

The Counseling Center at A&M-Commerce, 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](http://www.tamuc.edu/counsel)

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## **CONE 332 STRUCTURAL ANALYSIS AND DESIGN**

**COURSE SYLLABUS: SPRING 2024**

**TR 9:30 am-10:45 am - Location: AGIT118A**

### **INSTRUCTOR INFORMATION**

**Instructor:** Ayman Elzohairy, Assistant Professor

**Office Location:** Room 129

**Office Hours:** Tuesdays (1:30 PM – 4:00 pm) and Thursdays (1:30 pm – 4:00 pm) other times by appointment.

**Office Phone:** 903-468-8683

**Office Fax:** 903-886-5960

**Email Address:** Ayman.Elzohairy@tamuc.edu

**Preferred Form of Communication:** E-mail

**Communication Response Time:** Emails will be responded at the same day. Feel free to send an email at any time. Emails received during a weekend will be responded at the evening of the same day.

### **COURSE INFORMATION**

Materials – Textbooks, Readings, Supplementary Readings

**Textbook(s) Required:** “Optional”

“Structural Analysis”, R.C. Hibbeler, 9th Ed., Prentice Hall ISBN-10: 0133942848, ISBN-13: 978-0133942842

**Course Description:**

Functions of structure, design loads, reactions and force systems; analysis of statically determinate structures including beams, trusses and arches; Software analysis by RISA 2-D; energy methods of determining deflections of structures;

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influence lines and criteria for moving loads; analysis of statically indeterminate structures including continuous beams and frames. (Prerequisite: CONE 331).

### **Student Learning Outcomes:**

Upon successful completion of this course, students will be able to:

1. Understand and determine different types of loads considered in the design of structures.
2. How to use software RISA 2-D in structural analysis.
3. Construct and apply Influence Lines to Structural Analysis & Design.
4. Determine forces and deflections of structures.
5. Perform analysis on statically determinate structures.
6. Perform analysis on statically indeterminate structures.
7. Demonstrate the competency to utilize software in structural engineering.

## **COURSE REQUIREMENTS**

### **Minimal Technical Skills Needed:**

Using the learning management system, course website on D2L, and using Microsoft Word and PowerPoint.

### **Instructional Methods:**

This course is an enhanced course. This means course materials and lecture notes will be provided via a course website on the course website on D2L. All announcements will be posted on the course website as well. Assignments will be asked to be submitted in class or on the course website. Students' grades for assignments and exams will be indicated on the submitted papers if available and on the course website.

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

It is a student's responsibility to log in to the course website on D2L in a timely manner to read announcements, access necessary course materials, submit assignments and answer quiz questions whenever required. Students can set up their course website on D2L account such that they will receive notifications via emails and/or text messages from the course website on D2L when there are new updates on our course website. For more details about how to access the course website, read all the subsections of Section ACCESS AND NAVIGATION of this syllabus.

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## GRADING

### Final grades:

In this course will be based on the following scale:

A = 90%-100%

B = 80%-89.9%

C = 70%-79.9%

D = 60%-69.9%

F = 59.9% or Below

### Assessments:

The student's final grade will be assessed based on the following:

1. Home Works 25%
2. Quizzes 25%
3. Exam-I 25%
4. Exam-II 25%

## TECHNOLOGY REQUIREMENTS

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).

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**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

In general, discussing your questions and/or concerns during office hours with me is the most efficient way to communicate and to get help you need.

If you cannot visit my office during the office hours, it is preferred for you to send me emails with your questions. Please add “[Course Prefix and #]” in the subject title so that I recognize which course and section you are inquiring about. Please be as specific as possible in describing subjects and/or concepts you need more assistance from me.

As indicated at the beginning of this syllabus, all emails will be responded in the same day including weekends. Feedbacks and grading of your assignments and exams will be provided in a week from the due date/time.

