

# Architecture at Norwalk

Almost 30 years ago the Architectural Engineering Technology program was established at the Norwalk State Technical College. After the merger of technical and community colleges we became part of the Community Colleges.

The program is designed not only for high school graduates who wish to pursue careers in the construction industry and profession of architecture but also for anyone interested in architecture. The graduates of the program can work in an architect's office, Construction Company, engineer's office, building department, as manufacturer's representative or at a lumberyard. They could also work in the field of construction or transfer to five-year, NAAB accredited architectural schools, to become licensed architects.

Our program has CADD (computer aided drafting and design) fully integrated into the curriculum. In addition to our dedicated Design Studio students have access to CADD Laboratory. They can use the CADD Lab to work on different projects during their study at NCC.

Local architects, builders and former graduates are serving on an Advisory Committee. They make sure that the program is on a cutting edge and that what is being taught has direct application in the "real" life.

Incoming freshmen can take the following architectural courses (when available, provided they took the placement test and are eligible for EN101 and/or MAT100):

Course	Description	Credits
ARC 105	Architectural Visualization	4
CAD 120	Architectural CADD	3
ARC 106	Building Technology	4
ART105	Architecture of the World	3

The sequence for the design courses is as follows:

Course	Description	Credits
ARC 105	Architectural Visualization	4
ARC 115	Architectural Fundamentals	4
ARC 201	Architectural Design I	4
ARC 202	Architectural Design II	4

The sequence for the CADD courses is as follows:

Course	Description	Credits
CAD 120	Architectural CADD	3
CAD 130	Architectural Desktop (Architectural Elective)*	3
CAD 220	3-D CADD	3
CAD 240	Studio VIZ (Architectural Elective)*	3

(Architectural Elective)\* is required for graduation unless a student has completed successfully Co-Op.

It is important to plan carefully since some of these courses are being offered only once a year and can be taken only in a sequence.

For the remaining courses check the pre-requisites and co-requisites in the catalog. Any other freshman course from the program can be used but that depends on eligibility. For questions on any of the architectural courses call Prof. Jacek Bigosinski AIA, Program Coordinator at 203-857-7159 and/or the Counseling Center with questions on any other topics.

# Architectural Engineering Technology

*Courses listed in italics are as per Core Curriculum Committee recommendations*

<b>Course</b>	<b>Description</b>	<b>Credits</b>
ARC 105	Architectural Visualization	4
ARC 106	Building Technology	4
<i>CAD 120</i>	<i>Architectural CADD</i>	3
<i>ENG 101</i>	<i>English Composition</i>	3
<i>MAT 172</i>	<i>College Algebra</i>	3
	<b>Total credits Semester I</b>	<b>17</b>
ARC 115	Architectural Fundamentals	4
<i>CAD 220</i>	<i>3D CADD</i>	3
<i>ENG 102</i>	<i>Literature and Composition</i>	3
<i>MAT 186</i>	<i>Pre-Calculus</i>	3
<i>PHY 114</i>	<i>Mechanics</i>	4
	<b>Total credits Semester II</b>	<b>17</b>
ARC 201	Architectural Design I	4
ARC 215	Construction Documents	4
<i>COM 173</i>	<i>Public Speaking</i>	3
<i>ART 105</i>	<i>Architecture of the World</i>	3
<i>PHY 115</i>	<i>Heat, Light &amp; Sound</i>	4
	<b>Total credits Semester III</b>	<b>18</b>
ARC 202	Architectural Design II	4
ARC 229	Structures	3
ARC 240	Environmental Systems	3
ARC 296	<i>Co-Op Education Experience (or Architectural Elective)*</i>	3
<i>IDS 220</i>	<i>Social Science Interdisciplinary</i>	3
	<b>Total credits Semester IV</b>	<b>16</b>

Students who will not be able to secure Co-Op Experience at architect's office have a choice of Architectural Electives:

CAD130 Architectural Desktop or CAD240 Studio VIZ.

# Course Descriptions:

## ARC 105 Architectural Visualization

This course is an introduction to basic freehand and hard line architectural drawings. Work includes drafting techniques, perspective drawing, sketching and color. Basic presentation tools and techniques will be introduced. Drawing will be studied as a tool of visualization. The impact of light, shadow and composition on architectural drawing will be explored.

1 hour of lecture plus 6 hours of laboratory.

