



CREATIVE CODING FOR DIGITAL MEDIA (IMDM 127) SPRING 2026

Main Course Website: <https://mnolan4.github.io/IMD127/index.html>

Assignments will be turned in on ELMS/Canvas

Professor: Matthew Nolan

Pronouns: He/Him

Email: mttln@umd.edu

Office: 3215 AV Williams Building

Office Hours: M & W 3:30-5:30 PM, OR by appointment via email

Teaching Assistant: Dhruv Suri

Email: dsuri@terpmail.umd.edu

Office Hours: M 10am-11am, W 10am-11am, and F 10am-12pm, OR by Appointment

Credits: 3

Course Dates: Jan 26, 2026 - May 11, 2026

Course Times: Tuesdays & Thursdays 11 AM-12:15PM

Classroom: AV Williams Room 3258 - IMD Visualization Lab

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. This course is designed for artists and designers with mixed technical backgrounds.

Course Information

Duration

The course runs for 15 weeks, with 3 hours per week (Tuesdays and Thursdays), totaling 45 contact hours.

Important Semester Dates:

- First day of class: January 27, 2025 (Tuesday)
- Last day of classes: May 8, 2025 (Friday)
- Spring Break: March 15-22, 2025 (Sunday-Sunday)
- Reading Day: May 9, 2025 (Saturday)
- Final Exams: May 11-18, 2025 (Monday-Monday)

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
- 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
- A 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. I recommend starting with [Terp AI](#), if you do not already have a preferred tool. As it is a private enterprise GPT model that does not train off of your data, it is more secure for student work.
 - You might prefer a Visual Studio Code with GitHub or Claude co-pilot set up. We will discuss AI usage in class, but for now get one tool set up to use in your workflow.
- 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 sensor 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
- Use Generative AI tools responsibly and as a collaborator

See the Learning Outcomes document in the Website Week pages for detailed weekly learning outcomes.

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
- We're all learning together
- 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 in the course website. We will also use online documentation and tutorials, including:

- Course and Assignments: elms.umd.edu
- Course Website: <https://mnolan4.github.io/IMD127/index.html>
- 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 week 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

Formative Assessments:

- Up to one week late with a 10% penalty
- Example: 13-point assignment late = lose 1.3 points (rounded to 1 point)

Creative Challenges:

- Up to 3 days late with a 10% penalty per day
- Example: 60-point project 2 days late = lose 12 points (20% total)

Homework Sketches:

- Up to one week late with a 10% penalty
- Example: 11-point sketch late = lose 1.1 points (rounded to 1 point)

Final Portfolio:

- Due on scheduled date (exceptions only for documented emergencies)

Exams:

- Must be taken on scheduled date/time
- Make-up exams only for documented emergencies with advance notice

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

AI Tools:

- AI tools are integrated into this course
- Some assignments will explicitly ask you to use AI in structured ways
- Other projects give you the choice—you can use AI if you want, or work without it
- The key is: always document when and how you use AI
- On quizzes/assessments/exams (unless specifically instructed), you **cannot** use AI, copilot, or code completion tools
- 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:

Weeks 1-5: Foundations

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

Weeks 6-8: Building Complexity

- Week 6: Arrays and Collections (Creative Challenge 2: Interactive Drawing Tool)
- Week 7: Objects and Classes
- Week 8: Randomness and Noise (Major Project 2: Window Treatments)

Weeks 9-10: Sound and UI

- Week 9: Sound Basics
- Week 10: UI Basics

Weeks 11-15: Integration and Advanced Projects

- Week 11: Interactivity & Game Design (Creative Challenge 3: Interactive System/Game)
- Week 12: Data Visualization and Generative Systems
- Week 13: Video Input and Processing
- Week 14: Studio Work / Portfolio & Sharing
- Week 15: Final Exam

See **Important Dates** below for a more detailed breakdown of timeline and assignments

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.
- **Login regularly.** I recommend that you log in to ELMS-Canvas several times a week 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.
- **Do not fall behind.** This class moves at a quick pace and each week builds on the previous content. If you feel you are starting to fall behind, check in with the instructor/TA as soon as possible so we can troubleshoot together. It will be hard to keep up with the course content if you fall behind in the pre-work or post-work.
- **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:

Walk-in Office Hours are held Mondays and Wednesdays 3:30-5:30 PM, or by appointment. Come by with questions, to work on assignments, or just to chat about creative coding.

Email: If you need to reach out and communicate with me, please email me at mttln@umd.edu. Please DO NOT email me with questions that are easily found in the syllabus or on ELMS (i.e. When is this assignment due? How much is it worth? etc.) but please DO reach out about personal, academic, and intellectual concerns/questions. I will do my best to respond to emails within 1-2 business days. ***Rhetorical questions may be ignored.***

ELMS: I will send IMPORTANT announcements via ELMS messaging. You must make sure that your email & announcement notifications (including changes in assignments and/or due dates) are enabled in ELMS so you do not miss any messages. You are responsible for checking your email and Canvas/ELMS inbox with regular frequency.

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.

