COURSE DESCRIPTION

IOM 580 Project Management

View course introduction: http://youtu.be/OVZkHuvGDIs

This course introduces important behavioral skills and analytical tools for managing complex projects across multiple functions. The behavioral skills focus on organizing, planning, and controlling projects and managing teams, risks and resources to produce a desired outcome. The course also covers analytical tools to do quantitative trade-offs and make the best possible decision, help decision making under uncertainty.

We will discuss cases describing successful projects and failures throughout the semester and learn project success factors. In addition to lectures and case discussions, tutorials on Excel, simulation software for project risk management, and Microsoft Project are integrated in every module in class.

This online course is divided into modules. Module activities may include reading assignments, weekly lessons, interactive exercises, homework assignments, Blackboard discussion forums and MarshallTALK live video discussion forums.

Student is required to participate in "real time" online sessions on Mondays, 7pm – 8:30pm PT, in addition to completing other online content. Only register for this class if you can log on for the Monday evening online sessions.

Blackboard (Bb)
Blackboard is the primary learning management system currently used at USC. From the Bb Course Home Page, students can access their course syllabus, identify readings, participate in discussion forums, submit assignments, and review grades at any time (asynchronously). They can also access links to the other platforms used in this course.

Virtual Classroom
The Virtual Classroom enables students to asynchronously view faculty lessons and other integrated course content. Students also use the Virtual Classroom to engage in self-assessment activities designed to help them understand and apply key course concepts. The Virtual Classroom is organized into modules that correspond to the course syllabus and are designed to be taken in the order they appear. The interactive exercises within this Virtual Classroom are not graded but contain information that would otherwise be delivered in traditional class lectures that may be included in the midterm and final exams.

MarshallTALK
Students and faculty will meet online on a regular basis at a pre-determined date and time (synchronously) in MarshallTALK, a live video discussion forum. MarshallTALK allows students to discuss course content and to ask questions in real time and may also be used as a forum for individual or group presentations.

System Requirements
The following equipment is required to successfully participate in this online course:

- Computer
- High speed Internet connection
- Headset or built-in speakers & microphone
- Webcam

OVERVIEW OF TOOLSETS

1. Blackboard (Bb)

   This toolset is the primary learning management system currently used at USC and may be accessed at https://blackboard.usc.edu/. From the Bb Course Home Page, students can access their course syllabus, readings, and assignments, participate in discussion forums, submit assignments, and review their grades. They can also access links to the other toolsets used in this course.

2. Virtual Classroom

   Course content will be found on Virtual Classroom. A link to this toolset will be found on Blackboard course pages. Virtual Classroom enables students to view asynchronously (available at any time) course related videos and other integrated course content. Students will also use Virtual Classroom to take part in self-assessment activities in order to make sure they understand key course concepts. Virtual Classroom is organized by Modules. Refer to the Syllabus for the weekly Virtual Classroom Modules that you should view and the exercises you should complete. The Virtual Classroom exercises are not graded but should be viewed as a substitute for traditional class lectures.

3. MarshallTALK - MANDATORY

   Through weekly MarshallTALK sessions, students and faculty will meet (virtually) through a synchronous (at a scheduled time) live video discussion forum. A link and instructions to join the weekly MarshallTALK sessions will be posted on Blackboard course pages. MarshallTALK allows students to discuss the course content and ask questions synchronously with the faculty and other students, and may also be used as a forum for guest speakers and industry experts.

SYSTEM REQUIREMENTS

1. Browser Requirements:
   a. Internet Explorer 9.x and above on PCs
   b. FireFox 3.6 and above on PCs
   c. Safari 3.x and higher on Mac (only)
   d. Firefox 3.6 and higher on Mac
   e. Google Chrome
2. Computer with camera, speakers, and microphone
   a. Recommended microphone/headset: http://www.amazon.com/Logitech-ClearChat-Comfort-Headset-Black/dp/B000UXZQ42/ref=pd_sim_e_2
   b. Recommended webcam: http://www.logitech.com/en-us/product/hd-webcam-c525?crid=34
3. High Speed Internet Connection (Wireless or Cabled)

TECHNICAL SUPPORT

- USC Information Technology Services (for Blackboard support):
  Call (213) 740-5555 or email consult@usc.edu
  For more information, visit their website at: http://www.usc.edu/its/
- USC Marshall (for Virtual Classroom support):
  Call (213) 740-3000 Monday through Thursday, 8:00am to 6:00pm PST; Friday, 8am – 5pm. Or visit their website at: http://msbhelp.usc.edu
- MarshallTALK empowered by WebEx Support: marshall.talk@marshall.usc.edu

USC Marshall School of Business

Project Management
IOM 580, Online
Spring 2014

INSTRUCTOR Professor Murat Bayiz
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OFFICE HOURS Mondays: 10:30 – 11:30 am and Wednesdays: 4:00 pm – 5:00 pm

Course Learning Outcomes 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.

