

BACHELOR OF SCIENCE IN CIVIL, COMPUTER, ELECTRICAL, AND MECHANICAL ENGINEERING

The School of Engineering provides students with a unique opportunity to experience American-style engineering education in one of the fastest growing cities in the world.

A MESSAGE FROM THE DEAN



The School of Engineering at AUD has been at the forefront of engineering higher education in Dubai. We are located in one of the fastest growing cities in the world, thus providing our students with a dynamic learning environment that is unparalleled elsewhere in the region. We emphasize the role of cultural diversity, teamwork, ethics, and professionalism in global engineering practice. Our graduates enjoy exceptional placement opportunities in

top engineering firms, both regional and multinational. Every year many of our graduates are admitted to top universities in the US and Europe to pursue post-graduate studies every year.

As we expand our state-of-the-art laboratory and classroom experiences, we maintain small class sizes to maximize learning. Our faculty are at the forefront of research in their fields, and our engineering programs are among the first to be American-accredited outside the US. I invite you to learn more about the success stories of our graduates by visiting in person or virtually at our website.

Alaa Ashmawy, Ph.D., P.E. Dean, School of Engineering

WHY ENGINEERING AT AUD?

- Rich program offerings supplemented with state-of-theart labs and facilities
- Strong links with industry and government partners
- Vibrant student life through professional engineering clubs
- Extra-curricular activities, study abroad, and exchange programs with top US universities

- UAE and US accreditation of all undergraduate programs
- Wide alumni network throughout the world
- Preparation and support for post-graduate study opportunities and scholarships in the US

ENGINEERING PROGRAMS AT AUD

The school offers undergraduate programs leading to Bachelor of Science degrees in Civil Engineering, Computer Engineering, Electrical Engineering, and Mechanical Engineering.

Civil Engineering

The Civil Engineering program provides the comprehensive undergraduate education required for professional careers in structural engineering, geotechnical engineering, construction engineering and management; environmental system's hydraulic engineering and water resources, and transportation systems.

Computer & Electrical Engineering

The Computer and Electrical Engineering programs prepare graduates for diverse careers

in communication engineering, electronics, power systems, software and hardware design, control and robotics, and embedded system design and integration.

Mechanical Engineering

The Mechanical Engineering program offers undergraduate students the opportunity to pursue careers in fields such as energy systems, fluid dynamics, aerodynamics, turbomachinery, robotics, mechatronics, and computer-aided manufacturing.



ACCREDITATION



The Civil, Computer, Electrical, and Mechanical Engineering programs are accredited by the Commission on Academic Accreditation of the UAE Ministry of Education.

www.caa.ae

Commission for Academic Accreditation P.O.Box 45133, Abu Dhabi, United Arab Emirates, tel. +971 2 6951461



The Civil, Computer, Electrical, and Mechanical Engineering programs are accredited by the Engineering Accreditation Commission of ABET.

www.abet.org

ABET: 415 N. Charles St., Baltimore, MD 21201, tel.: +1 410 347 7700



FACULTY MEMBERS

Our curricula are supported by a diverse group of faculty of the highest caliber, with outstanding expertise and solid ties with the professional community. They are recruited from top Universities across the world, such as Purdue University, University of Texas, University of Illinois, University of Waterloo, Queen's University, Delft University of Technology, University of Florida, Western Sydney University, Sorbonne University Paris and King's College-University of London.

POINTS OF PRIDE



We possess the strongest record among engineering schools in the region in terms of graduating student placement in academia and in the industry. Our graduates continue to be highly sought at both

the regional and global levels. Examples include Hiba Abdel-Jaber, who was offered a full scholarship by Princeton University to complete her Master's degree and PhD; Wael Bou Ajram was selected for the Nestle Leadership Program; and Reem Al Douri, was the only graduate selected from the UAE for the Global National Oilwell Varco Next Generation Leadership Program and completed four training rotations in the UAE, USA, and Singapore. Shurooque Baloch, and is now working as a Power Systems Engineer at UK National Grid after completing her Master's Degree from the University of Manchester, UK.

Our students are given the opportunity to excel beyond the classroom through competitions and activities, They won IEEE UAE Student Day for two consecutive year, won Microsoft's Imagine Cup 2017 local and regional competitions, and took home First Place at the RTA (Roads and Transport Authority) Transport Hackathon event.

