ARCHITECTURE (ARCH)

ARCH 1105 Orientation and Mentoring in Architecture--Construction Engineering (ACE) 1 Credit (1)
This course is intended for high school dual credit students and college/university students wishing to explore careers in Architecture, Construction, and Engineering (ACE), which includes the specific fields of Architectural, Civil, Mechanical, Structural, Interior, Landscape, Sustainability, and Environmental. Students receive one-on- one mentoring, attend field trips, and engage in hands-on activities. Repeatable: up to 6 credits.
View Course Outcomes

ARCH 1110 Architectural Drawing 4 Credits (4)
This course is designed as an introduction to architectural drawing and design for students without prior experience in the fine arts. Students are guided through a series of spatial and analytical exercises that focus attention on not only how architects draw, but also the reasoning and processes embedded within the technique. Students are provided exposure to a wide range of interconnected architectural concepts and to manual and digital drawing, as well as modeling techniques for architectural and interior design. Students will learn how to represent composition, form, and space by orthographic drawing, paraline and perspective views, and freehand sketching. Three-dimensional model building techniques will also be introduced.
Learning Outcomes
1. Gain understanding of basic methods of architectural drawing
2. Explore and gain understanding of concepts of spatial design and its representation through exercises
3. that stress analytical ability and an awareness of rational design process
4. Gain an understanding of the design process with practice and various exercises
5. Gain exposure to architectural delineation
6. Demonstrate an understanding of specific skills and concepts related to architectural drawing
7. Create and modify architectural models through various phases of a project
8. Demonstrate a knowledge of graphic standards according to industry conventions
9. Identify the various phases of work with regard to the architectural and interior design professions 1
10. Develop analytical and critical thinking skills

View Course Outcomes

ARCH 1112 Global Issues and Sustainability 3 Credits (3)
Introduction to global environmental issues (historic, present, and future), and the impact on tomorrow's design and construction professions. Issues will include, but shall not be limited to global warming, energy consumption, population, natural resource consumption, air and water quality, waste management, facilities operation management, politics, and facilities design & construction. The impact on the design and construction industry, including 'Green Building' and 'LEED Accreditation and Certification/Criteria' will also be addressed.Repeatable: up to 3 credits.
Learning Outcomes
1. Discover global environmental history to better understand sustainable topics and change your behavior in the future.
2. Expand your knowledge on environment, natural resource consumption, human intervention, politics, and design and construction industry to support your education and future careers.
3. Learn how the US Green Building Council LEED (Leadership in Energy and Environmental Design) certification and Accredited Professional training expands your knowledge on green building design criteria; will help you determine whether you want to take the LEED exam.
4. Examine the many sides of climate change and its effects on the globe as well as our individual microclimate and personal lives to learn how to adapt to the current changes
5. Learn how to effectively research, report, present, and debate environmental topics to help you in your education and future careers.

View Course Outcomes

ARCH 1114 Introduction to Architectural Design 3 Credits (3)
This course provides students who possess a basic background in architecture and architectural drawing with an introduction to architectural design. Students are guided through a series of spatial and analytical exercises that focus attention on two dimensional, three dimensional, and four dimensional design. This course will build on direct linkages to ARCT 101 and ARCT 104 to further students' exposure to interconnected architectural concepts of process, organizational strategies, and analysis of material methodology while utilizing abstract and practiced graphical architectural conventions.

Learning Outcomes
1. Develop critical thinking strategies through a series of connected exercises in order to explain, demonstrate, categorize, compare, contrast and assess information/evidence.
2. Explore concepts of design through spatial design and apply these concepts through a series of progressive representational exercises that stress analytical ability and an awareness of rational design process.
3. Gain skills in the application of graphical communication in a range of media.
4. Enhance abilities in selecting specific information and applying that information to problem solve issues/concerns required to complete a task, while considering other implications.
5. Develop skill sin writing and speaking effectively and use representational media appropriate for both within the profession and with the public.
6. Gather, assess, record, and comparatively evaluate relevant information and performance in order to support conclusions related to a specific project or assignment.
7. Utilize basic formal, organizational and environmental principles and the capacity of each to inform two- and three-dimensional design.
8. Apply fundamentals of both natural and formal ordering systems and the capacity of each to inform two- and three-dimensional design.
9. Demonstrate basic principles of structural systems and their ability to withstand gravitational, seismic, and lateral forces, as well as the selection and application of the appropriate structural system.

