ARCHITECTURAL AND ENGINEERING DESIGN TECHNOLOGY

Architectural and Engineering Design Technology

Certificate

This specialization is designed to provide a pathway to the fields of architectural, visual and civil engineering technologies. Students take basic courses that introduce them to a wide range of disciplines in the design-build community. In addition, students are introduced to architecture through an academic course and provided an opportunity to transfer credit to a four-year institution.

Specialization: Architectural and Visual Technology

Certificate and Associate of Applied Science

This program prepares students for careers in the design, building and general business sectors. Students learn to communicate design solutions for architects, engineers, builders and development companies through construction documents and numerous 2D and 3D visualizations. Students are trained in various industry standard software including AutoCad, Revit, Lumion, Photoshop and Illustrator. Upon completion of this program, students will be skilled in emerging technologies such as 3D printing, Building Information Modeling (BIM), Visual and Augmented Reality and advanced graphic techniques. In addition, students are introduced to architecture through several academic courses and provided an opportunity to transfer credit to a four-year institution.

Specialization: Civil Engineering Technology

Certificate and Associate of Applied Science

This degree is designed to assist students in preparing architectural, structural and civil construction documents for commercial, industrial and civil projects. Students are trained in various industry standard software including AutoCad, Revit, Microstation and Civil 3D to produce construction documents. They develop skills in the production of working/study models, Building Information Modeling (BIM), 3D printing and through specialized courses learn basic civil engineering technologies and surveying techniques. In addition, students are introduced to architecture through several academic courses and provided an opportunity to transfer credit to a four-year institution.

Program Learning Outcomes

Architectural and Engineering Design Technology Certificate

1. Students will use CAD hardware and software to create, organize, display, and plot/print working drawings.

2. Students will identify the importance and use of symbols, terminology, and standard abbreviations in construction documents.

3. Students will be able to describe professions in the Architectural, Engineering, and Construction (AEC) industry.

Specialization: Architectural and Visual Technology, Certificate

1. Apply fundamental drafting skills to create drawings in a prescribed discipline.

2. Students will apply fundamental visualization skills in architectural projects.

3. Prepare multimedia presentations of architectural projects.

Specialization: Architectural and Visual Technology, Associate of Applied Science

1. Apply advanced methods and technologies in architectural visualization.

2. Apply industry standards to produce a complete project and/or a portfolio in a prescribed discipline.

3. Demonstrate proficiency in the application of drafting concepts, skills and best practices in the workforce.

4. Students will utilize equipment and technologies used in the Architectural, Engineering, and Construction (AEC) industry.

5. Students will be able to integrate advanced graphic skills in the creation and presentation of construction documents for production of Architectural, Engineering, and Construction (AEC) industry projects.

6. Students will be able to apply specialized skills to a designated internship position related to the Architectural, Engineering, and Construction (AEC) industry.

Specialization: Civil Engineering Technology, Certificate

1. Students will apply fundamental drafting skills to create basic maps and drawings in the civil engineering discipline.

2. Students will use surveying instruments and equipment on site and keep a set of field notes.

3. Prepare civil engineering-related drawings and basic calculations utilizing field data.

Specialization: Civil Engineering Technology, Associate of Applied Science

1. Apply advanced methods and technologies in civil engineering related projects.

2. Apply industry standards to produce a complete project and/or a portfolio in a prescribed discipline.

3. Demonstrate proficiency in the application of drafting concepts, skills and best practices in the workforce.

4. Students will utilize equipment and technologies used in the Architectural, Engineering, and Construction (AEC) industry.

5. Students will be able to integrate advanced graphic skills in the creation and presentation of construction documents for production of Architectural, Engineering, and Construction (AEC) industry projects.

6. Students will be able to apply specialized skills to a designated internship position related to the Architectural, Engineering, and Construction (AEC) industry.

Advisory Committee Members

Hugo Avila, PE, Senior Project Manager, Associate, DBR Engineering Consultants
Yvette Barrera, PE, CFM, Assistant District General Manager, Hidalgo County Drainage District 1
Sergio Castillo, Production Manager, Sam Garcia Architects
Alfonso Soto, PE, D.GE, F.ASCE, Senior Principal, Terracon
Katrin Leonard, PE, Vice President, Raba-Kistner Consultants, Inc.
Cesar Alejandro Roque, AIA, Rike Ogden Figueroa Allex Architects, Inc.
Heriberto Cavazos, PE, Partner, Green, Rubiano & Associates
Erica Salinas, RID, NCIDQ, PBK Architects