WHAT DO ALUMNI HAVE TO SAY?

"For me, AUD has been a place where I have not only studied engineering, but have also learned to survive problems, challenge surroundings, and understand people. I have developed from being a high school kid to an electrical engineering graduate who has learnt beyond her confined classroom boundaries."

Shurooque Baloch BS in Electrical Engineering, UK Rail

"Every day, I realize that AUD's civil engineering program prepared me better than I ever thought. I knew it was an ABET-accredited program, but did not realize what a firm background it gave me until I came to Princeton."

Hiba Abdel-Jaber

BS Civil Engineering Valedictorian

Ph.D. Princeton University

I have joined the Lienhard Research Group at MIT, led by Professor John Lienhard, my advisor. I am working on nanofiltration membranes and their modeling. Nanofiltration is relatively recent desalination/ membrane separation technology with pore sizes on the order of I nm. I really love my new research area, and MIT is really a great place.

Omar Labban BS in Mechanical Engineering Ph.D. candidate, MIT

I remember my four years at AUD every single day at work. Each and every project I work on gives me a flashback of a project I submitted at university Whenever I look back at AUD, I recall and cherish all the experiences that would not have been possible in any other university in the world.

Mariam M. Khalifeh B.S. in Civil Engineering AECOM, Dubai





ADVISORY BOARD

The Advisory Board of the School of Engineering consists of prominent engineering professionals who assist the School in formulating and implementing its strategic priorities. The Board members represent a wide range of disciplines and cover the full spectrum of government, industry, and academia.

Current and past Board Members include top leaders from:

- Georgia Institute of Technology
- Dubai Municipality
- Dubai Electricity & Water Authority (DEWA)
- Atkins
- Bentley Systems
- Gulf Precast
- Parsons Corporation
- DUBAL

- Microsoft
- IBM
- Hyperloop
- BASF
- Oracle
- Cisco
- GE
- Siemens
- EGA

PRE-ENGINEERING REQUIREMENTS

Students admitted to the School of Engineering who have not satisfied the minimum SAT Math score of 560 must meet a set of Pre-Engineering requirements prior to enrolling in advanced courses.

In order to fulfill the Pre-Engineering Requirements, a student must satisfy all of the following:

- Successfully complete:
 - MATH 100 on the first attempt, or place in a more advanced Math course via the university-administered ACCUPLACER™ Exam:
 - MATH 110 with a minimum grade of C on the first or second attempt or place into a more advanced Math course via the university-administered ACCUPLACER™ Exam;
 - COMP 101 with a minimum grade of C on the first or second attempt, or

place into ENGG 140 through the university-administered Computer Proficiency Exam;

- Earn a grade of C or higher in:
 - MATH 210,
 - PHYS 201, and
 - CHEM 201.

A student who fails to fulfill the Pre-Engineering Requirements may subsequently enroll in engineering courses only upon securing the minimum SAT® Math score.

Alternatively, such a student may choose to pursue studies at AUD in a discipline other than Engineering, contingent upon admission into the new program.

The university does not assume any responsibility for loss of credit due to the student's change from an engineering degree program to another program.



ABOUT THE ENGINEERING PROGRAMS

Programs Mission

The Civil, Computer, Electrical, and Mechanical Engineering programs prepare a culturally diverse student population for successful professional careers in engineering at the local, regional, and global levels. The programs are designed to ensure excellence in multiple technical areas while emphasizing the role of general education, ethical and social responsibility, and life-long learning as part of the personal and professional growth of future engineers.



SUMMARY OF DEGREE REQUIREMENTS

The Bachelors of Science in Civil, Computer, Electrical and Mechanical Engineering are four-year programs.

