



UNIVERSITY OF  
MARYLAND

## CREATIVE CODING FOR DIGITAL MEDIA (IMDM 127) SUMMER II 2026

Assignments will be turned in on ELMS/Canvas

Professor: Stevens Miller

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Office: 3251 AV Williams Building

Office Hours: I am available after every class and via Zoom on weekends.

Teaching Assistant: Jake Farr

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Credits: 3

Course Dates: July 13, 2026 - July 31, 2026

Course Times: Mo, Tu, We, Th, Fr, 9:00 AM-12:30 PM

Classroom: Millard and Joseph Tydings Hall

Room Number: 2102

### Course Description

Creative coding is a way of making art through writing code. This course introduces programming as an artistic medium, teaching JavaScript through p5.js to create visual

art, interactive installations, data visualizations, sound pieces, and performative works. We will move from simple sketches to complex systems, always keeping creative vision at the center.

Throughout the course, you will connect your digital work to physical outputs. Code becomes a bridge between digital and physical art-making.

No prior coding experience is required.

## Course Information

### Duration

The course runs for 3 weeks, with 15 hours per week (3.5 hours per day, 3 hours of instructional time), for a total of 45 hours of instruction.

### Important Semester Dates:

- First day of class: July 13, 2026 (Monday)
- Last day of class: July 31, 2026 (Friday)

### Technologies

We will use JavaScript as our programming language. We will work with p5.js, which is a JavaScript library for creative media coding. We will also explore p5.sound for sound synthesis and analysis. We will use openprocessing.org as our main code compiler.

### Required Tools

You will need:

- **A computer running Mac, Windows, or Linux that can run the programs at p5js.org** (try <https://p5js.org/examples/math-and-physics-smoke-particle-system/> as a good test case).
- A web browser such as Chrome, Firefox, or Safari
- Free accounts for:

- p5.js web editor (<https://editor.p5js.org/>)

- OpenProcessing (<https://openprocessing.org/>)

### Recommended Resources

-Visual Studio Code can be really helpful

- text editor for local development/saving is optional but helpful
- GenAI tools will be allowed for certain projects, but account setup for these tools should be handled by the student.
- You might prefer a Visual Studio Code with GitHub or Claude co-pilot set up.
- See Below for AI Usage Policies

## Learning Outcomes

After successfully completing this course you will be able to:

Technical Skills:

- Read, Write, and Debug JavaScript code using the p5.js library
- Understand core programming concepts including variables, functions, loops, conditionals, arrays, and objects
- Create interactive experiences using mouse, keyboard, and camera inputs
- Integrate sound into creative projects
- Work with external data for visualization
- Export work for digital and physical outputs

Creative Skills:

- Develop a personal aesthetic and creative voice through code
- Connect technical skills to artistic expression
- Iterate on creative projects based on feedback
- Document and present creative work

Collaborative Skills:

- Collaborate effectively in pair programming sessions
- Explain code concepts to peers
- Provide constructive feedback

## COURSE PHILOSOPHY

This course treats code as a creative medium. We emphasize:

- Process over product
- Learning and experimentation matter more than perfect final pieces
- Experimentation and risk-taking
- Try weird things, break stuff, see what happens
- Multiple pathways to learning
- Everyone learns differently, and that's okay

- Inclusive and supportive environment
- Creative expression first
- Technical skills serve artistic goals, not the other way around
- Ethical practice with technology
- Consider the impact of your work
- Community and collaboration
- Build connections and learn from/with each other

## Required Resources

No textbook purchase is required. All readings are provided through the course website. We will also use online documentation and tutorials, including:

- Course and Assignments: [elms.umd.edu](https://elms.umd.edu)
- p5.js reference documentation (<https://p5js.org/reference/>)
- p5.js examples (<https://p5js.org/examples/>)
- p5.js web editor (<https://editor.p5js.org/>) - Browser-based code editor
- OpenProcessing (<https://openprocessing.org/>) - editing and sharing sketches

### Code Library

Comprehensive code examples organized by topic in the Code-Library folder on the course website.

### Student Resources

Setup guides, troubleshooting materials, FAQs, and getting started materials are available in the Student-Resources section of the course website.

### Documentation

How-to guides, API references, and setup instructions are available in the Documentation section.

### Examples

Student work examples, instructor demos, and curated OpenProcessing sketches are available in the Examples section of the course website.

