MTEC 1201: COMPUTER PROGRAMMING FOR INTERACTIVE MEDIA I

Emerging Media Technology
Department of Entertainment Technology
New York City College of Technology
Fall 2025

Course Info

MTEC 1201 Section D30
Computer Programming for Interactive Media I
Professor: Ofer Shouval
When: Wednesdays, 10:00am - 1:40pm
Modality: Fully in person
Location: Voorhees V103B
Course site: [this GitHub repo]
Discord: See email invitation
Email: OFER.SHOUVAL11@citytech.cuny.edu
Office hours: Thursday 2pm-4pm (via Zoom or Discord), and by appointment outside of listed hours.
Sign up for office hours through Discord DM or Email

COURSE DESCRIPTION

This course introduces students to foundational programming concepts and techniques, with a focus on coding for creative applications. Students design, develop, and code interactive software experiences integrating computer graphics, image assets, text and fonts, and additional digital media. Programming for Interactive Media is the first in a sequence of coding courses for the Emerging Media Technology program, preparing students for advanced coursework in the program.

LEARNING OUTCOMES

For the successful completion of this course, a student should be able to:

- Develop literacy for reading and writing in a coding language.
- Recognize and articulate computational strategies used in contemporary interactive media projects.
- Demonstrate learning and problem-solving methodologies, including use of coding reference, documentation materials, and flow charting.
- Implement foundational coding concepts and techniques to realize interactive software experiences, including use of: variables, logical comparison, and arithmetic operators; conditionals, functions; loops; arrays; and an introduction to Object Oriented Programming.
- Design, develop, debug, and iterate an interactive software experience from ideation through final project presentation.

COURSE STRUCTURE

The course combines lectures and presentations, critiques, discussions, and studio/lab time. Typically, students work on technical exercises each week, along with creative short study projects integrating these newly learned techniques. There will be two larger interactive software projects during the semester- a midterm and final project- largely independently driven, with iterative project development.

Course materials and assignments will generally be posted to GitHub on Wednesdays of each week, due the following Wednesday before class begins. We will create small peer groups for extra tech support during and outside of class hours.

PROJECTS AND ASSIGNMENTS

- Weekly creative short study assignments, demonstrating programming proficiency and creative concept development. Students implement required technical parameters for each week, while engaging with a chosen creative theme.
- Midterm project – a largely self-directed work exploring the topics covered in the first half of the semester, while expanding upon one or more short study assignments. These are multi-week, scaffolded projects with work-in-progress deadlines, peer playtesting, and final critiques.
- Final project – a largely self-directed work, supported by independent research and iterative project development. Students present proposals for the instructor to green-light, which includes a calendar of tasks and deliverables. These are multi-week, scaffolded projects with work-in-progress deadlines, peer playtesting, and final critiques.

REQUIRED MATERIALS

- A sketchbook, or paper to sketch with (does not need to be exclusive to this class)
- A Mac or PC computer with internet access [see "Laptop Requirements" under Resources for more info]
- Free software and accounts: Discord, Github, Visual Studio Code, Google Chrome Browser

EXPECTATIONS

By signing up for this class, you are making a **commitment to fully participate, support your classmates as best you can, and do your part in creating a positive class environment**. For our course to run smoothly, everyone must:

- **Show up to class on time**, ready to contribute.
- **Check Discord** regularly for group and private messages.
- **Check our class GitHub repo** regularly for posted assignments.
- **Back up work** regularly.
- Spend **at least 3-5 additional hours a week** (outside of class) on class projects and exercises. Midterm and Final Projects may require additional time, depending on your ambition. Budget more time each week than may be needed.
- **Reach out** to your peer group and your instructor via Discord with questions.
- **Push creatively and technically.** Stay open and curious.

COMMUNICATION

- **To contact your instructor with a brief, private question or message**, send a DM (Direct Message) through Discord. This is preferred over email.

