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 world's major cities.

DISCOVER OUR PROGRAMS AND HEAR THE SUCCESS STORIES OF OUR STUDENTS

A message from the Dean

I welcome you to the School of Engineering at the American University in Dubai. Positioned at the forefront of engineering education in Dubai and the region, the School offers Bachelor of Science degree programs in Civil, Computer, Electrical, and Mechanical Engineering, as well as a Master of Science in Construction Management. Courses cover multiple areas including artificial intelligence, cybersecurity, renewable energy, mechatronics, and environmental engineering.

Our programs are delivered by experienced faculty with strong records of accomplishment and solid international exposure. State of the art labs and excellent
facilities are available to ensure an effective learning experience. During their studies, AUD students have the opportunity to be members of prestigious professional societies, engage in study abroad programs and learn through practical field experience.

With local and international accreditations in place, our graduates continue to be highly sought at both the regional and global levels and hence are employed at leading engineering firms or admitted at some of the world's top graduate schools. Whether you are a student, a parent, or a professional, I invite you to explore our website, visit our campus, and meet our dedicated faculty to learn more about our programs and hear the success stories of our students.

Dr. Wael Bazzi
Dean, and Professor of Computer Engineering

WHY?

Why Engineering at AUD?

- Rich program offerings supplemented with state-of-the art 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

PROGRAMS

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 ndergraduate education required for professional careers in structural engineering, geotechnical engineering, construction engineering and management, environmental engineering, hydraulic and water resources, and transportation systems.
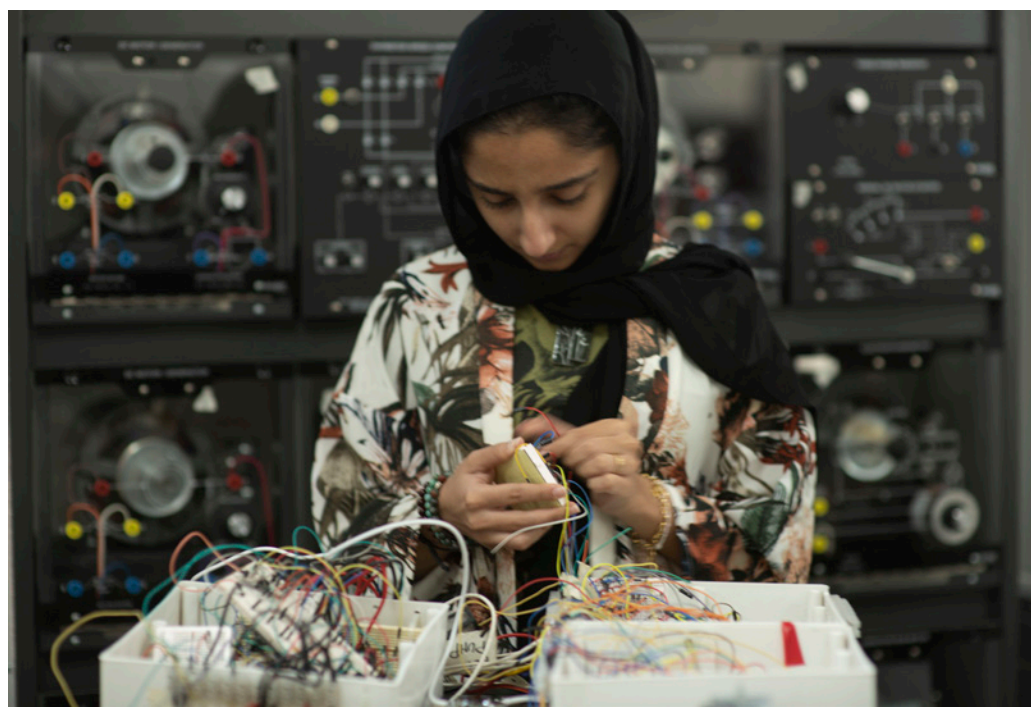
Computer & Electrical Engineering

The Computer and Electrical Engineering programs prepare raduates 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 tudents 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 for Academic Accreditation of the UAE Ministry of Education.

www.caa.ae

Ministry of Education P.O.Box 45133, Abu Dhabi, United Arab Emirates,
tel. +971 2 6427772

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 around the world, such as Kansas State University, Michigan State University, University of Illinois, University of Waterloo, Queen's University, University of Alberta, 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 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, 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.

Our students are given the opportunity to excel beyond the classroom through competitions and activities; for example, AUD engineering students won in the IEEE UAE Student Day for two consecutive years, won Microsoft's Imagine Cup 2017 local and regional competitions, and were awarded First Place at the RTA (Roads and Transport Authority) Transport Hackathon event in 2019.

