



Contact Information

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Come go with me. Let’s make beautiful things happen with code and design.

— Christine Moore —



Course Overview

A great way to begin describing this course is that it involves “drawing with code.” But wait, there's more! Not only will you learn the fundamentals of computer programming by creating visually stimulating designs, but you will also learn to apply popular design theory to aid in communicating the desired messages through your digital media.

The course is taught primarily using Processing, a language for programming images, animation, sound, and games. We start simply, with creating static sketches in order to get comfortable with coding basic shapes, colors, and more complex compositions. Then as you begin to learn programming constructs such as variables and loops, your programs even more alive with animation and interactivity

Around Midterm, you’ll have a project in which functions or objects are used to create a more intricate animation of your choosing. During a two-week period, there will be small group presentations on principles of design. During the same time, we will take a pause from programming and use a graphic editing software such as GIMP as we take a closer look at how images are produced and edited in such applications.

In the Final Project, you’ll design an interactive art composition or a game, while demonstrating a composite of knowledge and skills gained during the semester. The project will be judged on the effective implementation of design principles in the code.

Required Resources

Textbook:

Learning Processing, Second Edition: A Beginner's Guide to Programming Images, Animation, and Interaction by Daniel Shiffman (publisher: Morgan Kaufmann) ISBN: 978-0123944436

Laptop:

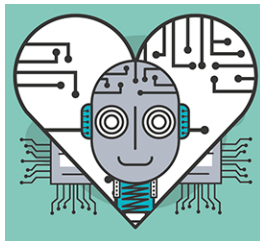
In conformity with the [new college laptop policy](#), all students are required to have a laptop with a working camera and microphone. During our virtual meetings, be sure to turn your camera on. Chromebooks are not recommended because they cannot run all of the software you may need, and some models have issues connecting to our wireless network. The software that you will need to use for this class are free and do not require a lot of space or memory.

Other Resources

- ≈ Required readings from various free sources will be assigned from time to time.
- ≈ Processing Programming website: www.processing.org
- ≈ Here you can browse and share Processing sketches: www.openprocessing.org
- ≈ It is a good idea to back up your files on a storage device such as OneDrive, Google Drive, or a flash drive. In that way, if something goes awry with your laptop, your files will not be lost.

Tutoring: Computer Science now has a walk-in [tutoring lab](#) at CSL. The schedule for tutors will be set a few days after the semester starts.

Technology Assistance: If you are having trouble logging into MyCharleston, OAKS or your College email account contact the College of Charleston [HelpDesk](#) at (843) 953-3375. In addition, technology information and tutorials on many topics are available at the [Student Computing Support](#) page.



Catalog Course Description

A course introducing the creative side of computing in the context of applying graphic design principles in digital media. It emphasizes computer programming related to image processing. Students will produce raster and vector graphics, motion graphics, and interactive web applications while implementing the fundamentals of graphic design.

Inclement Weather, Pandemic or Substantial Interruption of Instruction

If in-person classes are suspended beyond what is already planned, I will set up and inform students of a change in modality to ensure the continuity of learning. The plans and nature of work will be commensurate with the type and length of interruption, and where we are in the course at that time.

Grading Scheme and Scale

Evaluation Scheme:

Assignments and Class Work	40%
Projects	25%
Tests & Assessments	20%
Attendance & Participation	15%

Grading Scale

A	93 - 100
A-	90 - 92
B+	88 - 89
B	83 - 87
B-	80 - 82
C+	78 - 79
C	73 - 77
C-	70 - 72
D	60 - 69%
F	Less than 60%

Learning Outcomes

- To understand and apply basic algorithms for generating, manipulating, and representing digital information in the creation of digital media.
- To apply the software development process in program development.
- To apply various data types to represent information.
- To apply variables in program development.
- To design expressions using arithmetic, relational, and logical operators.
- To design selection statements.
- To design repetition statements.
- To design simple data structures using lists.
- To design and use functions.
- To apply event-driven programming
- To understand and apply principles of graphic design.
- To process and create composite digital images and digital audio.
- To apply the concept development process.
- Apply conceptual, aesthetic, and computational skills in the creation and critique of designs.

