INDUSTRIAL AND ENTREPRENEURIAL ENGINEERING AND ENGINEERING MANAGEMENT

EM 6140: Project Management

Catalog Description

"To address the basic rules of managing projects and the advantages and disadvantages of these methods of getting things done. The problems of selecting projects, initiating them, and operating and controlling them are discussed. The demands made on the project manager and the interaction with the parent organization are also presented."

See also separate handout on PMP certification and the application of IME 6140 toward requirements to sit for the PMP certification exam.

Course Objectives/ Performance Criteria	**Performance Activity/ Evaluation Technique**	**Criteria Addressed**
1. To assist students in gaining knowledge in the human and technical aspects of project management.	In-class exercises, case project, exam questions	f,h,j,k
2. To apply management and organizational behavior concepts to project management and the problems of selecting projects, initiating them, and controlling schedules and costs.	Homework, in-class activities, exam questions	g,j,k
3. To successfully evaluate a project management situation and professionally present the analysis.	Case project assignments	a,c,d,e,f,g,h,j,k
4. To introduce the Project Management Body of Knowledge (PMBOK) and to begin preparing students for certification as Project Management Professionals	Homework, quizzes, exam questions	i,j

For the PMI Certified Associate in Project Management (CAPM)® Handbook:
http://www.pmi.org/en/Certification/~/media/PDF/Certifications/pdc_capmhandbook.ashx

For the PMI Project Management Professional (PMP)® Handbook:
http://www.pmi.org/Certification/~/media/PDF/Certifications/pdc_pmphandbook.ashx

Texts

Required

PMI Standards Committee. *A Guide to the Project Management Body of Knowledge*. Newtown Square, PA: Project Management Institute.

Milosevic, D., Patanakul, P., and Srivannaboon, S. *Case Studies in Project, Program, and Organizational Project Management.* Hoboken, NJ: John Wiley & Sons, Inc.

Kerzner, H. *Project Management Case Studies*. New York: John Wiley & Sons. (Required for project teams. ***Do not purchase:*** I have copies available for teams to borrow.)

Suggested

Mulcahy, R. (2013). *PMP Exam Prep: Rita's Course in a Book for Passing the PMP Exam,* 8th ed.

Mulcahy, R. (2009). *CAPM Exam Prep: Rita's Course in a Book for Passing the CAPM Exam,* 2nd ed.

(The above two are not required, but may be used in preparation for PMP or CAPM exams, so strongly recommended for those intending to take the exam. We will use examples and problems from them.)

Kurstedt Project Management book (KPM). (see e-Learning content)

Resources

American Psychological Association. (2010). *Publication Manual of the APA,* 6th ed.

Crowe, A. *The PMP Exam: How to Pass on Your First Try,* 4th ed. Newtown Square, PA: Project Management Institute.

Horine, G. (2009). *Absolute Beginner's Guide to Project Management,* 2nd ed. Que Publishing.

Kendrick, T. (2009). *Identifying and Managing Project Risk: Essential Tools for Failure-proofing Your Project.* New York: AMACOM, div. of AMA.

Kendrick, T. (2010). *Project Management Tool Kit: 100 Tips and Techniques for Getting the Job Done Right.*

Kerzner, H. (2010). *Project Management: A Systems Approach to Planning, Scheduling, and Controlling.*

Kerzner, H., and Saladis, F. (2009). *Project Management Workbook and PMP/CAPM Exam Study Guide.*

Martinsuo, M., *et al.* (2006). Project-based Management as an Organizational Innovation: Drivers, Changes, and Benefits of Adopting Project-based Management. *Project Management Journal 37*(2), 89-97.

Meredith, J., and Mantel, S. (2006). *Project Management: A Managerial Approach,* 6th ed.

Paton, S., Hodgson, D., and Cicmil, S. (2010). Who Am I and What Am I Doing Here? Becoming and Being a Project Manager. *Journal of Management Development 29*(2), 157-166.

Perrin, R. (2011). *Pocket Guide to APA Style.* Wadsworth Publishing.

Ramroth, W. (2006). *Project Management for Design Professionals.* Chicago: Kaplan Publishing.

Schmid, B., and Adams, J. (2008). Motivation in Project Management: The Project Manager's Perspective. *Project Management Journal 39*(2), 60-71.

Tufte, E. (1997). Chap. 2: Visual and Statistical Thinking: Displays of Evidence for Making Decisions. In *Visual Explanations.* Cheshire, CT: Graphics Press.

