

# CONSTRUCTION AND CIVIL ENGINEERING TECHNOLOGY

## Construction and Civil Engineering Technology with Specializations in:

- Construction Management
- Civil/Surveying Engineering

## Associate in Science Degree (CIP# 1615100102)

The Construction and Civil Engineering Technology A.S. Degree program provides both the theoretical and classroom experience which closely parallels on-the-job activities. It is designed to train competent technicians capable of working with architects, engineers, contractors, building officials and others. It will accommodate architectural drafting, construction estimators, schedulers, and supervisors, as well as persons just entering the field of construction.

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.

### College Credit Technical Certificates

The Construction and Civil Engineering A.S. degree also offers the following college credit certificate programs. These certificates can put you on the fast-track to reaching your career goals. They are designed to equip you with a specialized skill set for entry-level employment or to upgrade your skills for job advancement. Most can be completed in one year or less, and all of the courses in the certificates are embedded in the A.S. degree. You can earn the certificates as you progress through your A.S. Degree or as a separate, stand-alone credential. Click on the Certificate tab at the top of the page for more information about the certificates that are offered.

- Construction Specialist (18 credits) (CIP # 0615100103)
- Field Survey Technician (18 credits) (CIP # 0715020102)

### 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), ETD 1031C (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), and either POS 2041 or AMH 2020 (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

- Project Manager
- Construction Scheduler
- Construction Superintendent
- Construction Estimator
- Building Inspector
- Construction Manager
- Building Supervisor
- General Contractor
- Plans Reviewer

### 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.

### 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

Andrew Ray, R.A.; 407-582-1847  
[aray@valenciacollege.edu](mailto:aray@valenciacollege.edu)

### Internship and Workforce Services

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

## Program Outcomes

- Accept professional and ethical responsibilities required by industry.
- Communicate effectively with technical and non-technical audiences.
- Analyze systems and processes used to create the built environment.
- Solve design problems using algebraic and trigonometric functions.

## Program Requirements

### Foundation Courses

Communications	ENC 1101 <sup>++~</sup>	3
ETD 1031C	INTRODUCTION TO THE BUILT ENVIRONMENT	3
MTB 2321C	TECHNICAL MATH	3
ETD 1103C	ENGINEERING GRAPHICS WITH CAD	3
Mathematics	See Gen. Ed. Core Requirement <sup>++~</sup>	3

### Intermediate Courses

Humanities	See Gen. Ed. Core Requirement <sup>~</sup>	3
Science	See Gen. Ed. Core Elective <sup>~</sup>	3
Social Science	POS 2041 <sup>+~</sup>	3
	or AMH 2010 U.S. History to 1877 <sup>+~</sup>	
	or AMH 2020 U.S. History 1877 to Present <sup>+~</sup>	

SUR 1101C	BASIC SURVEYING MEASUREMENTS (Surveying I) <sup>*</sup>	3
BCN 2405	STATICS AND STRENGTH OF MATERIALS <sup>*</sup>	3
ETC 1251C	ENGINEERING MATERIALS AND PROCESSES	3
ETD 1340C	ADVANCED CADD <sup>*</sup>	3

Specialization in Construction Management or Civil/Surveying Engineering (see below) 24

Total Credit Hours 60

## Construction Management Specialization

### Program Outcomes

- Plan and perform basic project management functions for construction.

### Construction Management Specialization

BCT 1705	CONTRACTS, CODES, SPECIFICATIONS, AND OFFICE PRACTICES	3
BCN 2563	BUILDING SYSTEMS & MANAGEMENT	3
BCN 2721C	CONSTRUCTION SCHEDULING AND MANAGEMENT	3
BCT 2770C	BUILDING CONSTRUCTION ESTIMATING (FORMERLY BCT 2600) <sup>*</sup>	3
TAR 1120C	ARCHITECTURAL DRAWING I <sup>*</sup>	3
TAR 2033C	ARCHITECTURAL DESIGN <sup>*</sup>	3
BCN 1303C	BUILDING INFORMATION MODELING (REVIT W/ DYNAMO) <sup>*</sup>	3
Technology Elective		3

Total Credit Hours 24

### Construction and Civil Engineering Electives

The Elective requirement may be satisfied with any course in the Course Descriptions section of the Valencia catalog with the subject prefix of BCN, BCT, ETC, ETD, ETM, SUR or TAR.

\* This course has a prerequisite; check description in Valencia Catalog.

+ This course must be completed with a grade of C or better.

~ This is a general education course.

(GR) denotes a Gordon Rule course.

### Notes:

Specialized program courses are offered on the West Campus. They may not be offered every session.

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 planning to transfer to Seminole State College must complete College Algebra and should contact Seminole State College advising for a list of courses that transfer. 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.

## Civil/Surveying Engineering Specialization

### Program Outcomes

- Perform basic civil/surveying techniques and related calculations

### Civil/Surveying Engineering Specialization

SUR 2202C	HIGHWAY DRAFTING AND ROUTE DESIGN <sup>*</sup>	3
SUR 2640C	ADVANCED SURVEYING COMPUTATIONS (SURVEYING III) <sup>*</sup>	3
SUR 2460C	SUBDIVISIONS <sup>*</sup>	3
SUR 2390C	INTRODUCTION TO GEOGRAPHIC INFORMATION SYSTEMS	3
ETC 2521C	HYDRAULICS AND HYDROLOGY	3
BCN 1272	CONSTRUCTION BLUEPRINT READING	3
BCN 1303C	BUILDING INFORMATION MODELING (REVIT W/ DYNAMO) <sup>*</sup>	3
Electives		3

Total Credit Hours 24

### Construction and Civil Engineering Technology Electives

The Elective requirement may be satisfied with any course in the Course Descriptions section of the Valencia catalog with the subject prefix of BCN, BCT, ETC, ETD, ETM, SUR or TAR.

