



COLLEGE OF ENGINEERING

ENMA 6090
Portfolio Management for New Product, Service and Process
Fall 2009

5:30 – 8:10 PM Wednesday

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OFFICE HOURS: Wednesday before and after class or by appointment
TEXTS: ***Portfolio Management for New Products 2nd ed.***
Cooper, Edgett, Kleinschmidt
Basic Books, Perseus Books Group, 2001
ISBN 0738205141

Other Readings Will Be Assigned Throughout the Semester

COURSE OBJECTIVES

ENMA 6090 is a management course more than an engineering course. While grounded in management theory, the focus of the course will be one of application and actual experience.

It is not hyperbole to say that our economic future, as well as scientific progress, is substantially influenced by our ability to leverage technological advances in the form of new products, services and processes. Too often scientific and technological advances are not fully appreciated, or are disparaged for their lack of actualization, when the problem lies in simple management issues. While the issues are simple, however, they are pervasive. Those organizations with consistently healthy new product/service/process development systems and processes are few and far between. This course is designed to introduce the student to healthy process, and to illustrate the myriad of actual circumstances that get in the way of implementation. At the end of the course, the student who has taken advantage of all the resources offered will be in a position to be a much more effective manager in his/her organization, not only in regard to NPD, but overall.

The course format will be 75% instructor-led lectures. There is a large amount of material to be covered. It will be assumed that students have read the material before coming to class because the lectures cannot cover everything in the textbook and will not try to do so. It is important that each student attempt to attend every class because of the quantity of material being covered and the pace of coverage. In addition, a significant portion of the content in the lectures

is neither in the book nor the readings assigned. However, it is understood that most students have career and family obligations outside class that interfere with attendance in some cases. It is the student's responsibility to make arrangements with the instructor to make up any missed course work. This is especially crucial in regard to the 25% of the course that is student led. In addition, 10% of the student's grade will be based on class participation outside of team presentations, which will of course be influenced by the student's attendance.

In surveying the local business community in regard to the gaps perceived between those skills needed in engineering managers and those at which managers excel, the gaps invariably settle around management, rather than technical issues. For that reason, the ENMA program seeks to work to improve management skills, in addition to imparting knowledge. It is too often the case that technical advances are not leveraged for the benefit of business or academia because the engineer or scientist has not developed the communication skills to persuade those in a decision making position about the benefit of the technology at hand. With the exception of a lucky few, communication skills are made, not born. They are honed through practice. Therefore, 25% of the time spent in this class will be student-led presentations. These presentations will be given by instructor-selected teams. All students on the team will receive the same grade, which will be given based on the overall presentation. Should absence prevent a particular student from attending on the day of her/his team's presentation, that student must work out the workload details with the rest of the team.

Feedback on the presentations will be given in class in the week following the presentations. The feedback will be professional, constructive and respectful, but it will be public, as will the grade. This allows all students to learn from each other to enhance the group's performance going forward. This also mirrors what students can expect in a professional environment.

Note: Students are welcome and, in fact, encouraged to use their own organizations as cases studies in class where there is an appropriate match to the assignment. If this does take place, however, keep in mind that due to the public nature of the presentations the organization must be comfortable with the lack of confidentiality inherent in knowledge sharing. In addition, I will need an understanding of your firm, including product information, organizational structure, published annual reports or financials where available, and a website address for the company. It will be your responsibility to inform me about the company in a manner which provides me with enough content to have sufficient context for your analyses.

Course Requirements

There will be no examinations in this class. There will be 4 team presentations, and two papers, the details of which are below.

<u>Exam or Assignment</u>	<u>Date</u>	<u>% of Total Grade</u>
Presentation 1	September 23	10%
Presentation 2	October 14	10%
Paper 1	October 21	15%
Presentation 3	November 11	15%
Presentation 4	December 9	15%
Paper 2	December 16	25%
Class Participation		10%

The following will be used as a **guideline** for assignment of letter grades*:

A	100-93	percent of the possible points
AB	92-86	percent of the possible points
B	85-80	percent of the possible points
BC	80-74	percent of the possible points
C	73 -50	percent of the possible points
F	49-0	percent of the possible points

Late work: Five points will be deducted per day for late papers, beginning immediately after class begins on the day the paper is due. This amount will be deducted from the grade the paper would have received if submitted on time.

