

**Summary Report on
“GN COM 206: Computing Everywhere”
Computational Literacy Course
Spring, 2016**

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Introduction

In Spring Quarter, 2016 we offered a zero-credit (graded S/U) course consisting of a series of 5 weekly 2-hour workshops about key components of computational literacy. Thirteen students participated in the entire course. Graduate students in the MTS and TSB programs within the School of Communication proposed workshop topics and served as instructors, with faculty coordination and mentoring provided by Jeremy Birnholtz. Workshop topics included: 1) sorting algorithms and algorithmic thinking, 2) fundamentals of coding in Python, 3) client/server architectures and HTML/CSS basics, 4) digital “exhaust” and data trails and 5) the social implications of algorithms. Feedback was solicited from students each week via anonymous survey, and reflectively in person at a dinner before the final workshop. Overall response from students was enthusiastic, with encouragement that the course proceed. In this document we provide a summary of our experience and lessons learned.

How it Worked

Our goal was to create a lightweight, low-pressure, hands-on and low-threat environment in which students could develop computational literacy. To achieve this goal, we opted to implement the course as a zero-credit, self-contained (i.e., without homework or reading assignments) series of 2-hour workshops. This allowed us to present it to the students as a low-risk, relatively low-effort endeavor (see feedback below), and also reduced the need to draw on full-time teaching faculty by leveraging the efforts of grad students already receiving their primary support from other sources.

Graduate students in TSB, MTS and some related areas (e.g., HCI students in SESP and McCormick) were invited to submit proposals (individually or in pairs) in early winter quarter to develop and teach one workshop, with compensation of \$500 per student. We received 11 proposals, all of which were reviewed for appropriateness and a suitable range of topics, with 5 ultimately selected. All applicants received detailed feedback on their proposals, and accepted workshops were assigned to mentoring pairs to offer feedback and suggestions to each other.

Each workshop consisted of a combination of hands-on exercises, experimentation with coding and design, and group discussion led by the instructors. Instructors were encouraged, through

the proposal instructions, peer mentoring and 1-2 mentorship meetings, to keep their workshop at a basic technical level, but to include hands-on experimentation with technologies and code wherever possible. Instructors also received detailed feedback from Jeremy, who attended the first half of all workshops, and students, who completed brief surveys at the end of each session.

Graduate student instructors also volunteered to take on administrative roles such as collecting student feedback, handling enrollment/registration questions, preparing the syllabus and course launch, etc.

Summary of Student Feedback

Overall student feedback was positive, for which the instructors deserve to be commended. Students completed a short questionnaire at the conclusion of each workshop to provide feedback on both the topic and the instruction. Figure 1 shows the aggregated results across all workshops, with ratings on a 5-point scale anchored by 1=Strongly Disagree and 5=Strongly Agree.

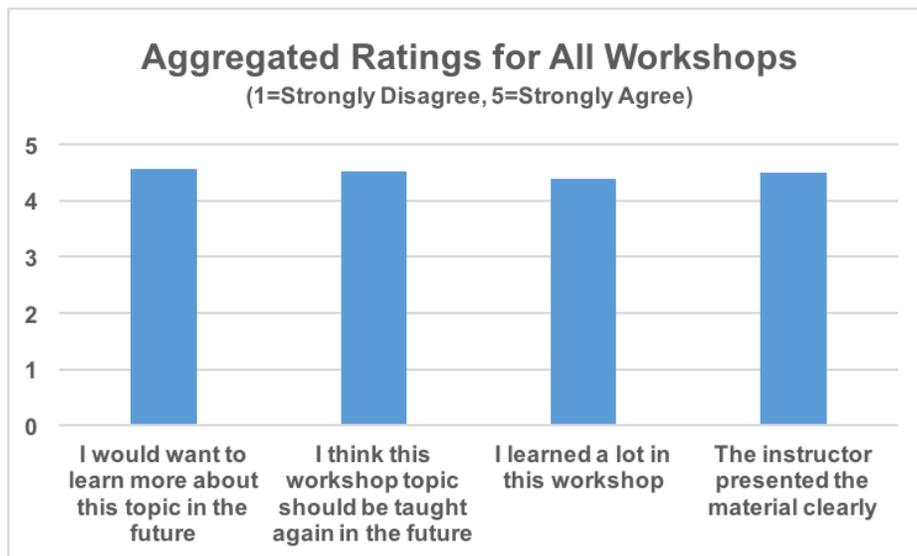


Figure 1. Summary of student feedback aggregated for all workshops.

