**ISE 515 – Engineering Project Management (3 Units)**
**Course Syllabus – Jan. 03,2022[1]**
**Semester: Spring 2022, Sections:  31505D (On Campus) & 31705D (DEN)**
**Monday 4:00 pm - 6:40 pm**
**Room: OHE100D**

Instructor: Ali Nowroozi

Office: Zoom meeting (advanced email appointments)

Hours: Any day/time (Appointment by email to CP)

Phone: Call request to nowroozi@usc.edu with timeframe

E-mail[2]: nowroozi@usc.edu

Course Producer (CP): Saikiran Ravisanker

Office: Zoom meeting (advanced email appointments)

Hours: Mon. 11:00am – 12:00pm (Appointments by email)

Phone:  Call request to sravisan@usc.edu with timeframe

E-mail[*]: sravisan@usc.edu

**Short-Term Objective:** This course provides a framework for understanding project management basics, its tools & techniques, its behavioral aspects, and its place within the organizational context. You will develop a structured knowledge of project management from a managerial perspective (not just mechanistic, and not just organic, but an integrative perspective). We will go through the project life cycle, from inception to completion. Through the course assignments, case studies, and projects, we will get familiar with project manager's challenges and paradoxes as a *manager* and as a *leader*; you will learn how to use the PM tools and techniques properly and adequately AND how to develop proven leadership attitudes to better lead and manage the project. You will learn, how to effectively play the chaos game between three primary project objectives; scope, cost, and schedule, as well as other less tangible, less immediate, but equally (or sometimes more) important objectives, and how to align them with the corporate strategic objectives and grand vision, as an effective project manager and corporate leader.

**Long-Term Objective:** This course is primarily designed to first familiarize the students with Traditional Project Management (TPM) approach which is suited for projects with *relatively* well-understood voice of customer and clearly defined scope of work at the initiation stage. However, with the understanding that many projects in the engineering world (six-sigma, R&D, software development, etc.), rarely fall within this category, this course will also prepare you for the next step. The shortcomings of TPM will be *discovered* by the students during this journey and contemporary project management techniques (categorically labeled as "Agile" throughout the course) will be introduced and briefly discussed as the course progresses.

**Our *unchangeable* Core Values (juxtaposed with ISE Core Values):**



| Creativity (Critical thinking & brainstorming) | ←→ | Open forum |
| Paradoxical blend of boldness & humility | ←→ | Care, collectivity, assistance, patience |
| Candor (Sincerity & supportiveness) | ←→ | Accountability, consideration |
| Drive (Self-reliance, self-learning) | ←→ | Commitment to excellence |

**Our *Permission-to-play values* (defined by Patrick Lencioni, The advantage):**

Academic integrity, Personal accountability, Information security and confidentiality

---

[1] Due to administrative processes, this syllabus is subject to change. It is **the student's responsibility to verify** with the instructor regarding any updates.

[2] All written communications with the Instructor and/or the Course Producer <u>must</u> be through emails.  **Both** should be included in the emails for **urgent Matters**.  Emails must be **short and to the point** and they are normally answered in **36 hours**.  We will <u>not</u> answer the questions that students post on the DISCUSSION BOARD.  This medium is for technical discussions among the students **only**.  They will be discussed at the open discussion session (last class).

Students who share our *core values* as their guiding principles will enjoy their experience and add value to everyone's experience. Students who do not share the above *permission-to-play* values, do not meet the minimum requirements for this course.

**Text Books & Software:**
 **Required:** Project Management: A Managerial Approach, 10th Edition, Meredith, Jack R. and Mantel Jr., Samuel J – ISBN-13: 978-1119625926 & ISBN: 1119625920

**Support Readings (NOT REQUIRED):**
- A Guide to the Project management Body   5th Edition, (PMBOK Guides), Project Management Institute (author) ISBN-13 978-1933890517
- Engineering Project Management, Neil G. Siegel, 2019, ISBN: 97811119525769
- Project Management for The Unofficial Project Manager, Kory Kogon , Suzette Blakemore, James Wood, A Franklin Covey Title, ISBN: 978-1-941631-10-2
- Project Management Tools and Techniques, A Practical Guide, by Carstens, Richardson and Smith, 2013. Publisher: CRC Press; ISBN: 978-1-4665-1562-8
- Project Management Lite: Just Enough to Get the Job Done...Nothing More, Juana Clark Craig, 2012, ISBN-13: 978-1478129226, ISBN-10: 1478129220
- Critical Chain Project Management, 3rd Edition, Lawrence P. Leach, ISBN-13: 978-1-60807-734-2, 2014
- *Effective Project Management: Traditional, Agile, Extreme, 7th Edition, Robert K. Wysocki, ISBN: 978-1-118-72916-8 , Dec 2013
- Critical Chain, Elyahu M. Goldratt, ISBN 0-88427-153-6 (1997)
- Rise and Fall of Strategic Planning, Henry Mintzberg,  (June 29, 2013), First print: 1994
- Managing High-Technology Programs and Projects, 2nd Edition (1992), Russell D. Archibald

