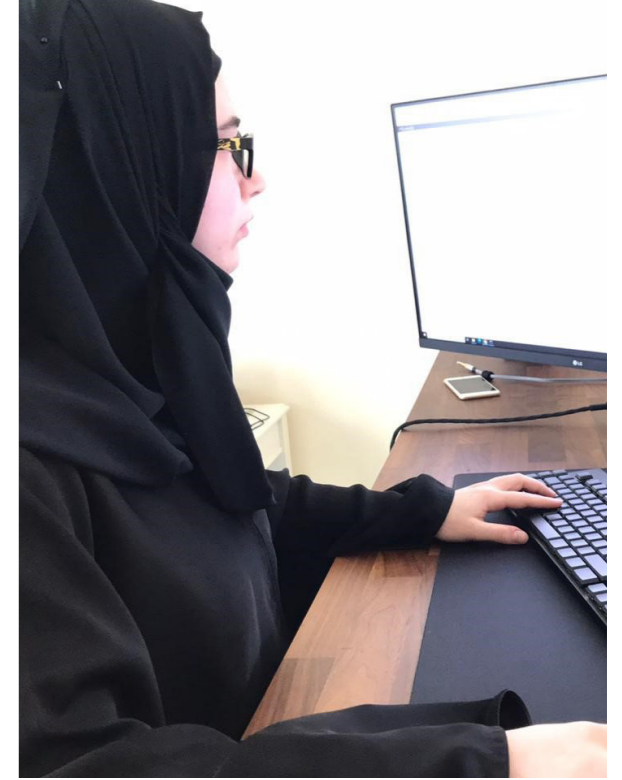


## Student's Testimonial

**I will forever be thankful to all of ADU Community**

**Huda Mahmoud Khafaji** - Information Technology student

If I had to describe how I felt the first time I entered ADU as a freshman, I would choose the word "terrified". Looking back at that day now, however, I can see how quickly, and without me even realizing, the ADU family has managed to replace that feeling with confidence. As I near graduation, I can easily reflect on my time at ADU's Computer Science department and notice how much that scared freshman has grown. In the span of 4 years, ADU has nurtured me enough that mine and my teammates graduation project was featured in a newspaper. I have both had the chance to grow personally as an active leader in the student body, and academically with 2 research papers to be published in accredited journals soon, and a third to be in progress. As an undergraduate, these achievements are something that I completely owe the ADU faculty for extending the opportunity for. My professors have taught me so much about the power and responsibility that comes with IT. I have always wanted my education to enable me to "help people", and Freshman-me could have never imagined that I would have the capabilities to do that now. I am excited to graduate soon, but I am also quite sad to say goodbye to my days as an IT student at ADU. I will forever be thankful to my colleagues, instructors, professors, and all of ADU's staff.



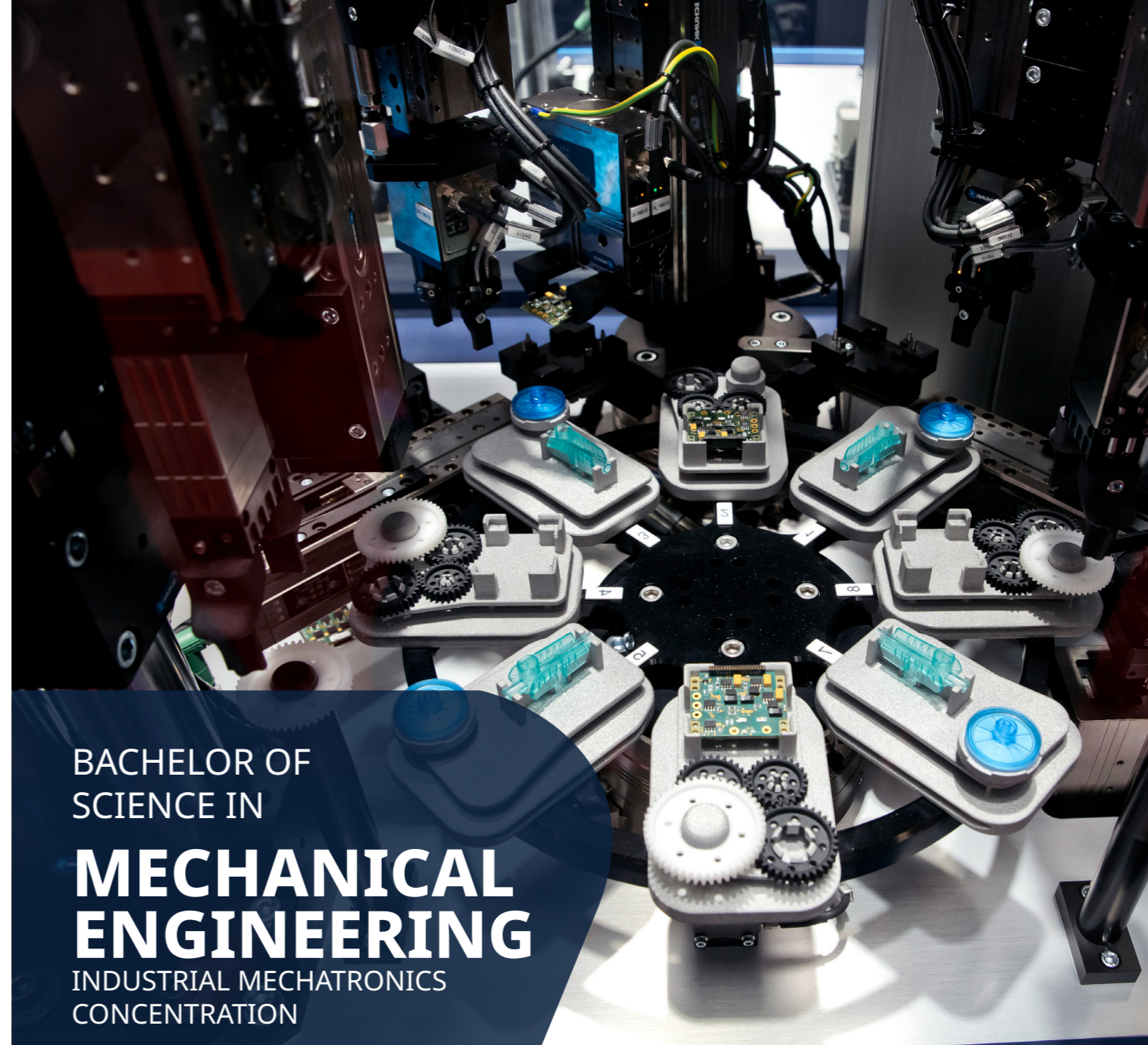
## Career Prospects

- System analysts and system support/configuration staff in high-tech telecommunication companies.
- Software/hardware developers/designers in multinational software/hardware development companies such as Microsoft, Sun Microsystems and Apple.
- System analysts and system configuration/testing staff in multinational mobile communication companies such as Nokia and Sony Ericsson.
- E-business solution developers/designers at Internet companies.
- Software/hardware designers for financial institutions.



# Curriculum

COURSE CODE	COURSE TITLE	COURSE CODE	COURSE TITLE	COURSE CODE	COURSE TITLE
<b>General Education Requirements: 21 Credit Hours</b>					
ARL 101(A)	Communication Skills in Arabic I	ENG 200	English II	FWS 310	Fundamentals of Innovation & Entrepreneurship
ISL 100	Islamic Culture	MTT 102	Calculus 1	FWS 205	UAE and GCC Society
STT 100	General Statistics				
<b>Degree Requirements: 35 Credit Hours</b>					
MTT 200	Calculus II	MTT 201	Calculus III	MTT 204	Introduction to Linear Algebra
MTT 205	Differential Equations	PHY 102	Physics and Engineering Applications I	PHY 102 L	Physics and Engineering Applications I Lab
PHY 201	Physics and Engineering Applications II	PHY 201 L	Physics and Engineering Applications II Lab	CHE 205	General Chemistry I
CHE 201L	Chemistry Lab	MEC 130	Introduction to Mechanical & Industrial Engineering	CSC 201	Structured Programming
GEN 101	Introductory Artificial Intelligence	GEN 201	Engineering Economy	GEN 400	Engineering Ethics
<b>Major Requirements: 67 Credit Hours</b>					
CIV 201	Statics	MEC 300	Materials Science	MEC 301	Manufacturing Processes
MEC 302	Mechanics of Materials	MEC 310	Dynamics	MEC 320	Thermodynamics I
MEC 321	Thermodynamics II	MEC 330	Computer Aided Drawing	MEC 350	Fluid Mechanics
MEC 351	Fluid Mechanics Lab	MEC 390	Electromechanical Devices	MEC 410	Control Systems
MEC 411	Kinematics and Dynamics of Machinery	MEC 412	Dynamic and Control Systems lab	MEC 420	Heat Transfer
MEC 421	Thermal Engineering Lab	MEC 430	Machine Design II	MEC 432	Design and manufacturing lab
MEC 399i	Internship	MEC 463	Turbomachinery	MEC 465	Numerical & Finite Element Simulation of Eng. Problems
MEC 480	Mechanical Vibration	MEC 482	Introduction to Mechatronics	MEC 498	Capstone I
MEC 499	Capstone II	MEC 340	Machine Design 1		
<b>Concentration Requirements: 15 Credit Hours</b>					
MEC 450	Hydraulic & Pneumatic systems	MEC 451	PLC and Industrial Automation	MEC 483	Mechatronics System Design
MEC 484	Artificial Intelligence in Mechatronics	MEC 485	DCS and SCADA		



## BACHELOR OF SCIENCE IN **MECHANICAL ENGINEERING** INDUSTRIAL MECHATRONICS CONCENTRATION

# Program Overview

The Bachelor of Science in Mechanical Engineering program is accredited by the Engineering Accreditation Commission of ABET, as well as the UAE Commission for Academic Accreditation. Mechanical Engineering is a diverse field of engineering, in fact, it is the broadest of all engineering disciplines. Mechanical engineering is the branch of engineering that deals with the design, construction and operation of machinery and systems. It is an exciting field that encompasses all engineering aspects of almost everything that moves in the universe. Mechanical engineers are trained to help address and solve some of the world's most pressing issues and problems such as energy, environment, robotics and advanced manufacturing, biomechanics, transportation on the ground, in the air, in and under water and in outer space – just to name a few from a long list of challenges facing our society. Cars and vehicles that we drive or ride on, airplanes that we fly in, ships, hovercrafts and submarines that we travel in and spaceships that take us to outer space and other planets are all mostly designed by Mechanical Engineers. However, that is just a subset of everything that Mechanical Engineers create. The Mechanical Engineering program at ADU has been developed according to the international standards. This ensures that graduates of the program will be uniquely qualified to design, analyze, and test wide-ranging solutions for state-of-the-art mechanical systems.

