

Electrical Automation and Robotics Technology

Electrical Automation and Robotics Technology

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This department offers degrees in Electrical Automation and Robotics Technology (EART) and Mechatronics Technology.

The EART degrees prepare students for work with all types of electrical and automated control systems and equipment. Students also receive training to work with hydraulic and pneumatic equipment as well as electrical wiring.

Mechatronics is a hybrid discipline that utilizes the principles of Computer Science, Electrical Engineering, and Mechanical Engineering to design and produce complex computer controlled electro-mechanical systems. Mechatronics students are prepared as multi-craft technicians capable of installing, programming, maintaining,

troubleshooting, calibrating, and repairing automated equipment and robots across integrated systems.

CAREER OPPORTUNITIES

EART and Mechatronics Technology students may be employed in many different occupations. They may work in mining industries, steel mills, processing plants, oil refineries, power plants, manufacturing, semiconductor industries, electronics companies, and chemical industries. Job duties may include construction, fabrication, maintenance, troubleshooting, repair, calibration, test and design. They may work with automatic control systems, AC and DC control components, motors, programmable control, microprocessors, computers, and robots. Advancement to supervisor and management positions within the electrical field is frequently available.

PROGRAMS

Three options are available: Associate in Applied Science Degree, Associate in Science Degree, and the Bachelor of Science in Technology Management. See Graduation Requirements in catalog for definitions.

Reminder: an overall grade point average of 2.0 (C) or above is required for graduation.

Management (i.e. Technology Management or Business Management) course work older than six years cannot be counted toward graduation.

If student chooses HIST 2700 and HIST 2710, the additional three hours may be used towards a social science distribution requirement.

AAS in Electrical Automation and Robotics Technology

66 CREDITS

General Education Requirements: 16 Credits

- ENGL 106A Career Writing for Technology--A 2.0
- Any approved Humanities or Fine Art 3.0
- Any approved Behavioral Science, Social, or Political Science Distribution Course 3.0
- Any approved Physical Education, Health, Safety, or Environment Course 1.0
- Any approved Biology or Physical Science 2.0
- EART 1050 Applied Electrical Math 5.0

Discipline Core Requirements: 50 Credits

- EART 1130 Basic Electrical 4.0
- EART 1180 Basic Electrical Lab 5.0
- EART 1250 Electrical Wiring and Code 2.0
- EART 1260 Logic 2.0
- EART 1270 DC and AC Machines 9.0
- EART 2110 Semiconductors Devices 6.0
- EART 2150 Hydraulics and Pneumatics 3.0
- EART 2160 Industrial Solid State Circuit 5.0
- EART 2250 Programmable Logic Controllers 1 5.0
- EART 2260 Advanced Logic 3.0
- EART 2270 Programmable Logic Controllers 2 6.0

Graduation Requirements:

- 1 Completion of a minimum of 66 semester credits
- 2 Overall grade point average of 2.0 (C) or above. (Departments may require a higher GPA.)
- 3 Residency hours: minimum of 20 credit hours through course attendance at UVU
- 4 Completion of GE and specified departmental requirements

AAS in

Mechatronics Technology

69 CREDITS

General Education Requirements: 20 Credits

- ENGL 1010 Introduction to Writing 3.0
 - MATH 1050 College Algebra 4.0
 - COMM 1020 Public Speaking 3.0
- or English 2310 Technical Communication
or Other Humanities distribution course approved by Dept. Chair

Complete one of the following: 3.0

- HIST 1700 American Civilization (3.0)
 - HIST 2700 US History to 1877 (3.0)
- and HIST 2710 US History since 1877 (3.0)
- HIST 1740 US Economic History (3.0)
 - POLS 1000 American Heritage (3.0)
 - POLS 1100 American National Government (3.0)

Complete the following:

- PHYS 2010 College Physics I 4.0
 - PHYS 2015 College Physics I Lab 1.0
 - HLTH 1100 Personal Health and Wellness 2.0
- or PES 1097 Fitness for Life (2.0)

