

SYLLABUS
SYST 371 - SYSTEMS ENGINEERING MANAGEMENT
SPRING 2017

Professor: Dr. Rochelle Jones
Work Phone: (703) 993-1663 (with voice mail)
FAX: (703) 993-1521
E-mail: rjones42@gmu.edu [preferred method of communication]

Classroom and Meeting Hours: David King Jr Hall – Room 2053: Tuesdays/Thursdays 12:00 – 1:15pm
Office Hours: Engineering Building – Room 2229: Tuesdays 2:00 – 4:00pm and by appointment. For distance education students: By appointment

Course Description: This course is intended to provide engineers with systems management and project control skills required to formulate and manage large, complex projects. The initial part of the semester will be devoted to the development and demonstration of individual ability to use engineering management tools, as well as to exercise control on the tradeoff performance, cost, and scheduling of a project. The second part of the course turns the focus to preparing engineers to face team competition in a project proposal situation. In this phase, team leaders will be chosen based upon individual performance on the midterm exam and homework, and will then select their teammates. All teams will be given a common engineering management problem and will bid for the contract at the end of the semester. I will act as the procurement executive of a large company that has published the request for proposal (RFP) and will assign grades based upon the merits of each team submission.

Prerequisites: *Prerequisites: SYST 210 – Systems Design*
Co-requisites: SYST 330 – System Methods

Text: Project Management in Practice
Jack R. Meredith, Samuel J. Mantel Jr., Scott M. Shafer, Margaret M. Sutton.
Wiley; 5th edition (September 23, 2013)

Grades: 20% - assignments
25% - midterm
25% - final
30% - group activities
Grades are assigned as follows:

A = 93 – 100	C+ = 77 – 79.9
A- = 90 – 92.9	C = 73 – 76.9
B+ = 87 – 89.9	C- = 70 – 72.9
B = 83 – 86.9	D = 63 – 69.9
B- = 80 – 82.9	F = Below 62.9

Course Expectations and Expected Behaviors:

1. Proper preparation is expected every week. You are expected to log into Blackboard each week and complete the assignments and activities on or before the due dates.
2. Students must check the class announcements in Blackboard on a daily basis for course announcements, which may include reminders, revisions, and updates.
3. It is expected that you will familiarize yourself with and adhere to the George Mason University Honor Code. Student members of the Mason community pledge not to cheat, plagiarize, steal, and/or lie in matters related to academic work. Students must adhere to the guidelines of the Honor Code [See <http://oai.gmu.edu/>].
4. It is essential to communicate any questions or problems to me promptly.
5. Attendance in class is essential. Information will be presented that will not necessarily be in the book, and is almost certain to be on both the midterm and final exams.
6. You are allowed to enter or leave class at any time, provided you do your best to avoid disrupting the activity going on.
7. Please make sure you have your cell phone, tablet, pager, etc., in silent mode. Should you find yourself in *extreme* need to answer an incoming call, just leave the room to do so.
8. With a few exceptions, almost all of the course deliverables are submitted electronically (e.g. class-work and homework), scheduled in advance, and with some flexibility for students to change. Should any scheduled event impact a student's participation in class activities and assignments, it is the student's responsibility to coordinate with me in advance.
9. Students are permitted to interact on homework assignments, but your write-up must be your own. Assignments are intended to provide practical, hands-on experience with the ideas presented in the course.
10. The exam dates and scheduling provided below are tentative, and it is the students' responsibility to keep abreast of changes.
11. **Late policy:** Assignments submitted late will receive reduced credit. If an assignment is submitted one day past the due date (without receiving prior approval from the instructor) the submission will receive no credit (grade of zero (0)).
12. Academic Policy: All academic policies as given in the Honor System and Code will be strictly followed. These are available at <http://catalog.gmu.edu/content.php?catoid=19&navoid=4113>
13. General Policies: All general policies defined in the University Catalog are in place for this course. You can access those at <http://catalog.gmu.edu/content.php?catoid=19&navoid=4114>

Exercise planning, be proactive and do your best to stay ahead of schedule

Assignments

There will be assignments posted via Blackboard during the course. Each assignment will have its respective due date defined.

You are not prevented from working with your peers on the class work and homework exercises, and are even encouraged to do so. However, each student must provide his/her own answers, and I might verify whether he/she actually worked in his/her respective exercise and understood the solution provided. In any case, past experience consistently shows that students who didn't keep up with the assignments had a hard time with the exams.