In this course, you will:

- Analyze tools and skills needed in project management
- Emphasize and address 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:

- Core Concepts: Project Management in Practice 4th Edition by Mantel, Meredith, Shafer and Sutton with 2 CDs. Wiley
- 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/16787925 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 Blackboard.

Project Simulation Game: Please go tohttp://cb.hbsp.harvard.edu/cb/access/16787949 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 Blackboard

Software:

- Microsoft Project – IT people will provide instructions to install it on your laptop
- Crystal Ball –installation instructions will be provided in the first week
- Project Management Simulation: Scope, Resources, Schedule. Available from the online course reader

GRADING

Your grade in this course will be based on individual class participation (MarshallTalk sessions), 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%
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 MarshallTalk sessions. 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 via the online discussion boards before MarshallTalk sessions. 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?

I will take attendance on a regular basis. It is not mandatory, but will be considered as a part of your participation score.

HOMEWORK ASSIGNMENTS

Homework counts for 10% of your course grade. There will be 5 or 6 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 on **Monday, March 24, 1014,** an **ON-CAMPUS**, 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 be on **Monday, May 12, 2014, 7pm – 9pm**, also **ON-CAMPUS**, 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. 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 uploaded onto Blackboard by **midnight of the Sunday before the Monday, MarshallTalk sessions** (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

USC seeks to maintain an optimal learning environment. General principles of academic honesty include the concept of respect for the intellectual property of others, the expectation that individual work will be submitted unless otherwise allowed by an instructor, and the obligations both to protect one's own academic work from misuse by others as well as to avoid using another's work as one's own. All students are expected to understand and abide by these principles. *SCampus*, the Student Guidebook, (www.usc.edu/scampus or http://scampus.usc.edu) contains the University Student Conduct Code (see University Governance, Section 11.00), while the recommended sanctions are located in Appendix A.

Students will be referred to the Office of Student Judicial Affairs and Community Standards for further review, should there be any suspicion of academic dishonesty. The Review process can be found at: http://www.usc.edu/student-affairs/SJACS/ . Failure to adhere to the academic conduct standards set forth by these guidelines and our programs will not be tolerated by the USC Marshall community and can lead to dismissal.

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.

DETAILED CLASS SCHEDULE (Subject to Change)

Date	Topics and Learning Outcomes	Assignments
1/6/14 - 1/13/14	**Class Session #1** **Course Expectations** **Introduction to Project Management** • Define characteristics of a project • Analyze project success factors • State three goals of project management • List key performance indicators (project success measures) for projects • Explain what programs and portfolios are and how they are different than projects **Roles and Skills for a Project Manager and Project Team** • Describe skills and roles for effective project managers • Analyze difficulties in working with people • State characteristics of an effective project team • Recognize challenges in managing a virtual team **Project Organization** • List different project organization types • Describe advantages and disadvantages for each organization type • Assess which organization type is a good fit under which scenario **Project Management Organizations and Certifications** • List the various organizations and certifications	**Readings:** • 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 **Virtual Classroom:** Complete all online content *prior* to the MarshallTalk session. (Including IDEO Video) **MarshallTalk:** Monday, January 13, 7pm – 8:30pm

1/14/14 – 1/20/14	Martin Luther King, Jr Holiday	
1/21/14 – 1/27/14	**Class Session #2** **Crystal Ball** • Explain what Monte Carlo simulation is • Define the relationship between Monte Carlo simulation and Crystal Ball • Explain the functionality of Crystal Ball • Construct simulation models by using Crystal Ball • Interpret the outcome from Crystal Ball **Project Evaluation and Selection** • State and explain financial evaluation models • Compare payback and NPV models • Develop NPV evaluation models with risk using Crystal Ball • Explain weighted scoring models **Project Planning** • Explain and compare project charter, project scope statement, project management plan **Work Breakdown Structure (WBS)** • Explain work breakdown structure (WBS) • Construct a WBS for a project • Explain organization breakdown structure (OBS) • Describe responsibility assignment charts/matrix	**Readings:** Chapter 1, pages 8 - 35, Chapter 3, pages 79 - 108 **Virtual Classroom:** Complete all online content *prior* to the MarshallTalk session. **MarshallTalk:** Monday, January 27, 7pm – 8:30pm