Late presentations will not be accepted, and the group will receive a grade of 0 for the presentation.

**Your grade can, and likely will be, positively affected by demonstration of integration of what you've learned as the class goes on. For example, a poor first presentation/paper followed by a much better second presentation/paper incorporating feedback from the first presentation/paper, with this improvement continuing throughout the semester, will result in less weight on the poorer early presentation/paper.*

Ultimately, however, the value of what you learn in this class will not be measured by your grade but by how you translate what you learn into your career and other applicable aspects of your life.

REQUIREMENTS FOR ALL PRESENTATIONS

- **The deliverable is a Power Point or .pdf presentation due to me through e-mail or jump drive *at or before the beginning of class.***
- Presentation will be given during class by one or all members of the team
- The presentation should be as close to the time amount given as possible. Material deviations in either direction will affect your grade.
- This is a business report and synthesis of information is expected.
- The presentation should be given as if to senior management who will be making decision based on the information and recommendations you provide.
- If conjecture is required on your part (this is likely,) make sure it is backed up as closely as possible by fact, and that you present all of the assumptions made to reach your conclusions. The soundness of your reasoning will be part of your grade, and will affect the grade as much or more than a “correct” answer.
- Choose an organization for which there is sufficient information – lack of sources is not a valid excuse for insubstantial work.
- **You must include a bibliography on the last slide of your presentation**

Presentation 1 – Strategic Planning

Due on Wednesday, September 23

Content Requirements

- The presentation should be as close to 25 minutes as possible.
- The content of this presentation is an analysis of the actual strategic plan/direction of an existing corporation, as well as the impact that strategy has or has not had on new product/process/service development, and the related effect on organizational performance.
- Select an organization where this information is obtainable.

Presentation 2 – Balanced Scorecard/NPD Measurement Systems

Due on Wednesday, October 14

Content Requirements

- The presentation should be as close to 30 minutes as possible
- At the time of this writing, it is assumed that at least one, if not multiple groups, will be analyzing Froedtert Hospital’s Balanced Scorecard and providing recommendations.

- In any case, the content of this presentation is an analysis of the actual balanced scorecard of an existing corporation, as well as the success or lack thereof of its implementation. Most important will be your analysis and recommendations surrounding reasons for success or failure and/or opportunities for improvement.
- Select an organization where this information is obtainable.
- **In this case only, the analysis does not have to be around NPD. This is particularly true if Froedtert is selected. If not, while BSC around NPD is preferred, it is acknowledged that this is very difficult information to obtain. Rather, a thorough analysis of actual BSC implementation where actual information is available is encouraged.**

Paper 1 – Strategic Planning, Measurements, and NPD/R&D

Due on Wednesday, October 21

Content Requirements

- This is an individual, as opposed to a team, report.
- **The deliverable is a Word or .pdf file due to me through e-mail or jump drive *at or before the beginning of class.***
- The report should be 6 to 8 pages long, double spaced, 10 to 12 font, the length of which should not be affected by diagrams, other objects, or the bibliography.
- The paper should analyze an existing organization not previously analyzed in class.
- The paper should focus on strategic planning as it relates to NPD (product, process or service) and the successful or unsuccessful integration thereof *and your analysis of why* OR an organizational implementation of BSC and the success or lack of success thereof *and your analysis of why*
- **You must include a bibliography**

Presentation 3 – Resource Management, Including Outsourcing & Offshoring

Due on Wednesday, November 11

Content Requirements

- The presentation should be as close to 30 minutes as possible.
- The content of this presentation is an analysis of the actual resource management experience of an existing corporation in regard to technology development, and/or NPD. Select either a case with significant experience surrounding Offshoring/Outsourcing, and/or one in which there is significant

information available surrounding other resource management issues related to technology development, and/or NPD.

- Select an organization where this information is obtainable.

