

COURSE SYLLABUS
The University of Texas at Arlington
College of Engineering
Department of Civil Engineering
CE 5382 – Construction Sustainability
(3 Credit Hours)
SPRING 2017

Name of Instructor: Michael W. Fairchild, AIA, NCARB, LEED® AP

Office Number: 345 Engineering Research Building

Telephone Number: 817-272-6898

Email Address: michaelf@uta.edu

Office Hours: Monday-Thursday, 4:30 PM until 5:30 PM

Teaching Assistant: Saeed Janbaz saeed.janbaz@mavs.uta.edu

Course Number, Section Number, and Course Title:
CE 5382, Sections 001 & 101 – Construction Sustainability

Time and Place of Class Meetings:
Section 001 – Tuesday & Thursday 5:30 – 6:50 PM, Geoscience Building, Room 104
Section 101 - Off Web

Description of Course Content: First Half Semester - Introduction to USGBC's LEED® New Construction Guidelines v.4 for constructing sustainable/Green Buildings. Topics include proper site selection, energy and water efficiency, material reuse and indoor air quality. Second Half Semester - Introduction to the International Code Council's 2015 International Building Code. Review topics include building occupancy categories, construction types, allowable height and area, life safety requirements, rated building assemblies and egress.

Student Learning Outcomes: Upon completion of the course, the student will have:

- an understanding of the LEED® New Construction v.4 Green Building requirements and rating system.
- abilities to (1) evaluate building sites in terms of reducing environmental impact, (2) evaluate building systems and components in terms of reducing amounts of energy and water consumed, (3) identify methods to reduce waste transported to landfills and recycling building materials and consumer products and (4) determine methods for controlling indoor air quality.
- abilities to conduct an assessment of a building's sustainable characteristics.
- skills for taking LEED® Exam and becoming a LEED® Accredited Professional.
- an understanding of ICC's 2015 International Building code and its effects on the design of buildings.
- an understanding of building construction types related to building code restraints.
- abilities to (1) determine maximum allowable building height and area, (2) evaluate egress requirements required per building use and occupant loading, (3) identify life safety requirements, (4) identify fire rated materials and building assemblies and (5) identify the building code's influence on structural design.

Requirements: Graduate Standing and consent of Dr. Najafi or instructor.

Course Text: SUSTAINABLE CONSTRUCTION, by Charles J. Kibert, published by John Wiley & Sons, Inc., 2013

Reference Books:

- GREEN BUILDING DESIGN & CONSTRUCTION, published by USGBC, 2013 Edition.
- INTERNATIONAL BUILDING CODE, published by the International Code Council, 2015 Edition.

Descriptions of major assignments and examinations with due dates: There will be two exams (one close to midterm and one final which will be non-comprehensive), one project, and several homework and lab assignments. See Course Outline for specific dates.

Grading Policy: Grades will be determined according to the following scale (the grading scale may be lowered at the discretion of the instructor, but will not be raised):

Grade	% Required
A	90 -100
B	80-89
C	70-79
D	60-69
F	Less than 60

Students will be required to accumulate points from the following:

Homework	15%
Class Attendance & Participation	15%
Student Presentation – Green Building	10%
Student Presentation – Building Codes	10%
Two Hourly Exams	25%
Final Exam	25%
<hr/>	
Total	100%

Make-up Exam Policy: All students must take the exams. Only extenuating circumstances will be accepted as excuse for missing the exam. Health related excuses require medical reports and the signature of a physician that provided treatment.

Grade Grievance Policy: Refer to UTA Catalog for more information.

Attendance: At The University of Texas at Arlington, taking attendance is not required but attendance is a critical indicator in student success. Each faculty member is free to develop his or her own methods of evaluating students' academic performance, which includes establishing course-specific policies on attendance. As the instructor for this course, I will take attendance for each class. However, while UT Arlington does not require instructors to take attendance in their courses, the U.S. Department of Education requires that the University have a mechanism in place to mark when Federal Student Aid recipients "begin attendance in a course." UT Arlington instructors will report when students begin attendance in a course as part of the final grading process. Specifically, when assigning a student a grade of F, faculty report the last date a student attended their class based on evidence such as a test, participation in a class project or presentation, or an engagement online via Blackboard. This date is reported to the Department of Education for federal financial aid recipients.

Drop Policy: Students may drop or swap (adding and dropping a class concurrently) classes through self-service in MyMav from the beginning of the registration period through the late registration period. After the late registration period, students must see their academic advisor to drop a class or withdraw. Undeclared students must see an advisor in the University Advising Center. Drops can continue through a point two-thirds of the way through the term or session. It is the student's responsibility to officially withdraw if they do not plan to

attend after registering. **Students will not be automatically dropped for non-attendance.** Repayment of certain types of financial aid administered through the University may be required as the result of dropping classes or withdrawing. For more information, contact the Office of Financial Aid and Scholarships (<http://www.uta.edu/aao/fao/>).