1/28/14 – 2/3/14	**Class Session #3** **Guest Speaker – Jason Scott, 120 VC** • Define leading executives • State rules of communicating with executives • Explain how to handle executive requests • Explain how to deliver executive project status • Explain how to notify an executive of a risk **MS Project – Defining Tasks** • Explain how to enter general project information • Explain how to manage project calendar • Describe and practice how to enter and link tasks • State the role of the summary task • Explain calendar, Gantt chart and network diagram views • Create project information for two examples **Project Estimation** • Compare top-down and bottom-up estimation • Explain and use the ratio method • Explain and use learning curve	**Readings:** Chapter 4, pages 115 – 136 Christopher Columbus, Inc. Case **Assignment:** Homework #1 **Virtual Classroom:** Complete all online content *prior* to the MarshallTalk session. **MarshallTalk:** Monday, February 3, 7pm – 8:30pm

2/4/14 – 2/10/14	**Class Session #4** **Project Scheduling – Critical Path Method** • List two types of activity networks and their role in project scheduling • Explain and apply how the critical path method works • State and explain the critical path • State and explain the slack **Critical Path Method by Excel** • Construct Excel models to identify the critical path and calculate slack **Critical Path Method by MS Project** • Construct MS Project models to identify the critical path? • Describe how to show slack for activities • Compare Total and Free Slack **Echelon (A) Case Discussion** • Apply the critical path method over a realistic example • Explain the role of resources in project scheduling • Explain which activities should be expedited to decrease the project duration	**Readings:** Chapter 5, pages 151 – 160 Echelon, Inc. (A) Case **Assignment:** Homework #2 Group Case Report **Virtual Classroom:** Complete all online content *prior* to the MarshallTalk session. **MarshallTalk:** Monday, February 10, 7pm – 8:30pm
2/11/14 – 2/17/14	President's Day Holiday	

2/18/14 – 2/24/14	**Class Session #5** **Project Scheduling – Program Evaluation and Review Technique (PERT)** • Explain the difference between CPM and PERT • Calculate the mean and variance of the project completion time • Calculate the probability of finishing the project within a due date • Calculate percentiles for the project completion time • Explain why PERT is biased **PERT by Excel and Simulation** • Set up Excel models to execute PERT • Perform probability calculations with Excel formulas • Set up Crystal Ball simulation model to analyze the impact of randomness • Compare manual (traditional method) and simulation approaches • Demonstrate the bias for PERT **Echelon (B) Case Discussion** • Demonstrate PERT calculations over a realistic Example • Calculate the probability of being on the critical path for an activity	**Readings:** Chapter 5, pages 161 – 185, Appendix 291 - 300 Echelon, Inc. (B) Case **Assignment:** Homework #3 Group Case Report **Virtual Classroom:** Complete all online content *prior* to the MarshallTalk session. **MarshallTalk:** Monday, February 24, 7pm – 8:30pm

2/25/14 – 3/3/14	**Class Session #6** **Harvard Simulation Game Overview** • Explain the three objectives of a project • Explain how three objectives linked together • Manage project team morale in additional to other project objectives • Explain splitting and multitasking **Resource Management** • List type of project resources • Explain why managing resources is hard • Explain resource leveling • Execute manual approach for resource leveling **Microsoft Project – Resource Management** • Define resources in Microsoft Project • Learn how to assign resources to activities • Identify resources with over allocation problems • Learn how to level resource assignments • Learn how to change activity priorities **Providian Case Discussion Overview** • Explain role of project resources (team) on project success • Explain importance of aligning project characteristics to the skill-set of the project team? • List areas where Providian made mistakes in Access+ project ***Midterm Review***	**Readings:** Chapter 6, pages 196 – 222 Providian Trust: Tradition and Technology Case **Assignment:** Group Case Report **Assignments:** Homework #4 **Virtual Classroom:** Complete all online content *prior* to the MarshallTalk session. **MarshallTalk:** Monday, March 3, 7pm – 8:30pm Project Simulation Debriefing – Scenario A

3/4/14 – 3/10/14 *NOTE:* ***On-Campus***	**Class Session #7** **Midterm Exam** **NPV Optimization** **Using Linear Programming in Projects (Optional)**	**Readings:** None **Virtual Classroom:** Complete all online content *prior* to the MarshallTalk session. **MarshallTalk: ON-CAMPUS** Monday, March 10, 7pm – 8:30pm
3/11/14 – 3/17/14	Spring Break	
3/17/14 – 3/24/14	**Class Session #8** **Time-Cost Trade-off** • Explain normal time and expedited time • Explain and calculate slope • Explain indirect and direct project cost • Calculate minimum cost to reduce the project desired amount of time	**Readings:** None **Assignment:** Project Simulation Debriefing – Scenario A **Virtual Classroom:** Complete all online content *prior* to the MarshallTalk session. **MarshallTalk:** Monday, March 24, 7pm – 8:30pm