Assignments must be submitted via Blackboard and can be of three types:

- *Homework Assignment*: Each homework assignment is out of 100 points.
- *Tests, Quizzes, or Challenges*: These are conducted in class on an ad hoc basis, and each will be for an amount of points to be disclosed prior to the class. The details of each test, quiz, or challenge will be explained during its respective announcement.

Files should be named with the following convention:

Syst371_AssignmentTypeAndWeek_LastnameFirstname.

Examples: Syst371_Hwk2_DoeJohn, Syst371_ClassWork2_PoppinsMary, etc.

Always check for grades on Blackboard. If you don't see the grade, report to me by the next class after assignments have been returned.

- *Exams*
Both the Midterm and the Final exams will be taken in-class.

Group Project

Students will be divided into 9 groups. Three Requests for Proposal (RFP) will be released. Each RFP will be given to 3 groups, which will act as internal competitors within a company (SYST 371, Inc.). The groups will present a draft proposal and an associated presentation to an evaluation panel, which will act as the company's senior leadership deciding on which of the draft proposals should go ahead and represent the company in the actual bid.

The Group Project grading is structured as follows:

- Oral presentation (35%)
- Final report (35%)
- Team self-evaluation (30%)

Each group will have 18 minutes to present their work, and at least 5 minutes will be reserved for questions. Presentation material must be submitted via Blackboard no later than 2PM the day before the presentation.

- All group members are expected to talk in the presentation and to be available for questioning.
- All group members are expected to present and to be available for questioning.
- Attendance is mandatory to all students, including those not presenting. Failure to attend will impact the student's group project grade by up to 5 points.
- A professional dress code is required and is part of the evaluation for the presenters.

The evaluation panel is composed of SEOR professors and fellow students. The latter will be chosen by their own group. Each group should submit the names of two representatives to compose the evaluation panel by Tuesday, 4/18, 11:59PM. The names must be submitted via email to Dr. Jones.

A 10-page written report is due on Tuesday, 5/2, 11:59PM. It must be submitted via the Blackboard system, which will have a suggested outline available to students. Neither the bibliography section nor the appendices count towards the page length requirement.

Your grade on this project will be strongly affected by your peer evaluations and the instructor's observations on your level of participation and performance. You are expected to rate each person on your team – not including you - on a 100-point scale. The rating scale is as follows:

- **90 - 100** Participated enthusiastically, exhibited strong leadership, attended regularly and was essential to meetings, performed tasks responsibly and on time, work was extremely high quality, took excellent initiative and was highly self-motivated;
- **80 - 90** Good participation, attended and contributed to meetings, exhibited leadership, performed tasks responsibly and on time, work of dependable high quality, took good initiative and was self-motivated;
- **70 - 80** Adequate participation, usually attended and contributed to meetings, exhibited some leadership, performed tasks responsibly and usually on time, work of dependable good quality, took reasonable initiative and was reasonably self-motivated;
- **50 - 70** Participation could have been better, performed tasks when asked but may have been late and/or needed reminders, quality could have been better, needed guidance and usually did not take enough initiative;
- **50 or lower** Participation was minimal or non-existent; any work that was turned in was of inadequate quality.

CLASS SCHEDULE

Week 1	Class 01	1/24	Syllabus review, course expectations, introduction to project management, Myers Briggs exercise
	Class 02	1/26	
Week 2	Class 03	1/31	Project Management as a Profession
	Class 04	2/2	Review of NPV calculations
Week 3	Class 05	2/7	Team Working: Main roles, leadership, and organization of the team, pitfalls and advantages of working in groups
	Class 06	2/9	
Week 4	Class 07	2/14	Project Planning: Work breakdown structure
	Class 08	2/16	
Week 5	Class 09	2/21	RACI matrix and multidisciplinary teams
	Class 10	2/23	Project Budgeting: Methods for budgeting, cost estimating, learning curves, tracking signals
Week 6	Class 11	2/28	Project Budgeting: Budget uncertainty, risk management
	Class 12	3/2	Project Budgeting: Tracking Signal
Week 7	Class 13	3/7	Project Scheduling: PERT and CPM
	Class 14	3/9	Schedule uncertainty and risk management
Week 8	SPRING BREAK		
Week 9	Class 15	3/21	Team assignments and briefing
	Class 16	3/23	Midterm
Week 10	Class 17	3/28	GANTT chart, extensions to PERT/CPM
	Class 18	3/30	Expediting a project
Week 11	Class 19	4/4	Midterm Review
	Class 20	4/6	Resource loading and resource leveling
Week 12	Class 21	4/11	Special topics
	Class 22	4/13	Monitoring a project
Week 13	Class 23	4/18	Earned Value
	Class 24	4/20	Project Control, Controlling Changes
Week 14	Class 25	4/25	Project meetings and final preparation
	Class 26	4/27	Team Presentations
Week 15	Class 27	5/2	Team Presentations
	Class 28	5/4	Team Presentations backup day / Course review
Week 16	Final Exam	5/11	Thursday, 10:30am - 1:15pm

