2010/2011 Applied Architecture Drawing PTE405 - 36 weeks DoDEA Course Description and Competencies

About the Program

Applied Architecture Drawing prepares students for careers in the Architecture industry. The course sequence focuses on duties and tasks performed by professionals in Architecture as well as pre-employment and employment skills.

Major Concepts/Content: The Applied Architectural Drawing course is designed around a capstone project. Emphasis is placed on applying life and educational experiences to architectural design. The team approach to problem solving is emphasized. The content includes, but is not limited to, determining purposes, uses, and aesthetics of structures, the analysis of various architectural designs, apply principles of environmental and energy efficient design, and use current construction materials and practices. Students will prepare and present multimedia presentations using a variety of software and technologies. This is a design project meeting the needs of clients. This course is an opportunity for students to utilize all the skills acquired through the architecture courses. This course is recommended for aspiring architects, designers, engineers, CAD technicians, and interior decorators.

Major Instructional Activities: Students may work in design teams on a realistic architectural design project. A variety of computer software programs will be used in developing a presentation of final project solutions. Students will be required to plan, design, and produce a project. They will develop solutions to problem solving activities, communicate ideas and information orally and in writing, investigate content-related occupations, and assume leadership roles and work cooperatively. Students will use the Internet as one of many tools in researching their project designs.

Major Evaluative Techniques: Students will be evaluated based upon the quality of their design work and performance. Projects will be analyzed and evaluated for meeting the essential objectives, creativity, and presentation quality. In addition, the students will be evaluated on their ability to cooperatively work together and solve problems.

PTE405	Applied Architectural Drawing	
36 weeks	TASKS/COMPETENCIES	
Implementing DoDEA's CTE Course Requirements		
• 001	Demonstrate DoDEA's Workplace Readiness Skills in course activities.	
• 002	Identify issues related to this field of study that affect the environment and impact	
	local and global communities.	
• 003	Identify Internet safety issues and procedures for complying with acceptable use	
	standards.	
Investigating the Architecture Profession and Related Careers		
• 004	Dialogue with professionals in the field of study.	
• 005	Create or update a portfolio containing representative samples of student work.	
Relating Objectives of the Course to Students in a Technological World		
• 006	Describe methods of continuing education and professional development for	
	architects.	

The table below is a competency list for the Applied Architectural Drawing course. The competencies are considered essential and are required of all students.

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• 007	Describe the management responsibilities of architects.	
• 008	Explain benefits of study of the humanities and social science.	
• 009	Describe the impact of architecture on society and the environment.	
• 010	Demonstrate a professional attitude toward classroom and laboratory activities.	
• 011	List and describe factors and methods of financing.	
• 012	Create a proposal for an architectural project.	
Communicating Technical Information		
• 013	Write a technical report for an architectural activity.	
• 014	Justify and defend design choices for a project.	
Reviewing the Architectural Design Phase		
• 015	Order and sequence construction phases of a residence.	
• 016	Describe the objectives of a feasibility study.	
• 017	Explain the use of the evaluation table during the preliminary design phase.	
• 018	Use anthropometric tables and ergonomic design.	
• 019	Apply basic building codes to architectural designs.	
Project level skills		
• 020	Implement architectural styles.	
• 021	Develop and design electrical and plumbing plan requirements.	
• 022	Integrate LEED (Leadership in Energy and Environmental Design) certification	
	requirements into building design.	
Compute	r Modeling Skills	
• 023	Gain advanced computer-aided drawing/design (CAD) ability in drawing and	
	dimensioning architectural designs.	
• 024	Create a mass model of a building design.	
• 025	Develop a site analysis.	
• 026	Design a foundation plan.	
Finishing the Project		
• 027	Create door and window schedules.	
• 028	Prepare detail-section views and interior and exterior elevations.	
• 029	Apply advanced principles of dimensioning and annotations.	
• 030	Render presentation designs.	
• 031	Create a walk-thru presentation of a portion of a building.	
• 032	Build presentation models.	
Using tl	ne Design Process as a Group Study	
• 033	Integrate anthropometric tables and ergonomic design.	
• 034	Critically evaluate peer work through the use of constructive feedback and rating	
	systems.	
• 035	Formulate an alternate design solution to a problem.	
Prepari	ng an Architectural Case Study	
• 036	Identify and describe architectural problems and their solutions.	
• 037	Describe the application of mathematics.	
• 038	Describe the application of scientific principles in the solution of architectural	
	problems.	

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• 039	Describe the application of technology in the solution of architectural problems.
• 040	Prepare a model demonstrating an architectural problem and its solution.
• 041	Use architectural graphics to describe the solution of an architectural problem.
• 042	Describe the social, cultural, and environmental impact of an architectural project.
Observing Designs in Nature	
• 043	Describe characteristics of natural materials used in selected products.
• 044	Identify organic structures on which architectural designs may be based.
• 045	Identify examples of the honeycomb structure in nature and architectural designs.