CSCI 410
Senior Seminar

Fall 2019
TR 8:15-9:30 (B1), MC Reynolds 306 (MARS)
Website: http://ozark.hendrix.edu/~yorgey/410/

Instructor: Brent Yorgey, MC Reynolds 310
Office hours: any time my door is open, or make an appointment at
http://byorgey.youcanbook.me
Email: yorgey@hendrix.edu
Note: I generally do not respond to emails before 4pm.

Course Description

A combination of readings, writing assignments, oral presentations, and independent project work integrates the lessons from each student's undergraduate studies. Students assess the content of formal writing about computing subjects, investigate ethical and social issues in computing, and complete a substantial independent capstone project. Students also prepare themselves for professional work by resume writing and the creation of a professional portfolio.

Evaluation

Evaluation will be based on:

- 30%: Active class participation

  Includes attendance, assigned readings, and feedback to other students.

- 30%: Oral presentations

  See the Presentations section below.

- 40%: Writing assignments

  See the Writing Assignments section below.

Writing Assignments

This course carries W2 credit. As such, it will feature a significant amount of various forms of writing, including multiple rounds of drafts and revisions based on feedback. Here is a list of writing assignments by due date. You are encouraged to use LaTeX for all writing assignments, though it is only required for your capstone document.

- **Tuesday, 3 September**. Capstone/thesis project proposal (1 page).

- **Thursday, 5 September**. Resume/CV. Bring **4 paper copies** of your resume/CV to class.

- **Tuesday, 10 September**. Revised capstone/thesis project proposal and work plan (1–2 pages).

- **Thursday, 19 September**. Cover letter/research statement.

- **Various**: classic literature summary (1–2 pages). See the Classic Literature section below.

- **Various**: capstone project paper (∼25 pages). See the Capstone Project section below.

Readings

There will be short readings assigned throughout the semester to serve as a basis for in-class discussion. See the website for an up-to-date list.

Presentations

Over the course of the semester you will give several presentations. You should put careful thought into preparing each presentation. What story do you want to tell? How can you most effectively communicate it with your audience? Your presentations must use appropriate visual aids, such as slides or the chalkboard.

- **1/3 October**: Progress report on your capstone project (10 minutes)

- **11 December**: Final project presentation (15 minutes, open to the public)

- **Various**: Presentation on classic literature (see below)

Classic Literature

Each student will pick a paper, book, or other classic computing literature and sign up for a presentation slot. On your assigned day you will:

- Turn in a 1–2 page summary/synthesis of the reading, explaining the major ideas, how it relates to other things you have learned, and why you think it is important.

- Give a 7-minute presentation presenting your summary/synthesis.

Do not simply summarize the content of the paper! You must also try to put the paper in a larger context: for example, you might connect it to contemporary ideas or practice, connect it to ideas encountered in courses you

have taken, and try to convey a sense for why the paper is important/classic. This may require doing a bit of extra research to find secondary sources that help put the paper in context or explain why it is important.

In addition, you will be paired with another student who is presenting a different piece of classic literature on the same day. At a prior mutually agreed time, you will meet to share drafts of your writeup and practice runthroughs of your talk, and to give each other feedback. This meeting and feedback will constitute part of your grade on the assignment.

Classic literature presentation dates:

- Tuesday 17 September

- Tuesday 24 September

- Thursday 10 October

- Thursday 31 October

Capstone Project

You will complete a substantial, individual capstone project which should tie together multiple things you have learned throughout your time at Hendrix. The capstone project could take many forms. Some ideas include:

- Developing a substantial piece of software, either on your own or for a client

- Writing an expository paper summarizing and synthesizing an area of research

- Making significant contributions to an open-source project

- Writing a tutorial or other documentation for a technology or piece of software

- Undertaking an independent research project

You are encouraged to talk with me or another member of the computer science faculty to discuss potential ideas for your project.

You may optionally undertake a year-long thesis project, which must be a research project, and is a prerequisite for graduating with distinction. You must discuss this with a potential faculty mentor and commit to a year-long thesis by Tuesday, 10 September. Note that after September 10 you may not "upgrade" a semester project into a year-long thesis; however, the opposite is always an option: if you start out doing a year-long thesis but decide by the end of the semester that you do not wish to continue, you may "downgrade" it to a semester capstone project with no penalty.

- **Tuesday 3 September**: Project idea due (1 page). Be sure to indicate whether you are thinking about undertaking a year-long thesis project.

- **Tuesday 10 September**: Revised project idea (1 page) and work plan due. Last day for committing to a year-long thesis project.

  The work plan should be up to 1 page explaining how you will make time to work on your capstone project. Be **as specific as possible**. Be creative in coming up with very specific ways to help yourself succeed. Some examples:

    - Horrible: "I will work on my project 5 hours per week." This plan gets an F.
    - Bad: "I will work on my project from 2-4pm every Tuesday before lacrosse practice, and from 9-noon every Sunday." Better, but still probably a D.
    - Better: "Every Tuesday from 2-4pm before lacrosse practice, I will go to Blue Sail which is a good distraction-free place for me to work. I will turn off my phone. For the first 4 weeks of the semester I will spend those two hours doing background reading; I will print papers I want to read ahead of time and write notes in the margins as I read. On Sundays, . . ." and so on. Probably a B.
    - I will leave you to imagine what an A plan looks like.