Course Classifications	Credit Hours Required
Mathematics/Natural Sciences	29
Major Core	54
Major Electives	15
Arts and Sciences Core	36
General Electives	3
TOTAL	137

For further information on the B.S. degrees in Engineering, please refer to the website http://engr.aud.edu/

B.S.C.E. COURSE SEQUENCING

	Fall	Spring	Summer
Year I	ENGG 140 (Introduction to Programming)	BIOL 201 (Principles of Biology)	
	ENGL 101 (Composition and Rhetoric)	ENGG 210 (Engineering Graphics and Visualization)	
	MATH 210 (Calculus I)	ENGL 102 (Advanced Composition and Research)	
	PHYS 201 (Introductory Physics I w/Lab)	MATH 220 (Calculus II)	
	UNIV 100 (The University Experience)	PHYS 202 (Introductory Physics II w/Lab)	
	CHEM 201 (General Chemistry)	ECVL 268 (Mechanics of Materials)	
	ENGG 255 (Engineering Design and Economics)	ENGG 200 (Engineering Statistics)	
<u> </u>	ENGG 270 (Statics w/Lab)	ENGG 222 (Numerical Methods in Engineering w/Lab)	
Year	ENGL 103 (Introduction to Literature)	ENGG 275 (Dynamics)	
	MATH 230 (Linear Algebra and Complex Variables)	ECVL 210 (Engineered Materials w/Lab)	
	MATH 231 (Differential Equations)	PSPK 101 (Public Speaking)	
	ECVL 305 (Geomatics w/Lab)	ECVL 340 (Environmental Engineering w/Lab)	ECVL 399 (Field Experience in Civil Engineering)
_	MATH 240 (Multivariable Calculus)	ECVL 350 (Transportation Engineering w/Lab)	
Year III	ECVL 330 (Fluid Mechanics w/Lab)	ECVL 368 (Reinforced Concrete Design I)	
Ě	ECVL 360 (Structural Analysis I w/Lab)	ECVL 370 (Geotechnical Engineering I w/Lab)	
	ISST ELE (Islamic Studies Elective)	ECVL ELE (Civil Engineering Elective)	
	SSCI ELE (Social Sciences Elective)		
	ECVL 420 (Construction Engineering and Management)	ECVL 499 (Civil Engineering Design Project)	
_	ECVL 470 (Geotechnical Engineering II)	ECVL ELE (Civil Engineering Elective)	
Year IV	ECVL ELE (Civil Engineering Elective)	ECVL ELE (Civil Engineering Elective)	
	ECVL ELE (Civil Engineering Elective)	GEN ELE (General Elective)	
	PHIL 222 (Professional Ethics)	WLDC 202 (World Cultures II)	
	WLDC 201 (World Cultures I)		

B.S.COMP.E. COURSE SEQUENCING

	Fall	Spring	Summer
Year I	ENGL 101 (Composition and Rhetoric)	CHEM 20 I (General Chemistry)	
	MATH 210 (Calculus I)	ENGG 140 (Introduction to Programming)	
	PHYS 201 (Introductory Physics I)	ENGL 102 (Advanced Composition and Research)	_
	SSCI ELE (Social Sciences Elective)	MATH 220 (Calculus II)	-
	UNIV 100 (The University Experience)	PHYS 202 (Introductory Physics II w/Lab)	
	BIOL 20 I (Principles of Biology)	EECE 205 (Linear Circuit Analysis II w/Lab)	
	EECE 200 (Linear Circuit Analysis I w/Lab)	EECE 240 (Digital System Design w/Lab)	
Year II	EECE 250 (Intermediate Programming)	ENGG 222 (Numerical Methods in Engineering w/Lab)	
Ž	ENGL 103 (Introduction to Literature)	MATH 250 (Discrete Mathematics)	
	MATH 230 (Linear Algebra and Complex Variables)	PSPK 101 (Public Speaking)	
	MATH 23 I (Differential Equations)		
	EECE 300 (Microelectronic Devices & Circuits I w/Lab)	EECE 323 (Fundamentals of Digital Signal Processing)	EECE 399 (Field Experience in Civil Engineering)
_	EECE 320 (Signals and Systems w/Lab)	EECE 345 (Computer Architecture)	
Year III	EECE 340 (Introduction to Microprocessors w/Lab)	EECE 355 (Software Engineering)	
چ	EECE 350 (Data Structures and Algorithms)	EECE 360 (Computer Networks)	
	ENGG 255 (Engineering Design and Economics)	CompE ELE (Computer Engineering Elective)	
	ENGG 300 (Probability and Random Variables)	ISST ELE (Islamic Studies Elective)	
	EECE 440 (Embedded System Design w/Lab)	EECE 499 (Computer Engineering Design Project)	_
	EECE 450 (Operating Systems)	CompE ELE (Computer Engineering Elective)	-
Year IV	CompE ELE (Computer Engineering Elective)	CompE ELE (Computer Engineering Elective)	_
	CompE ELE (Computer Engineering Elective)	GEN ELE (General Elective)	_
	PHIL 222 (Professional Ethics)	WLDC 202 (World Cultures II)	-
	WLDC 201 (World Cultures I)		

