

The Counseling Center at East Texas A&M, 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 www.tamuc.edu/counsel



IE 312 INDUSTRIAL OPERATIONS RESEARCH

COURSE SYLLABUS: FALL 2025

MW 2:30-3:45PM, AGIT211

INSTRUCTOR INFORMATION

Instructor: Burchan Aydin, Ph.D.

Office Location: AG/IT 213-D (*Engineering and Technology Building 2nd floor*)

Office Hours: Tuesday and Thursday 9:00 a.m. to 11:30 a.m.

Office Phone: 903-886-5174

Office Fax: 903-886-5690

University Email Address: burchan.aydin@tamuc.edu

Preferred Form of Communication: e-mail

Communication Response Time: within few hours

COURSE INFORMATION

Meets 8/26/2024 through 12/13/2024

Mon, Wed 2:30p-3:45p

Room: AGIT: 211 (Dept. of Engineering and Technology, 2nd Floor)

Materials – Textbooks, Readings, Supplementary Readings

Textbook(s) Required: No textbook required. Instructor will provide handouts as needed.

Software Required

- Lingo.
- Microsoft Word, Excel, and PowerPoint.

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Course Description

This course focuses on the application of linear programming techniques. Most of the mathematic models presented in the course are normal prescriptive or optimization applications. The course includes discussions of the Simplex method, sensitivity analysis, duality and post optimal analysis.

Prerequisites: Math 2318 (or equivalent) with a minimum grade of C.

Student Learning Outcomes

Upon completion of this course, the student will be able to:

- SLO #1: Formulate linear optimization models from real-world engineering or managerial decision problems using appropriate variables, objective functions, and constraints.
- SLO #2: Solve linear optimization problems using the Simplex method by performing tableau iterations and interpreting final solutions.
- SLO #3: Conduct sensitivity analysis by interpreting changes in objective function coefficients and right-hand side values using final simplex tableau or software output.
- SLO #4: Construct and interpret the dual of a given linear programming problem, including identification of dual variables, constraints, and economic meaning.

COURSE REQUIREMENTS

Assessments

This is a face-to-face class. The 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 project, assignments, and exams.

There will be three exams. Students will apply theory and mathematical principles to solve applied engineering problems. Exams will be used to assess a student's knowledge and skills related to operations research 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.

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Grading

Point Distribution

Quiz	15%	Grading Scale: 90% ≤ A ≤ 100% 80% ≤ B < 90% 70% ≤ C < 80% 60% ≤ D < 70% F < 60%
Project	20%	
Exam 1	20%	
Exam 2	20%	
Final Exam	20%	
Class Attendance	5%	
Total	100%	

- ✓ Late work will not be accepted and a grade of "0" will be assigned, unless prior arrangements are worked out with the instructor. Late penalties will be assessed to any prior-arranged approved late work, 20% off per day.
- ✓ A make-up exam/quiz is allowed only if the student informs the instructor before the exam due date and provides a doctor's note with an acceptable health excuse. Family emergencies are usually not accepted as a reason for make-up exams.
- ✓ Attendance is mandatory. The instructor takes attendance for every class.
- ✓ Participation and attendance: No point deduction up to 2 absences. Any absence above 2, will cause deductions in this grade category. Repeated lateness to the class sessions also causes deductions.
- ✓ Any student who has more than 7 unexcused absences, will receive an "F" from this course. Instructor records attendance for each class session.

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

YouSeeU Virtual Classroom Requirements:

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<https://support.youseeu.com/hc/en-us/articles/115007031107-Basic-System-Requirements>

ACCESS AND NAVIGATION

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@tamuc.edu.

Note: 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 TAMUC campus open computer lab, etc.

COMMUNICATION AND SUPPORT

If you have any questions or are having difficulties with the course material, please contact your Instructor.

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 here:

<https://community.brightspace.com/support/s/contactsupport>

Interaction with Instructor Statement

You can ask questions any time before, during, and after lectures or office hours face to face. You can also send an e-mail. Please expect an answer within few hours for e-mails.

