UNIVERSITY COLLEGE of the FRASER VALLEY

COURSE IMPLEMENTATION DATE:[Fall 1999
COURSE REVISED IMPLEMENTATION DATE:[September 2001
COURSE TO BE REVIEWED:[September 2005
(Four years after implementation date)

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 material will vary
- see course syllabus available from instructor

FACULTY/DEPARTMENT: 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

PRE OR COREQUISITES: PHYS 111

SYNONYMOUS COURSE(S)

(a) Replaces: Physics 151 *(Course #)*

(b) Cannot take Physics 151 for further credit *(Course #)*

SERVICE COURSE TO:

(Department / Program)

(Department / Program)

TOTAL HOURS PER TERM: 90

STRUCTURE OF HOURS:

Lectures:	45	hrs
Seminar:		hrs
Laboratory:	45	hrs
Field Experience:		hrs
Student Directed Learning:		hrs
Other (Specify):		hrs

TRAINING DAY-BASED INSTRUCTION

LENGTH OF COURSE:

HOURS PER DAY:

MAXIMUM ENROLMENT: 24

EXPECTED FREQUENCY OF COURSE OFFERING: Minimum of once/year, possibly twice/year

WILL TRANSFER CREDIT BE REQUESTED? (lower-level courses only) **YES** X **NO**

WILL TRANSFER CREDIT BE REQUESTED? (upper-level requested by department) **YES** **NO**

TRANSFER CREDIT EXISTS IN BCCAT TRANSFER GUIDE: **YES** X **NO**

AUTHORIZATION SIGNATURES:

Course designer(s): Peter Mulhern

Chairperson: *(Curriculum Committee)*

Department Head: Peter Mulhern

Dean: K. Wayne Welsh for J. Snodgrass

PAC Approval in Principle Date:

PAC Final Approval Date: December 4, 2002

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 YES X NO

METHODS OF OBTAINING PLAR:

Industrial experience relevant to the specific course content.

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

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

COURSE CONTENT:

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