

COURSE OUTLINE

Architecture 105 **Perspective Graphics with Introduction to SketchUp and Rhinoceros**

Catalog Statement

ARCH 105 is a course in technical perspective. Skills are developed in manual drawing techniques of various architectural subjects using formal two-dimensional methods. Introduction to two three-dimensional drawing programs, SketchUp and Rhinoceros is also included. Software topics include graphics user interface, surface editing, rendering, drawing tools, extrusions, lofting, and digital output.

Total Lecture Units: 1.5

Total Laboratory Units: 1.5

Total Course Units: 3.0

Total Lecture Hours: 24.0

Total Laboratory Hours: 72.0

Total Faculty Contact Hours: 96.0

Prerequisite: ARCH 101 or equivalent

Course Entry Expectations

Prior to enrolling in the course, the student should be able to:

- complete assignments in basic drafting fundamentals;
- complete basic residential working drawings;
- use limited technical vocabulary;
- demonstrate proficiency in an architectural style of lettering;
- demonstrate proficiency in drawing on vellum and in the use of drawing instruments;
- apply a limited portion of the uniform building code.

Course Exit Standards

Upon successful completion of the required coursework, the student will be able to:

- demonstrate the process of creating formal perspective drawings using manual drawing methods;
- demonstrate skills in the use of the SketchUp drawing software program;
- demonstrate skills in the use of the Rhinoceros drawing software program;.

- create a manual and digital portfolio of work completed using traditional drawing techniques, SketchUp, and Rhinoceros.

Course Content

Total Contact Hours = 96.0

Traditional Two-Point Perspective (lecture 6 hours, lab 6 hours)

- Orthographic and isometric projection
- Project setup and procedure
- Traditional drafting techniques

Introduction to the SketchUp Software Program (lecture 8 hours, lab 34hours)

- Toolbars
- Drawing techniques
- Presentation methods
 - Window styles
 - Adding color and textures to models
- Printing and exporting drawings

Introduction to the Rhinoceros Software Program (lecture 8 hours, lab 26 hours)

- User interface
- 2D drawing
- Surface creating and editing
 - Extruding
 - Lofting
- Rendering
- Printing and exporting drawings

Presentation of Portfolio (lecture 2 hours, lab 6 hours)

- Creation of a portfolio
- Final presentation of projects

Methods of Instruction

The following instructional methodologies may be used in the course:

- lecture;
- multimedia;
- guest speakers;

Out of Class Assignments

The following out of class assignments may be used in the course:

- weekly forum posts (e.g. short written response to weekly forum question);
- individual and group projects (e.g. completion of projects from lab manual);
- written research (e.g. writing a research paper on an assigned topic);
- field trips.

Methods of Evaluation

The following methods of evaluation may be used in the course:

- individual projects (e.g. projects assigned from the lab manual or by the instructor);
- performance tests (e.g. a timed drawing test);
- midterm examination (e.g. a performance-based drawing project);
- final examination (e.g. performance-based final drawing project);
- portfolio review and critique (e.g. a critique of all of the work that the student has accomplished during the course).

Textbook

Martin, D., *Perspective Graphics Lab Manual*. Glendale: Glendale Community College Bookstore, 2013. Print.
10th Grade Textbook Reading Level.

Fugier, M., *Rhinoceros Level 1 Training Manual Level 1 v5*. Seattle: Robert McNeel, 2013. Print.
10th Grade Textbook Reading Level.

Student Learning Outcomes

Upon successful completion of the required coursework, students will be able to:

- demonstrate the process of creating formal perspective drawings using manual drawing methods;
- demonstrate skills in the use of the SketchUp drawing software program by completing a selection of drawing assignments;
- demonstrate skills in the use of the Rhinoceros drawing software program by completing a selection of drawing assignments;
- create a traditional and digital portfolio of work completed using traditional drawing techniques, SketchUp, and Rhinoceros.