



# IE 471– Plan for Industrial Systems Design I

COURSE SYLLABUS: FALL 2024

## INSTRUCTOR INFORMATION

Instructor:	Sasan Khorasani
Office Location:	AG/ET 219
Office Hours:	Monday-Wednesday 12:15-13,14:15-15:30
Extra online office hours	Tuesday 13-14
Office Phone:	9034688115
Office Fax:	9038865960
University Email Address:	sasan.khorasani@tamuc.edu
Preferred Form of Communication:	Email
Communication Response Time:	48 hours
Course Times:	MWF 10am-10:50am

## COURSE DESCRIPTION

This course is a precursor for [IE 495](#). Each student will enroll the following spring in [IE 495](#) and as member of a student team. The objective of the course is for each team to prepare a proposal (technical and management sections) to outline the approach and methodology that the team plans to follow in working with industry sponsors on real-world industrial engineering process improvement activities. The proposed improvement activity will be the systems design project planned for the following spring semester in [IE 495](#) Industrial Systems Design. The proposal prepared during this class is intended to present: the background for the problem, statement and description of the problem, the approach, the methodology and analytical support of the team's plans for the execution of the project. Prerequisites: [IE 313](#) with a minimum grade of C, Senior Classification, IE Majors only, Course must be scheduled in the fall semester prior to the student's [IE 495](#) enrollment in the final spring semester and Instructor's consent.

### Required:

The Team Handbook, 3rd Peter R. Scholtes, Brian L. Joiner, Barbara Streibel, Oriel Incorporated ISBN 1-884731-266-0 February 2003

### COURSE REFERENCE TEXT/MATERIALS

FACILITIES PLANNING 3RD Edition, Tompkins et al, John Wiley, ISBN 0-471-41389-5

*The syllabus/schedule are subject to change.*

## **Student Learning Outcomes**

After completing this course:

Upon satisfactory completion of the course, the student as an industrial system designer will:

1. Recognize the need for and ability to engage in lifelong learning.
2. Demonstrate the role of teaming in an engineering environment.
3. Apply the engineering design process and application of quantitative tools as a foundation for demonstrating the proposed approach is a valid approach for the team's industrial design project.
4. Be able to define the physical requirements for the proposed design project.
5. Be able to relate system design requirements to specific work structure activity and prepare a schedule of the proposed personnel requirements in the approach.
6. Develop an overview of principles of system operations.
7. Be able to propose a model system design requirements for project process.
8. Be able to relate the proposed model components to implemental system level components.
9. Be able to layout, prepare and present the proposed system operations in a presentation with visual aids describing the system, final project proposal, highlighting the proposed system solution implementation.

## **COURSE REQUIREMENTS**

### **Minimal Technical Skills Needed**

1. Microsoft Word, Excel, PowerPoint.

### **Instructional Methods**

This course is a pre cursor for IE 495 Industrial Systems Design. Each student will be pre-enrolled in the following spring IE 495 and a member of a student team. The objective of the course is for each team to develop a real-world industrial design project with an industry sponsor. Each IE 471 team prepares a proposal (technical and management sections) to outline the approach and methodology that the team plans to follow in working with industry sponsor on real-world industrial engineering process improvement activities. The proposed improvement activity will be the systems design project planned for the following spring semester IE 495 Industrial Systems Design. The proposal prepared during this class is intended to present: the background for the problem, statement and description of the problem, the approach, the methodology and analytical support of the team's plans for the execution of the project. The proposal will include a project network schedule with the project work breakdown structure (WBS) and program plan including a quantitative labor cost estimate per team members per WBS task. The proposal will include all project deliverables with due dates. The proposal will outline the project organization with roles and responsibilities of each team member. These roles