### Attendance

Regular attendance is expected. If you must miss class, contact the instructor in advance.

In-class assessments can not be made up without an excused absence.

## Late Work Policies

All work must be submitted on time. If an extreme problem an unforeseeable problem arises (a medical emergency, your computer is struck by lightning, you are abducted by aliens, etc.), let the instructor know as soon as you can and we'll work something out. Otherwise, it's due when it's due.

## Exams:

There is no exam in this course. There *will* be a final project of significant weight. Must be taken on scheduled date/time

## Academic Integrity

### Collaboration:

- Collaboration is encouraged for pair programming and peer instruction

- Code sharing is allowed for learning purposes when attribution is provided
- Open Source Code that you work from must be either “forked” or explicitly attributed IN THE CODE COMMENTS
- Plagiarism of code or creative work is not permitted
- For homework and creative challenges, it is highly encouraged that you work from scratch, the class code library, reference materials, and examples to deepen your understanding.

## Course Structure

### Week-by-Week Overview

The course is organized into four main sections:

#### Week 1: Foundations

- Class 1: Introduction to Creative Coding
- Class 2: Drawing with Code
- Class 3: Interaction and Motion (Major Project 1: Static Image, Visual Poetry)
- Class 4: Loops and Patterns
- Class 5: Functions and Modularity (Midterm Exam will cover weeks 1-4 topics)

#### Weeks 2: Building Complexity

- Class 6: Arrays and Collections (Creative Challenge 2: Interactive Drawing Tool)
- Class 7: Objects and Classes
- Class 8: Randomness and Noise (Major Project 2: Window Treatments)
- Class 9: Sound Basics
- Class 10: UI Basics

### Weeks 3: Integration and Advanced Projects

- Class 11: Interactivity & Game Design (Creative Challenge 3: Interactive System/Game)
- Class 12: Video Input and Processing
- Class 13: Final project work Part 1
- Class 14: Final project work Part 2
- Class 15: Final project presentations

Note: This is a tentative schedule, and subject to change as necessary – monitor the course ELMS page for current deadlines. In the unlikely event of a prolonged university closing, or an extended absence from the university, adjustments to the course schedule, deadlines, and assignments will be made based on the duration of the closing and the specific dates missed.

## Tips for Success in this Course

- Participate. I invite you to engage deeply, ask questions, and talk about the course content with your classmates. You can learn a great deal from discussing ideas and perspectives with your peers and professor. Participation can also help you articulate your thoughts and develop critical thinking skills.
- Manage your time. Students are often very busy, and I understand that you have obligations outside of this class. However, students do best when they plan adequate time that is devoted to course work. Block your schedule and set aside plenty of time to complete assignments including extra time to handle any technology related problems.
- As this is a summer course, it meets *every day* for three weeks. That's a very high rate of speed: One class will be the same as *one week* of a regular semester. Try to plan the rest of your summer activities to be outside those three weeks.
- Login regularly. I recommend that you log in to ELMS-Canvas every day to view announcements, discussion posts and replies to your posts. You may need to log in multiple times a day when group submissions are due.
- Use ELMS-Canvas notification settings. Pro tip! Canvas ELMS-Canvas can ensure you receive timely notifications in your email or via text. Be sure to enable announcements to be sent instantly or daily.

- Ask for help if needed. If you need help with ELMS-Canvas or other technology, you may need to contact IT Support. If you are struggling with a course concept, project, assignment, or assessment, reach out to me, TA, and your classmates for support.

## Policies and Resources for Undergraduate Courses

It is our shared responsibility to know and abide by the University of Maryland's policies that relate to all courses, which include topics like:

- Academic integrity
- Student and instructor conduct
- Accessibility and accommodations
- Attendance and excused absences
- Grades and appeals
- Copyright and intellectual property

Please reference and review the Office of Undergraduate Studies' Course-Related Policies and follow up with me if you have questions.

## Course Guidelines

Names/Pronouns and Self-Identifications:

The University of Maryland recognizes the importance of a diverse student body, and we are committed to fostering inclusive and equitable classroom environments. I invite you, if you wish, to tell us how you want to be referred to in this class, both in terms of your name and your pronouns (he/him, she/her, they/them, etc.). Keep in mind that the pronouns someone uses are not necessarily indicative of their gender identity. For more information about names and gender markers, visit the LGBTQ+ Equity Center.

