Architectural Technology (AS)

The Architectural Technology program offers an associate in science degree that provides an introduction to architectural concepts and skills pertaining to the design and construction of facilities, preparing students for careers in architecture, construction, building technologies and facilities management.

This program enables its graduates to become skilled and knowledgeable contributors to the architectural/engineering, construction or facilities operations and maintenance fields. Students will be able to understand and produce a set of construction documents for buildings, residences, and other structures. Employment opportunities for which graduates of the program will qualify include entry level CAD/BIM drafter/designer and technician level work in architecture, engineering, construction, facilities departments, manufacturing, and fabrication. The program also prepares students for further academic study in architecture.

Many graduates decide to pursue bachelor degrees at other colleges or universities. Benjamin Franklin Institute of Technology has an articulation agreement with the Boston Architectural College (BAC). Under this agreement, students receive credit for courses passed at BFIT with a grade of C or better towards a bachelor's degree at BAC. BFIT also has an articulation agreement with Wentworth Institute of Technology. Under this agreement BFIT graduates can enter Wentworth's Facility Management Program upon successful graduation from BFIT.

In addition, BFIT students may elect to take a course at the BAC during their final semester of study, allowing them to achieve further advanced standing upon transfer to the BAC.

Curriculum

This comprehensive program provides students with a thorough introduction to the fundamental skills and core competencies of architectural technology, including familiarization with up-to-date architectural office practices including computer-aided drawing and design, building information modeling, green building standards and integrated project delivery. Studio work allows students to explore design through various architectural projects and 3D model making. A general foundation education is provided with the inclusion of courses in physics, mathematics, technical writing, humanities, and technical electives.

Facilities

The Architectural Technology Department maintains drafting and computer-aided-drawing labs which provide students with ample opportunity to experience hands-on training in the Architectural Technology field. The drafting lab, consisting of drafting tables, allows students to learn hands-on drafting and 3D model-making capabilities.

The computer-aided-drawing labs provide students the ability to construct computer generated drawings in 2D and 3D formats with industry standard computer software.

Desktop printers and a large scale plotter allow students to display their drawings in various viewable formats.

Outcomes

Upon successful completion of the Associate Degree in Architectural Technology, the graduate will be able to:

- Draw plans, elevations, sections and isometric views of three-dimensional objects with the proper use of lineweight and use of architectural symbols and conventions appropriately by the use of hand drafting tools and the use of Computer Aided Drafting (CAD) and Building Information Modeling (BIM).
- Understand scale and measurement and their practical applications. Students will learn to measure and draft existing built conditions.
- Solve moderate to complex design problems through creative thinking and iteration.
- Create design compositions using organizing principles such as axis, symmetry, hierarchy, and grid. Understand that formal elements in a design such as points, lines, planes, and volumes can assume symbolic meanings subject to personal or cultural interpretation.
- Produce a set of construction documents for a wood frame, single-family residence using the AutoCAD and Revit (BIM) computer programs.
- Analyze environmental factors influencing an architectural design including: cultural/historical, legal/economic, and climatic. Translate graphic diagrams into AutoCAD/Revit generated floor plans, sections, and elevations.
- Setup and operate the AutoCAD/Revit computer drafting programs including creating drawing parameters, opening, saving, and plotting drawings productively, utilizing basic AutoCAD/Revit commands to create and edit drawings.
- Utilize advanced principles of the AutoCAD/Revit program, including hatching, blocks, attribute definitions, external references, annotation scale and sheet sets in the creation of construction drawings. Perform at an acceptable level on a simulated AutoCAD/Revit assessment exams.
- Create and view three-dimensional drawings by various methods using the AutoCAD/Revit programs or other industry standard programs including building information modeling (BIM) software. Render a three-dimensional structure, including selecting views, placing lights, assembling a scene, and incorporating materials and landscape objects in a scene.
- Select materials that are compatible with the architectural and structural design regarding their appearance, strength, properties, and behavior against natural and manmade stressing forces.
- Understand the basic fundamentals involved in the analysis and design of structural/architectural building elements while incorporating this knowledge into the creation of construction drawings.
- Calculate heating and cooling loads in buildings, estimate the annual costs of various heating and cooling systems, evaluate site drainage, calculate water demand and drainage requirements for a building, and calculate building electrical loads.
- Understand the chronological development of architecture, comprehend the tools needed to have a critical appreciation, and possess an ability to be able to present projects and to speak and write effectively on the history of architecture.
- Demonstrate knowledge of the fundamental principles or theories predominant in architecture and an understanding of the shifts which have occurred in the social, political, technological, ecological, and economic factors that shape the practice of architecture.
- Fundamental knowledge of building and accessibility codes, zoning by-laws and green building standards and their use in the design and construction of facilities. Understanding the design and construction process based on industry standard manual of practice from project conception to facility management and perform at an acceptable level on an assessment exam.

Faculty

Eric Larsen, Chair

Instructor Staff: Michael Rocino, Todd Lariviere

Degree Requirements: Architectural Technology

TECHNOLOGY COURSES: 45 CREDIT HOURS

Course #	Course	Credits	Lecture	Lab
AR100	Introduction to Architectural Design	4	3	2
AR110	Introduction to CAD	3	1	4
AR150	Architectural Design I	4	3	2
AR160	Building Construction and Materials	4	3	2
AR220	Sustainable Buildings	3	3	0
AR240	Introduction to World Architecture	3	3	0
AR250	Environmental Systems	4	3	2
AR260	Architectural Design II	4	3	2
AR280	Statics & Strength of Materials	4	4	1
BT200	Construction Document Technologies	4	3	2
BT210	BIM I	4	3	2
BT270	BIM II	4	3	2

GENERAL EDUCATION COURSES: 26 CREDIT HOURS

Course #	Course	Credits	Lecture	Lab
EN130	College Composition I	3	3	0
EN140	College Composition II	3	3	0
HU/SS	Elective	3	3	0
HU/SS	Elective	3	3	0
MA105	Technical Mathematics I	3	3	0
MA115	Plane and Solid Geometry	4	4	0
MA120	College Algebra and Trigonometry	3	3	0
PH212	Physics I	3	3	0
PH215	Physics Lab I	1	0	2

Typical Course Sequence for Architectural Technology

SEMESTER 1

AR100	Introduction to Architectural Design
AR110	Introduction to CAD
AR240	Introduction to World Architecture
EN130	College Composition I
MA105	Technical Math I

SEMESTER 2

AR150	Architectural Design I
AR160	Building Construction and Materials
EN140	College Composition II
HU/SS	Elective
MA115	Plane and Solid Geometry

SEMESTER 3

AR220	Sustainable Buildings: Design and Construction
AR260	Architectural Design II
BT210	BIM I
MA120	College Algebra and Trigonometry
PH212	Physics I
PH215	Physics Lab I

SEMESTER 4

AR250	Environmental Systems
AR280	Statics & Strength of Materials
BT200	Construction Document Technologies
BT270	BIM II
HU/SS	Elective