Fall 2018 ARC 435K/385M Construction III

Instructor: Prof. Dr. Juliana M. Felkner
Office: GOL 2.212
Office hours: Friday 11:00AM to 1:00PM
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Course Time and Location: TTH 12:30 to 2:00PM, GOL 3.120
Lab Times and Location: T 7:00PM to 10:00PM, PAR 302
TH 7:00PM to 10:00PM, PAR 204

Course Description:

This course introduces students to the design and analysis of structures through graphical and analytical methods as well as through physical models. The structural behavior of columns and beams as well as the design of various structural components and connections will be covered. The importance of material choice and structural efficiency in design will be a common theme throughout the course. Graphic statics will provide a basis for visualizing how external forces, form and internal forces in elements are related.

A creative approach to architectural design with structural knowledge is encouraged. Knowledge obtained in this course will include preliminary sizing and analysis methods as well as geometrical form finding techniques.

Course Format:

The course is composed of lectures presenting material to be used in the design exercises as well as the lab exercises. The exam will be based on material covered in the lectures. Lab exercise tasks will be presented to the students at the end of the lecture and are to be completed in groups during the lab sessions. Completed work is to be handed in at the end each lab session. The lab sessions will also provide students the opportunity to ask for feedback on their projects. One structural design project will be given during this course. Details of the assignments will be handed out during the semester.

Main Text:

Allen, E.; Zalewski, W. 2012. *Form and Forces: Designing Efficient, Expressive Structures (1st Edition)* John Wiley & Sons ISBN-13:978-0470174654

Additional Texts (for the interested reader):

Flury, Aita. 2011. *Cooperation, the Engineer and the Architect,* Birkhauser.

Muttoni, Aurelio. *The Art of Structures; Introduction to the Functioning of Structures in Architecture,* EPFL Press.

Onouye, B; Kane, K. *Statics and Strength of Materials for Architecture and Building Construction (4th Edition)* ISBN-13: 978-0135079256

Recommended:

Schodek, D.; Bechthold, M. *Structures (7th Edition)* ISBN-13: 978-0132559133

Grading:

Lab Exercises	20%
Project	25%
Exam 1	15%
Exam II	30%
Attendance	10%

Grading is based on a 100 point scale as follows:

A 93-100
A- 90-92
B+ 87-89
B 83-86
B- 80-82
C+ 77-79
C 73-76
C- 70-72
D+ 67-69
D 63-66
D- 60-62
F 59 and below

UT Statements:

Attendance Policy
Attendance is mandatory in all lectures and labs. At the instructor's discretion, any student with more than 2 unexcused absences may be dropped from the class or the student's final grade may be lowered by one letter grade for each additional absence. Absences are excused only for medical conditions and personal or family emergencies. Written documentation will be required for any excused absence. A student who misses classes or other required activities for the observance of a religious holy day should inform the instructor as far in advance of the absence as possible, so that arrangements can be made to complete an assignment within a reasonable time after the absence. A student who fails to complete missed work within the time allowed will be subject to the normal academic penalties.

For Undergraduate Students: Quantitative Reasoning Flag
This course carries the Quantitative Reasoning flag. Quantitative Reasoning courses are designed to equip you with skills that are necessary for understanding the types of quantitative arguments you will regularly encounter in your professional life. You should therefore expect a substantial portion of your grade to come from your use of quantitative skills to analyze real-world problems.

Students with Disabilities
Students with disabilities who require special accommodations need to get a letter that documents the disability from the Services for Students with Disabilities area of the Office of the Dean of Students (471-6259 voice or 471-4641 TTY for users who are deaf or hard of hearing).

This letter should be presented to the instructor in each course at the beginning of the semester and accommodations needed should be discussed at that time. Five business days before an exam the student should remind the instructor of any testing accommodations that will be needed.

Behavior Concerns Advice Line (BCAL)
If you are worried about someone who is acting differently, you may use the Behavior Concerns Advice Line to discuss by phone your concerns about another individual's behavior. This service is provided through a partnership among the Office of the Dean of Students, the Counseling and Mental Health Center (CMHC), the Employee Assistance Program (EAP), and The University of Texas Police Department (UTPD). Call 512-232- 5050 or visit http://www.utexas.edu/safety/bcal.

Policy on Academic Integrity
Students who violate University rules on scholastic dishonesty are subject to disciplinary penalties, including the possibility of failure in the course and/or dismissal from the University. Since such dishonesty harms the individual, all students, and the integrity of the University, policies on scholastic dishonesty will be strictly enforced. For further information, visit the SJS website at http://deanofstudents.utexas.edu/sjs or call 471-2841.