ALUMNI

SHUROOQUE BALOCH

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

BS in Electrical Engineering,
National Grid ESO

HIBA ABDEL-JABER

" 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."

BS Civil Engineering Valedictorian,
Ph.D. Princeton University

OMAR LABBAN

"With its unique blend of caring faculty, talented classmates, rigorous programs, and nurturing environment, AUD provided the springboard for my career trajectory. From excelling in doctoral studies at MIT to later working on cutting edge technology, studying at AUD has been seminal to making the professional I am today."

BS in Mechanical Engineering,
Ph.D. MIT

MARIAM M. KHALIFEH

" 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 at any other university in the world. "

B.S. in Civil Engineering

Deloitte Middle East, UAE

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**

PROGRAMS

Programs Mission

The School of Engineering prepares a culturally diverse community of learners for successful professional careers grounded in strong engineering knowledge, a culture of innovation, and an awareness of the global societal, economic, and environmental contexts within which engineering decisions are made.

Summary of Degree Requirements

The Bachelor of Science degree programs in Civil, Computer, Electrical and Mechanical Engineering are four-years.

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 https://aud.edu/aud-school/school-of-engineering/

BACHELOR OF SCIENCE IN CIVIL ENGINEERING

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

BACHELOR OF SCIENCE IN COMPUTER ENGINEERING

	Fall	Spring	Internship Term
Year I	ARAB ELE (Arabic Elective)	CHEM 201 (General Chemistry)	
	ENGL 101 (Composition and Rhetoric)	ENGG 140 (Introduction to Programming)	
	MATH 210 (Calculus I)	ENGL 102 (Advanced Composition and Research)	
	PHYS 201 (Introductory Physics I)	MATH 220 (Calculus II)	
	UNIV 100 (The University Experience)	PHYS 202 (Introductory Physics II w/Lab)	
Year II	BIOL 201 (Principles of Biology) or BIOL 202 (General Biology I W/Lab)	EECE 205 (Linear Circuit Analysis II w/Lab)	
	EECE 200 (Linear Circuit Analysis I w/Lab)	EECE 240 (Digital System Design w/Lab)	
	EECE 250 (Intermediate Programming)	ENGG 222 (Numerical Methods in Engineering w/Lab)	
	ENGL 103 (Introduction to Literature)	MATH 250 (Discrete Mathematics)	
	MATH 230 (Linear Algebra and Complex Variables)	PSPK 101 (Public Speaking)	
	MATH 231 (Differential Equations)		
Year III	EECE 300 (Microelectronic Devices & Circuits I w/Lab)	EECE 323 (Fundamentals of Digital Signal Processing)	EECE 399 (Field Experience in Computer Engineering)
	EECE 320 (Signals and Systems w/Lab)	EECE 345 (Computer Architecture w/Lab)	
	EECE 340 (Introduction to Microprocessors w/Lab)	EECE 355 (Software Engineering)	
	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 Cultural Studies Elective)	
Year IV	EECE 440 (Embedded System Design w/Lab)	EECE 499 (Computer Engineering Design Project)	
	EECE 450 (Operating Systems)	CompE ELE (Computer Engineering Elective)	
	CompE ELE (Computer Engineering Elective)	CompE ELE (Computer Engineering Elective)	
	CompE ELE (Computer Engineering Elective)	GEN ELE (General Elective)	
	PHIL 222 (Professional Ethics)	WLDC 201 (Cultural Encounters and Historical Transformation) or WLDC 202 (Culture and Innovation in a Globalized World)	
	SSCI ELE (Social/Behavioral Sciences Elective)		

BACHELOR OF SCIENCE IN ELECTRICAL ENGINEERING

	Fall	Spring	Internship Term
Year I	ARAB ELE (Arabic Elective)	CHEM 201 (General Chemistry)	
	ENGL 101 (Composition and Rhetoric)	ENGG 140 (Introduction to Programming)	
	MATH 210 (Calculus I)	ENGL 102 (Advanced Composition and Research)	
	PHYS 201 (Introductory Physics I)	MATH 220 (Calculus II)	
	UNIV 100 (The University Experience)	PHYS 202 (Introductory Physics II w/Lab)	
Year II	EECE 200 (Linear Circuit Analysis I w/Lab)	BIOL 201 (Principles of Biology) or BIOL 202 (General Biology I W/Lab)	
	EECE 250 (Intermediate Programming)	EECE 205 (Linear Circuit Analysis II w/Lab)	
	ENGL 103 (Introduction to Literature)	EECE 240 (Digital System Design w/Lab)	
	MATH 230 (Linear Algebra and Complex Variables)	ENGG 222 (Numerical Methods in Engineering w/Lab)	
	MATH 231 (Differential Equations)	ISST ELE (Islamic Cultural Studies Elective)	
	PSPK 101 (Public Speaking)	MATH 240 (Multivariable Calculus)	
Year III	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)	
	EECE 340 (Introduction to Microprocessors w/Lab)	EECE 326 (Communications 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)	
Year IV	EECE 470 (Systems and Controls)	EECE 498 (Electrical Engineering Design Project)	
	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)	
	SSCI ELE (Social/Behavioral Sciences Elective)	WLDC 201 (Cultural Encounters and Historical Transformation) or WLDC 202 (Culture and Innovation in a Globalized World)	