Prerequisite Learning

Students are expected to have knowledge of and the ability to apply the following concepts in class:

1. Basic understanding of key business processes (e.g., production, finance, marketing) and technical processes (e.g., manufacturing processes, engineering design process). This is typically accomplished through active participation and successful completion of an undergraduate degree in an engineering or engineering-related curriculum and through work experience, whether part-time, co-op, intern, or full-time employment.
2. Able to understand, write, speak, and present in clear, understandable English.
   Please note: *There is a great deal of reading and writing in this class. If you only recently came to the U.S., you may wish to wait a year to take this class.*
3. Able to work with 2-3 other students on a semester project applying project management material. "Able" means having the technical ability and competence and the interpersonal ability to work with others, playing

a key role in the project, making time available to work on the project, and acting professionally during the course of all project activities.

4. Experience finding articles using databases such as ABI/Inform, FirstSearch, InfoTrac, Lexis-Nexis, and other sources.
5. Experience using the Internet, accessing Web pages, using e-mail to communicate, and using search engines to find relevant information.
6. Experience or ability to use PowerPoint to design and deliver presentations to the class.

Computer Usage

1. Experience finding articles using databases such as ABI/Inform, FirstSearch, InfoTrac, Lexis-Nexis, and other sources.
2. Experience using the Internet, accessing Web pages, downloading files, using e-mail to communicate, and using search engines to find relevant information.
3. Experience using Adobe Acrobat Reader to view pdf files.
4. Ability to generate graphs and flow charts using computer tools (such as Excel, PowerPoint, or other applications).
5. Ability to design documents that have features other than text in them – inclusion of graphs, tables, charts, pictures, etc. – to communicate effectively to engineering and management professionals.
6. Intermediate use of web-based skills required, including downloading files in Acrobat Reader format, using course web site to access some assignments, along with basic web skills of using search tools, locating information, accessing URLs, etc.

This course requires all the above, plus ability (not necessarily experience) to use Microsoft Project to manage project information and schedules. Typically, Excel proficiency will lead to successful use of MS Project.

Evaluation Distribution

Homework	80 pts	
Project	100 pts	50 pts for project **team** work, 50 pts for individual project deliverables
Quizzes	100 pts	
Mid-term exam	100 pts	
Final exam	100 pts	
Class participation	20 pts	
Total	100%	

Grading Scale

93-100	A	77-79.9	CB
88-92.9	BA	70-76.9	C
80-87.9	B	60-69.9	D

Description of Graded Assignments and Evaluation Guidance

Note on preparation of assignments

All assignments must be neatly word-processed, typed, prepared using graphics software or using a template. ***Handwritten work will not be accepted,*** except in cases where the homework consists of problems. I emphasize professional expectations of grammar, spelling, and the use of an appropriate writing style. If these expectations are not met, a grade penalty assessed. Assignments will be graded on components of 'correctness' as well as 'quality.'

Readings

Read all assigned chapters or materials prior to class. We will typically discuss in-depth the readings you did for that class, and you will be expected to contribute to class discussions or answer questions on the text / materials assigned.

Problems/Questions

Problems and/or questions will be assigned for some class periods. Written responses should be prepared for these as assigned. All assignments should be submitted to the appropriate e-learning drop box before the assigned due date, unless otherwise directed during class.

Projects

Details on a team case study are presented later in this syllabus. Project teams will analyze and present to the class on project cases. A written report and a class presentation is required from the project team. The project experience is designed to provide the student with applied experience working on project deliverables in a project team setting.

Mid-term and final exam

The formats will be short answer, cases, multiple choice, true/false, and problems. Several brief quizzes will be given also. All exams and most quizzes are in class.

Class Attendance

On-time attendance at every class meeting is expected. Class members strolling in late interrupt the class and steal precious time from everyone. Occasionally, travel requirements for employed students may arise. Please avoid scheduling work commitments during our class time if at all possible. As a professional courtesy, notify me in advance of any planned absences.

Class Participation

Your participation in class discussions and exercises is crucial to the learning process. Effective class participation requires your reading and studying assigned readings prior to class time. Even if you are absent, you have the responsibility to complete all assignments on time and obtain class notes from a classmate.

Academic Integrity

Professionalism and integrity are essential for success in this course and in your work and personal life. The following activities are identified as academic integrity violations. Students suspected of these violations will be referred to WMU Student Judicial Affairs for disciplinary action. See the WMU Student Code for specific details.

