Office of the Registrar
FORM 40 REV. 9/06

PURDUE UNIVERSITY

REQUEST FOR ADDITION, EXPIRATION,
OR REVISION OF AN UNDERGRADUATE COURSE
(100-400 LEVEL)

Pilot Form

Fall 07 EFD 8-06

DEPARTMENT Mechanical Engineering EFFECTIVE SESSION ~~Spring~~ 2007

INSTRUCTIONS: Please check the items below which describe the purpose of this request.

- [ ] 1. New course with supporting documents
- [ ] 2. Add existing course offered at another campus
- [ ] 3. Expiration of a course
- [ ] 4. Change in course number
- [X] 5. Change in course title
- [ ] 6. Change in course credit/type
- [ ] 7. Change in course attributes (department head signature only)
- [ ] 8. Change in instructional hours
- [X] 9. Change in course description
- [ ] 10. Change in course requisites
- [ ] 11. Change in semesters offered (department head signature only)
- [ ] 12. Transfer from one department to another

PROPOSED:		EXISTING:	
Subject Abbreviation	ME	Subject Abbreviation	ME
Course Number	263	Course Number	263
Long Title	Introduction to Mechanical Engineering Design, Innovation		
Short Title	ME Design, Inn & Entre and Entrepreneurship		

Abbreviated title will be entered by the Office of the Registrar if omitted. (22 CHARACTERS ONLY)

TERMS OFFERED
Check All That Apply:
[ ] Summer [X] Fall [X] Spring

CAMPUS(ES) INVOLVED
[ ] Calumet [ ] N. Central
[ ] Cont Ed [ ] Tech Statewide
[ ] Ft. Wayne [X] W. Lafayette
[ ] Indianapolis

CREDIT TYPE
1. Fixed Credit: Cr. Hrs. 3
2. Variable Credit Range:
Minimum Cr. Hrs
(Check One) To [ ] Or [ ]
Maximum Cr. Hrs.
3. Equivalent Credit: Yes [ ] No [ ]
4. Thesis Credit: Yes [ ] No [ ]

COURSE ATTRIBUTES: Check All That Apply
1. Pass/Not Pass Only [ ]
2. Satisfactory/Unsatisfactory Only [ ]
3. Repeatable [ ]
Maximum Repeatable Credit: [ ]
4. Credit by Examination [ ]
5. Designator Required [ ]
6. Special Fees [ ]
7. Registration Approval Type
Department [ ] Instructor [ ]
8. Variable Title [ ]
9. Remedial [ ]
10. Honors [ ]
11. Full Time Privilege [ ]
12. Off Campus Experience [ ]

Instructional Type	Minutes Per Mtg	Meetings Per Week	Weeks Offered	% of Credit Allocated	Delivery Method (Asyn. Or Syn.)	Delivery Medium (Audio, Internet, Live, Text-Based, Video)
Lecture	50	2	66%	Syn.	Live	
Recitation						
Laboratory	50	3	33%	Syn.	Live	
Lab Prep						
Studio						
Distance						
Clinic						
Experiential						
Research						
Ind. Study						
Pract/Observ						

Cross-Listed Courses

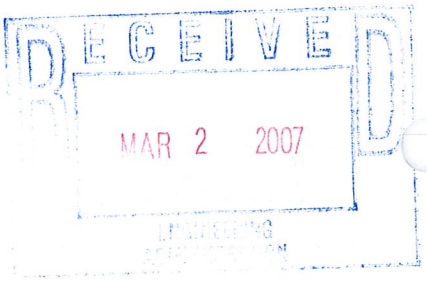
COURSE DESCRIPTION (INCLUDE REQUISITES): **ME 263 Introduction to Mechanical Engineering Design, Innovation, and Entrepreneurship.** Sem. 1, 2, Class 2, Lab 1, cr. 3.
Prerequisite: CGT 163, ME 200, ME 270. Co-requisite: MA 262, ME 290

The product design process. Development of product design specifications using customer inputs, benchmarking, product/market research and patent review. Concept generation and evaluation using brainstorming, functional decomposition, modeling and decision matrices. Detailed product design including assembly, economic analysis, CAD, and bill of materials. Oral and written design reviews. Key skills developed include teamwork, communication, project planning, innovation, design, and entrepreneurship.

