



IET 330 / 330L
Industrial Design / Industrial Design Lab
Course Syllabus
Spring 2015

Department of Applied Engineering and Technology
College of Science and Technology
Morehead State University

Course Description:

(2-2-3); I, II. This course covers product design with emphasis on consumer demands. The key principles, elements and precepts of modern design are discussed with emphasis on the design methodology in both individual and collaborative settings. The other purpose of this course is to extend students' knowledge in designing components for manufacturability, in a concurrent mode of engineering. At the end of the course, students will be required to utilize their acquired knowledge and skills to prepare a proposal for their Senior Project (Capstone) course.

Prerequisites: junior/senior standing and all 100 level IET core courses and MATH 152 College Algebra.

Instructor

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Textbook:

“Engineering Design” by Eggert R. J., High Peak Press, 2nd Ed., ISBN: 978-0-615-31938-4

Supplementary Readings:

“Engineering Design Process”, by Haik Y., Thomson-Engineering; 1st Ed., ISBN: 978-0-534-38014-4

Course Objectives:

- Develop an understanding and appreciation for the phases of engineering design and the Product Development Process. (Assessed in individual projects, lab work, discussions, and group project)
- Be provided the opportunity to work with software, equipment and other materials relevant to design processes and activities.
(Assessed in individual projects, lab work, weebly webpage and group project)
- Develop skills using the scientific method of inquiry to redesign or create new products in a collaborative mini, small and large group.
(Assessed in individual projects, lab work, discussions, and group project)

- Learn to develop useable skills in the areas of design, layout, **creativity**, production, and presentation associated with engineering design.
(Assessed in individual projects, lab work, discussions, group project, presentations, and senior project proposal)
- Justify the criteria for appropriate materials selection and manufacturing processes as effective stages of Design for Manufacturability.
(Assessed in individual project, laboratory work, and group project).
- Analyze the requirements for Design for X and Economic Analysis for product and process design.
(Assessed in Group Project, Laboratory work, and individual project).
- Develop an understanding of how design impacts society: locally, nationally and globally.
(Assessed in discussions, group project, and presentations)

Course Requirements

1. **Weebly Webpage:** There is an assignment to design, create and prepare your own website. This website will be your way of communicating to the outside world what you like and dislike, hobbies, etc. as well as creating and posting a link (with description) of your class projects. You will also be required to add a page for thoughts, comments and suggestions (an evaluation) of the course
2. **Discussion Board:** Students are required to participate constructively in all discussion board activities in order to earn the points assigned for discussion board activities. At the beginning of each week, the instructor will inform students of the due dates for discussion board. No posts to the discussion board will be accepted after the announced due date.
3. **Individual Projects/Assignments:** There will be individual projects/assignments. Each individual project/assignment must be submitted on the specified due date. There will be one grading scale deduction from the assignment total grade for each delay week after the due date. Should a student need to miss an assignment, the instructor must be consulted beforehand. MSU's excused absences fall into five categories: 1) University sponsored activities; 2) Student/Family illness/death; 3) Military obligations; 4) Jury duty or subpoena for court appearances, or 5) Major religious holidays. (Competencies 1 – 4, 6 - 8).
4. **Group Projects:** Each group will be assigned an engineering design task as a group project. All groups will complete their assigned projects and present their work in class (online). There is no substitute for these activities.
5. **Electronic Portfolios:** Each student will be required to prepare an electronic portfolio that comprises of samples of individual projects, research papers, assignments, exams, design project reports, etc. that they have submitted and for which they have received credit. This e-portfolio will also include a table of content and a short section for comments and suggestions about the course, its contents, and delivery. The due for the portfolio is one week prior to the final exam.
6. **Laboratory Work:** Laboratory work is an essential part of this course. Students will be required to use design and electronic tools to showcase their concepts design, materials selection, manufacturing process(es), and other design criteria. Laboratory work will be both individual and group effort. For group work, constructive collaboration and team work is strongly recommended.
7. **Senior Project Proposal:** Senior project proposal will be required in the end of semester. This proposal is prepared for senior project, and should be approved by senior project committee.

