

Computer Science, Information Systems and Engineering

B.S. in Mechatronics Engineering Technology

Program Description

The Bachelor of Science in Mechatronics Engineering Technology degree prepares students to apply mathematical and scientific principles to the design, development and operational evaluation of automated systems (computer-controlled with embedded electronics, sensors and actuators).

Delivery Mode

Traditional (on campus)

Curriculum

The following eight-semester schedule of courses provides a recommended framework for completing this program of study in four years.

Course	Credits
Freshman Year	
First Semester	17
CSC 120 Problem Solving and Programming Constructs	3
ENG 101 English Composition I	3
GET 130 Introduction to Engineering Technology	3
MAT 199 Pre-Calculus	3
PHY 121 General Physics I	4
UNI 100 First-Year Seminar	1
Second Semester	17
CSC 124 Computer Programming I	3
EET 110 Electrical Circuits I	4
ITE 215 CAD I	3
MAT 281 Calculus I	3
PHY 122 General Physics II	4
Sophomore Year	
Third Semester	17
CET 235 Digital Electronics Design	4
EET 160 Electric Circuits II	4
ITE 305 OSHA General Industrial Safety	3
MAT 282 Calculus II	3

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Course	Credits
MTR 300 Manufacturing Processes	3
Fourth Semester	15
ECO 201 Introduction to Economics	3
ENG 217 Science and Technical Writing	3
MTR 310 Principles of Automatic Control	3
MTR 320 Statics	3
Technical Elective	3
Junior Year	
Fifth Semester	16
EET 325 Introduction to Electric Power	4
MTR 325 Fundamental of Programmable Logic Controllers	3
MTR 330 Dynamics	3
MTR 340 Fluid Power	3
General Education Course	3
Sixth Semester	13
EET 215 Introduction to Instrumentation	3
MTR 335 Advanced PLCs and Integration	3
MTR 370 Properties and Strength of Materials	4
General Education Course	3
Senior Year	
Seventh Semester	13
ITE 375 Principles of Production	3
MTR 400 Machine Design Elements and Kinematics	3
MTR 410 Process Control	3
MTR 445 Senior Project Proposal	1
General Education Course	3

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Course	Credits
Eighth Semester	12
MTR 420 Computer Integrated Manufacturing	3
MTR 450 Senior Projects	3
General Education Courses	6
Total	120

Related (Technical) Electives (3 credits)

- **CIS 341** CISCO CCNA 1 (4 credits)
- **CIS 354** Systems Project Management (3 credits)
- **CET 335** Microprocessor Interfacing (4 credits)
- **CET 270** Introduction to Microprocessor Design (4 credits)
- **ITE 460** Principles of Manufacturing (3 credits)
- **ITE 385** Industrial Cost Estimating (3 credits)
- **MTR 495** Mechatronics Internship (4 credits)
- **RET 260** Robotics Systems Project (3 credits)
- **RET 210** Robotic Teaming (3 credits)

Substitutions

College Algebra (3 crs.) and College Trigonometry (3 crs.) may be substituted for Pre-Calculus, if math placement test score does not permit direct entry into Pre-Calculus, or if students would prefer less intense coverage of this material.

Program Webpage

<https://www.calu.edu/academics/undergraduate/bachelors/mechatronics-engineering-technology/index.aspx>