GEORGE MASON UNIVERSITY
Department of Systems Engineering and Operations Research,
Volgenau School of Engineering
Course Syllabus

Course:	SYST 520 / ECE 550
Long Title:	Systems Engineering Design
CRN:	71008/72297
Semester:	Fall, 2020

Scheduled Meetings:	• Groups: Times to be arranged w/ each group
	• Blackboard Collaborate Ultra (see Blackboard menu)
	  ○ Use Generic Collaboration Session
	  ○ URL: https://mymasonportal.gmu.edu

Appointments	• Groups or Individual • Virtual (Virtual same location as above)
Credits:	3 Graduate Credit Hours
Course Dates:	August 24, 2020 through December 5, 2020
Week Start / End	• Start: Monday Morning • End: Sunday Midnight

Instructor: Edward Huang
Office Hours: As arranged by groups or individuals
E-mail: chuang10@gmu.edu
Phone: 703-993-1672

COURSE DESCRIPTION

System engineering design methods are studied and practiced, including object-oriented and structured analysis-based techniques. Design description languages such as SysML are introduced and used in carrying out complete system designs.

NATURE OF COURSE DELIVERY

The format of this online course is asynchronous. The course is structured around twelve learning units made up of readings, weekly exercises, and reflections on your learning. We are scheduled to meet "live", online once in a conference system that supports audio/visual communication:

- August 25 (Tuesday) from 6 PM to 7:30 PM via Blackboard Collaborate Ultra web conferencing session.

COURSE WEEKLY RHYTHM

Because online courses do not necessarily have a "fixed" meeting day, our first week will "start" on Monday, August 24th and officially "finish" on Sunday, December 5th. I will go over the details of the course schedule during our first week live, online meeting.

TECHNOLOGY REQUIREMENTS
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 Ultra. 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:
Web browser (See Blackboard Support for supported web browsers)
Blackboard Courses (Log into http://mymason.gmu.edu, select the Courses Tab)
Blackboard Collaborate Ultra (select from the course menu)
Adobe Acrobat Reader (free download)
Flash Player (free download)
Microsoft Office (purchase)
Cameo Enterprise Architecture

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.

Blackboard Collaborate Ultra: The first live meeting will take place on Blackboard Collaborate Ultra, a synchronous videoconferencing platform. Login in to mymason.com with your Mason NetID and password. Select the Courses Tab. Choose the course Master - SYST-520-DL1 / ECE-550-DL1. Click on Blackboard Collaborate Ultra on the left menu.

Please make sure to update your computer and prepare yourself to begin using the online format BEFORE the first day of class. The IT Support Center can be found online here.

In the menu bar to the left you will find Blackboard Collaborate Ultra; you need to become familiar with Blackboard Collaborate Ultra for this course. Make sure you run a system check a few days before videoconference day. To do this, click on Bb Collaborate Ultra and a dropdown menu will appear. Become familiar with the attributes of Bb Collaborate Ultra and online learning.

TEXTBOOK
　　1. Buede, D. M., and W. D. Miller. The Engineering Design of Systems, 3rd edition, Wiley,

2016.
2. Friedenthal, S., A. Moore and R. Steiner. A Practical Guide to SysML: The Systems Modeling Language, The MK/OMG Press, (Elsevier) 2014 (3rd Edition).

LEARNER OUTCOMES

SYST 520 / ECE 550 is the graduate-level core course in Systems Engineering with focus on System Design Process.

As a result of this course, participants will be able to:

- Have a good understanding of the basic concepts in Systems Engineering Design Process
- Be able to apply the Systems Engineering process(es) to solve design problems
- Be able to apply the methods and tools learned through the lectures and the homework assignments to the design of systems
- Be able to work independently as a lead designer to carry out a project

PREREQUISITES:

Graduate standing.