The program provides Mechanical Engineering students with the opportunity to learn through a combination of theory and lab work. This mix of theory and practical application allows students to think through and apply their ideas in a variety of real-life situations. Students also learn to diagnose problems and develop a variety of solutions. The program curriculum has been designed to provide a balanced education in the design, analysis and hands-on experience. It is a challenging four-year curriculum that integrates courses in mathematics, physics and mechanical engineering to produce a professional engineer capable of designing and analyzing all aspects of modern mechanical systems. The program emphasizes a number of areas of technology including aerospace, thermal power, materials and manufacturing and mechatronics.

Mechanical Engineering graduates with Industrial Mechatronics concentration will be equipped with knowledge and skills in industries application of Mechatronics systems as DCS, SCADA, Industrial robotics, PLC and industrial automation. We prepare our graduates to meet the industry expectation directly related to the fast expansion and growth in industrial automation and smart manufacturing systems. The Industrial Mechatronics concentration provides Mechanical Engineers with future needs of Industrial sectors to meet the requirements of Abu Dhabi Economic Vision 2030.



## Student's Testimonial

### Eng. Mohammed Alavi

Joining the Mechanical and Industrial Engineering department was always my dream due to my passion and interest in turbomachinery, automobiles, and mechatronics. I had accomplished my dream successfully when I graduated from Abu Dhabi University with Bachelor of Science in Mechanical Engineering. This great achievement wouldn't have been possible without the help of highly qualified faculty, their incredible teaching style, and support. The program at Abu Dhabi University with excellent quality of academic curriculum prepared me to excel my skills, knowledge, and developed me to work environment as well as to pursue higher studies. While studying at Abu Dhabi University, I also had the opportunity to participate on major research projects, and competitions held in the region. Moreover, I would like to highlight that the faculty members support, guide, and help in publishing the papers and project works in journals and conferences which I cannot see in other universities.



## Career Prospects

Graduates of the Mechanical Engineering program have great job opportunities in the following places:

- Oil and gas industries
- Power generation and distribution industries
- Control, simulation and robotics industries
- Automotive industries
- Aerospace industries
- Manufacturing industries



# Curriculum

COURSE CODE	COURSE TITLE	COURSE CODE	COURSE TITLE	COURSE CODE	COURSE TITLE
<b>General Education Requirements: 21 Credit Hours</b>					
ARL 101(A)	Communication Skills in Arabic I	ENG 200	English II	FWS 310	Fundamentals of Innovation & Entrepreneurship
ISL 100	Islamic Culture	MTT 102	Calculus 1	FWS 205	UAE and GCC Society
STT 100	General Statistics				
<b>College Requirements: 35 Credit Hours</b>					
MTT 200	Calculus II	MTT 201	Calculus III	MTT 204	Introduction to Linear Algebra
MTT 205	Differential Equations	PHY 102	Physics and Engineering Applications I	PHY 102 L	Physics and Engineering Applications I Lab
PHY 201	Physics and Engineering Applications II	PHY 201 L	Physics and Engineering Applications II Lab	CHE 205	General Chemistry I
CHE 201L	Chemistry Lab	MEC 130	Introduction to Mechanical & Industrial Engineering	CSC 201	Structured Programming
GEN 101	Introductory Artificial Intelligence	GEN 201	Engineering Economy	GEN 400	Engineering Ethics
<b>Major Requirements: 67 Credit Hours</b>					
CIV 201	Statics	MEC 300	Materials Science	MEC 301	Manufacturing Processes
MEC 302	Mechanics of Materials	MEC 310	Dynamics	MEC 320	Thermodynamics I
MEC 321	Thermodynamics II	MEC 330	Computer Aided Drawing	MEC 350	Fluid Mechanics
MEC 351	Fluid Mechanics Lab	MEC 390	Electromechanical Devices	MEC 410	Control Systems
MEC 411	Kinematics and Dynamics of Machinery	MEC 412	Dynamic and Control Systems lab	MEC 420	Heat Transfer
MEC 421	Thermal Engineering Lab	MEC 430	Machine Design II	MEC 432	Design and manufacturing lab
MEC 399i	Internship	MEC 463	Turbomachinery	MEC 465	Numerical & Finite Element Simulation of Eng. Problems
MEC 480	Mechanical Vibration	MEC 482	Introduction to Mechatronics	MEC 498	Capstone I
MEC 499	Capstone II	MEC 340	Machine Design 1		
<b>Metallurgy concentration courses: 15 Credit Hours</b>					
MEC 475	Microstructure Engineering	MEC 477	Corrosion & Degradation of Metals	MEC 474	Fracture and Fatigue Control in Design
MEC 476	Heat Treatment & Surface Hardening	MEC 478	Phase Transformation		



## BACHELOR OF SCIENCE IN **MECHANICAL ENGINEERING** METALLURGY CONCENTRATION

## Program Overview

The Bachelor of Science in Mechanical Engineering program is accredited by the Engineering Accreditation Commission of ABET, as well as the UAE Commission for Academic Accreditation. Mechanical Engineering is a diverse field of engineering, in fact, it is the broadest of all engineering disciplines. Mechanical engineering is the branch of engineering that deals with the design, construction and operation of machinery and systems. It is an exciting field that encompasses all engineering aspects of almost everything that moves in the universe. Mechanical engineers are trained to help address and solve some of the world's most pressing issues and problems such as energy, environment, robotics and advanced manufacturing, biomechanics, transportation on the ground, in the air, in and under water and in outer space – just to name a few from a long list of challenges facing our society. Cars and vehicles that we drive or ride on, airplanes that we fly in, ships, hovercrafts and submarines that we travel in and spaceships that take us to outer space and other planets are all mostly designed by Mechanical Engineers. However, that is just a subset of everything that Mechanical Engineers create. The Mechanical Engineering program at ADU has been developed according to the international standards. This ensures that graduates of the program will be uniquely qualified to design, analyze, and test wide-ranging solutions for state-of-the-art mechanical systems.

Mechanical Engineering graduates with Metallurgy concentration will be equipped with knowledge and skills in material science and metallurgical science, along with the mechanical engineering knowledge core of manufacturing, heat treatment, processing, and simulation. We prepare our graduates to meet industry expectations directly related to the fast expansion and growth in the metal and manufacturing industry. The Metallurgy concentration provides Mechanical Engineers with the materials and metallurgical knowledge needed by industrial sectors to meet the requirements of the 4<sup>th</sup> Industrial Revolution.



## Student's Testimonial

**Abid Abdul Azeez - Alumnus, BSc. Mechanical Engineering**

I was privileged to be taught by an elite faculty, providing incredible teaching efforts and support. Without this continuous support and worldclass teaching, I wouldn't have been able to accomplish the achievements I've always dreamed of. Also, I had the chance to experience the fun side of Mechanical Engineering by participating in competitions such as TAQA's first GCC Hybrid Electric Car Challenge and Undergraduate student research competition. The highly advanced Mechanical engineering workshop helps students to gain hands-on experience and also excel in their research. He is studying PhD and working as doctoral researcher at Tampere University, Finland.



## Career Prospects

Graduates of the Mechanical Engineering program have great job opportunities in the following places:

- Oil and gas industries
- Power generation and distribution industries
- Control, simulation and robotics industries
- Automotive industries
- Aerospace industries
- Manufacturing industries



# Curriculum

COURSE CODE	COURSE TITLE	COURSE CODE	COURSE TITLE	COURSE CODE	COURSE TITLE
<b>General Education Requirements: 21 Credit Hours</b>					
ARL 101(A)	Communication Skills in Arabic I	ENG 200	English II	FWS 310	Fundamentals of Innovation & Entrepreneurship
ISL 100	Islamic Culture	MTT 102	Calculus 1	FWS 205	UAE and GCC Society
STT 100	General Statistics				
<b>Degree Requirements: 35 Credit Hours</b>					
MTT 200	Calculus II	MTT 201	Calculus III	MTT 204	Introduction to Linear Algebra
MTT 205	Differential Equations	PHY 102	Physics and Engineering Applications I	PHY 102 L	Physics and Engineering Applications I Lab
PHY 201	Physics and Engineering Applications II	PHY 201 L	Physics and Engineering Applications II Lab	CHE 205	General Chemistry I
CHE 201L	Chemistry Lab	MEC 130	Introduction to Mechanical & Industrial Engineering	CSC 201	Structured Programming
GEN 101	Introductory Artificial Intelligence	GEN 201	Engineering Economy	GEN 400	Engineering Ethics
<b>Major Requirements: 67 Credit Hours</b>					
CIV 201	Statics	MEC 300	Materials Science	MEC 301	Manufacturing Processes
MEC 302	Mechanics of Materials	MEC 310	Dynamics	MEC 320	Thermodynamics I
MEC 321	Thermodynamics II	MEC 330	Computer Aided Drawing	MEC 350	Fluid Mechanics
MEC 351	Fluid Mechanics Lab	MEC 390	Electromechanical Devices	MEC 410	Control Systems
MEC 411	Kinematics and Dynamics of Machinery	MEC 412	Dynamic and Control Systems lab	MEC 420	Heat Transfer
MEC 421	Thermal Engineering Lab	MEC 430	Machine Design II	MEC 432	Design and manufacturing lab
MEC 399I	Internship	MEC 463	Turbomachinery	MEC 465	Numerical & Finite Element Simulation of Eng. Problems
MEC 480	Mechanical Vibration	MEC 482	Introduction to Mechatronics	MEC 498	Capstone I
MEC 499	Capstone II	MEC 340	Machine Design I		
<b>Major and Open Electives: 15 Credit Hours</b>					
ME1	Major Elective I	ME2	Major Elective II	ME 3	Major Elective III
OE1	Open Elective I	OE 2	Open Elective II		
At least 1 of the 2 open elective courses must be taken from the below list.					
FWS 305	Technical Communications for Workplace	MAC317	Public Speaking		
<b>Mechanical Engineering Electives/ Themes*</b>					
<b>Energy Systems</b>					
MEC 460	Air Conditioning Systems	MEC 461	Internal Combustion Engines	MEC 462	Energy Management
MEC 464	Power Plants				
<b>Materials and Manufacturing</b>					
MEC 431	Computer Aided Machine Design	MEC 470	Composites Materials Design	MEC 471	Introduction to Computer Aided Manufacturing
MEC 472	Mechanics of Materials II	MEC 473	Non-Conventional Manufacturing	MEC 474	Fracture & Fatigue Control in Design
<b>Mechatronics</b>					
MEC 481	Introduction to Robotics	MEC 483	Mechatronics System Design	MEC 450	Hydraulic & Pneumatic systems
MEC 451	PLC and Industrial Automation	MEC 484	Artificial Intelligence in Mechatronics	MEC 485	DCS and SCADA
<b>Aerospace</b>					
MEC 490	Compressible Fluid Mechanics	MEC 491	Aerodynamics	MEC 492	Aerospace Propulsion
MEC 493	Aerospace Structures				
<b>Metallurgy</b>					
MEC 475	Microstructure Engineering	MEC 477	Corrosion & Degradation of Metals	MEC 474	Fracture and Fatigue Control in Design
MEC 476	Heat Treatment & Surface Hardening	MEC 478	Phase Transformation		

\*At least 2 of the 4 elective courses must be taken from one of the Mechanical Engineering Elective themes as shown in the table below and the rest are free electives to be taken from any University approved courses.  
\*To satisfy the requirements of a Theme, at least two courses must be taken from the same theme.

