



College of Architecture

Spring 2022

A. COURSE

Title and Number:	COSC 321 – Structural Systems I
Meeting Times and Locations	Lecture TR 12:45 PM – 2:00 PM
Instructional Type and Method:	Section 502 - In-Person

B. COURSE DESCRIPTION, PREREQUISITES AND CREDITS

- Introduction to the physical principles that govern classical statics and strengths of materials through the design of architectural structures.
- Prerequisites: Admission to upper level in Construction Science.
- Credits: 3. 3 Lecture Hours.

STUDENT LEARNING OUTCOMES (SLOS)

COURSE LEVEL	COSC/ACCE LEVEL
To understand the application of structural principles as applied to the design and construction of building structures.	SLO #19: Understand the basic principles of structural behavior
To be aware of the building codes that govern the structural design and be able to comply with the International Building Code requirements for structural design and detailing.	SLO #15: Understand construction quality assurance and control SLO #19: Understand the basic principles of structural behavior
To understand the principles of statics and strength of materials and be able to apply them to analysis and design of basic structural steel members and systems.	SLO #19: Understand the basic principles of structural behavior
To understand the fundamental application of Load and Resistance Factor Design (LRFD) and Allowable Strength Design (ASD) to the design of the main structural materials used in construction.	SLO #15: Understand construction quality assurance and control SLO #19: Understand the basic principles of structural behavior
To understand soil properties and parameters, and its interaction with the foundation systems.	SLO #19: Understand the basic principles of structural behavior

C. INSTRUCTOR INFORMATION

Name: Oke Orieka, PE

Email: oorieka@tamu.edu

Refer to Email Policy for response goals and required format.

TAMU Office Hours: *See note below.

TAMU Office Location: *See note below.

*One on one Zoom sessions can be scheduled for questions as needed. Email the instructor with the requested session topic and time. Email is the preferred communication form for all correspondence.

D. TEXTBOOKS/RESOURCE MATERIALS/TOOLS

- **Required** - The College of Architecture requires all students to have a personal laptop computer. This laptop is required to perform classroom activities. You will need your laptop in this course and you are required to bring an operational laptop and all required items to class every day.
- **Required** - Structural Engineering for Construction and Architecture Professionals Spring 2022 Course Pack
 - Available at the following location: <https://store.cognella.com/23121>
- Drawings and specifications – will be provided electronically by the instructor.

E. COMMUNICATION

The Instructor will communicate with students primarily through assigned class hours and email. The Instructor may also communicate with students through Canvas. Students are required to have an active email in Canvas, an instructor will from time-to-time email students directly through the Canvas email feature. Students are responsible for contacting the Instructor in the event they fail to receive electronic communications from the Instructor. The Instruction will use Canvas to post supplemental course material, to communicate grades and turning in assignments.

Email is the preferred communication form to ask the instructor questions in relation to the course.

F. GRADING POLICIES

- A student must receive a grade of “C” or better in this class to obtain credit in the COSC degree program.
- Attendance is mandatory, and your regular attendance at class is required. Your attendance records will be kept by whether you submitted the quiz within the allotted time frame at the beginning of each class. Unexcused absences will impact your final grade. More than 5 unexcused absences will result in automatic failure of class.
- You are responsible for class assignments. If you do not understand the class materials in solving problems, the most effective way to handle the difficulty is to email the instructor as soon as possible to request clarification.