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and responsibilities will be designated as tasks within the overall team project. There will be two course deliverables for each team. These team-capacity deliverables are 1. Team's Project Proposal 2. Presentation of Proposal to client. In an individual capacity, each student will be expected to participate in the Team Dynamics, Life Learning, and Engineering Ethics learning experience components---Examinations or Assignments These team deliverables and the individual student achievements will be the components used for evaluation of the student grades for IE 471. The project subject is typical type of problems that an industrial engineer would encounter during their career. The project team approach is very similar to the approach problems are addressed industry. That is, each team member brings to the team their individual expertise or knowledge that is needed. Their individual contributions may include tasks areas outside their specialty, but these tasks are required to be completed by the team. In this course, the course professor/industrial sponsors will act in advisory roles. In this IE 471 course and the following IE495 course, the professor will not have the answers, but he is available for advice and assistance. This will be the situation in industry as well as---if the solutions to these projects are known, then industrial engineers would not be needed.

### **Student Responsibilities or Tips for Success in the Course**

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

### **GRADING**

The final course grade will be based on the following factors. Proposal for a Class Project: Students are expected to participate in the locating an industry sponsor and defining the requirements of the project. Then, the teams perform the analysis, concept, planning and the preparation efforts (including conceptualize, analysis to support the approach, planning, defining the resources for the project and writing/illustrating the proposal for the class project. Each student will be expected to participate in the proposal efforts. Each student will be assigned to a team for the project. Each team will be assigned an engineering problem. The team will be expected to submit a complete proposal for the team designated project.

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

Grading rubric

1. Overall Evaluation of Proposal 15%
2. Analysis to support the proposal approach to meeting the objectives 15%
3. Conceptual approach to the project 15%
4. Assignments and Examination (Teaming, Lifelong learning and Engineering Ethics) 30%
5. Individual student contribution to the team project (Professor, Industry Sponsors, other team members inputs) 25%

**Total 100%**

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## TECHNOLOGY REQUIREMENTS

### LMS

All course sections offered by Texas A&M University-Commerce 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](https://documentation.brightspace.com/EN/brightspace/requirements/all/browser_support.htm)

YouSeeU Virtual Classroom Requirements:

<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](mailto: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>

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## **Interaction with Instructor Statement**

The instructor will response to your questions on D2L tools within 24 hours. For urgent questions, and for questions that are not answered within 24 hours, please prefer e-mail correspondence.

## **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.

## **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>

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

<https://www.britannica.com/topic/netiquette>

### **TAMUC Attendance**

For more information about the attendance policy please visit the [Attendance](#) webpage and [Procedure 13.99.99.R0.01](#).

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

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

### **Academic Integrity**

Students at Texas A&M University-Commerce 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:

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

[Undergraduate Student Academic Dishonesty Form](#)

<http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/documents/13.99.99.R0.03UndergraduateStudentAcademicDishonestyForm.pdf>

[Graduate Student Academic Dishonesty Form](#)

<http://www.tamuc.edu/academics/graduateschool/faculty/GraduateStudentAcademicDishonestyFormold.pdf>

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

Texas A&M University-Commerce

Velma K. Waters Library Rm 162

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

Fax (903) 468-8148

Email: [studentdisabilityservices@tamuc.edu](mailto:studentdisabilityservices@tamuc.edu)

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

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

### **Nondiscrimination Notice**

Texas A&M University-Commerce 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 Texas A&M University-Commerce 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 A&M-Commerce 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 all A&M-Commerce campuses. Report violations to the University Police Department at 903-886-5868 or 9-1-1.

## **Department or Accrediting Agency Required Content**

### **COURSE OUTLINE / CALENDAR**

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## **COURSE MILESTONES SCHEDULE:**

Understanding an industrial engineering project (August 26-September 4,2024)

Team building, constructing the statement of interest (September 4-9,2024)

Plagiarism Assignment (September 19)

Instruction of a professional report (September 26,2024)

Lifelong Learning Assignments To be announced (TBA)

Team Dynamic Assignments To be announced (TBA)

Engineering Ethics Assignment To be announced (TBA)

Problem Statement NLT October 25, 2024

Project Proposal NLT December 2, 2024

Project Proposal Presentation to Client To be announced (TBA)