Prerequisites: none. Co-requisites: CAD120 or AutoCAD knowledge Credits: 4

## ARC 115 Architectural Fundamentals

Principles of architectural design are studied. The goal of this studio sequence is to expand and apply knowledge acquired in ARC 105 Architectural Visualization into a series of design experiences at the residential scale. The results are critiqued in classroom. Concept of space is introduced. Design problems are given, solved and discussed. The impact of structure on design is also addressed.

2 hours of lecture plus 4 hours of laboratory.

Prerequisites: ARC 105. Credits: 4

## ARC 201 Architectural Design I

Students develop basic skills of project design, including site analysis and site design. The main focus of the course is the design of a multifamily dwelling project on an assigned site. Drawings are presented to a professional jury for critique.

2 hours of class work plus 4 hours of laboratory.

Prerequisites: ARC 115. Credits: 4

## ARC 202 Architectural Design II

Further development of the student's skills through the design of a commercial and public building on an assigned site. Drawings and model will be critiqued by professional jury.

2 hours of class work plus 4 hours of laboratory.

Prerequisites: ARC 201. Credits: 4

## **ARC 106 Building Technology**

The study of materials, their origin, manufacture, use, limitations and application in construction. Areas of concentration include building systems, foundations, wood, heavy timber and light frame construction, masonry, steel, concrete, sitecast and precast concrete framing systems, roofing, glass and glazing, cladding and finishes.

4 hours of lecture.

Prerequisites: None. Credits: 4

## **ARC 215 Construction Documents**

Introduction to the architect's practice. Study problems involved in the personal, ethical, legal relationships between the Architect, Engineer, Owner, Contractor. The organization and day-to-day problems of architect's office. Study building codes, laws, zoning regulations, legal AIA documents. CSI format specifications and their applications. Introduction to working drawings and preparation of cost estimating bids.

2 hour lecture plus 4 hours of laboratory.

Prerequisites: none. Credits: 4

## **ARC 240 Environmental Systems**

This course imparts knowledge of the interior environment of structures large and small. The interrelationship of energy, climate, site, and architectural design are studied. Conservation of nonrenewable energy sources is an intrinsic theme. A study of the design factors in heating, cooling, plumbing, fire protection and electrical systems is included.

2 hours of class work plus 2 hours of laboratory.

Prerequisites: None. Credits: 3

## **ARC 229 Structures**

Investigation of principles of structural mechanics. Study of compressive, tensile, shear and bending stresses; strain due to axial loads; beam loading; column and beam action in determinate structures; beam and column design in steel and wood. 2 hours of lecture work plus

2 hours of laboratory.

Prerequisites: PHY 114 or Instructor's permission. Credits: 3

## **CAD 120 Architectural CADD**

Drafting techniques using computer and the latest version of AutoCAD. Architectural setup of drawings, layering systems, floor plans and elevations drawn with computer, including walls, doors, windows, furniture, notes, dimensioning. Drawing manipulation with blocks and printing.

2 hours of class work plus 2 hours of laboratory.

Prerequisites: Some drafting experience. Credits: 3

## **CAD 220 3D-CADD**

Three-dimensional drafting and design techniques using the latest AutoCAD version. Use of UCS and WCS for generating wire meshes, solids, 3-D polylines, hatching. Hidden lines removal and true perspectives. Introduction to shading and rendering. Printing of perspectives.

Two hours of lecture, two hours of laboratory

Prerequisite: CAD 120 or CAD 121 Credits: 3

## **CAD 130 Architectural Desktop**

This course will cover the use of AutoCAD Architectural Desktop for the creation of architectural design and working drawings. Topics include creation of architectural floor plans, the basics of creating 3-D walls, wall styles, wall modifier styles and object display control. Creating mass models, commercial structures and 3-D walkthroughs using the camera will also be covered.

2 hours of class work plus 2 hours of laboratory

Prerequisites: CAD120. Credits: 3

## **CAD 240 Studio VIZ**

This course covers the 3D Studio VIZ software used by architects, artists, engineers, designers, medical and forensic experts as a modeling and presentation tool. Topics include the creation and editing of three-dimensional geometry using primitives, lofting and existing 3D AutoCAD objects. Students will learn how to present their ideas thorough images, 3D models and animations.

2 hours of class work plus 2 hours of laboratory

Prerequisites: Some drafting experience. Credits: 3

## **ART 105 Architecture of the World**

The critical influence of social, religious, historical and technological forces on the characteristic features of architecture are stressed by studying the various architectural styles. Course covers architectural milestones from ancient to modern on all of the continents.

3 hours of lecture per week. Prerequisites: none. Credits: 3