Grade Distribution:

A — 90-100

B — 80-89

C — 70-79

D — 60-69

F — < 60

Major Assignments and Grade Weights:

Assignment/Exams	Qty	Percent
Quizzes / Homework	35 ^a	40
Group Project	1	10
Mid-Term	1	25
Final (Cumulative)	1	25
Total	-	100

- a)** Lowest (2) quiz grades will be dropped. Quantity of homework assignments, quizzes is subject to change.
- b)** All quizzes and homework's will be weighed equally to determine total points earned. E.g., if your average on quizzes and homework's is 90% then you will receive $40 \times 0.90 = 36$ points. If your average is 100% or greater then you will 40 points.
- c)** Final grades will be rounded to the nearest whole number. E.g., $89.4 = 89$, $89.5 = 90$

SLO Assessment will be made as assigned in CALENDAR OF ACTIVITIES

Please note that LATE ASSIGNMENTS (submitted after the established deadline) WILL NOT BE ACCEPTED unless accompanied by a legitimate University Excused Absence Pursuant to Rule 7. (Please see I. SPECIAL PROVISIONS, No. 3. Absences)

G. CALENDAR OF ACTIVITIES AND MAJOR ASSIGNMENT DATES

The schedule below is tentative and subject to change at the discretion of the instructor.

Lecture	Date	Topic
1	Tuesday, January 18	Introduction
2	Thursday, January 20	Structural Drawings and Specifications
3	Tuesday, January 25	Building Codes and Load
4	Thursday, January 27	Statics / Strength of Materials
5	Tuesday, February 01	Reinforced Concrete
6	Thursday, February 03	Reinforced Concrete
7	Tuesday, February 08	Concrete Testing
8	Thursday, February 10	Prestressed Concrete
9	Tuesday, February 15	Prestressed Concrete
10	Thursday, February 17	No Class - CIAC Career Fair Social Mixer
11	Tuesday, February 22	Concrete Submittals
12	Thursday, February 24	Mid-Term Exam Review
13	Tuesday, March 01	Mid-Term Exam (Mid semester grades due March 7)
14	Thursday, March 03	Reinforced Masonry
15	Tuesday, March 08	Reinforced Masonry
16	Thursday, March 10	Structural Steel
17	Tuesday, March 15	Spring Break
18	Thursday, March 17	Spring Break
19	Tuesday, March 22	Structural Steel
20	Thursday, March 24	Steel Shop Drawings
21	Tuesday, March 29	Light-Frame Wood Construction
22	Thursday, March 31	Cold-Formed Steel
23	Tuesday, April 05	Mass Timber
24	Thursday, April 07	Soil
25	Tuesday, April 12	Shallow Foundations
26	Thursday, April 14	Deep Foundations
27	Tuesday, April 19	Soil Investigations and Geotechnical Reports
28	Thursday, April 21	Group Project Presentation/Review
29	Tuesday, April 26	Final Exam Review
30	Thursday, April 28	No Class - Reading Day
31	Tuesday, May 03	No Class - Reading Day, students attend Friday classes
32	Thursday, May 05	No Class - Final Exam Available
33	Tuesday, May 10	No Class - Final Exam to be taken online, must be turned in before this date
34	Wednesday, May 11	No Class - Grades Due for Degree Candidates

LinkedIn Learning will be utilized for various assignments. The course certificate will need to be uploaded to receive credit. All students have access to LinkedIn Learning via TAMU, see snippet below.

[COSC LinkedIn Learning Collection](#)



- **University Policies**

Attendance Policy

The university views class attendance and participation as an individual student responsibility. Students are expected to attend class and to complete all assignments.

Please refer to [Student Rule 7](#) in its entirety for information about excused absences, including definitions, and related documentation and timelines.

Makeup Work Policy

Students will be excused from attending class on the day of a graded activity or when attendance contributes to a student's grade, for the reasons stated in Student Rule 7, or other reason deemed appropriate by the instructor.

Absences related to Title IX of the Education Amendments of 1972 may necessitate a period of more than 30 days for make-up work, and the timeframe for make-up work should be agreed upon by the student and instructor" ([Student Rule 7, Section 7.4.1](#)).

"The instructor is under no obligation to provide an opportunity for the student to make up work missed because of an unexcused absence" ([Student Rule 7, Section 7.4.2](#)).

Students who request an excused absence are expected to uphold the Aggie Honor Code and Student Conduct Code. (See [Student Rule 24](#).)

