

COURSE NUMBER: IE 5113, 4 credits	COURSE TITLE: Systems Engineering II
TERMS OFFERED: Spring	PREREQUISITES: 5111, a course on basic probability, IT upper division or graduate student
TEXTBOOKS/REQUIRED MATERIAL: Blanchard, B.S., Fabrycky, W.J. (2005), <i>Systems Engineering and Analysis</i> , Fourth Edition, ISBN #0131869779, Prentice Hall Dorner, Dietrich (1996) <i>Logic of Failure: Why Things Go Wrong and What We Can Do to Make Them Right</i> . ISBN #0201479486, Perseus Publishing.	PREPARED BY: Saif Benjaafar DATE OF PREPARATION: May 23, 2007
COURSE LEADER(S): Robert Monson, Ph.D. Lockheed Martin Adjunct Professor	CLASS/LABORATORY SCHEDULE: 3 hour lecture once per week CONTRIBUTION OF COURSE TO MEETING PROFESSIONAL OBJECTIVES: 100 % Engineering Topics
CATALOG DESCRIPTION: Systems engineering thinking/techniques presented in 5111. Hands-on techniques applied to specific problems. Topics pertinent to effectiveness of design process. Practices and organizational/reward structure to support collaborative, globally distributed design team.	COURSE TOPICS: 1. Systems Overview 2. Enterprise Architecture 3. DODAF 4. Modeling and Simulation 5. Logic of Failure 6. Human Factors

COURSE OBJECTIVES	This class considers the engineering of both natural and human-made systems as well as the analysis of those systems. The principal focus of the course is development of complex systems, with emphasis on simulation, modeling, and the human factors of systems engineering. The course will convey to students the essential elements of systems engineering; including systems thinking, systems analysis, simulation and modeling, project management, human factors and social factors in engineering management. This course is ideal for any student seeking to expand their current project development skills to enable them to effectively execute large and complex programs, or simply to manage current projects with a systems view perspective.
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COURSE OUTCOMES	<p>(Letters shown in brackets are linked to program outcomes a-k)</p> <ol style="list-style-type: none"> 1. Understand systems thinking [c, d, h, k] 2. Define and formulate the underlying requirements of a project [c, e, g] 3. Plan and document a project or program, including (1) performance specification, (2) project schedule, and (3) project budget [c, d, f, g] 4. Understand systems simulation and modeling [a, b, c, e, k] 5. Understand enterprise architecture and DODAF [c, e] 6. Understand human factors in systems engineering [b, c, f, h, j] 7. Recognizing failure modes and effects [a, c, e] 								
ASSESSMENT TOOLS:	<table border="0"> <tr> <td>1) Exam - Midterm</td> <td>20%</td> </tr> <tr> <td>2) Term Paper</td> <td>30%</td> </tr> <tr> <td>3) Exam - Final</td> <td>30%</td> </tr> <tr> <td>4) Class Participation</td> <td>20%</td> </tr> </table>	1) Exam - Midterm	20%	2) Term Paper	30%	3) Exam - Final	30%	4) Class Participation	20%
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Nature of Changes

This is an entirely new document, no previous versions exist.