

CS-8903-ODC: 1-3 Credits

Computing Research Opportunities for Conservation and Sustainability (CROCS)

General Information

Please read the syllabus schedule carefully and note critical dates/times. All course dates/times are in [Eastern Time \(USA\)](https://www.wsav.com/now/what-is-the-difference-between-est-edt-and-et/#/)  (<https://www.wsav.com/now/what-is-the-difference-between-est-edt-and-et/#/>); the UTC offset varies by time of year. It is highly recommended that you review this schedule regularly to manage your time effectively and be prepared to participate in activities and submit assignments by their due dates. You will also find essential class policies and other related information here.

Front-loading and Honor Code

Front-loading

All class assignments and descriptions are front-loaded for our course. You may work on assignments at your own pace. Please be very careful if you work ahead for the following reasons:

1. Assignments may change
2. You may receive feedback on an earlier assignment that impacts what you did ahead of schedule

Both contingencies may require extensive modifications to your submissions. For these reasons, **we highly recommend working at the pace specified in the assignment due dates.**

Generally, if a change is made to an assignment, we will notify you far enough in advance to adjust your submission(s). Notification will be provided via ED Discussion and/or a Canvas announcement.

Honor Code

Friendly reminder: It is an honor code violation to publicly post or disclose OMSCS course information without obtaining written, advance permission from OMSCS.

Course Description

CROCS provides students with a project-based introduction to research. The scope is ambitious. Within a single semester, students can work on transnational projects. At the same time, they work on a research paper relevant to their project. One of the most exciting opportunities is the ability to conduct

research that will later appear on the student's Google Scholar profile. However, **not all research will be ready for conference submission by the end of the semester.** Each student or team will create a website for their project and research. Each student or team must at least accomplish #1 below. However, you are welcome, but not required, to do both.

1. Each student or team will, at a minimum, create a webpage for their project, e.g., a simple description of the project and the team members.
2. An actual tool that serves the project may be part of the website described in "1." For example, if you're developing a project to predict something geographically, part of your website may include a GIS dashboard or a link to the dashboard.

It's preferred that your webpage/website conform to accessibility and performance standards and that you create a Progressive Web App (PWA) if appropriate for your project. These goals can be easily achieved with [Chrome DevTools](https://developer.chrome.com/docs/lighthouse/overview)  (<https://developer.chrome.com/docs/lighthouse/overview>) (CTRL-SHIFT-I and look for the Lighthouse tab). An additional advantage is that a PWA lets a single codebase run on Android and desktop platforms.

The course consists of two major components: 1) Research, and 2) Project. Each component is to be completed by each team. **Each team is expected to consist of 1-4 persons.**

To calculate the **expected amount of work to achieve an A** in the course, we use 15 weeks (the last week, 16th, is considered a time of minor wrap-up procedures). Each team member is expected to adhere to the "10 hours/week/3-credit graduate course standard." If you registered for fewer than three (3) credit hours, you are expected to document the appropriate fraction of the 10 hours of work per week.

For example, if you registered for one (1) credit, *you must document at least 3.3 hours of weekly work* (you can do more if you'd like). In this 1-credit example, if you choose to work on multiple projects, you must specify the hours and work details for each project; these 3.3 hours can be further subdivided. For a given week, you may document 1 hour of work on Project A and 1.3 hours of work on Project B. We realize that due to fluctuating workloads, the relative amount of work on each project can vary from week to week. However, you must document the appropriate weekly work total amount for your credit-hour choice for the course.

While documentation of work is part of assignments A02-A04, it becomes more detailed, beginning with assignment A05, when you will make formal entries into your Weekly Excel Report sheet. Please see the assignment A05 description for more details.

Primary and Secondary Projects

A primary project (including research) is the one you are focused on. It is subject to the usual course expectations (e.g., assignment deadlines).

A secondary project is one that you're interested in, but may not be able to devote all your time and energy to this semester. You do not have to formalize an arrangement; however, it's helpful to maintain open communication with both me and the project contact to ensure expectations are appropriately managed. There are no deliverable expectations for this type of project, and you will not be graded on the work. You may devote as little or as much time and effort to this type of project as you like. You may later realize you cannot devote ANY time; that's also OK. IMPORTANT: If you want to receive credit for time spent on a secondary project, your weekly hours report must reference the secondary project once we begin weekly reporting.