- **If you have a question that may be relevant to the group**, post in the #general channel on Discord for all to see and comment on.
- Use Discord for **easy communications with your classmates** as well—you can DM individuals or selected groups.
- **To discuss a longer matter** with your instructor, set up an appointment for office hours.

PARTICIPATION POLICY (The Rules + Regulations for Keeping the Ship Sailing)

- **We will begin promptly at the start of each class.**
- As **our work is interdependent**, it is critical for everyone to be fully present, participating, and engaging in the course.
- If absent from class, this will impact other students and lab activities. **If you will be late or absent, DM your instructor via Discord ASAP.**
- **Absences may be excused in the following cases:** illness, religious observance with advanced notice, and on a case-by-case basis for other critical events and extenuating circumstances.
- In the case of an absence, check GitHub and **contact a classmate to catch up** on what you missed. Contact the instructor if you have additional questions.
- Each student is asked to play their part in supporting our class, by **contributing regularly to peer groups** via Discord, for feedback and technical support.
- **Midterm and Final Project critiques are mandatory and cannot be made up.** Missing a critique will result in a deduction of one letter grade for the corresponding project.

GRADING

COURSE GRADING

- Participation: 20%
- Weekly "Short Study" Assignments: 35%
- Midterm Project: 20%
- Final Project: 25%

Participation will be graded out of 3 points:
3 = full participation: fully present, on task, and supportive of classmates throughout the class session.
2 = partial participation: late arrival or early departure, on task for some of the time.
1 = minimal participation: absent from lab for more than 30 minutes, minimally on task.
0 = no participation.

Weekly "Short Study" Assignments will be graded out of 10 points, based on completion of requirements. Midterm and Final projects will be graded on a standard A-F scale, according to criteria detailed in the final project assignment.

All work must be submitted on time. Any late assignment will drop one letter grade per class session that it is late. Please contact your instructor if there are extenuating circumstances, in which case lateness may be excused on a case by case basis.

ACADEMIC INTEGRITY POLICY

Students and all others who work with information, ideas, texts, images, music, inventions, and other intellectual property owe their audience and sources accuracy and honesty in using, crediting, and citing sources. As a community of intellectual and professional workers, the College recognizes its responsibility for providing instruction in information literacy and academic integrity, offering models of good practice, and responding vigilantly and appropriately to infractions of academic integrity. Accordingly, academic dishonesty is prohibited in The City University of New York and at New York City College of Technology and is punishable by penalties, including failing grades, suspension, and expulsion. The complete text of the College policy on Academic Integrity may be found in the catalogue.

Instructor's note: all borrowed text, code, or media used for this course must be attributed to the original creator, **whether human or AI**. Any direct text quotes from another source must be specified with quotes and appropriately cited. **Code borrowed from another source at more than four lines in length must be attributed as a //comment within the code itself.** If you are unsure of whether or not your work may constitute plagiarism, please check with your instructor before submitting. **Any instance of plagiarism will be reported to the MTEC Program Director, the Chair of ENT, and City Tech's Academic Integrity Officer.**

COURSE ACCOMMODATIONS FOR STUDENTS WITH DISABILITIES

In order to receive disability-related academic accommodations students must first be registered with the Center for Student Accessibility. Students who have a documented disability or suspect they may have a disability are invited to set up an appointment with the Center (phone: 718–260–5143). If you have already registered with the Center, please provide your professor with the course accommodation form and discuss your specific accommodation with him/her.

A NOTE ON CITY TECH'S COUNSELING CENTER

The Counseling Services Center supports the educational, emotional and career development of City Tech students by providing opportunities for skill development, counseling and referrals that address obstacles to success. The Center is currently available to students remotely and in-person. For questions and appointments, contact the Center at counseling@citytech.cuny.edu or 718-260-5030.

