



COURSE SYLLABUS – Spring 2021

COURSE INFORMATION

Lecture Day: Wednesday

Lecture Time: 3:35 pm – 6:15 pm

Lecture Room: Virtual – Zoom: (<https://fiu.zoom.us/j/95113335042?pwd=M21iSitmSHNxUHRPYzZlWms4RDZlZz09>)

INSTRUCTOR

Instructor: Dr. Mohamed ElZomor

Office: EC 2955

Email: melzomor@fiu.edu

Office Hours: By appointment (email to schedule appointment)

T/A: Piyush Pradhananga pprad013@fiu.edu

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PROFESSOR'S BACKGROUND

Dr. ElZomor is an Assistant Professor at Florida International University. His work focuses on integrating energy efficiency measures into building design, construction, and operational processes. Specifically, he is interested in novel design activities that financially and technically define projects' scope and any associated risks.

Dr. ElZomor, was an Assistant professor at State University of New York (SUNY); where he introduced innovative models of education and paved for student's successes. During his time at SUNY, he led student teams in various international competitions and steered them to winning awards. Dr. ElZomor not only focuses on developing his students' technical skills, but also their professional skills. He strongly believes that these are the tools that help students strive in their careers.

Before embarking on his academic career, he spent approximately a decade gaining valuable local and international construction management experience while working in the construction industry for different capacities, both in the office and the field. Mohamed held different positions as a project manager, planner, estimator, and control's engineer with contract, procurement and costing responsibilities in varied types of projects and with consultants, contractors and owners. ElZomor worked as a Project Manager for several years and delivered several complex projects one of which was an iconic multi-million office park.

Dr. Mohamed has taught a variety of topics, ranging from construction management, sustainability, architecture, design and energy conservation, construction material, methods and equipment and urban infrastructure anatomy. He holds a Bachelor of Science in Construction Engineering, Master of Engineering in Construction, Master of Science in Design and Energy Conservation and a Ph.D. in Construction Management from Arizona State University. He is a licensed engineer, member of the American Society of Civil Engineers (ASCE), the American Society for Engineering Education (ASEE), and is Arizona's United States Green Building Council Ambassador.

CATALOG DESCRIPTION

This course presents a study of the concepts and techniques of sustainable construction. An in-depth review of sustainable materials and construction techniques will be covered.

COURSE LEARNING OUTCOMES

Upon completion of this course, students should be able to:

Course Learning Outcome (CLO)	SLO	Assessment
1. Understand the basic vocabulary for Sustainable Construction	18	Quiz, Midterm Exam
2. Identify the fundamental concepts of energy and science of climate that defines Sustainable Construction techniques	18	Quiz, Midterm Exam
3. Recognize the different certification tools in residential/commercial, and infrastructure construction projects	18	Quiz, Midterm Exam
4. Understand the principles of green building certifications (LEED) and low-energy building strategies	2, 18	Quiz, Student Individual Presentation
5. Develop analytical thinking skills, knowledge and gain attitudes of professionals through analyzing cases studies	2, 18	Term Project Student Individual Presentation
6. Apply the basic principles of sustainable construction on buildings by (1) proposing bold solutions that advance sustainable building performance or (2) applying existing tools of sustainable strategies to buildings	2, 18	Final Project
7. Create written communications appropriate to the construction discipline through LMS, Social Media and/or Report deliverable.	1	HM and Course Project Deliverables

INSTRUCTIONAL METHODS

This is a three lecture hours per week class that requires active student participation. Students are encouraged and expected to read required materials ahead of class and engage in virtual/classroom/online discussions, ask questions, and share relevant experiences with others. Throughout this course students will develop and prepare presentations, guide class discussions and will be assigned in-class and/or online activities to practice the covered materials. The instructor will use multiple means of communication and evaluations throughout the semester. Some examples for communication mediums are CANVAS, emails and Online social media platforms (*Twitter, Linked-in*); some examples of course evaluations are peer reviews, self-grading, Group members' grading their team and external guests. Students will be notified by the mean of grading for each deliverable.