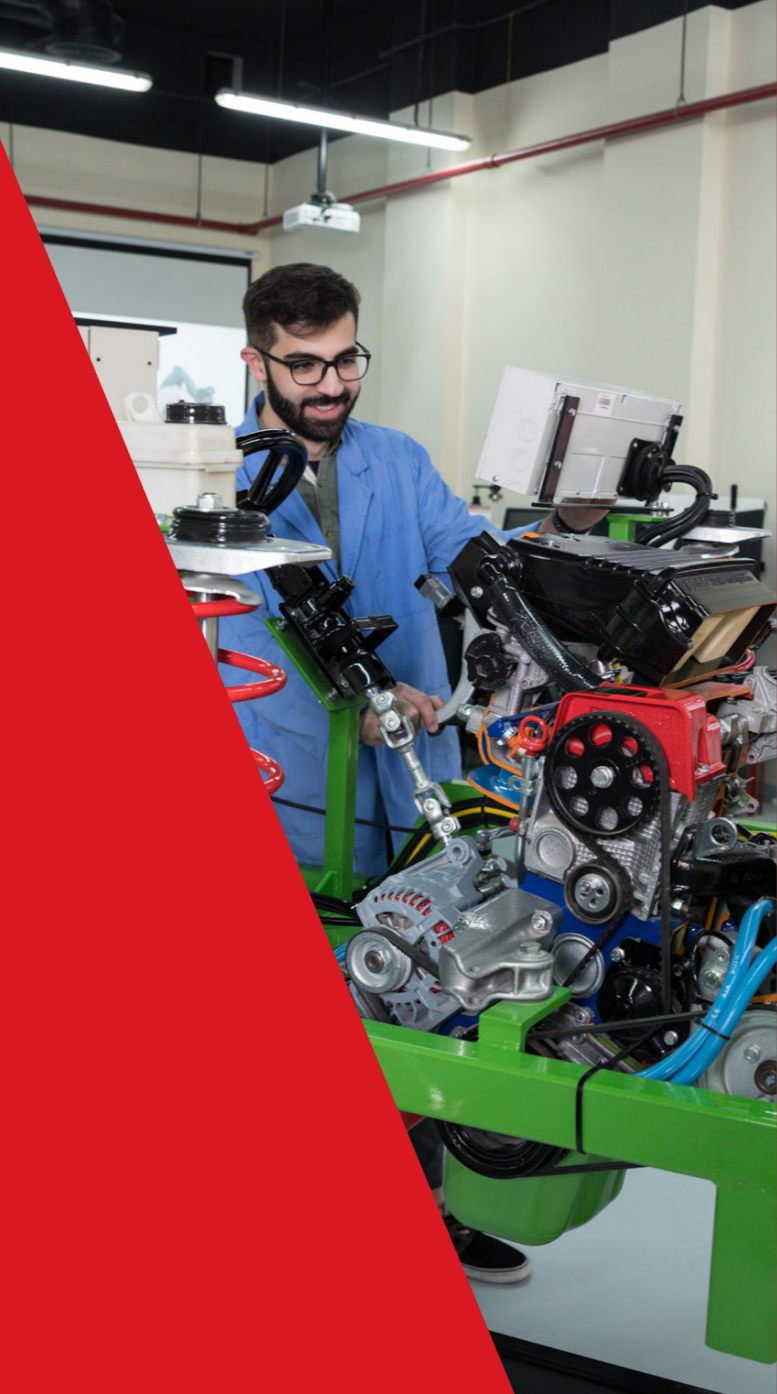


## BACHELOR OF SCIENCE IN MECHANICAL ENGINEERING

## Program Overview

The Bachelor of Science in Mechanical Engineering program is accredited by the Engineering Accreditation Commission of ABET, as well as the UAE Commission for Academic Accreditation. Mechanical Engineering is a diverse field of engineering, in fact, it is the broadest of all engineering disciplines. Mechanical engineering is the branch of engineering that deals with the design, construction and operation of machinery and systems. It is an exciting field that encompasses all engineering aspects of almost everything that moves in the universe. Mechanical engineers are trained to help address and solve some of the world's most pressing issues and problems such as energy, environment, robotics and advanced manufacturing, biomechanics, transportation on the ground, in the air, in and under water and in outer space - just to name a few from a long list of challenges facing our society. Cars and vehicles that we drive or ride on, airplanes that we fly in, ships, hovercrafts and submarines that we travel in and spaceships that take us to outer space and other planets are all mostly designed by Mechanical Engineers. However, that is just a subset of everything that Mechanical Engineers create. The Mechanical Engineering program at ADU has been developed according to the international standards. This ensures that graduates of the program will be uniquely qualified to design, analyze, and test wide-ranging solutions for state-of-the-art mechanical systems.

The program provides Mechanical Engineering students with the opportunity to learn through a combination of theory and lab work. This mix of theory and practical application allows students to think through and apply their ideas in a variety of real-life situations. Students also learn to diagnose problems and develop a variety of solutions. The program curriculum has been designed to provide a balanced education in the design, analysis and hands-on experience. It is a challenging four-year curriculum that integrates courses in mathematics, physics and mechanical engineering to produce a professional engineer capable of designing and analyzing all aspects of modern mechanical systems. The program emphasizes a number of areas of technology including aerospace, thermal power, materials and manufacturing and mechatronics.



## Student's Testimonial

**Abid Abdul Azeez - Alumnus, BSc. Mechanical Engineering**

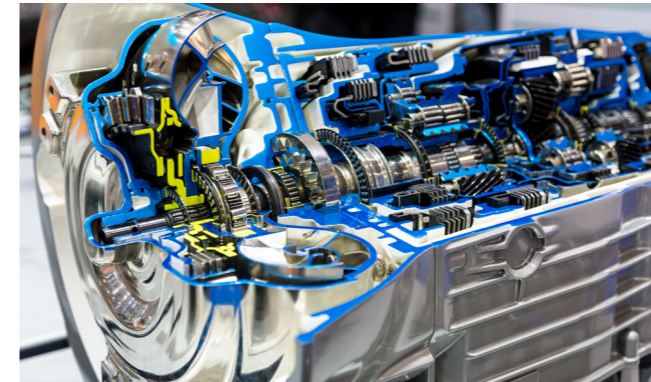
I was privileged to be taught by an elite faculty, providing incredible teaching efforts and support. Without this continuous support and worldclass teaching, I wouldn't have been able to accomplish the achievements I've always dreamed of. Also, I had the chance to experience the fun side of Mechanical Engineering by participating in competitions such as TAQA's first GCC Hybrid Electric Car Challenge and Undergraduate student research competition. The highly advanced Mechanical engineering workshop helps students to gain hands-on experience and also excel in their research. He is studying PhD and working as doctoral researcher at Tampere University, Finland.



## Career Prospects

Graduates of the Mechanical Engineering program have great job opportunities in the following places:

- Oil and gas industries
- Power generation and distribution industries
- Control, simulation and robotics industries
- Automotive industries
- Aerospace industries
- Manufacturing industries