Sample student scenario. A student may choose to focus on the project they submitted before the course began. They later realize there's a project in our course that also interests them. They may contact the project lead, primary contact, or the stakeholder. If the project lead accepts them into the project, the student may include work on the secondary project in their weekly report. Depending on the work performed, extra credit may be awarded for a secondary project. Like all projects, secondary projects may lead to career opportunities beyond the class.

Pre- and/or Co-Requisites

The primary prerequisite is a desire to learn. Since projects tend to be full-stack, this type of development knowledge is desirable but not required. Similarly, experience in statistics and research is desired but not required.

Course Requirements and Grading

Getting an A in the Course. Simple: do these things:

- 1. Do excellent work
- 2. Submit assignments on time
- 3. Respond to (and implement) assignment feedback given in Canvas
- 4. Respond to correspondence appropriately
- 5. Monitor ED Discussion and email

Returning grades. Our grading staff will *attempt* to return assignment grades within one week after the due date.

Grading Scale

Your final grade will be assigned as a letter grade according to the following scale:

Letter Grade	Percentage
A	90-100%
B	80-89%
C	70-79%

Letter Grade	Percentage
D	60-69%
F	0-59%

Late Policy and Emergency Situations

Any graded items submitted late incur a 5% deduction for each day they are late. Submissions are accepted until one week past the due date/time.* Instructional staff may make exceptions if the student works through the [Office of the Dean of Students](https://dev.grandchallenges.gatech.edu/office-dean-students)  (<https://dev.grandchallenges.gatech.edu/office-dean-students>) regarding their specific situation. This office is also available 24 hours a day for emergencies.

*There may be exceptions due to grade submission deadlines, etc. Please check each assignment.

Course Goals and Learning Outcomes

Upon successful completion of this course, you should be able to...

- Understand the importance of a clearly defined architecture for a project amenable to research metrics.
- Work with key tools such as a web-based research paper editor, such as *Overleaf*, and reference managers like *JabRef* or *Zotero*.
- Understand the basic architecture of a conference-ready research paper.
- Understand the components of a good literature review.

Other Important Course Information

Communication. Generally, it's best to post questions to ED Discussion so classmates can answer them and benefit from responses from instructional staff and peers. However, instructional staff will generally respond to emails within 24-48 hours. *The two primary modes for course communication are ED Discussion and Canvas announcements.*

Success in the Course. It is critical to both attend all meetings (when applicable) *and* review online materials (Canvas, etc.).

Grade Challenges. If you believe a grade was not appropriate, please create a private post in our online forum within one week after the grade was assigned.

AI Collaboration Information

We are using [Dr. David Joyner's AI collaboration policy](https://www.davidjoyner.net/on-my-ai-collaboration-policy/)  (<https://www.davidjoyner.net/on-my-ai-collaboration-policy/>) in our class. Please note that our AI policy is subject to ongoing revision due to rapid change and new developments in this domain. If anything changes, you will be notified via the usual communication channel(s). Please cite the use of AI in accordance with APA guidelines. An

example is provided below from the [Musselman Library at Gettysburg College](https://libguides.gettysburg.edu/citation/gen-ai)  (<https://libguides.gettysburg.edu/citation/gen-ai>):

APA Reference/Citation Example

Reference: OpenAI. (2023). *ChatGPT* (Sep 27 version) [Large language model]. <https://chat.openai.com/chat>  (<https://chat.openai.com/chat>)

In-text: (OpenAI, 2023)

The Most Important Thing About AI Usage

Please exercise considerable self-awareness in your use of it. It's a *tool to build skills and speed up basic workflows, not a tool to create assignment deliverables*. Over-reliance on AI may decrease creativity and critical thinking - these are two of the most essential traits for research scientists and software engineers.

Course Structure, Terms, and Naming Conventions

Mentor - This is the person with whom you will be working directly throughout the semester on your project and research. If there are no TAs in the class, this will be your instructor.

If you're new to OMSCS or Canvas, it may be helpful to understand the basic course architecture and the naming conventions used in *this* course. Please see the terms below:

Module - A learning component. May contain references to resources, tasks, assignments, and quizzes. Assignments and quizzes are uploaded in the Grades section. **Some modules may not have a separate page; assignments or quizzes may be listed under the module.**

Assignment - Something you will upload in the Grades section. Please pay attention to the Assignment description and rubric, which are part of each assignment.

