

CAPILANO UNIVERSITY COURSE OUTLINE	
Term: Fall 2015	Course No. APSC 130
Course: TECHNICAL DRAFTING AND COMPUTER-AIDED DESIGN	Credits: 3.0 Section:
INSTRUCTOR Office: FR?? Tel: 604-986-1911 (Ext. ??) email: @capilanou.ca	

COURSE FORMAT: Four lab hours per week, for a 15 week semester, which includes two weeks for final exams.

PRE-REQUISITES: Precalculus 12 or Math Placement Test (Calculus MPT).

COURSE OBJECTIVES:

General: This course introduces students to hand drafting and computer-aided drafting techniques applied to engineering designs. Although it is intended for students in the Engineering programs, it will be of interest to any discipline that involves the design of materials, structures, devices, systems, or processes according to specified criteria.

Student Learning Outcomes:

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

- communicate technical material in graphical form;
- read, understand, and produce basic engineering drawings and become familiar with some of the conventions and practices of graphical communication for engineers; and
- use a computer-aided design (CAD) software package.

REQUIRED COURSE MATERIALS:

Textbook: Finkelstein, Ellen. AutoCAD 2013 Bible. Wiley, John & Sons, 2009.

- Drafting Equipment:**
1. Metric scale 987-19-SI with scaling (1:1, 1:2, 1:5, 1:10, 1:20 and 1:50)
 2. Protractor with 180 degrees graduation
 3. Set Squares (45 degree triangle and 30/60 degree triangle)
 4. Eraser and Eraser Shield
 5. Circle Template
 6. Compass (prefer a compass with stabilizer between the arms)
 7. 2 Mechanical Pencils (HB, 2H lead)

8. Brush for cleaning eraser bits
9. Vellum papers (11" by 17") – 20 sheets
10. Tapes and sand papers (sharpening pencils)
11. French Curve
12. Engineering calculator
13. Dividers (optional)
14. Ellipse template (optional)

A package containing all required drafting equipment is available at the Bookstore. Alternatively, you may purchase each item separately. Please obtain the required items in the list above before your first lab. Drafting labs will begin during the second week of classes. The manual drafting equipment must be brought to the drafting lab each week.

Computer Equipment: It is recommended that students have their own personal storage device such as USB flash drive capable of storing several large graphical data files (+512 MB). Computer labs will begin during the second week of classes.

COURSE CONTENT:

Weeks	AutoCAD	Drafting
1	AutoCAD Fundamental and Basic Commands	Instrument Drafting, Geometry in Technical Drafting
1	Linetypes and Drawing Construction Using AutoCAD	Lettering for Pencil Sketch, Sketch Line Weights and Drawing Constructions
1	Setting up and Creating Your First Drawing	Principle of Projection
1	Making Orthographic Views with AutoCAD	Sketch Orthographic Views
1	Making Sectional Views with AutoCAD	Sketch Sectional Views
1	Making Auxiliary Views with AutoCAD	Sketch Auxiliary Views
1	Making Isometric Views with AutoCAD	Sketch Pictorial Views
1	Dimensioning with AutoCAD	Dimensioning and Geometric Tolerance
1	Introduction to AutoCAD 3D (brief) and Solid Edge	Sketch Development Drawings
1	Direct modeling: Extrusion, Revolve, Datum, Layers, Pattern, Sweep	Sketch Intersection Drawings
1	Assemblies and Exploded Assemblies	Sketch Threads and Fasteners
1	Shell Structures	Cartography, topography and geology

Weeks	AutoCAD	Drafting
1	AutoCAD Evaluation Test	Drafting Evaluation Test

LABS:

Labs are instructional classes on manual drafting and the use of AutoCAD. Students are encouraged to study any additional books related to technical drafting, engineering graphics and AutoCAD. AutoCAD 2013 is available on campus.

