



architectural | **TECHNOLOGY**

FERRIS STATE UNIVERSITY

program MESSAGE

The Associate in Applied Science degree in Architectural Technology provides a comprehensive foundation of technical ability and awareness of all aspects of the architecture profession. The program prepares students with an understanding of how buildings “work” as well as how they are designed, documented and constructed. The curriculum is distinctively designed with an emphasis on visual communication, digital technology, design principles, building materials, building systems, architectural history and the development of architectural graphic techniques involved in the production of architectural presentation and working drawings.

mission STATEMENT

The mission of the Architectural Technology associate degree program is to provide students with a foundation of architectural concepts, skills and values necessary to continue education for advanced degrees leading to careers in architecture and professions related to the built environment.

program OBJECTIVES

As one of several programs within the School of Built Environment, the program is the foundation for several diverse educational opportunities. Upon successful completion with a proven record of achievement, you may choose to enter one of the following programs:

- BS in Architecture and Sustainability
- BS in Facility Management
- BS in Construction Management
- BA in Interior Design (at Kendall College of Art and Design)

The combination of the two-year Architectural Technology associate degree and one of the above two-year baccalaureate degrees provides a unique educational experience and skill set for employment. Graduates of our programs are now pursuing successful careers in architecture, facility management, construction management and interior design.

Under the guidance of the faculty of professional, licensed architects the program prepares students to:

- Develop manual and digital graphic skills necessary to document the architectural process including the design development and construction document phases.
- Develop knowledge of building materials, systems and technology in conjunction with the architectural process and construction process.
- Develop a basic understanding of design, the history of architecture and an appreciation of architecture and art.
- Develop an awareness of environmental stewardship and architectural practice that embraces sustainable design and building.
- Develop a basic awareness of structural and HVAC systems.
- Develop skills in hand drawing and hand model making.
- Acquire skills in use of digital tools such as: laser cutter, 3D printer, and CNC router.
- Acquire a foundation in mathematics, physical science, and written and verbal communication.

program | HISTORY

The Architectural Technology associate degree program was established in the early 1950s as an architectural drafting program. It has evolved into Architectural Technology as the demands of the architecture profession have changed.

Originally a program dealing primarily with pencil and paper drafting, it is now a program with a strong focus on digital technology that includes Computer Aided Design (CAD), Building Information Modeling (BIM), and use of digital tools such as laser cutters, 3D printers and CNC routers. Additionally the program focuses on building technology and builds proficiency in critical thinking and technical skills.

Taught by practitioners, the architectural technology curriculum is unique in its emphasis on the practice of the profession. Studio classes provide students with experience in the areas of residential and commercial building materials, architectural CAD drawing, BIM, construction methods, building codes, presentation techniques and architectural design and history. The curriculum provides the skills, knowledge, and the necessary preparation to allow students to pursue related educational opportunities.

The innovative curriculum has a long and proud history of providing professional cutting edge architectural education. The program is recognized among architects as producing qualified, employable graduates with valued technical skills. Architectural Technology graduates, coupled with a related baccalaureate degree, currently enjoy successful careers in professions of the built environment in cities across the country.

In 1989 the Architectural Technology program was enhanced with the introduction of the Bachelor of Science in Facility Management program. The Facility Management program is one of a select group of degree programs in the United States accredited by the International Facility Management Association (IFMA) for meeting the highest standard in facility management education. Graduates from this program are in high demand, and are employed by leading national corporations, health care organizations, the GSA (General Services Administration of the US Federal Government) and facility management consulting firms.

In 2010 the Architectural Technology program was enhanced with the introduction of the Bachelor of Science in Architecture and Sustainability program. This program prepares students to contribute to the design and construction of architecture relevant to the community and environment in which it is placed. This program is the first of its kind in northern Michigan and is unique for the way in which it combines advanced architectural studies with education in community planning, teaching students to be leaders in the creation of buildings and communities in harmony with the environment. Graduates from this program can enter the workplace in an architectural office, continue on to graduate education on the path for architectural licensure, or work in their communities to develop solutions to architectural and environmental problems.

graduate | OPTIONS



Upon completion of the two-year degree in Architectural Technology, graduates have several career path options. These include:

- continue their education at Ferris and apply for the upper-division sequence leading to the BS in Architecture and Sustainability (ARST)
- continue their education at Ferris and apply for the upper-division sequence leading to the BS in Facility Management (FMAN)
- continue their education at Ferris and apply for the upper-division sequence leading to the BS in Construction Management (COMM). Further preparation may be required for entry into the Construction Management program
- continue their education at Ferris' Kendall College of Art and Design in Grand Rapids and apply for the BA in Interior Design
- continue their education at Ferris and pursue a dual degree path leading to a BS in ARST and a BS in FMAN, or a BS in ARST and a BS in CONM, or a BS in FMAN and a BS in CONM

The technology and foundation skills emphasized in the AAS program complements the theory and practice emphasized in the BS programs to produce a well-rounded professional education.



great | CAREER

The Architectural Technology program provides a foundation for securing an entry-level job as an architectural technician. A beginning technician works closely with a team to produce design development drawings, construction documents and specifications. With experience, the architectural technician becomes involved in other phases of work such as project field observation, preparation of written specifications, building code analysis, CAD and BIM three-dimensional modeling and rendering, and presentation of designs.

Although some employment opportunities are available upon graduation from the two-year program, the majority of graduates continue into a baccalaureate degree in either Architecture and Sustainability or Facility Management. These degrees afford the graduate greater career and earning opportunities. Regardless of one's choice, the AAS in Architectural Technology degree and its many options provides a solid foundation for building a successful career in all aspects of the built environment.

Many associate degree graduates take advantage of the dual-degree program that includes two bachelor degrees:

- BS in Architecture and Sustainability and BS in Facility Management
- BS in Architecture and Sustainability and BS in Construction Management
- BS in Facility Management and BS in Construction Management

These dual-degree programs consist of a structured, organized curriculum that allows students to complete the Associate degree and two BS degrees in 5 years. Students who pursue these unique learning paths have interests in both architecture and facility management OR construction management and facility management and wish to combine two career-oriented degrees to acquire in-depth knowledge of two subject areas, broaden their horizons or improve job prospects. Additionally, completion of a dual degree program shows initiative, organization, and follow-through. These credentials look impressive on a resume, and provide our graduates with the opportunity to take their careers in diverse directions as interests and priorities change.

Students interested in pursuing the dual degree are invited to make an appointment with the Program Coordinator in the Architecture and Facility Management Department Office by calling (231)591-3100 or emailing atfm@ferris.edu.



program | SPECIALTIES

- An average faculty/student ratio of 1 instructor for every 18 students assures small classes that guarantee interactive learning with faculty and peers alike.
- All program faculty are experienced educators and practitioners and hold architectural licensure, LEED AP, CFM and/or registered historic architect credentials.
- In the studio, the faculty teach theory and the practical day-to-day experience of real world learning.
- 65% Architectural Technology coursework, 35% General Education coursework.
- Program is designed to integrate traditional practices and state-of-the-art technology.
- Coursework builds technical skills and results in discipline and provides readiness for further educational and employment opportunities.
- Active student chapter of the AIAS (The American Institute of Architecture Students) provides opportunities to travel, perform community service, and interact with professional architects and employers.
- Program promises viable options after two years of study.
- Credits earned in the two-year Architectural Technology associate degree transfer into the final two years of compatible FSU baccalaureate programs.
- The career-oriented curriculum results in an average 96% graduate placement rate in a variety of baccalaureate programs.
- Curriculum is developed with input from professional architects who serve on an advisory board.



AIAS

The American Institute of Architecture Students is the student division of the American Institute of Architects (AIA), the leading architecture professional organization. Members of AIAS join with a community of architecture students regionally and from across the country through events like Forum and Quad Conference. These events afford students the opportunity to travel to cities like Toronto, Minneapolis, Boston, Denver, Kansas City and unique locations like Frank Lloyd Wright's Taliesin in Wisconsin. The self-governed student chapter at Ferris State coordinates social events, skiing and skating outings, community service, architectural firm visits, and trips to regional architecture centers like Detroit, Chicago and Columbus, Indiana.



PLACE MATTERS LECTURE AND FILM SERIES

The Place Matters Lecture and Film series combines community outreach with educational practice to create a public forum for the exchange of ideas between students, professionals, and community members. Lecturers are drawn from regionally and nationally-recognized architects, writers, designers, and environmentalists who share their work and ideas with students and other interested parties. Visiting lecturers are also given the opportunity to interact with students in the classroom, which proves to be an invaluable complement to the classroom experience.