Disability Accommodations: UT Arlington is on record as being committed to both the spirit and letter of all federal equal opportunity legislation, including *The Americans with Disabilities Act (ADA)*, *The Americans with Disabilities Amendments Act (ADAAA)*, and *Section 504 of the Rehabilitation Act*. All instructors at UT Arlington are required by law to provide “reasonable accommodations” to students with disabilities, so as not to discriminate on the basis of disability. Students are responsible for providing the instructor with official notification in the form of **a letter certified** by the Office for Students with Disabilities (OSD). Only those students who have officially documented a need for an accommodation will have their request honored. Students experiencing a range of conditions (Physical, Learning, Chronic Health, Mental Health, and Sensory) that may cause diminished academic performance or other barriers to learning may seek services and/or accommodations by contacting:

The Office for Students with Disabilities, (OSD) www.uta.edu/disability or calling 817-272-3364. Information regarding diagnostic criteria and policies for obtaining disability-based academic accommodations can be found at www.uta.edu/disability.

Counseling and Psychological Services, (CAPS) www.uta.edu/caps/ or calling 817-272-3671 is also available to all students to help increase their understanding of personal issues, address mental and behavioral health problems and make positive changes in their lives.

Non-Discrimination Policy: *The University of Texas at Arlington does not discriminate on the basis of race, color, national origin, religion, age, gender, sexual orientation, disabilities, genetic information, and/or veteran status in its educational programs or activities it operates. For more information, visit uta.edu/eos.*

Title IX Policy: The University of Texas at Arlington (“University”) is committed to maintaining a learning and working environment that is free from discrimination based on sex in accordance with Title IX of the Higher Education Amendments of 1972 (Title IX), which prohibits discrimination on the basis of sex in educational programs or activities; Title VII of the Civil Rights Act of 1964 (Title VII), which prohibits sex discrimination in employment; and the Campus Sexual Violence Elimination Act (SaVE Act). Sexual misconduct is a form of sex discrimination and will not be tolerated. *For information regarding Title IX, visit www.uta.edu/titleIX or contact Ms. Jean Hood, Vice President and Title IX Coordinator at (817) 272-7091 or jmhood@uta.edu.*

Academic Integrity: Students enrolled all UT Arlington courses are expected to adhere to the UT Arlington Honor Code:

I pledge, on my honor, to uphold UT Arlington’s tradition of academic integrity, a tradition that values hard work and honest effort in the pursuit of academic excellence.

I promise that I will submit only work that I personally create or contribute to group collaborations, and I will appropriately reference any work from other sources. I will follow the highest standards of integrity and uphold the spirit of the Honor Code.

UT Arlington faculty members may employ the Honor Code in their courses by having students acknowledge the honor code as part of an examination or requiring students to incorporate the honor code into any work submitted. Per UT System *Regents’ Rule* 50101, §2.2, suspected violations of university’s standards for academic integrity (including the Honor Code) will be referred to the Office of Student Conduct. Violators will be disciplined in accordance with University policy, which may result in the student’s suspension or expulsion from the University. Additional information is available at <https://www.uta.edu/conduct/>.

Student Support Services: UT Arlington provides a variety of resources and programs designed to help students develop academic skills, deal with personal situations, and better understand concepts and information related to their courses. Resources include [tutoring](#), [major-based learning centers](#), developmental

education, [advising and mentoring](#), personal counseling, and [federally funded programs](#). For individualized referrals, students may visit the reception desk at University College (Ransom Hall), call the Maverick Resource Hotline at 817-272-6107, send a message to resources@uta.edu, or view the information at <http://www.uta.edu/universitycollege/resources/index.php>.

Engineering Librarian:

Sylvia George-Williams, Engineering Librarian
UT Arlington Science & Engineering Library

Mailing address: B03B Nedderman Hall, Arlington, TX 76019. Phone: (817) 272 7519, Email: sylvia@uta.edu

Electronic Communication: UT Arlington has adopted MavMail as its official means to communicate with students about important deadlines and events, as well as to transact university-related business regarding financial aid, tuition, grades, graduation, etc. All students are assigned a MavMail account and are responsible for checking the inbox regularly. There is no additional charge to students for using this account, which remains active even after graduation. Information about activating and using MavMail is available at <http://www.uta.edu/oit/cs/email/mavmail.php>.

Campus Carry: Effective August 1, 2016, the Campus Carry law (Senate Bill 11) allows those licensed individuals to carry a concealed handgun in buildings on public university campuses, except in locations the University establishes as prohibited. Under the new law, openly carrying handguns is not allowed on college campuses. For more information, visit <http://www.uta.edu/news/info/campus-carry/>

Student Feedback Survey: At the end of each term, students enrolled in face-to-face and online classes categorized as “lecture,” “seminar,” or “laboratory” are directed to complete an online Student Feedback Survey (SFS). Instructions on how to access the SFS for this course will be sent directly to each student through MavMail approximately 10 days before the end of the term. Each student’s feedback via the SFS database is aggregated with that of other students enrolled in the course. Students’ anonymity will be protected to the extent that the law allows. UT Arlington’s effort to solicit, gather, tabulate, and publish student feedback is required by state law and aggregate results are posted online. Data from SFS is also used for faculty and program evaluations. For more information, visit <http://www.uta.edu/sfs>.

