

**University of Southern California**  
**Marshall School of Business**  
**Spring 2008**

**IOM 580 – PROJECT MANAGEMENT**

Instructor: Professor Murat Bayiz  
Office: Bridge Hall 400 G  
Office phone: 213- 821 1612  
Email: murat.bayiz@marshall.usc.edu

Class meeting: Tuesdays, 6:30 – 9:30 pm  
Office hours: Tuesdays, 4:30 – 6:00 pm

**COURSE OBJECTIVES**

Managing projects is increasingly becoming a critical activity for many companies. This trend is getting stronger as businesses move to the contractor-subcontractor mode and project-based (vs. position based) work is on the rise. This course is designed to help students learn tools and skills needed in project management. It emphasizes applications of such tools and skills in projects from various industries and challenges faced in complex projects with uncertainties.

**COURSE DESCRIPTION**

This course begins with organizational issues in project management and focuses on skills and roles of project leaders and structure of project teams. Then the course moves on to more technical areas and covers project integration, scope, time, and cost management. It will also cover project resource, risk, and procurement management. It will be finalized with controlling, monitoring and terminating projects. Throughout the course students will learn how to use MS Project, Monte Carlo simulation for project risk management, and spreadsheet models for various optimization problems within the project management context.

**COURSE MATERIALS**

- *Core Concepts: Project Management in Practice* 2nd Edition by Mantel, Meredith, Shafer and Sutton with 2 CDs. Wiley.
- *Critical Chain* by Eliyahu M. Goldratt, The North River Press.
- Course reader containing cases, which can be purchased online from Harvard Business Online. To purchase the cases, you need to go to <http://harvardbusinessonline.hbsp.harvard.edu/relay.jhtml?name=cp&c=c17558> and register / sign in (Reference ID: c14258). The website will allow you to purchase the cases for \$3.95 each using your credit card. There are 6 cases in this online reader, other cases will be provided in class.

## EVALUATION

Class Participation: It counts 10% of your course grade. You are expected to come to class prepared and actively participate in class discussions. Useful criteria for measuring effective class participation include:

- Is the student absent too many times? Is the participant a good listener?
- Are the points that are made relevant to the discussion? Are they linked to the comments of others?
- Is there a willingness to participate and bring new ideas?
- Do the comments show evidence of analysis of the topic or the case?
- Do the comments clarify or build upon the important aspects of earlier comments and lead to a clearer statement of the concepts being covered?

Homework Assignments: There will be 6 homework assignments. Each assignment counts 2.5% of your course grade. A typical assignment will consist of 2-3 questions related to subject discussed in the previous weeks.

Mid-term Exam: It counts for 25% of your course grade. It will be an in class, open book, closed computer exam. Exam duration is 1 hour 20 minutes.

Final Exam: It counts for 35% of your course grade. It will also be in-class, open book, closed computer exam. The final exam is cumulative but the emphasis will be on the subjects covered after the mid-term exam.

Case Write-up and Presentation: It counts for 10% of your grade. There are two parts:

- You are required to turn in one complete case analysis. It will be done in a learning team of 4-5 students. A case will be assigned to your team in the third week of the semester. The written report should be no more than 5 pages (excluding appendices). Your write-up should recommend a solution. The recommendation should be supported by clear, well thought-out analysis. You will also lead off the discussion for the case that you have been assigned. This will entail a brief (15 minute) presentation of your analysis and recommendations.

The report should contain the following:

- Brief discussion of the company and its environment
- Brief description of the problems
- Analysis that links the problems to its causes
- Recommendations – short term and long term
- Implementation plan and the risks
- Short-term solutions should be to implement in the sense that they require less effort, time and resources.

Please ensure that the report is well organized with clear section and sub-section headers. The questions on the case are given to help you focus on the relevant issues. You may, in addition, want to consider other issues that you consider important in your analysis. Therefore, do not organize your report in the form of a response to each of the discussion questions.

- You are required to turn-in one-page write up for all the other cases (that you are not presenting). It will also be done in your learning team. This report should be only one page and discusses three points that you find important in the case and why they are important. It should be e-mailed to me by Sunday midnight (no exceptions!).

Critical Chain Book Report: It counts for 5% your grade. The Critical Chain teaches project leaders how to reduce project development times resulting in early completion within budget and without compromising quality or specifications. You will benefit from this book's techniques of how to remain focused on the few critical areas and how to prevent your attention from being divided among all of the projects tasks and resources. After reading the book, answer the following questions:

- Provide the definitions of critical path and critical chain? How do they differ?
- What are inventory buffers analogous in project management? List kinds of buffers used to manage projects and describe where each of them should be located?
- Describe common practices to estimate the duration of project activities as well as real reasons that cause project delays.
- What are the challenges to resolve resource contention in multiple projects?

