

ARCE Comprehensive Design Project

ARCE 698 – Fall Semester 2018

Special Fall Offering with Prof. Rock

Meeting Time: Tuesdays and Thursdays, 2:30 to 3:15 p.m.

Meeting Place: 2410 LEEP2 for class, 3101 Learned for design-work, etc.

Instructor: Brian A. Rock, Ph.D., P.E., Fellow ASHRAE
Office: 2134-D Learned Hall, 785-864-3603, docrock@ku.edu

Catalog Description:

ARCE 698: Capstone architectural engineering design course that includes the analysis, design, and integration of a building's structural, mechanical, electrical, and lighting systems. Building codes, standards, performance, and sustainability are addressed, and BIM software utilized.

Prerequisites: CMGT 357/457, CMGT 500, ARCE 640, ARCE 650, ARCE 661, and CE 562 {and, for the special Fall 2018 offering, must be able to graduate in December 2018}.

Textbook: None required for this special Fall offering.

References: Will vary student-to-student depending on the topic selected.

Final Exam: No written exam. The time-period, Friday, December 14th, 1:30 to 4 p.m., will be used for making your final project presentations in 2410 LEEP2.

Grading: Individual assignments will be graded on a 0 to 10 scale each. Late work may lose 10% per 24 hours or fraction thereof. Plus/minus (+/-) grading will not be utilized for the final letter grades.

Weighting:

Final Grades:

Memo	5%	90% to 100%	= "A"
First Draft	10%	80% to 89.9%	= "B"
Second Draft	20%	70% to 79.9%	= "C"
Final Report	45%	60% to 69.9%	= "D"
Presentation	20%	59.9% or less	= "F"

Due Dates:	Project Memo	August 28, 2018 (T)
	Project Report's First Draft	October 25, 2018 (R)
	Project Report's Second Draft	November 15, 2018 (R)
	Final Report (and Model?)	December 6, 2018 (R, LDOC)
	Presentation	In the final exam period

Semester Project: Students, individually or as teams, will perform architectural engineering or closely-related analysis and/or design problems. Each student or team is expected to formulate and communicate innovative yet realistic solutions. The analyses and solutions will be presented by the students/teams via well-written, illustrated technical reports and presentations to the class, and possibly via physical models depending on the projects chosen. The reports may be submitted to national design competitions, or, after refinement, for publication.

Project Memo: A one-page business memo. This memo gives your draft project title and a problem statement. It also lists, if any, your team's members. Each student does the memo individually.

Report Format: This is your individual or team project's report on unbound 8.5" x 11" paper, single-sided, white paper. Thirty five laser-printed pages maximum. Illustrations must be incorporated into the body of the text. Follow, closely, the Technical Writing Hints handout.

Final Presentation: Your presentation of your project should be about 20 minutes long if individual; teams' up to proportionally longer. Have paper copies of your full presentation available as handouts. An overhead/LCD projector and a screen, as well as a VCR and CD/DVD player will be available in the classroom (2410 LEEP2). Try logging on to the teaching station's PC and test your presentation (on USB drive?) well in advance.

The suggested organization of your presentation is:

- Title slide
- Problem Statement
- Background
- Description of your approach
- Results and Discussion
- Conclusions and Recommendations
- Acknowledgments

Lab Project(s): Each person assumes the liability for personal injury during any laboratory work. Do not perform any lab work without proper training, safety precautions, and supervision.

Other:

All work submitted for grading in this course must be completed independently unless specifically assigned as a team effort by the instructor, as well as be original (no cutting & pasting, for example). Students are referred to and expected to abide by KU's academic misconduct policies. The instructor's penalties for discovered academic misconduct range from no credit given on a particular requirement to portion or course failure. Incidences are reported to the course coordinator, CEAE, and the SoE's Dean's Office for potential further action.

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The Academic Achievement & Access Center (AAAC) coordinates accommodations and services for all KU students who are eligible. If you have a disability for which you wish to request accommodations and have not contacted the AAAC, please do so as soon as possible. They can be contacted at 22 Strong Hall, or via 785-864-4064 (V/TTY) or achieve@ku.edu.

Note: If you are taking the F.E. exam this semester be sure to plan for your exam preparation as well as for completing all your courses' requirements. Also be aware that we have our ABET reaccreditation visit this Fall 2018 semester, so there may be outside interest in your coursework, especially in ARCE 698.

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Methods of teaching: Class discussions, lectures, demonstrations, videos, student presentations, possible field trips/meetings/tours, etc.

Objectives

For the selected semester individual/team projects:

- To develop an interesting solution to a design and/or analysis problem in architectural engineering, or a closely-related field
- To communicate intermediate and final results through documents suitable for wide distribution, and via a classroom presentation

For the class topics:

- To introduce technical, professional practice, and other relevant topics
 - Technical writing skills will have significant emphasis

Last revision: August 13, 2018