BACHELOR OF SCIENCE IN MECHANICAL ENGINEERING

	Fall	Spring	Internship Term
Year I	ARAB ELE (Arabic Elective)	CHEM 201 (General Chemistry)	
	ENGG 140 (Introduction to Programming)	ENGG 210 (Engineering Graphics and Visualization)	
	ENGL 101 (Composition and Rhetoric)	ENGL 102 (Advanced Composition and Research)	
	MATH 210 (Calculus I)	MATH 220 (Calculus II)	
	PHYS 201 (Introductory Physics I w/Lab)	PHYS 202 (Introductory Physics II w/Lab)	
	UNIV 100 (The University Experience)		
Year II	BIOL 201 (Principles of Biology) or BIOL 202 (General Biology I W/Lab)	EECE 201 (Electric Circuit Theory)	
	EMEC 210 (Structure and Properties of Materials W/Lab)	ENGG 200 (Engineering Statistics)	
	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)	
Year III	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)	
	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 Cultural Studies Elective)	
Year IV	EMEC 440 (Energy Systems w/Lab)	EMEC 499 (Mechanical Engineering Design Project)	
	EMEC 460 (Manufacturing Engineering and Technology)	EMEC ELE (Mechanical Engineering Elective)	
	EMEC ELE (Mechanical Engineering Elective)	EMEC ELE (Mechanical Engineering Elective)	
	EMEC ELE (Mechanical Engineering Elective)	PHIL 222 (Professional Ethics)	
	SSCI ELE (Social/Behavioral Sciences Elective)	WLDC 201 (Cultural Encounters and Historical Transformation) or WLDC 202 (Culture and Innovation in a Globalized World)	

EMPLOYER'S

" 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
Regional Manager, Fugro

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

Bashar Kilani
Managing Director, Accenture, UAE

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 extra-curricular 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-the-art 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 equipped with 25-30 PCs and a projector, and is connected to a high-speed Internet network. General purpose and discipline-specific softwares such as Matlab, SolidWorks, AutoCad, MathCad, Primavera, Bentley, Plaxis, Etabs, and SAP are available.
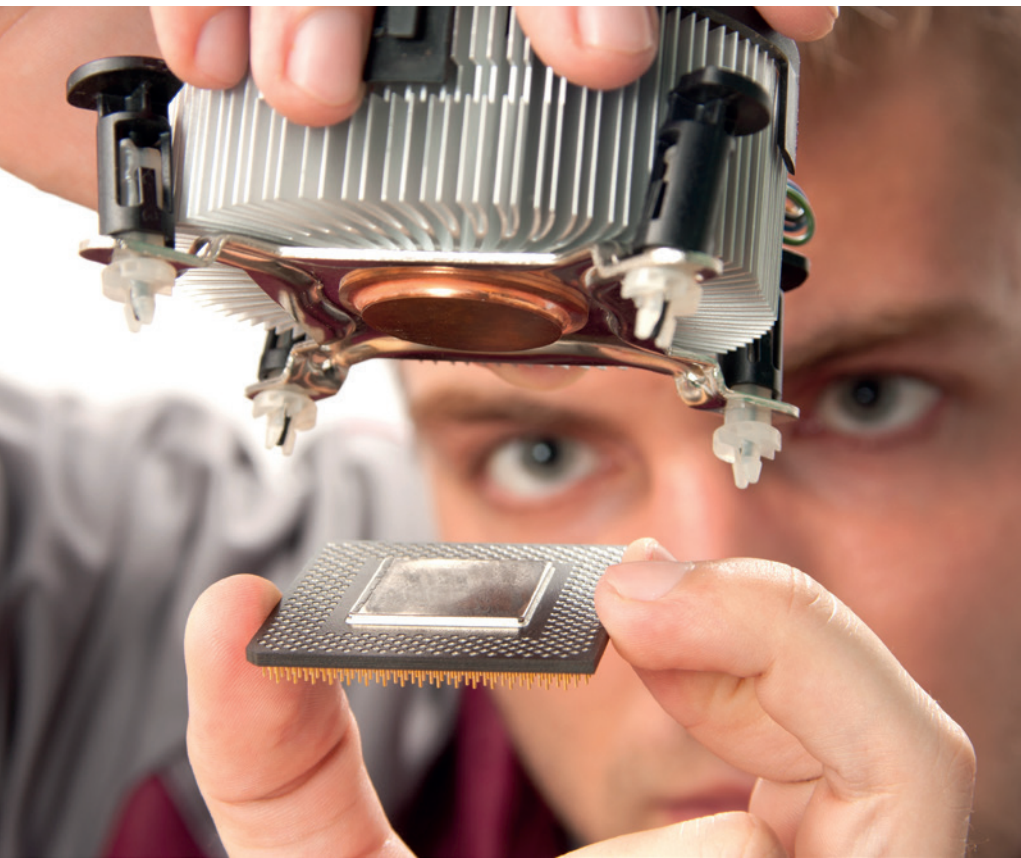
ADMISSIONS CHECKLIST