## COURSE AND UNIVERSITY PROCEDURES/POLICIES

**A&M-Commerce requires the use of face-coverings in all instructional and research classrooms/laboratories. Exceptions may be made by faculty where warranted. Faculty have management over their classrooms. Students not using face-coverings can be required to leave class. Repetitive refusal to comply**

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can be reported to the Office of Students' Rights and Responsibilities as a violation of the student Code of Conduct.

Students should not attend class when ill or after exposure to anyone with a communicable illness. Communicate such instances directly with your instructor. Faculty will work to support the student getting access to missed content or completing missed assignments.

### **Class Attendance Requirements**

You will not receive a grade deduction for your absences up to three times. If you are absent more than three times, then a grade deduction of 2% per an absence will be applied to your final grade. Note that the attendance and participation is 10% of your final grade.

### **Assignments and Late Assignments Policy:**

1. All assignments should be submitted on time or before.
2. A few problems from an assignment will be selected to be graded for the correctness of procedures and their answers.
3. Remainder of the assignment will be graded for completeness of your solution procedures.
4. Late assignments may be accepted for a partial credit.

### **Missed Exams and Quizzes Policy**

Unless prior arrangements are worked out with the instructor, a zero-grade will be awarded for a missed exam or quiz.

### **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).  
<http://www.tamuc.edu/admissions/registrar/documents/studentGuidebook.pdf>

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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: [Netiquette](http://www.albion.com/netiquette/corerules.html)

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### **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>

### **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)

<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)

<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:

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### ***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

Email: [Rebecca.Tuerk@tamuc.edu](mailto:Rebecca.Tuerk@tamuc.edu)

Website: [Office of Student Disability Resources and Services](http://www.tamuc.edu/campusLife/campusServices/studentDisabilityResourcesAndServices/)

<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.

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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&MCommerce campuses. Report violations to the University Police Department at 903886-5868 or 9-1-1.

### **A&M-Commerce Supports Students' Mental Health**

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### **AI use policy [Draft 2, May 25, 2023]**

**Texas A&M University-Commerce 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**

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**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.**

**13.99.99.R0.03 Undergraduate Academic Dishonesty**

**13.99.99.R0.10 Graduate Student Academic Dishonesty**

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## **COURSE OUTLINE / CALENDAR**

| Week                | Subject                                                        |                               |
|---------------------|----------------------------------------------------------------|-------------------------------|
| 1<br>01/10 – 01/12  | Types of Structures and Loads                                  |                               |
| 2<br>01/15 – 01/19  | Analysis of one-way and two-ways slabs                         | Stability of Beams and Frames |
| 3<br>01/22 – 01/26  | Structural Analysis of Statically Determinate Beams and frames |                               |
| 4<br>01/29 – 02/02  | Structural Analysis of Statically Determinate Beams and Frames |                               |
| 5<br>02/05 – 02/09  | Structural Analysis of Statically Determinate Trusses          |                               |
| 6<br>02/12– 02/16   | RISA 2-D Analysis                                              |                               |
| 7<br>02/19– 02/23   | Influence Lines for Beams                                      |                               |
| 8<br>02/26 – 03/01  | Influence Lines for Beams                                      |                               |
| 9<br>03/04 – 03/08  | << Exam I >>                                                   |                               |
| 10<br>03/11 – 03/15 | <<<<Spring Break>>>>                                           |                               |
| 11<br>03/18 – 03/22 | Deflections Using Double Integration Method for Beams          |                               |
| 12<br>03/25 – 03/29 | Deflections Using Energy Methods for Beams                     |                               |
| 13<br>04/01 – 04/05 | Deflections Using Energy Methods for Trusses                   |                               |
| 14<br>04/08 – 04/12 | Analysis of Indeterminate Trusses by Energy Methods            |                               |
| 15<br>04/15 – 04/19 | Analysis of Indeterminate Beams by Slope Deflection Method     |                               |
| 16<br>04/22 – 04/26 | Analysis of Indeterminate Beams by Moment Distribution Method  |                               |
| 17<br>04/29 – 05/03 | Review                                                         |                               |
| 18<br>05/06 – 05/10 | << Exam II >>                                                  |                               |

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