Calumet Department Head	Date	Calumet School Dean	Date
Fort Wayne Department Head	Date	Fort Wayne School Dean	Date
Indianapolis Department Head	Date	Indianapolis School Dean	Date
Central Department Head	Date	North Central Chancellor	Date
C. Daniel Hartenan	1/30/07		1/31/07
West Lafayette Department Head	Date	West Lafayette College/School Dean	Date
		West Lafayette Registrar	Date

OFFICE OF THE REGISTRAR

2/27/07 dm


RECEIVED
MAR 2 2007

Engineering Faculty Document No. 8-06
October 18, 2006

TO: The Faculty of the College of Engineering

FROM: The Faculty of the School of Mechanical Engineering

RE: ME 263 Course Title and Description Change

The Faculty of the School of Mechanical Engineering has approved the following course title description change. This action is now submitted to the Engineering Faculty with a recommendation for approval.

From:

ME 263 Introduction to Mechanical Engineering Design
Sem. 1, 2 , Class 2, Lab 1, cr. 3.
Prerequisite: CGT 163, ME 200, ME 270. Co-requisite: MA 262, ME 290.

The product design process. Development of design problem definitions by evaluating customer inputs, technology, and competitive products. Generation of conceptual design using structured and unstructured approaches. Evaluation of concepts using engineering modeling and decision matrices. Product detail design including design for manufacturability and profitability. Effective communication: oral, written, and graphical.

To:

ME 263 Introduction to Mechanical Engineering Design, Innovation, and Entrepreneurship
Sem. 1, 2 , Class 2, Lab 1, cr. 3.
Prerequisite: CGT 163, ME 200, ME 270. Co-requisite: MA 262, ME 290.

The product design process. Development of product design specifications using customer inputs, benchmarking, product/market research and patent review. Concept generation and evaluation using brainstorming, functional decomposition, modeling and decision matrices. Detailed product design including assembly, economic analysis, CAD, and bill of materials. Oral and written design reviews. Key skills developed include teamwork, communication, project planning, innovation, design, and entrepreneurship.

Reason: The proposed new title and course description provides 1) a more contemporized summary of the course aligned with the Purdue Engineer of 2020 outcomes adopted by the School and 2) the growing emphasis on innovation and entrepreneurship in the course.

APPROVED FOR THE FACULTY
OF THE SCHOOLS OF ENGINEERING
BY THE COMMITTEE ON
FACULTY RELATIONS

E. Daniel Hirleman, Head
School of Mechanical Engineering

CFR Minutes 5
Date 10-20-06
Chairman CFR [signature]

Purdue University
School of Mechanical Engineering
ME 263 - Introduction to Mechanical Engineering Design

Fall 2006

Lecture Topics, Reading and Assignments

(text: The Mechanical Design Process, D. G. Ullman, Third Edition, McGraw-Hill)

Phase 1: Problem Definition

Date	Lecture/Lab Topic	Reading	Due
Week 1			
8/22	1. Design Process: Overview of Phase 1	Ch. 1, 2.4	
8/24	2. Open-Ended Problems, Overview of Design Process	Ch. 4.1-4.4	
Lab 1a	Form Teams, Discuss Project Description		
1b	Work on Project: Patents, Market Research, Competitors' Products, Plan Surveys		
Week 2			
8/29	3. Patents	Notes, Ch. 7.2.3, 13.5	
8/31	4. The House of Quality	Ch. 6	
Lab 2a	Work on Project: Patents, Market Research, Competitors' Products, Customer Survey		D1 (Labor Costs)
2b	Work on Project: Patents, Market Research, Competitors' Products, Surveys		
Week 3			
9/5	5. Market and Product Research	Notes	
9/7	6. Design Process: Phase 2 Preview	Ch. 2.4, Notes	
Lab 3a	Report Expectations: Written and Oral Communications		
3b	Work on Project: Patents, Market Research, Competitors' Products, Surveys		D2 (Patents)
Week 4			
9/12	7. Concept Generation, Functional Decomposition	Ch. 7	
9/14	8. Concept Evaluation, Decision Making	Ch. 8	
Lab 4a	Work on Project: Develop House of Quality		
4b	Work on Project: Outline and prepare OR1 and PR1		D3 (QFD)
Week 5			
9/19	9. Design Process: Phase 3 Preview	Ch. 2.4, Notes	
9/21	10. Introduction to Engineering Modeling	Ch. 11.1-11.5	
Lab 5a (1 hr)	Work on Project		
5b (2 hr)	Phase 1 Oral Report		OR1