**Required Software: Microsoft ® Project: The course will utilize Microsoft Project software.**
Microsoft® Project is available at various USC computer labs (ECC, ITP, RTH, 109, RTH 115). You can access the USC network remotely and run the program (see the instructions attached).
*Note: This is not a software training course and the students are expected to learn this program (and/or other needed software packages) on their own. Although, we will try to arrange for as many tutoring sessions by the TA as possible, limitations of these trainings shall not constrain the students from learning the program to the extent needed to complete their course assignments.*

**Course Material:** Textbook, all topics discussed in lecture by the instructor, guest speakers (if any), other students, and all related handouts.

**Study Guidelines:** The lectures and class discussions are not limited to reading assignments. Merely reading the textbook does not guarantee students' successful completion of the course. The instructor's Class notes are not sufficient either and all students are responsible to take their own notes in the class and use them to study and elevate their understanding of the reading materials and the class discussions.

**Performance Evaluation:**

| | | | |
|---|---|---|---|
| 1. | Class Participation & Workshops | 100 | (10%) ← *Instructor's assessment (**non-negotiable**)* |
| 2. | Homeworks | 300 | (30%) |
| 3. | Exams | 300 | (30%) |
| 4. | Term Project(s) | 300 | (30%) |
| | Total | 1000 | (100%) |

1. **CLASS PARTICIPATION:**

   i. **10 points:** All students to submit a student profile questionnaire and propose their own term project idea (a physical product to be built within the semester timeline) **within the first week** of joining the class. Students can read the preliminary term project criteria (will be posted by SESSION 1) to get a general idea on how to select a project. You will get full credit upon on time submittal. This assignment is not graded, but it will not be accepted after the deadline (with or without penalty).

   ii. **10 points:** After the first class, your first assignment is to read this syllabus and take a short test on this syllabus, **due within 24 hours after the class**. Students who join later will take this test within 24 hours after the first session they join.

   iii. **30 points:** Students who are not talkative but attend the workshops effectively can earn up to 30 points. DEN students who are unable to join the workshops live due to time zone restrictions will earn these points by commenting on the workshops, the same way they make comments on the class discussions, i.e. through the Discussion Board (within the following week).

   iv. **50 Points[1]:** ON-CAMPUS (OC) students are expected to **attend** and **participate** in as many class discussions as possible. *Participation* in this class means ***active contribution to in-class discussions, debates, Q&A on presentations, etc.*** If you do not talk in this class you will not earn any points in this category (except for the DEN students who cannot attend and comment on the discussion board, see next bullet). Attending the workshops and talking to your teammates within the workshop does not count towards this category (see the previous bullet). While we do not take attendance in this course (except for the final presentation sessions[2]), OC students who miss several sessions will also miss the opportunity to improve their learning experience and contribution and, therefore, their class participation grade could be adversely impacted.

   v. **50 Points:** DEN students have the following options to participate in the class discussions:
      a. They can make comments on the lectures and class discussions, using the **discussion board**, under the appropriate lecture forum, **within one week of the lecture**.
      b. Upon availability, they can participate live in class discussions and will get credit for that.
      c. Text messaging through WebEx is not the most effective way of communication, but such comments will be addressed as practically as possible.
      d. DEN students who can physically join the class, are strongly encouraged (but not required) to do so.

   By registering in this course, students are accepting the instructor's judgement and will not debate on their class participation grades. Nevertheless, once the class participation grades are posted, students will have a chance to **provide evidence** of their participation, if they believe some aspects of their participation were not captured accurately. This, however, shall be only limited to providing dates & times of the student speaking in the class (or through the Chat Window) and/or teammates' confirmation of effective contribution to workshops. Students are encouraged to record the time and date of their in-class contribution to discussions, debates, Q&A, etc. as the course progresses, so they can share with the instructor if needed. The grade improvement is limited to the maximum points allowed for the class participation category for which the evidence was provided (items i – v.).