Additionally, it is your choice whether to disclose how you identify in terms of your gender, race, class, sexuality, religion, and dis/ability, among all aspects of your identity (e.g., should it come up in classroom conversation about our experiences and perspectives) and should be self-identified, not presumed or imposed. I will do my best to address and refer to all students accordingly, and I ask you to do the same for all of your fellow Terps.

Video or Audio Recording:

Video or audio recording of class sessions, activities, or discussions is prohibited without advance permission from the professor. Maryland is one of 11 U.S. states that require two-party, or all-party, consent before it is permissible to record or otherwise

intercept and/or capture communications (such as phone calls, in-person conversations, video conferences).

This means that everyone participating in a conversation must give their consent before any communication is recorded. Read this UMD article on Audiovisual Recording for more information.

Communication with Instructor:

I will be available after every class if you have extra questions or concerns. Also, you can email me and we can cover things by email or set a time for a weekend Zoom chat.

Course Communication

- Announcements are made via the course management system (ELMS/Canvas)
- Questions are welcome during class
- Peer support is available through collaboration and class discussions
- The course website is your hub for all materials and information
- ELMS/Canvas for turning in all assignments, doing assessments, and major projects

Communication with Peers:

With a diversity of perspectives and experience, we may find ourselves in disagreement and/or debate with one another. As such, it is important that we agree to conduct ourselves in a professional manner and that we work together to foster and preserve a virtual classroom environment in which we can respectfully discuss and deliberate controversial questions. I encourage you to confidently exercise your right to free speech—bearing in mind, of course, that you will be expected to craft and defend arguments that support your position. Keep in mind, that free speech has its limit and this course is NOT the space for hate speech, harassment, and derogatory language. I will make every reasonable attempt to create an atmosphere in which each student feels comfortable voicing their argument without fear of being personally attacked, mocked, demeaned, or devalued.

Any behavior (including harassment, sexual harassment, and racially and/or culturally derogatory language) that threatens this atmosphere will not be tolerated. Please alert me immediately if you feel threatened, dismissed, or silenced at any point during our semester together and/or if your engagement in discussion has been in some way hindered by the learning environment.

## Grading Structure

This course uses a 100-point grading system. Your final grade is calculated across the following assessment categories, which emphasize steady skill development, creative exploration, and demonstrated mastery of core programming concepts.

There will be four graded homework assignments, typically due on Mondays and Thursdays, and one final project assignment. The homework assignments will be worth 10, 15, 20, and 25 points, for a total of 70 points. The final project will be worth 30 points. Please note: To pass this course, you must have at least 40 points earned from homework assignments and 20 points earned from your final project.

## Academic Integrity

For this course, most of your assignments will be collected on our course ELMS page. You will need to submit URL links to your work.

The University's Code of Academic Integrity is designed to ensure that the principles of academic honesty and integrity are upheld. In accordance with this code, the University of Maryland does not tolerate academic dishonesty. Please ensure that you fully understand this code and its implications because all acts of academic dishonesty will be dealt with in accordance with the provisions of this code. All students are expected to adhere to this Code. It is your responsibility to read it and know what it says, so you can start your professional life on the right path. As future professionals, your commitment to high ethical standards and honesty begins with your time at the University of Maryland.

It is important to note that course assistance websites, such as CourseHero, are not permitted sources unless the instructor explicitly gives permission. Material taken or copied from these sites can be deemed unauthorized material and a violation of academic integrity. These sites offer information that might be inaccurate, and most importantly, relying on restricted sources will hamper your learning process, particularly the critical thinking steps necessary for college-level assignments.

Additionally, students may naturally choose to use online forums for course-wide discussions (e.g., Group lists or chats) to discuss concepts in the course. However, collaboration on graded assignments is strictly prohibited unless otherwise stated. Examples of prohibited collaboration include: asking classmates for answers on quizzes or exams, asking for access codes to clicker polls, etc. Please visit the Office of Undergraduate Studies' full list of campus-wide policies and reach out if you have questions.

## Grades

All scores will be posted on the course ELMS page. If you would like to review any of your grades (including the exams), or have questions about how something was scored, please see me after class or email me to schedule a time for us to meet and discuss.

Late work will not be accepted for course credit so please plan to have it submitted well before the scheduled deadline. I am happy to discuss any of your grades with you, and if I have made a mistake I will immediately correct it. Any formal grade disputes should be submitted in writing and within two days of receiving the grade.