Cheating Cheating during a quiz or examination will result in a failing grade. Cheating includes glancing at another student's quiz or examination, talking with other students during an exam, and any use of unauthorized texts, notes, or other materials during a quiz or examination. Students failing to respect this policy will

be referred for disciplinary action. Please refer to the Student Code for details.

Plagiarism

Plagiarism is a serious offense. Plagiarism involves the copying of information or ideas from a published source without acknowledging that source or copying ideas or written information from another student. *Copying information and changing a few words, **even when cited,** may still be considered plagiarism.* The student's intent or ignorance of content source does not change the charge; plagiarism is charged regardless.

To deter plagiarism, encourage responsible student behavior, improve student learning and ensure greater accountability, assignments for this class may be submitted to Turnitin® for plagiarism detection.

Take time to learn proper referencing styles and practices. The APA (American Psychological Association) style book is an excellent source for this.

Unauthorized Collaboration

All work you submit for evaluation in this course must be your own work. *You must work independently on all assignments* unless I instruct you otherwise.

Submitting Work from Other Courses

All work you submit for evaluation in this course must be done specifically for this course. You may *not* use work you have done or plan to do for other courses.

Requirements for Project Team Case Assignments

The class will be divided into several project teams in the second or third class meeting. Cases for analysis will be drawn from the Kerzner P*roject Management Case Studies*, 2nd ed., Milosevic *et al.*'s *Case Studies in Project…Management* texts, and other sources. Each team will analyze one of the cases assigned this semester. If two teams are permitted to analyze the same case, the teams will operate independently to focus on the key project management problems faced in the case.

Each team will prepare a 1) professional quality presentation and a 2) subsequent written case report. On the designated night, the team will present their analyses of their case. Then the team will submit their written case report no more than two weeks later.

Project Team Case Assignments

The assignment consists of two deliverables which will be prepared for each of the case assignments during the semester.

1. **Team Oral Presentation**
    a. The team will present their work and, in some cases, lead the class discussion on the assigned case. The team case presentation will include as a minimum:
        i. 25 minute formal presentation with slides (PowerPoint or your choice of alternative materials). Points ***will be deducted*** for presentations that exceed the allotted time.
        ii. 5-10 minute Q&A when the presentation is completed.
    b. You are free to design your presentation for maximum impact, but be sure to have material parallel to your case brief. Essential material: case situation description, case analysis performed for this case, identification of key project management aspects/tools/techniques, and recommendations.

2. Written Case Brief

a. Case situation description: Provide a summary of the case and its details. Identify the key players, trends, and project management challenges faced in the case.

b. Case analysis: Use the questions at the end of the case as guidance, but do not treat as a listing of questions that must be answered for a successful case analysis. Your job is to identify the important aspects of the case, ***especially as they concern the project management topics embedded in each case.*** Expectations concerning depth of analysis increase as the semester progresses, since we'll have access to more information about project management and PM tools and techniques.

c. Summary of analysis and recommendations: What should be (should have been) done in this case? How can the key metrics be improved through the application of your recommendations? What are the key metrics to be tracking? How will implementation occur? What are the obstacles to implementation and how will you counter them as a PM team? What should have been done differently? Be sure to support your recommendations with concrete data and justify using logical arguments.

d. Organization of case study written report

   i. Executive Summary: one page; tell us your brief summary of analysis and recommendations. This part should be able to stand alone.

   ii. Body of brief: logically organized as you see fit considering the facts of the case. Be sure to include graphics and other exhibits to communicate your points effectively. Use specific headings to show organization and guide readers.

   iii. References: for cited material in body of case brief (required) and any suggested readings (optional).

   iv. Appendices: Any data, tables, articles, other materials you deem helpful to understanding the case and case analysis you performed.

e. Format of written report

   i. Documents should be single-spaced, flush left only, with one line of space between paragraphs.

   ii. Use a serif font (e.g., Times Roman), which is easier to read and understand.

   iii. Specific headings that correspond to your material and organization should be used.

f. Submission requirements

   i. Submit a bound hard copy of the written report and a hard copy of your PowerPoint presentation (can print four slides on a single sheet).

   ii. Provide an electronic copy of the final report and PowerPoint presentation – delivery method to be described in class.

