INSTRUCTOR: Professor Murat Bayiz  
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OFFICE HOURS: Mondays and Wednesdays: 2:00 pm – 3:00 pm

**Course Objective and Description**

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 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.

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**

**Text Books:**
- Critical Chain by Eliyahu M. Goldratt, The North River Press

**Online Course Reader** - Containing cases which can be purchased from Harvard Business Online. To purchase the case, you need to go to [http://cb.hbsp.harvard.edu/cb/access/14595166](http://cb.hbsp.harvard.edu/cb/access/14595166) and register / sign in. The website will allow you to purchase the cases using your credit card. There are 6 cases in this online reader, other cases will be provided in class.

**Project Simulation Game:** Please go to [http://cb.hbsp.harvard.edu/cb/access/14595809](http://cb.hbsp.harvard.edu/cb/access/14595809) and sign in to purchase the license. After the purchase, you will have access to the simulation game, which we will play throughout the semester.

**Blackboard Files** - Additional articles and notes will be posted on the Blackboard

**Software:**
- Microsoft Project – IT people will provide instructions to install it on your laptop
- Crystal Ball – I will provide you with installation instructions in the first week
- Project Management Simulation: Scope, Resources, Schedule. Available from the online course reader (wait until we meet in class for further instructions)
GRADING

Your grade in this course will be based on individual class participation, group assignments, individual assignments and tests. I will try to assess your understanding of the tools and concepts covered, your ability to integrate and apply those concepts and your contribution to the learning experience of the class as follows:

Class participation | 10%
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Homework assignments | 10%
Mid-term exam | 30%
Final exam | 35%
Case write-up and presentation | 5%
Critical chain book report | 5%
Simulation debriefing reports | 5%

CLASS PARTICIPATION

Class participation counts 10% of your course grade. It requires that you do the assigned readings, analyze the cases based on the questions given and participate actively in class. I prefer substantive comments based on good analysis rather than brief, general comments that add little to the discussion and learning. If you are reluctant to talk in class but would like to show your preparation, please provide me with your analysis before class. Be prepared to defend your suggestions or solutions with careful and thoughtful analysis! 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

A typical assignment will consist of 2-3 questions related to subject discussed in the previous weeks.

MIDTERM EXAM

It counts for 30% of your course grade. It will be an in class, closed book/notes, closed computer exam. One page double sided cheat sheet is allowed. Exam duration is 1 hour 20 minutes.

FINAL EXAM

It counts for 35% of your course grade. It will also be in-class, closed book/notes, closed computer exam. Two pages double sided cheat sheet is allowed. The final exam is cumulative but the emphasis will be on the subjects covered after the mid-term exam. According to the USC Final Exam Schedule, the final exam is scheduled for December 14th (Friday) at 11:00 am. Please take this into account when
scheduling your trips! If there are extenuating circumstances that prevent you from taking an exam, you must discuss the reason with me before the time of the exam. You will not be given a make-up exam unless you obtain permission from me in advance. In addition, you must be able to document the extenuating circumstance. If you miss the exam due to a medical emergency that can be documented and verified, then a make-up exam will be given. Otherwise, a grade of zero will be given for the missed exam.

**GROUP CASE REPORTS**

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 Tuesday 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.
**Simulation Debriefing Reports**

It counts for 5% your grade. There are five debriefing reports. Each report will ask you to address a specific set of questions related to the interactive project management simulation we will be conducting throughout the semester.

**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.

Academic dishonesty includes: (Faculty Handbook, 1994: 21-22):

- **Examination behavior** - any use of external assistance during an examination shall be considered academically dishonest unless expressly permitted by the teacher.

- **Plagiarism** - the appropriation and subsequent passing off of another’s ideas or words as one’s own. If the words or ideas of another are used, acknowledgment of the original source must be made through recognized referencing practices.

- **Other types of academic dishonesty** - submitting a paper written by or obtained from another, using a paper or essay in more than one class without the teacher’s express permission, obtaining a copy of an examination in advance without the knowledge and consent of the teacher, changing academic records outside of normal procedures and/or petitions, using another person to complete homework assignments or take-home exams without the knowledge or consent of the teacher.

**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.
TENTATIVE DETAILED CLASS SCHEDULE

WEEK 1 – AUGUST 27 & 29, 2012

Discussion Topics:

• Course expectations
• Introduction to project management
• Historical context
• “IDEO – Deep Dive” video - IDEO’s approach in product development projects
• Roles and skills in projects, project leader and team
• Project organization structures

Reading:

• Chapter 1, pages 1-8, Chapter 2, pages 44- 72
• (Blackboard) How to fail in Project Management
• (Blackboard) Lesson on How not to Build Navy Ship

WEEK 2 – SEPTEMBER 3 & 5, 2012

No class on September 3rd – Labor Day

Discussion Topics:

• 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 8-35, Chapter 3, pages 79-108

