

CET 314 – Construction Procedures II

SPRING 2023

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 on structural systems, construction materials and detailed finishing operations required to make a serviceable structure.
PREREQUISITE(S)	CET 313, 317
REQUIRED MATERIALS	<u>Fundamentals of Building Construction, 7th edition</u> , Edward Allen & Joseph Iano, J. Wiley
COMPUTER USAGE	Word, Excel, PowerPoint
COURSE OBJECTIVES	By the end of the course students should be able to: <ol style="list-style-type: none">1. Understand the principles of sustainability in building construction.2. Understand the different types of building materials and their properties.3. Understand how the different parts of the structure are assembled.4. Discussion of interior finishes.5. Understand the different concepts and types of cladding systems that are used in the building process
CLASS TOPICS	Sustainability of buildings, wood as a building product, heavy timber frame, light wood frame construction, interior and exterior finishes for wood frame construction, brick masonry, stone masonry, steel construction, light gauge steel construction, concrete construction, glass, and glazing, cladding systems
STUDENT OUTCOMES	<p>The Course Learning Outcomes support the achievement of the following CET Student Outcomes and TAC of ABET Criterion 9 requirements</p> <p>Student Outcome 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.</p> <p>Course Learning Outcome – Understand the various construction materials for the building project, their characteristics and how they are constructed in the building project.</p>

Student Outcome 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.

Course Learning Outcome – Students will be able to identify the best construction material to use in the construction project.

Student Outcome 4 – An ability to conduct standard tests, measurements, and experiments and to analyze and interpret the results to improve processes.

Course Learning Outcome – Students will be able to determine the engineering properties and physical properties of different materials and understand the testing protocols to determine the performance of the materials used in the building process.

Program Specific Outcomes a - Utilization of measuring methods, hardware and software that are appropriate for field, laboratory, and office processes related to construction.

Course Learning Outcome – Students will be able to determine what various materials will be appropriate for the building project.

Program Specific Outcomes b – Estimation of costs, estimation of quantities, and evaluation of materials for construction projects.

Course Learning Outcome – Ability to provide a detailed estimate and quantities based upon the different materials utilized in the construction project

Program Specific Outcomes c – Utilization of measuring methods, hardware and software that are appropriate for field, laboratory, and office processes related to construction.

Course Learning Outcome – Students will be able to determine the engineering properties and physical properties of different materials and understand the testing protocols to determine the performance of the materials used in the building process.

Program Specific Outcomes d – Application of fundamental computational methods and elemental analytical techniques in sub-disciplines related to construction engineering.

Course Learning Outcomes – Apply the techniques available to determine what materials would provide the required results required for the building process.

Program Specific Outcomes e – Production and utilization of documents related to design, construction, and operations.

Course Learning Outcomes – Students will be able to determine how the various materials will be used in the building project based on the construction contracts, documents, and codes

Program Specific Outcomes f - Performance of economic analysis and cost estimates related to design, construction, and maintenance of systems associated with construction engineering.

Course Learning Outcome – Students will be able to determine how the various materials will be used in the building project based on the construction contracts, documents, and codes

Program Specific Outcomes g – Selection of appropriate construction materials and practices.

Course Learning Outcomes – Students will be able to determine how the various materials will be used and the method of construction in the building project based on the construction contracts, documents, and codes

Program Specific Outcomes h – Application of appropriate principles of construction management, law, and ethics.

Course Learning Outcome – Students will be able to determine how the various materials will be used and the method of construction in the building project based on the construction contracts, documents, and codes

GRADING POLICY	Exam 1	25 %
	Exam 2	25%
	Exam 3	25%
	Final Exam	25 %

Note: A student cannot pass this course if they have not taken the final exam. If a student misses a scheduled test, they will have 1 week from the date of the test to schedule their taking of the test.

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 on which you are working. 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 Class time should be participative. You should try to be part of the 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 Edward A. Gottko

CLASS HOURS

Tuesday	11:30 AM – 1:00 PM	FMH 321
Thursday	11:30 AM – 1:00 PM	FMH 321

Methods of Achieving Success Achieving success in this course will require a time commitment outside of class that averages two to three hours per week. It is vital that the student read the textbook assignments prior to their being covered in class. If the student fails to understand any material, it is crucial that the student seek out the instructor for consultation.

GRADING LEGEND

GRADE	NUMERIC RANGE
A	90 to 100
B+	85 to 89
B	80 to 84
C+	75 to 79
C	70 to 74
D	60 to 69
F	0 to 59

The grade of Incomplete will only be granted in the case of an extreme emergency on the part of the student, proved by adequate evidence.

OFFICE HOURS

Office hours will be available on Tuesdays from 10:00 AM to 11:00 AM. The student should contact the professor to arrange a meeting.

COURSE OUTLINE

Week	Date Week of	Textbook	Assignment	Topics
1.	January 17	Chapter 1 Chapter 2		General Introduction – review of syllabus and textbook. Foundations
2.	January 24	Chapter 2	TBD	Foundations
3.	January 31	Chapter 3	TBD	Wood
4.	February 7	Chapter 4	TBD	Heavy Timber Frame Construction
5.	February 14	Chapters 5	TBD	Light Wood Frame Construction
6.	February 21	Chapter 8	TBD	Brick Masonry
7.	February 28	Chapters 9 & 10		Stone & Concrete Masonry
8.	March 7	Chapters 9 & 10	TBD	Stone & Concrete Masonry
9.	March 14			Spring Break
10.	March 21	Chapter 11	TBD	Steel Construction
11.	March 28	Chapter 12	TBD	Steel Construction
12.	April 4	Chapter 13	TBD	Concrete Construction
13.	April 11	Chapter 14	TBD	Site cast/ Pre-Cast Concrete
14.	April 18	Chapter 17	TBD	Glass and Glazing
15.	April 25	Chapters 19, 20, 21		Cladding Systems

TUESDAY, MAY 2, 2023 – FRIDAY SCHEDULE & LAST DAY OF CLASSES

WEDNESDAY, MAY 3, 2023 – READING DAY 1

THURSDAY, MAY 4, 2023 – READING DAY 2

THURSDAY, MAY 5, 2023 – FINAL EXAMINATIONS BEGIN – DATE OF EXAM IS TO BE DETERMINED