   Students who do not participate in any of the open discussions will not receive any class participation points in category iv (v for DEN), even if they attend all classes. **Term project activities are not considered as class participation**. Attending the workshops can earn up to 30 points for its own category of class participation (iii), as stated above. Talking to teammates (term project or workshop) does not earn any additional class participation points.
   All students to avoid using the discussion board to ask questions from the instruction team or to discuss personal/non-course related topics (exception: the welcome page of the course site is designed for posting

---

[1] Due to COVID restrictions and unpredictability of the class structure (live or on-line), all DEN options (bullet 1.v.) are available to On-Campus students as well.

[2] Attendance will be taken only at the students' presentation sessions and All OC students are required to attend those sessions.

personal information).  All questions should be emailed first to the teaching assistant / or course producer and then, if not responded to in a timely manner (see footnote 1 in page 1), to the instructor.

2. **Case Studies / Homeworks** consist of **4@75 Points Each. They may be real-life (or simulated) business cases, or some may be in the form of homework assignments**. You will be expected to work on these assignments **individually**. DEN students may post their comments on the case study via DEN Discussion Board, after the Case Study final submittal deadline. The case studies **MAY NOT** be discussed before the FINAL submission deadline (including the grace period with penalty, see below).  The CASE STUDIES due dates are shown in the attached schedule.

ALL CASE STUDIES / HOMEWORK ASSIGNMENTS MUST BE PERFORMED **INDIVIDUALLY,** NO "TEAMWORK" IS ALLOWED HERE!  Students must attempt to use their intellect, analyze the case comprehensively, and answer the questions in their own words. In cases of necessity, appropriate quotation is required. Merely repeating the lecture and textbook materials without proper and direct connectivity to the case study will not earn you any credit. The Students, who miss the deadlines and submit the case studies up to one week late, **will be graded based on 80% of that assignment's total points**. No assignment will be accepted afterwards.

3. **Two Exams** will be given on with the following points distribution:

| | |
|---|---|
| **MIDTERM (Take-Home)** | **150** |
| **FINAL EXAM (Optional)** | **150** |
| **Total EXAMS** | **300** |

The exams will cover the material presented up to and including the preceding lecture. Points will be assigned to each section of the exam. Partial credit will be awarded according to work shown. No re-takes will be allowed. No make-up exam will be given.

The Midterm Exam is take-home and will be managed as homework and its timing is shown in the "Assignments and Due Dates" sheet. Like all homework and case assignments, teamwork is strictly prohibited on this assignment.

After the last class, students' pre-final GPA will be announced. Students who are happy with the GPA they received may choose not to take the final exam and that will be their final GPA. Students who feel they want to improve their GPA can choose to take the final exam.

Grades are not negotiable in this course.  If, after verification of all grade categories by the instructor, a student's pre-final grade is on the borderline, he/she is encouraged to take the final exam to improve his/her grade, instead of requesting reconsideration of the grades on the completed work. Such reconsideration, only if justified, can happen after the final exam.

Students, who have a GPA of 3.00 or less and/or are on probation, must meet the professor before add/drop deadline to evaluate their ability to complete this course successfully. Students who are challenged to graduate and this is an elective course for them, should reconsider their decision.

4. Students start working on their **TERM PROJECT** after SESSION 3. The grading structure is provided below:

| | |
|---|---|
| **Project Proposal and presentation** | **100** |
| **Final Team Presentation** | **100** |
| **Individual assessment** | **100** |
| **TOTAL** | **300** |

The term project criteria and its grading structure will be provided in detail in SESSION 4. Term project Initiation and Planning presentations are scheduled for SESSION 9 and final term project presentation

and discussions are scheduled for SESSIONS 13 & 14 . Teams (and individuals within teams) will be evaluated by the instruction team based on the quality of their work, their ability to present and educate the audience, and their ability to rationalize and defend their conclusions. ALL members[1] of the presenting team must contribute to the discussion and to the Q&A.  Ample time will be provided for Q&A. Term project grades are ultimately based on the instructor's judgement.