View Course Outcomes

ARCH 1120 Introduction to Architecture 3 Credits (3)
This course provides students the tools and vocabulary to analyze, interpret and discuss the built environment from the social, historical, perceptual and technical determinants. Students are introduced to elements, principles, and theories of architecture through their social, historical, and technical determinants. The course seeks to lay a foundation in architectural studies, including introducing students to fundamental vocabulary and concepts.

Learning Outcomes
1. Identify and describe significant architects and iconic buildings
2. Discuss social, cultural, and aesthetic contributions of specific architects and projects
3. Explain architectural concepts via written and graphic communication
4. Recall basic processes and vocabulary of architectural professional practice
5. Understand our built environment and the language of design and architecture
6. Understand how buildings are constructed and explain the process of development
7. Describe and discuss design elements, principles, and theories
8. Understand the relationships among owner, surveyors, designers, architects, engineers, and contractors
9. Research design texts and analyze buildings, landscapes, interiors, sustainability, and products to increase knowledge of important elements of architecture and design 1
10. Identify the various styles, periods, and movements and their social, historical, and technical impacts on architecture

View Course Outcomes

ARCH 1121 Computers in Architecture 3 Credits (3)
Explore various software and photography techniques widely used in the architectural field. In addition to using industry standard CAD program as primary 2-d drafting tool, focus is to produce digital architectural models and renderings, presentation boards, and animations. Digital images will be produced and enhanced through basic techniques in photography and integration of various software. Both individual and group work will be required.

Learning Outcomes
1. Demonstrate the use of the computer and plotters/printers
2. Define and understand different terminologies
3. Demonstrate the understanding of different files using windows operating system
4. Understanding the appropriate use of the software in order to produce necessary drafting outcomes
5. Use proper plotting and printing procedures in order to increase efficiency and minimize paper waste
6. Demonstrating the use of different line types as the relate to drafting

View Course Outcomes

ARCH 1122 Architectural Design Studio I 5 Credits (5)
Enhancement of general graphic communication skills and introduction to fundamental design including exploration, development and defense of design concepts; structural order; 2D and 3D processes in manual and digital architectural graphic expression; model building; general communication and presentation techniques; and development of course portfolio. Course is Studio/critique-based with considerable amount of work/hours required. This course is designed to be taken during student's last year in the Pre-Architecture program. Repeatable: up to 5 credits.
View Course Outcomes

ARCH 1220 Architecture World History I 3 Credits (3)
An introduction to the history of architecture from prehistory to the Renaissance. The major movements in architecture of the Western world will be emphasized while the non-Western tradition will be presented. Architectural works will be examined from an historical perspective that will include the consideration of the political, social, philosophical, intellectual, and spiritual climate of the period during which they were built. Buildings will also be examined as works of art and seen in the context of prevailing movements and styles in painting and sculpture. In addition, urban design will be introduced. Students will learn to appreciate architecture in the larger social context, in terms of its engineering genius and to train their eye to the refined nuances of form, texture, line, light, shadow, and material.
View Course Outcomes

ARCH 1310 Introduction to Architecture, Engineering & Construction 3 Credits (3)
Introduction to and exploration of careers in the fields of architecture, engineering, and construction. Specific fields to include: architecture, civil engineering, mechanical engineering, structural engineering, engineering technology, residential construction, commercial construction, geographical information systems (GIS), surveying, sustainable design, and green building
View Course Outcomes

ARCH 2111 Architectural Delineation I 3 Credits (3)
Introduction to visual literacy, architectural graphic communication, & basic analytical skills. Architectural concepts primarily explored through the application of technical drawing, descriptive geometry, & material manipulation; primarily black & white media. Use of digital tools and media as applicable. Repeatable: up to 3 credits.
Learning Outcomes
  1. Develop and utilize visual observation skills
  2. Translate visual observations into graphical information
  3. Develop and utilize critical thinking in the development of projects
  4. Develop effective line drawing techniques
  5. Produce graphical representations using various shading techniques
  6. Communicate design concepts and ideas clearly

