

IE 570 – Systems Engineering and Project Management

Spring 2017

Howe 1344 6-9 p.m. Thursday

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Office hours: N/A. Correspond with assistants via e-mail for grading
clarification issues only. **For grading disputes,
engage directly with me.**

Class Requirements

Text. "Project Management in Practice" (5th edition) by Meredith, Shafer, Mantel and Sutton. NOTE: We will be using the software that comes with the textbook, so do not purchase a textbook without the Crystal Ball software.

Case studies. Multiple case studies are required for the course. Additional details are provided in class.

Course content. The course will focus heavily on the textbook, and students can expect that we'll cover most all of the text as part of the course. Material external to the textbook will include outside readings, some work involving mathematical optimization, and student presentations.

Topics. Course topics will include the following:

- Introduction to Project Management
- The Manager, the Organization and the Team
- Planning the Project
- Budgeting the Project
- Scheduling the Project
- Allocating Resources to the Project
- Monitoring and Controlling the Project
- Evaluating and Terminating the Project
- Optimization applications
- Selected Case Studies
- Class presentations

Learning Outcomes.

- Achieve an understanding of challenges and opportunities associated with project management in practice
- Be able to describe and apply several project selection methodologies

- Describe and understand the challenges and potential solutions associated with multiple project management case studies where ideal approaches are not always evident
- Understand basic applications of the normal and triangular distributions as they relate to project management
- Form a group team, select an appropriate project management-related topic, and present results of the project research to the class
- Understand and be able to describe advantages and disadvantages of typical organization structures
- Achieve a basic understanding of mathematical optimization applications in project management
- Demonstrate an understanding of simulation as it applies to estimating project costs involving uncertainty
- Understand approaches to dealing with budgeting and cost estimating
- Understand and apply techniques associated with project resource allocation, and project monitoring and evaluation

Grading.

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| • Midterm exam | 25% |
| • Group project | 25% |
| • Homework | 25% |
| • Final exam | 25% |

Group project. Groups of 2-4 students will be formed in the first two to three weeks of the course. These groups are responsible for proposing, developing and delivering a presentation to the class on a topic relative to systems engineering and project management. The group project will include a proposal, presentation of significant duration and content, and leading a follow-on question and answer session relative to the presentation. **Project proposals and team compositions are due January 27th.** More details of the group project will be provided during the first day of class. A successful group project will require significant effort outside of class. Your efforts will entail collaborating with group project team members in determining a group project topic and submitting a proposal for the topic, conducting appropriate background research relative to the approved topic, and putting together the group project presentation. At least 50% of each group should be composed of off-campus students.

Participation/homework. The on-campus scheduled class will be recorded so that off-campus students may review the class at their convenience during the following week. While verbal participation during classroom discussion periods is strongly encouraged to enhance everybody's learning experience, there is no penalty for lack of participation or reward for such participation. Off-campus students choosing to watch a recorded class are unable to participate verbally, so this policy ensures equity for all.

Professionalism: The IMSE Department has an expectation that all students will behave in a professional manner during all interactions with fellow students, faculty, and staff. Treating others with respect and having constructive communications are examples of being professional. Don't be late; don't use your electronic devices during class.

Exam dates. The Midterm Exam is tentatively scheduled for March 9th, and the Final Exam will be scheduled in accordance with university policy. In the event of a take-home Final Exam, the Final

Exam will be due no later than the conclusion of the time scheduled for the Final Exam by Iowa State University.

Makeup Policy: Makeups that are not pre-arranged will only be administered in the case of a legitimate and documented emergency.

Off-campus exams. Off-campus students will be provided a limited window in which to take exams (typically beginning at the same time on-campus students begin taking the exam and lasting 24 hours). **Off campus students are responsible for obtaining exam proctors consistent with ISU policy, and must make appropriate arrangements for a proctor within the first 2 weeks of class.** For more information, go to: <http://www.testcenter.iastate.edu/need-a-proctor/>. **There is no option to take the exam at ISU's Testing Center – you can take exams with the on-campus students, or via a proctor.**

Academic Honesty, Exceptions and Professionalism:

The IMSE Department has an expectation that all students will be honest in their actions and communications. Individuals suspected of committing academic dishonesty will be directed to the Dean of Students Office as per University policy. For more information regarding Academic Misconduct see <http://www.dso.iastate.edu/ja/academic/misconduct.html>.

If it is determined there was academic dishonesty committed, the student will receive a grade of "0" for the assignment(s) where dishonesty occurred, and will have their final course grade reduced by a full letter grade. A second case of academic dishonesty -- no matter how trivial -- will result in a grade of "F" for the course.