# Curriculum

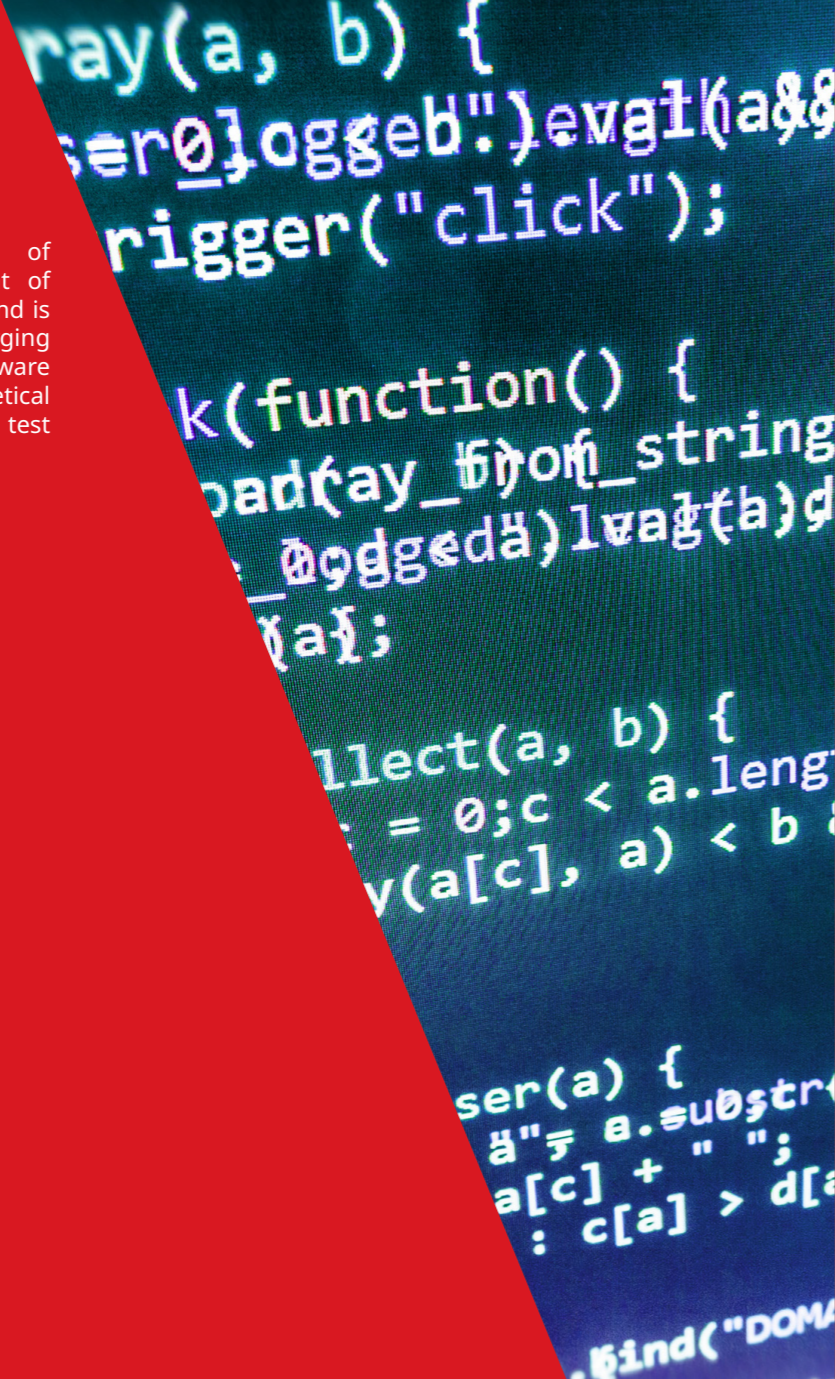
COURSE CODE	COURSE TITLE	COURSE CODE	COURSE TITLE	COURSE CODE	COURSE TITLE
<b>General Education Requirements: 27 Credit Hours</b>					
ARL 100	Communication Skills in Arabic I	ENG 200	English II	FWS 100	Academic Skills for Success
FWS 205	UAE and GCC Society	FWS 305	Technical Communications for Work Place	FWS 310	Fundamentals of Innovation and Entrepreneurship
ISL 100	Islamic Culture	MTT 102	Calculus I	STT 100	General Statistics
<b>Degree Requirements: 60 Credit Hours</b>					
GEN 200	Engineering Economy	STT 201	Intermediate Statistics and Research Methods	MTT 200	Calculus II
MTT 202	Discrete Structures and Applications	MTT 204	Introduction to Linear Algebra	PHY 102	Physics and Engineering Applications I
PHY 102 L	Physics and Engineering Applications I Lab	PHY 201	Physics and Engineering Applications II	PHY 201 L	Physics and Engineering Applications II Lab
CHE 205	General Chemistry I	CHE 201 L	Chemistry Lab	CSC 202	Programming II
CSC 301	Data Structures and Algorithms	CSC 305	Data Communications and Networks	CSC 308	Operating systems
ITE 422	System and Networks Administration	ITE 390	Computer Ethics	SWE 201	Structured Programming
SWE 302	Formal Methods in Software Engineering	SWE 399	Internship/Project in Software Engineering	SWE 401	Software Engineering
SWE 499A	Capstone Design Project in Software Engineering-Part A	SWE 499B	Capstone Design Project in Software Engineering-Part B		
<b>Major Requirements: 33 Credit Hours</b>					
CSC 302	Database Management Systems	CSC 307	Web Design	CSC 408	Distributed Information Systems
ITE 409	Human Computer Interactions	ITE 408	Information Security	ITE 421	Native Mobile Application Development
SWE 370	Object Oriented Design Patterns	SWE 371	Software Requirements and Specification	SWE 471	Software Design and Architecture
SWE 472	Software Testing and Quality Assurance	SWE 473	Software Maintenance and Evolution		
<b>Electives: 15 Credit Hours</b>					
ME 1	Major Elective I	ME 2	Major Elective II	ME 3	Major Elective III
OE 1	Open Elective I	OE 2	Open Elective II		



## BACHELOR OF SCIENCE IN SOFTWARE ENGINEERING

## Program Overview

Software Engineering is the application of engineering to the systematic development of software. It is a relatively new area of study and is becoming increasingly critical due to the emerging challenges of building reliable quality software systems. Software Engineers apply theoretical knowledge to design, develop, analyze, and test high quality software systems.



## Student's Testimonial

**Muhammad Abdullah Usman Ghani Khan** - BSc. in Software Engineering student

Being part of the first batch of the Software Engineering program at Abu Dhabi University (ADU) has been a great experience with a unique learning atmosphere. Once I began taking courses, I immediately knew the Software Engineering program was the right fit for me. At ADU, learning is so much fun! Professional teaching, creative classes, effective explanations, and entertaining material that you get here – all contribute to your success in the industry. My professors have been generous with their time, supporting me in my classwork as well as extracurricular opportunities. Studying on the Program has made people treat me differently: they see that I am investing in my long-term career. Now I am finishing my degree with a final project that involves cutting edge software technologies. Thank you ADU for helping in reaching my career goal and become a Software Engineer.



## Career Prospects

The objectives of the program are to produce Software Engineers who will be able to:

- Demonstrate success in the software engineering field with a good set of technical, problem solving, and leadership accomplishments.
- Participate in life-long learning activities such as training, continuing education, or graduate studies.
- Contribute to the development and growth of local and global communities and uphold ethical, social, and professional responsibilities.

## BSc in Software Engineering graduates will be able to

The following learning outcomes describe the competencies and skills that Abu Dhabi University Software Engineering students will acquire by graduation:

- An ability to apply knowledge of mathematics, science and engineering principles to software engineering.
- An ability to design a system, component, or process to meet the desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability.
- An ability to identify, formulate, and solve software engineering problems.
- An understanding of professional and ethical responsibility.
- An understanding of the impact of engineering solutions in a global, economic, environmental, and societal context.
- Knowledge of contemporary software engineering issues.
- An ability to use the techniques, skills, and modern engineering tools necessary for software engineering practice.



# Curriculum

Program Component	Courses	Credit Hours
Summary of Course Requirements		
Program Core	8	24
Program Electives <sup>1</sup>	2	6
Total	10	30
<sup>1</sup> Electives: The six credit hours of program electives could be utilized by choosing any one of the following three options: (a) A research project and one program elective (b) The two courses in the Management basket. (c) The two courses in the Engineering basket.		

**Table 2: Core Courses**

Courses	Course Title	Credit Hours	Prerequisite(s)
MEM 501	Project Management	3	
MEM 502	Advanced Engineering Economics	3	GEN-484PC
MEM 504	Quality Engineering	3	Knowledge of basic statistics
MEM 506	Operations Research and Simulation	3	
MEM 509	Information Technology Management	3	
MEM 511	Operations and Supply Chain Management	3	Completion of 18 credit hours
ACC 522	Advanced Managerial Accounting	3	ACC -482PC
MGT 523	Strategic Management	3	Last Semester Status

**Table 3: Electives/ Baskets <sup>2</sup>**

Basket	Course	Course Title	Credit Hours	Prerequisite(s)
Management	MGT 522	Leadership and Communication	3	
	MEM 510	Innovation and Entrepreneurship	3	
Engineering	MEM 507	Systems Engineering	3	
	MEM 508	Engineering Risk Management	3	

<sup>2</sup>To satisfy the requirements of a Basket, both courses in the basket must be taken.



## MASTER OF ENGINEERING MANAGEMENT

## Program Overview

The Master of Engineering Management (MEM) program is offered by the College of Engineering (CoE) in collaboration with the College of Business.

The program curriculum consists of 10 courses (30 credit hours), of which 6 are engineering courses and 4 are business courses. The students could also do a research project in lieu of one elective course. The program accepts students with a Bachelor's degree in all engineering discipline, architecture, computer science or IT. The MEM program offers its students unique opportunities for advanced education in the field of engineering management as well as opportunities for leadership growth at personal and professional levels. It is focused on advanced economics, quality management, and operations and supply chain management. This program is an alternative to an MBA offered to engineers who are looking for improving their engineering education and acquiring business and management skills.

This program has been introduced at Abu Dhabi University in response to the UAE market needs where engineering is driving all sectors of the industry and where engineering managerial positions are crucial to the UAE firms. The graduates of this program will train Emirati and expatriate professionals to lead and manage projects in the UAE engineering-based industries.



## Student's Testimonial

**Nasser Khalid Aljallaf** - Master of Engineering Management student

It was indeed an excellent opportunity to pursue my Master's degree in Engineering management at Abu Dhabi University. In these years I have evolved personally and professionally in a way I couldn't have possibly imagined. I will always be grateful to the faculty members of our department. Their exceptional teaching skills and expertise provided me with the right knowledge, tools and best practices to tackle any possible challenges that I might face in my future endeavors. I am proud to be an ADU student.



