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CET 314-102: Construction Procedures II

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CET 314 – Construction Procedures II

Spring 2020

COURSE NUMBER	CET 314
COURSE DESCRIPTION	Construction Procedures II
COURSE STRUCTURE	(3-0-3) (lecture hr/wk - lab hr/wk – course credits)
COURSE DESCRIPTION	An introduction to building construction practices and building materials. Emphasis is on structural systems, construction materials and detailed finishing operations required to make a serviceable structure. Case studies in building construction are used.
PREREQUISITE(S):	CET 313, CET 317
COREQUISITE(S):	None
REQUIRED MATERIALS	<u>Fundamentals of Building Construction, 7th Edition</u> Edward Allen and Joseph Iano - Wiley, 2019 - ISBN 978-1-119-44619-4
OPTIONAL MATERIALS	To be announced.
COMPUTER USAGE	Microsoft Word, Excel, PowerPoint, Autodesk AutoCAD, Trimble SketchUp
COURSE OBJECTIVES	By the end of the course students should be to: <ol style="list-style-type: none">1. Understand the principles of the building process and building sustainability.2. Understand the various construction materials used in building construction, their properties, characteristics and uses.3. Understand how the various construction materials are manufactured.4. Understand how each type of construction material is assembled into the structure.5. Understand the concept of cladding systems and the different types that are used in building construction.
CLASS TOPICS	Building processes and sustainability, light wood frame construction, interior and exterior finishes for light wood frame construction, heavy timber frame construction, steel and light gauge steel construction, brick masonry, stone and concrete masonry, concrete construction, site cast and precast concrete construction, glass and glazing, cladding systems.
STUDENT OUTCOMES	ABET Student Outcomes: <ol style="list-style-type: none">(1) an ability to apply knowledge, techniques, skills and modern tools of mathematics, science, engineering, and technology to solve broadly-defined engineering problems appropriate to the discipline;(2) an ability to design systems, components, or processes meeting specified needs for broadly-defined engineering problems appropriate to the discipline;(3) an ability to apply written, oral, and graphical communication in broadly-defined technical and non-technical environments; and an ability to identify and use appropriate technical literature;(4) an ability to conduct standard tests, measurements, and experiments and to analyze and interpret the results to improve processes; and(5) an ability to function effectively as a member as well as a leader on technical teams. ABET Program Outcomes: <ol style="list-style-type: none">a. utilization of techniques that are appropriate to administer and evaluate construction contracts, documents, and codes;b. estimation of costs, estimation of quantities, and evaluation of materials for construction projects;c. utilization of measuring methods, hardware, and software that are appropriate for field, laboratory, and office processes related to construction;e. production and utilization of documents related to design, construction, and operations;g. selection of appropriate construction materials and practices;h. application of appropriate principles of construction management, law, and ethics; andi. performance of standard analysis and design in at least one sub-discipline related to construction engineering.

GRADING POLICY	Attendance	10%
	Class Presentations	10%
	Homework SketchUp Exercises	10%
	Test 1	20%
	Test 2	20%
	Final Exam	30%

Notes:

1. Attendance to all classes is expected and mandatory. Attendance constitutes part of the course grade and will be evaluated as an assignment.
2. Class materials will be posted on Canvas. It is the student's responsibility to access the materials and retain them as necessary.
3. Tests and Final Exams – You cannot pass the course if you have not taken BOTH tests and the final exam.
4. There will be no makeup tests except in extraordinary circumstances.

ACADEMIC INTEGRITY

“Academic Integrity is the cornerstone of higher education and is central to the ideals of this course and the university. Cheating is strictly prohibited and devalues the degree that you are working on. As a member of the NJIT community, it is your responsibility to protect your educational investment by knowing and following the academic code of integrity policy that is found at:

<http://www5.njit.edu/policies/sites/policies/files/academic-integrity-code.pdf>.

