New Jersey Institute of Technology

Department of Engineering Technology

CET 317 Construction Computing

COURSE NUMBER	CET 317
COURSE NAME	Construction Computing
COURSE STRUCTURE	2-2-3 (lecture hr/wk - lab hr/wk – course credits)
COURSE INSTRUCTOR	Professor Yanxiao Feng
COURSE DESCRIPTION	This course explores the application of computing tools in construction project planning, analysis, and modeling. Students will develop cost estimates and perform return on investment (ROI) analyses using Excel, apply scheduling techniques such as bar charts, activity on arrow (AOA), and activity on node (AON), and conduct resource-loaded schedule analysis using Microsoft Project. The course also introduces building information modeling (BIM) through hands-on use of Revit, where students will create 2D construction drawings and build coordinated 3D models to support design, construction, and documentation processes.
PREREQUISITE(S)	CS106
COREQUISITE(S)	None
REQUIRED ELECTIVE	Required
OR SELECTED ELECTIVE	
REQUIRED MATERIALS	Construction Project Scheduling and Control, 2nd edition, S. Mubarak, John Wiley & Sons, 2010, ISBN978-0-470-50533-5. Autodesk Revit 2026 Architecture Fundamentals, SDC Publications, 2026, ISBN: 978-1-63057-736-0
COMPUTER USAGE	Microsoft Office, Revit, Computer Aided Design (CAD) Software

COURSE OUTCOMES (CO) By the end of the course students should be able to:

1. Develop project cost estimates and perform return on investment (ROI) analysis using Excel.
2. Apply scheduling tools such as bar charts, activity on arrow (AOA), and activity on node (AON) to organize construction activities.
3. Conduct project scheduling analysis and resource planning using Microsoft Project.
4. Create and interpret 2D construction drawings using Revit.

5. Build coordinated 3D models in Revit to support design, construction, and documentation processes.

COURSE TOPICS

Project Cost Estimation and ROI Analysis, Construction Scheduling and Control techniques, Network Scheduling and Critical Path Method, Resource Allocation and Leveling, 2D Drafting and Construction Documentation in Revit, 3D Modeling and Coordination using Revit

STUDENT OUTCOMES

The Course Outcomes support the achievement of the following

CET Student Outcomes:

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;

Related CO – 1 thru 5

GRADING POLICY

Assignments	20%
Quiz	10%
Midterm Exam	25%
Lab Project and Test	15%
Final Exam	25%
Participation	5%

There are quizzes for lecture and lab class. If you achieve an A for all the quizzes and homework, you will not be excused from the final. There will be no makeup tests, quizzes and exam.

Homework sets are due one week after they are assigned. There will be 5% per day late penalty. Assignments more than one week late will not be accepted.

- Homework must be submitted online on canvas.
- Homework must be clearly legible.
- Homework should be completed individually.
- All equations should be defined symbolically prior to calculating any values.
- DO NOT HAND IN class notes or scratch work

ACADEMIC INTEGRITY

NJIT has a zero-tolerance policy regarding cheating of any kind and student behavior that is disruptive to a learning environment. Any incidents will be immediately reported to the Dean of Students. In the cases the Honor Code violations are detected, the punishments range from a minimum of failure in the course plus disciplinary probation up to expulsion from NJIT with notations on students' permanent record. Avoid situations where honorable

behavior could be misinterpreted. For more information on the honor code, go to http://www.njit.edu/academics/honorcode.php

STUDENT BEHAVIOR

- No eating or drinking is allowed at the lectures, recitations, workshops, and laboratories.
- Cellular phones must be turned off during the class hours.
- No headphones can be worn in class.

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.

CLASS HOURS & LOCATION

Tuesday	10:00 AM-12:05 PM	GITC 2302
Friday	02:30 AM-04:35 PM	Mall PC37

OFFICE HOURS

Tuesday: 1:30 PM-3:00 PM; and Friday: 10:00 AM-11:30 AM;
or By appointment: yanxiao.feng@njit.edu

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

COURSE IMPORTANT DATES

- **SEP 8, 2025 – LAST DAY TO ADD/DROP A CLASS**
- **SEP 8, 2025 – LAST DAY FOR 100% REFUND, FULL OR PARTIAL WITHDRAWAL**
- **SEP 15, 2025 – LAST DAY FOR 90% REFUND**
- **SEP 29, 2025 –LAST DAY FOR 50% REFUND**
- **OCT 2, 2025 – WELLNESS DAY**
- **OCT 20, 2025 –LAST DAY FOR 25% REFUND**
- **NOV 10, 2025 – LAST DAY TO WITHDRAW**
- **NOV 25, 2025 – THURSDAY CLASSES MEET**
- **NOV 26, 2025 – FRIDAY CLASSES MEET**
- **NOV 27, 2025 – THANKSGIVING RECESS BEGINS. NO CLASSES.**
- **DEC 11, 2025 – LAST DAY OF CLASSES**
- **DEC 12, 2025 – READING DAY 1**
- **DEC 14, 2025 – FINAL EXAMS BEGIN**