Phase 2: Concept Generation and Evaluation

Date	Lecture/Lab Topic	Reading	Due
Week 6			
9/26	11. Engineering Modeling	Notes	
9/28	12. Engineering Modeling	Notes	
Lab 6a	Peer Evaluations, Review Notebooks, Functional Decomposition		D4 (NB1)
	Phase 1 Written Report Due		PR1
6b	Work on Project: Functional Decomposition, Concept Generation		
Week 7			
10/3	13. Engineering Statistics and Tolerances	Ch. 11.6-11.8	
10/5	14. Tolerances	Notes	
Lab 7a	Work on Project: Concept Generation & Evaluation		D5 (Funct. Decomp.)
7b	Work on Project: Concept Selection, Decision Matrices, Eng. Models		
Week "8-1"			
10/10	No Lecture or Tuesday Labs - October Break		
10/12	15. Tolerances		
Lab 8a (1 hr)	Work on Project: Engineering Models (Only WRF labs meet)		
8b (2 hr)	Work on Project: Engineering Models		
Week 9			
10/17	No lecture - Test 1 in evening on 10/18		
10/18	Evening Test 7-8 pm in MTHW 210		
10/19	16. Manufacturing Processes I	Notes & Videos	
Lab 9a	Shop Project Day 1		
	Work on Project: Prepare OR2 and PR2		D7 (Toolpath)
9b	Shop Project Day 2		
	Work on Project: Prepare OR2 and PR2		D6 (Eng. Models)
Week 10			
10/24	17. Manufacturing Processes II	Notes & Videos	
10/26	18. Manufacturing Processes III	Notes & Videos	
Lab 10a (1 hr)	Work on Project		
10b (2 hr)	Phase 2 Oral Report		OR2

Phase 3: Product Design

Date	Lecture/Lab Topic	Reading	Due
Week 11			
10/31	19. Design for Assembly	Ch. 12.5	
11/2	20. Failure Modes and Effects Analysis (FMEA)	Notes	
Lab 11a	Peer Evaluations, Work on Project		D8 (NB2)
	Phase 2 Written Report Due		PR2
11b	Work on Project: Selection & Original Design		
Week 12			
11/7	21. Engineering Ethics and Safety, Costs & BOM	Ch. 8.8, Notes	
11/9	22. Introduction to Engineering Economics	Notes	
Lab 12a	Work on Project: Selection & Original Design		
12b	Work on Project: Original Design and Drawings		D9 (BOM)
Week 13			
11/14	23. Profitability Measures and Project Costs	Notes	
11/16	24. Project Financial Analysis	Notes	
Lab 13a	Work on Project: Original Design and Drawings		
13b	Work on Project: Develop Economic Model		D10 (Drawings)
Week "8-2"			
11/21	25. Quiz 2 Preview and Final Project Preparations		
11/23	No Lecture or Labs - Thanksgiving Break		
Lab 8a (1 hr)	Work on Project (Only Tuesday labs meet)		
Week 14			
11/28	No Lecture – Test 2 in evening on 11/30		
11/30	Evening Test 7-8 pm in MTHW 210		
11/30	26. Project Discussion		
Lab 14a	Work on Project: Detail Design		
14b	Work on Project: prepare OR3 and FR		D11 (Fin. Anal.)
Week 15			
12/5	27. Quiz Results, Course Closure		
12/7	No lecture		
Lab 15a (1 hr)	Final Preparations		
15b (2 hr)	Final Oral Presentation		OR3
	Monday, December 11: Final report, Peer3, D12 due at high noon to ME 300		FR, D12 (NB3)