About Group Work

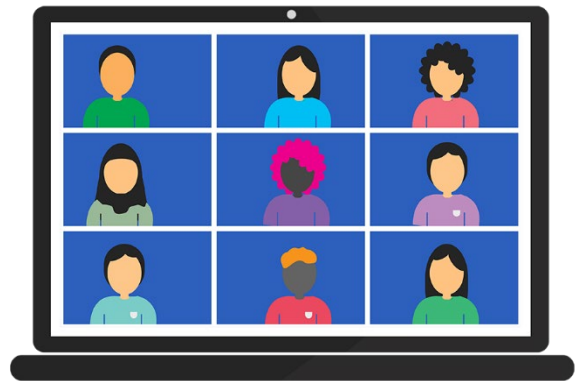
Typically, in my courses, I did not have the habit of assigning a lot of group work. Students sitting next to each other would naturally do some forms of collaboration. Maybe they would help to find errors in each other's code, or maybe simply show off some interesting work that they did.



However, with the online and hybrid class formats, the sense of community might not occur as organically. Therefore, you can expect more pairing and grouping to occur as the semester goes on. For the great majority of it, meeting in person will be not be required. Also, the group assignments will not account for any large percentage of your final grade.

Participation and Attendance

Success in the course requires reading and reviewing course material BEFORE class. As well, you should work through the textbook exercises and practice questions for greater comprehension. In our new environment of hybrid learning, it is even more important for you to engage with the course material and each other. There will be a variety of ways to participate, as mentioned in other parts of this syllabus. We will also have various unannounced in-class exercises throughout the semester, some of which will be submitted in a variety of ways, such as OAKS, embedded in your website, or verbally discussed.



Regular and punctual attendance is critical to your success in this class. The attendance policy during this season of public health concerns will be based on mutual respect and trust. I will trust you to inform me if you are missing class for a reason you feel I should know about. To the extent possible, I will make reasonable accommodations for COVID19-related and other absences that are beyond your control. However, please remember that you are responsible for course content and assignments whether or not you are in attendance.

Tests will only be made up for compelling reasons for absence, such as sickness or death.

Other Course Policies

Late Assignments:

Assignments are due at the beginning of the class period on their due date. Twenty-five (25) points will be deducted if an assignment is late. Late assignments must be submitted no later than the next class period. Due dates for assignments will be strictly enforced.

Tests & Assessments:

Make-up tests will not be given unless approved for compelling reasons.

Computer, Cell Phone, & Headphones Policy:

When we are in the classroom, everyone has a computer in front of them, and a large part of our time will be spent working on them. However, while we are having class discussions or presentations, I do not expect you to use your computers for wasteful activities. In this class, you are forbidden from wearing headphones, texting, using social media, or using electronic devices in any way that is disruptive to learning.

Academic Integrity

Academic integrity is taken seriously in this course. Please be aware of the specific requirements of the [Honor Code](#) at the College of Charleston.

You may be wondering what "academic integrity" means in the context of programming. In this course, you may consult with other students for conceptual and debugging help while working on your code, but unless otherwise specified on the assignment the final code you submit should be written, tested, and documented by you. This means that if two students submit code that is substantially the same, we will consider this a likely academic violation. All assignments will be automatically scanned for similarity.

It is a usual practice for real-world programmers to find and adapt publicly available code written by others in their own projects, and you may also do this in this class. If you use "found code" from on-line sources, you must bring that code up to the standards expected in this course. You must also identify which code is "found" and document its source with a comment in your code, just as you would for an academic citation in a written paper. Unless otherwise specified for a particular assignment, found code may not take up more than 10% of the code that you submit (counting by correctly formatted lines).

Disability Accommodation

Any student eligible for and needing accommodations because of a disability is encouraged to speak with me during the first two weeks of class or as soon as you have been approved ([Center for Disability Services/SNAP](#)). In that way, we can talk about accommodations appropriate to your needs.

Mental & Physical Wellbeing

At the college, we take every students' mental and physical wellbeing seriously. If you find yourself experiencing physical illnesses, please reach out to student health services (843.953.5520). And if you find yourself experiencing any mental health challenges (for example, anxiety, depression, stressful life events, sleep deprivation, and/or loneliness/homesickness) please consider contacting either the Counseling Center (professional counselors at <http://counseling.cofc.edu> or 843.953.5640 3rd Robert Scott Small Building) or the Students 4 Support (certified volunteers through texting "4support" to 839863, visit <http://counseling.cofc.edu/cct/index.php>, or meet with them in person 3rd Floor Stern Center). These services are there for you to help you cope with difficulties you may be experiencing and to maintain optimal physical and mental health.

