

ARCHITECTURAL TECHNOLOGY (ACH)

ACH 100 (3 credit hours)

Construction Documents I

This is the first course of a four-semester studio sequence. Proper methods and fundamentals of architectural construction documents and residential construction will be introduced. Drafting conventions utilizing basic hand drafting tools and computer-aided drawing techniques will be studied. Lecture: 2 credits (30 contact hours); Laboratory: 1 credit (45 contact hours).

Attributes: Computer Literacy, Technical

Components: LAB: Laboratory, LEC: Lecture

ACH 110 (1 credit hours)

Survey of the Architectural Profession

In this course, the student will gain an understanding of the language of architecture and develop an appreciation for building design strategies through direct analysis. In addition, various career opportunities in architecture and related professions will be explored. Lecture: 1 credit (15 contact hours).

Attributes: Technical

Components: LEC: Lecture

ACH 120 (3 credit hours)

Theory and History of Architecture I

The development of architecture as it is related to world culture with an emphasis on design, structure, materials, eco-social, and political factors are considered. Lecture: 3 credits (45 contact hours).

Attributes: Technical

Components: LEC: Lecture

ACH 150 (3 credit hours)

Construction Documents II

This is the second course of a four-semester studio sequence. Students develop architectural construction documents for multi-level framed construction. Students will further develop an understanding of programming, schematics, design development, and construction document production using current computer-aided technology. Emphasis will be placed on building codes and related discipline coordination. Lecture: 2 credits (30 contact hours); Laboratory: 1 credit (45 contact hours).

Pre-requisite: ACH 100 or consent of instructor.

Attributes: Technical

Components: LAB: Laboratory, LEC: Lecture

ACH 160 (3 credit hours)

Building Materials and Construction I

The essentials of the theory of selected building materials (Construction Specifications Institute, Divisions 2-7) and their assembly in appropriate systems are presented with particular attention to component selection and behavior under various loads, climatic conditions and fire. Lecture: 3 credits (45 contact hours).

Attributes: Technical

Components: LEC: Lecture

ACH 161 (3 credit hours)

Building Materials and Construction II

The essentials of the theory of selected building materials (Construction Specifications Institute, Divisions 7-16) and their assembly in appropriate systems are presented with particular attention to component selection and behavior under various loads, climatic conditions and fire. Lecture: 3 credits (45 contact hours).

Attributes: Technical

Components: LEC: Lecture

ACH 170 (3 credit hours)

Theory and History of Architecture II

A survey of the architectural periods from the neo-classic to the present is presented. This course is a continuation of ACH 120. Lecture: 3 credits (45 contact hours).

Attributes: Technical

Components: LEC: Lecture

ACH 175 (3 credit hours)

Introduction to Systems

An overview of the various systems found in buildings and the influences that shape architectural design and construction is presented. Lecture: 3 credits (45 contact hours).

Attributes: Technical

Components: LEC: Lecture

ACH 180 (1-3 credit hours)

Selected Topics in Architectural Technology (Topic)

The subject matter of this course may vary from semester to semester as new technology is developed and new issues evolve and/or to address local architectural issues. This course may be repeated with different topics to a maximum of six credit hours. Lecture: 1-3 credits (15-45 contact hours).

Pre-requisite: Consent of instructor.

Attributes: Technical

Components: LEC: Lecture

ACH 194 (3 credit hours)

Visual Composition

In this course, the student will study the aesthetic principles found in both two-dimensional and three-dimensional compositions. These principles will be applied in exercises involving drawing, model construction and creative writing. Lecture: 1 credit (15 contact hours); Laboratory: 2 credits (120 contact hours).

Attributes: Technical

Components: LAB: Laboratory, LEC: Lecture

ACH 195 (3 credit hours)

Computer Aided Drafting I

Students learn how computer hardware and software are used in preparing architectural documents. Lecture: 2 credits (30 contact hours); Laboratory: 1 credit (45 contact hours).

Attributes: Technical

Components: LAB: Laboratory, LEC: Lecture

ACH 198 (1-3 credit hours)

Practicum in Architectural Technology

Provides supervised, on-the-job work experience related to the student's educational objectives; students who participate in the practicum do not receive compensation. cumulative GPA of 2.0 in all courses. Practicum: 1.0 - 3.0 credits (40-120 contact hours).

Pre-requisite: Completion of a minimum of 12 hours in Architectural Technology (ACH) courses with a min.

Attributes: Technical

Components: PCM: Practicum

ACH 200 (3 credit hours)**Construction Documents III**

This is the third course of a four-semester studio sequence. Students study the methods by which commercial buildings are designed and constructed. Basic skills are developed relating to the implementation of determinants in this process such as program analysis, applicable codes, construction methods and materials as well as computer applications. Through the completion of a series of structured projects including the preparation of a set of architectural construction documents for a medium-sized building, students apply the knowledge necessary to achieve these goals. Lecture: 2 credits (30 contact hours); Laboratory: 1 credit (45 contact hours).

Pre-requisite: ACH 150 and ACH 185/ACH 195 or consent of instructor.

Attributes: Technical

Components: LAB: Laboratory, LEC: Lecture

ACH 225 (3 credit hours)**Structures**

Students study structural materials and systems including the design of simple structural components. Lecture: 3 credits (45 contact hours).