## Career Prospects

- Make responsible engineering and business decisions
- Have the knowledge and skills necessary for planning and strategic management of organizations
- Have the ability to use principles of engineering and management in the modeling, design, and management of complex systems
- Capable of using quality methods and standards to develop and assess the quality of engineering systems



# Curriculum

Program Component	Courses	Credit Hours
Summary of Course Requirements		
Program Core	6	18
Program Electives <sup>1</sup>	2	6
Management & Business Requirements	2	6
Total	10	30
<sup>1</sup> Electives: The six credit hours of program electives could be utilized by choosing one of the following two options: (a) A research project (3 credit hours) and one program elective (b) Two courses from the Project Management Elective Basket (see Table 3 below)		

**Table 2: Required Core Courses (6 courses)**

Courses	Course Title	Credit Hrs.	Prerequisite(s)	Courses	Course Title	Credit Hrs.	Prerequisite(s)
MEM 501	Project Management	3		MPM 531	Project Management Professionalism	3	MEM 501
MPM 521	Project Planning, Integration, and Scope Management	3		MPM 561	Project Scheduling and Time Management	3	MEM 501
MPM 541	Project Contract Management and Legal Aspects	3		MPM 581	Project Costing and Financial Management	3	MEM 501

**Table 3: Project Management Elective Basket (2 courses)**

Students will select one of the following themes:

Theme 1: Managing Innovation and Technology Projects			
Courses	Course Title	Credit Hours	Prerequisite(s)
MPM 571	E-tools for Project Management	3	MEM 501
MEM 510	Innovation & Entrepreneurship	3	
Theme 2: Project Logistics and Quality Management			
Courses	Course Title	Credit Hours	Prerequisite(s)
MEM 504	Quality Engineering	3	Knowledge of basic stat*
MEM 511	Operations and Supply Chain Management	3	Completing 18 CHs

\*A course in statistics in the undergraduate study or passing a statistics challenge test

**Table 4: Management & Business Elective Basket (2 courses)**

Students will select one of the following themes:

Theme 1: Project Economics and Finance			
Courses	Course Title	Credit Hours	Prerequisite(s)
MEM 502	Advanced Engineering Economics	3	GEN-484PC
FIN 512	Financial Management	3	GEN-484PC+ACC482-PC
Theme 2: Project HR Management and Leadership			
Courses	Course Title	Credit Hours	Prerequisite(s)
HRM 517	Human Resource Management in a Global Environment	3	
MGT 522	Leadership and Communication	3	

\*Only required if coursework not taken at the undergraduate level



## MASTER OF PROJECT MANAGEMENT

## Program Overview

The Master of Project Management (MPM) program at Abu Dhabi University is offered by the College of Engineering (CoE) in collaboration with the College of Business. The program accepted the first cohort of students in Spring 2013. The program is designed to be in line with the Project Management Body of Knowledge (PMBOK) developed by the Project Management Institute (PMI: [www.pmi.org](http://www.pmi.org)). This prepares the students to take the exam of Project Management Professional (PMP) certification offered by the PMI and makes the program more attractive to professionals and engineers who plan to become certified Project Managers. The program curriculum consists of 10 courses (30 credit hours), 6 of which are core courses, 2 are program elective courses, and 2 are business courses. The student could also do a research project in lieu of one program elective. Upon completion of the 6 core courses of the program, students will be offered two certificates from Abu Dhabi University, the first one is a Certificate in Project Management Fundamentals, and the second is a Certificate in Advanced Project Management. The new program accepts students with a Bachelor's degree in engineering, architecture, computer science, or information technology.



## Student's Testimonial

**Muhammad Saqib Muhammad Shafique** - Student of Master of Program Management

After receiving my bachelor's in civil engineering from ADU, I knew I wanted to continue my education further into a master's degree. I needed to build up those critical skills in management and understand in greater detail the Core principles and concepts of project management, therefore I intended to pursue a master's in project management. I chose the MPM program in ADU due to its comprehensive course structure and esteemed professors. The program has been amazing so far, and the faculty members have been very supportive and responsive towards the students and their queries.



## Student's Testimonial

**Hessa Ibrahim Alblooshi** - Student of Master of Program Management

One of my life goals is to become a great leader, Abu Dhabi University was the right place to start working on that goal. With the help of the professional faculty members and the support of the expert staff members, my journey started in MSc Project Management and ended with prosperity. I would recommend those success seekers to follow their dreams and start by choosing the right place, I chose Abu Dhabi University.



## Career Prospects

- Obtaining a Master of Project Management (MPM) from ADU opens the door for better employment opportunities in national and multinational companies in both private and public sectors.
- MPM graduates can work as project managers in construction, government, telecommunication, oil and gas, IT and in many other industries.
- MPM graduates can lead projects in organizations of various sizes.

# Curriculum

Project Option	Courses	Credit Hours
Program Core	10	30
Project	1	3
Total	11	33

COURSE CODE	COURSE TITLE	COURSE CODE	COURSE TITLE	COURSE CODE	COURSE TITLE
ECE 500	Integrated Circuit Design	ECE 501	Advanced Embedded System Design	MEM 501	Project Management
ECE 510	Advanced Communication Systems	ECE 512	Smart Grids and Renewable Energy	ECE 520	Advanced Power System Analysis
ECE 611	Advanced Mixed-Mode Integrated Circuit Design	MEM501	Advanced Engineering Economics	MEM510	Innovation and Entrepreneurship
ECE 621	Computer and Machine Vision	ECE 690	Electrical and Computer Engineering Management-based Project		



MASTER OF  
ENGINEERING IN  
**ELECTRICAL  
AND COMPUTER  
ENGINEERING**

## Program Overview

The College of Engineering (CoE) offers the Master of Engineering in Electrical and Computer Engineering (MEngECE) program at Abu Dhabi University. The college also offers a Master of Science in Electrical and Computer Engineering program (MSECE). The MEngECE responds to regional and international market demand for engineers with a unique blend of advanced Electrical and Computer Engineering and Engineering Management backgrounds, thus preparing the ECE project managers and industrial leaders of tomorrow. The MEngECE program has seven technical courses and three engineering management courses. Students are also expected to complete a capstone project in the area of Electrical and Computer Engineering project management. The program accepts students with bachelor's degrees in Electrical Engineering, Computer Engineering, or related fields. Students who lack the necessary background in certain topics, as per their undergraduate transcript, may be admitted conditionally. Such students will need to take some undergraduate-level courses as remedial courses or pass challenge exams as determined by the Program Director.

The Master's degree in Electrical and Computer Engineering paves the way for advancement in professional practice. Graduates of the program are ready to tackle complex problems in the areas of microelectronics, communications and networking, power and renewable energy, embedded systems, robotics, the Internet of Things, machine learning, signal processing, and Electrical and Computer Engineering management. The graduates achieve the breadth and depth of knowledge and skills needed to innovate in today and tomorrow's world where innovation, technology, communication, and energy are the driving forces for economic growth and prosperity. Moreover, they also receive the advanced business training required to successfully manage the large scale and complex projects of today. The program is designed with a schedule that minimizes disruption of work commitments.

## Student's Testimonial

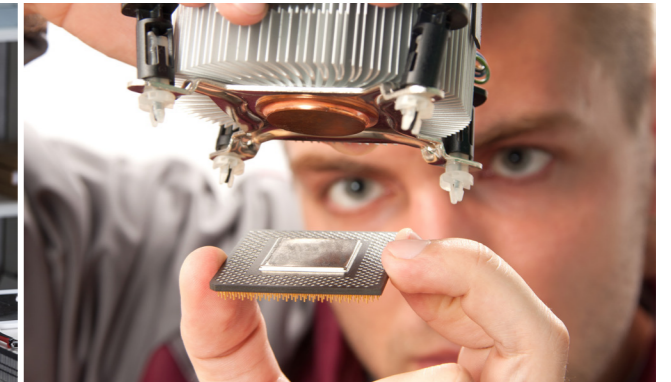
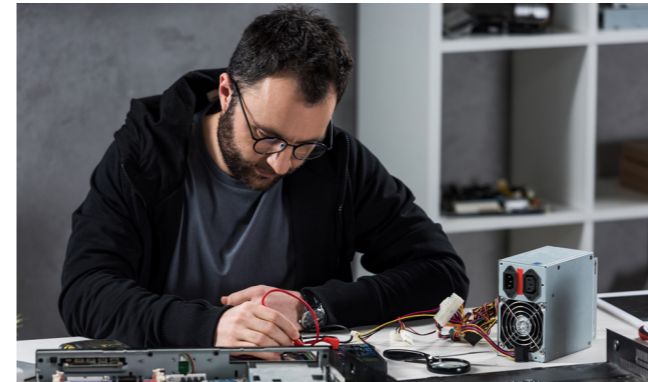
**Ala'a Harb** - Senior Master's student in Electrical & Computer Engineering

As an ADU graduate, I was able to land my first job as soon as I graduated. Moreover, the quality of education and the rich knowledge I obtained allowed me to maximize my performance at work and grow faster. Therefore, when I decided to take my masters, I chose ADU once again. The quality I like most about the program is how fundamentally they have prepared me for my next step in life, regardless of whether I choose employment or graduate studies. Besides, the faculty willingness to help us, not only in the areas pertinent to their class but also our endeavors outside of the classroom, makes the department unique. Throughout my study at Abu Dhabi University, Electrical & Computer Engineering Department, I gained an intensive knowledge in different cutting-edge technologies such as computer vision, machine learning and artificial intelligence.



## Career Prospects

- Electrical Engineering project managers working in the area of smart, sustainable, and renewable energy systems for the government or private sector
- Power engineering project managers working on the generation, transmission, and the distribution of electrical power for consultants, contractors, power plants, factories, airports, or the oil and gas industry
- Microelectronics project managers who deal with design and micro-fabrication of tiny electronic circuit components
- Telecommunications project managers for international communication companies such as Etisalat, DU, Atlas, ... etc
- Project managers in high-tech telecommunication, oil companies, or the government



# Curriculum

Program Component	Courses	Credit
Program Core	2	6
Program Courses	4	12
Program Electives <sup>1</sup>	1	3
Masters Thesis <sup>2</sup>	3	9
Total	10	30

<sup>1</sup> Program Elective may be replaced by program course

## Core Courses<sup>1</sup>

Course Code	Course Title	Cr.	Prerequisite(s)
CIV 502	Advanced Engineering Mathematics	3	Graduate Standing
CIV 509	Probability, Decision Theory, and Stochastic Processes	3	Graduate Standing
CIV 514	Engineering Research Methods and Communications	3	Graduate Standing

A student must take two courses out of the three core courses

## Program Courses

Course Code	Course Title	Cr.	Prerequisite(s)	Course Code	Course Title	Cr.	Prerequisite(s)
CIV 503	Finite Element Analysis	3	Graduate Standing	CIV 515	Advanced Reinforced Concrete Design	3	Graduate Standing
CIV 516	Engineering Bridge Design	3	Graduate Standing	CIV 518	Pre-stressed Concrete Design	3	Graduate Standing
CIV 521	Advanced Foundations	3	Graduate Standing	CIV 511	Structural Dynamics I	3	Graduate Standing
CIV508	Durability, Monitoring, and Rehabilitation of Concrete Structures	3	Graduate Standing	CIV 522	Advanced Soil Mechanics	3	Graduate Standing
CIV 526	Slopes and Earth Dams	3	Graduate Standing	CIV 531	Urban Transportation Planning	3	Graduate Standing
CIV 534	Public Transportation	3	Graduate Standing	CIV 542	Groundwater Hydrology	3	Graduate Standing
CIV 544	Coastal Processes and Harbor Engineering	3	Graduate Standing	CIV 561	Construction Project Management	3	Graduate Standing
CIV 589	Advanced Civil Engineering Materials	3	Graduate Standing	CIV 517	Advanced Steel Design	3	Graduate Standing

## Elective Courses

The following is a partial list of available elective courses. Students select one elective course if pursuing the thesis option of the master's degree or two electives otherwise.

