# **Syllabus – ISE 515: Engineering Project Management**

Summer 2014, Monday 6:00pm – 9:10pm (OHE 136)

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| Instructor | Erich Kreidler | Phone | 949.278.7001 (appointment required) |
| Office | GER 216C | E-mail | [Erich.kreidler@usc.edu](mailto:Erich.kreidler@usc.edu) |
| Office Hours | Monday 5:00pm – 6:00pm or by appointment |  |  |

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| TA | TBD | Phone | N/A |
| Office | TBD | E-mail | TBD |
| Office Hours | TBD |  |  |

## **Course Description:**

This course will provide you with a basic exposure to the tasks and challenges facing today’s projects and in particular, those of the project manager. Imagine managing globally distributed teams while adhering to scope, budget, time constraints while balancing project risks and rigorous quality demands. This course will provide you with the tools and – as important – behavioral skills to systematically manage projects for profit and non-profit organizations.

The course objectives are:

* Acquire and fine-tune the skills and techniques for the 4 phases in the life cycle of a typical project: initiating, planning, executing and closing
* Gain an understanding of essential principles associated with effective project management and how to apply these principles in the day-to-day business environment
* Familiarize yourself with commonly available computer software tools
* Understand and apply methods for solving and avoiding common difficulties associated with project management

The subject matter will be covered using lectures and discussions, case studies, text reading, individual research, group discussion and preparation of a comprehensive project management plan in a team environment.

## **Materials:**

*Project Management Tools and Techniques, A Practical Guide*, by Carstens, Richardson and Smith. Publisher: CRC Press; ISBN: 978-1-4665-1562-8.

*Project Management Body of Knowledge (optional):* Available from the university bookstore or from the Project Management Institute website ([www.pmi.com](http://www.pmi.com)) for PMI members.

*Quantitative Methods in Project Management (optional),* by John C. Goodpasture. Available from the university bookstore.

*Software:* Microsoft ® Project: Copies of Microsoft ® Project are available on the ISE laboratory computers in GER 309 (open M-F 8 to 5). A 60-day trial of Microsoft ® Project can be downloaded from [Microsoft’s website](http://technet.microsoft.com/en-us/evalcenter/ee404758).

## [*Case Studies HBR Sourced*](https://cb.hbsp.harvard.edu/cbmp/import/ptos/26799593)*: Instructions for package download are in Blackboard.*

* 9-303-003: The SK-II Globalization Project Case
* 308049: ATEK PC Project Management Office Case
* 910D16 American Constructors Inc.
* 9-483-098: Mat McGregor (A)
* 600021: Learning from Projects

## **Blackboard (Online access to materials):**

The assignments, handouts, lecture notes, team rosters and other class information will be posted in <http://den.usc.edu>. All students are expected to be able to access information from here.

## **Class project:**

The class project consists of a group project where project management skills will be demonstrated. The students will be provided with an engagement where all the elements of project planning are explicit and clearly defined. The class project will be graded based on the class presentation, final report and a 360° team rating. The groups will be created during the fourth week of class.

## **Grading**

*Participation: 25%.* This includes class participation (in person or via Webex/phone). DEN students’ participation will be graded based on email interaction with the instructor, TA and other students as well as the discussion forum.

*Homework assignments and case studies: 25%.* Homework must be turned in at the specified due date or via DEN prior to the beginning of class. No late assignments will be accepted. One homework assignment (lowest grade) may be dropped.

*Class Project: 30% (divided into 2 parts).* The final report is due on 8/11/14.

*Midterm: 10%.* The midterm will cover all the materials covered until 7/14/14 (inclusive). This date will mark the end of the first part of the course.

*Final Exam: 10%.* The final exam will be comprehensive of all the course materials, with an emphasis on the second part of the course and guest lectures. The university schedules the final exam date and time. Please do not request an alternate date, as none can be accommodated.

## **Attendance:**

Regular class attendance is strongly encouraged and recommended, but not mandatory.

*Note: Attendance will be taken for the first two weeks of class. If a student fails to attend during this period, the student will be dropped from the class without further contact.*

## **Quality Expectations:**

Professional deliverables are expected at all times, both for content and presentation. This means that all the homework, project, papers and other artifacts must be prepared using a word processor, spreadsheet or any other relevant computer software (e.g. MS Project). Make sure all documents have at a minimum:

* Your name and/or your team member names
* No spelling mistakes
* Date and document title
* Professional analysis, conclusions and/or recommendations

## **Academic Integrity:**

The Department of Industrial and Systems Engineering adheres to the University’s policies and procedures governing academic integrity as described in SCampus. Students are expected to be aware of and to observe these academic integrity standards, as they will be strictly enforced throughout the semester.