Major Assignments

Major Assignment Due Dates

- Major Project 1: Static Image, Visual Poetry: February 23, 2025 (Sunday, 11:59 PM)
- Creative Challenge 2: Interactive Drawing Tool: March 16, 2025 (Sunday, 11:59 PM)
- Major Project 2: Window Treatments: April 7, 2025 (Monday, 11:59 PM)
- Creative Challenge 3: Interactive System or Game: April 27, 2025 (Sunday, 11:59 PM)
- Final Portfolio: May 11, 2025 (Sunday, 11:59 PM)

Exam Dates

- Midterm Exam: March 3, 2025, 12:00 PM (Monday, in-class)
- Final Exam: May 11, 2025, 10:30 AM - 12:30 PM (Monday, in-class)

Assessment Due Dates

Most formative assessments are due Monday at 11:59 PM before Tuesday's class. In-class (proctored) assessments are completed during scheduled class time. See the course website for specific assessment due dates.

Homework Sketch Due Dates

Homework sketches are typically due Monday at 11:59 PM before Tuesday's class:

- Week 1: February 3, 2025

- Week 2: February 10, 2025
- Week 4: February 24, 2025
- Week 5: March 3, 2025
- Week 7: March 24, 2025 (after Spring Break)
- Week 8: March 31, 2025
- Week 9: April 7, 2025
- Week 10: April 14, 2025
- Week 12: April 28, 2025

Grading Structure

This course uses a **1000-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.

Formative Assessments — 25% (250 points)

Practice-oriented exercises designed to help you build fluency and conceptual understanding:

- Code tracing exercises
- Code explanations
- Parsons problems
- Targeted practice tasks

Approximately 18 assessments will be completed throughout the semester, averaging about 14 points each.

Exams — 35% (350 points total)

Midterm Exam — 15% (150 points)

March 3, 2025, 12:00 PM, in-class

Covers Weeks 1–5, including variables, conditionals, loops, and custom functions.

Proctored in class, with additional TA-proctored sessions available for approved accommodations.

Final Exam — 20% (200 points)

May 11, 2025, 10:30 AM–12:30 PM, in-class

Comprehensive exam covering Weeks 1–13.

Proctored in class, with additional TA-proctored sessions available for approved accommodations.

Creative Challenges & Projects — 18% (180 points)

Major creative assignments that integrate technical concepts with expressive design:

- Major Project 1: Static Image / Visual Poetry (Week 3) — 45 points
- Creative Challenge 2: Interactive Drawing Tool (Week 6) — 45 points
- Major Project 2: Window Treatments (Week 8) — 45 points
- Creative Challenge 3: Interactive System or Game (Week 11) — 45 points

Code Writing Tasks — 6% (60 points)

Four in-class coding assessments focused on independent problem-solving and applied syntax:

- 20 points each
- Occur in Weeks 3, 6, 9, and 12

Live Coding— 4% (40 points)

In-class live coding sessions where students can demonstrate working solutions in real time.

Final Portfolio — 2% (20 points)

Submitted during Week 15.

A curated collection of your strongest work across the semester, accompanied by brief written reflections on process, iteration, and growth.

Homework Sketches — 10% (100 points)

Weekly programming sketches that reinforce technical concepts and creative experimentation.

Nine assignments are scheduled during Weeks 1, 2, 4, 5, 7, 8, 9, 10, and 12, each worth approximately 11–12 points.

**These numbers, percentages and totals are subject to change with course trajectory.*

Assignment	Percentage %
Code Writing Tasks	6%
Final Portfolio	2%
Live Coding	4%
Assessments	25%
Creative Challenges/Major Projects	18%
Homework Sketches	10%
Midterm Exam	15%
Final Exam	20%
Total	100%

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 weekly sketches.

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.

Finally, on each exam or assignment you must write out and sign the following pledge: ***"I pledge on my honor that I have not given or received any unauthorized assistance on this exam/assignment."*** If you ever feel pressured to comply with someone else's academic integrity violation, please reach out to me straight away. Also, ***if you are ever unclear*** about acceptable levels of collaboration, ***please ask!*** To help you avoid unintentional violations, ***the following table*** lists levels of collaboration that are acceptable for each graded exercise. Each assignment will contain more specific information regarding acceptable levels of collaboration.

	 OPEN NOTES	 LEARN ONLINE	Gen AI, Co-pilot, etc.	 ASK FRIENDS	 WORK IN GROUPS	
Homework Assignments	✓	✓	If you are really struggling	Discuss concepts, not answers	Discuss concepts, not answers	
Quizzes & Weekly Assessments	✓	✓	X	To study	To study	
Team Project	✓	✓	✓	✓	✓	
Final Exam	---	---	---	---	---	

AI use is integrated into projects, but not allowed for assessments, quizzes, and exams.

[See the University of Maryland guidelines on Generative AI for Teaching & Learning](#) for more information

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 email me to schedule a time for us to meet and discuss.

Late work beyond guidelines 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 one week 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 ≠ 90.00). It would be unethical to make exceptions for some and not others.

Final Grade Cutoffs						
A +	100%					
A	90.00%	B	80	C	70.00%	D
						F

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.

Emergency Preparedness

Emergencies on campus can happen at any time. To prepare, visit 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](#).

Basic Needs Security

If you have difficulty affording groceries or accessing sufficient food to eat every day, or lack a safe and stable place to live, let me know if I can help in any way.

Additionally, please visit [UMD's Division of Student Affairs website](#) for information about resources the campus offers you.

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.

If 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.

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!

-Matt