TEXTBOOKS AND REFERENCE MATERIAL:

The required textbook for this class is:

- Title: **Sustainable Construction: Green Building Design and Delivery (4th edition)**
Author: Charles Kibert
Publisher: Wiley, 2016 (ISBN: 9781119055174)

The optional reading material for this class is:

- Title: Sustainable Buildings and Infrastructure: Paths to the Future
Author: Annie Pearce
Published: Routledge, 2012 (ISB: 0415690927)

Any required reading materials will be available on the Website.

ATTENDANCE POLICY:

Class attendance is mandatory. Absence from class may result in the loss of attendance points. Much of the learning of concepts that occurs during this course happens during course hours. If you are absent, for whatever reason, you lose the benefit of collaborating with your colleagues and the faculty. It is recommended for students who are able to anticipate an absence to notify the instructor in advance. Absent students will be responsible for all material covered in class, and for completing any and all assigned work, regardless of whether the absence was excused or unexcused. It is the student's responsibility to do whatever is necessary to obtain material missed, to obtain and complete assigned work missed, and to keep informed as to when quizzes and exams will be administered.

EXAMINATION AND GRADING POLICY

The following criteria, weights, and grading scale will be used to calculate the Final Grade. The final grade for the course will be based on the student's understanding of the course material as evidenced by his/her performance on Participation/attendance, Quizzes, Midterm, Academic Article Analysis and Discussion in Class, Presentation/s, Term Project and assignments according to the following:

Deliverables	Qty.	Weight	Grade	Scale
• Attendance, Participation, Activities and HM	20	20%	A	93 – 100%
• Reading Quizzes	5	20%	A-	90 – 92.9%
• Midterm	1	20%	B+	87 – 89.9%
• LEED Credit/s (<i>Presentation # 1</i>)	1	15%	B	83 – 86.9%
• Horizontal Sustainable Construction In-Class Activity (<i>In-class Pres. # 2</i>)	1	5%	B-	80 – 82.9%
• Final Project Sustainable Buildings Case Study (<i>Pres. # 3</i>)	1	20%	C+	77 – 79.9%
			C	70 – 76.9%
			D	60 – 69.9%
			F	

- Attendance, Participation and HM will be required during the semester. [Every student to use social media \(twitter &/or Instagram\) as a medium for communication in addition to CANVAS where students' participation and HM will be monitored and graded.](#)
- These weights may be changed at the discretion of the instructor to reflect the emphasis placed on the material presented during the course. All examinations, homework, and other student work are the intellectual property of the student, but the instructor reserves the right to retain any and all student work for the purposes of record, exhibition, and instruction. Examination and homework assignment dates indicated in this syllabus are tentative and subject to change at the instructor's discretion according to class progress. It is the responsibility of the student to keep abreast of the class schedule. [Absence from previously assigned meeting time is not accepted as a valid reason for missing any scheduled deliverable](#) including Examination, Quiz, Presentation, Homework, etc.
- Quizzes usually start exactly at the beginning of the schedule meeting time and lasts for approximately 5/10 minutes depending on the quiz. This is the only window to complete the quiz. Quizzes will have time limits and will include a deadline to complete them.
 - [There will not be any makeups for the Quiz and it is part of your attendance.](#)
 - [Quizzes will be on CANVAS; please ensure having laptops, tablets, etc. to sit for the quiz.](#)
- Students may be required to attend field trips either during class time or on weekends or on their own. The professor will inform the students ahead of those field trips so they may coordinate accordingly.
- Students will be expected to work in groups or individuals for presentations. [Presentations will be either presented virtually/in-class or to be posted online before class time. Online submissions will have a deadline and this will not be changed, please make sure to submit the presentation before meeting times.](#)
- For the LEED presentation, an individual presentation is required. Each student will develop and present assigned sections in LEED V.4, which is to be presented for the rest of the class.
- For the Horizontal Sustainable Construction it will be an in-class/virtual activity and presentation
- This Class will provide sessions and training to develop your Professional Presentation Skills and so students will be required to demonstrate their progress in such skills during each presentation.
- Test and quiz dates are listed on the course schedule, all tests are comprehensive. Tests will cover all materials up to the corresponding date of the test. All tests and quizzes will be closed book.
- [Only Graduate student/s are required to provide an additional deliverable, Project Report for a Sustainable Topic/Project and will sit for GA exam before the end of semester. If graduate student passes the LEED GA exam, the Report deliverable will not be needed.](#)
- **If any student passes the LEED GA Exam during the Semester this will count towards your Final Grade, there is almost 55% of this course grade that is connected and contingent on the LEED GA Exam.**