3/25/14 – 3/31/14	**Class Session #9** **Time-Cost Trade-off with Excel** • Calculate slope using Excel • Calculate cost of an activity for a give duration • Develop a Linear Programming model for the time-cost trade-off problem • Optimize the time cost trade-off problem for a given deadline constraint • Optimize the time cost trade-off problem for a given budget constraint **Risk management** • List types of risks in projects • Explain preventive and contingency plans • Explain risk management process • Explain risk assessment and prioritization **Guest Speaker – Jason Scott, 120 VC** **Boeing Case Discussion Overview** • Explain different types of risks in a development project • Explain Boeing's mitigation strategy for financial, market, technological, and production risks • Define parametric estimation technique • Explain Boeing's best practices in project management	**Readings:** Chapter 4, pages 136 – 144 Boeing Case **Assignment:** Group Case Report **Virtual Classroom:** Complete all online content *prior* to the MarshallTalk session. **MarshallTalk:** Monday, March 31, 7pm – 8:30pm

4/1/14 – 4/7/14	**Class Session #10** **Critical Chain** • Define critical chain • Explain how critical chain is different than critical path • Explain how safety is wasted in projects • Explain project buffer, feeding buffer, and resource buffer • Calculate size of project and feeding buffers • Explain resource contention **MS Project – Multiple Project Management** • Explain how to insert subprojects into the master project • Explain how to remove subprojects from the master project • Compare creating a master schedule versus creating a consolidated schedule • Create a resource pool and link it to the projects • Explain how to link activities from two different projects **BAE Case Discussion Overview** • Explain the importance getting stakeholder commitments in projects • Explain why build-design approach does not work in large construction projects • Recognize the importance of clear communication channels among project stakeholders • Recognize the importance of a good project manager for project success	**Readings:** Chapter 6, pages 222 – 231 BAE Case **Assignment:** Homework #5 Group Case Report **Virtual Classroom:** Complete all online content *prior* to the MarshallTalk session. **MarshallTalk:** Monday, April 7, 7pm – 8:30pm

4/8/14 – 4/14/14	**Class Session #11** **Multiple Project Management** • List the stakeholders in the project portfolio organization • Explain four steps in project portfolio selection • Compare derivative versus portfolio projects **Portfolio Selection** • Develop an optimization model for portfolio selection problem • Select the best set of project for a given budget constraint • Select the best set of projects for given budget and labor (resource) level constraints **Le Petit Chef Case Discussion Overview** • Examine the issue of project planning, product line planning, and aggregate resource planning in an R&D department • Explore the link between competitive strategy and product line choices • Explain problems of having too many projects overall, too many derivative projects (versus platform projects), overcommitted resources	**Readings:** Le Petit Chef Case **Assignment:** Homework #6 Group Case Report **Virtual Classroom:** Complete all online content *prior* to the MarshallTalk session. **MarshallTalk:** Monday, April 14, 7pm – 8:30pm Simulation Game B & C (during session)
4/15/14 – 4/21/14	**Class Session #12** **New Product Development** • Explain the importance of new products • Explain and compare water-fall and spiral development processes • List advantages of the spiral process **Earned Value Analysis** • Explain project monitoring and control • Explain the earned value analysis • Calculate earned value, planned value, and actual cost for a project • Calculate cost index and schedule index • Calculate and explain budged cost at completion (BAC) estimated cost and complete (EAC) values	**Readings:** Chapter 7, pages 238 - 264 **Assignment:** Homework #7 **Virtual Classroom:** Complete all online content *prior* to the MarshallTalk session. **MarshallTalk:** Monday, April 21, 7pm – 8:30pm Simulation Game D,E, & F (during session)

4/22/14 – 4/28/14	**Class Session #13** **MS Project for Earned Value Analysis** • Practice entering cost information in resources • Compute the total project cost using MS Project • Define a baseline schedule • Practice entering current project progress • Compare current project progress with the baseline • Calculate earned value metrics using MS Project • Identify the project health status **Project Termination** • Explain project evaluation • Explain project auditing and list steps in a project audit • Describe the content of an audit report • Explain different types of project termination • Explain activities in the project termination phase **Final Review**	**Readings:** Chapter 8, pages 272 - 289 **Assignment:** Homework #8 Simulation Game D,E, & F **Virtual Classroom:** Complete all online content *prior* to the MarshallTalk session. **MarshallTalk:** Monday, April 28, 7pm – 8:30pm
Monday, May 12, 7pm – 9pm ON CAMPUS	**FINAL EXAM – ON CAMPUS**	