5. **LINES OF COMMUNICATION:**
   - All students <u>must</u> follow the communication protocol set forth by the Instruction team.  Assignments that are supposed to be posted on the course site will NOT be graded if submitted via other media (email, hardcopy, etc.), unless specifically and exceptionally agreed, in advance.
   - Assignments must be submitted in the exact format instructed by the CP and/or the instructor.  In cases of discrepancy, the instructor's guidelines supersede. Assignments that do not follow submittal guidelines (File type, naming structure, content format, etc.) will NOT be graded.
   - All students are responsible for proper communication and for timely transfer of their assignment files.  All students to make sure all their communication lines are open and they are able to properly upload their files, during the FIRST WEEK of their registration in this course.  In the exceptional case of possible glitches in the D2L system, if it can be proven, a student may submit the assignment by email.  In this case, the "Date Created" attribute of the submitted file will be considered as the submittal date.
   - All students are responsible to have proper training with the D2L system.  If you need to schedule a training please contact DEN staff directly (or through the course CP) to arrange for a training session as soon as possible.
   - <span style="color:red">**Please refrain from writing emails longer than one paragraph, 3 lines**</span>. Long emails are not effective means of communication as they have high potential for communication biases. If you are interested to debate on a course topic, you can post your subject on the discussion board as explained above. You are also encouraged to meet the instruction team as often as you please to discuss the course materials, term project progress, and logistics.  DEN students may schedule a phone appointment for this purpose.

All due dates are provided in the next page: "Assignments & Due Dates".  The due dates may be changed as the course progresses, at the instructor's discursion only (per consultation with the CP).  Students must take the exams on the exam dates and times.  Exceptions only include special cases such as sickness, time zone difference (for DEN students), or such unavoidable circumstances.  **PLEASE DO NOT SCHEDULE ANY TRIPS ON THE EXAM DATES.  PERSONAL OR BUSINESS ENGAGEMENTS DO NOT JUSTIFY EXAM DATE & TIME CHANGES.**

**Final Grades:**
Course FINAL GRADES will be determined by the distribution of point totals for the class.  "Natural groupings" will be used to assign letter grades.  The highest scoring group will receive A's, the next group is the A-'s, and so on.  A single point will not be the difference between any two letter grades.
A "gap" must exist to create a grade boundary. <mark>Students are responsible to understand the process clearly as their actual performance may differ from their perceived performance which is conventionally based on percentages only.</mark>

This is a qualitative management course and students' performance assessment is based on the instructor's judgement.  Each student's performance data combined with the instructor's personal assessment of his/her level of effort and learning experience will determine that student's overall grade. Ultimately, the instructor will be the sole judge of all students' incremental and final GPA's based on personal experience. The grades are NOT negotiable and long emails debating on this topic **will not be responded to**. Please note that by taking this course, you are giving the instruction team full authority to evaluate your performance based on their judgement. Nevertheless, if a student has strong evidence that the evaluator (the instructor or the CP) may have mistakenly omitted a portion of his/her response, a **<u>short one-sentence email</u>** to the CP is sufficient to get our attention.

---

[1] DEN students who are unable to participate in their team presentation due to justifiable restrictions (time zone difference, conflict with work-hours, etc.) must inform the instruction team by session 4 and get their approval and must provide recording of their presentation to a teammate to present for them. Any student's absence in the final presentation without coordination with the instructor, and his approval, will cost the student's individual grade in the term project 50 points and the team's Final Presentation Grade 10 points.

## Assignments and Due Dates[1]:
## "An Organized Chaos!"
*TPM: Traditional Project Management, APM: Contemporary Project management

