

SYSE 591 Introduction to Systems Approach/Engineering

1. Basic Information:

- a. Course Number: SYSE 591
- b. Course Title: Introduction to Systems Approach/Engineering
- c. Credit Hours: 4
- d. Instructor: William "Ike" Eisenhauer, M.Eng. Sys. Eng., BS Mech. Eng.
- e. Class Location: Online
- f. Class Hours: Online – New "Week" begins on Mondays
- g. Text:

{ Required }
Systems Engineering: Principles and Practice
[Kossiakoff and Sweet]
ISBN 9780471234432

{ Required }
NASA Systems Engineering Handbook
[NASA]
Available in Course at no cost as a PDF

- h. Office Hours: By appointment
- i. Phone: 503-422-6022
- j. Email address: wde@pdx.edu or through BlackBoard
- k. Mailbox: CECS Dean's Office, Engineering Building Suite 500
- l. Final Exam: Online BlackBoard Exam – Self Schedule During Exam Week

2. Course Description

- a. This course provides the beginning knowledge and skills necessary to engineer complex, multi-disciplinary systems. It serves as a cornerstone course for the Systems Engineering program.
- b. The student will gain interdisciplinary knowledge and skills necessary to:
 - i. Define the system life cycle and the particulars of stakeholder involvement
 - ii. Cover critical tools and methods for implementing Systems Engineering
 - iii. Explain the various structure and tasks of the Systems Engineering process

3. Specific Goals and Objectives:

Upon completion of this course, each student should be able to:

- a. Understand systems engineering as an interdisciplinary process.
- b. Demonstrate the value of systems concepts in the development of products, processes, and services.
- c. Access case studies, templates, and checklists that support the systems engineering approach.

4. Logistics:

Success in this course will require:

- a. Reading and completing weekly assessments by the assigned date
- b. Posting assignment results on, or before, the assigned date
- c. Successful completion of Mid-Term and Final Examinations
- d. Active participation in online discussions in the forums

5. Metrics for Student Progress

- a. Total of 600 points
 - i. Written Assignments [9] (360 points total)
 - ii. Weekly Discussion Participation [9] (45 points total)
 - iii. Mid-Term Exam (75 points)
 - iv. Final Exam (120 points)
- b. Grades will be assigned as follows (this is the minimum guaranteed distribution, the instructor reserves the right to adjust the lower thresholds as needed to ensure adequate representation of effort)
 - i. 600-540 : A
 - ii. 539-510 : A-
 - iii. 509-480 : B+
 - iv. 479-450 : B
 - v. 449-420 : B-
 - vi. 419-390 : C
 - vii. 389-000 : F
- c. **Assignments are due at 8AM PST the next Monday!!!**
 - i. ***There is a 5 point penalty per day late***
 - ii. **Please notify me in advance of due date if travel or family issues preclude turn in on time to make arrangements**

6. Tentative Fall 2008 Week Plan [Assignments Due by 8AM PST Monday]

- a. Week 1 [Sep 28 – Oct 4]: Introduction to Systems Engineering
- b. Week 2: [Oct 5 – Oct 11]: Functional and Information Modeling
- c. Week 3: [Oct 12 – Oct 18]: Systems Thinking Tools
- d. Week 4: [Oct 19 – Oct 25]: Systems Design Requirements
- e. Week 5: [Oct 26 – Nov 1]: Systems Life Cycle Models
- f. Week 6: [Nov 2 – Nov 8]: Mid Term
- g. Week 7: [Nov 9 – Nov 15]: Systems Development Phases
- h. Week 8: [Nov 16 – Nov 22]: Systems Engineering Documents
- i. Week 9: [Nov 23 – Nov 29]: Formulation of Issues and Constraints
- j. Week 10: [Nov 30 – Dec 6]: Design and Evaluation of Systems Models
- k. Week 11: [Dec 7 – Dec 11] Finals Week. **Final must be in by 11PM PST 12/11**

7. H1N1 [“Swine Flu”] Protocol [Fall Term 2009]

- a. PSU's guidance regarding addressing student absenteeism in the face of a potential outbreak of H1N1 flu this year will be followed in this class as follows:
 - i. Please inform, or have a representative inform, the instructor as soon as possible if you are incapacitated and unable to participate / submit work in the course due to a flu infection
 - ii. Refrain from coming on campus or meeting in person with fellow students after a confirmed infection for at least 7 days after symptoms subside
 - iii. Late submission penalties will be waived, if appropriate notice is given
 - iv. If you have any further questions or need clarification on this issue, please ask the instructor directly