B.S.E.E. COURSE SEQUENCING

	Fall	Spring	Summer
Year I	ENGL 101 (Composition and Rhetoric)	CHEM 201 (General Chemistry)	
	MATH 210 (Calculus I)	ENGG 140 (Introduction to Programming)	
	PHYS 20 I (Introductory Physics I)	ENGL 102 (Advanced Composition and Research)	
	SSCI ELE (Social Sciences Elective)	MATH 220 (Calculus II)	
	UNIV 100 (The University Experience)	PHYS 202 (Introductory Physics II w/Lab)	
	EECE 200 (Linear Circuit Analysis I w/Lab)	BIOL 201 (Principles of Biology)	
	EECE 250 (Intermediate Programming)	EECE 205 (Linear Circuit Analysis II w/Lab)	
	ENGL 103 (Introduction to Literature)	EECE 240 (Digital System Design w/Lab)	
Year	MATH 230 (Linear Algebra and Complex Variables)	ENGG 222 (Numerical Methods in Engineering w/Lab)	
	MATH 23 I (Differential Equations)	ISST ELE (Islamic Studies Elective)	
	PSPK 101 (Public Speaking)	MATH 240 (Multivariable Calculus)	
	EECE 300 (Microelectronic Devices and Circuits I w/Lab)	EECE 305 (Microelectronic Devices and Circuits II)	EECE 398 (Field Experience In Electrical Engineering)
	EECE 310 (Applied Electromagnetics I)	EECE 315 (Applied Electromagnetics II w/Lab)	
=	EECE 320 (Signals and Systems w/Lab)	EECE 323 (Fundamentals of Digital Signal Processing)	
Year III	EECE 340 (Introduction to Microprocessors w/ Lab)	EECE 326 (Communication Systems I w/Lab)	
	ENGG 255 (Engineering Design and Economics)	EECE 330 (Electric Power Systems w/Lab)	
	ENGG 300 (Probability and Random Variables)	PHIL 222 (Professional Ethics)	
	EECE 470 (Systems and Controls)	EECE 498 (Electrical Engineering Design Project)	
Year IV	EE ELE (Electrical Engineering Elective)	EE ELE (Electrical Engineering Elective)	
	EE ELE (Electrical Engineering Elective)	EE ELE (Electrical Engineering Elective)	
	EE ELE (Electrical Engineering Elective)	GEN ELE (General Elective)	
	WLDC 20 I (World Cultures I)	WLDC 202 (World Cultures II)	

B.S.M.E. COURSE SEQUENCING

	Fall	Spring	Summer
Year I	ENGG 140	CHEM 201	
	(Introduction to Programming) ENGL 101	(General Chemistry) ENGG 210	
	(Composition and Rhetoric)	(Engineering Graphics and Visualization)	
	MATH 210 (Calculus I)	ENGL 102 (Advanced Composition and Research)	
	PHYS 20 I (Introductory Physics I w/Lab)	MATH 220 (Calculus II)	
	UNIV 100 (The University Experience)	PHYS 202 (Introductory Physics II w/Lab)	
	BIOL 20 I (Principles of Biology)	EECE 201 (Electric Circuit Theory)	
	EMEC 210 (Structure and Properties of Materials W/Lab)	ENGG 200 (Engineering Statistics)	
Year II	ENGG 270 (Statics w/Lab)	ENGG 222 (Numerical Methods in Engineering w/Lab)	
₽	ENGL 103 (Introduction to Literature)	ENGG 275 (Dynamics)	
	MATH 230 (Linear Algebra and Complex Variables)	MATH 240 (Multivariable Calculus)	
	MATH 231 (Differential Equations)	PSPK 101 (Public Speaking)	
	EMEC 320 (Solid Mechanics I)	EMEC 345 (Heat and Mass Transfer w/Lab)	EMEC 399 (Field Experience in Mechanical Engineering)
_	EMEC 330 (Fluid Dynamics w/Lab)	EMEC 350 (Design of Mechanical Systems W/Lab)	
=	EMEC 340 (Thermodynamics)	EMEC 365 (Control Systems w/Lab)	
Year III	EMEC 360 (Electronics and Instrumentation w/Lab)	EMEC ELE (Mechanical Engineering Elective)	
	ENGG 255 (Engineering Design and Economics)	GEN ELE (General Elective)	
		ISST ELE (Islamic Studies Elective)	
	EMEC 440 (Energy Systems w/Lab)	EMEC 499 (Mechanical Engineering Design Project)	
	EMEC 460 (Manufacturing Engineering and Technology)	EMEC ELE (Mechanical Engineering Elective)	
Year IV	EMEC ELE (Mechanical Engineering Elective)	EMEC ELE (Mechanical Engineering Elective)	
Yea	EMEC ELE (Mechanical Engineering Elective)	PHIL 222 (Professional Ethics)	
	SSCI ELE (Social Sciences Elective)	WLDC 202 (World Cultures I I)	
	WLDC 20 I (World Cultures I)		

