

Fall 2020

IE 492-453: Engineering Management

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NEW JERSEY INSTITUTE OF TECHNOLOGY

Department of Mechanical and Industrial Engineering

COURSE: IE-492 ENGINEERING MANAGEMENT

SEMESTER: FALL 2020 - ONLINE

INSTRUCTOR: Lucie Thibeaud Tchouassi E.I.T
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TEXTBOOKS: *Schaum's Outline of Theory and Problems of Engineering Economics*,
Sepulveda, J., Souder, W. and Gottfried, B., McGraw-Hill, Inc., 1984
Gido, J. and Clements, J., Successful Project Management, 4th, 5th or 6th Edition,
South-Western Publishing, 2009, 2012, 2015

COURSE DESCRIPTION: This course introduces engineering majors to the fundamentals of engineering economics and the factors necessary for successful pr

INSTRUCTIONAL

METHODS:

Methodologies

Online conversations, peer to peer discussion about subject matter and relating to real world examples
Association to real world; using case studies to put learning into practice
Practice problems

Moodle

For access to syllabus, lectures, assignments and discussion (dialogue) thread posting
Article, video, term paper and URL sharing
Document sharing

Articles, Books, Videos and internet– All will be used to enhance and aid in your experience.

Required Resources

Article URLs, title, authors and journals shared in Moodle resources
Required video clips with associated URLs will be posted in Moodle

Optional Resources

Occasional posting of resources in Moodle that will be helpful to read in order to enhance your course performance.

Web Resources

URLs for articles, videos and websites for additional references will be provided in Moodle.

NJIT HONOR CODE:

Please read and follow the NJIT University Code for Academic Integrity. It will be enforced in this course. Any violation of the code will null and void all assignments and other grading factors. The alleged action will be reported to the Dean of Students office for further action. The NJIT Integrity and Honor Code site is provided below.

<http://www.njit.edu/academics/pdf/academic-integrity-code.pdf>

GRADING:

Online Participation/Case Studies and Questions	20%
Group Evaluation/Performance	10%
Quizzes	30%
Term Project	15%
Project Presentation	5%
Final Exam	20%

SPRING 2020 - COURSE SCHEDULE

DATE	WEEK	TOPICS	ASSIGNMENT		DUE DATES
			IA: Individual	GA: Group	
8/31/2020	1	Introductions and Class Requirements Engineering Management, Engineering Economics Decision Making & Ethics	Posted Notes Self Introductions and expectations (IA) Group introductions: My emoticon (GROUP)		9/4/2020 9/5/2020
9/6/2020	2	Engineering Economics Basic Concepts & Annual Compounding Interest, Time Value of Money, Cash Flows Single-Payment, Uniform-Series, Gradient Series	Chapters 1 & 2 Schaum's Post assigned Problem (IA) Team building: Two Truths and a Lie (GROUP)		9/10/2020 9/12/2020
9/13/2020	3	Basic Relationships & Continuous Compounding Algebraic relationships and Solutions procedures, Discrete, period compounding, continuous compounding	Chapters 3, 4 & 5 Schaum's Specified problems in chapters 3, 4 & 5 (IA) Specified problems in assigned chapters (GROUP)		9/17/2020 9/19/2020
9/20/2020	4	Team Project Team & Team Development Teamwork, Team Building, Effective Project Teams Ethical Behavior & Time Management	Posted Notes & Chapter 11 Gido Project Log/Team Progress Report-1 (GROUP) QUIZ 1 - CHAPTERS 1-5		9/24/2020 9/25/2020 9/26/2020
9/27/2020	5	Project Selection and Evaluation Methodology	Chapters 6 & 7 Schaum's		

		Equivalence Present Worth, Future Worth, Annual Equivalence Analysis	Post assigned Problem (IA) Team building: Pass Around a Story (GROUP)	10/1/2020 10/3/2020
10/4/2020	6	Project Selection and Evaluation Methodology Net Present Value, Rate of Return Payback Period, Benefit-Cost Ratio Investment Alternatives	Chapters 8 & 9 Schaum's Specified problems in chapters 8 & 9 (IA) Specified problems in assigned chapters (GROUP)	10/8/2020 10/10/2020
10/11/2020	7	Project Selection and Evaluation Methodology - Part II Retirement, Depreciation and Taxes Fundamentals of Engineering (FE) Exam Engineering Economics Introduction	Posted Notes Post and Comment on assigned Problem (IA) QUIZ 2 - CHAPTERS 6-9	10/15/2020 10/17/2020
10/18/2020	8	Initiating a Project Project Management Concepts Project Identification and selection Proposal Development	Chapters 1, 2 & 3 Gido See assigned questions (IA) <i>Project Log/Team Progress Report-2 (GROUP)</i> Project Plan Assignment (GROUP)	10/22/2020 10/23/2020 10/24/2020
10/25/2020	9	People: The key to Project Success Project Manager, Project Team and Project Communication and Documentation	Chapters 10, 11 & 12 Gido See assigned questions (IA) Term Project Part 1 & 2 (GROUP)	10/29/2020 11/1/2020
11/1/2020	10	Project Planning, Performing and Controlling Scope Development Scheduling and Resource Utilization	Chapters 4, 5 & 6 Gido Chapter 4 Case Study 1 (IA) QUIZ 3 - CHAPTERS 1-3, 10-12	11/5/2020 11/7/2020
11/8/2020	11	Project Planning, Performing and Controlling-Cont. Cost, Budget, Risk management and Project closing	Chapters 7, 8 & 9 Gido See assigned questions (IA) Term Project Part 3 & 4 (GROUP)	11/12/2020 11/15/2020
11/15/2020	12	Project Planning, Performing and Controlling	<i>Project Log/Team Progress Report-3 (GROUP)</i> Term Project Part 5 & 6 (GROUP)	11/19/2020 11/21/2020