Course Code	Course Title	Cr.	Prerequisite(s)	Course Code	Course Title	Cr.	Prerequisite(s)
MEM 504	Quality Engineering	3	Core Courses Completion	MEM 506	Operations Research & Simulations	3	Core Courses Completion
ARC 620	Efficient Building Systems	3	Core Courses Completion	ARC 630	Passive Design Strategies	3	Core Courses Completion
ARC 635	Professional Responsibility in Sustainable Environmental	3	Core Courses Completion				

# MASTER OF SCIENCE IN CIVIL ENGINEERING

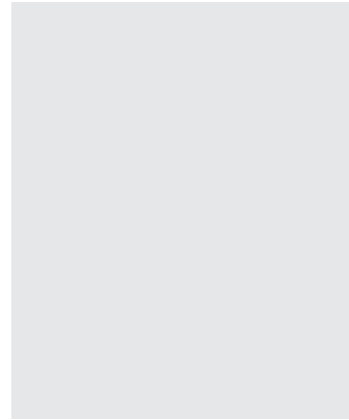
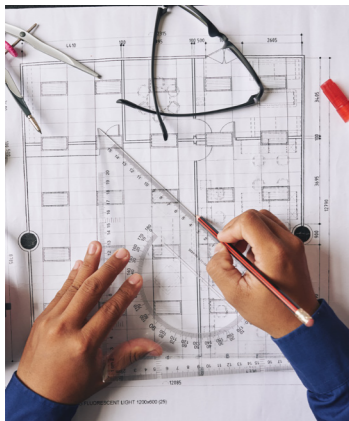


## Program Overview

The Master of Science in Civil Engineering (MSCE) at Abu Dhabi University is offered by the College of Engineering (COE).

Professional civil engineering practice nowadays is more demanding than ever, with distinction expected of professionals who are seeking better opportunities. A master's degree in civil engineering provides opportunities for advancement in professional practice. Graduate courses prepare students to tackle today's complex civil engineering problems related to the design of buildings, bridges, tunnels and foundations, solid and liquid waste treatment facilities, canals and ports, roads and highways, and modern transportation systems.

The program requires the completion of seven graduate-level courses (21 credit hours), in addition to a master's thesis (9 credit hours) or nine graduate-level courses (27 credit hours) and a professional project report (3 credit hours). The program accepts students with a Bachelor in Civil Engineering or a related field. Students who do not have a background in specific civil engineering subdisciplines may be admitted conditionally, subject to taking some undergraduate-level courses.



## Student's Testimonial

**THE COURSE PROVIDED ME WITH VARIOUS VALUABLE SKILLS THAT BENEFITED ME WITH MY CAREER**

**Eng. Abdalla Shaat** - Alumnus, MSc. Civil Engineering

I came here as student filled with goals and aims willing to do, wishes and ambitions willing to succeed, and Abu Dhabi university helped me in to understand and assess real-world problems, professional career work, concepts and possible solutions through the course of Master of Civil / Structural Engineering.

The course provided me with various valuable skills that benefited me a lot when progressing with my career as a Structural Bridge Engineer working in Bilfinger Tebodin Middle East and dealing with main government stakeholders such as Department of Municipalities and Transport (DMT), Abu Dhabi, Al-Ain, Western Region Municipalities and MUSANADA as Supervision Consultant.



## Career Prospects

A master's degree highlights the readiness of the graduate to lead in all aspects of the civil engineering profession. In addition, a master's degree is often a major step toward careers in academia where you have the best opportunity to transfer your knowledge to future generations. Graduates with the MSCE degree are sought after locally and internationally where new civil engineering projects are being designed and built to support economic development and enhance the wellbeing of society.

This program was introduced to Abu Dhabi University in response to the market needs of the UAE, where civil engineers are leading the design, construction, and environmental industries and where advanced, sustainable engineering solutions are critical.

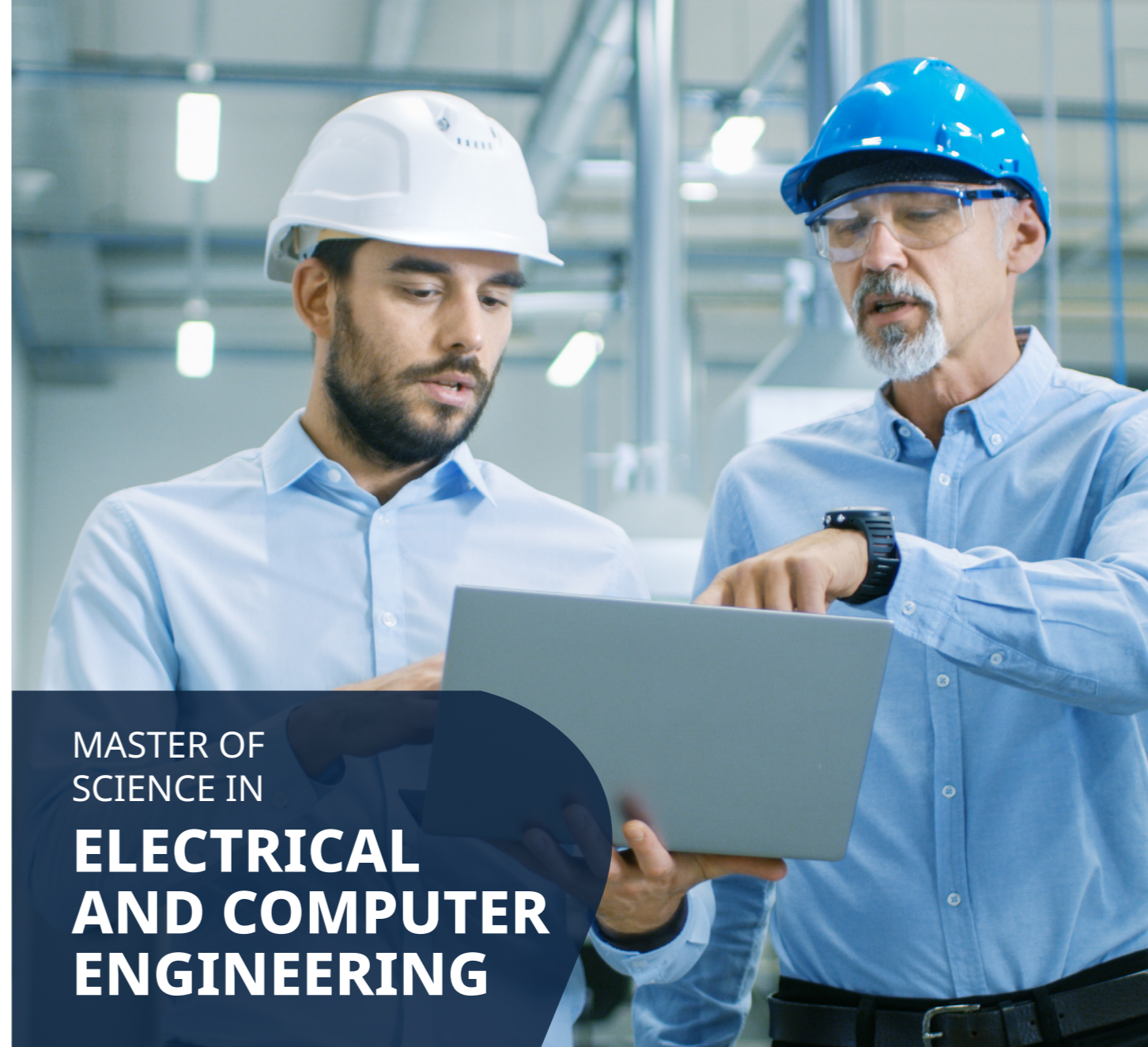


# Curriculum

Project Option			Thesis Option	
Program Component	Courses	Credit Hours	Courses	Credit Hours
Program Core	8	24	8	21
Program Electives	2	6	1	3
Capstone / Thesis	1	3	1	6
Total	11	33	10	33

COURSE CODE	COURSE TITLE	COURSE CODE	COURSE TITLE	COURSE CODE	COURSE TITLE
<b>Core Courses</b>					
ECE 500	Integrated Circuit Design	ECE 501	Advanced Embedded System Design	MEM 501	Project Management
ECE 510	Advanced Communication Systems	ECE 512	Smart Grids and Renewable Energy	ECE 520	Advanced Power System Analysis
ECE 611	Advanced Mixed-Mode Integrated Circuit Design	ECE 621	Computer and Machine Vision	ECE 690 Or ECE 691	Electrical and Computer Engineering Project Thesis in ECE

COURSE CODE	COURSE TITLE	COURSE CODE	COURSE TITLE	COURSE CODE	COURSE TITLE
<b>Elective Courses</b>					
ECE 630	Advanced Low-Power Integrated Circuit Design	ECE 632	Computer Based Power System Planning and Design	ECE 622	Embedded Signal Processing
ECE 638	Nano-Optical Devices	ECE 634	Optoelectronic Devices and Circuits	ECE 635	Special Topics in ECE
ITE 500	Rich Internet Application	ITE 510	Advanced Data Communication and Networks	ITE 520	Mobile Application Development



## MASTER OF SCIENCE IN ELECTRICAL AND COMPUTER ENGINEERING

## Program Overview

The College of Engineering (CoE) offers the Master of Science in Electrical and Computer Engineering (MSECE) program at Abu Dhabi University. The college also offers a Master of Engineering in Electrical and Computer Engineering program (MEngECE). The MSECE program offers students opportunities for advanced education in the field of Electrical and Computer Engineering, thus producing engineers with state-of-the-art specialized technical knowledge and skills that are ready to serve as experts in their fields and/or to pursue Ph.D. degrees in ECE. The MEngECE, on the other hand, responds to regional and international market demand for engineers with a blend of advanced Electrical and Computer Engineering and Engineering Management backgrounds, thus preparing the ECE project managers and industrial leaders of tomorrow. The MSECE program has a coursework option and a thesis option. In the coursework option, students are required to complete 10 graduate-level courses (30 credit hours) in addition to a capstone project (3 credit hours). For the thesis option, students complete 9 graduate-level courses (27 credit hours) and a thesis (6 credit hours). The program accepts students with bachelor's degrees in Electrical Engineering, Computer Engineering, or related fields. Students who lack the necessary background in certain topics, as per their undergraduate transcript, may be admitted conditionally. Such students will need to take some undergraduate-level courses as remedial courses or pass challenge exams as determined by the Program Director.

