Fall 2024

CS 104-001, 003, 005, 007: Computer Programming and Graphics Problems

Kaustubh Vijaykumar Pethkar

CS104 - Computer Programming and Graphics Problems

Course Syllabus Fall – 2024

Instructor: Kaustubh Pethkar
Office: GITC 2118
Office Hours: Tuesday, Wednesday 1pm- 2pm (in-person) || by appointment (Zoom)
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TA Information- (Labs):
1. CS104 001- Chandramouli Vittal (cv267@njit.edu)
2. CS104 003- Mustansir Kapasi (myk3@njit.edu)
3. CS104 005- Nashid Shah (nn379@njit.edu)
4. CS104 007- Suryaprakash Halwasia (ssh49@njit.edu)

Class Meetings - (**Lectures**):
CS104- 001: Tuesday 10:00 AM - 11:20 AM- **Location**: TIER LECT 1
CS104- 003: Tuesday 10:00 AM - 11:20 AM- **Location**: TIER LECT 1
CS104- 005: Monday 8:30 AM - 9:50 AM- **Location**: WEST LECT 1
CS104- 007: Monday 8:30 AM - 9:50 AM- **Location**: WEST LECT 1

1. Course Information:
A. Course Number, Title, Credits
CS104, Computer Programming and Graphics Problems, 3 credits.

B. Catalog Course Description
This course provides students with a comprehensive introduction to software engineering principles and web development. Students will learn the fundamentals of programming, web development, and software engineering methodologies. They will gain hands-on experience with HTML, CSS, JavaScript, and modern web development tools like GitHub, and Bootstrap. Throughout the course, students will work on a project, from proposal to final presentation, allowing them to apply their programming and web development skills to real-world scenarios.

2. Course Features and Objectives:
A- Features:
This course has unique features that are not currently offered through any other course on campus. These features are:

- - Understand the fundamentals of software engineering.
- - Explore SCRUM methodology for project management.
- - Work in teams for collaborative projects.
- - Gain proficiency in using GitHub for version control.

- - Understand the architecture of the web and how it functions.
- - Understand the process of deploying web applications into production environments
- - It provides hands-on multidisciplinary real-world experiences that integrate business applications with computer technology areas such as art & design, multimedia and game development. - It simulates the real-world environment internally in the structure of students' teams and of course "virtual organization".
- - It offers dynamic market-driven training that reflects hot topics highly demanded by industry but not usually covered through a static college curriculum.
- - It enables students to master career-oriented skills such as leadership, presentation, entrepreneurship, social and communication skills.
- - It shows how both IT and business knowledge are used to solve real-world architecture-related problems.
- - The experience gained working on such projects will make students more employable by industry including the ability of building businesses through the entrepreneurship track.

B- Specific goals for the course

Students who complete this course successfully will have:

- Ability to break down complex problems into manageable pieces.
- Ability to define project stakeholders, scope
- Ability to capture, map and visualize the design of the proposed solution identifying key components and their relationships.
- Ability to implement the solution successfully using software and/or hardware technologies with emphasis on design and development.
- Ability to communicate a value proposition of the project to various stakeholders including the ability to explain, convince, engage and impress.
- Ability to organize the presentation in a meaningful and professional fashion including mastering personal and collaboration presentation skills.

Accordingly, the general outcomes of this course include:

(a) An ability to apply knowledge of computing and mathematics appropriate to the discipline

(b) An ability to analyze a problem, and identify and define the computing requirements appropriate to its solution

(c) An ability to design, implement, and evaluate a computer-based system, process, component, or program to meet desired needs

(d) An ability to function effectively on teams to accomplish a common goal

(e) An understanding of professional, ethical, legal, security and social issues and responsibilities

(f) An ability to communicate effectively with a range of audiences

(h) Recognition of the need for and an ability to engage in continuing professional development

(i) An ability to use current techniques, skills, and tools necessary for computing practice.

(k) An ability to apply design and development principles in the construction of software systems of varying complexity.

Course Material:

We will use PowerPoint slides and a collection of papers/ articles / blogs for our class. All the course materials will be available on canvas.

Recitation

Attending recitation is an important checkpoint in assuring your grasp of the material being covered and correctly solving assigned problems. When you go for recitation, you should have already read the assigned material and worked on current homework. In recitation, you should be prepared to ask the questions you have identified that need clarification. This will check whether your understanding of this material is correct. If you have any doubts meet me during office hours, I have posted office hours.

Communication:

This course uses Canvas for announcements and discussion. If you have questions about the class materials or assignments, requests for clarification, or other issues that may interest the class, post them to the Discussion Forum in Canvas.

If you have any further questions that you are confident do not belong on Canvas, drop me a message using NJIT email.

***A class discord or Slack account can be set up for Queries related homework on the request of the students.**

Grading Policy:

Attendance	**10%**
Progress Reports	**30%**
Team Project	**35% (including presentations and model)**
Labs	**25%**
Total	**100%**

Late Policy

Assignments due date will be provided for each Assignment on canvas and students are expected to submit on the day of due date, failing to submit before the due date will result

in a penalty of 10% deduction for each day late. No Exceptions will be made unless the student genuinely has a serious problem (like medical, family etc.)

Common Presentations

There are no makeup midterm and final presentations. Midterm presentations for each section will commence from Wednesday Oct 30, 2024. The date for final presentation will be announced soon.

Grading Scale:

Grade	Significance
90-100	A (Excellent)
80-89	B+ (Very Good)
73-79	B (Good)
65-72	C+ (Acceptable)
57-64	C (Marginal Performance)
50-56	D (Minimal Performance)
50 and below	(F) Fail

Grade Corrections
Check the grades in course work and report errors promptly. Please try and resolve any issue within 48 hours of the grade notification.

Generative AI
This course expects students to work without artificial intelligence (AI) assistance in order to better develop their skills in this content area. As such, AI usage is not permitted throughout this course under any circumstance.

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: NJIT Academic Integrity Code.

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"

A set of ethical principles governing this course:

- It is okay to share information and knowledge with your colleagues/classmates, but
- **It is not okay** to share the work,
- **It is not okay** to post or give out your work to others (also in the future!),
- **It is not okay** to use the work from others

You will be informed of any modifications of this syllabus during the semester.