For Distance Learning Students

Online Learning Community

This online course is taught via Blackboard Courses (Log into <http://mymason.gmu.edu>, select the Courses Tab, and the course can be found in the Course List). This course is offered completely online. Each week begins on Thursday and ends on Tuesday.

In our online learning community, we must be respectful of one another. Please be aware that innocent remarks can be easily misconstrued. Sarcasm and humor can be easily taken out of context. When communicating, please be positive and diplomatic. I encourage you to learn more about Netiquette. The guides for Collaborate may be found at: <http://course support.gmu.edu/course tools.cfm?audiencename=Students&categoryname=Bb%20Collaborate&datname=Full%20Participant%20Guide>

Technology Requirements

For a brief introduction to some of the services the Volgenau School of Engineering offers to our students, please review: <http://labs.vse.gmu.edu>. The technology requirements for this online course are listed below.

Hardware: You will need access to a Windows or Macintosh computer with at least 2 GB of RAM and to a fast, reliable broadband Internet connection (e.g., cable, DSL). For optimum visibility of course material, the recommended computer monitor and laptop screen size is 13-inches or larger. You will need computer speakers or headphones to listen to recorded content. A headset microphone is recommended for live audio sessions using course tools like Blackboard Collaborate. For the amount of computer hard disk space required to take an online course, consider and allow for the space needed to: 1) install the required and recommended software and, 2) save your course assignments. For hardware and software purchases, visit Patriot Computers.

Software

Microsoft downloads: This course uses Microsoft software available at no charge through the Microsoft DreamSpark program. You should have received notification of your access to this program when you first registered for a course in the Volgenau School of Engineering. If you can't find that notification email, please read the DreamSpark FAQ on: <http://labs.vse.gmu.edu> for instructions on activating your account or resetting your password.

Windows software on Macs: Microsoft and many other software developers do not make Mac versions of many software titles. If you have a Macintosh computer on which you want to install software written for Windows, you will have to use Boot Camp or a virtual machine product and then install Windows. VMWare Fusion (a virtual machine host for the Mac) and Windows are available at no charge through your enrollment in Volgenau School courses. Instructions for obtaining the software are in the Microsoft DreamSpark & VMWare FAQs on: <http://labs.vse.gmu.edu>

There are some hints for Mac users on using Microsoft Windows in the FAQs.

Web browser: (See Blackboard Support for supported web browsers)

Blackboard Courses (Log into <http://mymason.gmu.edu>, select the Courses Tab)

Blackboard Collaborate (select from the course menu)

Adobe Acrobat Reader (free download)

Flash Player (free download)
Microsoft Office (purchase)

Note: If you are using an employer-provided computer or corporate office for class attendance, please verify with your systems administrators that you will be able to install the necessary applications and that system or corporate firewalls do not block access to any sites or media types.

Exams

Closed book, closed notes, closed neighbor. In class students will take the test during the designated class period. Distance learning students must have a proctor for their exams. Proctoring materials may be found in Blackboard in “Proctoring Materials” to validate proctors and verify the taking of the exam.

Academic Integrity

The Honor Code will be read and signed by all students the first week of class and submitted in Blackboard. The Honor Code will also be the first page of the exam and must be signed before taking the exam.

