



IE 409-001 WORK DESIGN  
COURSE SYLLABUS: FALL 2020

## INSTRUCTOR INFORMATION

**Instructor:** Dr. Marty Yaqub, Ph.D., D.Eng., M.B.A.  
Department of Engineering & Technology

**Online Office Hours:**

T 1:00pm – 3:00pm  
Th 1:00pm – 3:00pm

**University Email Address:**  
marty.yaqub@tamuc.edu

## COURSE INFORMATION

### *Materials – Textbooks, Readings, Supplementary Readings*

#### *Textbook(s) Required*

Niebel's Methods, Standards, and Work Design (13th ed.). Freivalds, A. and Niebel, B. W. (2014).

#### *Optional Texts and/or Materials*

Introduction to Manufacturing Processes. Groover, M. P. (2012).

### *Course Description*

Advanced course emphasizing the analysis and design of job requirements, manufacturing push and pull arrangements, assembly line balancing, human-machine system design processes and principles which improve the human workplace. Students will research and create a system design project.

Prerequisites: IE 318.

### *Student Learning Outcomes*

After completing this course;

1. The student will be able to perform time study, work sampling, and workers' compensations

2. *The student will analyze manufacturing systems, its components, and the impact of engineering solutions.*
3. *Students will evaluate work safety systems*
4. *The student will have ability to design a system, component, or process to meet desired needs.*

## **COURSE REQUIREMENTS**

### **Instructional Methods and Activities 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 assignments, a term project, a research paper, a midterm exam, and a final exam.

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

### ***Grading:***

Exam-1	30%
Team Project	25%
Assignments	15%
Exam -2	30%

## **TECHNOLOGY REQUIREMENTS**

The following technologies will be required for this class.

- A scientific calculator for exams.
- Microsoft Word, Excel, PowerPoint.

### **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>

## **COURSE AND UNIVERSITY PROCEDURES/POLICIES**

### ***Course Specific Procedures/Policies***

1. One day late assignment is accepted with a 20% grade deduction; after this, no assignment will be accepted as the solutions will be posted online.
2. No make-up exams will be permitted unless official documentation is provided (e.g., death in the family, illness).
3. You will be expected to do all the readings throughout the semester.
4. There will be a group project.
5. There will be engineering ethics and professional responsibility case studies assignments.

### **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/registrar/documents/studentGuidebook.pdf>

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>

#### ***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

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

Graduate Student Academic Dishonesty 13.99.99. R0.10

*The syllabus/schedule are subject to change.*

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

## ***ADA Statement***

### **Students with Disabilities**

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

Gee Library, Room 162

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

Fax (903) 468-8148

[StudentDisabilityServices@tamuc.edu](mailto:StudentDisabilityServices@tamuc.edu)

### ***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. *The syllabus/schedule are subject to change.*

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.

## COURSE OUTLINE / CALENDAR

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Date	Week	Topic Assignment	Resources
24-Aug	Week-1	Introduction to Design of Work Systems	Lecture Notes Chapter 1
31-Aug	Week-2	Work Environmental Design	Lecture Notes Chapter 6
7-Sep	Week-3	Time Studies and Development of Time Standards Measuring Process Performance Rating & Allowances	Lecture Notes with Solved Examples Chapters 10,11
14-Sep	Week-4	Developing Standard Time	Lecture Notes with Solved Examples Chapters 12, 13
21-Sep	Week-5	Work Sampling Worker Compensation Systems <i>Assignment-1 September 24<sup>th</sup>, Due @ 11:59 pm</i>	Lecture Notes with Solved Examples Chapters 14,17
28-Sep	Week-6	<b>Exam-1. October 1<sup>st</sup>, 2020</b>	<b>Exam-1 will be available only on October 1<sup>st</sup>, 9:30 AM to 10:30 AM</b>
05-Oct	Week-7	Work Safety Systems	Lecture Notes, Chapter 8
12-Oct	Week-8	Pull and Push Manufacturing Systems Just in Time Kanban Manufacturing Methodology  Lean Manufacturing systems Methodology	Video Lecture Notes with Solved Examples Lecture Notes
19-Oct	Week-9	Assembly Line Balancing <i>Assignment-2 October 22<sup>nd</sup>, Due @ 11:59 pm</i>	Lecture Notes with Solved Examples Chapter 2
26-Oct	Week-10	Team Project Assignment & Guidelines <i>Assignment-3 October 29<sup>th</sup>, Due @ 11:59 pm</i>	Handout
02-Nov	WW-11	<b>Exam-2. November 5<sup>th</sup>, 2020</b>	<b>Exam-2 will be available only on November 5<sup>th</sup>, 9:30 AM to 10:30 AM</b>
09-Nov	Week-12	Team Project Execution	
16-Nov	Week-13	<b>Project Report Due, November 19<sup>th</sup>, @11:59 pm</b>	Final Version
07-Dec	Week-16	<b>Project Presentation. Due on December 8<sup>th</sup></b>	Final Version