- **1/3 October**: You will give a 10-minute in-class presentation reporting on your progress so far.

- **8 October**: Turn in a first draft of your abstract.

- **15 October**: Turn in a first draft of your introduction (2–5 pages).

- **29 October**: Turn in a first draft of your background section (5–10 pages).

- **12 November**: Turn in a draft of the first half of your paper body (10 pages or so).

- **26 November**: Turn in a draft of the second half of your paper body, and a revised version of the first half.

- **11 December**: 15-minute final presentation (open to the public).

- **12 December**: Final revised paper due, unless you pick a later deadline.

Note: all the above deadlines still apply even if you undertake a year-long thesis; but in that case you will be turning in a partial version of your thesis rather than a finished draft. Consult with the instructor to figure out what makes the most sense in your specific situation.

Calendar

Tuesday	Thursday
Aug 27th **1** Go over syllabus	29th **2** Workshop project ideas
Sep 3rd **3** LaTeX **Project idea due**	5th **4** **Resume/CV due** Workshop resumes
10th **5** **Revised project idea & work plan due** Discuss setbacks Dr. Yorgey classic literature presentation	12th **6** Writing & Communication I: presentations
17th **7** 2x classic paper presentations (7 mins each) Writing & Communication II: writing	19th **8** **Cover letter due** Workshop cover letters
24th **9** 2x classic Abstracts & Introductions	26th **10** Ethics
Oct 1st **11** **Progress presentations I**	3rd **12** **Progress presentations II**
8th **13** **Abstract due** Workshop abstracts	10th **14** 2x classic Social media
15th **15** **Introduction due** Workshop introductions	17th **15** *Fall break*
22nd **16** IP & copyright	24th **17** Licenses & open source
29th **18** **Background due** Workshop background	31st **19** 2x classic Ask Dr. Yorgey anything day
Nov 5th **20** Culture & diversity	7th **21** Career services presentation

TUESDAY	THURSDAY
12th **22** **Body draft I due** Workshop	14th **23** Flex
19th **24** Feedback meetings with Dr. Yorgey *(no class)*	21st **25** Feedback meetings with Dr. Yorgey *(no class)*
26th **26** **Body draft II due** *(no class)*	28th *Thanksgiving*
Dec 3rd **27** Feedback meetings with Dr. Yorgey *(no class)*	5th **28** Feedback meetings with Dr. Yorgey *(no class)*

Final presentations: Wednesday, 11 December 2–5pm
Final draft due Thursday, 12 December

Attendance Policy

Attendance is required, and unexcused absences will be reflected in your participation grade.

Disabilities

It is the policy of Hendrix College to accommodate students with disabilities, pursuant to federal and state law. Students should contact Julie Brown in the Office of Academic Success (505.2954; `brownj@hendrix.edu`) to begin the accommodation process. Any student seeking accommodation in relation to a recognized disability should inform the instructor at the beginning of the course.

Academic Integrity

All Hendrix students must abide by the College's Academic Integrity Policy as well as the College's Computer Policy, both of which are outlined in the Student Handbook.

For specific ways the Academic Integrity policy applies in this course, please refer to the Computer Science Academic Integrity Policy.

The short version is that academic integrity violations such as copying code from another student or the Internet are **easy to detect**, will be **taken very seriously**, and will typically result in a zero on the assignment in question **in addition to** a reduction of one letter grade on your final grade.

If you have any questions about how the Academic Integrity policy applies in a particular situation, please contact me.

The Writing Center

Located in the Jennings L. Snoddy Academic Resource Center in the west wing of Bailey Library, the Writing Center is an excellent (and free) resource for working on your writing with a peer tutor. Tutors can assist you in learning to organize, edit, and revise assignments at any stage of the process and for all fields of study. Think of peer tutors as a group of helpful first readers that will enable you to develop the skill and effectiveness of your writing. The Center is open Monday through Thursday from 1:00 pm to 5:00 pm and 6:00 pm to 10:00 pm, and on Sunday from 6:00 pm to 10:00 pm. Appointments are encouraged, but drop-ins are accepted as well. Contact Felipe Pruneda Senties, Interim Director, if you have questions or you want to make an appointment at `pruneda@hendrix.edu` or 501-505-1560. For more detail, see `https://www.hendrix.edu/writingcenter/`.

Learning Objectives

By the end of the course, you will:

- Read, understand, and explain technical papers describing computing topics

- Properly cite related work

- Compose a resume and cover letter targeted to a specific job announcement or graduate school application

- Use LaTeXto create professionally formatted documents

- Assemble an online portfolio of previous course projects

- Create a senior capstone document with the following characteristics:

    - A clear and concise goal statement describing the purpose of the project
    - An introduction that clearly identifies the topic and previews the main points
    - A background section that discusses the context and related work of your project
    - A body which clearly presents the work you completed for your capstone project, with appropriately substantiated claims
    - A conclusion that reiterates the main points and assesses the degree to which the goal has been achieved

- Deliver an oral presentation with the following characteristics:
  - An introduction that clearly identifies the topic and previews the main points
  - A body in which the main points are clear and well-supported
  - Visual aids that are well designed and properly employed
  - A fluent presentation style, including good eye contact and clear speech
  - A topic that is specific, appropriate, and adapted to the audience