IE 444-01E – Systems Engineering

COURSE SYLLABUS: Spring 2026

INSTRUCTOR INFORMATION

Instructor:	Jeremy Jenkins
Office Location:	AG/ET 209
Office Hours:	Monday-Wednesday 12pm-3pm
Extra online office hours	Tuesday 2-4
Office Phone:	469-359-1830
University Email Address:	jeremy.jenkins@etamu.edu
Preferred Form of Communication:	Email
Communication Response Time:	48 hours
Course Times:	MW 3:15pm-4:30pm
Course Classroom:	AG/ET 211

COURSE INFORMATION

Textbook Required:

Textbook Required: Blanchard, B. S., and Fabrycky, W. J. (2006). *Systems Engineering and Analysis* (5th Ed). Pearson Prentice Hall: Upper Saddle River, NJ. [ISBN 978-0-13-221735-4] Instructor will provide lecture slides/ handouts as references too.

Software Required:
Microsoft Office (Word, Excel, and Powerpoint)

Course Description

A study of the systems acquisition life cycle, alternatives and models in decision making, trade off analyses, models for economic evaluation, control concepts and methods, and design for reliability. The emphasis of this course is on the process of bringing systems into being, beginning with the identification of a need and extending through requirements, determination, functional analysis and operation and decision support techniques. Additional emphasis is placed on the improvement of systems now in existence. An iterative process of analysis, evaluation, feedback, and modification will

be emphasized to show how most systems in existence can be improved in their effectiveness. Co-Requisite: IE 495 Industrial Systems Design.

Student Learning Outcomes

After completing this course:

1. Command of systems engineering terminology as it applies to the design, operation, and support of modern technological systems including critical analysis by applying tools and methodologies to systems engineering problems.
2. Analyze alternatives models in decision making to evaluate alternatives for improving systems designed for human and non-human use.
3. Analyzing models for economic evaluation to assist development teams in developing cost- effective engineering solutions.
4. Learn and analyze control concepts and methods .
5. Analyze and direct system reliability efforts.

COURSE REQUIREMENTS

Minimal Technical Skills Needed

1. A scientific calculator for exams.
2. Microsoft Word, Excel, PowerPoint.
3. Excel Solver
4. LINGO

Instructional Methods

This course utilizes lectures, assignments to assist students in achieving the course learning outcomes.

Student Responsibilities or Tips for Success in the Course

Students should attend the lectures and deliver the assignment in a timely manner.
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GRADING

Final grades in this course will be based on the following scale:

A = 90%-100%
B = 80%-89%
C = 70%-79%
D = 60%-69%
F = 59% or Below

Weights of the assessments in the calculation of the final letter grade.
Grading rubric

Exam 1:	30%
Exam 2:	30%
Quizzes & Homework:	10%
Term project:	30%
TOTAL	100%

Assessments

This course utilizes lectures and assignments to assist students in achieving the course learning outcomes. The assessment criteria for the stated student learning outcomes will include a term project, assignments, and exams.

COURSE AND UNIVERSITY PROCEDURES/POLICIES

Course Specific Procedures/Policies

One day late assignment is accepted with a 15% grade deduction; after this, no assignment will be accepted.
Assignments and labs will be given to support the instructional material (homework assignment). Students will have an ability to use the techniques, skills, and modern engineering tools necessary for engineering practice. Students will have an ability to communicate effectively.

There will be three exams. Students will apply statistics to solve applied engineering problems. Exams will be used to assess a student's knowledge and skills related to applied statistics concepts.

The student project is devised to make students utilize their knowledge to solve real world problems. The types of projects will be left up to the student teams. The final report should be comprehensive, should describe methods used, and should show and illustrate the improvements and the final solution. A detail written procedure will be provided at the time of team member formation.

Syllabus Change Policy

The syllabus is a guide. Circumstances and events, such as student progress, may make it necessary for the instructor to modify the syllabus during the semester. Any changes made to the syllabus will be announced in advance.