FIRST YEAR - FALL SEMESTER

ARCH 101	Architectural Graphics
ARCH 112	Materials & Methods of Construction
ARTS 101	Basic Art
ENGL 150	English 1
MATH 120	Trigonometry

FIRST YEAR - SPRING SEMESTER

ARCH 102	Architectural Digital Graphics
ARCH 115	Interior & Exterior Materials
ARCH 119	Sustainability in Architecture: Introduction
ARCH elec	Architectural Elective
COMM 121	Fundamentals of Public Speaking
(OR) COMM 105	Interpersonal Communication
SOCY 121	Introduction to Sociology

SECOND YEAR - FALL SEMESTER

ARCH 203	Architectural Documentation
ARCH 241	Design Principles
ARCH 244	Architectural History 1
HVAC 337	Mechanical & Electrical Systems for Buildings
PHYS 211	Introductory Physics 1

SECOND YEAR - SPRING SEMESTER

ARCH 204	Architectural Detailing
ARCH 223	Statics & Strength of Materials
ARCH 245	Architectural History 2
ARCH elec	Architectural Elective
ENGL 250	English 250

ARCHITECTURAL ELECTIVES:

ARCH 242	Architectural Design Principles
ARCH 250	Systems Cost Estimating
ARCH 270	BIM and Parametric Design
ARTS 220	3D Design
CONM 211	Construction Quantity Estimating
CONM 212	Soils and Foundations
CONM 222	Construction Administration

**ARCH 101
ARCHITECTURAL GRAPHICS**

A foundation in the graphic methods used to plan and present buildings. Hard line and sketching techniques are used to develop orthographic, axonometric, pictorial, and modeled representations of buildings. Emphasis is placed on drawing layout, graphic communication, and visual enhancement.

**ARCH 102
ARCHITECTURAL DIGITAL GRAPHICS**

Introduction to the use of digital graphic media as tools of architectural design, representation and documentation. Includes 2-D documentation and 3-D modeling and rendering techniques. Emphasis is placed on the use and integration of traditional and digital media in the design process.

**ARCH 112
MATERIALS & METHODS OF CONSTRUCTION**

Study of properties, characteristics, limitations, selection criteria and graphical interpretation of concrete, steel, masonry and wood used in foundation, substructure, and super-structure building systems. Considers aesthetic, performance, maintainability and cost/benefit aspects. Introduces major building codes, material and industry standards, and utilization of manufacturers' catalogs.

**ARCH 115
INTERIOR & EXTERIOR MATERIALS**

Study of properties, characteristics, limitations, selection criteria and graphical interpretation of common interior and exterior finish materials and systems utilized in exterior closure, roofing, interior construction and conveying systems of buildings. Considers aesthetic, performance, code requirements, maintainability and cost/benefit aspects.

ARCH 119

SUSTAINABILITY IN ARCHITECTURE: INTRODUCTION

An overview of the history of sustainability with an emphasis on the built environment. Lecture topics range from the roots of environmental thought to contemporary challenges.

ARCH 203

ARCHITECTURAL DOCUMENTATION

Introduction to the graphic language, methods, and organizational principles of construction documents. Emphasis is placed on building materials, processes and assemblies and their graphic depiction in working drawings. Additional emphasis is placed on adaptation of standard practices to increase sustainability. Student projects are created in a digital environment following principles of standard practice in the architectural profession.

ARCH 204

ARCHITECTURAL DETAILING

Introduction to the process of developing construction details and the assembly of materials that serves both functional and aesthetic requirements of architecture. Emphasis is placed on product research, performance evaluation, cost/benefit studies, and sustainability. Various methods of presentation will be employed to communicate understanding of material relationships and assemblies.

ARCH 223

STATICS & STRENGTH OF MATERIALS

Provides an awareness of the primary structural systems, including wood, concrete and steel; and the appropriate use of each. Basic statics and strength of material principles are introduced and students are familiarized with references such as the AISC Steel Handbook and the ACI code.

ARCH 241

DESIGN PRINCIPLES

An exploration of the principles underlying architectural design such as shape, form and space; pattern and texture; scale and proportion; function and circulation; color and light; environment, context and meaning. Students will develop a design vocabulary; skills in public presentation; advanced graphic and model-making skills; and an understanding of the integration of architectural form with complementary disciplines.