11/22/2020

HAPPY THANKSGIVING

Individual/Self & Team Assessment

11/26/2020

11/29/2020

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Project Management Software

Project Management Software

Project Management Information Systems

App. A Gido

Chapter 12 & App. A Questions #3 (IA)

Draft Term Project (GROUP)

12/3/2020

12/6/2020

12/6/2020

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Term Project Wrap-up

Final Project (GROUP)

Group Presentation (GROUP)

12/10/2020

12/16/2020

Final Exam Review

Review all course Materials

12/13/2020

Reading Day

12/14/2020

12/14/2020

Final Exam Week

12/21/2020

Final Exam 12/12/2020

12/13/2020

ASSIGNMENT REQUIREMENTS

You will be assigned a number at the beginning of the semester, please safeguard your number because your assignments will be based on that number. For your assignment, please label with your name, number, group number and problem number and chapter.

You will be setup with in groups of three or four. All group members are equally responsible for all assignments. Please make sure that you list your group number, and names of all members of the group who have contributed to the assignment on each submission. Please make sure that you use the group forum as your main group communication. Each Group assignment will be coordinated and posted by a different member of the group in sequence. This is to ensure that each member has an opportunity to lead the group and ensure proper submission of the assignment.

Problem Solving Questions (PSQ)

Each student will be asked to solve and post his/her assigned problem. You must post your assigned problem on time in a clear and step by step manner. You are encouraged to review all the problems that are posted. The solved problems that you post must be solved in a step by step manner, showing all the work, formula and illustration used. You are encouraged to question or comment on any of the problems that are posted. You are encouraged to solve a minimum of 10 problems on your own.

Please note the following abbreviation for the location of your assignments:

- Gido, Reinforce Your Learning Questions - LR
- Gido, Questions – Q
- Gido, Internet Exercises- IE
- Gido, Case Study - CS

Discussions: You must complete all your assignments in addition to the introduction. Participation is required in 2 forms: 1) Your answer to the question (100 - 200 words apiece); 2) Your responses to your classmates' answers to the questions.

Case Study Answers: You are required to contribute meaningful; substantive responses demonstrating you understand the concepts from the course readings. Your discussions contributions must be grounded in the course content and demonstrate an analytical or evaluative level of comprehension and thought. The CS question participation is not an attempt to evoke right or wrong answers. It is an opportunity for you to engage in meaningful dialogue in the online environment.

Assignment Requirement: All assignments will be posted in advance. Please do not go far ahead. For example, you must post your assigned solved problems or answers to questions and case studies by Thursday, 11:58 PM and Group assignments or any comments on responses by Saturday 11:58 PM, of that same week.

Note: if you do not submit your assignment by the assigned time you will automatically get an F for that part of the assignment. Please adhere to this timeline to ensure that you get the best grades for your efforts.

Term Project

The term project consists of developing a plan and a schedule for a real life project, based on the project plan that you developed in the beginning of the course. The project should be based on a project that will help with real life natural disasters, such as hurricane, earthquakes, forest fires, etc. You do not have to perform the project for this course; rather, you have to develop a detailed plan and schedule for it. You may develop a plan and schedule for a project that you are currently working on, one recently completed, or one that you will be undertaking in the near future. Projects may be related to your academic program, work experience, or personal but must help with natural disasters. Your group will be interdisciplinary so that you may use the strengths of the various majors.

Part 1:

A brief proposal of what project will be the basis for the course project. Team-based projects should include a list of all team members. (1 paragraph)

Part 2:

A detailed description of the project scope of work, including any assumptions. Clearly state project objective(s). (1–2 pages)

Part 3:

Work breakdown structure.

List of activities, including estimated duration of each activity (20–40 tasks).

Budget for each activity (hours for each person and any material costs).

Part 4:

Network diagram of the logical sequence of all activities.

Part 5:

Schedule table showing the duration, earliest start and finish times, latest start and finish times, and slack for each activity. Identify activities that make up the critical path. Discuss possible ways to reduce overall project duration and consequences of doing so.

Part 6:

Computer-generated network, schedule, resource histograms, and cost graphs.

Part 7:

Create a PPT presentation of your term project. Submit, in a report format, a final copy of all documents (parts) previously submitted and a copy of presentation visuals.

Group Presentation Team members get together virtually to present their Term Project. They will record and submit the presentation. All members of the team must be present and be an active participant. The presentation will be graded on an individual and group basis.

Final Project Due on

12/16/2020

Presentation of Final Project Due on

12/16/2020