View Course Outcomes

ARCH 2113 Sustainable Design in Architecture 3 Credits (3)
This course provides students with hands-on opportunity to increase their awareness in, and respond to the issues of responsible environmentally friendly building design by engaging in an integrated design process combining 'Traditional Design Process' with 'Sustainable Environmental Design' strategies. Students will expand their awareness of global environmental impacts due to design and construction, and gain knowledge in the industry's leading design 'tool' LEED (Leadership in Energy and Environmental Design) green building design rating system. LEED strategies will be utilized in the design of individual projects apply LEED in practical, individual design development, and develop an integrated building model utilizing the concept of BIM (Building Information Modeling). Such project development will require learning a basic design process and specific sequence including conceptual design, schematic design, design development and BIM (utilizing a BIM software such as REVIT, or AutoCAD Architecture).
Learning Outcomes
  1. Understand Global Issues that impact sustainability of resources and quality of/equity in life.
  2. Understand the impact of buildings on the environment
  3. Identify the basic principles of 'green' design and construction
  4. Identify and Interpret basic principles of the LEED green building rating system
  5. Engage in research of green technologies and design practices
  6. Understand the essential steps of the design process
  7. Develop a basic building design which qualifies for at least LEED Certified rating
  8. Utilize a BIM integrated software package to develop a virtual Building Information Models
  9. Develop presentation posters and slideshow of design work 1
  10. Conduct project presentations, and critique work of peers in a clear, concise manner

View Course Outcomes

ARCH 2114 Construction Documents 3 Credits (3)
Basic use of CAD and Building Information Modeling (BIM) to produce residential, commercial, and industrial architectural working drawings, including floor plans, sections, foundation plans and details, exterior and interior elevations, framing plans, and site plans. Use and application of building and zoning codes, typical construction methods and materials, and accessibility requirements. Basic 3-D modeling, AIA layering standards, sheet layout, and construction document coordination. Repeatable: up to 3 credits.
Learning Outcomes
  1. Create full 3D architectural project models, both via tutorials, and independently
  2. Set models up as working drawings.
  3. Have a working knowledge of the tools that the majority of users will use to work with Revit Architecture.
  4. Project File management skills

View Course Outcomes

ARCH 2115 Architecture Design Studio III 5 Credits (5)
Advanced graphic communication, design and 3D physical model representation. Focus on site analysis, programing and fundamental design issues of context, environment, program development and space planning, 2D and 3D design and presentation techniques. The Course is 'Studio/critique-based' with considerable amount of outside work/hours required. This course is designed to be taken during the student's last year in the Architecture Program.
Learning Outcomes
1. Write and speak effectively and use representational media appropriate for both within the profession and with the general public.
2. Raise clear and precise questions, use abstract ideas to interpret information, consider diverse points of view, reach well-reasoned conclusions, and test alternative outcomes against relevant criteria and standards
3. Gather, assess, record, and comparatively evaluate relevant information and performance in order to support conclusions related to a specific project or assignment.
4. Effectively use basic formal, organizational and environmental principles and the capacity of each to inform two- and three-dimensional design.
5. Apply the fundamentals of both natural and formal ordering systems and the capacity of each to inform two- and three-dimensional design.
6. Examine and comprehend the fundamental principles present in relevant precedents and to make informed choices about the incorporation of such principles into architecture and urban design projects.
7. Prepare a comprehensive program for an architectural project that includes an assessment of client and user needs; an inventory of spaces and their requirements; an analysis of site conditions (including existing buildings); a review of the relevant building codes and standards, including relevant sustainability requirements, and an assessment of their implications for the project; and a definition of site selection and design assessment criteria.
8. Respond to site characteristics, including its context and developmental patterning, the fabric, soil, topography, ecology, climate, and building orientation, in the development of a project design.
9. Design sites, facilities, and systems that are responsive to relevant codes and regulations, and include the principles of life-safety and accessibility standards. 1
10. Demonstrate the basic principles of structural systems and their ability to withstand gravitational, seismic, and lateral forces, as well as the selection and application of the appropriate structural system. 1
11. Understand the basic principles involved in the appropriate selection and application of building envelope systems relative to fundamental performance, aesthetics, moisture transfer, durability, and energy and material resources.