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COURSE AND UNIVERSITY PROCEDURES/POLICIES

Course Specific Procedures/Policies

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- ✓ A make-up exam/quiz is allowed only if the student informs the instructor before the exam due date and provides a doctor's note with an acceptable health excuse. Family emergencies are not accepted as a reason for make-up exams.
- ✓ Attendance is mandatory. The instructor takes attendance for every class.

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.

University Specific Procedures

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 in the [Student Guidebook](http://www.tamuc.edu/Admissions/oneStopShop/undergraduateAdmissions/studentGuidebook.aspx).
<http://www.tamuc.edu/Admissions/oneStopShop/undergraduateAdmissions/studentGuidebook.aspx>

Students should also consult the Rules of Netiquette for more information regarding how to interact with students in an online forum: [Netiquette](http://www.albion.com/netiquette/corerules.html)
<http://www.albion.com/netiquette/corerules.html>

TAMUC Attendance

For more information about the attendance policy please visit the [Attendance](http://www.tamuc.edu/admissions/registrar/generalInformation/attendance.aspx) webpage and [Procedure 13.99.99.R0.01](http://www.tamuc.edu/admissions/registrar/generalInformation/attendance.aspx).

<http://www.tamuc.edu/admissions/registrar/generalInformation/attendance.aspx>

<http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/13students/academic/13.99.99.R0.01.pdf>

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Academic Integrity

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

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.

[Undergraduate Academic Dishonesty 13.99.99.R0.03](#)

<http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/13students/undergraduates/13.99.99.R0.03UndergraduateAcademicDishonesty.pdf>

[Graduate Student Academic Dishonesty 13.99.99.R0.10](#)

<http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/13students/graduate/13.99.99.R0.10GraduateStudentAcademicDishonesty.pdf>

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

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Fax (903) 468-8148

Email: studentdisabilityservices@tamuc.edu

Website: [Office of Student Disability Resources and Services](#)

<http://www.tamuc.edu/campusLife/campusServices/studentDisabilityResourcesAndServices/>

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 East Texas A&M University 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.

Web url:

<http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/34SafetyOfEmployeesAndStudents/34.06.02.R1.pdf>

Pursuant to PC 46.035, the open carrying of handguns is prohibited on 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 University Supports Students' Mental Health

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COURSE OUTLINE / CALENDAR

Week #	Week's starting day	Topic	Assessments Specific dates will be announced at least a week in advance
1	Aug 25	<ul style="list-style-type: none"> Introduction to Operations Research 	
2	Sep 2	<ul style="list-style-type: none"> Linear Programming 	
3	Sep 8	<ul style="list-style-type: none"> Linear Programming 	
4	Sep 15	<ul style="list-style-type: none"> Linear Programming 	Quiz 1
5	Sep 22	<ul style="list-style-type: none"> Simplex Method 	
6	Sep 29	<ul style="list-style-type: none"> Simplex Method 	Quiz 2
7	Oct 6	<ul style="list-style-type: none"> Simplex Method 	
8	Oct 13	<ul style="list-style-type: none"> Simplex Method 	Exam 1
9	Oct 20	<ul style="list-style-type: none"> Duality and Post-optimal Analysis 	
10	Oct 27	<ul style="list-style-type: none"> Duality and Post-optimal Analysis 	
11	Nov 3	<ul style="list-style-type: none"> Duality and Post-optimal Analysis 	Quiz 3
12	Nov 10	<ul style="list-style-type: none"> Duality and Post-optimal Analysis 	Exam 2
13	Nov 17	<ul style="list-style-type: none"> Project Execution 	
14	Nov 24	<ul style="list-style-type: none"> Project Execution Thanksgiving Week 	
15	Dec 1	<ul style="list-style-type: none"> Project Execution 	Project submission and Presentations
16	Dec 6	Final Exam Week	Final Exam

* Instructor reserves the right to change the schedule/material as appropriate to course productivity.

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