

Stevens Institute of Technology WebCampus.Stevens

Syllabus

Course Number: 645

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Overview

- This course provides students with a disciplined approach for identifying opportunities to influence the design of a system from a reliability, maintainability, and supportability perspective.
- > Students will be introduced to the relevant concepts to understand the scope of the important parameters, and their relationship.
- ➤ There will be an emphasis on the mathematical descriptions of these parameters and their relationships.
- The course will also address specific methods, tools, and practices for influencing the design of complex systems for enhanced reliability, maintainability, and supportability.
- > The intent is provide a discussion in the context of the systems engineering process, and to highlight the integration of reliability, maintainability, and supportability parameters into the overall systems engineering effort.

Learning Goals

After taking this course, the student will be able to understand and utilize the systems' impact of reliability, maintainability and supportability.

The course combines lectures and readings to understand the "why" and "how" of influencing system designs and architectures from a reliability, maintainability, and supportability perspective. Particular focus is also given to software intensive systems.

Pedagogy

The course will employ readings, lectures, discussions, individual assignments and an individual term paper.

Required Text(s)

Students need the following textbook for this course:

Maintainability: A Key to Effective Serviceability and Maintenance Management

by Benjamin S. Blanchard, Dinesh Verma, Elmer L. Peterson

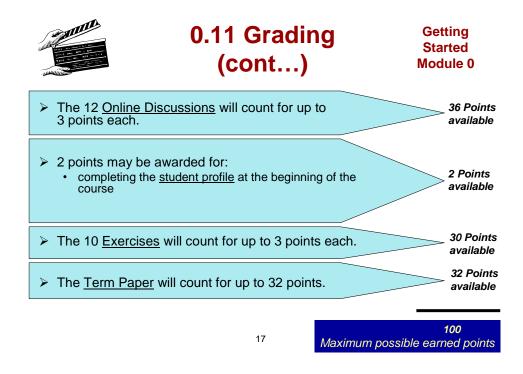
Required Readings

Readings will be assigned for each week. These will be found on the course website.

Assignments

Weekly individual assignments may include the following:

- Specified reading
- On-line discussion
- Exercise
- Term Paper (due at end of class)



Please note that assignments in this class may be submitted to <u>www.turnitin.com</u>, a web-based anti-plagiarism system, for an evaluation of their originality.

Course Schedule

Week	Subject	Assignment Due
1	•Introduction	Textbook reading, Additional reading
'	Concepts and Definitions	2. Read Notes for week
	•What is R, M&S	3. complete the student profile
2	•Early Influence –	Textbook reading, Additional reading
_		2. Read Notes for week
	rtoquiromonto una / tronitooturo	3. Complete Exercise for week
		Participate in discussion for week
	•System RM&S Requirements	·
3	System Reliability Concepts	Textbook reading, Additional reading
		Read Notes for week
		Complete Exercise for week
		Participate in discussion for week
4	System Reliability Evaluation	Textbook reading, Additional reading
		2. Read Notes for week
		3. Complete Exercise for week
<u> </u>	System Delighility Managers	Participate in discussion for week
5	System Reliability Measures	Textbook reading, Additional reading Read Notes for week
		Read Notes for week Complete Exercise for week
		Participate in discussion for week
6	System Reliability Management	Textbook reading, Additional reading
	eyetem rendemly management	2. Read Notes for week
		Complete Exercise for week
		Participate in discussion for week
7	Complex System Reliability	Textbook reading, Additional reading
		2. Read Notes for week
		3. Complete Exercise for week
		Participate in discussion for week
8	System Reliability Design	Textbook reading, Additional reading
	Methods	Read Notes for week Complete Exercise for week
		Participate in discussion for week
9	Design for System	Textbook reading, Additional reading
9	Maintainability	2. Read Notes for week
	···· ·· · · · ·	3. Complete Exercise for week
		Participate in discussion for week
L_		5. Draft Term Paper Topic
10	System Maintainability	Textbook reading, Additional reading
	Measures	2. Read Notes for week
		3. Complete Exercise for week
<u></u>		4. Participate in discussion for week
11	Design for System	Textbook reading, Additional reading Read Notes for week
	Supportability	Read Notes for week Complete Exercise or week
		Complete Exercise of week Participate in discussion for week
		5. Term paper Topic approval
12	Design for System RM&S for	Textbook reading, Additional reading
12	Software Intensive Systems	2. Read Notes for week
		3. Continue Term Paper
		Participate in discussion for week
13	Commercial Off the Shelf	Textbook reading, Additional reading
	(COTS) and Technology	2. Read Notes for week
	Refreshment	3. Submit Term Paper
		4. Participate in discussion for week
	Causas Basias	5. Complete Course Evaluation
	Course Review	