EMPLOYERS' CORNER

"One thing I would say is that we had three years of AUD students joining us for summer internships. And it has been a continuous history of successful experiences. The students appeared well geared with engineering knowledge. AUD has given them the most important capacity in the ability to learn how to learn and progress in their profession."

Karim Khalaf Director, ByrneLooby "I find the faculty very positive, open, and forward-looking. They do engage us and other members of the industry every now and then to help provide the students with the latest leading edge of technology. I wish the school all the success."

Bashar Kilani Region Executive, IBM Middle East



STUDENT CLUBS

AUD Departmental Clubs serve as professional organizations that address the needs and interests of students in specific areas of study. They encourage members to explore their interests and talents and organize specific activities such as lectures, seminars, professor's lunches, competitions, exhibitions, workshops, and field trips. The clubs also serve as a liaison between the student body and faculty of each department.



ACM

The Association for Computing Machinery student branch at AUD provides computer engineering students with extracurricular tools to improve their professional knowledge and enables them to link with key industry professionals.



ASCE

The American Society of Civil Engineers student branch at AUD engages students in a variety of technical activities, including field trips, guest speeches, and internship opportunities. The Club also organizes the Gulf Annual Wooden Bridge Competition.



ASME

The American Society of Mechanical Engineers student branch at AUD allows students to participate in technical activities and links students with an international network of Mechanical Engineering professionals.



IEEE

The Institute of Electrical and Electronics Engineers student branch at AUD provides students with essential technical knowledge through seminars, field trips, workshops, competitions, and study tours.



WEF

The Water and Environment Federation student club enables students to participate in various local and regional activities inspired by the need to protect the environment and properly manage water resources.



WIE

The Women in Engineering Affinity Group inspires, engages, encourages, and empowers women in engineering at AUD.WIE advocates women in leadership roles and different technical disciplines.

FACILITIES AND LABORATORIES

The School of Engineering continues to build and equip our state-of-theart laboratories and classroom facilities, to provide students with the knowledge needed for technical excellence in engineering.

- Fluid Mechanics Laboratory
- Materials/Structures Laboratory
- Geotechnical Engineering Laboratory
- Structures and Properties of Materials Laboratory
- Heat and Mass Transfer Laboratory
- Energy Systems Laboratory
- CAD Laboratory
- Control Systems Laboratory
- 3D Design and Manufacturing Workshop
- Geotechnical Engineering Laboratory

- Environmental Laboratory
- Circuits and Electronics Laboratory
- Electromagnetics and Antenna Laboratory
- Digital Systems and Microprocessors Laboratory
- Communications Systems Laboratory
- Electric Power Systems Laboratory
- Embedded Systems Laboratory
- Senior Design Laboratory
- Computational Modeling and Simulation Laboratory

In addition, the School houses several computer labs. Each of these is equipped with 25-30 PCs and a projector, and is connected to a high-speed Internet network. General purpose and discipline-specific. software such as Matlab, SolidWorks, AutoCad, MathCad, Primavera, Bentley, Plaxis, Etabs, and SAP are available



ADMISSIONS CHECKLIST

Please make sure that the following items are included with your application. Your admission will depend on the receipt of all required documents throughout the review of your application.

Official English translations of all supporting educational documents must be submitted. Translations must be literal (i.e., word-for-word).

