ENGR B47: Introduction to Engineering & Design

Fall, 2011 **CRN: 75062/75063**

Lecture Instructor: Jean Morris
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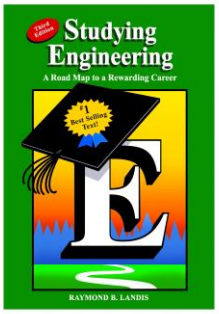
Office Hours: To be determined

Lab Instructors:
Klint Rigby (CRN 75062)
Sean Caras (CRN 75063)



General Course Information

***Meetings**:*

Lecture :	Monday & Wednesday		8:00 – 9:05 a.m. in SE-45 or MS-9
Lab:	CRN 75062:	Thursday	7:45 – 10:55 a.m. in SE-45 or MS-9
	CRN 75063:	Thursday	1:00 – 4:10 p.m. in INDT 6

***Prerequisites**:* Math BD or equivalent(recommended)

Class Materials:

Texts: *Introduction to EXCEL*, by Kuncicky and Larsen, ISBN: 978-0-13-608165-4 (required);
Studying Engineering by Ray Landis, ISBN: 978-0-9646969-2-1 (optional)

Website: Schedule changes/updates are maintained on the website.

Course Objectives & Student Learning Outcomes:

This course is designed for beginning students majoring in engineering or engineering technology, and for those who simply want to find out what engineering professionals do by providing an opportunity to actually solve some simple engineering problems and to construct an engineering design. It meets requirements of four-year colleges and universities for a general introduction to the field of engineering and design. It also satisfies the counseling requirement for A.A. and A.S. degrees at BC. Upon completion of this course, students will be able to:

- ✓Outline the functions and characteristics of various engineering disciplines.
- ✓Determine what courses he/she will need to take for an A.S. degree or transfer by completing a college educational plan.
- ✓Document and present technical material by writing a memo, technical report and resume in addition to participating with a team on oral presentations.
- ✓Analyze simple engineering problems using appropriate graphical and statistical solutions.
- ✓Discuss ethical issues in engineering.
- ✓Apply the 5-step design process to a well-defined problem to produce a viable and testable product.

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Attendance & Drops

Attendance is required. You will be held responsible for everything covered in class. If you must miss a class, then it is your individual responsibility to obtain the class material from a student who did not miss class.

If you fail to withdraw from a class you are no longer attending, you may receive an "F" on your permanent transcript. "Students are responsible for officially withdrawing from any class or classes in which they no longer wish to be enrolled. Non-attendance does not release the student from this responsibility." (Bakersfield College Catalog) If you decide to drop, be sure to drop on banweb. If you are uncertain about dropping, please talk to me.

Grade Components

Class Assignments:

Your lecture grade in this course will be based on the following assignments:

1. *Personal Essay*
2. *Engineering Disciplines Research & Presentation*
3. *Study Skills Packet*
   - *Educational Plan* – Every student in the course must complete an educational plan. If an educational plan is not completed, the student will receive an incomplete for the course. An educational plan must then be completed and turned into Professor Rozell within a year or the grade will revert to an F for the course.
   - *Learning Style*
   - *Self-Assessment & Semester Schedule*
   - *Temperament Tests*
   - *Success Plan*
4. *Excel Assignments*
   - *Introductory Excel Assignment (completed in first lab)*
   - *Cost Analysis*
   - *Tables & Graphs in Excel I*
   - *Tables & Graphs in Excel II*
   - *Engineering Control Charts in Excel*
   - *Motor Project Graphs in Excel*
5. *In Class Science/Engineering Assignments*
   - *Problem Solving Assignment*
   - *Unit Conversion Assignment*
6. *Professional Development*
   - *Ethics Assignment*
   - *Resume & Cover Letter Assignment*

Project Assignments:

1. *Book Light Project and Presentation*
2. *Spinning Top (CRN 75062) or Electronic (CRN 75063) Project and Presentation*
3. *Motor Project and Presentation*

Each design is a team effort, but heavily relies on your participation with the team. Therefore, you will not only be graded on your attendance at team meetings, but will also be graded on your participation at these meetings. Attendance at all team oral presentations is required. Should you miss your team's presentation, you will receive a 0 for all work related to the presentation.