WEEK 3 – SEPTEMBER 10 & 12, 2012

Discussion Topics:

• Project budgeting
• Estimating project times and costs
• Request for proposals
• Bid preparation and evaluation
• Microsoft Project (please bring your laptop to the class and make sure that you have Microsoft Project installed)
  o Starting a new project
  o Defining project information
  o Defining tasks and precedence relations

Case Discussion:
• Christopher Columbus, Inc. on September 12th (Case will be provided in class, questions are in the case)

Reading:
• Chapter 4, pages 115-136

Assignment:
• Homework # 1 – due on September 12th

WEEK 4 – SEPTEMBER 17 & 19, 2012

Discussion Topics:
• Deterministic project scheduling
• Critical Path Method (CPM)
• Microsoft Project (please bring your laptop to the classroom)
  o Scheduling tasks
  o Finding the critical path

Case Discussion:
• Echelon Inc. (A) on September 19th (Case will be provided in class, questions are in the case)

Reading:
• Chapter 5, pages 151-160

WEEK 5 – SEPTEMBER 24 & 26, 2012

Discussion Topics:
• Probabilistic 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) on September 26th (Case will be provided in class, questions are in the case)

Reading:
- Chapter 5, pages 161-185 and Appendix 291-300

WEEK 6 – OCTOBER 1 & OCTOBER 3, 2012

Discussion Topics:
- Resource management
- Resource leveling
- Project Simulation – Scenario A on October 3rd (please bring your laptop to the classroom)

Case Discussion on October 3rd:
- Providian Trust: Tradition and Technology

Discussion 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 196-222

Assignment:
- Homework # 2

WEEK 7 – OCTOBER 8 & OCTOBER 10, 2012

Discussion Topics:
- 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

Assignment:
- Project Simulation Debriefing – Scenario A due on October 10th
WEEK 8 – OCTOBER 15 & OCTOBER 17, 2012

No Class on October 15th – Out of Town for a Conference

Mid-term Exam on October 17th
- One Double Sided Cheat Sheet
- Closed books/notes
- Closed computer
- 80 minutes

WEEK 9 – OCTOBER 22 & OCTOBER 24, 2012

Discussion Topics:
- Project time & cost trade-off analysis
- Excel Solver examples on time & cost trade-off (please bring your laptop to the classroom)
- Risk management
- Project Simulation – Scenario B & C on October 24th

Case Discussion on October 24th
- Boeing 767
  Discussion 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?

Reading:
- Chapter 4, pages 136-144

WEEK 10 – OCTOBER 29 & OCTOBER 31, 2012

Guest Speaker:
- Frank Parth, CEO/President - Project Auditors, Project Management Institute Board of Directors 2010-2012

Discussion Topics:
- Project Simulation – Scenario D & E
Case Discussion on October 31st

- Airbus3XX: Developing the World’s Largest Commercial Jet

Discussion Questions:
1. Why is Airbus interested in building the A3XX? 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?

Assignments:
- Homework # 3
- Project Simulation Debriefing – Scenario B & C

WEEK 11 – NOVEMBER 5 & NOVEMBER 7, 2012

Discussion Topics:
- Role of contracts in project management
- Projects with multiple stakeholders
- Critical Chain the concept
- Critical Chain the book

Case Discussion on November 7th:
- BAE Automated Systems

Discussion 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?

Reading:
- Chapter 6, pages 222-231
Assignment:
• Critical Chain Book Report
• Project Simulation Debriefing – Scenario D & E

WEEK 12 – NOVEMBER 12 & NOVEMBER 14, 2012

Discussion Topics:
• New product development

Case discussion on November 14th
• Microsoft Office 2000
  Discussion 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:
  3. How did the team resolve uncertainty in the early stages of development?
  4. What role did Milestones and Daily Builds play in development?
  5. How has Microsoft's approach to development changed over the last ten years? What factors have driven these changes?

Assignment:
• Homework # 4

WEEK 13 – NOVEMBER 19 & NOVEMBER 21, 2012

No Class on November 21st – Thanksgiving Holiday

Discussion Topics:
• Portfolio selection and resource allocation
• Microsoft Project (please bring your laptop to the classroom)
  o Structuring master projects
  o Consolidating projects
  o Sharing resources

WEEK 14 – NOVEMBER 26 & NOVEMBER 28, 2012

Case discussion:
• Le Petit Chef on November 26th
Discussion 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?

Discussion Topics:
- 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

Reading:
- Chapter 7, pages 238-264

WEEK 15 – DECEMBER 3 AND DECEMBER 5, 2012

Discussion Topics:
- Project audits
- Project termination
- Best practices
- Final review and practice final

Reading:
- Chapter 8, pages 272-289

Assignment
- Homework # 5

FINAL EXAM – DECEMBER 14, 2012
- 11:00 am – 1:00 pm
- Two Double Sided Cheat Sheets
- Closed Notes/Book
- Closed Computer
- Comprehensive