COURSE SYLLABUS
(DRAFT- may change over the next two weeks)

ESE 444/544
Project Management

Fall 2008

Department of Electrical and Systems Engineering
University of Pennsylvania

Class Time and Location:

3 September – 3 December 2008
Wednesdays, 4:30 to 7:30 pm
Skirkanich Auditorium is the classroom in the new BE Building

Instructor:

Dr. John Pourdehnad
610 – 256 -0676
Office Hours: 3:15 – 4:15 Wednesday, 276 Towne
jp2consult@aol.com

TA:

TBA

Course Objective:

The objective of this course is to introduce and reinforce the principles, tools and techniques of project management. In addition to traditional approach, the systems approach to project management will be emphasized.

Designed as an overview of project management concepts for undergraduates and graduate students, this course covers fundamental elements of the project management processes.

Course Content:

Course material is presented in class lectures, a textbook, and a few e-pack articles. Assignments include weekly quizzes, short individual homework assignments, and an ongoing group project. The course also has a midterm and final exam.

The course begins with an introduction to projects and the project management process. It also explains the skills exhibited by effective project managers and the formation of a successful project team.

The class then covers methods of identifying which projects to pursue, how to prepare a Request for Proposal (RFP), prepare a project proposal and decide among proposals for the project submitted by contractors.

Shifting to the perspective of the people implementing the project, the class examines how to schedule project tasks, assign resources to tasks, budget for project costs, and control project progress to meet goals.

Alongside learning project management fundamentals, the class will offer hands-on instruction on how to use Microsoft Project software to implement the same project management tools.

Throughout the semester, student groups will work on all aspects of managing a project, from identifying the project need, to presenting a plan for the project.

Course Communications:

Course details, including lecture slides and assignment details, will be available on the courseweb, or Blackboard, page (http://courseweb.upenn.edu). Given the number of students in the class, please co-operate by first visiting the Blackboard site to confirm if the question or clarification you have is already posted. If you still have any questions, you may post new items to the Blackboard Discussion Board or contact the TA.

Please submit completed electronic documents (individual homework assignments, group project assignments), through the Blackboard Digital Drop Box. When more than one file is involved (e.g. project documents), please zip files before submitting. For individual assignments, files should be named: Last_First_HW1. File names for group assignments should begin with: Group_01_ then a description of the file.

Utilizing the courseweb site for most course communication and assignment submission reduces paper waste and allows students to make their own decision on what material to print or access online.

Course Materials:

This class utilizes a textbook and an e-kpack available on the blackboard or articles emailed individually. Since the book may be arriving late to the Penn bookstore, paper copies of the first chapters covered will be provided in class. The second and the third editiosn of the textbook are also suitable for the course.

Jack Gido, James P. Clements, (2009). *Successful Project Management*, 4e, Thomson South Western, 2008.

Evaluation and Grading:

Grading for the course is based 50% on individual assignments and 50% on group assignments as indicated below.

Individual (50%)
- 15% Midterm exam
- 20% Final exam
- 5% In-class quizzes
- 10% Individual homework assignments

Group (50%)
- 8% RFP
- 12% Proposal
- 20% Project plan
- 10% Project presentation

Guidelines for individual and group assignments will be provided in class or in other documents on Blackboard.

Calendar:

Date	Assignments/Due Dates	Readings	1st half of lecture	2nd half of lecture
September 3		G&C 1 & 10	Intro to course, Intro to project mgmt, Project manager skills	Past project examples, Quiz
September 10	HW/Case #1, Group picks	G&C 2, 11 e-pack 1	Needs identification, Project selection, RFP example,	The project team, Quiz
September 17	**RFP**	G&C 3, 4, 5	Proposed solutions, The project	Planning the project, Quiz
September 24	Project choices	G&C 6	Proposal example, Scheduling	MS Project Introduction, Quiz
October 1	**Proposal**	G&C 8, 9	Resource Consideration, Cost planning & performance	Recap for midterm, Quiz
October 8	**Midterm**		**Midterm**	**Midterm**
October 15	HW/Case #2	G&C 7, e-pack 2 & 3	Schedule Control, Project Procurement Management	Project Quality Management , Quiz
October 22	Random Checkpoint #1	e-pack 4	Econ analysis	Quiz
October 29	Random Checkpoint #2	Guest info	Guest lecture	Guest Lecture Quiz
November 5	HW/Case # 3	G&C 12, 13, e-pack 5	Project Communication, Type of Project Organizations	Project Risk Management, Quiz
November 12	HW/Case #4 Random Checkpoint #3	Guest Info.	Guest Lecture	Guest Lecture, Course recap. Quiz
November 19	**Final project**, Presentations		Presentations	Presentations, Quiz
November 26			No class for Thanksgiving	No class for Thanksgiving
December 3	**Final project**, Presentations		Presentations	Presentations, Quiz