COURSE OUTLINE / CALENDAR

Week	Date	Topic	Source
1	1/12	Introduction to Systems Engineering	Ch.1
	1/14	Bringing Systems into Being	Ch.2
2	1/19	Conceptual System Design	Ch.3
	1/21	conceptual Questions W/ Answers	Ch.4
3	1/26	Alternatives and Models in Decision Making	Ch.7
	1/28	Alternatives and Models in Decision Making	Ch.7
4	2/2	Project First Check	
	2/4	Models for Economic Evaluation	Ch.8
5	2/9	Models for Economic Evaluation	Ch.8
	2/11	Ethics/ Professional Responsibilities	
6	2/16	Ethics Case Study	
	2/18	Exam Review	
7	2/23	**Exam 1**	**Exam 1**
	2/25	Post-Exam Review	
8	3/2	Engineering Economy	Ch. 11
	3/4	Engineering Economy	Ch. 11
9	3/9	**Spring break**	
	3/11	**Spring break**	
10	3/16	Control Concepts and Method	
	3/18	Control Concepts and Method	
11	3/23	Design for Reliability	
	3/25	Design for Reliability	
12	3/30	Design for Reliability	
	4/1	Project Second Check	
13	4/6	Quiz 1	
	4/8	Quiz Review	
14	4/13	Exam review	
	4/15	**Exam 2**	
15	4/20	Project Review	
	4/22	Term Project meeting	
16	4/27	Term Project Presentation	
	4/29	Term Project Presentation	
17	Final week	**Final Project Final Report**	

The *syllabus/schedule are subject to change.*

TECHNOLOGY REQUIREMENTS

LMS

All course sections offered by East Texas A&M University have a corresponding course shell in the myLeo Online Learning Management System (LMS). Below are technical requirements

LMS Requirements:
https://community.brightspace.com/s/article/Brightspace-Platform-Requirements

LMS Browser Support:
https://documentation.brightspace.com/EN/brightspace/requirements/all/browser_support.htm

Zoom Video Conferencing Tool
https://inside.tamuc.edu/campuslife/CampusServices/CITESupportCenter/Zoom_Account.aspx?source=universalmenu

STUDENT RESPONSIBILITIES FOR COURSE

CWID and Password

You will need your campus-wide ID (CWID) and password to log into the course. If you do not know your CWID or have forgotten your password, contact the Center for IT Excellence (CITE) at 903.468.6000 or helpdesk@etamu.edu.

Technology-Related Issues

Personal computer and internet connection problems do not excuse the requirement to complete all course work in a timely and satisfactory manner. Each student needs to have a backup method to deal with these inevitable problems. These methods might include the availability of a backup PC at home or work, the temporary use of a computer at a friend's home, the local library, office service companies, Starbucks, a ETAMU campus open computer lab, etc.

TECHNOLOGY REQUIREMENTS AND SUPPORT

Minimal Technical Skills Needed

Students will need reliable computer and internet access for this course. Students must be able to effectively use myLeo email, myLeo Online D2L, and Microsoft Office.

Learning Management System (LMS) – D2L

All course sections offered by East Texas A&M University have a corresponding course shell in the myLeo Online Learning Management System (LMS). Below are the technical requirements:

- View the Learning Management System Requirements Webpage.
- Learn more on the LMS Browser Support Webpage.

Technical Support

If you are having technical difficulty with any part of Brightspace, please contact Brightspace Technical Support at 1-877-325-7778. Other support options can be found on the Brightspace Support Webpage.

COMMUNICATION AND SUPPORT

Interaction with Instructor Statement

If you have any questions or are having difficulties with the course material, please contact your instructor. Correspondence will always be through university email (your "myLeo" mail) and announcements in myLeo online (D2L). You will not RECEIVE email through D2L, so be sure to check your ETAMU email for communication. Students are encouraged to check university email daily.

Include the Following in Emails with Instructor:

- Course name and subject in the subject line
- Salutation (Good afternoon, Dr. Jackson)
- Proper email etiquette (no "text" emails – use proper grammar and punctuation)
- Student name and CWID after the body of the email (possibly add to student signature on email)

COURSE AND UNIVERSITY PROCEDURES/POLICIES

Syllabus Change Policy

The *syllabus/schedule are subject to change.*

The syllabus is a guide. Circumstances and events, such as student progress, may make it necessary for the instructor to modify the syllabus during the semester. Any changes made to the syllabus will be announced in advance.