ACADEMIC HONESTY

Cheating, fabrication, plagiarism or helping others to commit these acts will not be tolerated. Academic dishonesty will result in severe disciplinary action including, but not limited to, failure of

the student assessment item or course, and/or dismissal from MSU. If you are not sure what constitutes academic dishonesty, read *The Eagle: Student Handbook* or ask your instructor. The policy is located at:

<http://www.morehead-st.edu./units/studentlife/handbook/academicdishonesty.html>

For example: Copying information from the Internet is plagiarism if appropriate credit is not given.

POLICY for ACCOMMODATING STUDENTS with DISABILITIES

Professional staff from MSU Academic Services Center (ASC) coordinates efforts to address accessibility needs and class accommodations with instructors of students who have learning or physical disabilities. Faculty will cooperate with the ASC staff to accommodate the needs of students taking departmental courses.

CAMPUS SAFETY STATEMENT

Emergency response information will be discussed in class. Students should familiarize themselves with the nearest exit routes in the event evacuation becomes necessary. You should notify your instructor at the beginning of the semester if you have special needs or will require assistance during an emergency evacuation. Students should familiarize themselves with emergency response protocols at www.moreheadstate.edu/emergency.

CONTINGENCY PLAN

In case of emergency that may impact classes, students are expected to contact Blackboard for an announcement by the instructor.

Evaluation

<u>Activity</u>	<u>Points</u>	<u>Percentage</u>
Weebly Webpage	100	10%
Discussion Board	200	20%
Individual Projects & Labs (6)	350	35%
Group Project	200	20%
Portfolio	50	5%
Senior Project Proposal	100	10%
Total	1000	100%

Note: 90-100% = A 80-89% = B 70-79% = C 60-69% = D Below 60% = E

COURSE OUTLINE**Industrial Design (IET 330/330L)****SPRING 2015**

WEEK 1 & 2			WEEK 3 & 4		
Week Beginning	Activity/Topic	Chapter	Week Beginning	Activity/Topic	Chapter
01/13	Course Introduction Syllabus Quiz, DB1, Weebly Webpage assigned	Ch. 1	01/27	Concept Design IA1 and DB 2 due Lab 1 and DB 3 assigned	Ch. 4
01/20	Defining Design Problem Formulating Design Problem Syllabus Quiz, and DB1 due, IA 1 and DB2 assigned	Ch. 2 Ch. 3	02/03	Projects Teamwork and Ethics Lab 1 and DB 3 due IA2 and DB 4 assigned	Ch. 14
WEEK 5 & 6			WEEK 7 & 8		
02/10	Materials Selection IA2 and DB 4 due DB 5 assigned	Ch. 5	02/24	Configuration & Parametric Design DB 7 and Lab 2 assigned DB 6 and IA 3 due (Tuesday, Feb 24,15)	Ch. 7 & 8
02/17	Manufacturing Processes DB 5 due, Weebly Webpage First Review DB 6 and IA 3 assigned Group Project Assignment	Ch. 6	03/03	Failure Modes and Effects Analysis (FMEA) Design for X DB 8 and IA 4 assigned DB 7 and Lab 2 due	Ch. 10
WEEK 9 & 10			WEEK 11 & 12		
03/10	Engineering Economic Analysis Detail Design DB 8 and IA 4 due DB 9 and Lab 3 assigned	Ch. 12 Ch. 13	03/24	GROUP PROJECTS DB 9 and Lab 3 due Senior Project Proposal assigned	
03/17	Spring Break		03/31	GROUP PROJECTS Update Senior Project Proposal Update	
WEEK 13 & 14			WEEK 15 & 16		
04/07	GROUP PROJECTS Update Senior Project Proposal First Review		04/21	Senior Project Proposal Final Review Electronic Portfolio Assigned	
04/14	Group Project Submission and Review Senior Project Proposal Update Weebly Webpage Final Review		04/28	Senior Project Proposal Approval Electronic Portfolios Due	

IA = Individual Assignment DB = Discussion Board GP = Group Project

NOTE: This syllabus is subject to change at the discretion of the instructor to accommodate student and/or instructional needs.