Academic Integrity Statement and Policy

"An Aggie does not lie, cheat or steal, or tolerate those who do."

"Texas A&M University students are responsible for authenticating all work submitted to an instructor. If asked, students must be able to produce proof that the item submitted is indeed the work of that student. Students must keep appropriate records at all times. The inability to authenticate one's work, should the instructor request it, may be sufficient grounds to initiate an academic misconduct case" ([Section 20.1.2.3](#), [Student Rule 20](#)).

You can learn more about the Aggie Honor System Office Rules and Procedures, academic integrity, and your rights and responsibilities at aggiehonor.tamu.edu.

Americans with Disabilities Act (ADA) Policy

Texas A&M University is committed to providing equitable access to learning opportunities for all students. If you experience barriers to your education due to a disability or think you may have a disability, please contact Disability Resources in the Student Services Building or at (979) 845-1637 or visit disability.tamu.edu. Disabilities may include, but are not limited to attentional, learning, mental health,

sensory, physical, or chronic health conditions. All students are encouraged to discuss their disability related needs with Disability Resources and their instructors as soon as possible.

NOTE: Faculty associated with the main campus in College Station should use this Americans with Disabilities Act Policy statement. Faculty not on the main campus should use the appropriate language and location at their site.

Title IX and Statement on Limits to Confidentiality

Texas A&M University is committed to fostering a learning environment that is safe and productive for all. University policies and federal and state laws prohibit gender-based discrimination and sexual harassment, including sexual assault, sexual exploitation, domestic violence, dating violence, and stalking.

With the exception of some medical and mental health providers, all university employees (including full and part-time faculty, staff, paid graduate assistants, student workers, etc.) are Mandatory Reporters and must report to the Title IX Office if the employee experiences, observes, or becomes aware of an incident that meets the following conditions (see [University Rule 08.01.01.M1](#)):

- The incident is reasonably believed to be discrimination or harassment.
- The incident is alleged to have been committed by or against a person who, at the time of the incident, was (1) a student enrolled at the University or (2) an employee of the University.

Mandatory Reporters must file a report regardless of how the information comes to their attention – including but not limited to face-to-face conversations, a written class assignment or paper, class discussion, email, text, or social media post. Although Mandatory Reporters must file a report, in most instances, you will be able to control how the report is handled, including whether or not to pursue a formal investigation. The University's goal is to make sure you are aware of the range of options available to you and to ensure access to the resources you need.

Students wishing to discuss concerns in a confidential setting are encouraged to make an appointment with [Counseling and Psychological Services](#) (CAPS).

Students can learn more about filing a report, accessing supportive resources, and navigating the Title IX investigation and resolution process on the University's [Title IX webpage](#).

Statement on Mental Health and Wellness

Texas A&M University recognizes that mental health and wellness are critical factors that influence a student's academic success and overall wellbeing. Students are encouraged to engage in proper self-care by utilizing the resources and services available from Counseling & Psychological Services (CAPS). Students who need someone to talk to can call the TAMU Helpline (979-845-2700) from 4:00 p.m. to 8:00 a.m. weekdays and 24 hours on weekends. 24-hour emergency help is also available through the National Suicide Prevention Hotline (800-273-8255) or at suicidepreventionlifeline.org.

Campus Safety Measures

To promote public safety and protect students, faculty, and staff during the coronavirus pandemic, Texas A&M University has adopted policies and practices for the Spring 2021 academic term to limit virus transmission. Students must observe the following practices while participating in face-to-face courses and course-related activities (office hours, help sessions, transitioning to and between classes, study spaces, academic services, etc.):