Assignment Grading Weights:

Class Assignments	40%
Book Light Project	10%
Spinning Top/Electronic Project	30%
Motor Project	15%
Excel Competency Exam	5%
Total	**100%**

Grade Determination:

90-100%	Grade = **A**
80-89%	Grade = **B**
70-79%	Grade = **C**
60-69%	Grade = **D**
< 60%	Grade = **F**

***Late class assignments will be penalized 10% for every class day late and may only be turned in up to 2 class days late.*

Additional Attendance & Drops

Attendance is required. Pursuant to the guidelines outlined in the college catalog, should you miss the equivalent of two weeks of class *(4 lectures and/or 2 labs), you will be dropped from the course.

Academic Dishonesty:

Any form of Academic Dishonesty will not be tolerated and will be treated as STUDENT MISCONDUCT at Bakersfield College. Should an instance of academic dishonesty be determined by the instructor, all involved parties will receive a grade of 0 for that assignment or exam.

Student Disability:

Students with disabilities who believe they may need accommodations in this class are encouraged to contact Disabled Student Programs & Services located at Student Services Building, 1st Floor, Counseling Center (661-395-4334), as soon as possible to better ensure such accommodations are implemented in a timely fashion.

Tentative Calendar – Updates maintained on the website

Week	Lecture	Assignments Due	Lab
1 **8/22 – 8/25**	Introduction to Course Educational Planning	Introductory Excel Assignment	Campus Orientation Introduction to Excel
2 **8/29 – 9/1**	Study Skills Engineering Discipline Assignment Guest Speaker	Personal Essay	Book Light Project
3 **9/5 – 9/8**	Example Engineering Discipline Presentation Guest Speaker	Excel Cost Analysis	Book Light Project
4 **9/12 – 9/15**	Physics of Tops (CRN 75062 – meet in SE-45) & Electronic Concepts (CRN 75063 –meet in INDT-6)	Physics of Tops Assignment (only CRN 75062)	Book Light Project

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Tentative Calendar – Updates maintained on the website

Week	Lecture	Assignments Due	Lab
5 **9/19 – 9/22**	Guest Speaker Engineering Discipline Presentations	Book Light Cost Analysis Book Light Powerpoint Handout	Book Light Project Presentations
6 **9/26 – 9/29**	Engineering Disciplines Presentations		Spinning Top/Electronic Project
7 **10/3 – 10/6**	Guest Speaker Engineering Disciplines Presentations		Spinning Top/Electronic Project
8 **10/10 – 10/13**	Problem Solving	Study Skills Packet Problem Solving Assignment	Spinning Top/Electronic Project
9 **10/17 – 10/20**	Unit Conversion Guest Speaker	Unit Conversion Assignment	Spinning Top/Electronic Project
10 **10/24 – 10/27**	Tables & Graphs I		Spinning Top/Electronic Project
11 **10/31 – 11/3**	Tables & Graphs II	Tables & Graphs I Spinning Top Excel Analysis, Project Report and Powerpoint Handout Electronic Project Report and Powerpoint Handout	Spinning Top/Electronic Project Presentations
12 **11/7 – 11/10**	Engineering Control Charts	Tables & Graphs II	Motor Project
13 **11/14 – 11/17**	Excel Competency Exam	Engineering Control Charts	Motor Project
14 **11/21 – 11/24**	Resumes Engineering Ethics	Resume Assignment	Motor Project
15 **11/28 – 12/1**	Motor Graphs	Engineering Ethics Assignment	Motor Project
16 **12/7**	Motor Project Presentations	Motor Project Excel Graphs, Instruction Booklet & Powerpoint Handout	