This is also a group assignment. The report should be no more than 4 pages.

## **GRADING**

Grades will be based on homework assignments, class participation, mid-term and final exams, and case write-up. Extraordinary contributions to the intellectual process of the course will also be recognized in the final grade. The following weights will be used in grading:

Class participation	10 %
Homework assignments	15 %
Mid-term exam	25 %
Final exam	35 %
Case write-up and presentation	10 %
Critical chain book report	5%

## **NOTICE ON ACADEMIC INTEGRITY**

The use of unauthorized material, communication with fellow students during an examination, attempting to benefit from the work of another student, and similar behavior that defeats the intent of an examination or other class work is unacceptable to the University. It is often difficult to distinguish between a culpable act and inadvertent behavior resulting from the nervous tensions accompanying examinations. Where a clear violation has occurred, however, the instructor may disqualify the student's work as unacceptable and assign a failing mark on the paper.

## **FOR STUDENTS WITH DISABILITIES**

Any student requesting academic accommodations based on a disability is required to register with Disability Services and Programs (DSP) each semester. A letter of verification for approved accommodations can be obtained from DSP. Please be sure the letter is delivered to me as early in the semester as possible. DSP is located in STU 301 and is open 8:30 a.m. - 5:00 p.m., Monday through Friday. The phone number for DSP is (213) 740-0776.

## COURSE OUTLINE

### Session # 1 – January 15, 2008

- Course expectations
- Introduction to project management
- Historical context
  
- Roles and skills in projects
- Project leader and team
- Project organization structures
  
- **Reading:** Chapter 1, pages 1-8, Chapter 2, pages 38- 62

### Session # 2 – January 22, 2008

- **Guest speaker:** Ella Lau, IBM Global Services
- Topic: Life of a Project Manager
  
- Monte Carlo Simulation and Crystal Ball (please bring your laptop to the class and make sure that you have Crystal Ball installed)
- Project evaluation and selection
  
- Project plan
- Work breakdown structure
  
- **Reading:** Chapter 1, pages 8-26, Chapter 3, pages 67-90

### Session # 3 – January 29, 2008

- Project budgeting
- Estimating project times and costs
- Request for proposals
- Bid preparation and evaluation
  
- Microsoft Project (please bring your laptop to the classroom and make sure that you have Microsoft Project)
  - Starting a new project
  - Defining project information
  - Defining tasks and precedence relations
  
- **Case discussion:** Christopher Columbus, Inc. (Case will be provided in class, questions are in the case)
  
- **Reading:** Chapter 4, pages 98-115
- **Assignment due:** Homework # 1

#### Session # 4 – February 5, 2008

- Project scheduling
- Critical Path Method (CPM)
- Microsoft Project (please bring your laptop to the classroom)
  - Scheduling tasks
  - Finding the critical path
- **Case discussion:** Echelon Inc. (A) (Case will be provided in class, questions are in the case).
- **Reading:** Chapter 5, pages 134-143
- **Assignment due:** Homework # 2

#### Session # 5 – February 12, 2008

- **Guest speaker:** Frank Parth, Project Auditors LLC
- Topic: Project Scheduling
- Project scheduling
- Program Evaluation and Review Technique (PERT)
- Merge Event Bias
- Crystal Ball examples on probabilistic project scheduling (please bring your laptop to the classroom)
- **Case discussion:** Echelon Inc. (B) (Case will be provided in class, questions are in the case).
- **Reading:** Chapter 5, pages 144-170

#### Session # 6 – February 19, 2008

- Resource management
- Resource leveling
- **Case discussion:** Providian Trust: Tradition and Technology
  - Questions
    1. How successful do you expect the Access+ project to be?
    2. What are the project's areas of exposure?
    3. What advice would you give Steve Walsh on November 1, 1995?
- **Reading:** Chapter 6, pages 192-2008
- **Assignment due:** Homework # 3

### Session # 7 – February 26, 2008

- Using linear programming in projects
- NPV optimization
- Microsoft Project (please bring your laptop to the classroom)
  - Defining resources
  - Assigning resources to tasks
  - Resource leveling
- Review for midterm

### Session # 8 – March 4, 2008

- Mid-term Exam
  - Open books/notes
  - Closed computer
  - Exam time is 80 minutes
- Time and cost trade-offs
- Excel Solver examples on time cost trade-off (please bring your laptop to the classroom)
- **Reading:** Chapter 6, pages 180-192

### Session # 9 – March 11, 2008

- Risk management
- Implications of uncertainty
- Crystal Ball examples on project risk management (please bring your laptop to the classroom)
- **Reading:** Chapter 4, pages 115-128
- **Case discussion:** Boeing 767  
Questions
  1. How would you describe Boeing's approach to project management? What are its basic elements? Its strengths and weaknesses?
  2. What is your evaluation of the company's parametric estimating technique?
  3. How does Boeing manage risk? (Please consider all of the following: financial risk, market risk, technological risk, and production risk.)
  4. Which method should Boeing use to convert the first 30 767s from three-person to two person cockpits? Why?

