

ARCH 3324: Structures-I

ARCH 5324

Spring 2016

Instructor: Madan Mehta Ph.D., P.E.
(mmehta@uta.edu)
Room No. 415, School of Architecture
Office Hours: CAPPA Library
Fridays: 12:20 – 12:45 PM

Important Dates

Test 1.....	Feb. 08
Test 2.....	Feb. 22
Test 3.....	Mar. 07
Test 4.....	Mar. 28
Test 5	Apr. 11
Test 6	Apr. 25

Final examination: May 09, 2016 (9:00 – 10:30 AM)

Course Objectives and Learning Outcomes

After completing the course, a student should:

- Understand the broad, qualitative relationship between a building and its structural form.
- Comprehend the differences between structural stability, strength, stiffness, and how they affect structural decision making by architects.
- Understand the fundamental structural concepts (forces, moments, stresses and deformations) and their application to various types of structural elements using quantitative methods of structural engineering.
- Be able to analyze simple, statically determinate structural systems using mathematical techniques.
- Be able to determine bending moments, shear forces, deflections and the bent shapes of simple, statically determinate structural systems.

Description of Course Content

An introduction to architectural structures, including statics and strength of materials, with emphasis on design in timber.

Required Text and Other Course Material

Barry Onouye and Kevin Kane: *Statics and Strength of Materials for Architecture and Building Construction*, Pearson, (Fourth edition).

Notes by Instructor

Schedule

Week	Date	Topic	Chapter
1	Jan. 20 – 22	Introduction to Architectural Structures; Statics	Chapters 1 & 2
2	Jan. 25 - 29	Statics	Chapter 2
3	Feb. 01 – 05	Statics	Chapter 2
4	Feb. 08 – 12	Test 1 (Feb. 08); Determinate Structures	Chapter 3
5	Feb. 15 – 19 Chapter 3	Determinate Structures	
6	Feb. 22 – 27	Test 2 (Feb. 22); Trusses	Chapter 3
7	Feb. 29 – Mar. 04	Pinned Frames	Chapter 4
8	Mar. 07 -11	Test 3 (Mar. 07); Strength of Materials	Chapter 5
9	Mar. 14 – 18	SPRING BREAK	
10	Mar. 21 – Mar. 25	Strength of Materials & Cross-Sectional Properties	Chapters 5 & 6
11	Mar. 28 – Apr. 1	Test 4 (Mar. 28); Bending and Shear	Chapter 7
12	Apr. 04 – 08	Bending and Shear; Bending and Shear Stresses	Chapters 7 & 8
13	Apr. 11 – 15	Test 5 (Apr. 11); Bending and Shear Stresses	Chapter 8
14	Apr. 18 – 22	Deflection	Chapter 8
15	Apr. 25 – Apr. 29	Test 6 (Apr. 25); Column Analysis and Design	Chapter 9
16	May 02 – 06	Column Analysis and Design	Chapter 9
17		Final Exam. May 09 (9:00 – 10:30 AM)	

Breakdown of Grades and Grading Policy

Tests (5x 25)	125
Homework Assignments	15
Attendance	5
Course Binder	5
Final Examination	25

Maximum points **175**

Letter grade A will be given to a student with a score of 90% or higher; Letter grade B to a student with a score of 80% to 89.9%; Letter grade C to a student with a score of 70% to 79.9%; Letter grade D to a student with a score of 60% to 69.9%; Letter grade F to a student with a score of less than 60%.

Out of six tests, only five tests will count toward the final grade. Each test will be of 45-minute duration. All homework assignments will count toward the final grade. **There will be no makeup test or makeup final examination.**

Use of Laptop Computers

The use of laptop computers for taking lecture notes in the classroom is not permissible at any time.

Attendance Policy

Every lecture must be attended, and the student must be in the classroom a few minutes before the scheduled class starting time and sign the roll sheet hung on the classroom wall. The roll sheet may be removed by the Instructor 5 minutes after the scheduled time. A student coming after the removal of the roll sheet is welcome to attend the class but will be considered absent.

Course Binder

All students will maintain a course binder that will be submitted to the instructor on the last day of classes for grading. The binder should include all course-related material, (course syllabus—this document, handwritten class notes, graded tests, homework's, material supplied by the instructor, and so on). The binder will be graded on the thoroughness of class notes and the binder's overall presentation. You are advised to take class notes on three-hole, 8-1/2 x 11 paper.

Course Drop Policy

Refer to University Drop Policy.

Americans With Disabilities Act

The University of Texas at Arlington is on record as being committed to both the spirit and letter of federal equal opportunity legislation; reference Public Law 92-112 - The Rehabilitation Act of 1973 as amended. With the passage of federal legislation entitled *Americans with Disabilities Act (ADA)*, pursuant to section 504 of the Rehabilitation Act, there is renewed focus on providing this population with the same opportunities enjoyed by all citizens.

As a faculty member, I am required by law to provide "reasonable accommodations" to students with disabilities, so as not to discriminate on the basis of that disability. Student responsibility primarily rests with informing faculty of their need for accommodation and in providing authorized documentation through designated administrative channels. Information regarding specific diagnostic criteria and policies for obtaining academic accommodations can be found at www.uta.edu/disability. Also, you may visit the Office for Students with Disabilities in room 102 of University Hall or call them at (817) 272-3364.

Academic Integrity

It is the philosophy of The University of Texas at Arlington that academic dishonesty is a completely unacceptable mode of conduct and will not be tolerated in any form. All persons involved in academic dishonesty will be disciplined in accordance with University regulations and procedures. Discipline may include suspension or expulsion from the University. "Scholastic dishonesty includes but is not limited to cheating, plagiarism, collusion, the submission for credit of any work or materials that are attributable in whole or in part to another person, taking an examination for another person, any act designed to give unfair advantage to a student or the attempt to commit such acts." (Regents' Rules and Regulations, Series 50101, Section 2.2)

Student Support Services Available

The University of Texas at Arlington supports a variety of student success programs to help you connect with the University and achieve academic success. These programs include learning assistance, developmental education, advising and mentoring, admission and transition, and federally funded programs. Students requiring assistance academically, personally, or socially should contact the Office of Student Success Programs at 817-272-6107 for more information and appropriate referrals.

Grade Grievance Policy

If a student has any grievance about the grade on a test, quiz, homework or sketchbook assignment, he/she must contact the Instructor promptly—no later than the following class period. If the Instructor is satisfied that a genuine error was made, the grade will be changed. If not, the Instructor will try to explain to the student the rationale behind the grade. If the student does not agree with the Instructor's decision, he/she must submit a written request to the Instructor explaining why a higher grade is deserved. This must be done within one week of the student receiving the grade on the test or homework assignment in question beyond which no grievance will be entertained.