Student Conduct

All students enrolled at the University shall follow the tenets of common decency and acceptable behavior conducive to a positive learning environment. The Code of Student Conduct is described in detail online in the Student Guidebook.

Students should also consult the Rules of Netiquette Webpage for more information regarding how to interact with students in an online forum.

ETAMU Attendance

For more information about the attendance policy, please view the Attendance Webpage and the Class Attendance Policy

Academic Integrity

Students at East Texas A&M University are expected to maintain high standards of integrity and honesty in all their scholastic work. For more details and the definition of academic dishonesty see the following procedures:

Undergraduate Academic Dishonesty University Procedure 13.99.99.R0.03

Undergraduate Student Academic Dishonesty Form

Graduate Student Academic Dishonesty University Procedure 13.99.99.R0.10

Graduate Student Academic Dishonesty Form

Use of Artificial Intelligence

East Texas A&M University acknowledges that there are legitimate uses of Artificial Intelligence, ChatBots, or other software that has the capacity to generate text, or suggest replacements for text beyond individual words, as determined by the instructor of the course.

Any use of such software must be documented. Any undocumented use of such software constitutes an instance of academic dishonesty (plagiarism).

Individual instructors may disallow entirely the use of such software for individual assignments or for the entire course. Students should be aware of such requirements and follow their instructors' guidelines. If no instructions are provided the student should assume that the use of such software is disallowed.

In any case, students are fully responsible for the content of any assignment they submit, regardless of whether they used an AI, in any way. This specifically includes cases in which the AI plagiarized another text or misrepresented sources

Students with Disabilities-- ADA Statement

The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you have a disability requiring an accommodation, please contact:

Office of Student Disability Resources and Services

East Texas A&M University

Velma K. Waters Library Rm 162

Phone (903) 886-5150 or (903) 886-5835

Fax (903) 468-8148

Email: studentdisabilityservices@etamu.edu

Website: Office of Student Disability Services

Nondiscrimination Notice

East Texas A&M University will comply in the classroom, and in online courses, with all federal and state laws prohibiting discrimination and related retaliation on the basis of race, color, religion, sex, national origin, disability, age, genetic information, or veteran status. Further, an environment free from discrimination on the basis of sexual orientation, gender identity, or gender expression will be maintained.

Campus Concealed Carry Statement

Texas Senate Bill - 11 (Government Code 411.2031, et al.) authorizes the carrying of a concealed handgun in East Texas A&M University buildings only by persons who have been issued and are in possession of a Texas License to Carry a Handgun. Qualified law enforcement officers or those who are otherwise authorized to carry a concealed handgun in the State of Texas are also permitted to do so. Pursuant to Penal Code (PC) 46.035 and ETAMU Rule 34.06.02.R1, license holders may not carry a concealed handgun in restricted locations.

For a list of locations, please refer to the Carrying Concealed Handguns On Campus document and/or consult your event organizer.

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Pursuant to PC 46.035, the open carrying of handguns is prohibited on all East Texas A&M University campuses. Report violations to the University Police Department at 903-886-5868 or 9-1-1.

East Texas A&M Supports Students' Mental Health – Counseling Services

The Counseling Center at East Texas A&M University, located in the Halladay Building, Room 203, offers counseling services, educational programming, and connection to community resources for students. Students have 24/7 access to the Counseling Center's crisis assessment services by calling 903-886-5145. For more information regarding Counseling Center events and confidential services, please visit https://www.etamu.edu/counseling-center/

Mental Health and Well-Being

The university aims to provide students with essential knowledge and tools to understand and support mental health. As part of our commitment to your well-being, we offer access to Telus Health, a service available 24/7/365 via chat, phone, or webinar. Scan the QR code to download the app and explore the resources available to you for guidance and support whenever you need it.