EVALUATION PROFILE:

Final grades for the course will be computed based on the following schedule:

Drafting Labs: in-class practice	15%
AutoCAD Labs: in-class practice	15%
Drafting Labs: quiz	6%
AutoCAD Labs: quiz	5%
Drafting Labs: homework assignment	10%
AutoCAD Labs: homework assignment	10%
Drafting Evaluation Test	17%
AutoCAD Evaluation Test	17%
Performance Evaluation	5%
TOTAL	100%

PERFORMANCE EVALUATION:

In the absence of exceptional circumstances, which are at the instructor's discretion, the performance evaluation component of the final grade will be prorated to the rest of the grade. The most common circumstance justifying an increased performance evaluation mark is a marked improvement in performance in the final examination relative to the tests during the term, where the instructor feels justified in giving an elevated grade.

GRADING PROFILE:

Letter grades will be assigned according to the following guidelines:

A+ 90 - 100%	B+ 77 - 79%	C+ 67 - 69%	D 50 - 59%
A 85 - 89%	B 73 - 76%	C 63 - 66%	F 0 - 49%
A- 80 - 84%	B- 70 - 72%	C- 60 - 62%	

Students should refer to the University Calendar for the effect of the above grades on grade point average.

OPERATIONAL DETAILS:

- University Policies:** Capilano University has policies on Academic Appeals (including appeal of final grade), Student Conduct, Cheating and Plagiarism, Academic Probation and other education issues. These and other policies are available on the University website.
- Attendance:** Attendance at lectures, labs and tutorials is expected. You are responsible for all information given in the lectures, labs and tutorials, including the times of tests and deadlines for assignments.
- Computer Access:** Drop-in access to the University computers is available during the hours posted outside each lab, subject to computer availability. Please respect the directions of the instructor in the lab if asked to leave the lab due to a class booking. The University's Student Conduct Policy and Statement of Appropriate Use of Information Technology and Services will be strictly enforced.
- Missed Exams:** Normally, a score of zero will be given for a missed exam, test, quiz, lab, etc. In some exceptional situations, the student will be permitted to write a make-up test, defer the lab to a later date or to replace the score by other marks.
- The situations in which a score of zero may be avoided are those for which the student meets **all** of the following conditions:
1. Circumstances are beyond the control of the student which resulted in the exam, test, quiz, lab, etc. to be missed. Such circumstances include serious illness or injury, or death of close family member. They do **NOT** include forgetting about the test, lack of preparation for the test, work-related or social obligations.
 2. The student has notified the instructor (or the Pure and Applied Science office staff, if the instructor is not available) about the missed exam, test, quiz, lab, etc. Such notification **MUST** occur in advance, if possible, or at the latest, on the day of the exam, test, quiz, lab, etc.
 3. Proof of the circumstances must be provided. Proof of illness or injury requires a note from a doctor, who may also be consulted.
 4. The student has been fully participating in the course up until the circumstances that prevented the writing of the exam, test, quiz, lab, etc. **Fully participating means attending almost all classes and turning in almost all assignments in the course.**

The options offered to the student who meets the four conditions are decided by the instructor. They will not necessarily meet the convenience of the student.

- Final Exam Period:*** Students should note that the final exam period is from **date to date** (*including Saturday, date*), and that they can expect to write exams at any time during this period. Individual exam times will not normally be rescheduled because of holidays, work, or other commitments. While efforts are made to spread exams throughout the exam period, an individual's particular course combination may result in exams being scheduled close together, or spread widely through the entire exam period.
- Intellectual Honesty:*** If an instructor determines that you have cheated on an examinable component (e.g. quiz, lab, test), the instructor may impose a sanction ranging from a failing grade on the component to a failing grade for the course and will report the incident to the Dean of Student Services. The University's policy on Cheating and Plagiarism will be strictly enforced.
- Incomplete Grades:*** Incomplete grades ("I") are given only when special arrangements have been agreed upon with the instructor prior to the end of the semester. Since "I" grades are granted only in exceptional circumstances (usually health problems), their occurrence is rare.
- Final Letter Grade:*** All registered students will receive a final letter grade unless they have officially withdrawn (see the University website for the withdrawal date).
- English Usage:*** Students are expected to use correct standard English in their written and oral assignments, exams, presentations and discussions. Failure to do so may result in reduced grades in any part of the Evaluation Profile. Please refer to the guidelines provided in the Capilano Guide to Writing Assignments (available from the University Bookstore).
- Emergency Procedures:*** Please read the emergency procedures posted on the wall of the classroom.