3. Evaluation

a. Team oral presentation grades will include both an overall grade for content and presentation quality, and an individual grade for presentation, content, and contribution. Peer reviews will be conducted at the end of the semester and adjustments to these grades may be made individually based on those reviews.

b. Written team case briefs are assigned the same grade for all team members. Again, the peer review will be used for some of this evaluation.

Selected General Rules for APA References

Ensure that you use the APA style for all references in assignments were external content, quotes, graphics or images are used. For specific examples of APA style references, use the two sites below as well as the APA style guide.

American Psychological Association. (2010). *Publication Manual of the APA,* 6th ed.

https://owl.english.purdue.edu/owl/resource/560/01/

http://www.apastyle.org/

EM 614 Schedule (Note: subject to change based on progress)

Week	Topics	Reading (before class)	Assignments (due before class)	In-class Activities	Presentation Work
1	**Module 1 Pt 1:** Introduction & Overview of PM			***For all classes:*** Discussion during slides; in-class review	Identify Project Teams
2	**Module 1 Pt 2:** Organization and Teams	PMBOK, Ch. 1-3; MPS, pp. 1-2, 5-6 Rita, Ch. 1-2	**HW1**: MPS, "AaronSide Goes to Teams," all Qs, p. 6;	**Quiz 1: PM Overview**	Case ideation 20 minutes
3	**Module 2:** PM Processes and Integration	PMBOK, Ch. 4 MPS, pp. 31-35; 49-53; 57-68 Rita, Ch. 3-4	**HW2:** (A)MPS, "Abacus Project," Qs 2, 3, 5, p. 68 & (B)Scoring problem	**Quiz 2: PM Basics** Review Homework	Case ideation 20 minutes
4	**Module 3:** Project Scope; Project Planning	PMBOK, Ch. 5 MPS, pp. 85-88; 99-101 Rita, Ch. 5	**HW3:** MPS, "Rapid Prototype for Fast Profits," all Qs, p. 101	**Quiz 3: Integration** Review Homework	Cases defined and scoped
5	**Module 4:** Scheduling	PMBOK, Ch. 6 MPS, pp. 130-132; 133-135 Rita, Ch. 6	**HW4:** (A) MPS, "AtlasCom," all Qs, p. 132; (B)"The Milestone Chart," all Qs, p. 135	**Quiz 4: Scope** Review Homework	20 Minute Team Review
6	**Module 5 Pt 1:** Cost Estimation; Earned Value Management	PMBOK, Ch. 7 MPS, pp. 141-148; 149-151; 158-159 Rita, Ch. 7		**In Class Practice Quiz: EVM** Review Homework	20 Minute Team Review
7	**Module 5 Pt 2:** Earned Value Management, So Far….*	Everything that you skipped, missed, or don't feel confident about; review Rita	**HW5:** (A)MPS, "Bad Metrics for Earned Value, all Qs, p. 148 (B) PDM, Crashing, EVM, Questions	**Mid-term Preparation**	20 Minute Team Review
8				**Mid-term through PMBOK Ch. 7 (Cost)**	
9	**SPRING BREAK**				
10	**Module 6** Quality	PMBOK, Ch. 8 MPS, pp. 163-166; 172-174 Rita, Ch. 8		Review Mid-term Review Homework	20 Minute Team Review
11	**Module 7:** Human Resources & Communication	PMBOK, Ch. 9-10 MPS, pp. 183-184; 185-189; 205-206; 223-224 Rita, Ch. 9-10	**HW6:** MPS, "Robots Fail Too," Qs 1-2, p. 166	Review Homework	**Case study #1** **Case study #2**
12	**Module 8:** Risk	PMBOK, Ch. 11; MPS, pp. 231-236; 245-246; Rita, Ch. 11	**HW7:** MPS, "Startups Born with Conflict," Qs 1-4, p. 184	Review Homework	**Case study #3** **Case study #4**
13	**Module 9:** Procurement; Project Closing	PMBOK, Ch. 12-13 MPS, pp. 252-253 Rita, Ch. 12	**HW8:** (A) MPS, "Probability and Impact," Qs 1-2, p. 245 (B)MPS, "Mountain of Iron…," Q 1, p. 253;	Review Homework **Quiz 5: Random Questions through Module 8**	**Case study #5** **Case study #6**
14	**Module 10:** Stakeholders & Prof. / Social Responsibility	Rita, Ch. 13-14		Review Homework **PREPARE FOR FINAL EXAM**	
15					
Finals		**Date & Time to be announced**		**FINAL EXAM**	