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Associate Degrees

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Architectural and Engineering Design Technology Certificate

TSI EXEMPT

Course	Title	Credit Hours
Fall		
DFTG 1409	Basic Computer-Aided Drafting	4
DFTG 1315	Architectural Blueprint Reading	3
ARCH 1311	Introduction to Architecture	3
ARCE 1421	Architectural Illustration	4
DFTG 1470	Introduction to Civil Drafting	4
	Credit Hours	**18**
	Total Credit Hours	**18**

Architectural and Visual Technology Certificate

TSI EXEMPT

Course	Title	Credit Hours
Fall		
DFTG 1409	Basic Computer-Aided Drafting	4
DFTG 1315	Architectural Blueprint Reading	3
ARCH 1311	Introduction to Architecture	3
ARCE 1421	Architectural Illustration	4
	Credit Hours	**14**
Spring		
DFTG 2419	Intermediate Computer-Aided Drafting	4
INDS 1445	Commercial Design I	4
DFTG 2428	Capstone: Architectural Drafting-Commercial	4
	Credit Hours	**12**
	Total Credit Hours	**26**

Civil Engineering Technology Certificate

TSI EXEMPT

Course	Title	Credit Hours
Fall		
DFTG 1409	Basic Computer-Aided Drafting	4
DFTG 1315	Architectural Blueprint Reading	3
ARCH 1311	Introduction to Architecture	3
DFTG 1470	Introduction to Civil Drafting	4
	Credit Hours	**14**
Spring		
DFTG 2419	Intermediate Computer-Aided Drafting	4
SRVY 1413	Plane Surveying	4
DFTG 1430	Civil Drafting I	4
	Credit Hours	**12**
	Total Credit Hours	**26**

Architectural & Engineering Design Technology

Specialization: Architectural and Visual Technology Associate of Applied Science

TSI LIABLE

Course	Title	Credit Hours
First Year		
Fall		
DFTG 1409	Basic Computer-Aided Drafting	4
DFTG 1315	Architectural Blueprint Reading	3
ARCH 1311	Introduction to Architecture	3
ARCE 1421	Architectural Illustration	4
	Credit Hours	**14**
Spring		
DFTG 2419	Intermediate Computer-Aided Drafting	4
INDS 1445	Commercial Design I	4
DFTG 2428	Capstone: Architectural Drafting-Commercial	4
	Credit Hours	**12**
Summer		
Math Elective [1]		3
ENGL 1301	Composition I [1]	3
	Credit Hours	**6**
Second Year		
Fall		
DFTG 1441	Intermediate Technical Animation and Rendering	4
PHTC 2431	Architectural Photography	4
ARCH 1301	Architectural History I [1]	3
ARCH 1303	Architectural Design I	3
	Credit Hours	**14**
Spring		
Social and Behavioral Sciences Elective [1]		3
ARCH 1302	Architectural History II [1]	3
DFTG 2438	Final Project - Advanced Drafting	4

DFTG 1480	Cooperative Education	4
	Credit Hours	**14**
	Total Credit Hours	**60**

[1] Identifies courses to fulfill minimum 15 credit hour General Education requirement

Architectural & Engineering Design Technology

Specialization: Civil Engineering Technology Associate of Applied Science

TSI LIABLE

Course	Title	Credit Hours
First Year		
Fall		
DFTG 1409	Basic Computer-Aided Drafting	4
DFTG 1315	Architectural Blueprint Reading	3
ARCH 1311	Introduction to Architecture	3
DFTG 1470	Introduction to Civil Drafting	4
	Credit Hours	**14**
Spring		
DFTG 2419	Intermediate Computer-Aided Drafting	4
SRVY 1413	Plane Surveying	4
DFTG 1430	Civil Drafting I	4
	Credit Hours	**12**
Summer		
Math Elective [1]		3
ENGL 1301	Composition I [1]	3
	Credit Hours	**6**
Second Year		
Fall		
ARCE 1452	Structural Drafting	4
ARCH 1301	Architectural History I [1]	3
DFTG 2470	Civil Drafting II	4
DFTG 2371	Civil Drafting Visualization	3
	Credit Hours	**14**
Spring		
Social and Behavioral Sciences Elective [1]		3
ARCH 1302	Architectural History II [1]	3
DFTG 2438	Final Project - Advanced Drafting	4
DFTG 1480	Cooperative Education	4
	Credit Hours	**14**
	Total Credit Hours	**60**

[1] Identifies courses to fulfill minimum 15 credit hour General Education requirement