VIRTUAL CLASS ENVIRONMENT

The instructor expects and insists that the class environment remain professional, businesslike, and conducive to learning. Behavior or actions that disrupt this environment are not acceptable and will subject the student to removal from the class by the University Public Safety Department. **Students will be requested to ensure their presence during the virtual meeting times on the online platform.** Use of other computers and any other smart and communication devices is not permitted during meeting times. Any student doing so will be asked to leave the class and not return during that particular class session. Repeated disruption of the class environment will subject a student to expulsion from the course, solely at the instructor's discretion. Students must turn off or silence their smart phones and other devices that emit audible alarms immediately upon the beginning of the class.

RELIGIOUS HOLIDAYS

The School adheres to the University's policy concerning religious holidays as stated in the University catalog. Any student may request to be excused from a class to observe a religious holiday for their faith. Assignments due on that day will be due the day following the holiday. If a quiz falls on a religious holiday, an alternate date will be provided. Students are expected to inform the instructor ahead of time so that appropriate arrangements may be made.

ACADEMIC HONESTY AND INTEGRITY

All students are expected to conform to the University Code of Conduct, and to adhere to the principles of academic integrity as defined by the University Division of Student Affairs and the Division of Academic Affairs. Violations of the University Code of Conduct will be prosecuted to the fullest extent available.

STUDENT CODE OF STANDARDS

By attending this class, the student is required to comply with the Florida International University Student Code of Standards, including, but not limited to, references concerning classroom behavior, discrimination, sexual harassment and academic misconduct. A copy of the Code may be found in the University Student Handbook.

DISABLED STUDENTS

Students with disabilities who may need special accommodations should register with the Disability Resource Center for Students, telephone (305) 348-3532. In addition, they are encouraged to contact the instructor so that arrangements can be made to accommodate their needs.

INCLUSIVE EXCELLENCE STATEMENT

As an institution, we embrace inclusive excellence and the strengths of a diverse and inclusive community. During classroom discussions, we may be challenged by ideas different from our lived experiences and cultures. Understanding individual differences and broader social differences will deepen our understanding of each other and the world around us. In this course, all people (including but not limited to, people of all races, ethnicities, sexual orientation, gender, gender identity and expression, students undergoing transition, religions, ages, abilities, socioeconomic backgrounds, veteran status, regions and nationalities, intellectual perspectives and political persuasion) are strongly encouraged to respectfully share their unique perspectives and experiences. This statement is intended to help cultivate a respectful environment, and it should not be used in a way that limits expression or restricts academic freedom at FIU.

COURSE SCHEDULE:

Please refer to the Schedule of Classes file. This schedule is a living document which is updated regularly with all course lectures, activities and requirements. This schedule is regularly on CANVAS.

