DCS 1100: Introduction to Digital & Computational Studies

Professors

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Office hour scheduling: https://calendly.com/profchown

Learning Assistants

TDB, office hours will be posted on the course website and circulated by email

Course Description

We invite you to make sense of the chaos of digital devices, apps, and algorithms that we confront every day. We use so many of these objects (or they are used on us), and some of them work well, but others aren't great. We encourage you to use your enthusiasm for your favorite app or internet-of-things gadget to imagine something better. Our hope is that you gain a habit of asking five types of questions whenever you encounter a digital artifact to restore agency and power to you in a technological world that often seems out of our control. Our approach is collaborative and project-based so that you can immediately apply what you have learned and draw on the perspectives and experiences of your classmates to identify nuances, seek solutions that work for broader communities, and be actively involved in every class. You will have a chance to demonstrate your Digital and Computational Studies (DCS) knowledge in a final project that you can opt to share outside of class.

Learning Goals

1. Bring together perspectives from different fields of study in the liberal arts to evaluate the structures, advantages, and limitations of digital artifacts.
2. Use the Analytical Framework of DCS to examine apps, devices, and "smart" objects as artifacts with histories that interact via infrastructures, represent abstractions of processes, and have consequences for the agency of users related to systems of social, ethical, and environmental accountability.
3. Tell the story of a digital artifact beyond where to click to make it work (functionality). Talk about it as code, visual or physical object, and as an argument. Compare and contrast evaluations made by different users with different purposes. Imagine improvements or alternatives.

Outcomes: What you will point to at the end of the semester

- **The 5As Project.** An interdisciplinary, critical, and creative analysis that demonstrates your ability to evaluate and innovate with digital and computational artifacts by applying the DCS Analytical Framework. (Goals 1, 2, 3)

Time commitments this semester to meet those goals:

In terms of workload, Bowdoin asks for a minimum of 3 hours in class plus 9 hours of preparatory work, labs, discussion sections, film viewings, etc. for each course credit. Our estimates below of ~5-7 hours recognizes that completion time varies by student, with some additional work on the project likely, but also leaving time for office hour check-ins as necessary.

Weekly Journal Entry — 45 min. — 20% of the final grade

- At least 300 words per week with substantive engagement with reading(s)
- Always connects to prior week and looks ahead to upcoming class meetings
- Ideally completed before coming to class on Wednesdays

Conversational Python Activities — 45-90 min. — 20% of the final grade

- Includes any pre-recorded lectures
- Connects to class meetings
- Ideally completed before coming to class on Mondays

Class Meetings (2 per week) — 170 min. — 15% of the final grade

- Discussion, construction, application, and extension of readings and activities
- Being present, staying on task, contributing to the shared documents and projects. These will be active meetings that create things to be used in projects.
- *Up to 2 classes can be missed without penalty. Tardiness counts towards absences. We will deduct 3 points from your final grade for each absence above the limit. Please contact the professor if you encounter any challenges. Note: the 2 class limit is built on the assumption that you will be sick/have appointments, etc. once or twice a semester. Exceptions will only be made for extreme situations.*

Reading — 60-90 min. — Included below

- Includes any related lecture video
- Builds on prior classes, often connects to Python theme

In class concept checks — 30-60 min. — 15% of the final grade

- Weekly quizzes
- Covering the readings, lectures, and class discussions

Project & Project Development — 45-60 min. — 30% of the final grade

- Always connects to module materials for the week
- Activities to practice vocabulary, skills, and concept application (i.e. hands-on use of tools, concept mapping, using rubrics, writing or data analysis, coding)
- Deliverables of the 5As project.