Course Policies. The following section is an important list of course policies. **FAILURE TO ADHERE TO THESE POLICIES IS CONSIDERED ACADEMIC DISHONESTY.**

- Exam times/locations will be promulgated in class, and tentative exam times are also in this syllabus for your convenience. **Do not ask for an exception to time or location.**
- There is no extra credit for this course. **Do not ask for an extra credit opportunity.**
- Homework will be due by the time specified in class and via Blackboard. **Do not ask for an extension.** If Blackboard determines the homework submission is late, it's late. All late homework submissions will receive a grade of 0. Homework that is not submitted in the correct format and/or uses the wrong data or approach will not receive full credit.
- **Do not ask the instructor to "pre-grade" your homework.** If you have a specific question, then the instructor and/or Class Assistant will be happy to work with you. But the instructor or Class Assistant cannot check your answers for accuracy before the homework due date, since this would not be fair to other students.
- Address any grading concerns directly with the instructor within 2 weeks of receiving the grade in question. **Do not ask for grade reconsiderations after the 2 week deadline.**

- **Only emergency situations qualify for a potential exception to homework and/or exam policies.**
 - The instructor must be notified ahead of time (before due date) that there is an emergency situation. Advising the instructor after the fact ("I missed the homework deadline because...") is unacceptable.
 - Do not be insulted if you are asked for documentation of your emergency situation.
- Group project work should be shared equitably. Failure to do so is considered academic dishonesty for group members not contributing their fair share. If there is evidence that a student is not contributing their “fair share” to the Group Project, individual grades may be adversely affected. All group members should plan on participating during the project presentation and Q&A session afterwards.
- Lectures, presentations and/or assignments covered in class will not be repeated. **Do not ask for any of these to be repeated.**
- Exams will not be returned to students, but will be covered in class. Additionally, the instructor is happy to go over missed exam questions with students, either in person, or via phone or e-mail. **Do not ask for an exam to be returned.**
- **There may be a short homework assignment the last week of class, depending on the progress of student presentations.**
- **Students are responsible for ensuring they have met course prerequisites. See applicable paragraph below.**
- Students are expected to turn in original work (your own or that of a team) for every part of every deliverable in this course. Include the full reference of any sources (text, image or audio), if any.
- If exam scores are curved, the maximum score a student can obtain is a 100. **Do not ask for more points than the maximum of 100.**

Asking the instructor or class assistants for something that is contrary to the syllabus is considered academic dishonesty. Don't do it.

Course contributions to professional development. Students will learn the key concepts of engineering management, and how to apply these concepts in planning, budgeting, scheduling and controlling a project. Students will also learn various quantitative and analytical techniques associated with project management, including basic optimization and simulation methodologies. In addition, students will gain team project experience working on a group project.

Special considerations: If you have special considerations (including a disability) then let the instructor know and we'll make every effort to accommodate you. There will be no special considerations without appropriate documentation, e.g. Student Academic Accommodation Request (SAAR) form.

Iowa State University is committed to assuring that all educational activities are free from discrimination and harassment based on disability status. All students requesting accommodations are required to meet with staff in Student Disability Resources (SDR) to establish eligibility. A Student Academic Accommodation Request (SAAR) form will be provided to eligible students. The provision of reasonable accommodations in this course will be arranged after timely delivery of the SAAR form to the instructor. Students are encouraged to deliver completed SAAR forms as early in the semester as possible. SDR, a unit in the Dean of Students Office, is located in room 1076, Student Services Building or online at www.dso.iastate.edu/dr/. Contact SDR by e-mail at disabilityresources@iastate.edu or by phone at 515-294-7220 for additional information.

Course prerequisites. It is the policy of the IMSE Department to require all students enrolled in this course to have satisfied all of the course's prerequisite requirements. If it is discovered that a student has not met any applicable prerequisite requirements, he/she will be required to immediately drop the course. The failure to drop the course will result in a final course grade of 'F', regardless of course performance. Students who discover they have improperly enrolled in a course without meeting the applicable prerequisite requirements are strongly encouraged to meet with advising staff to promptly drop the course and make alternative scheduling arrangements or discuss if an official waiver of the pre-requisite requirements may be applicable.

Blackboard Assistance

For help with your username and password for Blackboard Learn, contact the Solution Center at 515-294-4000 or solution@iastate.edu

For lecture video technical support using Echo360, WebEx, or Cybox, contact ELO at elotech@iastate.edu.