Quizzes - Usually short "tests" that you can take as many times as you'd like. Only the highest grade is counted.

Naming conventions. Different learning components in this course are assigned prefixes. The prefix consists of three (3) parts:

1. Learning component **type**, e.g., M for module, A for assignment, and Q for quiz.
2. The **week** during which you should work with the component, e.g., 01, is the first week of the course
3. A dash and the **name** of the learning component, e.g., "-ModuleOne", is a fictitious component name, as shown below
4. EC is the exception; this represents Extra Credit.

Please note that there is no A01 component in this course. Please see below for **examples**.

M01-ModuleOne - This is a *fictitious* module that begins during Week 1 in the course; its name is ModuleOne.

A01-AssignmentOne - This is a *fictitious* assignment you should complete during Week 1 in the course, and upload into the Grades section.

Q09-FakeQuiz - This is a *fictitious* quiz you should complete during Week 9 of the course.

Teaching Philosophy and Related Matters

First and foremost, this class highly values diversity, as articulated in the principle of [Ubuntu](https://en.wikipedia.org/wiki/Ubuntu_philosophy)  (https://en.wikipedia.org/wiki/Ubuntu_philosophy): I'm grateful for who *you* are because that's what we are as a class. On behalf of our instructional staff, we pledge to promote a learning environment that fosters empathy and responsibility.

Finally, we're incredibly passionate about what we do. Please contact us at any time. We're excited to work with you!

-Dante

Course Summary:

Date	Details	Due
Sun Aug 30, 2026	 Q01-CourseOverview (https://gatech.instructure.com/courses/547994/assignments/2575856)	due by 11:59pm
Sun Sep 6, 2026	 A02-ProjectListing (https://gatech.instructure.com/courses/547994/assignments/2575858)	due by 11:59pm
Sun Sep 13, 2026	 A03-Setup-A (https://gatech.instructure.com/courses/547994/assignments/2575860)	due by 11:59pm
Sun Sep 20, 2026	 A04-Setup-R (https://gatech.instructure.com/courses/547994/assignments/2575862)	due by 11:59pm
Sun Sep 27, 2026	 R05-WeeklyReport (https://gatech.instructure.com/courses/547994/assignments/2575868)	due by 11:59pm
Sun Oct 4, 2026	 R06-WeeklyReport (https://gatech.instructure.com/courses/547994/assignments/2575870)	due by 11:59pm

Date	Details	Due
Sun Oct 11, 2026	 R07-WeeklyReport (https://gatech.instructure.com/courses/547994/assignments/2575872)	due by 11:59pm
Sun Oct 18, 2026	 R08-WeeklyReport (https://gatech.instructure.com/courses/547994/assignments/2575874)	due by 11:59pm
Sun Oct 25, 2026	 R09-WeeklyReport (https://gatech.instructure.com/courses/547994/assignments/2575876)	due by 11:59pm
Sun Nov 1, 2026	 R10-WeeklyReport (https://gatech.instructure.com/courses/547994/assignments/2575878)	due by 11:59pm
Sun Nov 8, 2026	 R11-WeeklyReport (https://gatech.instructure.com/courses/547994/assignments/2575882)	due by 11:59pm
Sun Nov 15, 2026	 EC-Interest (https://gatech.instructure.com/courses/547994/assignments/2575864)	due by 11:59pm
	 R12-WeeklyReport (https://gatech.instructure.com/courses/547994/assignments/2575884)	due by 11:59pm
Sun Nov 22, 2026	 R13-WeeklyReport (https://gatech.instructure.com/courses/547994/assignments/2575886)	due by 11:59pm
Sun Nov 29, 2026	 EC-Paper (https://gatech.instructure.com/courses/547994/assignments/2575866)	due by 11:59pm
	 R14-WeeklyReport (https://gatech.instructure.com/courses/547994/assignments/2575888)	due by 11:59pm
Sun Dec 6, 2026	 R15-WeeklyReport (https://gatech.instructure.com/courses/547994/assignments/2575890)	due by 11:59pm
Sun Dec 13, 2026	 R16-WeeklyReport (https://gatech.instructure.com/courses/547994/assignments/2575892)	due by 11:59pm