BCN 4570_Sustainable Approach to Construction & BCN 5585 – Sustainable Construction

Module	Date	Day	Class	Class Activity	Attendance	Assigned Task	Task Due
Module 1: Sustainability and Certifications	13-Jan	Wednesday	1	Welcome and Course: Introduction Motivation: Why is sustainable Construction important? Defining Sustainability, discussion on global issues and leverage; Environmental Resources and Concerns	Zoom Meeting Required	Prepare Resume Set-up your Twitter Account Reading Ch. 1 & 2 (Quiz #1)	
	20-Jan	Wednesday	2	Built Environment and Codes, Regulations and Certifications & Energy Basics, Renewable and Energy Efficiency Auditing	Will be Through Quiz	Reading Ch. 8 & Ch. 9 (Quiz # 2)	Submit your Resume Activate your Twitter, IG & LinkedIn Account Reading Quiz # 1
Module 2: Energy, Solar, Light and Climate	27-Jan	Wednesday	3	Energy Fundamentals, Internal Loads and External Loads & Shading, Lighting, Daylight, and Electric Lighting	Will be Through Quiz	Reading Ch. 4, 5 and 6 Reading Ch. 10, 12 and 13 (Quiz # 3)	Reading Quiz # 2 Tweet/Post # 1
	3-Feb	Wednesday	4	Climate, Microclimate, Thermal Comfort, Urban Heat Island and Evaporative Cooling + Energy Efficiency Measures (Passive Vs. Active Strategies) + Overview of LEED Certification	Will be Through Quiz	Reading Ch. 3 and Ch. 7 Reading Ch. 14 (Quiz # 4)	Reading Quiz # 3
	10-Feb	Wednesday	5	"Sustainable Project Decisions and Life Cycle Assessment Special Certifications: LBC, Net Zero, Energy star and HERS". Water Strategies, Site, Construction Materials (Recycle/Reuse) and Indoor Environmental Quality	Will be Through Quiz	Reading Ch. 11 and Ch. 15 (Quiz # 5)	Reading Quiz # 4 Tweet/Post # 2
Module 3: Sustainable Building Rating Systems	17-Feb	Wednesday	6	Prepare for the LEED Presentation and Study for the Midterm and GA Exam		Prepare for LEED Presentations # 1	Reading Quiz # 5
	<u>24-Feb</u>	Wednesday	7	Student Presentations # 1 - LEED Credits ALL students to submit their presentation on CANVAS by noon	Zoom May Be Required	Midterm	LEED Presentations # 1
	<u>3-Mar</u>	Wednesday	8	MIDTERM			
	10-Mar	Wednesday	9	Planning to Sit for the GA Exam Study for the GA Exam	No class Required		
	<u>17-Mar</u>	Wednesday	10	Horizontal Sustainable Construction In-Class Activity	Zoom Meeting Required	Draft Homework #1	In-Class (Virtual) Activity/Presentation # 2 No need to Prepare for Presentation #2 Tweet/Post # 3
Module 4: Synergies to Sustainable Construction and Professional Learning Experience	<u>24-Mar</u>	Wednesday	11	Communication/Presentation Skill Training In-Class Activity Field Trip / Students are required to visit a Building or Construction Site for Final Project Presentation	Zoom Meeting Required	Student Prepare for Final Presentation/Project	
	<u>31-Mar</u>	Wednesday	12	Training for Online Presentations In-Class Activity Special Certifications: BREEAM, CASBEE, Green Star & Horizontal Construction - Green Roads, Invest, Envision	Zoom Meeting Required		Tweet/Post # 4
	7-Apr	Wednesday	13	<i>Lean and Biomimicry, Commissioning and Effective Construction & Difference between Sustainability and Resilience</i>		Complete All Course Surveys	Homework #1 (HM Compile & Submit your Tweets on CANVAS)
	<u>14-Apr</u>	Wednesday	14	Final Project Presentation (@ 3:35 - 6:15)	Zoom Meeting Required		Final Presentation # 3
	21-Apr	Wednesday	15	Exam Week - Course Development and Professional Assessment			

Syllabus Changes - Any information in this syllabus may be subject to change with reasonable advance notice.