WORKLOAD

Student success in this course is priority one. We have a great deal to cover in a relatively short period of time, so please keep on track. The nature of this course is such that playing "catch up" will prove to be extremely challenging. Read the first two bullets on this DE Experience page: http://masononline.gmu.edu/faqs/ . Expect to log in to this course at least four times a week to work on course materials and participate in the discussions. Our most successful students log in *daily for about an hour per day on average*. If there is anything you do not understand, or if work or personal challenges threaten to derail your progress, please drop me a note via Bb course e-mail as quickly as possible or call me, and we'll talk. I can typically respond to you within 48 hours.

COURSE REQUIREMENTS, PERFORMANCE-BASED ASSESSMENT, AND EVALUATION CRITERIA

A. Requirements:

Grade Component	Weight	Focus
Homework Assignments*	50%	Core tenets in the textbook: • Homework 1 (Due: 9/ 6/2020) • Homework 2 (Due: 9/13/2020) • Homework 3 (Due: 9/20/2020) • Homework 4 (Due: 9/27/2020) • Homework 5 (Due: 10/ 4/2020) • Homework 6 (Due: 10/11/2020) • Homework 7 (Due: 10/25/2020) • Homework 8 (Due: 11/ 1/2020) • Homework 9 (Due: 11/ 8/2020) • Homework 10 (Due: 11/15/2020) • Homework 11 (Due: 11/22/2020) • Homework 12 (Due: 11/29/2020) Late submissions are not accepted.
Exams*	50%	Material discussed in class: • 50% Midterm (Due: 10/18/2020) • 50% Final Exam (Due: 12/ 6/2020) Final exam will be cumulative in that it may include all the topics covered in class. There is no make-up exam.

*NOTE:
- Due Dates for individual/group assignments are on Sunday at midnight of the respective weeks.
- The stated dates above are tentative and are subject to change per the progress of the class. See schedule below for details.

B. Criteria for Evaluation
The instructor will evaluate all assignments.

C. Grading Scale

Letter Grade	Numerical Range
A+	97-100
A	92-96
A-	90-91
B+	88-89
B	82-87
B-	80-81
C+	78-79
C	72-77
C-	70-71

COURSE EXPECTATIONS

- Students are required to use system, online, self-help resources, in addition to the instructor's resources and peer support to solve problems related to the access, download, and operation of course Web 2.0 tools to complete assignments.
- Each student is expected to complete all readings and class exercises as assigned by the instructor.
- To enable individualization of the course to the needs of each student (either remedial or advanced activities), special arrangements on requirements and assignments may be negotiated in writing with the instructor.
- Late submissions are not accepted. You can submit homework directly to Blackboard.
- The class schedule may change as the course progresses.

VOLGENAU SCHOOL OF ENGINEERING STATEMENT OF EXPECTATIONS

Student Expectations

- Students are expected to exhibit professional behavior and dispositions. See http://gse.gmu.edu/facultystaffres/profdisp.htm for a listing of these dispositions.
- Students must follow the guidelines of the University Honor Code. See http://oai.gmu.edu/the-mason-honor-code-2/ for the full honor code.
- Students must follow the university policy for Responsible Use of Computing [See http://universitypolicy.gmu.edu/1301gen.html].
- Students can find the student privacy policy at https://registrar.gmu.edu/students/privacy/.
- Students with disabilities who seek accommodations in a course must be registered with the George Mason University Office of Disability Services (ODS) and inform their instructor, in writing, at the beginning of the semester [See http://ods.gmu.edu/].
- Students are responsible for the content of university communications sent to their George Mason University email account and are required to check it regularly. All communication from the university, college, school, and program will be sent to students solely through their Mason email account.

- GMU's Social Media "best practices" guidelines:
  http://webdev.gmu.edu/Social_Media_Guidelines

Campus Resources

- 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://universitypolicy.gmu.edu/policies/responsible-use-of-computing/].
- Students enrolled in online courses at Mason have easy access to Distance Education Library resources [See http://masononline.gmu.edu/student-resources/library/].

- 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/

Religious Holidays

A list of religious holidays is available on the University Life Calendar page (http://ulife.gmu.edu/calendar/religious-holiday-calendar/). Any student whose religious observance conflicts with a scheduled course activity must contact the Instructor at least 2 weeks in advance of the conflict date in order to make alternative arrangements.