

# ENERGY MANAGEMENT AND CONTROLS TECHNOLOGY

## Associate in Science Degree (CIP# 1615170100)

This one-of-a-kind program teaches students how to manage and control a building's electrical and mechanical systems efficiently using a broad range of current and emerging technologies. Students will develop a proficiency in HVAC/R commercial systems, control theory, logic and programming, as well as installation, system design and integration, and will be trained to enter the building automation industry as skilled technicians capable of designing, installing, servicing, and troubleshooting commercial control systems. Students will also have the added benefit of working on controls devices that are representative of the leading brands found in the field, and will complete an industry-based internship enabling them to gain the hands-on experience needed to land a high-demand job when they graduate.

Students are strongly encouraged to consult a student success coach in the department office for assistance in determining the best education plan for their career goals.

Although scheduling may not always provide for the following progression of courses, students should use the foundation, intermediate and advanced course sequence as a guide in program planning.

All degree-seeking students must satisfy entry testing requirements and satisfactorily complete all mandatory courses in reading, student success, mathematics, English, and English for Academic Purposes in which the student is placed.

## Alternative Ways to Earn Credit toward this Degree

Graduates of specific programs at Orange Technical College and Osceola Technical College, as well as other institutions may be eligible to receive college credit for courses in this program. You may also be eligible to receive credit toward this degree if you have earned one of the approved Gold Standard industry certifications or Career Pathways credit. To learn more about Valencia's award of credit options, visit <https://valenciacollege.edu/academics/programs/as-degree/credit-industry-certification-agreements.php> Eligible students should contact the Student Success Coach in their academic department for more information about the requirements for the award of credit.

## Start Right

Degree-seeking students enrolling at Valencia for the first time will have a limited range of courses from which to choose for their first 18 college-level credits. Within the first 18 college credit hours, you will be required to take ENC1101 (3 credits), and if applicable, SLS 1122 (3 credits) and a mathematics course appropriate to your selected meta-major (3 credits). The remaining courses will be chosen from the General Education Core Courses in humanities (3 credits), science (3 credits), or social science (3 credits), and/or the introductory courses within the A.S. degree programs. For specific courses see the *Foundation Courses* on the "Program Requirements" tab. For course sequencing recommendations, see your Student Success Coach or create an education plan by logging into MyVC, clicking on the LifeMap tab and clicking My Education Plan.

## Potential Careers

- Building Automation/Controls Technician
- Building Operator
- Measurement and Verification Specialist
- Energy Manager
- Lighting Systems and Controls Technician
- Energy Auditor
- Indoor Air Quality Specialist
- HVAC/R Installation and Service Technician
- Facilities Manager

## Salary & Earnings Information

For career information related to this program, please visit **O\*Net OnLine** (<https://www.onetonline.org/>).

## Contacts

### Future Students

To learn more about this program, contact Enrollment Services at [enrollment@valenciacollege.edu](mailto:enrollment@valenciacollege.edu) or 407-582-1507 or visit [valenciacollege.edu/emct/](https://valenciacollege.edu/emct/) (<https://valenciacollege.edu/emct/>)

### Current Students

Your Student Success Coach contact information can be found in MyVC. Log into MyVC, click on the Courses tab, and check your Academic Profile information to find a link to your Coach.

### West Campus Faculty Program Chair

Radu Bunea: 407-582-1360  
[rbunea@valenciacollege.edu](mailto:rbunea@valenciacollege.edu)

### Internship and Workforce Services

If you need assistance with job resources or in locating an internship, please visit: [valenciacollege.edu/internship](https://valenciacollege.edu/internship) (<https://valenciacollege.edu/internship/>).

## Program Outcomes

- Complete a BAS hardware and software project from submittals to commissioning
- Troubleshoot BAS hardware and software networks
- Communicate with technical and non-technical audiences
- Demonstrate management of time, materials, and resources to perform BAS tasks
- Identify energy management principles for BAS hardware and software tasks

### Foundation Courses

ETM 1600C	AUTOMATION AND CONTROLS FUNDAMENTALS	3
ETM 1601C	HVAC SYSTEMS AND DEVICES	3
ENC 1101	FRESHMAN COMPOSITION I	3
Mathematics	See Gen. Ed. Core Requirements	3
Science	See Gen. Ed. Core Requirements	3
Humanities	See Gen. Ed. Core Requirements	3

POS 2041	U.S. GOVERNMENT ~	3
or AMH 2010	UNITED STATES HISTORY TO 1877	
or AMH 2020	U.S. HISTORY 1877 TO PRESENT	

**Intermediate Courses**

ETM 1602C	AUTOMATED ELECTRICAL SYSTEMS AND DEVICES	3
or EET 1214C	INTRODUCTION TO ENGINEERING TECHNOLOGY	
ETM 1603C	AUTOMATION AND CONTROLS DESIGN THROUGH COMMISSIONING	3
ETM 1604C	ENERGY MANAGEMENT CONCEPTS	3
ETM 2608C	AUTOMATED BUILDING OPERATIONS	3

**Advanced Courses**

ETM 2606C	PROGRAMMING BUILDING AUTOMATION SYSTEMS	3
ETM 2605C	AUTOMATION AND CONTROLS INTEGRATION	3
ETM 2607C	TROUBLESHOOTING AUTOMATION AND CONTROL SYSTEMS	3
ETM 2609C	CAPSTONE IN ENERGY MANAGEMENT AND CONTROLS TECHNOLOGY	3

**Restricted Electives 15**

Note: After consulting with your EMCT Program Chair and/or Student Success Coach, select from the following courses for a total of 15 credit hours of electives.

ETM 2942	INTERNSHIP IN ENERGY MANAGEMENT AND CONTROLS TECHNOLOGY	*
ETM 2943	PRACTICUM IN ENERGY MANAGEMENT AND CONTROLS TECHNOLOGY	*

**Note about ETM 2943:**

Students who have completed an approved training program from another institution or can provide documentation of current industry knowledge and work experience and have earned the required industry certifications may be eligible to receive credit toward this degree. Please see your EMCT Program Chair and/or Student Success Coach for more information on the eligibility requirements.

ETD 1103C	ENGINEERING GRAPHICS WITH CAD	*3
COP 1000C	INTRODUCTION TO PROGRAMMING CONCEPTS	*3
CET 2486C	LOCAL AREA NETWORKS	*3
BCN 2563	BUILDING SYSTEMS & MANAGEMENT	*3
CNT 2417C	CYBERSECURITY OPERATIONS	*3
CGS 2545C	DATABASE MANAGEMENT SYSTEMS	*3

**Total Credit Hours 60**

All specialized program courses are offered on the West Campus and may not be offered every session; some courses may be offered at other locations.

Students who have completed an approved training program from another institution or can provide documentation of current industry knowledge and work experience, and have the required industry certification(s) may be eligible to receive credit toward this degree. Please see the Student Success Coach in your academic department for more information on the eligibility requirements.

Expand your career opportunities with a Bachelor's Degree in Business and Organizational Leadership (BASBOL) from Valencia. This degree builds on your skills, and prepares you for a supervisory or management role within your respective field. For more information, go to: Bachelor's Degree in Business & Organizational Leadership (<http://catalog.valenciacollege.edu/degrees/bachelorofscience/bas/>). Students who wish to continue their education should consult with a Student Success Coach to determine the best education plan for their career goals.

Students wishing to transfer credits from this program to another institution must accept responsibility for securing approval from the transfer institution for acceptance of this degree.