The Master's degree in Electrical and Computer Engineering paves the way for advancement in professional practice. Graduates of the program are ready to tackle complex problems in the areas of microelectronics, communications and networking, power and renewable energy, embedded systems, robotics, the Internet of Things, machine learning, signal processing, and information technology. The graduates achieve the breadth and depth of knowledge and skills needed to innovate in today and tomorrow's world where innovation, technology, communication, and energy are the driving forces for economic growth and prosperity. The program is designed with a schedule that minimizes disruption of work commitments.



## Student's Testimonial

**Ala'a Harb** - Senior Master's student in Electrical & Computer Engineering

As an ADU graduate, I was able to land my first job as soon as I graduated. Moreover, the quality of education and the rich knowledge I obtained allowed me to maximize my performance at work and grow faster. Therefore, when I decided to take my masters, I chose ADU once again. The quality I like most about the program is how fundamentally they have prepared me for my next step in life, regardless of whether I choose employment or graduate studies. Besides, the faculty willingness to help us, not only in the areas pertinent to their class but also our endeavors outside of the classroom, makes the department unique. Throughout my study at Abu Dhabi University, Electrical & Computer Engineering Department, I gained an intensive knowledge in different cutting-edge technologies such as computer vision, machine learning and artificial intelligence.



## Career Prospects

- Senior electrical engineers working in the area of smart, sustainable, and renewable energy systems for the government or private sector
- Senior power engineers working on the generation, transmission, and the distribution of electrical power for consultants, contractors, power plants, factories, airports, or the oil and gas industry.
- Senior microelectronics engineers who deal with design and micro-fabrication of tiny electronic circuit components
- Senior telecommunications engineers for international communication companies such as Etisalat, DU, Atlas, ... etc.



# Curriculum

COURSE CODE	COURSE TITLE	CR.	PREREQUISITE(S)
ITE 501	Cloud Computing	3	Pre-core: CSC302-PC, CSC305-PC
ITE 503	Research Methods and Communications	3	Graduate status
ITE 504	Advanced Big Data Analytics	3	Pre-core CSC302-PC
ITE 510	Advanced Data Communication and Computer Networks	3	Pre-core CSC305-PC
CSE 511	Advanced Ethical Hacking and Penetration Testing	3	Pre-core: CSC302-PC, CSC305-PC, CSC307-PC, CSC308-PC
ITE 515	Artificial Intelligence	3	Graduate status
ITE 591A	Master's Thesis in IT- Part 1	3	15 credits
ITE 591B	Master's Thesis in IT- Part 2	6	ITE 591A
ME	Major Elective	3	Graduate status
<b>Total</b>		<b>30</b>	

## Remedial Courses

Course Code	Course Title	Cr.
CSC 202-PC	Programming II	3
CSC 302-PC	Database Management Systems	3
CSC -305PC	Data Communication and Networks	3
CSC -307PC	Web Design and Programming	3
CSC -308PC	Operating Systems	3

\*A remedial course could be waived by passing a challenge test at the time of admission.



# MASTER OF SCIENCE IN INFORMATION TECHNOLOGY

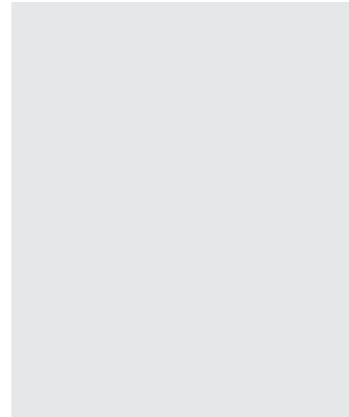


## Program Overview

The Master of Science in Information Technology (MSIT) program at Abu Dhabi University is offered by the College of Engineering. The program requires the completion of 7 graduate-level courses (21 credit hours) in addition to a master's thesis (9 credit hours).

The program accepts students with Bachelor's degree in Information Technology or related fields. Students who lack the background in certain IT subdisciplines, as per their undergraduate transcript, may be admitted conditionally. Such students will need to take some undergraduate level courses determined by the Program Director upon admission to the program. These courses will be considered as remedial courses and will not be counted towards fulfilling the graduation requirement.

The mission of the MSIT program is aligned with ADU mission by providing prospective students, both fresh IT graduates as well as working professionals, with an excellent opportunity to obtain a master's degree in Information Technology. The program offers graduates a highly rewarding career-oriented graduate degree that will improve their chances and contribute to the progress of their career. The program will enable its graduates to develop an understanding of the latest Information Technology issues and to gain technical skills that are essential for effective IT professionals. The MSIT program is also aligned with the needs of the UAE and the region. The UAE economy and Abu Dhabi in particular are in high demand for IT professionals with advanced degrees to develop and manage the various growing sectors such as the banking industry, the construction industry, and the telecommunication industry.



## Student's Testimonial

**BEING A MASTER STUDENT IN MSc IN IT PROGRAM GAVE ME A GREAT LEARNING EXPERIENCE**

**Wedad Ahmed Al-Dhuraibi** - Master of Science in Information Technology Student

Being a master student in MSc in IT program gave me a great learning experience that built my IT skills, and enabled me to communicate better, learn more and grow stronger. To me, ADU is the bridge to success hence giving me the opportunity to work in a research group while being funded. With ADU, I have been afforded multiple opportunities for involvement in research, continuing education and advancement of skills through hands on and advanced courses. I was able to do my own publications and to participate in multiple research conferences. I would like to take this as an opportunity to thank Prof. Mourad Elhadeif for accepting me to be part of his research group. Being surrounded by resourceful and encouraging faculty members motivates me to push myself beyond my limits and to focus on learning rather than grades as learning is a lifelong process that does not end after graduating. It is the people that I have met in this program, both mentors and peers, that have made it such a valuable experience and that pushed me to succeed. ADU, it was an immense honor and a privilege to be part of you.



## Career Prospects

- Obtaining a Master of Science in Information Technology from ADU opens the door for better employment opportunities in multinational high-tech companies in telecommunication and internet
- Leads to fast-track promotion and a salary increase of up to 50%

# Curriculum

**Table 1: Summary of Course Requirements**

COURSE CODE	COURSE TITLE	COURSE CODE	COURSE TITLE	COURSE CODE	COURSE TITLE
General Education Requirements: 28 Credit Hours					
MEC 511	Advanced Mathematics and Applied Statistics	MEC 522	Advanced Heat Transfer	MEC 524	Finite Element Applications in Solid Mechanics & Heat Transfer
MEC 513	Advanced Fluid Mechanics	MEC 526	Renewable Energy	MEC 515	Linear Elasticity
Elective 1	Technical Elective 1	Elective 2	Technical Elective 2	MEC 599	Thesis 2
MEC 589	Thesis 1				

Students who lack the expected knowledge for unconditional admission must complete the required prerequisite undergraduate courses as recommended by the graduate advisor. Table 3 shows the expected prerequisite knowledge for the MSME:

**Table 2: Expected Pre-core Requirement**

COURSE CODE	COURSE TITLE	Cr
MEC 465 or equivalent	Numerical & Finite Element Simulations of Engineering Problems	3

**Table 3: Study Plan**

The following is the study plan for a typical full-time student:

First Year	
Semster 1	Semster 1
MEC 511 Advanced Mathematics and Applied Statistics	MEC 524 Finite Element Applications in Solid Mechanics & Heat Transfer
MEC 513 Advanced Thermo-Fluid	MEC 522 Advanced Heat Transfer
MEC 515 Linear Elasticity	MEC 526 Renewable Energy
Second Year	
Semster 1	Semster 1
Technical Elective 1	Technical Elective 2
MEC 589 Master Thesis 1	MEC 599 Master Thesis 2

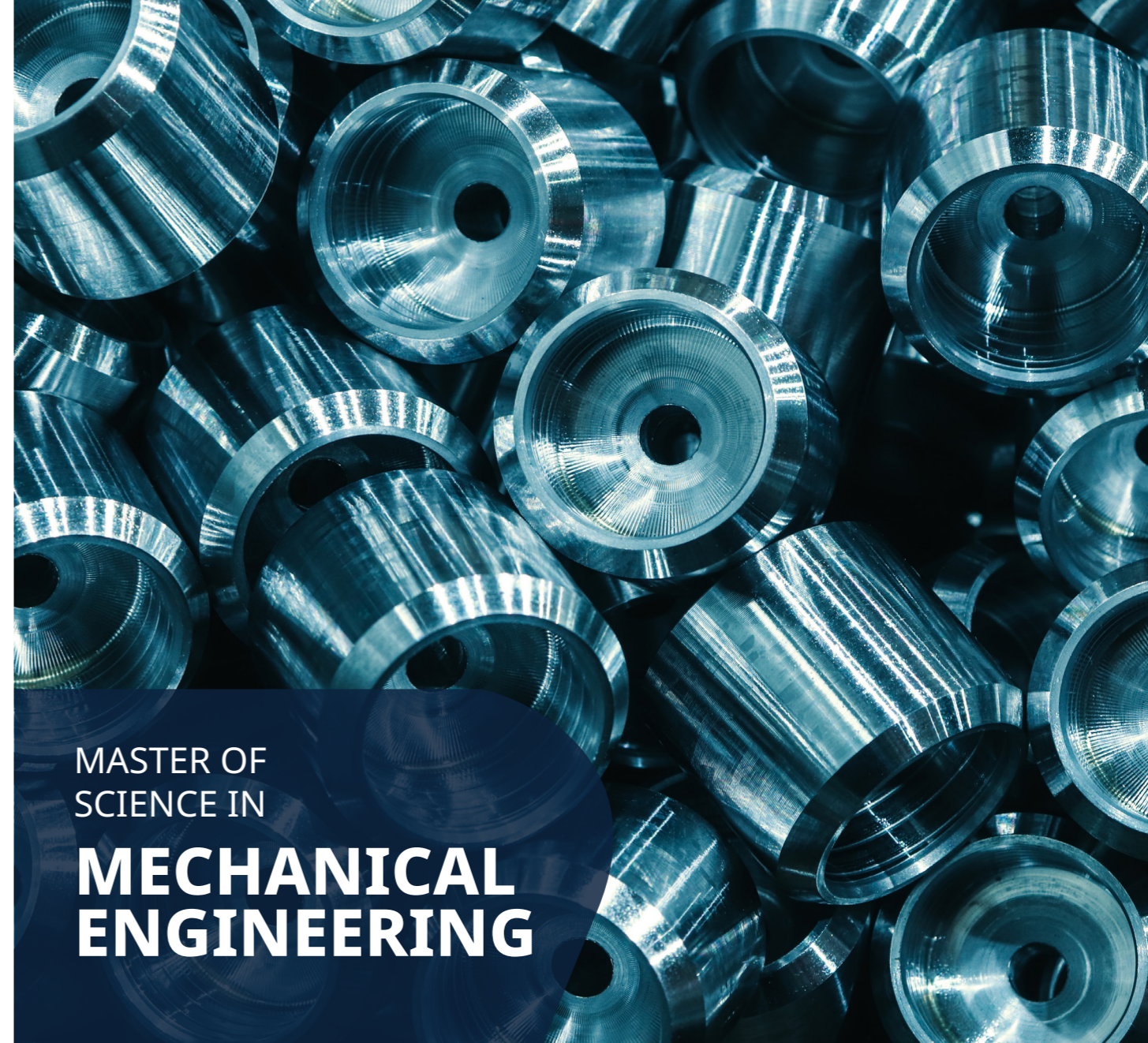
**The following is the Technical courses for the MSME:**

