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 career program advisor 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 Career Program Advisor 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 Career Program Advisor or create an education plan by logging into Atlas, 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 or 407-582-1507 or visit valenciacollege.edu/emct/ (https://valenciacollege.edu/emct/)

Current Students

Your Career Program Advisor contact information can be found in Atlas. Log into Atlas, click on the Courses tab, and check your Academic Profile information to find a link to your Advisor.

West Campus Faculty Program Chair

Radu Bunea: 407-582-1360
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/).

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
PHY 1020	CONCEPTUAL PHYSICS ~	3
MGF 1130	MATHEMATICAL THINKING +*~	3

or

Mathematics	See Gen. Ed. Core Requirements	
Intermediate Courses		
Humanities	See Gen. Ed. Core Requirements	
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
ETD 1103C	ENGINEERING GRAPHICS WITH CAD	3
ETM 2605C	AUTOMATION AND CONTROLS INTEGRATION	3
ETM 2606C	PROGRAMMING BUILDING AUTOMATION SYSTEMS	3
or COP 1000C	INTRODUCTION TO PROGRAMMING CONCEPTS	
Advanced Courses		
BCN 2563	BUILDING SYSTEMS & MANAGEMENT	3
CET 2486C	LOCAL AREA NETWORKS	3
CET 2178C	COMPUTER HARDWARE	3
ETM 2607C	TROUBLESHOOTING AUTOMATION AND CONTROL SYSTEMS	3
POS 2041	U.S. GOVERNMENT ~	3
or AMH 2020	U.S. HISTORY 1877 TO PRESENT	
ETM 2942	INTERNSHIP IN ENERGY MANAGEMENT AND CONTROLS TECHNOLOGY	3
Restricted Electives		**6**
Note: After consulting with your EMCT Career Program Advisor, select from the following courses for a total of 6 credit hours of electives.		
CET 1610C	CISCO ROUTER TECHNOLOGY	
CET 2615C	ROUTING & SWITCHING IN THE ENTERPRISE	
CNT 2417C	CYBERSECURITY OPERATIONS	
CGS 2545C	DATABASE MANAGEMENT SYSTEMS	
ETM 2608C	AUTOMATED BUILDING OPERATIONS	
ETM 2609C	CAPSTONE 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 Career Program Advisor for more information on the eligibility requirements.		
Total Credit Hours		**57**

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 Career Program Advisor 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 Career Program Advisor 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.