GMU is an Honor Code university; please see the University Catalog or <http://oai.gmu.edu/> for a full description of the code and the honor committee process. The principle of academic integrity is taken very seriously and violations are treated gravely. What does academic integrity mean in this course? Essentially this: when you are responsible for a task, you will perform that task. When you rely on someone else’s work in an aspect of the performance of that task, you will give full credit in the proper, accepted form. Another aspect of academic integrity is the free play of ideas. Vigorous discussion and debate are encouraged in this course, with the firm expectation that all aspects of the class will be conducted with civility and respect for differing ideas, perspectives, and traditions. When in doubt (of any kind) please ask for guidance and clarification. Students must be responsible for their own work, and students and faculty must take on the responsibility of dealing explicitly with violations. The tenet must be a foundation of our university culture. [See <http://oai.gmu.edu/students-responding-to-alleged-violations/distance-learners/>].

MasonLive/Email (GMU Email)

Students are responsible for the content of university communications sent to their George Mason University email account and are required to activate their account and check it regularly. All communication from the university, college, school, and program will be sent to students solely through their Mason email account. [See <https://masonlivelogin.gmu.edu/login>].

Patriot Pass

Once you sign up for your Patriot Pass, your passwords will be synchronized, and you will use your Patriot Pass username and password to log in to the following systems: Blackboard, University Libraries, MasonLive, myMason, Patriot Web, Virtual Computing Lab, and WEMS. [See <https://password.gmu.edu/index.jsp>].

University Policies

Students must follow the university policies. [See <http://universitypolicy.gmu.edu>]. Responsible Use of Computing Students must follow the university policy for Responsible Use of Computing. [See <http://universitypolicy.gmu.edu/policies/responsible-use-of-computing/>]. University Calendar Students must follow the university policies. [See <http://registrar.gmu.edu/calendars/>].

University Libraries University

The Mason library provides resources for both in class [See <http://library.gmu.edu/>] and distance students. [See <http://library.gmu.edu/distance>].

Writing Center

The George Mason University Writing Center staff provides a variety of resources and services (e.g., tutoring, workshops, writing guides, handbooks) intended to support students as they work to construct and share knowledge through writing. [See <http://writingcenter.gmu.edu>]. You can now sign up for an Online Writing Lab (OWL) session or for a face-to-face session in the Writing Center, which means you set the date and time of the appointment! Learn more about the Online Writing Lab (OWL) (found under Online Tutoring).

Counseling and Psychological Services

The George Mason University Counseling and Psychological Services (CAPS) staff consists of professional counseling and clinical psychologists, social workers, and counselors who offer a wide range of services (e.g., individual and group counseling, workshops and outreach programs) to enhance students' personal experience and academic performance [See <http://caps.gmu.edu>]. Family Educational Rights and Privacy Act (FERPA) The Family Educational Rights and Privacy Act of 1974 (FERPA), also known as the "Buckley Amendment," is a federal law that gives protection to student educational records and provides students with certain rights. [See <http://registrar.gmu.edu/privacy>].

Disabilities Statement

If you have a documented learning disability or other condition that may affect academic performance you should: 1) make sure this documentation is on file with Office of Disability Services (SUB I, Rm. 4205; 993-2474; <http://ods.gmu.edu>) to determine the accommodations you need; and 2) talk with me to discuss your accommodation needs.

Mason Diversity Statement

George Mason University promotes a living and learning environment for outstanding growth and productivity among its students, faculty and staff. Through its curriculum, programs, policies, procedures, services and resources, Mason strives to maintain a quality environment for work, study and personal growth.

An emphasis upon diversity and inclusion throughout the campus community is essential to achieve these goals. Diversity is broadly defined to include such characteristics as, but not limited to, race, ethnicity, gender, religion, age, disability, and sexual orientation. Diversity also entails different viewpoints, philosophies, and perspectives. Attention to these aspects of diversity will help promote a culture of inclusion and belonging, and an environment where diverse opinions, backgrounds and practices have the opportunity to be voiced, heard and respected.

The reflection of Mason's commitment to diversity and inclusion goes beyond policies and procedures to focus on behavior at the individual, group and organizational level. The implementation of this commitment to diversity and inclusion is found in all settings, including individual work units and groups, student organizations and groups, and classroom settings; it is

also found with the delivery of services and activities, including, but not limited to, curriculum, teaching, events, advising, research, service, and community outreach.

Acknowledging that the attainment of diversity and inclusion are dynamic and continuous processes, and that the larger societal setting has an evolving socio-cultural understanding of diversity and inclusion, Mason seeks to continuously improve its environment. To this end, the University promotes continuous monitoring and self-assessment regarding diversity. The aim is to incorporate diversity and inclusion within the philosophies and actions of the individual, group and organization, and to make improvements as needed.