- Self-monitoring—Students should follow CDC recommendations for self-monitoring. **Students who have a fever or exhibit symptoms of COVID-19 should participate in class remotely if that option is available, and should not participate in face-to-face instruction.**
- Face Coverings—[Face coverings](#) (cloth face covering, surgical mask, etc.) must be properly worn in all non-private spaces including classrooms, teaching laboratories, common spaces such as lobbies and hallways, public study spaces, libraries, academic resource and support offices, and outdoor spaces where 6 feet of physical distancing is difficult to reliably maintain. Description of face coverings and additional guidance are provided in the [Face Covering policy](#) and [Frequently Asked Questions \(FAQ\)](#) available on the [Provost website](#).
- Physical Distancing—Physical distancing must be maintained between students, instructors, and others in course and course-related activities.
- Classroom Ingress/Egress—Students must follow marked pathways for entering and exiting classrooms and other teaching spaces. Leave classrooms promptly after course activities have concluded. Do not congregate in hallways and maintain 6-foot physical distancing when waiting to enter classrooms and other instructional spaces.
- To attend a face-to-face class, students must properly wear an approved face covering. If a student refuses to wear a face covering, the instructor should ask the student to leave and join the class remotely. If the student does not leave the class, the faculty member should report that student to the [Student Conduct office](#) for sanctions. Additionally, the faculty member may choose to teach that day's class remotely for all students, or dismiss the class in the case of a traditional face to face lecture.

Personal Illness and Quarantine

Students required to quarantine must participate in courses and course-related activities remotely, if that option is available, and **must not attend face-to-face course activities**. Students should notify their instructors of the quarantine requirement. Students under quarantine are expected to participate in courses and complete graded work unless they have symptoms that are too severe to participate in course activities.

Students experiencing personal injury or illness that is too severe for the student to attend class qualify for an excused absence (See [Student Rule 7, Section 7.2.2](#).) To receive an excused absence, students must comply with the documentation and notification guidelines outlined in Student Rule 7.

Bring Your Own Device (BYOD)

The College of Architecture requires all students to have a personal laptop. This laptop is required to perform classroom activities based on the courses taken. [Click here for more information on device requirements for Construction Science majors.](#)

Web Camera Use

YOU MUST ATTEND CLASS AT YOUR ALLOCATED TIME. IF YOU ARE ATTENDING REMOTELY, YOU MUST HAVE YOUR CAMERA ON, WITH YOUR PRESENCE SHOWN, AT ALL TIMES DURING CLASS. SEE TAMU CLAR POLICY ON LAPTOPS AND WEBCAMS. [You may NOT RECORD any of the lectures, small group sessions or break out groups.](#)

Campus Safety Measures

To promote public safety and protect students, faculty, and staff during the coronavirus pandemic, Texas A&M University has adopted policies and practices for the Fall 2020 academic term to limit virus transmission. Students must observe the following practices while participating in face-to-face courses and

course-related activities (office hours, help sessions, transitioning to and between classes, study spaces, academic services, etc.):

- **Email Policy**

The instructor will strive to achieve a 24-hour response time for all properly formatted email requests sent on a Weekday. Emails sent on the Weekend will be responded to by end-of-day Monday.

Required Email Formatting

To: Oke Orieka
Subject: Short Summary of Email (E.g. HW #2 Problem #3)

Oke,

Concise statement with either an action item or question clearly defined.

(E.g., On HW #2 – Problem #3, the question asks to find the shear strength for the beam and we need the $f'c$, however this is not provided. What $f'c$ should we use?)

Thanks,

First Name, Last Name

- **Items Specific to this Class**

1. **Assigned Readings:** The instructor will assign and provide readings that must be done outside of class time. Homework / quiz and exam questions will come from these readings.
2. **Homework Assignments:** Homework will be uploaded to Canvas. It is the student's responsibility to download or complete on Canvas.
3. **Submitting Homework:** All homework must be submitted to Canvas prior to the start of class on the day it is due.
4. **Quizzes:** Quizzes will be administered through Canvas. In general, you will have 5-minutes to complete 2-5 multiple choice questions which will be based upon the previous day's lecture or assigned reading. Unless noted otherwise, quizzes are due 5-minutes after the start of class.