RESPECT

This course consists of individual work shared in group discussion. We must therefore strive to create an atmosphere of mutual respect. It is my intent that students from all backgrounds and perspectives be well-served by this course, and that these should inherently be viewed as an asset, resource, strength, and benefit, rather than a checklist item or at worst, a hindrance. It is my intent to present materials and activities that are respectful of our shared humanity. Your suggestions are encouraged and appreciated. Please let me know ways to improve the effectiveness of the course for you personally, or for other students or student groups. Feel free to reach out to me via email or Discord at any time about any issues concerning you or with any such ideas.

COURSE SCHEDULE / CALENDAR

The topics and schedule are subject to change as needed. Assignment details and requirements are announced in class and posted to our GitHub Wiki each week.

SESSION 1: [8/27]

TOPIC

- Introductions
- Course Overview
- What is Computational Art and Design?
- Exploring the p5.js library

SESSION 2: [9/3]

TOPIC

- Drawing with Algorithms: Instructions-Based Art and Design
- Code Editor and File Structure Basics

TECHNIQUE

- Introduction to Visual Studio Code
- Introduction to .js, .html, .css files and structure
- Introduction to programming structure, comments, syntax
- Drawing with the p5.js library: coordinates, points, lines, primitives, colors

SESSION 3: [9/10]

TOPIC

- Interactive Images and User Input

TECHNIQUE

- Program flow: setup() and draw(), code blocks
- Variables- data types, declaration, initialization
- Variable scope (global, block, function)
- Operators: arithmetic (including modulus), boolean, comparison
- Basic user input using mouse and keyboard

SESSION 4: [9/17]

TOPIC

- The "If" Conditions for Interactivity
- Creating Uncertainty
- Introduction to Git and GitHub

TECHNIQUE

- Conditional statements
- Random function
- Event functions
- Intro to flow charting and designing for interactivity
- Version control with Git and managing a GitHub repository

NO CLASS SESSION - 9/24

NO CLASS SESSION - 10/1

SESSION 5: [10/7]
TOPIC

- Time-Based Media, Strategies for Animation
- Introduction to Midterm Projects

TECHNIQUE

- Loading external media assets: images and fonts
- Working with motion: speed, direction, translation, easing, and interpolation
- Variable incrementation and de-incrementation
- System clock, millis(), one-time + repeating timers

SESSION 6: [10/15]
TOPIC

- Functions and Modularity
- Programming State Changes Part 1
- Interface review- graphical buttons, overlay triggers, etc.

TECHNIQUE

- Creating user-defined functions
- Function arguments and parameters
- Return statement
- Coding state changes

SESSION 7: [10/22]
TOPIC

- Review and Special Topics Related to Midterm (By Request)
- Playtesting Midterm WIP

TECHNIQUE

- Review and special topics

SESSION 8: [10/29]
TOPIC

- Midterm Project Presentations

TECHNIQUE

- Critique of midterm projects

SESSION 9: [11/5]
TOPIC

- Iteration + Patterns

TECHNIQUE

* While and for loops

SESSION 10: [11/12]
TOPIC

* Storing Data in Arrays

TECHNIQUE

* Working with Arrays

SESSION 11: [11/19]
TOPIC

* Introduction to Object Oriented Programming
* Introduction to Final Projects

TECHNIQUE

* Objects and classes
* Constructor and methods
* Arrays of objects

SESSION 12: [11/26]
TOPIC

* OOP "Remix" / OOP Review Continued
* Working with Libraries
* p5 Sound Library

TECHNIQUE

* Constructing and deconstructing OOP classes, Continued
* Implementing libraries

SESSION 13: [12/3]
TOPIC

* Playtesting and Work-in-Progress Critiques for Final Projects
* Special Topics TBD / Review

SESSION 14: [12/10]
TOPIC

* Playtesting and Work-in-Progress Critiques for Final Projects
* Special Topics TBD / Review

SESSION 15: [12/17]
TOPIC

* **FINAL PROJECTS DUE: Project Presentations / Critiques**