Specific feedback on each workshop was reviewed by the instructional team and is available for further review, but is beyond the scope of this overall report.

Students also provided informal feedback over dinner prior to the final workshop. Their reactions here were also quite positive, but they made some useful suggestions. Students overwhelmingly felt that this course, or something like it, should be offered in the future.

In terms of promoting the course, students felt that the positioning of the workshops as explicitly for non-technical students made them more comfortable signing up for a course on otherwise potentially intimidating material. For many students, not receiving a grade also made this feel like a low-risk endeavor that they could participate in.

The biggest source of disagreement among the students was the zero-credit format. They appreciated that it was lightweight and low-risk, but some students felt that -- were they not spring quarter seniors -- they would have had trouble allocating the time amidst their myriad other commitments and responsibilities. (To be fair, it bears mentioning that there were students in the class from all class years, so this probably should be taken with a grain of salt.) Some students also felt that homework assignments or problem sets might have helped them retain the material and think about it between class sessions. The tradeoffs of the lightweight format vs. a full course merit further discussion.

Students generally liked the topics of the workshops, but particularly liked the more technical sessions. Many of the students were very interested in learning to write or at least understand code, and reported that the more technical sessions were their favorites. Questionnaire results for the final workshop also suggest that the students very much enjoyed the integration of technical topics (e.g., ranking algorithms for music) and social problems. Students suggested a possible survey to gauge interest in potential topics for future workshops.

Summary of Graduate Student Instructor Feedback

Graduate students who served as instructors reported quite positive experiences informally via email and conversation. Several students mentioned that, especially as TSB students who do not frequently serve as TAs, they valued the opportunity to teach and plan a lesson. All students valued the feedback they received from the students and through the mentoring process. Some students also particularly valued teaching relatively technical content, which they do not ordinarily get to do even as TAs, given the subject matter in most Comm Studies Courses.

Students were also asked if they felt the compensation was adequate, and nobody indicated that it was not. One instructor was surprised by additional administrative tasks (of which there were a few in helping to get the course ready), but did not feel this was overwhelming. One student noted that the compensation was lower than that received for TA work in the MSC program.

Overall Lessons and Recommendations

Based on the extremely positive feedback from students and instructors in this first offering, it is recommended that this course be a regular offering. Depending on appetite and resources, it could likely be offered on a regular and recurring basis throughout the year. There are several key issues that require attention in order to carry this out successfully.

First, the format of the course merits discussion. A series of workshops has the benefit of being relatively lightweight for both students and instructors. A full course would likely draw students, but would also require one or more dedicated graduate student instructors (as we do for public speaking). As these funding lines are both scarce and significantly more costly than the current model, these tradeoffs must be weighed in light of factors at the Department and School level. It may also be worth considering offering several different versions of the course (e.g., lightweight workshops, a full course, an intense weekend session, a summer course, etc.) that would all have similar focus.

Second, the course should have a dedicated coordinator in some form. Jeremy Birnholtz performed this role on an essentially volunteer overload basis for this year, but the amount of effort required makes this an unsustainable model for the future. The nature and amount of coordination effort required will depend on the course format, but a coordination model similar to that used for Public Speaking or Junior Writing Seminars could be adopted. This person should also be the primary administrative point of contact for the course, if a workshop series is adopted.

Third, the current set of workshop topics should be used as the basis for future course offerings, but with an emphasis on hands-on exercises and more technical topics (presented for a non-technical audience). A repository of workshop exercises and further information should be created to allow students to further explore topics of interest. This repository should be available to current and past students and instructors for the course.