

MESSIAH COLLEGE
Fall 2013
Introduction to Engineering
ENGR102

Class Time/Locations:

Lab 1*	Monday	1:00 PM - 3:50 PM	F 68	Dr. Soerens
Lab 2	Tuesday	1:20 PM - 4:00 PM	F 68	Dr. Swartz
Lab 3	Wednesday	1:00 PM - 3:50 PM	F 68	Dr. Pratt
Lab 4**	Friday	1:00 PM - 3:50 PM	F 68	Dr. Whitmoyer
Class A	Tuesday	8:00 AM - 9:15 AM	Frey 150	Dr. Fish
Class B	Thursday	8:00 AM - 9:15 AM	Frey 150	Dr. Fish

* **Note:** The Monday lab section (Lab 1) begins the week after the other three sections and will be behind the rest of the labs for most of the semester.

** **Note:** The Friday lab section (Lab 4) loses one meeting time due to the mid-fall recess. You will need to work with the instructor to find the time during Mon. – Thur. of the following week to make up the lost time.

Prereq: None

Credit Hours: 2

Course Coordinators:

Lab Instructors:

Dr. Donald Pratt
Frey Hall Rm. 227 Phone: x7169, Email: dpratt@messiah.edu

Dr. Thomas Soerens
Frey Hall Rm. 230, Phone x2187, Email: tsoerens@messiah.edu

Dr. Brian Swartz
Frey Hall Rm. 226 Phone: x2190, Email: bswartz@messiah.edu

Dr. Timothy Whitmoyer
Frey Hall Rm. 223 Phone: x6810, Email: whitmoye@messiah.edu

Class Instructor

Dr. Randy Fish
Frey Hall Rm. 221, Phone x2501, Email: rfish@messiah.edu
Office Hours: Mon/Wed/Fri 11:00-12:00, Tuesday/Thursday 12:30 – 1:15,

Model Shop Supervisor

Mr. John Meyer
Frey Hall Rm. 66, Phone x7101, Email: jmeyer@messiah.edu

Textbook: Studying Engineering: A Road Map to a Rewarding Career, Fourth Edition, Raymond B. Landis, Discovery Press, (2013) ISBN 978-0-9793487-4-7

Course Description:

This course presents an overview of the engineering profession, the engineering design process and academic success skills required to optimize learning. Instruction includes lectures, and small team engineering design projects.

Course Objectives:

By the end of this course:

1. Students will be able to clearly articulate what an engineer is and what inspires them to pursue this profession.
2. Students will have made connections with other engineering students for social and academic interactions
3. Students will have put into practice positive academic strategies/productive behaviors necessary for academic success.
4. Students will be able to clearly articulate how their personalities and learning styles impact their educational experience and their participation as members of teams.

Course Evaluation:

Students will be evaluated on projects, presentations, use of a portfolio, participation homework, and quizzes.

<u>Grade Scale</u>			
Percentage Breakdown:			
Projects/presentations	30 %	A	100 - 94
Portfolio	25 %	A-	93 - 90
Quizzes	30 %	B+	89 - 87
Participation Homework	15 %	B	86 - 83
		B-	82 - 80
		C+	79 - 77
		C	76 - 73
		C-	72 - 70
		D+	69 - 67
		D	66 - 60
		F	59 - 0

There are three team projects (with relevant presentations), each worth 10%. Some project and presentation materials may need to be purchased by the student.

The use of a portfolio as a vehicle for demonstrating knowledge, understanding and performance, as a personal reflective tool, and as an assessment tool will be required. Students are required to purchase materials for the portfolio.

There will be two quizzes, each worth 15 %

Participation homework is worth 15 %. There will be approximately 10 participation homework exercises over the semester. All homework is considered late immediately following the collection of the assignment by the instructor and will be given a zero.

Messiah College Policy on Academic Integrity:

Messiah College policy states that “Personal integrity is a behavioral expectation for all members of the Messiah College community: administration, faculty, staff and students.” Examples of activities that violate community standards of academic integrity include: plagiarizing, cheating, fabricating, facilitating academic dishonesty, perpetrating computer offenses, pursuing unfair advantages, and employing exclusive or discriminatory language (e.g., invisibility, extra visibility, trivialization, stereotyping, imposed labeling). For a more detailed description of such activities, further definition of policies, and specific penalties for violation, please refer to the Academic Integrity Policy section of the Messiah College Student Handbook.

Americans with Disabilities Act:

Any student whose disability falls within the ADA guidelines should inform the instructor at the beginning of the semester of any special accommodations or equipment needs necessary to complete the requirements for this course. Students must register documentation with the Office of Disability Services (OM 342). If you have questions, call extension 5358.

