Course Syllabus for SIADS 501: Being a Data Scientist

Course Overview and Prerequisites

This course introduces students to the process of data science, covering problem formulation, data acquisition, modeling and analysis, and presentation and integration into action. Students will be tasked with understanding what data scientists do, and reflecting on what special knowledge and skills, perspectives, and ethical commitments they want to bring to problems as data scientists. Students will also be exposed, through interviews with practicing data scientists, to real problems they may also have to work around or avoid, so it lightly foreshadows the rest of the program and students' future in data science.

There are no course prerequisites.

Instructor and Course Assistants

Instructor: Aasakiran "Bobby" Madamanchi
Instructional Team: Ruth Corddry, Alexander Levin-Koopman, Morteza Taiebat, Sachit Krishnan

Members of the instructional team play different roles:

- Prof. Resnick recorded most of the videos and Dr. Madamanchi will lead the course for this iteration.
- Dr. Madamanchi and Ruth Corddry are your first points of contact for everything related to assignments and grading. They want to help you learn the material and get a good grade in the course!
- The remaining members of the instructional team are lecturers who specialize in grading your work. Ruth Corddry or Dr. Madamanchi may also ask them to help individual students or provide feedback outside of the grading mechanism.

Communication Expectations

All course communications will happen through Slack and synchronous office hours on Zoom.

Slack etiquette:

- If you'd like to correspond about career matters and don't feel comfortable doing so in a public post, feel free to DM Dr. Madamanchi (@Dr. Madamanchi). You can also DM him about course concepts and readings, but you'll be doing your classmates a favor if you make public posts instead.
- For questions about assignments, grades, peer feedback pairings, extensions, or other course logistics and requirements: DM both @BobbyMadamanchi and @RuthCorddry **in a single message**; this will allow us to answer your question most efficiently.
- You generally should not have a reason to initiate communication with the other members of the instructional team, and they will redirect you if you do so.

Email response time: N/A (please communicate via Slack)
Slack response time: within 24 hours
Office hours: see **Group Office Hours** below

Required Textbook

None

Readings

All readings are available through links in Coursera.

Note: You need a free O'Reilly learning platform account to access many of the readings. Create an account using your <uniqname>@umich.edu email address by visiting: https://www.oreilly.com/library/view/temporary-access/

From the dropdown, select “Not listed? Click here.” Then enter your <uniqname>@umich.edu email address. O'Reilly will send you an account activation email. Click the embedded red button to activate your account. You now have free access to hundreds of titles. Start reading!

Technology Requirements unique to this course

None

Accessibility

Screen reader configuration for Jupyter Notebook Content

Learning Outcomes

1. Competency - Explain the four project stages as a framework for data science problems and solutions, including the goals and desired outcomes of each stage.
2. Literacy - Describe the expertise, perspectives, and ethical commitments that data scientists may bring to each of the four stages.
3. Literacy - Articulate a set of maxims that apply to each of the four stages and to data science projects as a whole.
4. Competency - Create and maintain an environmental monitoring system for staying up to date on new developments in data science.

Course Schedule

This session **begins on Tuesday, January 9, 2024** and **ends on Monday, February 5, 2024.**

Weekly assignments are due on Mondays at 11:59 pm Eastern Standard Time (time zone = Ann Arbor, Eastern Time Zone, GMT-5).

Group Office Hours

Office hours are held on Zoom and are usually recorded, but we think you will get a lot more out of them by attending synchronously.We have scheduled the two office hour times to include people in different parts of the world and with different schedule. We look forward to chatting with you!

See Live Events section on Coursera for links to the zoom sessions. The password is 501. (The password for the office hours for most MADS courses is the course number.)

Schedule of Weekly Office Hours via Zoom (time zone = Eastern Daylight (EDT); local time in Ann Arbor, Michigan):

- **Wednesdays at 6:00 PM EST (Dr. Madamanchi)**
- **Saturday at 10:00 AM EST (Ms. Corddry)**

Access office hours via the Live Events tab from the course menu in Coursera.

Grading

Course Assignments	**Percentage of Final Grade**
Peer Feedback in weeks 2-4	5% total
Initial Drafts of Plan (Manifesto) Components in weeks 1-3	5% each week

Final Version of Plan (Manifesto)*	80%
Total	100%

Feedback on assignments 1 through 3 are intended to help you refine your approach to subsequent assignments and make revisions for the final manifesto.

NOTE: All assignments are required to earn credit for this course.

Letter Grades, Course Grades, and Late Submission Policy

For general information, refer to the MADS Assignment Submission and Grading Policies section of the UMSI Student Handbook (access to Student Orientation course required).

Our policy on grades for late submissions is a little simpler and works better with the mechanics of Gradescope: for each day that an assignment is late, a penalty of 10% of the assignment points will be assessed (not 10% of the points earned). For example, if an assignment has 20 points, the penalty will be two points per day. This late penalty will be reflected in the score listed in Coursera.

If Gradescope will not permit a late submission, please send the assignment to Ruth Corddry on Slack.

Letter grades are calculated within Coursera as follows: A+ (97+); A (93-96); A- (90-92); B+ (87-89); B (83-86); B- (80-82); C+ (77-79); C (73-76); C- (70-72); D+ (67-69); D (63-66); D- (60-62); E (59 or less). There is no rounding up or down (e.g. an 86.79 is a B).

Regrade Requests Policy

Graders may make mistakes. Please use Gradescope to request a review of the grading on a particular item. Regrade requests are available for one week following the release of grades for assignments 1 through 3. Regrade requests will be handled by a different grader. The entire question will be regraded, applying all elements of the grading rubric so your grade could go up or down.

Academic Integrity / Code of Conduct

This course is in part intended to encourage you to consider what is important to you in your data science practice and to foreshadow your experience in MADS. We expect the Data Science Manifesto to be unique to each student and also expect that it represents your own thoughts and effort. Submitting work from other sources including generative artificial intelligence (e.g., ChatGPT, Bard) is a violation of the academic integrity expectations and will result in a 0 for the assignment and a referral to Academic Advising.

Refer to the Academic and Professional Integrity section of the UMSI Student Handbook (access to Student Orientation course required).

Disability Statement

The University of Michigan recognizes disability as an integral part of diversity and is committed to creating an inclusive and equitable educational environment for students with disabilities. Students who are experiencing a disability-related barrier should contact Services for Students with Disabilities https://ssd.umich.edu/; 734-763-3000 or ssdoffice@umich.edu). For students who are connected with SSD, accommodation requests can be made in Accommodate. If you have any questions or concerns please contact your SSD Coordinator or visit SSD's Current Student webpage. SSD considers

aspects of the course design, course learning objects and the individual academic and course barriers experienced by the student. Further conversation with SSD, instructors, and the student may be warranted to ensure an accessible course experience. The instructional team will treat any information that you provide in as confidential a manner as possible.

Help Desk(s): How to get help

Degree program questions or general help - umsimadshelp@umich.edu
Coursera's Technical Support (24/7) - https://learner.coursera.help/

Library Access

Refer to the U-M Library's information sheet on accessing library resources from off-campus. For more information regarding library support services, please refer to the U-M Library Resources section of the UMSI Student Handbook (access to the Student Orientation course required).

Student Mental Health

Refer to the University's Resources for Stress and Mental Health website for a listing of resources for students.

Student Services

Refer to the Introduction to UMSI Student Life section of the UMSI Student Handbook (access to the Student Orientation course required).