Master of Science in
MECHATRONICS ENGINEERING
The Master of Science in Mechatronics Engineering (MSMTR) program is committed to being an international, multidisciplinary center of excellence in synergistic applications of the latest techniques in embedded systems, precision mechanical engineering, control theory, computer science and electronics through education, research and outreach.

The MSMTR graduate program provides students with state-of-the-art knowledge in their areas of specialization with practical strategies for adapting that knowledge to serve the specific needs of the region. Multidisciplinary engineers are needed now more than ever to meet the demand for a flexible engineering workforce to deal with highly integrated engineering systems.

Integrating the latest in science and engineering

The MSMTR program integrates multidisciplinary engineering concepts of electrical, mechanical, control, computer and software engineering, addressing grand challenges across the ever-changing industrial landscape. Graduates of the program are highly valued by employers, equipped to contribute across the following areas:

- maintenance diagnosis and troubleshooting
- computer integrated manufacturing systems
- modern industrial installations and systems
- robotics
- vehicle design and manufacturing
- defense systems
- intelligent systems

Faculty of distinction

In undertaking the MSMTR, you will work under the supervision of faculty who have received their doctoral degrees from renowned universities, including some of the best engineering institutions in North America and Europe. These faculty are recognized experts in their fields, with extensive teaching and research experience.

Built-in flexibility

Our graduate programs are flexible, ensuring that students are able to pursue their careers alongside their graduate degree. Students can choose between a full-time schedule and a part-time schedule, with classes offered at times suitable for those in the workforce.

The graduate program at AUS is challenging but highly satisfying at the same time. The graduate courses will help you to expand your knowledge and increase your abilities to tackle real-world problems in a more expansive manner. The time you invest in AUS is bound to leave a positive mark in your life.

Danial Waleed | MSMTR Class of 2019
Doctoral student at the University of Vermont, USA
Graduate assistantships and employment
AUS offers graduate students assistantships and work-study opportunities. These are awarded on a competitive basis, coming in the form of a Graduate Research Assistantship or Graduate Teaching Assistantship. This offers not only financial assistance but also hands-on experience in teaching and research helpful to students interested in pursuing a career in academia.

AUS offers graduate students assistantships and work-study opportunities.

Active mechatronics research projects at AUS
AUS graduate students have the opportunity to work with faculty to publish their work in leading international engineering and scientific journals. As part of the MSMTR program at AUS, you will have the opportunity to be involved in quality research across a number of areas pertinent to the growing biomedical industry, including:

- mechatronics systems and control
- path planning and navigation
- sensor fusion
- motor drives
- embedded systems
- energy systems
- robotics and intelligent systems
- IoT
Admission to the MSMTR
In addition to meeting the university’s general graduate admission requirements, applicants must hold a Bachelor of Science in Computer Engineering from an independently accredited university recognized by the UAE Ministry of Education’s Higher Education Affairs Division and by AUS. Degreed individuals in engineering fields or a quantitative science field that is closely related to the sought program field may be considered on a case-by-case basis.

Applicants who do not meet the full admission requirements may be eligible for conditional admission to the program and are encouraged to check the program website for more details.

MSMTR courses: A breadth of choice
Students in the MSMTR program must choose from two options: the thesis option or the course option.

Thesis Option
Students in the thesis option must successfully complete a minimum of 30 credit hours, as follows:
• 15 credit hours in core courses
• a minimum of six credit hours in elective courses
• nine credit hours in Master's Thesis

Course Option
Students in the course option must successfully complete a minimum of 30 credit hours, as follows:
• 15 credit hours in core courses
• a minimum of 15 credit hours in elective courses

Prerequisite Discipline-Bridging Course
Students admitted to the MSMTR program, with the exception of students with a Bachelor of Science in Mechatronics Engineering, are required to complete the prerequisite discipline-bridging course MTR 501 Introduction to Mechatronics.

Core Courses (15 credit hours)
Students must successfully complete the following courses:
• MTR 520 Embedded Systems for Mechatronics
• MTR 540 Advanced Control Systems
• MTR 550 Robotics Systems
• MTR 615 Artificial Intelligent Systems
• MTR 690 Mechatronics Design
• MTR 695 Mechatronics Seminar

Elective Courses (minimum of 6/15 credit hours)
Students in the thesis option must successfully complete a minimum of six credit hours from the following list of courses. Students in the course option must successfully complete a minimum of 15 credit hours:
• ELE 544 Advanced Signal Processing
• MTR 610 Automated Manufacturing Systems
• MTR 640 Nonlinear and Intelligent Control Systems
• MTR 644 Electric Drives for Mechatronics Systems
• MTR 650 Applied Linear Estimation
• MTR 694 special topic courses in mechatronics engineering
• MTR 696 Independent Study in Mechatronics Engineering
• NGN 500 Advanced Engineering Mathematics

Sustainability is CEN’s priority and focus
The AUS College of Engineering (CEN) is seeking to build a more sustainable future for its students and the global communities of which they are a part. Throughout its research, teaching and other scholarly activities, the college seeks to uphold the widely accepted vision of the global engineering community for the 21st century: to ensure the continuation of life on the planet, making the world more sustainable, secure, healthy and joyful.

CEN practices the values of this vision every day, by housing itself within one of the region’s most sustainably advanced buildings. The AUS Engineering and Sciences Building has achieved the highly sought-after “2 Pearl” rating by Estidama, a sustainable development initiative of the Abu Dhabi Urban Planning Council. The rating evidences the building’s highly efficient use of resources and minimization of waste. It also complements AUS’ position as the first university in the MENA region to have a Sustainability Tracking, Assessment and Rating System (STARS) classification for sustainability in higher education, awarded by the Association for the Advancement of Sustainability in Higher Education (AASHE).
The work of CEN’s faculty and students helps progress international sustainability efforts. By advancing design and innovation in engineering that impacts many facets of sustainability, CEN is contributing to the global collaboration needed to find solutions to some of the world’s most pressing challenges: climate change, population growth and disease, among others. Our faculty and students are at the helm of sustainability-related efforts in the fields of supply chain, materials science, renewable energy, urban planning, water and environment, energy, construction, Artificial Intelligence, data science and more—all areas that will play a role in securing a sustainable tomorrow for populations across the world.

Together, we are committed to working with the global engineering community to safeguard our tomorrow, in the Middle East and beyond.
Reasons to choose a graduate program at the AUS College of Engineering

All graduate programs offered by the AUS College of Engineering are accredited by the Commission for Academic Accreditation of the Ministry of Education’s Higher Education Affairs Division in the United Arab Emirates. AUS is also accredited in the United States of America by the Middle States Commission on Higher Education (3624 Market Street, Philadelphia, PA 19104, USA, Tel +1 215 662 5606).

Why AUS?

AUS was founded in 1997 by His Highness Sheikh Dr. Sultan Bin Muhammad Al Qasimi, Member of the Supreme Council of the United Arab Emirates and Ruler of Sharjah.

Sheikh Sultan articulated his vision of a distinctive institution against the backdrop of Islamic history and in the context of the aspirations and needs of contemporary society in the UAE and the Gulf region.

Firmly grounded in principles of meritocracy and with a strong reputation for academic excellence, AUS has come to represent the very best in teaching and research, accredited internationally and recognized by employers the world over for creating graduates equipped with the knowledge, skills and drive to lead in the 21st century.

AUS values learners not driven only by academic success, but by those that embrace our dynamic campus life and embody our ideals of openness, tolerance and respect.

This combination of academic excellence and community spirit ensures AUS is filled with world-class faculty and students, poised to become the innovators, thinkers, contributors and leaders of tomorrow.