### March 18, 2007

- No Class – Spring Break

## Session # 10 – March 25, 2008

- Project quality management
- Valuation and economics of large projects
- **Case discussion:** Airbus3XX: Developing the World's Largest Commercial Jet  
Questions
  1. Why is Airbus interested in building the A3XXX? What are the objectives?
  2. How many aircrafts does Airbus need to sell in order to break even on the investment? Is this number greater or less than your estimate of total demand for very large aircraft (VLA) over the next 20 years?
  3. As Boeing, how would you respond to this situation? How does your answer depend on what you think Airbus is likely to do?
  4. Should Airbus commit to build the A3XX? How many orders should Airbus have before committing to develop the plane?
- **Assignment due:** Homework # 4

## Session # 11 – April 1, 2008

- Role of contracts in project management
- Projects with multiple stakeholders
- Critical Chain
- **Book discussion:** Critical Chain
- **Reading:** Chapter 6, pages 213-221
- **Book report due:** The Critical Chain
- **Case discussion:** BAE Automated Systems  
Questions
  1. Evaluate the implementation of the Denver International Airport Baggage-Handling System. What do you believe were the top 3 factors that contributed to the project's failure? Who do you feel is most at fault (Pena, Webb, DiFonso, others)?
  2. What problems occurred during the timeframe when Federico Pena was mayor? Given the constraints he faced when he succeeded Pena in November 1989, what should Mayor Wellington Webb have done differently?
  3. As Gene DiFonso, what would you have done differently to avoid the problems faced at the end of the case?
  4. How should DiFonso respond to Mayor Webb's decision to impose a \$12,000 per day penalty and the requirement that BAE assume the \$50 million cost of building a conventional tug-and-cart baggage system?

## Session # 12 – April 8, 2008

- New product development

- “Office 2000 Development” video
- **Case discussion:** Microsoft Office 2000  
Questions
  1. What’s your assessment of the Office 2000 project? What criteria would you use to judge whether this project is a success?
  2. Critique the process through which Office 2000 was developed. Specifically:
    - a. How did the team resolve uncertainty in the early stages of development?
    - b. What role did *Milestones* and *Daily Builds* play in development?
  3. How has Microsoft’s approach to development changed over the last ten years? What factors have driven these changes?
  4. What should Sinofsky do? Be specific in your recommendations.
- **Assignment due:** Homework # 5

### Session # 13 – April 15, 2008

- **Guest speaker:** Bulent Guzel, Microsoft Consulting Services
- Topic: Managing Project Portfolios
- Portfolio selection and resource allocation
- Microsoft Project (please bring your laptop to the classroom)
  - Structuring master projects
  - Consolidating projects
  - Sharing resources
- **Reading:** Chapter 6, pages 209-212, Chapter 7, pages 228-254
- **Case discussion:** Le Petit Chef  
Questions:
  1. What should Gagne do? Specifically, which project should she fund and why? How should she handle the executive meeting?
  2. What factors explain Le Petit Chef’s poor performance? What actions would you recommend to remedy the situation?

### Session # 14 – April 22, 2008

- Project monitoring and control
- Earned value approach
- Microsoft Project (please bring your laptop to the classroom)
  - Saving a baseline and updating the process
  - Doing earned value analysis
- **Case Discussion:** Turner Construction Company  
Questions:
  1. What is Turner’s business strategy? How does its strategy differ from competitors?
  2. What contingencies could threaten or invalidate the viability of Turner’s strategy?



3. Evaluate the IRO system and related reports and meetings. Does the IOR system force managers and the project team to address the contingencies you identified in question 2?
4. If you were Gary Thompson, what would you say about the \$500,000 contingency to:
  - a. Senior management (i.e., Les Shute and Don Kerstetter)?
  - b. The owner of Kent Square?
  - c. Your project team (i.e., Jim Verzella and Bill Rantanen)?

#### **Session # 15 – April 29, 2008**

- Project audits
- Project termination
- Best practices
  
- Final review
- **Reading:** Chapter 8, pages 262-278
- **Assignment due:** Homework # 6

#### **Final Exam – May 13, 2008 (Tuesday)**

- 6:30 – 8:30 pm
- Open book/notes
- Closed computer
- Comprehensive