Please note that it is my professional obligation and responsibility to report any academic misconduct to the Dean of Students Office. Any student found in violation of the code by cheating, plagiarizing or using any online software inappropriately will result in disciplinary action. This may include a failing grade of F, and/or suspension or dismissal from the university. If you have any questions about the code of Academic Integrity, please contact the Dean of Students Office at dos@njit.edu”

STUDENT BEHAVIOR

- No eating or drinking is allowed at the lectures.
- Cellular phones must be turned off during the class hours – if you are expecting an emergency call, leave it on vibrate.
- No headphones can be worn in class.
- Unless the professor allows the use during lecture, laptops should be closed during lecture.
- Class time should be participative. You should try to be part of a discussion.

MODIFICATION TO COURSE

The Course Outline may be modified at the discretion of the instructor or in the event of extenuating circumstances. Students will be notified in class of any changes to the Course outline.

PREPARED BY

Zachary A. Porcello, P.E., R.A., AIA, LEED AP
zap3@njit.edu (preferred contact)

Note that this instructor does not have an office on campus. The instructor will be available after regularly scheduled classes. Additional arrangements can be made to accommodate both parties if questions/issues cannot be resolved via email or Canvas.

COURSE COORDINATOR

Prof. John Wiggins, P.E., P.P., Esq., F.ASCE

CLASS HOURS

Wednesday 6:00 PM – 8:50 PM Central King Building 314

COURSE OUTLINE & SCHEDULE

Week	Class Date	Topic(s)	Textbook Chapter(s)	Homework Assigned	Due Date	Presentation Group
1	1/22/2020	<i>Class Introduction, Syllabus, Expectations, Class Policies</i>	-	-	-	-
		Introduction to SketchUp	-	-	-	-
2	1/29/2020	Making Buildings	1	Figure 1.6 Model	2/12/2019	-
3	2/5/2020	Foundations and Sitework	2	Figure 2.27 Model	2/19/2020	-
		Concrete Construction	13	Figure 13.33 Model	2/19/2020	-
4	2/12/2020	Sitecast Concrete Systems	14	-	-	Group 1
		Precast Concrete Systems	15	-	-	
5	2/19/2020	Test No. 1	1, 2, 13-15	-	-	-
		Steel Frame Construction	11	Figure 11.41 Model	2/26/2020	-
6	2/26/2020	Brick Masonry	8	-	-	Group 2
		Stone and Concrete Masonry	9	-	-	
7	3/4/2020	Masonry Wall Construction	10	Figure 10.7 Model	3/25/2020	Group 3
		Cladding with Masonry and Concrete	20	-	-	
8	3/11/2020	Wood	3	-	-	Group 4
		Heavy Timber	4	Figure 4.2c Model	3/25/2020	
9	3/18/2020	Spring Break - No Class				
10	3/25/2020	Wood Light Frame Construction	5	Figure 5.2 Model	4/8/2020	Group 1
11	4/1/2020	Test No. 2	3-5, 8-10, 20	-	-	-
		Light Gauge Steel Frame Construction	12	-	-	-
12	4/8/2020	Designing the Building Enclosure	16	-	-	Group 2
		Exterior Finishes for Wood Light Frame Construction	6	-	-	
		Roofing	17	Figure 17.23 Model	4/22/2020	
13	4/15/2020	Glass and Glazing	18	-	-	Group 3
		Windows and Doors	19	-	-	
		Cladding with Metal and Glass	21	Figure 21.2 Model	4/29/2020	
14	4/22/2020	Selecting Interior Finishes	22	-	-	Group 4
		Interior Walls and Partitions	23	Figure 7.20 Model	4/29/2020	
15	4/29/2020	Interior Finishes for Wood Light Frame Construction	7	-	-	-
		Finish Ceilings and Floors	24	-	-	-
		Final Exam - Date and Time TBA	1-24	-	-	-

Important Dates

4/6/2020	Last Day to Withdraw				
5/5/2020	Last Day of Classes				
5/6/2020	Reading Day 1				
5/7/2020	Reading Day 2				
5/8/2020	Final Exams Begin				
5/14/2020	Final Exams End				
5/16/2020	Grades Due				

As of 1/18/20