Final Review Week: for semester-long courses, a period of five class days prior to the first day of final examinations in the long sessions shall be designated as Final Review Week. The purpose of this week is to allow students sufficient time to prepare for final examinations. During this week, there shall be no scheduled activities such as required field trips or performances; and no instructor shall assign any themes, research problems or exercises of similar scope that have a completion date during or following this week *unless specified in the class syllabus*. During Final Review Week, an instructor shall not give any examinations constituting 10% or more of the final grade, except makeup tests and laboratory examinations. In addition, no instructor shall give any portion of the final examination during Final Review Week. During this week, classes are held as scheduled. In addition, instructors are not required to limit content to topics that have been previously covered; they may introduce new concepts as appropriate.

Laptop use in the classroom: In order to minimize distraction, the use of laptop and/or any other digital device (except standard scientific calculators) in the classroom is NOT allowed.

Emergency Exit Procedures: (Applies to face-to-face courses only.) Should we experience an emergency event that requires us to vacate the building, students should exit the room and move toward the nearest exit, look for illuminated EXIT signs. When exiting the building during an emergency, one should never take an elevator but should use the stairwells. Faculty members and instructional staff will assist students in selecting the safest route for evacuation and will make arrangements to assist individuals with disabilities.

CE 5382 – Construction Sustainability
TENTATIVE COURSE OUTLINE

Day	Date	Topic	Reference	Assignments Due
Week 1				
Tuesday	January 17	Intro to Construction Sustainability, LEED & IBC	Text Book: Chapter 1 and 2	Homework Handouts
Thursday	January 19	Green Building Assessment	Text Book: Chapter 4	Homework Handout
Week 2				
Tuesday	January 24	LEED 4.0	Powerpoint on Blackboard	List the Major Categories of Credits
Thursday	January 26	LEED - Site Selection	LEED + Text Book: Chapter 5 & LEED v3.0	List LEED SS Credits & Describe
Week 3				
Tuesday	January 31	LEED - Water Conservation	Chapter 5 & LEED v3.0	List LEED WE Credits & Describe
Thursday	February 2	LEED - Energy Efficiency	Chapter 5 & LEED v3.0	List LEED EA Credits & Describe
Week 4				
Tuesday	February 7	LEED - Conserving Materials	LEED + Chapter 5	List LEED MR Credits & Describe
Thursday	February 9	LEED - Indoor Air Quality and Comfort	LEED + Chapter 5	List LEED IAQ Credits & Describe
Week 5				
Tuesday	February 14	Green Building Design Process	Chapter 7	Homework Handout
Thursday	February 16	Commissioning & Construction Operations	Chapter 13	Homework Handout
Week 6				
Tuesday	February 21	Green Building Economics	Chapter 14	Homework Handout
Thursday	February 23	Review for LEED Exam		
Week 7				
Tuesday	February 28	EXAM #1: LEED EXAM		
Thursday	March 2	The Cutting Edge of Sustainable Construction	Chapter 15	Homework Handout (Green Report Draft Due)
Week 8				
Tuesday	March 7	CII Construction Sustainability Best Practices	Handouts on Blackboard	Homework Handout
Thursday	March 9	Infrastructure Sustainability	Guest Speaker	Review ISI Literature on Blackboard
SPRING BREAK – March 13 through March 17				
Week 9				
Tuesday	March 21	LEED Legal Issues	Handouts on Blackboard	
Thursday	March 23	Mechanical Engineering & LEED	Mechanical Engineer Guest Speaker	

Day	Date	Topic	Reference	Assignments Due
Week 10				
Tuesday	March 28	Green Building Presentations		
Thursday	March 30	Green Building Presentations		
Week 11				
Tuesday	April 4	LEED Building Case Study	Handouts	
Thursday	April 6	IBC Overview	IBC	Outline IBC Chapters
Week 12				
Tuesday	April 11	IBC Occupancy & Construction Types	IBC	List Occupancy Categories & Define Construction Types
Thursday	April 13	IBC Finishes, Fire Systems, Ingress & Egress	IBC	Describe Rated Assemblies for Walls & Roofs
Week 13				
Tuesday	April 18	BUILDING CODE EXAM REVIEW (Code Report Draft Due)		
Thursday	April 20	EXAM #2: BUILDING CODE EXAM		
Week 14				
Tuesday	April 25	IBC Structural Design, Finishes, Exterior Walls	GUEST SPEAKER, IBC	List Structural Systems Covered by the IBC
Thursday	April 27	Building Code Presentations		
Week 15				
Tuesday	May 2	Building Code Presentations		
Thursday	May 4	Semester Review		
Week 16				
Tuesday, May 9, 5:30 – 8:00 PM		FINAL EXAM (Comprehensive) – verify date & time		

As the instructor for this course, I reserve the right to adjust this schedule in any way that serves the educational needs of the students enrolled in this course. – Michael W. Fairchild

Emergency Phone Numbers: In case of an on-campus emergency, call the UT Arlington Police Department at 817-272-3003 (non-campus phone), 2-3003 (campus phone). You may also dial 911.