Discipline Core Requirements: 49 Credits

- CS 1400 Fundamentals of Programming 3.0
- CS 2810 Computer Organization and Architecture 3.0
- EENG 2700 Digital Design I 3.0
- EENG 2705 Digital Design I Lab 1.0
- MATH 1060 Trigonometry 3.0
- MECH 1010 Introduction to Mechatronics 3.0
- MECH 1020 Mechanical Systems 3.0
- MECH 2030 Sensor Technology 3.0
- MECH 2040 Control Technology 3.0
- MECH 3050 Mechatronics Integration Projects 3.0
- MECH 3060 Mechatronics Management 3.0
- MECH 1510 Software Tools for Mechatronics 3.0
- MECH 2520 Introduction to Control Systems Programming 4.0
- MECH 2530 Advanced Control Systems Programming 4.0
- MECH 3540 Embedded Control Systems 3.0
- MECH 1800 Basic Electronics AC and DC 4.0

Graduation Requirements:

- 1 Completion of 69 or more credit hours.
- 2 Overall grade point average of 2.0 (C) or above, with no core course below a C-.
- 3 Residency hours: minimum of 20 credit hours through course attendance at UVU.
- 4 Completion of GE and specified departmental requirements.

AS Pre Major in Electrical Automation and Robotics Technology

63 CREDITS

General Education Requirements: 35 Credits

- ENGL 1010 Introduction to Writing 3.0
 - ENGL 2010 Intermediate Writing--Humanities/Social Sciences 3.0
- or ENGL 2020 Intermediate Writing--Science and Technology(3.0)

Complete one of the following: 3.0

- MATH 1030 Quantitative Reasoning(3.0)
- MATH 1040 Introduction to Statistics(3.0)
- MATH 1050 College Algebra(4.0)

Complete one of the following: 3.0

- HIST 2700 US History to 1877(3.0)
- and HIST 2710 US History since 1877(3.0)
- HIST 1700 American Civilization(3.0)
- HIST 1740 US Economic History(3.0)
- POLS 1000 American Heritage(3.0)
- POLS 1100 American National Government(3.0)

Complete the following:

- PHIL 2050 Ethics and Values 3.0
 - HLTH 1100 Personal Health and Wellness 2.0
- or PES 1097 Fitness for Life(2.0)

Distribution Courses

- Biology 3.0
- Physical Science 3.0
- Additional Biology or Physical Science 3.0
- Humanities Distribution 3.0
- Fine Arts Distribution 3.0
- Social/Behavioral Science 3.0

Discipline Core Requirements: 16 Credits

- Choose from EART or related courses (1000 level 16.0 or higher)

Elective Requirements: 12 Credits

- Electives (1000 level or higher) 12.0

Graduation Requirements:

- 1 Completion of a minimum of 63 semester credits.
- 2 Overall grade point average of 2.0 (C) or above (Department may require a higher GPA.)
- 3 Residency hours-- minimum of 20 credit hours through course attendance at UVU.
- 4 Completion of GE and specified departmental requirements.

BS in Technology Management 125 CREDITS

The following Technical Area is available (see the Technology Management section of this catalog for complete degree requirement listings.)

Specialization in Electrical Automation and Robotics Technology 45 Credits

Emphasis Requirements: 44 Credits

- EART 1130 Basic Electrical 4.0
- EART 1050 Applied Electrical Math 5.0
- EART 1180 Basic Electrical Lab 5.0
- EART 1260 Logic 2.0
- EART 1270 DC and AC Machines 9.0
- EART 2110 Semiconductors Devices 6.0
- EART 2150 Hydraulics and Pneumatics 3.0
- EART 2160 Industrial Solid State Circuit 5.0
- EART 2250 Programmable Logic Controllers 1 5.0

Elective Requirements: 1 Credits

Electives in EART based on chosen option (students must see advisor for list of approved course options). 1.0

See Course Descriptions section of the catalog for detailed course information. This department manages the following course prefixes:

- EART, Electrical Engineering
- ECT, Engineering Science
- MECH, Mechatronics Technology
- TCT Telecommunications Technology