Final letter grades are assigned based on the percentage of total assessment points earned. To be fair to everyone I have to establish clear standards and apply them consistently, so please understand that being close to a cutoff is not the same as making the cut (89.99  $\neq$  90.00). Likewise, I do not drop any grades, provide extra credit work, or change weightings. It would be unethical to make exceptions for some and not others.

Most likely, the grade cutoffs will be: 90 to 100, A- to A+; below that to 80, B- to B+; below that to 70, C- to C+; below that to 60, D; below that, F. I have been known to *lower* the cutoffs (that is, an 89 might earn an A-). I don't raise them.

## Resources & Accommodations

### Accessibility and Disability Services

The University of Maryland is committed to creating and maintaining a welcoming and inclusive educational, working, and living environment for people of all abilities. The University of Maryland is also committed to the principle that no qualified individual with a disability shall, on the basis of disability, be excluded from participation in or be denied the benefits of the services, programs, or activities of the University, or be subjected to discrimination. The Accessibility & Disability Service (ADS) provides reasonable accommodations to qualified individuals to provide equal access to services, programs and activities. ADS cannot assist retroactively, so it is generally best to request accommodations several weeks before the semester begins or as soon as a disability becomes known. Any student who needs accommodations should contact me as soon as possible so that I have sufficient time to make arrangements.

For assistance in obtaining an accommodation, contact Accessibility and Disability Service at 301-314-7682, or email them at [adsfrontdesk@umd.edu](mailto:adsfrontdesk@umd.edu).

### Emergency Preparedness

Emergencies on campus can happen at any time. To prepare, visit [prepare.umd.edu](http://prepare.umd.edu) or use the emergency symbol in the UMD App to review information. Resources for

persons with disabilities are available on the emergency preparedness page of the ADA Coordinator's website.

## Student Resources and Services

Taking personal responsibility for your own learning means acknowledging when your performance does not match your goals and doing something about it. I hope you will come talk to me so that I can help you find the right approach to success in this course, and I encourage you to visit UMD's Student Academic Support Services website to learn more about the wide range of campus resources available to you. In particular, everyone can use some help sharpening their communication skills (and improving their grade) by visiting UMD's Writing Center and schedule an appointment with the campus Writing Center.

You should also know there are a wide range of resources to support you with whatever you might need (UMD's Student Resources and Services website may help). If you feel it would be helpful to have someone to talk to, visit UMD's Counseling Center.

## Veteran Resources

UMD provides some additional support to our student veterans. You can access those resources at the office of Veteran Student life and the Counseling Center. Veterans and active duty military personnel with special circumstances (e.g., upcoming deployments, drill requirements, disabilities) are welcome and encouraged to communicate these, in advance if possible, to the instructor.

## Notice of Mandatory Reporting

- as a faculty member, I am designated as a "Responsible University Employee," and I must report all disclosures of sexual assault, sexual harassment, interpersonal violence, and stalking to UMD's Title IX Coordinator per University Policy on Sexual Harassment and Other Sexual Misconduct.
- you wish to speak with someone confidentially, please contact one of UMD's confidential resources, such as CARE to Stop Violence (located on the Ground Floor of the Health Center) at 301-741-3442 or the Counseling Center (located at the Shoemaker Building) at 301-314-7651.

You may also seek assistance or supportive measures from UMD's Title IX Coordinator, Angela Nastase, by calling 301-405-1142, or emailing [titleIXcoordinator@umd.edu](mailto:titleIXcoordinator@umd.edu). To view further information on the above, please visit the Office of Civil Rights and Sexual Misconduct.

## Course Evaluation

Please submit a course evaluation through Student Feedback on Course Experiences in order to help faculty and administrators improve teaching and learning at Maryland. All information submitted to Course Experiences is confidential. Campus will notify you when Student Feedback on Course Experiences is open for you to complete your evaluations at the end of the semester. Please go directly to the Student Feedback on Course Experiences to complete your evaluations. You may access the evaluation reports for courses for which 70% or more students submitted their evaluations.

## Copyright Notice

Course materials are copyrighted and may not be reproduced for anything other than personal use without written permission. Please do not repost quizzes and assessments, please do not input assessment problems or solutions into AI Systems. Please do not share course materials without my permission.

Thank you for reading the syllabus and welcome to the course!