

ARC 6911

Advanced Topics in Building Technology

Fall of 2019

Instructor:.....Prof. Ryan Sharston
Email: r.sharston@ufl.edu

Office Hours:.....Thursday, 12:50-1:40 PM (Period 6), School of Architecture,
Room 246, or by appointment (arranged by email)

Course Schedule: Labs: Weil Hall, Room 408A on Tuesdays, 11:45 AM-1:40 PM
(Periods 5&6), Lectures: Rinker Hall, Room 0220 on Thursday,
11:45 AM-12:35 PM

Course Objectives:..... ARC 6911 investigates acoustical, thermal and luminous qualities within the built environment, with an emphasis on building envelope and system design. The main goal of the course is to advance students' knowledge of **computational modeling** in building technologies such as lighting and energy simulation. The course begins with a study of building acoustic, lighting and thermal systems and then focuses on the evaluation of **building energy performance** in various climate zones. *Specific topics* include architectural acoustics, advanced lighting and daylighting strategies, visual and thermal comfort assessment, building primary (boilers, chillers, etc.) and secondary (comfort delivery) mechanical systems, and building energy performance. This course will use a mix of traditional lecture and **interactive and experiential education**, and will include laboratory sessions, guest lectures, in-class debates and discussions, site visits, and real-time building performance measurements and experiments. The goals of this course are to provide a/an:

- Understanding of the principles of building physics and the impact of the building mass and envelope
- Understanding of the principles of the environmental systems such as acoustics, lighting, and mechanical systems as well as building energy performance
- Understanding of important concepts that will allow intelligent collaboration with other building professionals
- Starting point from which an intuitive sense for thermal environments created in buildings can be developed

Grading:Final course grades are based on the following scale:

40%	Homework
20%	Quizzes
20%	Min-term Exam
20%	Final Project
*	Attendance/Participation

*. This course *will* use “+” and “-” designations on the final grades, and a curve may be applied to final course averages at the discretion of the instructor. If a curve is applied, it will only be used to raise course grades, not to lower them.

Homework/discussion:There will be approximately 4-6 homework problems assigned throughout the semester. Homework problems reinforce material introduced in the lectures and laboratories and are thus crucial to the learning process. All homework sets are due as noted on the assignment sheets when they are handed out for full credit. Generally, homework assignments will be mostly due one week after they are posted.

Late homework assignments will not be accepted. In the case of an excused absence (illness or other emergencies), any new homework deadline must be determined by the instructor.

Quizzes:There will be 4-5 quizzes given during the course of the semester. The time of each quiz will be announced within the prior week.

Exams:There will be one exam given during the course of the semester. A tentative schedule for the exam is listed below:

Mid-term Exam (20% of total grade): Tuesday, October 15, 2019

The exam is computer-based. Participation in the exams is *mandatory*. An unexcused absence from the exam will count as a *zero* grade for the exam. In the case of illness or other emergencies, the student must obtain an excused absence from the Dean of Students and make arrangements to take the exam as soon as possible thereafter.

There are **no make-ups** for missed quizzes, exam, project, and optional extra credit activities.

Final Project:There will be one final projects assigned during the course of the semester. A tentative schedule for the project and due dates is listed below:

Final project (20% of total grade): Sunday, November 25, 2019

Project may include calculations and applications of concepts discussed in class to design situations. These may or may not be related to current or past design projects performed by individual students in design studio. Details on the project will be provided separately including exact submission requirements. Projects submitted late will be penalized in the same manner as late homework assignments. In the case of an excused absence (see exam policy above), any new homework deadline must be determined by the instructor.

Optional Extra Credits:..... There are three available options to obtain extra credits; 20% total credit to be counted toward the final project:

I. Participation in an approved sustainability event and/or join and participate in an approved sustainability group / committee. Extra credit in this category is limited to 1 event for a total of 3% points to be counted toward exams. Certification required!

II. Post advanced building technology relevant topics in E-Learning website’s DISCUSSIONS (forum). If your topic gets three relevant replies and higher, you will receive 5%. When replying to a post in DISCUSSIONS (forum), please refer to which post you are replying. Replies to discussions will be reviewed before assigning points.

III. Site visit reports (500 words): Each report can earn up to 4%.

Grading Scale:.....