Picnic at Erikson's Farm – Sept. 7th 3:00 – 6:00

Preliminary Class Schedule

Wk		Tuesday	Homework	Thursday	Homework
1	Sept. 2	Introduction, Overview of course; Hidden Factory	outline SE Ch. 1	Introduction, Overview of course; Hidden Factory	outline SE Ch. 1
2	Sept. 9	Understanding the Teaching/Learning Process	outline SE Ch. 3-4a (pp. 89-120) Learning Style Questionnaire	Understanding the Teaching/Learning Process	outline SE Ch. 3-4a (pp. 89-120) Learning Style Questionnaire
3	Sept. 16	Process Elements	outline SE Ch. 4b-5 (pp. 120 - 157)	Process Elements	outline SE Ch. 4b-5 (pp. 120 - 157)
4	Sept. 23	Making the Learning Process Work, Myer-Briggs Instructions	Intro Section of Portfolio Due Take & Submit M-B profile Select a Process Element 5 questions about Engineering profession. Read Ch2	Making the Learning Process Work, Myer-Briggs Instructions	Intro Section of Portfolio Due Take & Submit M-B profile Select a Process Element 5 questions about Engineering profession. Read Ch2
5	Sept. 30	The engineering Profession: Time management	Read SE Ch2a (pp. 35 - 59) Hand in M-B profile Time Management Planning Form	The engineering Profession: Time management	Read SE Ch2a (pp. 35 - 59) Hand in M-B profile Time Management Planning Form
6	Oct. 7	Random Entertaining Event		Break	
7	Oct. 14	Presentations and Exam Preparation		Presentations and Exam Preparation	
8	Oct. 21	Quiz # 1		Quiz # 1	
9	Oct. 28	Dwayne Keiffer: Myers-Briggs		Dwayne Keiffer: Myers-Briggs	
10	Nov. 4	Engineering Profession: Guest	Read SE Ch 2b (pp. 60 - 82) Draft portfolio Sections Due	Engineering Profession: Guest	Read SE Ch 2b (pp. 60 - 82) Draft portfolio Sections Due
11	Nov. 11	Personal Growth and Development	SE Ch. 6	Personal Growth and Development	SE Ch. 6
12	Nov. 18	Broadening Your Education: resume; Interview	SE Ch. 7	Broadening Your Education: resume; Interview	SE Ch. 7
13	Nov. 25	Random Entertaining Event (Thurs Schedule)		Break	
14	Dec. 2	Course Wrap-Up/Guest		Course Wrap-Up/Guest	
15	Dec. 9	Quiz # 2		Quiz # 2	
16	Dec. 16	Final 8:00 – 9:00 Survey	Portfolio Due	Final 9:00 – 10:00 Survey	Portfolio Due

Preliminary Lab Schedule - take 2

Wk		Monday	Tuesday	Wednesday	Thur	Friday
1	Sept. 2		Orientation; Safety; Portfolio	Orientation; Safety; Portfolio		Orientation; Safety; Portfolio
2	Sept. 9	Orientation; Safety; Portfolio	Edible Scale - Engineering Design Process	Edible Scale - Engineering Design Process		Edible Scale - Engineering Design Process
3	Sept. 16	Edible Scale - Engineering Design Process	Edible Scale – Build	Edible Scale – Build		Edible Scale – Build
4	Sept. 23	Edible Scale – Build	Edible Scale – testing	Edible Scale – testing		Edible Scale – testing
5	Sept. 30	Edible Scale – testing	Edible Scale – Demonstrate	Edible Scale – Demonstrate		Edible Scale – Demonstrate
6	Oct. 7	Edible Scale – Demonstrate	Alt. Energy – Design	Alt. Energy – Design	Break	Break Join 10/8, 10/9, 10/14
7	Oct. 14	Alt. Energy – Design	Alt. Energy – Design Cont.	Alt. Energy – Design Cont.		Alt. Energy – Design Cont.
8	Oct. 21	Alt. Energy – Design Cont.	Alt. Energy – EDR design instructions due	Alt. Energy – EDR design instructions due		Alt. Energy – EDR design instructions due
9	Oct. 28	Alt. Energy – EDR design instructions due	Alt. Energy – Fabrication	Alt. Energy – Fabrication		Alt. Energy – Fabrication
10	Nov. 4	Alt. Energy – Fabrication	Alt. Energy – Fabrication Cont.	Alt. Energy – Fabrication Cont.		Alt. Energy – Fabrication Cont.
11	Nov. 11	Alt. Energy – Fabrication Cont.	Alt. Energy – Demonstrate	Alt. Energy – Demonstrate		Alt. Energy – Demonstrate
12	Nov. 18	Alt. Energy – Demonstrate	Elec. Eyes – Breadboard	Elec. Eyes – Breadboard		Elec. Eyes – Breadboard
13	Nov. 25	Elec. Eyes – Breadboard	Thurs Schedule – No Lab	Break	Break	Break
14	Dec. 2	Elec. Eyes – Build	Elec. Eyes – Build	Elec. Eyes – Build		Elec. Eyes – Build
15	Dec. 9	Elec. Eyes – Demonstrate	Elec. Eyes – Demonstrate	Elec. Eyes – Demonstrate		Elec. Eyes – Demonstrate