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).

- A completed online Application for Admission.
- An official, attested high school/secondary school transcript (academic record) covering the last three years.
- High school Diploma.
- Equivalency letter from the UAE Ministry of Education.
- Official test scores: TOEFL® or Academic IELTS™ or EmSAT and SAT®. Army exemption letter for UAE nationals.
- Valid passport photocopy (and Ethbara page for UAE nationals, visa validity age, and Emirates ID (both sides).
- Completed Health History Form. This form must be signed and stamped by a physician.

Financial Requirements

- Non-refundable application fee of AED 420.

Additional details are available online: www.aud.edu

As part of the recent UAE Ministry of Education guidelines, you are required to satisfy the below requirements:

- A minimum High School Average of 75% for Elite Track, or, 80% for Advanced Track
- EmSAT MATH score of 900 or equivalent
- EmSAT Physics score of 800
- EmSAT Arabic score of 600

Please note, the minimum requirements for these programs are set by the UAE Ministry of Education; however, AUD requires higher scores to waive the placement exams required for admissions. Please consult with the Admissions Office at admissions@aud.edu.

ADMISSIONS – SCHOOL OF ENGINEERING

Admissions – School of Engineering

- In addition to satisfying AUD's general admissions requirements, admission to the School of Engineering is contingent upon the following requirements:

  All applicants must have completed secondary school coursework in math (min. average of 80% or equivalent), physics (min. average of 80% or equivalent), and one other natural science.

Conditional Admission – School of Engineering

- Applicants who do not meet the above requirements in math, physics, or natural science may be admitted conditionally to an Engineering program for a maximum of two terms (including summer sessions). During that period, the student must satisfy the following requirement(s) in order to gain full admission to their Engineering program:

- Applicants who did not satisfy the math requirement must score a minimum of 1200 on the EmSAT MATH test;

- Students who did not satisfy the physics requirement must pass a preparatory course in physics (PHYS 101) with a grade of C or higher, or score a minimum of 1000 on the EmSAT Physics test;

- Students who have not completed a second natural science coursework in high school must score a "C" or higher in BIOL201 or CHEM201 in order to clear the engineering *conditional admission.*

Math Placement:

Placement into an appropriate math course will be determined by the university-administered ACCUPLACER™ Exam.

Engineering applicants with a SAT Math score of 560 will be placed in MATH104 and score of Math 590 in MATH210 or equivalent

Students who have the equivalent of MATH 210 transferred from another recognized university or from advanced high school curricula (A-level, AP, etc.) will be exempted from taking this Exam.

Computer Placement:

Computer proficiency will be determined by 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 his or her first term of admission. In such cases, COMP 101 credit will not count towards any of the School of Engineering program requirements.

AUD | AMERICAN UNIVERSITY IN DUBAI
School of Engineering

The School of Engineering prepares a culturally diverse community of learners for successful professional careers grounded in strong engineering knowledge, a culture of innovation, and an awareness of the global societal, economic, and environmental contexts within which engineering decisions are made.

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 Office of Admissions 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 OFFICE OF ADMISSIONS
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 at our website or contact the Office of Admissions.

ACCREDITED 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.

AUD is accredited by the Southern Association of Colleges and Schools Commission on Colleges (SACSCOC) to award Baccalaureate and Master's degree levels. Questions about the accreditation of AUD may be directed in writing to the Southern Association of Colleges and Schools Commission on Colleges at 1866 Southern Lane, Decatur, GA 30033-4097 USA, by calling +1 (404) 679-4500, or by using information available on SACSCOC's website (www.sacscoc.org).