- Completed Application for Undergraduate Admission
- Official school records for grades
 10 and 11 stamped by the school.
- Official school records for Grade I2 should be attested by the appropriate authority of the U.A.E. Ministry of Education -Higher Education Affairs.
- Attestation for international students: Grade 12 transcript and diploma must be attested by the Ministry of Education of home country, Ministry of Foreign Affairs of home country and U.A.E. Embassy in home country. Please note that true copies of your grade 12 documents must bear original attestations.
- High school diploma original required for verification.
- Equivalency letter is also required from the Knowledge of Human Development Authority (KHDA.) (following the referring educational zone) for students who graduated from the U.A.E. & the U.A.E. Ministry

- of Education for students who graduated from outside the U.A.E.
- Paper-Based TOEFL® min. score of 550 + 4.0 on TWE (essay), or
- Internet-based TOEFL® min. score of 79 + 24 on the writing, or
- Academic IELTS[™] min. score of
 6.5 + 6.5 on the writing or
- EMSAT min. score 1550 + C1 on the writing part
- SAT® Reasoning Test scores with min. 560 in Math (Engineering and Architecture applicants are also required to take a Math placement test at AUD).
- Engineering applicants are required to take a Computer exam at AUD.
- Two recent passport size photographs
- Passport photocopy with validity page
- Photocopy of UAE Residence Visa
- Photocopy of Emirates ID (both sides)
- Army exemption letter for all UAE nationals
- Non-refundable application fee of AED 420. A reservation deposit (non-refundable) of AED 5,000 which is fully applied toward tuition, is required upon acceptance for admission.
- Completed Health History Form.
 This form must be signed and stamped by a physician.

SCHOOL OF ENGINEERING ADMISSIONS

In addition to satisfying AUD's general admissions requirements, applicants to the Bachelor of Science in Engineering applicants need to satisfy either of the following two requirements:

- Secure minimum SAT Reasoning Test Score of 560 in Math.
 For each time they have taken this test, students should have their scores sent to AUD. It is highly recommended that this test be taken before November of the senior year of high school.
- Fulfill the AUD Pre-Engineering Requirements.
- Math readiness and placement into an appropriate Math course will be determined by the University-administered Accuplacer™ Exam. Students who have the equivalent of MATH 210 transferred from another recognized university will be exempted from taking this exam. It should be noted that Pre-calculus (MATH 110) credit will not be considered in fulfillment of any of the School of Engineering program requirements.
- Engineering students must have completed secondary school

- course work in Physics and two other laboratory sciences.

 Applicants who have not completed such course work at the secondary school level will be required to do remedial courses in science prior to taking sophomore level Engineering courses.
- Engineering students are required to take the University's Computer Proficiency Exam prior to their first term of admission into Engineering.
 A student who fails the exam will be required to enroll in and pass COMP 101 within the first term of enrollment.
 In such cases, COMP 101 credit will not count towards any of the School of Engineering program requirements.





The School of Engineering prepares a culturally diverse student population for successful professional careers in Engineering at the regional and global levels. The School's educational experience provides all students with the knowledge needed for technical excellence in Engineering, while emphasizing the role of general education, ethical and social responsibility, and life-long learning in the personal and professional growth of future engineers.

ADMISSIONS AT AUD

The mission of the Office of Admissions is to admit to AUD's degree programs students who possess appropriate credentials and the demonstrated capacity and potential to successfully complete the educational programs provided by the university and meaningfully participate in the total educational experience offered by AUD.

The Admissions Office consists of a professional team that assists prospective students gain accessibility to opportunities in higher education. The Admissions team is held to a high level of integrity and is charged with providing quality service and accurate information to all students.

AUD ADMISSIONS OFFICE

P.O. Box 28282, Dubai, UAE T. +971 4 399 9000 admissions@aud.edu www.aud.edu For specific admissions requirements, please check the AUD Undergraduate Catalog on our website or contact the Admissions Office.



IN THE UAE & THE USA

AUD is officially licensed by the U.A.E. Ministry of Education – Higher Education Affairs (MOE-HEA) The Ministry has accredited the university's undergraduate and graduate programs, in addition to Certificate programs in Middle Eastern Studies and Professional Teaching. The university is also accredited in the USA by the Southern Association of Colleges and Schools Commission on Colleges (SACSCOC) to award Bachelor's and Master's degrees.