

Architecture (ARC)

(Science, Engineering, & Arch Department)

ARC 101—Architectural Graphics

2 lect., 3 lab, 3 cr.

An introduction to architectural graphics standards. Topics include general drafting terminology, using mechanical drafting equipment, the communicative role of lineweights and scales, and the roles of plans, sections and elevations. Laboratory work using instruments and specialized software provides hands-on experience. Drawings will be discussed and demonstrated in lecture and applied in lab assignments and projects. Emphasis is on drafting and line quality and successful communication through architectural drawings. Lab assignments will include both two-dimensional and three-dimensional drawings along with an introduction to shade and shadows.

ARC 102—Advanced Architectural Graphics

2 lect., 3 lab, 3 cr.

An advanced course in architectural graphics with an emphasis on mixed media. Topics include coordination of two and three dimensional drawings, the use of color and fonts, composition of presentation boards, the role of freehand sketching in presentations, and Adobe software applications. Emphasis is on composition and successful communication through architectural drawings.

Prerequisite: ARC 101

ARC 105—Building Materials and Methods 1

2 lect., 2 cr.

The description and analysis of building materials and their use in construction: foundations, structural elements, and floor, roof, and wall systems. This course primarily focuses on building component and structural terminology, identification and variations of building materials, and methods of wood construction. Steel, concrete and masonry construction will be introduced.

Corequisite: Concurrent enrollment in or completed WRT 040

Pre/corequisite: WRT 040 or ENG 098 or tested into ENG 101

ARC 106—Building Materials and Methods 2

2 lect., 4 lab, 4 cr.

The description and analysis of building materials and methods and their use in masonry, steel and reinforced concrete construction. Sustainable building principles will be introduced. Methods are clarified through the development of drawings such as wall sections, window details, plan details, etc.

Prerequisite: ARC 101, ARC 105, CAD 101

ARC 111—Architectural Design 1

2 lect., 3 lab, 3 cr.

An introduction to the basic elements of architectural design -scale, proportion, rhythm, mass, textural effects, contrast, unity, sequential spatial experience. Execution of two and three dimensional design projects. An exploration of nature of art and architecture.

Pre/corequisite: WRT 040 or ENG 098 or tested into ENG 101

ARC 112—Architectural Design 2

1 lect., 4 lab, 3 cr.

The place of function, structure, and expression of ideas in architecture will be explored through the lecture and lab component of this course. In lecture, case studies will be presented. In lab, the execution and criticism of architectural design problems will take place. Presentation techniques will be in various media, with a concentration on model building.

Prerequisite: ARC 101, ARC 111

ARC 201—Digital Portfolio

3 lab, 1 cr.

A structured environment in which students prepare and orally present a portfolio that demonstrates the body of their work produced in courses in the Architectural Technology Program. Students also produce a cover letter, resume and personal essay on architecture.

Prerequisite: CAD 102, ARC 102, ARC 112

ARC 205—Working Drawings 1

2 lect., 3 lab, 3 cr.

This course is an introduction to architectural working drawings. Basic principles of preparing and organizing necessary components of a working drawings set will be covered. Students will prepare a set of drawings for a small wood structure using AutoCAD

SUNY Orange 2023-2024

software. Correctness of construction techniques and CAD draftsmanship will be emphasized. Quantifying building materials from the students' prepared sets will be introduced.

Prerequisite: ARC 106, CAD 102

ARC 206—Working Drawings 2

1 lect., 6 lab, 4 cr.

This is the capstone course of the building materials and methods sequence of the A.A.S. Architectural Technology program.

Advanced working drawings of a building of steel construction will be produced. Emphasis is placed on draftsmanship, coordination, and accuracy plus development of building construction details. AutoCAD is used as the drafting medium. The complex relationships between owner, architect and contractor as well as the role of specifications will be introduced.

Prerequisite: ARC 205

ARC 211—Architectural Design 3

1 lect., 4 lab, 3 cr.

A continuation of the design course sequence in which students explore programmatic requirements, precedents and architectural form. In lecture, case studies will be presented. In lab, the execution and criticism of architectural design problems will take place.

Presentation techniques will be in various media and oral presentation is required.

Prerequisite: ARC 102, ARC 112, CAD 102

ARC 212—Architectural Design 4

2 lect., 4 lab, 4 cr.

This is the capstone course to the design sequence of the A.A.S. Architectural Technology program. The scope of design is expanded beyond building to outdoor spaces and land planning. A survey of town planning throughout history with emphasis on 19th and 20th century. Execution of several design projects involving outdoor spaces, site, town and subdivision layouts, and a building in context on an actual site in the community.

Prerequisite: ARC 211, ARC 201

ARC 215—Architecture to the 18th Century

3 lect., 3 cr.

A survey of the development of Western architecture through the 18th century. Physical characteristics, form, interior spaces, construction materials, and structural systems from ancient Egypt through the eighteenth century will be covered. The relationship between built form and a society's institutions and culture, level of technology, and environment will be considered. (G8A)

ARC 216—Architecture from the 19th Century

3 lect., 3 cr.

A survey of modern architecture. Form and space, aesthetic philosophy, material usage, and structural systems of architecture from 1850 to the present will be explored. The influence of technology, society, and the environment on architectural form will be explored. (G8A)

ARC 220—Mechanical and Electrical Equipment for Buildings

3 lect., 3 cr.

Description, analysis, and basic design of heating, ventilating, plumbing, and electrical systems and equipment, fire protection, vertical transportation and acoustics in buildings, with a focus on sustainable mechanical and electrical systems.