Class Agendas:

Week 1 – September 3
Readings: G&C – 1 & 10
Assignments due: none
First half of lecture:
- Introduction to this course
- Introduction to Project Management

Second half of lecture:
- Project manager responsibilities and skills
- Presentation of past projects
- Quiz

Week 2 – September 10
Readings: G&C – 2, 11, e-pack article 1
Assignments due: HW/Case #1, email with at least one person who you want to work with and who wants to work with you
First half of lecture:
- Needs identification
- Project selection
- RFP examples

Second half of lecture:
- The project team
- Quiz

Class work time: 4 hrs for readings, 1 hr for homework/Case

Week 3 – September 17
Readings: G&C 3, 4, 5
Assignments due: RFP
First half of lecture:
- Proposed solutions
- The project

Second half of lecture:
- Planning the project
- Quiz

Classwork time: 3 hrs for reading, 3 hours for RFP

Week 4 – September 24
Readings: G&C – 6
Assignments due: Project choices
First half of lecture:
- Proposal examples
- Scheduling

Second half of lecture:
- MS Project Introduction

End of class: Quiz
Class work time: 1 hr for homework, 2 hr for project choices

Week 5 – October 1
Readings: G&C – 8, 9
Assignments due: Proposal
First half of lecture:
    Resource Consideration
    Cost planning and performance
Second half of lecture:
    Recap for midterm
    Quiz
Classwork time: 2 hrs for reading, 6 hours for proposal

Week 6 – October 8
MIDTERM
Review session will be conducted by TA (TBA), before the October 8

Week 7 – October 15
Readings: G&C 7, e-pack 2 & 3
Assignments due: HW/Case #2
First half of lecture:
    Schedule Control
    Project Procurement Management
Second half of lecture:
    Project Quality Management
End of class: Quiz
Classwork time: 1 hr for reading, 1 hr for homework, 2 hrs for project work

Week 8 – October 22
Readings: e-pack article 4
Assignments due: Project plan random checkpoint #1
    Economic analysis
End of class: Quiz
Classwork time: 1 hr for reading, 3 hrs for checkpoint

Week 9 – October 29
Readings: Guest lecture background information
Assignments due: Project plan random checkpoint #2
    Guest Lecture
End of class: Quiz
Class work time: 1 hours for reading, 3 hrs for checkpoint, 2 hours for project work

Week 10 – November 5
Readings: G&C 12, 13, e-pack 5
Assignments due: HW/Case #3

First half of lecture:
Project communication
Types of Project Organizations
Second half of lecture:
Project Risk Management
End of class: Quiz

Week 11 – November 12
Readings: Guest lecture background information
Assignments due: Project plan random checkpoint #3, HW/Case #4
Guest Lecture
End of class: Quiz
Class work time: 1 hours for reading, 3 hrs for checkpoint, 2 hours for project work

Week 12 – November 19
Readings: none
Assignments due: none
Group presentations: Each group has fifteen (max twenty) minutes of time for their presentation and answering questions. There is five minutes for transitions between groups. Groups may switch presentation times/dates with another group if mutually arranged. Groups that finish their presentation should remain in the class to hear other presentations. This constitutes learning from others!
4:30 – 4:45 Group 1
4:50 – 5:05 Group 2
5:10 – 5:25 Group 3
5:25 – 5:40 Group 4
Break
6:00 – 6:15 Group 5
6:20 – 6:35 Group 6
6:40 – 6:55 Group 7
7:00 – 7:15 Group 8
Classwork time: 6 hrs for project work

