

Architectural/Civil Engineering Technology

Associate of Applied Science Degree (895)

Purpose The Architectural/Civil Technology degree is designed to prepare qualified technicians for career opportunities in architecture and civil engineering technology by exposing the student to the main areas of these professions. Courses in construction planning, estimating, surveying, and construction materials are included. Fundamental courses in mechanics (statics and strength of materials) are required. A comprehensive three semester sequence of CAD drafting classes exposes the student to the fundamentals of computer-aided drafting and introduces the application of a specialty suite such as Autodesk® Architectural Desktop. Graduates may seek immediate employment or transfer to a Bachelor of Technology program at certain four-year college and universities.

Occupational Objectives The architectural/civil technician serves as a liaison between the craftsperson and the technologist or engineer. Opportunities include employment with architects, consulting engineers, general contractors, land surveyors, and government organizations such as the Virginia Department of Transportation (VDOT) and the Department of Environmental Quality (DEQ). Opportunities also exist in construction-related manufacturing fields such as prefabricated buildings, steel fabrication, and precast/prestressed concrete production.

Admissions Requirements

Applicants must meet the general admission requirements for admission to the college.

Students who do not place into college-level English on the placement test will be required to take developmental courses (i.e., ENG 1, ENG 3, ENG 4, ENG 7).

Students who have not completed Pre-calculus or Trigonometry in high school with a grade of "A" within the past three years, or who have not completed a college level Pre-calculus or Pre-calculus with Trigonometry (or equivalent) course will be required to take the placement test. Students who do not place above Algebra II (MTH 4) and into the pre-requisite course for calculus (MTH 163 or 166) on the placement test will be required to take developmental courses.

Curriculum and Other Requirements

		Credits
ARC 100	Introduction to Architecture	3
ARC 133	Construction Methodology and Procedures I	3
ARC 221	Architectural CAD Applications Software I	3
CIV 135	Construction Management and Estimating	3
CIV 171*	Surveying I	3
DRF 201-202*	Computer Aided Drafting and Design I-II	6
DRF 238*	Computer-Aided Modeling and Rendering	3
EGR 216	Computer Methods in Engineering and Technology	3
ENG 111	College Composition I	3
GEO 200 ²	Introduction to Physical Geography	3
GIS 200-201	Geographical Information Systems I-II	8
HLT/PED ¹	Health or Physical Education	2
MEC 131	Mechanics I – Statics for Engineering Technology	3
MEC 132*	Mechanics II – Strength of Materials for Engineering Technology	3
MTH 115-116	Technical Mathematics I-II	6
PHY 201 ³	General College Physics I	4
SDV 101	Orientation to Engineering and Engineering Technology	1
CST 100	Principles of Public Speaking (or CST 105)	3
E ⁴	Humanities/Fine Arts Elective	3
E ²	Social Science Elective	3

Total Minimum Credits for Degree

69

¹ Two credits of Health (HLT) or Physical Education (PED) are required of all students. Consult approved Health courses in the Description of Courses for selection. Veterans with an honorable discharge will be awarded HLT/PED credit based on military service.

² Social Science electives must be selected from the "Approved List of Transfer courses." If the student is transferring to a four-year institution, the student should select the Social Science courses at VWCC that will satisfy the Social Science requirements at the four-year institution.

³ Students transferring to a four-year institution should also complete PHY 202.

⁴ Humanities/Fine Arts elective must be chosen from the "Approved List of Humanities Transfer Courses." A two-semester sequence of the same course is strongly recommended. If planning on transfer, contact four-year institution for requirements.

* This course has a prerequisite. Prerequisites for all courses are listed in the course description section at the back of the catalog.

Suggested Course Sequence

Fall

DRF 201
EGR 216
ENG 111
GEO 200
MTH 115
SDV 101

Fall

ARC 221
GIS 200
HLT/PED
MEC 132
PHY 201

Spring

ARC 100
ARC 133
DRF 202
DRF 238
MEC 131
MTH 116

Spring

CIV 135
CIV 171
GIS 201
CST 100
Humanities/Fine Arts Elective
Social Science Elective

Architectural/Civil Engineering Technology, continued

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Program Requirements

As a result of an articulation agreement with Old Dominion University, students receiving an Associate of Applied Science (AAS) degree in Architectural/Civil Engineering Technology may earn a baccalaureate degree (BS) in Engineering Technology on the Virginia Western Community College campus in Roanoke. Students must take ENG 111 in their first semester of classes.

Curriculum and Other Requirements

Credits

Geographic Information Systems Specialization (01)

ARC 221	Architectural CAD Applications Software I	3
CIV 171	Surveying I	3
DRF 201-202*	Computer-Aided Drafting and Design I-II	6
EGR 126	Computer Programming for Engineers (or ITP 112)	3
EGR 216	Computer Methods in Engineering and Technology	3
ENG 111	College Composition I	3
GEO 200	Introduction to Physical Geography	3
GIS 200-201*	Introduction to Geographical Information Systems I-II	8
GIS 205*	Three Dimensional Analysis	4
GIS 210	Understanding Geographic Data	4
HLT/PED ¹	Health or Physical Education	2
MEC 131	Mechanics I-Statics for Engineering Technology	3
MEC 132*	Mechanics II – Strength of Materials for Engineering Technology	3
MTH 115-116	Technical Mathematics I-II	6
PHY 201 ³	General College Physics I	4
SDV 101	Orientation to Engineering & Engineering Technology	1
CST 100	Principles of Public Speaking (or CST 105)	3
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EGR 216
ENG 111
GEO 200
MTH 115
SDV 101

Fall

ARC 221
GIS 200
GIS 210
MEC 132
PHY 201

Spring

DRF 202
EGR 126
HLT/PED
MEC 131
MTH 116
Humanities/Fine Arts Elective

Spring

CIV 171
GIS 201
GIS 205
CST 100
Social Science Elective