

COURSE IMPLEMENTATION DATE:	September 1999
COURSE REVISED IMPLEMENTATION DATE:	September 2006
COURSE TO BE REVIEWED:	November 2009
(Four years after UPAC final approval date)	(MONTH YEAR)

**OFFICIAL COURSE OUTLINE INFORMATION**

Students are advised to keep course outlines in personal files for future use.

Shaded headings are subject to change at the discretion of the department and the material will vary - see course syllabus available from instructor

FACULTY/DEPARTMENT:	Science, Health & Human Services / Physics	
ENGR 151		4
COURSE NAME/NUMBER	FORMER COURSE NUMBER	UCFV CREDITS
	Computer-Aided Engineering Graphics	
COURSE DESCRIPTIVE TITLE		

**CALENDAR DESCRIPTION:**

This course covers technical sketching, orthographic projection, visualization in three dimensions, and conventions of engineering drawing. Computer-based graphics (CADD) will be introduced. The principles of descriptive geometry will be applied to the solution of space problems. This course is designed for students intending to transfer to Engineering at UBC or UVIC and emphasizes engineering practices.

**PREREQUISITES:** Familiarity with Windows-based systems

**COREQUISITES:**
**PRE OR COREQUISITE:** **PHYS 111**

SYNONYMOUS COURSE(S)	<b>SERVICE COURSE TO:</b>
(a) Replaces: <b>Physics 151</b> (Course #)	(Department/Program)
(b) Cannot take: <b>Physics 151</b> (Course #) for further credit.	(Department/Program)

TOTAL HOURS PER TERM: <b>90</b>	TRAINING DAY-BASED INSTRUCTION
<b>STRUCTURE OF HOURS:</b>	LENGTH OF COURSE: _____
Lectures: <b>45</b> Hrs	HOURS PER DAY: _____
Seminar: _____ Hrs	
Laboratory: <b>45</b> Hrs	
Field Experience: _____ Hrs	
Student Directed Learning: _____ Hrs	
Other (Specify): _____ Hrs	

MAXIMUM ENROLLMENT:	<b>24</b>
EXPECTED FREQUENCY OF COURSE OFFERINGS:	<b>Annual, possibly twice/year</b>
<b>WILL TRANSFER CREDIT BE REQUESTED? (lower-level courses only)</b>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
<b>WILL TRANSFER CREDIT BE REQUESTED? (upper-level requested by department)</b>	<input type="checkbox"/> Yes <input type="checkbox"/> No
<b>TRANSFER CREDIT EXISTS IN BCCAT TRANSFER GUIDE:</b>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

**AUTHORIZATION SIGNATURES:**

Course Designer(s): _____ Peter Mulhern	Chairperson: _____ Gillian Mimmack ( <i>Curriculum Committee</i> )
Department Head: _____ Norm Taylor	Dean: _____ Jackie Snodgrass
UPAC Approval in Principle Date: _____	UPAC Final Approval Date: May 26, 2006

**LEARNING OBJECTIVES / GOALS / OUTCOMES / LEARNING OUTCOMES:**

Engineering drawings are essential means of communication between designers and manufacturers of a structure or a product. Neatness, clarity of expression, and accuracy are of paramount importance. A body of standard techniques and styles has been developed to ensure this ease of communication. Upon successful completion of this course, the student will have attained a satisfactory level of competence in these basic techniques, using standard drawing methods, and using Computer-Aided Drafting (CADD).

**METHODS:**

Classes will consist of lecture and lab components. The lecture will describe an aspect of the course, put it in the context of a career in Engineering, and lay out the specific expectations of the students. The lab will provide an opportunity for hands-on practice of the skills described in the lecture while under supervision of the instructor.

**PRIOR LEARNING ASSESSMENT RECOGNITION (PLAR):**

Credit can be awarded for this course through PLAR (Please check:)  Yes  No

**METHODS OF OBTAINING PLAR:**

Please see the Physics PLAR policy on the department's webpage

**TEXTBOOKS, REFERENCES, MATERIALS:**

[Textbook selection varies by instructor. An example of texts for this course might be:]

James H. Earle, Engineering Design Graphics, 10th ed.

Gary R. Bertoline, Graphics Communications for Engineers

**SUPPLIES / MATERIALS:**

Set of drawing equipment

Appropriate paper

3.5" disks

printer card

**STUDENT EVALUATION:**

[An example of student evaluation for this course might be:]

Labs	25%
Assignments (incl. log)	10%
Quiz #1	20%
Quiz #2 AutoCad	15%
Final exam	30%

**COURSE CONTENT:**

[Course content varies by instructor. An example of course content might be:]

1. Introduction, Design
2. Basic Technical Drawing
3. Instrument Drawing
4. AutoCAD #1: Basic Commands
5. AutoCAD #2: Prototypes and Orthographic Drawings
6. AutoCAD #3: Conventional Practices and Isometric Drawings
7. Descriptive Geometry #1: True Length and True Shape

8. Forces #1: 2D Graphical Analysis
9. Forces #2: 3D Graphical Analysis
10. Sectioning
11. Auxiliary Views
12. Dimensioning
13. Tolerances
14. Geometric Tolerances
15. Standards and Threads
16. Descriptive Geometry #2: Intersections
17. Descriptive Geometry #3: Slopes
18. Topographic Maps
19. Graphical Solutions to Differential Equations
20. Working Drawings
21. Finish Working Drawing Lab