\* This course has a prerequisite; check description in Valencia Catalog.

+ This course must be completed with a grade of C or better.

~ This is a general education course.

(GR) denotes a Gordon Rule course.

### Notes:

Specialized program courses are offered on the West Campus. They may not be offered every session.

Upon earning the Construction and Civil Engineering Technology A.S. degree, you can continue at Valencia to complete the B.A.S. degree in Business & Organizational Leadership (<http://>

[catalog.valenciacollege.edu/degrees/bachelorofscience/bas/](http://catalog.valenciacollege.edu/degrees/bachelorofscience/bas/). Additional education at the bachelor's level can enhance your skills and create more career opportunities.

Students interested in pursuing careers in Land Surveying are encouraged to contact UF-Apopka regarding the Geomatics Certificate (<http://sfrc.ufl.edu/distance/gemcertificate>). During their time at Valencia, this pathway will require students to register as a dual-major, allowing them to complete an AA degree in addition to completing the Civil/Surveying Engineering specialization in the Construction and Civil Engineering Technology AS Degree. 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.

Students who wish to continue their education should consult with their Student Success Coach to determine the best education plan for their career goals.

## Construction Specialist

### Technical Certificate

This certificate is designed to prepare individuals for entry-level positions working with architects, engineers, contractors, and building officials. It provides a working knowledge of estimating, scheduling, and interpreting commercial and residential blueprints. It also provides the foundation for individuals pursuing a career in building inspection and quality control.

### Program Outcomes

- Communicate effectively with technical and non-technical audiences.
- Analyze systems and processes used to create the built environment.
- Solve design problems using algebraic and trigonometric functions.
- Plan and perform basic project management functions for construction.

ETC 1251C	ENGINEERING MATERIALS AND PROCESSES	3
BCN 2721C	CONSTRUCTION SCHEDULING AND MANAGEMENT	3
BCT 2770C	BUILDING CONSTRUCTION ESTIMATING (FORMERLY BCT 2600) *	3
MTB 2321C	TECHNICAL MATH	3
CONSTRUCTION ELECTIVES		6
<b>Total Credit Hours</b>		<b>18</b>

### CONSTRUCTION ELECTIVES

BCN 1272	CONSTRUCTION BLUEPRINT READING	3
BCT 1705	CONTRACTS, CODES, SPECIFICATIONS, AND OFFICE PRACTICES	3
BCN 2563	BUILDING SYSTEMS & MANAGEMENT	3
TAR 2170C	INTRODUCTION TO ARCHITECTURAL REVIT	3
SUR 1101C	BASIC SURVEYING MEASUREMENTS *	3
BCN 2941		1-4
BCN 2942	INTERNSHIP IN CONSTRUCTION AND CIVIL ENGINEERING TECHNOLOGY	1-4

\* This course has a prerequisite; check description in Valencia catalog.

### Notes:

All certificate courses are offered on the West Campus.

Specialized courses may not be offered every session or on every campus.

## Field Survey Technician

### Technical Certificate

This certificate is designed to prepare individuals for entry-level positions working with architects, engineers, and contractors. It provides a working knowledge of surveying measurements, field work with data collection, roadway and subdivision design. It also provides the foundation for individuals pursuing a career in the civil surveying land development field by utilizing the current industry software.

### Program Outcomes

- Communicate effectively with technical and non-technical audiences.
- Analyze systems and processes used to create the built environment.
- Solve design problems using algebraic and trigonometric functions.
- Perform basic civil/surveying techniques and related calculations

ETD 1103C	ENGINEERING GRAPHICS WITH CAD	3
MTB 2321C	TECHNICAL MATH	3
SUR 1101C	BASIC SURVEYING MEASUREMENTS ~	3
SUR 2202C	HIGHWAY DRAFTING AND ROUTE DESIGN ~	3
Civil/Surveying Electives - see below		6
<b>Total Credit Hours</b>		<b>18</b>

### Civil/Surveying Electives

SUR 2640C	ADVANCED SURVEYING COMPUTATIONS (SURVEYING III) ~	3
SUR 2390C	INTRODUCTION TO GEOGRAPHIC INFORMATION SYSTEMS	3
ETC 2521C	HYDRAULICS AND HYDROLOGY	3
SUR 2460C	SUBDIVISIONS	3

~ This course has a prerequisite; check description in Valencia Catalog.

### NOTE:

Students interested in pursuing careers in Land Surveying are encouraged to contact UF-Apopka regarding the Geomatics Certificate ([sfrc.ufl.edu/distance/gemcertificate](http://sfrc.ufl.edu/distance/gemcertificate)). During their time at Valencia, this pathway will require students to register as a dual-major, allowing them to complete an AA degree in addition to completing the Civil/Surveying Engineering specialization in the Construction and Civil Engineering Technology AS Degree.