ARCH 244

ARCHITECTURAL HISTORY 1

An investigation of the primary styles and movements in Western and Non-Western architecture from the prehistoric period through the Middle Ages. The course will examine cultural, architectural and technological developments during the periods of formation of civilizations, expansion of empires, and developments in religious and governmental structure.

ARCH 245

ARCHITECTURAL HISTORY 2

An investigation of the primary styles and movements in Western and Non-Western architecture from the Renaissance through the 20th Century. The course will examine cultural, architectural and technological developments during the periods of modernization in world history, including the Industrial and Technological revolutions.

ARTS 101

BASIC ART

Fundamental art training, two dimensional art, introduction to various techniques and media. Pencil, pastel, ink, and watercolor will be explored while interpreting a variety of subject matter including still-life, landscape, and the figure. Creative problem solving will be stressed.

HVAC 337

MECHANICAL & ELECTRICAL SYSTEMS FOR BUILDINGS

Awareness of heating, ventilating, and air conditioning systems, water supply, sanitary and storm sewers, fire protection, electrical distribution, lighting and acoustical systems for buildings. Emphasis is placed upon systems integration, energy considerations and their effects upon building planning, detailing and construction. Discusses equipment, code requirements and building applications.



program | ENROLLMENT

Entry requirements into the AAS in Architectural Technology include:

- High School GPA of 2.75
- Composite ACT = 19, SAT = 990
- Math ACT = 24, SAT 500
- Reading ACT = 17, SAT EWR = 450

Applications should be submitted by February 1 prior to fall semester requested. To apply online go to:

www.ferris.edu/admissions

Further information may be obtained by calling the Architecture and Facility Management Office at 231-591-3100, email at atfm@ferris.edu, or visit program web site www.ferris.edu/atfm

faculty | DIRECTORY

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Master of Architecture, Lawrence Technological University

Dr. Tanzia Sharmin
Associate Professor
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Master of Architecture, Bangladesh University of Engineering and Technology
PhD, Civil and Environmental Engineering, University of Alberta

program | GRADUATES

“I found the Architectural Technology program at Ferris to be unique in its comprehensive, real world preparation for a career in architecture. The program has proven to be an excellent foundation for a rewarding career with limitless opportunities.”

Pat Noyes

Project Manager
Tower Pinkster, Grand Rapids, Michigan
AAS in Architectural Technology, Class of 1993

“The Architectural Technology program provided me with the necessary skills to be successful in my chosen career. Courses and assignments challenged me to think critically about a problem or task, make informed decisions, and work in an efficient manner; all of which are skills that employer’s desire. Receiving my AAS in Architectural Technology provided me with a strong foundation to continue my education in Facility Management and enter the workforce with valuable skills.”

Nathan Veeneman

Facility Manager
Grand Valley State University, Allendale, Michigan
AAS in Architectural Technology, Class of 2007
BS in Facility Management, Class of 2009

“As project manager for major construction projects, the Architectural Technology program provided me with a comprehensive understanding of user programs, design and construction documents, and the means to deliver the built environment. The program’s emphasis on details and the understanding of ‘what works’ have been invaluable assets to my career.”

Scott L. Veine

Director of Sustainability, Project Manager
Pioneer Construction, Grand Rapids, Michigan
AAS in Architectural Technology, Class of 1997
BS in Construction Management, Class of 2009

“The Architectural Technology degree at Ferris prepared me for the real world and for my next level of education. From the first day of the program I was taking architecture classes, from professional architects, who prepared me for practice and instilled a strong work ethic. My architecture degree gave me the tools to pursue several career paths, to think critically about solving design problems, and to look at the world in a different way.”

Lindsey Jankowski

Interior Designer
Via Design, Grand Rapids, Michigan
AAS in Architectural Technology, Class of 2004
BFA in Interior Design, Kendall College of Art and Design, Class of 2006

“As a graduate of the Architectural Technology and Facility Management programs I have been provided with a solid foundation that I have relied on numerous times. The hands-on experience in the studios, the collaborative atmosphere, the faculty and courses, and the focus on both the technical and design aspects of architecture have been most beneficial as a precursor to my graduate level classes and now working as an associate architect.”

Kristen Kuk

Axis Architecture + Interiors, Indianapolis, Indiana
AAS in Architectural Technology, Class of 2008
BS in Facility Management, Class of 2010
MArch Ball State University, Class of 2013

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