Pre-requisite: ACH 175 and MAH 125, or consent of instructor.

Attributes: Technical

Components: LEC: Lecture

ACH 250 (3 credit hours)**Construction Documents IV**

This is the fourth course of a four-semester studio sequence. Students prepare a set of advanced construction documents using current computer-aided drafting techniques. Emphasis will be placed on design principles and site development for a commercial construction project. Lecture: 2 credits (30 contact hours); Laboratory: 1 credit (45 contact hours).

Pre-requisite: ACH 200 or consent of instructor.

Attributes: Technical

Components: LAB: Laboratory, LEC: Lecture

ACH 260 (3 credit hours)**Office Practice**

This course is intended to serve as a capstone course in the Architectural Technology program. Emphasis is placed on preparing students for the workplace by focusing on the professional, legal, and business aspects of the architectural and construction industries. Case studies are reviewed and projects are prepared by students with the goal of introducing them to a broader set of circumstances that affect how decisions are made in the practice of architecture. Lecture: 3 credits (45 contact hours).

Pre-requisite: ACH 110 and ACH 200 or equivalent.

Attributes: Technical

Components: LEC: Lecture

ACH 275 (3 credit hours)**Mechanical and Electrical Systems**

Students engage in a qualitative and quantitative study of environmental control systems used in buildings. Lecture: 3 credits (45 contact hours).

Pre-requisite: ACH 175 and MAT 125, or consent of instructor.

Attributes: Technical

Components: LEC: Lecture

ACH 280 (2 credit hours)**Revit/Building Information Modeling**

Introduces Building Information Modeling (BIM) using Autodesk Revit or other similar and related software, methods and processes. Provides students with skills to produce and present residential and commercial design models, construction documents, and to extract information and data from the model. Incorporates investigations into issues related to sustainable design and the integration of other software for related analysis. Lecture/Lab: 2.0 credits (45 contact hours).

Pre-requisite: ACH 195, or consent of instructor.

Attributes: Technical

Components: LAI: Integrated Laboratory, LEI: Integrated Lecture

ACH 290 (3 credit hours)**Building Codes I**

Students will analyze the content and format of current building codes. The necessity for building codes, problems in interpretation and application as well as legal aspects will be discussed. The main objective is to familiarize students with the basic provisions and procedures associated with building code administration. Lecture: 3 credits (45 contact hours).

Pre-requisite: ACH 150 and ACH 160, or consent of instructor.

Attributes: Technical

Components: LEC: Lecture

ACH 291 (3 credit hours)**Construction Management**

Students examine the principles and current practices of construction management with emphasis on project organization, scheduling and cost control. Lecture: 3.0 credits (45 contact hours).

Pre-requisite: ACH 150, ACH 160 and ACH 161, or consent of instructor.

Attributes: Technical

Components: LEC: Lecture

ACH 292 (3 credit hours)**Building Codes II**

This course will be continuation of ACH 290, Building Codes I, with a more in-depth study of current building codes. Lecture: 3 credits (45 contact hours).

Pre-requisite: ACH 290 or consent of instructor.

Attributes: Technical

Components: LEC: Lecture

ACH 293 (3 credit hours)**Presentation Techniques**

Students will explore a variety of presentation and rendering techniques used in the architectural profession. Design skills and the understanding of spatial relationships will be further developed. Lecture: 2 credits (30 contact hours); Laboratory: 1 credit (45 contact hours).

Pre-requisite: ACH 100 or consent of instructor.

Attributes: Technical

Components: LAB: Laboratory, LEC: Lecture

ACH 294 (3 credit hours)**Specification Writing**

This course provides an in-depth study of the importance of specifications in the design and construction process. Students will engage in research, evaluate the quality of building materials, study the methods of writing specifications, and gain exposure to industry-standard software in preparing a variety of specifications. Lecture: 3 credits (45 contact hours).

Pre-requisite: ACH 150, ACH 160, ACH 161, or consent of instructor.

Attributes: Technical

Components: LEC: Lecture

ACH 295 (3 credit hours)**Computer Aided Drafting II**

Students learn how to modify selected computer aided drafting software to enhance construction document production. Integration of other software will also be discussed. Lecture: 3.0 credits (45 contact hours).

Pre-requisite: ACH 195 or consent of instructor.

Attributes: Technical

Components: LEC: Lecture

ACH 297 (3 credit hours)**Estimating Techniques**

Students investigate the factors affecting the cost of construction, labor productivity, materials, overhead and profit, including area and volume computations. Current methods of cost estimating will be applied.

Lecture: 2.5 credits (37.5 contact hours); Laboratory: 0.5 credits (15 contact hours).

Pre-requisite: ACH 150 and MAT 125; or consent of instructor.

Attributes: Technical

Components: LAB: Laboratory, LEC: Lecture

ACH 298 (3 credit hours)**Computer 3D Modeling**

Students learn how computer hardware and software are used in preparing 3D architectural drawings and client-oriented presentations.

Lecture: 3 credits (45 contact hours).

Pre-requisite: ACH 150 and ACH 185 or consent of instructor.

Attributes: Technical

Components: LEC: Lecture