GROUP A: Students can select up to three technical courses from the following:

COURSE CODE	COURSE TITLE	COURSE CODE	COURSE TITLE	COURSE CODE	COURSE TITLE
General Education Requirements: 28 Credit Hours					
MEC 551	Computational Fluid Dynamics (CFD) & Heat Transfer (HT)	MEC 553	Online condition-based monitoring of rotating equipment	MEC 558	Computer Aided Analysis of Multi-Body systems
MEC 552	Mechanical Design Optimization	MEC 557	Advanced Mechatronics	MEC 559	Design of Robotics Manipulators
MEC 554	MEMS (Microelectromechanical systems)	MEC 560	Production Systems Operations	MEC 555	Bio-Materials
MEC 561	Dynamics of Mechanical Systems	MEC 556	Solar Energy	MEC 562	Transport Phenomena in Porous Media
MEC 563	Advanced Thermodynamics				

GROUP B: Students can select maximum of one course from the following group as a technical elective:

COURSE CODE	COURSE TITLE	CR	Pre-requisites
MEM 501	Project Management	3	-
MEM 504	Quality Engineering	3	Knowledge of basic statistics



## MASTER OF SCIENCE IN MECHANICAL ENGINEERING

## Program Overview

The Master of Science in Mechanical Engineering (MSME) program is offered by the College of Engineering at Abu Dhabi University (ADU). The MSME program has been designed to provide a wide range of technical knowledge and skills that would enhance analytical abilities and knowledge in the area of Mechanical Engineering. The program is also beneficial for working ME professionals seeking competitive edge to aid promotional opportunities by obtaining a master's degree in Mechanical Engineering on a carefully designed schedule that minimizes disruption of work commitments.

Students with a bachelor degree in mechanical engineering and related fields are eligible to apply. However, students with undergraduate degrees other than mechanical engineering may be admitted on conditional basis. Such students will have to take some undergraduate-level deficiency courses, as determined by the graduate advisor after examination of their undergraduate transcripts.



## Student's Testimonial

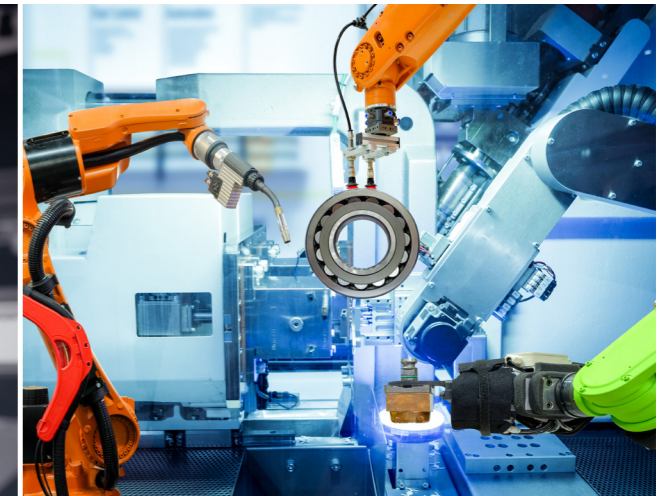
**Eng. Omar Ahmad Mohamad - Alumni**

I completed my Bachelor of Science in Mechanical Engineering in 2018. I didn't want to pursue a Master- Degree, but after listening to the advises of the surrounding and remember the support that my instructors provided in the Bachelor program, I said "Let us do it". It was literally "us" as the faculty are so keen about the students and they believe in them more the students believe in themselves. In several cases, it felt like the faculty members are putting more time into the projects more the student himself is doing. I have several friends who finished their masters abroad, yet they hardly have any research skills. However, in ADU, this is not an option given the emphasize the faculty members place on the research and how it is embedded in the course work. The only word I can say, THANK YOU.



## Curriculum

The Master of Science in Mechanical Engineering is a 30-credit-hour program. Table 1 summarizes the degree requirements. Students have to complete 8 graduate-level courses (24 credit hours) in addition to a master's thesis (6 credit hours). This program is ideal for students wishing to complete the degree in about 2 years and to use their advanced degree as a foundation for a career in industry related to design and analysis, testing, consulting, or management.



# Curriculum

## Study Plan for Full-Time Student

FIRST YEAR	
Semester 1	Semester 2
ARC 600: Approaches to Sustainable Design	ARC605: Sustainable Urban Spaces and Landscape Design
ARC 610: Building Skins and Façade Design	ARC 615: Environmental Planning
ARC 620: Efficient Building Systems	ARC 625: Sustainable Indoor Spaces
SECOND YEAR	
Semester 3	Semester 4
ARC 630: Passive Design Strategies	ARC 635: Professional Responsibility in Sustainable Environmental Design
ARC640: Architectural Research Methods	ARC 690: Capstone Project (Prerequisite Completion of 24 Cr. Hours)

Note: for those selecting the Thesis option, they may do so by taking a 6-credit thesis in lieu of (ARC690 and ARC640).

## Study Plan for Part-Time Student

FIRST YEAR	
Semester 1	Semester 2
ARC 600: Approaches to Sustainable Design	ARC605: Sustainable Urban Spaces and Landscape Design
ARC 610: Building Skins and Façade Design	ARC 615: Environmental Planning
SECOND YEAR	
Semester 3	Semester 4
ARC 620: Efficient Building Systems	ARC 625: Sustainable Indoor Spaces
ARC 630: Passive Design Strategies	ARC 635: Professional Responsibility in Sustainable Environmental Design
THIRD YEAR	
Semester 5	
ARC640: Architectural Research Methods	ARC 690: Capstone Project (Prerequisite Completion of 24 Cr. Hours)

Note: for those selecting the Thesis option in place of (ARC 690), they may do so in lieu of (ARC690 and ARC640).

\* Pre Core Courses  
 ARC 360 Urban Planning or equivalent  
 ARC 470 Urban Design or equivalent  
 ARC 540 Sustainable Design



# MASTER OF SCIENCE IN SUSTAINABLE ARCHITECTURE



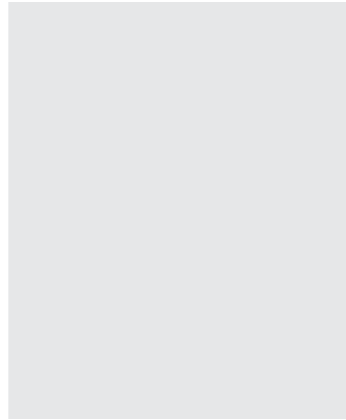
## Program Overview

In line with Abu Dhabi's aim to transform its urban fabric into a model of sustainable urbanization, through supporting cross-disciplinary research, and to deliver more improved environmental designs, the Master of Science in Sustainable Architecture program goals are to incorporate the best international practices of environmental design into contemporary architecture and to prepare students to lead innovative sustainable solutions in the UAE and the region.

The program aims to promote advanced research and innovation in sustainable architecture in the UAE, the region, and internationally, and contribute to a sustainable design practice and research-based knowledge towards sustainable regional architecture. The program offers its graduates a highly rewarding scientific degree that will improve their chances and contribute to the progress of their career. The program will enable its graduates to develop research skills in environmental design, Sustainable Architecture and integration of latest practices that lead to innovative design solutions.

The courses are taught by faculty with recognized academic and professional backgrounds. The curriculum prepares students for doctoral programs and provides architectural designers/researchers with the qualitative and quantitative knowledge, methods, and tools that are appropriate for regional desert environments in order to implement sustainable designs in the professional practice. The Master of Science in Sustainable Architecture Program (MSSA) is a 30-credit-hour program that includes 24-27 hours of coursework and 3 credit hours for the Capstone Project or 6 credit hours for the Thesis option.

The Program accepts graduates and practicing professionals with degrees related to the Built Environment, Landscape Architecture, Architecture, Architectural Engineering and Urban Planning.



## Student's Testimonial

**THIS COURSE HAS OPENED UP HORIZONS FOR ME TO RECOGNIZE HOW THE FIELD OF SUSTAINABILITY BRINGS TOGETHER RESEARCH AND DESIGN.**

**Huda Masalmeh** - Manager & Sustainability Consultant  
EEDAMA, Alumna, MSc in Sustainable Architecture

Studying Msc in Sustainable Architecture at Abu Dhabi University has helped me understand and assess real-world problems, concepts and possible solutions in regards to sustainability. This course has opened up horizons for me to recognize at length how the field of sustainability brings together research and design. ADU's faculty's constant guidance and encouragement pushed me to heights I never thought possible which also motivated me to pursue further education in the near future. Overall, the course provided me with various valuable skills that benefited me a lot when progressing with my career as a Manager and a Sustainability Consultant.



## Career Prospects

- The Master's program in Sustainable Architecture offers its graduates the necessary skills for advanced research necessary to pursue Doctoral studies
- The program offers its graduates the necessary professional skills in environmental design and Sustainable Architecture through the integration of latest technologies needed for private and international firms
- The program offers its graduates extended opportunities as designers specialized in environmental design and Sustainable Architecture in line with the Abu Dhabi 2030 plan warranted by the industry, Ministry of Planning and Municipalities