## **Course Schedule:**

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|  | Date | Milestones | Topic | Reading Requirements |
| 1 | 5/26/14 | ***Memorial day – no class*** | |  |
| 2 | 6/2/14 |  | Introduction  Discussion: What is a project? 🡪 Triple constraint | Chapters 1-3 |
| 3 | 6/9/14 | Homework #1 due | Discuss The SK-II Globalization Project  Starting a project  Organizing the project: Project team, manager | Chapters 4-6 |
| 4 | 6/16/14 |  | The work breakdown structure (WBS)  Time estimating  Scheduling tools | *Chapters 7-8*  Chapter 9  *The Mythical Man Month* |
| 5 | 6/23/14 | Class project part 1 due | Discuss class project part 1  Resource allocation  Creating the project budget | Chapter 19  Chapter 10 |
| 6 | 6/30/14 | Homework #2 due | Discuss American Constructors, part 1  Creating a viable project plan | Chapter 12-13 |
| 7 | 7/7/14 |  | Risk and contingency  Conflict Resolution | Chapters 11, 22 |
| 8 | 7/14/14 | Homework #3 due | Discuss American Constructors, part 2  Accelerating a project | Chapter 14  Accelerating a project.pdf |
| 9 | 7/21/14 | ***Midterm Exam*** | |  |
| 10 | 7/28/14 | Homework #4 due | Learning From Projects Discussion  Completing a project  Project Execution:   * Key Performance Indicators * Tracking project status * Handling project changes | Chapter 16  Chapter 17  Chapter 18 |
| 11 | 8/4/14 | Homework 5 | Managing a project crisis  Earned Value | [*Project Pathology*](http://www.thomsettinternational.com/main/articles/path/pathology.htm)  Chapter 15 |
| 12 | 8/11/14 | Class project part 3 | Class project presentations  Review course materials, answer questions  **Final Exam** |  |

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| Assignment Name and Description |
| Homework #1:   * Case Study: 9-303-003 The SK-II Globalization Project |
| Homework #2:   * American Constructors case study, part 1 |
| Homework #3:   * American Constructors case study, part 2 |
| Homework #4:   * Learning From Projects Paper |
| Homework #5:   * [Mat McGregor Case Study](http://harvardbusiness.org/search/9-483-098/) |

## **Disability Services and Programs:**

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 or to the TA as early in the semester as possible. DSP is located in STU 301 and is open 8:30am – 5:00pm Monday through Friday. The phone number for DSP is 213.740.0776.

**Note: This syllabus is subject to change as announced in class.**

ISE 515 – Engineering Project Management Study Guide

* Project management process – general understanding of elements
* What is the distinction between management and project management
* Difference between projects, programs and business processes
* Conceptual idea of the triple constraint; understanding what we mean by cost, schedule and performance
* Performance, schedule and cost issues – origin and avoidance
* Why does one start a project?
* Scope statement-elements, meaning and application
* Understand project initiation within context of internal and external customers
* Statement of work – what is it/application
* Elements of proposal process
* Requirements and specifications
* Contract types
* Program management plan
  + What is it
  + Elements
  + Planning issues
  + Benefit to PM
* Role of triple constraint in PM plan
* WBS
  + What is it
  + Meaning of product oriented, deliverable based
  + Features of a good one
  + Comparison of functional based vs. product oriented deliverable
  + Ability to construct one
* Task size guidelines
* WBS dictionary – be able to write one
* Network diagrams
  + Understand the different types
  + Ability to translate
* TESTETIL diagrams
  + What is it
  + Be able to draw and status
* Scheduling options
  + Understand types and advantages/disadvantages
* CPM and PERT
  + Definition
  + Identification and usage
* Slack and float
  + Definition
  + Identification and usage
* Cost elements
* Resource constraints
  + Identifying them
  + Effect on plan
  + Strategies to overcome
  + Solve simple projects with network concepts
* Accelerating projects, “crashing”
* Risk
  + What is it
  + Types of risk
  + Risk statement
  + Process to manage
* Risk management plan – ability to write one
* Risk mitigation strategies – ability to identify them for various problems
* Effect of team size and project duration on project performance
* Expectations of the organization on the PM
* Skills needed by a PM
* Conflict resolution
* Measurements to show performance against the plan
* How do you make “% complete” work
* Program reviews – why, types
* Task review – why, content
* Tracking with cost vs. time upside/downside
* Earned value terminology, definition, usage, upside/downside, calculations
* Variances – definitions, calculation
* Change control
* Scope change control – elements, plan
* Completing a project- understanding the elements