Week 13 – November 26
Readings: none
No lecture for Thanksgiving

Week 14 – December 3
Readings: none
Assignments due: Final project plan due for all groups
Group presentations: Each group has fifteen minutes of time for their presentation and answering questions. There is five minutes for transitions between groups.
4:30 – 4:45 Group 9
4:50 – 5:05 Group 10
5:10 – 5:25 Group 11
5:25 – 5:40 Group 12

Break
6:00 – 6:15 Group 13
6:20 – 6:35 Group 14
6:40 – 6:55 Group 15
7:00 – 7:15 Group 16
Classwork time: 6 hrs for project work

December ??
Primary final exam date
TBA

December ??
Alternate final exam date
TBA
Email the TA if you have a reason for taking the exam on the alternate date

Term Project

Objective

The major objective of the term project is to apply project management principles, tools and techniques in a real project. The students do not have to perform the project for this course; rather they have to develop a detailed plan and schedule for it.

Project team

Each project team consists of 4 to 5 students. The team decides which member of the team will act as project manager. The instructor and TAs for the course will be the upper management to which project manager reports.

Project Guidelines

For carrying out a project, you are required to prepare three documents, namely: **RFP, Project Proposal** and **Project Plan**. What each document means is described later in this Section. RFP, Proposal and Project Plan. Usually, these are prepared by different parties. Here, we would like you to play multiple roles, as shown below:

- **Project RFP**: Each team must come up with their own project idea and write an RFP, and such a project shall meet the criteria given below. When writing RFP, assume your are the client/ customer.

- Each team will get to choose from among current RFPs and some from the past for the project you will continue to work on during the semester. From among these choices we will assign each group a project.

- **Project proposal**: Each team will complete a project proposal for the project they are assigned. When preparing the proposal, assume you are

the consultant/ contractor. Your group will also critique the project proposal written for your original RFP.

- **Project Plan and Execution**: Assuming you have been awarded the project, prepare a detailed plan.

The selection of project will be structured as a game. The RFP Criteria includes:

- The estimated dollar value of the project must be larger than $100,000 (includes labor, material, outside consulting fee, etc.).
- The duration should be at least 6 months.
- It should involve the coordination of at least 3 parties (customer, contractor, sub-contractor, supplier etc.)

The following criteria must be respected:

- The choice of the project must not disclose proprietary information.
- The project has not been implemented, nor prepared for implementation. Use of such project violates academic integrity.

Deliverables & Deadlines

Deliverables are:

- RFP (your own)
- Project Proposal
- Evaluation of another group's proposal
- Project Plan

Please see the calendar for proposed deadlines.

General Requirements

Your project documents shall be of professional quality. Structure and format your report well. You would prepare them as though you have been vested with these responsibilities in real life. Your documents should also be realistic and original.

Marks will be given for quality of presentation. All submissions must be typed. Handwritten project submissions are not acceptable. You are encouraged to make use of headings, bolding, italics, and bullet points (in place of just long paragraphs) where appropriate.

You should ensure that your report is specifically tailored to the project - do not simply rehash theory from the course. Rather, apply that theory to the particular problems and

opportunities, and be creative.
Good reports will be creative and demonstrate strong business value and useful application of knowledge you have learned in the course.

The written portion of the project RFP/ proposal/ plan should follow the length guidelines below. Written documents should be as long as needed to convey the proper information. Too little, and too much information reflects negatively on the document. Place extra materials in the appendices. Please re-submit (revised) proposals along with the project plan.

Document	Length
RFP	Target of 5 typed pages or 2500 words
Proposal	Target of 10 typed pages or 5000 words
Project Plan	Target of 15 typed pages or 7000 words. Note: The word count exclude original proposal and RFP, which will be considered as part of the appendices. Do not rehash blindly from these materials.

The page counts/ word counts refer to the main body of the report. Word counts exclude title page, table-of-contents, diagrams, references, and appendices. Page counts include diagrams (in the body), but exclude title page, table-of-contents, references, and appendices. Papers that are significantly (+/- 10%) shorter or longer than these word-counts will be penalized at instructor's discretion.