| Session | DATE | TOPIC | ASSIGNMENTS DISTRIBUTION | ASSIGNMENTS DUE | READING ASSIGNMENTS |
|---|---|---|---|---|---|
| 1 | Jan. 12 | **Course Management** Introduction to Project Management TPM* VS APM*; competing or complementing philosophies? | Students' profile questionnaire[2] *(week of joining the class)* | Syllabus Quiz *(sessin of joining the class)* | Chapter 1 Chapter 2 |
| 2 | Jan. 19 | **The Project in the Organizational** Structure, Selecting and *Leading* a project, Project Manager OR Leader? **Term Project Teams formation** | Homework/Case #1 | Students' profile questionnaire *(1 week after joining the class)* | Chapter 3, Chapter 4, Chapter 5 |
| 3 | Jan. 26 | **Structuring the Project** TPM: Project Charter → WBS & OBS **Term Project Guidelines** | | | Chapter 6 (pp. 221-249) |
| 4 | Feb. 02 | **Structuring the Project – Cont.** APM: Manifesto; Stories, Sprints & Scrums, Kanban Board Daily → Iterative → Release planning | Homework/Case #2 | **Project Charter due** Homework/Case #1 (75 points) | Chapter 7 (pp. 285 - 308) |
| 5 | Feb. 09 | **Budgeting & Cost Estimating** TPM: Estimating costs ➜ Budget APM:!? (Open discussion) | | | Chapters 8 & 9 (pp. 335-357 & pp 387-433) |
| 6 | Feb. 16 | **Scheduling & Resource allocation** TPM: CPM, Resource loading & leveling APM: Burndown Chart, Backlog | **Take-Home Midterm (150 Points)** | Homework/Case #2 (75 points) | Chapters 6-9 (remaining parts) |
| 7 | Feb. 23 | **Risk Management Plan** TPM: Prepare for Risks & Opportunities APM: Maximize Return on Luck! | Homework/Case #3 | | Chapters 10, 11 |
| 8 | Mar. 02 | **Project Initiation & Planning Presentations,** Mission: Sell the project to the Investors! | | | |
| 9 | Mar. 09 | **Project Controls: Cost Control** TPM: PV, EV, AC, APM: Burn Rate Cost, backlog, | Homework/Case #4 | **Take-Home Midterm (150 Points)** | Chapter 12 |
| | Mar. 16 | **Spring Break – No Class** | | | |
| 10 | Mar. 23 | **Project Controls: Schedule & Scope** TPM: Updating, Recovery, Fragnets… Burndown Chart, Velocity | **Integrated Change Management** | Homework/Case #3 (75 points) | Chapters 1 |
| 11 | Mar. 30 | **Project Auditing** TPM: Periodic Auditing APM: Continuous Client involvement | | | |
| 12 | Apr. 06 | **Project Termination** TPM: Phase / Project Close-out APM: Sprint Retrospective, Release | | Homework/Case #4 (75 points) | |
| 13 | Apr. 13 | DEN Discussion Open Discussion & Concluding Remarks | | | |
| 14 | Apr. 20 | **Term Project Discussion (Teams 1-4)** | **All Presentations packages due at 4:00 pm** | | |
| 15 | Apr. 27 | **Term Project Discussion (Teams 5-8)** | **360 Evaluations** | | |
| | May 04 | **Final Exam – Optional (150 Points) (4:30 to 6:30 PM)** | In Accordance with USC Final Examinations Schedule Guideline: https://classes.usc.edu/term-20221/finals/ | | |

---

[1] This is a *general* road map to the course. As you will learn, depending on the general class absorptive capacity, we may change the pace of the course to keep sufficient emphasis on the depth, as well as breadth of the content, within the context of the course. Students are responsible to coordinate with the instruction team to prepare for each class, as the "Reading Assignments" may change as the pace of the course changes. The term project schedule changes to be announced by 09/14.

[2] Students who register late will be assigned this task upon registration and will have one week to turn it in

## Outreach DEN Students

This course is conducted in outreach format, meaning, it is available to off-campus students via video recording and streaming. Students in on-campus or off-campus receive the same instruction and perform the same tasks.

## Language Support Systems

USC provides support for students who need help with scholarly writing. Students whose primary language is not English should check with the American Language Institute http://dornsife.usc.edu/ali, which sponsors courses and workshops specifically for international graduate students.

## Emergency Services

If an officially declared emergency makes travel to campus infeasible, USC Emergency Information http://emergency.usc.edu will provide safety and other updates, including ways in which instruction will be continued by means of D2L, blackboard, teleconferencing, and other technology.

## Statement 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 the professor(s) 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.

## Academic Integrity

USC seeks to maintain an optimal learning environment. The Department of Industrial and Systems Engineering adheres to the University's policies and procedures governing academic integrity as described in Scampus, the Student Guidebook. 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. Scampus, contains the Student Conduct Code in 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. All students are expected to understand and abide by these principles, as they will be strictly enforced throughout the semester.
Note: This syllabus is subject to change.

We take academic integrity very seriously. Since this is a qualitative course and students should use their creativity to respond to most of the questions, it will be very easy to identify information borrowed from others (other students, textbooks, articles, websites, etc.) without proper quotation. If more than one sentence is identified to closely mimic a source (or another student's response) on a qualitative & creative question, disciplinary action will be taken on **all** students involved.