View Course Outcomes

ARCH 2116 Architectural Delineation I 3 Credits (3)
Continuation of ARCT 210 with an emphasis in color media.Repeatable: up to 3 credits.
Learning Outcomes
1. Develop and utilize visual observation skills
2. Translate visual observations into graphical information
3. Develop and utilize critical thinking in the development of projects
4. Develop effective line drawing techniques
5. Produce graphical representations using various shading techniques
6. Communicate design concepts and ideas clearly

View Course Outcomes

ARCH 2122 LEED Accreditation Exam Prep 3 Credits (3)
This course is intended for anyone in the construction or architectural design fields who is interested in learning more about green building and the LEED (Leadership in Energy and Environmental Design) strategies, and are also interested in learning about how to become LEED accredited. Overview of the LEED rating systems utilized in the design and operation of buildings, the various LEED building certifications, and accreditation requirements for professionals. Highlights include interpretation of the LEED Reference Guides, accepted strategies for meeting LEED certification, sample practice exams, integrated project delivery methods, and a practical approach to problem solving through the use of design problems.
Learning Outcomes
1. The student completing this course should gain knowledge and skills for each of the topics covered in the Course Outline.
2. Successful completion of this course should give each student a working knowledge of various LEED Rating Systems, and LEED GA Study Guides.
3. Students will develop critical thinking strategies to enable them to develop preliminary design and plan checking for code compliance.
4. Students should develop acceptable and productive work habits

View Course Outcomes

ARCH 2124 Professional Development and Leadership 1-3 Credits
As members and/or officers of student professional organizations, architecture students gain experience through undertaking leadership roles, participating in team building, and becoming involved in service to the community. Students can also gain actual work experience involving skills related to their field of study. Repeatable: up to 6 credits. Grading: (S/U, Audit).
Learning Outcomes
1. Leadership skills
2. Presentation techniques and public speaking
3. Organizational and teambuilding skills
4. Architecture-related skills
5. Community organizations and service

View Course Outcomes

ARCH 2220 Architectural World History II 3 Credits (3)
A continuation of World Architecture I (AHST 261) and covers the history of architecture from 1400 to the present. The major movements in architecture of the Western world will be emphasized while the non-Western tradition will be presented. Architectural works will be examined from an historical perspective that will include a consideration of the political, social, philosophical, intellectual, and spiritual climate of the period during which they were built. Buildings will also be examined as works of art and seen in the context of prevailing movements and styles in design, painting, and sculpture, Urban design will also be introduced. Students will learn to appreciate architecture in the larger social context in terms of its engineering genius and to train their eye to the refined nuances of form, texture, line, light, shadow, and material.
View Course Outcomes

ARCH 2994 Portfolio in Architecture 3 Credits (3)
This course is intended for Pre-Architecture students in their last semester of the program. Students develop a comprehensive portfolio that compiles, organizes, and showcases their most accomplished coursework produced in Architecture courses , in preparation for application to a 4 yr. Architecture program. Skills and techniques in architectural photography, scanning, and design layout using graphic software.

Learning Outcomes
1. Edit and enhance previous drawings, digital files, and models.
2. Research and learn about portfolio and layout styles.
3. Development/Presentation of Final Portfolio for application/transfer purposes, as well as presenting it to the class and other reviewers.
4. Document drawings, models, digital work and other productions accurately and effectively.
5. Organize their coursework and select the images that best showcase learned skills.
6. Develop organizational habits to record and document their work and back up digital copies.
7. Develop analytical skills to produce an effective layout to then produce a portfolio.
8. Organize, layout and design their own portfolio.

View Course Outcomes

ARCH 2995 Cooperative Education in Architecture 1 Credit (1)
Supervised cooperative work program. Student employed in approved occupation; supervised and evaluated by employer and instructor. Student meets weekly with instructor. Graded S/U.
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ARCH 2996 Topics in Architecture 1-6 Credits
Topics subtitled in the Schedule of Classes. Repeatable: maximum of 12 credits.
View Course Outcomes