

## **Systems Design**

ESI 6553 Section 09G1/09GE

**Class Taping:** Tuesday 3-5pm, Thursday 3-4pm (CT)

**Location:** UF REEF, Studio 110

**Academic Term:** Fall 2016

### **Instructor:**

Dr. Michael J. McCourt

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850.833.9355 Ext 228

Office Hours: Tuesday/Thursday 2-3pm or by appointment, UF REEF Room 135

### **Course Description (3 Credits)**

Broad introduction to systems engineering and the structured approaches needed to design complex systems. Emphasizes formulation of systems problems and approaches to their solution. Introduces basic mathematical techniques for dealing with systems design.

### **Course Pre-Requisites / Co-Requisites**

Calculus, linear algebra, basics of statistics, ESI 6314

### **Course Objectives**

This course will acquaint students with concepts of systems and the role systems engineering plays in their development. These concepts will be reinforced through application to real world examples. As this is a project oriented course, a final project is required.

### **Materials and Supply Fees: None**

### **Required Textbook**

- Systems Engineering and Analysis, 5<sup>th</sup> Edition  
Blanchard and Fabrycky  
Prentice Hall 2011  
ISBN: 978-0132217354
- Additional materials will be provided as needed

### **Course Schedule**

Week 1: Introduction to Systems Engineering – Ch. 1 and 2  
Week 2: Conceptual System Design – Ch. 3  
Week 3: Preliminary System Design – Ch. 4  
Week 4-5: System Test, Evaluation, and Validation – Ch. 6  
Week 6-7: Models for Economic Evaluation – Ch. 8  
Week 8-9: Optimization in Design and Operations – Ch. 9  
Week 10-11: Control Concepts and Methods – Ch. 11  
Week 12-13: Design for Reliability – Ch. 12  
Week 14-15: Design for Usability – Ch. 14  
Week 16: Course Review, Final Exam

### **Attendance Policy, Class Expectations, and Make-Up Policy**

This course is offered through the UF EDGE program. All lectures are recorded and made available to students. It is expected that students watch all course lectures. Attendance is not required, but students local to the Shalimar, FL area are encouraged to attend. It is possible to make up an exam in extreme circumstances. Please contact the instructor prior to the exam to discuss. Excused absences are consistent with university policies in the undergraduate catalog (<http://gradcatalog.ufl.edu/content.php?catoid=10&navoid=2020#attendance>) and require appropriate documentation.

### ***Evaluation of Grades***

<b>Assignment</b>	<b>Percentage of Final Grade</b>
Homework and Quizzes	30%
Midterm Exam	20%
Final Exam	30%
Final Project	20%
	100%

### ***Grading Policy***

<b>Percent</b>	<b>Grade</b>	<b>Grade Points</b>
93.0 - 100.0	A	4.00
90.0 - 92.9	A-	3.67
87.0 - 89.9	B+	3.33
83.0 - 86.9	B	3.00
80.0 - 82.9	B-	2.67
77.0 - 79.9	C+	2.33
73.0 - 76.9	C	2.00
70.0 - 72.9	C-	1.67
67.0 - 69.9	D+	1.33
63.0 - 66.9	D	1.00
60.0 - 62.9	D-	0.67
0 - 59.9	E	0.00

More information on UF grading policy may be found at:

<http://gradcatalog.ufl.edu/content.php?catoid=10&navoid=2020#grades>

### ***Students Requiring Accommodations***

Students with disabilities requesting accommodations should first register with the Disability Resource Center (352-392-8565, <https://www.dso.ufl.edu/drc>) by providing appropriate documentation. Once registered, students will receive an accommodation letter which must be presented to the instructor when requesting accommodation. Students with disabilities should follow this procedure as early as possible in the semester.

### ***Course Evaluation***

Students are expected to provide feedback on the quality of instruction in this course by completing online evaluations at <https://evaluations.ufl.edu/evals>. Evaluations are typically open during the last two or three weeks of the semester, but students will be given specific times when they are open. Summary results of these assessments are available to students at <https://evaluations.ufl.edu/results/>.

### ***University Honesty Policy***

UF students are bound by The Honor Pledge which states, "We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honor and integrity by abiding by the Honor Code. On all work submitted for credit by students at the University of Florida, the following pledge is either required or implied: "On my honor, I have neither given nor received unauthorized aid in doing this assignment." The Honor Code (<https://www.dso.ufl.edu/sccr/process/student-conduct-honor-code/>) specifies a number of behaviors that are in violation of this code and the possible sanctions. Furthermore, you are obligated to report any condition that facilitates academic misconduct to appropriate personnel. If you have any questions or concerns, please consult with the instructor or TAs in this class.

### **Software Use**

All faculty, staff, and students of the University are required and expected to obey the laws and legal agreements governing software use. Failure to do so can lead to monetary damages and/or criminal penalties for the individual violator. Because such violations are also against University policies and rules, disciplinary action will be taken as appropriate. We, the members of the University of Florida community, pledge to uphold ourselves and our peers to the highest standards of honesty and integrity.

### **Student Privacy**

There are federal laws protecting your privacy with regards to grades earned in courses and on individual assignments. For more information please see:

<http://registrar.ufl.edu/catalog0910/policies/regulationferpa.html>

### **Campus Resources:**

#### Health and Wellness

##### **U Matter, We Care:**

If you or a friend is in distress, please contact [umatter@ufl.edu](mailto:umatter@ufl.edu) or 352 392-1575 so that a team member can reach out to the student.

**Counseling and Wellness Center:** <http://www.counseling.ufl.edu/cwc>, and 392-1575; and the University Police Department: 392-1111 or 9-1-1 for emergencies.

##### **Sexual Assault Recovery Services (SARS)**

Student Health Care Center, 392-1161.

**University Police Department** at 392-1111 (or 9-1-1 for emergencies), or <http://www.police.ufl.edu/>.

#### Academic Resources

**E-learning technical support**, 352-392-4357 (select option 2) or e-mail to [Learning-support@ufl.edu](mailto:Learning-support@ufl.edu).  
<https://lss.at.ufl.edu/help.shtml>.

**Career Resource Center**, Reitz Union, 392-1601. Career assistance and counseling. <https://www.crc.ufl.edu/>.

**Library Support**, <http://cms.uflib.ufl.edu/ask>. Various ways to receive assistance with respect to using the libraries or finding resources.

**Teaching Center**, Broward Hall, 392-2010 or 392-6420. General study skills and tutoring.  
<https://teachingcenter.ufl.edu/>.

**Writing Studio**, 302 Tigert Hall, 846-1138. Help brainstorming, formatting, and writing papers.  
<https://writing.ufl.edu/writing-studio/>.

**Student Complaints Campus:** [https://www.dso.ufl.edu/documents/UF\\_Complaints\\_policy.pdf](https://www.dso.ufl.edu/documents/UF_Complaints_policy.pdf).

**On-Line Students Complaints:** <http://www.distance.ufl.edu/student-complaint-process>.