ARCHITECTURAL TECHNOLOGY

Degree:

AAS: Architectural Technology 65-68

Description:
The Architectural Technology program provides instruction in the concepts and skills required for careers in architectural and related professions involved in designing for the built environment. At the core of the curriculum are a series of architectural studios where students prepare construction documents. The series begins with a study of residential construction and culminates with commercial. Emphasis is placed on quality graphic communication, the development of design skills and a thorough understanding of a variety of construction types. Complementing the studio sequence are courses designed to provide instruction in building materials, structures, mechanical/electrical systems, professional practices, and architectural theory and history. Electives in the program allow students to customize their education to fit their interests. Given the wide range of topics covered in the curriculum, graduates are prepared to find employment in architectural and related professional offices including positions in construction estimating, civil engineering, structural engineering, mechanical/electrical engineering, construction management, computer-aided drafting, building code enforcement, specification writing, urban planning, historic preservation, contracting, sub-contracting, and building material sales and marketing.

Implementation: Fall 2011

Competencies:

General Education Competencies:

I. Communicate Effectively
   1. Read and listen with comprehension.
   2. Speak and write clearly using standard English.
   3. Interact cooperatively with others using both verbal and non-verbal means.
   4. Demonstrate information processing through basic computer skills.

II. Think Critically
   1. Make connections in learning across the disciplines and draw logical conclusions.
   2. Demonstrate problem solving through interpreting, analyzing, summarizing, and/or integrating a variety of materials.
   3. Use mathematics to organize, analyze, and synthesize data to solve a problem.

III. Learn Independently
   1. Use appropriate search strategies and resources to find, evaluate, and use information.
   2. Make choices based upon awareness of ethics and differing perspectives/ideas.
   3. Apply learning in academic, personal, and public situations.
   4. Think creatively to develop new ideas, processes, or products.

IV. Examine Relationships in Diverse and Complex Environments
   1. Recognize the relationship of the individual to human heritage and culture.
   2. Demonstrate an awareness of the relationship of the individual to the biological and physical environment.
   3. Develop an awareness of self as an individual member of a multicultural global community.

Technical Courses:

Upon completion of the program, the graduate can:

1. Use algebra, geometry and trigonometry to solve problems related to architectural technology.
2. Identify the specific area of architectural work in which employment is desired and understand the appropriate skills needed.
3. Describe environmental constraints that effect the built environment.
4. Use vocabulary associated with construction.
5. Recognize and apply the appropriate symbols used in construction documents.
6. Describe the five typical phases of a construction project.
7. Summarize a variety of standard documents published by the American Institute of Architects.

8. Discuss the primary roles of architects, architectural technicians, owners, contractors and regulatory agencies.
9. Produce construction documents for residential and commercial structures utilizing hand drafting and current computer-aided drafting technology.
10. Recognize acceptable construction techniques.
11. Choose and evaluate appropriate mechanical and electrical systems for buildings.
12. Perform calculations associated with basic structural, mechanical and electrical systems.
13. Employ current building materials and methods of construction into drawings and specifications.
14. Employ structural, mechanical and electrical systems into drawings and specifications.
15. Apply the results of research of a variety of information sources to building designs.
16. Evaluate the appropriateness of certain building materials for specific construction assemblies.
17. Analyze the performance of materials and assemblies for building construction using drawings, specifications, & site visits.
18. Describe construction processes and how specific working drawings relate to these processes.
19. Communicate the methods by which building members are connected through drawings and model construction.
20. Compose graphically functional, logical, and economical construction details for a variety of construction types.
21. Employ building codes including inspection and enforcement procedures into assignments and projects.
22. Discuss planning and zoning principles and apply them to the project design process.
23. Describe the development of architecture as it is related to world culture and functional human needs.
24. Discuss the implications of the professional, business, and legal aspects of architecture.
25. Perform assigned duties as a member of a building design team.
26. Apply architectural historical concepts and theories to building designs.
27. Analyze architecture utilizing aesthetic principles and conceptual building organizations.
28. Apply problem solving skills to a variety of design and construction related issues.
29. Analyze and transform a complex building program into a competent design.

Outline:

Program Title: Architectural Technology

Course Prefix	Course Number	Course Title	Credit Hours
ACH	100	Construction Documents I	3
ACH	110	Survey of the Architectural Profession	1
ACH	120	Theory and History of Architecture I	3
ACH	150	Construction Documents II	3
ACH	160	Building Materials and Construction I	3
ACH	161	Building Materials and Construction II	3
ACH	170	Theory and History of Architecture II	3
ACH	175	Introduction to Systems	3
ACH	195	Computer Aided Drafting I	3
ACH	200	Construction Documents III	3
ACH	225	Structures	3
ACH	250	Construction Documents IV	3
ACH	260	Office Practice	3
ACH	275	Mechanical and Electrical Systems	3
		Technical Courses ** (see list below)	10
ENG	101	Writing I	3
MAT	116	Technical Mathematics OR	3
MAT	150	College Algebra OR	(3)
MA	109	College Algebra OR	(3)
		Other Quantitative Reasoning course approved by program	(3)

		coordinator	
		Heritage/Humanities	3
		Natural Sciences Course	3
		Social/Behavioral Sciences Course	3
		Computer/Digital Literacy	0-3
		Total	**65-68**

** **Technical Courses**

ACH	180	Selected Topics in Architectural Technology: (Topic)	1-3
ACH	194	Visual Composition	3
ACH	290	Building Codes I	3
ACH	291	Construction Management	3
ACH	292	Building Codes II	3
ACH	293	Presentation Techniques	3
ACH	294	Specification Writing	3
ACH	**295**	Computer Aided Drafting II	3
ACH	297	Estimating Techniques	3
ACH	298	Computer 3D Modeling	3
COE	199	Cooperative Education: Arch Tech	1-3

Additional Suggested General Education Courses (Not Required)

ENG	102	Writing II	3
		Oral Communication	3

Dates of Actions:
Approved:
Revised: 2003, February 2011