Course Structure & Continuity

important

Due to social distancing requirements, this class will include a variety of online and technology enhanced components to reinforce continuity of learning for all enrolled students. Before the drop/add deadline, students should decide whether the course plan on the syllabus matches their own circumstances.

- ★ **Starting Wednesday, August 26**, the first three weeks and the final two weeks of the course will be conducted online in a synchronous format. Therefore, we are all expected to be present on Mondays, Wednesdays, and Fridays at our scheduled class time during the online portions of the course.
- ★ Then, **starting Monday, September 14**, the course will be handled as a hybrid. For the in-person class sessions, I will meet with half of the class on Mondays and half on Wednesdays. On Fridays, we will all meet online. All of our meetings will be synchronous. During our in-person sessions, there will be activities such as short lectures, reviewing, discussions, testing, hands-on work, and collaborative coding. Much of the course content such as lectures will be delivered online so that when we're in class we can spend time with the activities mentioned above.
- ★ Before September 14, I will be able to determine which students will meet on Mondays and which will meet on Wednesdays.

Course Expectations

No matter what the structure is at any given time, you can expect the same academic rigor as a traditional face-to-face course. Here is a quick reference to some expectations for engagement in the course. To help assure that we will all be successful in meeting expectations, some of these guidelines will also be detailed in the other portions of this syllabus.

How much time should you spend studying? The general rule of thumb is that for a 3-hour course like this one, a student should spend at least 6 hours of study time outside the classroom per week.

Actively engage and participate: Participate actively in class, including, but not limited to, attendance, discussion boards, comments, sharing information and resources that the class might be interested in, and reactions to classmates' work.

Become familiar with the tools: Beyond the software required to learn the contents of the course, you will need to become familiar with other tools that facilitate communication. Of course, the communication tools include OAKS, Zoom, VoiceThread and others. Whenever a new software is introduced in a module, I will provide information about it in the module.

Prepare: The course involves much more than the mechanics of coding webpages. A considerable amount of reading is required in order to understand the conceptual aspects of web design. Expect regular assigned reading material. As well, you should exercise enough curiosity to find additional resources to learn about the subject.

Timely Submissions: Deadlines for assignments and other activities will be announced forthrightly and strictly enforced.

For Info Only – Study Tips

HOW TO STUDY ONLINE COURSES EFFECTIVELY

11 useful tips for online study success

Using Proper Netiquette

The fundamental rules of online behavior are essential for building a community of learners within an online course. It is quite likely that you are familiar with these rules and already adhere to them. In fact, the general rule is simply to **adhere to the same standards of behavior online that you follow in real life**. Listed below are some additional rules to adhere to in this course.



- Use proper **grammar and spellings** that are appropriate for a college level course.
- Do not submit **flaming or negative** posts. If you are about to respond while angry, wait until you have cooled off and reconsider the message.
- Always be **polite and respectful** of the opinion of others. We may disagree on a subject matter, but remember the right of each person to his own opinion.
- You are encouraged to express your opinions, but always be sure that you can back up your opinions with **facts and reliable sources**. This will heighten your credibility.
- **Be careful**. Although we are mostly operating in a protected environment within OAKS, remember that nothing placed on the internet is truly private and that your writings can have **eternal lives**.
- Make posts that are **on topic** and within the scope of the course material.
- Respect the time of everyone involved in the course. When posting or communicating on any subject matter, try to be **concise, relevant**, and to the point. Also, try to communicate within the time frame of the discussion or assignment.
- Use clear and descriptive **subject line** in your email messages.
- Email messages generally should include only **one subject**.
- Include a **signature line** in your emails that includes your name and any other information that would help others to communicate with you.

Schedule of Topics

Processing, Drawing Primitive Shapes
Flow of Control and Interaction
Variables & Control Structures
Loops and Concept of Iteration
Functions and Reuse
Classes and Objects
Image Editing with graphic editors
Visual Design Principles
Image Processing with Code
Arrays
Debugging
Algorithms
Text & Data Input
Translation and Rotation (3-D)
Other topics as permitted