Presentation 4 – Portfolio Management

Due on Wednesday, December 9

Content Requirements

- The presentation should be as close to 30 minutes as possible
- At the time of this writing, it is assumed that at least one, if not multiple groups, will be analyzing Harnischfeger's Portfolio Management Process.
- In any case, the content of this presentation is an analysis of various aspects of an organizations overall portfolio management process, **including the method for prioritization of projects**. Most important will be your analysis and recommendations surrounding reasons for success or failure and/or opportunities for improvement.
- Select an organization where this information is obtainable.

Paper 2 – Portfolio Management

Due on Wednesday, December 16 at 5:30 pm

Content Requirements

- This is an individual, as opposed to a team, report.
- **The deliverable is a Word or .pdf file due to me through e-mail *at or before 5:30 pm 12/16/09*.**
- The report should be 10 to 12 pages long, double spaced, 10 to 12 font, the length of which should not be affected by diagrams, other objects, or the bibliography.
- This paper is intended to be the culmination of the course, and you should show as much of what you've learned as possible without non-value-added verbosity. .
- The paper should focus on all aspect of New Product/Process/Service Development Portfolio Management for the organization selected.
- **The Instructor may assign Harnischfeger and/or Froedtert here – decision to be made by 10/7.**
- **You must include a bibliography**

Class Communication

Communication is vital to this class. If you have questions on anything, particularly assignments, please ask me as soon as possible. Last minute



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work with a misunderstanding of the actual assignment is the most common reason for poorly done work. Ask me ahead of time if you have any questions, and I will provide you with as much guidance as I can. Lack of communication on your part, particularly where you are unsure of requirements, is strongly ill advised.

D2L

Class Power Point presentations will be available on D2L which can be accessed through the MU Portal (<http://d2l.mu.edu>). Your login-in and password name is the same as you use for CheckMarq portal. I will attempt to have the presentations posted at least 3 days before the date of class.

E-MAIL

You are required to activate your MU e-mail and keep the box within the size limit. I will send class e-mails on occasion.

Students are expected to adhere to the University's academic honesty policy, or accept the consequences for violating that policy.

<http://www.marquette.edu/rc/academichonesty.shtml>

Detailed Class Information (Subject to Change – Assignment dates will not change)

Class	Date	Topic & Readings	Assignments Due
1	9/2	Class Introduction Stage-Gate® Process Portfolio Management Introduction Chapters 1&2 Cooper Article: "Perspective..."	
2	9/9	Strategic Planning Chapter 5 Kaplan & Norton: "Mastering the Management System"	
3	9/17	Financials Balanced Scorecard Chapters 3 & 8 Kaplan & Norton: "Using the BSC as a Strategic Management System"	

4	9/23	Presentations Portfolio Balance Chapter 4	Presentation 1: Strategic Planning
5	9/30	In class feedback on Presentation 1 Portfolio Management & Performance Results Open Innovation Begin Resource Management Chapter 6	
6	10/7	Resource Management – Offshoring & Outsourcing – STEM Reading: http://esmke.jobing.com/ Van Walling, Engineers & Scientists of Milwaukee – Guest Speaker	Decision made on P&H and/or Froedtert
7	10/14	Presentations Resource Management – Executive Attention and Love Managing R&D Personnel Chapter 9	Presentation 2: Balanced Scorecard /NPD Measurement Systems
8	10/21	In class feedback on Presentation 2 Finish Resource Management Challenges & Unresolved Issues Chapter 7	Paper 1 - Strategic Planning, Measurements, and NPD/R&D
9	10/28	Government Funding Making Portfolio Management Work Chapter 10	
10	11/4	High Performance Computing Cloud Computing Milwaukee Institute Dr. Jay Bayne Milwaukee Institute – Guest Speaker	
11	11/11	Presentation 3 Project, Program and Platform Management	Presentation 3: Resource Management, Including Outsourcing & Offshoring

12	11/18	In class feedback on Presentation 3 Connect & Develop Designing and Implementing the Portfolio Management Process Chapter 11	
	11/25	Thanksgiving – No Class	
13	12/2	Knowledge Management <i>Enron: The Smartest Guys in the Room</i>	
14	12/9	Presentation 4	Presentation 4: Portfolio Management
15	12/16	Finals Week - No Class	Paper 2 - Portfolio Management