Grade:	Range:	
A	100 %	to 94.0%
A-	< 94.0 %	to 90.0%
B+	< 90.0 %	to 87.0%
B	< 87.0 %	to 84.0%
B-	< 84.0 %	to 80.0%
C+	< 80.0 %	to 77.0%
C	< 77.0 %	to 74.0%

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C- < 74.0 %	to 70.0%
D+ < 70.0 %	to 67.0%
D < 67.0 %	to 64.0%
D- < 64.0 %	to 61.0%
F < 61.0 %	to 0.0%

Communication:..... Use the e-Learning in Canvas environment to send an email to the instructor. **Please do not** e-mail the course instructor outside of the e-Learning in Canvas system because emails received outside of e-Learning may not receive a response. Please allow 36 hours for a response to your email. The instructor reserves the right not to respond to course inquiries on the weekend.

Students are responsible for addressing grades/omissions within one week of the grade being posted on e-Learning in Canvas. After one week, the grade/input stands for the class regardless of cause or circumstance.

Students are responsible to ensure that their assignments, quizzes, exams... etc have been submitted on Canvas properly and before the deadlines.

Please make sure that you receive all **Canvas notifications**.

Attendance:..... Attendance and participation in lectures and laboratory sessions are course requirements and therefore mandatory. Attendance and participation for this course is defined as being present from the start of class until class is dismissed on each day that class meets and actively participating in course activities. Students who are late, leave early, or do not participate actively in class may be counted as absent.

“*Participation quizzes*” may be given at the beginning of classes. If you miss the quiz due to the late arrival, it may be counted as an absence.

Cellphones:..... Cellphone use is not allowed in classrooms unless they are used for computer-based examinations upon given instructions in the class.

Laptops & Tablets:..... These devices shall only be used to take notes related to lectures and/or computer-based exams upon given instructions in the class. Use of these devices for social media or any other unrelated purposes during class hours will discontinue attendance.

Course Text/Readings: The textbook for this course is **12th Edition** of “**Mechanical and Electrical Equipment for Buildings**” by Grondzik, Kwok,

Stein, and Reynolds. ISBN: 978-1118615904. It is the responsibility of each individual student to read the course text. Additional information may be provided as handouts in class.

UNIVERSITY POLICY ON ACCOMMODATING STUDENTS WITH DISABILITIES: .

Students requesting accommodation for disabilities must first register with the Dean of Students Office (<http://www.dso.ufl.edu/drc/>). The Dean of Students Office will provide documentation to the student who must then provide this documentation to the instructor when requesting accommodation. You must submit this documentation prior to submitting assignments (discussion, term paper, extra credit) or taking the quizzes or exams. Accommodations are not retroactive, therefore, students should contact the office as soon as possible in the term for which they are seeking accommodations.

UNIVERSITY POLICY ON ACADEMIC MISCONDUCT:

Academic honesty and integrity are fundamental values of the University community. Students should be sure that they understand the UF Student Honor Code at <http://www.dso.ufl.edu/students.php>. The Honor Code will be applied in the class. We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honesty and integrity. On all work submitted for credit by students at the university, the following pledge is either required or implied: "On my honor, I have neither given nor received unauthorized aid in doing this assignment." It is Rinker School policy that any incident of cheating, copying, or other attempts to deceive will be penalized by course failure.

NETIQUETTE, COMMUNICATION COURTESY POLICY:

All members of the class are expected to follow rules of common courtesy in all email messages, threaded discussions and chats. Detailed guide is available at <http://teach.ufl.edu/wp-content/uploads/2012/08/NetiquetteGuideforOnlineCourses.pdf>

GETTING HELP WITH E-LEARNING WEBSITE:

In the case you have technical difficulties with e-Learning in Canvas, please contact the UF Help Desk at: Learning-support@ufl.edu; (352) 392-HELP - select option 2; <https://lss.at.ufl.edu/help.shtml> . If your technical difficulties will cause you to miss a due date/time, you MUST report the problem to the UF Help Desk before the due date/time.

Note from the Instructor:.....The syllabus represents my current plans and objectives. As we go through the semester, those plans may need to change to enhance the class learning opportunity. Such changes, communicate clearly, are not unusual and should be expected.