Your project documents must cover some/ all of the following, as appropriate. Your are required to place them appropriately in the project documents. In adequate depth, details as well as placing materials out of context will be penalized (for example, project plan needs to have project schedule, PERT/ CPM while RFP does not need to have budget or schedule- that is out of place and will be penalized).

RPF

For example, RFP should spell out the requirements clearly. Please refer to the textbook for additional details on the project RFP.

Proposal Requirements

Project Proposal introduces the client to the project, tells him or her what you plan to accomplish, how you plan to accomplish, how you would ensure safety of your project and what your credentials are for undertaking the project. A typical proposal may have:

- Clear Definitions of the Project Objective and Project Background
- Need for the Project – why the client should carry out the project (briefly, since RFP is given out)

- Breaking down the proposal into Technical, Management, and Cost Sections
- Why they should commission you, of all the people on this planet
- Work Breakdown Structure
- Responsibility Matrix
- Discussion of Activities Required to Complete the Project
- Discussion of Resources Required to Complete the Project
- Time Estimates for Activities
- Cost Estimates for Activities
- Gantt Chart
- Brief Discussion of Contingency & Risk Management

Please refer to the textbook for additional details on the project proposal.

Guideline for Project Plan

The project plan serves as cookbook for the duration of the project. It helps the project manager control the project by answering these questions:

- What will be accomplished?
- How, Where, When, Why will it be accomplished? (Briefly, as this should have been done in Proposal)
- What if something goes wrong?

Be brief. Use tables. Refer to specific details in the Proposal. You can repeat some of those materials in the proposal, but do not copy and paste the entire proposal, which should be included in the Appendix of the Project Plan.

Your project plan can differ from proposal. Between proposal and project plan, some negotiations might have taken place. It is imperative that you mention these variations.

Contents shall include, but not necessarily limited to (you are free to experiment beyond this):

- Statement of specifications
- Work Breakdown Structure (WBS)
- Schedule and Critical Path

- Resource Requirements
- Resource Allocation
- Project Team Skill Levels
- Responsibility Matrix
- Project Budget including Time & Cost Estimates for Activities
- Discussion of variation from the Proposal.
- Discussion of Project Constraints
- Discussion of ES, EF, LS, LF, slack, project duration
- Discussion of the Critical Path
- Discussion of the Methods You Propose to Control the Project
- Discussion of the Tasks Needed to Close-Out the Project
- Discussion of Critical Success Factors
- Risk Management Issues
- Contract: Comments on contract including any Provisions for subcontracting, risk handling (particularly how you would control the outsourcing and contractual risk). You need not provide a contract per se.
- Appropriate Reports from Microsoft Project
- Gantt Chart (baseline)
- PERT/CPM Chart: The network diagram is for the future project (baseline plan). This should not be confused with the Software Execution.
- Conclusion/Lessons Learned/Next Step
- Previous Docs: One of the Appendices should include RFP and Proposal
- Cost & Time Calculations: Detailed calculations should also be included in the Appendices.

Software Execution

(This could be an Appendix or a Section in the Main Project Plan Report or a Separate Document).

It is expected that the execution would largely be included in the Appendix of the main

Project Plan report. 15-page limit is actually meant for the main plan text and does not apply to appendices.

Start at the Baseline

- Illustrate crashing by reducing the project duration to say 2/3 of the current estimate. Provide Output and Costing.
- Assuming a % completion (a snap shot in future and track the cost indices etc), provide at least 4 of TBC, CBC, CAC, CEV, CPI, CV, and FCAC. Provide Cost-Tracking Charts.
- Make sure, there are no resource conflicts. When you crash, you might end up with resource conflict and might have to do leveling.

Remember that there is MS Project in the school network.

Difference between the Project Plan and Proposal

Proposal is done when you attempt to win the work, where you do sufficient work for the client to award you the contract; Here you should show broad, but adequately accurate cost estimations (which you can not change it without client approval), Gantt chart etc. Once you have been awarded the project, you create detailed baseline plan of project including network diagrams, resource allocations etc.

Also included into this stage (for the class project): You will also carry out the software execution, including assuming a case of crashing. So, the plan will be at the project commencement, but execution should just illustrate a tracking and crashing.