Schedule - Big Picture for the Semester

Week 1	Aug 30	Introductions
Week 2	Sep 04-6	Module 1.1 The 5As
Week 3	Sep 11-13	Module 2.1 Artifacts
Week 4	Sep 18-20	Module 2.2 Artifacts

*5As Artifact Section - **Due Sep 29** at 4:59pm ET*

Week 5	Sep 25-27	Module 3.1 Abstraction
Week 6	Oct 2-4	Module 3.2 Abstraction
Week 7	Oct 11	Module 3.3 Abstraction (Fall break)

*5As Architecture Section - **Due Oct 20** at 4:59pm ET*

Week 8	Oct 16-18	Module 4.1 Architecture
Week 9	Oct 23-25	Module 4.2 Architecture
Week 10	Oct 30-Nov 1	Module 4.3 Architecture

*5As Abstraction Section - **Due Nov 10** at 4:59pm ET*

Week 11	Nov 6-8	Module 5.1 Agency
Week 12	Nov 13-15	Module 5.2 Agency

*5As Agency Section - **Due Nov 21** at 4:59pm ET*

Week 13	Nov 20	Module 6.1 Accountability (Thanksgiving)
Week 14	Nov 27-29	Module 6.2 Accountability
Week 15	Dec 4-6	Module 7.1 Accountability and 5As Major Challenges

5As Accountability due at 4:30 pm ET **Dec XXth**

Schedule - Weekly Routine

Prior to Monday's class	Reading Concept Checks and Conversational Python
Prior to Wednesday's class	Weekly Journal Project Development

Course Materials

- We will be using a course website to share assignment descriptions, links to materials, and the content of modules.
- You will be using a web-based DCS Organizer to share your work with professors.It will contain both your 5As project and Weekly Journals.
- There are no books or equipment to purchase.
- All videos, handouts, and assessment materials are the property of the instructors and are distributed for use of individual students only. They are not to be shared.
- All recordings are subject to FERPA legislation. For reasons of privacy, clips or screen captures cannot be shared outside of class.

Please contact the professors if there are any obstacles to accessing the course materials.

Terms & Conditions

Collaboration

One of the principal components of a DCS course is collaboration. However, you should always be clear on what part of the work you hand in is your own, what parts come from other sources, and what parts are collaborative. As a general rule, we distinguish between interacting with another student using any written medium (e.g. pencil and paper, email, looking at their code, screen sharing) and having broad discussions with them. Unless you work with another student in a group, you are not allowed to exchange information through a written medium with them or directly providing answers to activities such as problem sets through conversation. This is a zero-tolerance policy. You are allowed to talk about problem sets, just not give the answers.
It is permissible to use materials available from other sources such as the Internet (understanding that you get no credit for using the work of others) as long as: 1) You acknowledge explicitly which aspects of your assignment were taken from other sources and what those sources are. 2) The materials are freely and legally available. 3) The material was not created by a student at Bowdoin as part of this or another course this year or in prior years. To be absolutely clear, if you turn in someone else's work you will not receive credit for it; on the other hand, if you acknowledge it, at least you will not violate the Honor Code. All write-ups, reviews, documentation and other written material must be original and may not be derived from other sources. Further, if you provide assignment materials to any future students in this course this will also be considered a violation of the Bowdoin Honor Code and we will take appropriate action against you.

Grading Policies

Credit/D/F. DCS 1100 can be a requirement for the coordinate major and the minor in DCS. You retain the option to change your grading option to Credit/D/F until a few weeks into the semester. We would be glad to talk to you about this decision. For students planning a major or minor in DCS, you would then need to take DCS 1200 for a grade to satisfy the introductory course requirement.

Late work. This semester might go smoothly for us all or it might be full of surprises for everyone. If things feel out of control, prioritize the project work. Be a good community member first. We can work with you on the timing of the individual responsibilities. Importantly: we can't help if we don't know what is going on. Please stay in touch!

No material will be considered for grading after the deadline Dec 14th at 4:30pm ET.

Religious Holidays

Please be in touch with the professors as soon as possible if deadlines conflict with religious holidays. We will make course materials for the week available on Fridays to allow for flexibility when completing any activities, but again, we can't resolve a problem if we don't know about it.