



BACHELOR OF SCIENCE IN COMPUTER ENGINEERING

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.

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

Student's Testimonial

Samr Samir Ali - Alumna

"With my graduation on the horizon, I cannot help but view my Bachelor degree study years as an adventurous rollercoaster. It has been my honor to experience such a unique blend of enriching knowledge, supportive faculty, and practical experience. The program further fueled my passion for learning through the many competitions that I had the privilege to participate in with winnings in high profile ones such as the mGov and the Digital Arabic Content competition that is organized by the United Nations. I am proud to always say I have been a Computer Engineering student at ADU."

Curriculum

COURSE CODE	COURSE TITLE	COURSE CODE	COURSE TITLE	COURSE CODE	COURSE TITLE
General Education Requirements: 21 Credit Hours					
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				
Degree Requirements: 35 Credit Hours					
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	GEN 101	Introduction to Artificial Intelligence
GEN 201	Engineering Economy	GEN 400	Engineering Ethics		
Major Requirements: 66 Credit Hours					
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
CEN 451	Computer Engineering Design Project I	CEN 452	Computer Engineering Design Project II		
Electives: 15 Credit Hours					
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		
Major Electives: 9 Credit Hours					
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				

* 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.