Syllabus

1.0 Course Overview and Prerequisites

SIADS 593 has three objectives:

1. Assess student course prerequisite knowledge employing a rigorous assessment.

2. Promote collaborative learning via a student team-based portfolio project demonstrating skills learned thus far in the School of Information's Masters in Applied Data Science program, including problem formulation, data acquisition, cleaning, manipulation, analysis, and visualization.

3. Provide a space for students to strengthen their knowledge of previous learning through repeated practice.

Course prerequisites: SIADS 501, 502, 503, 505, 511, 515, 516, 521, and 522.

2.0 Course Communication Expectations

Slack is the preferred communication tool for this course. If you have questions about course content (e.g. lecture videos or assignments), please make sure to

use Slack. Instructor and course assistant response time to Slack messages will be within 24 hours. Please monitor the course Slack channel(s) regularly.

General announcements and reminders will be posted to the relevant Slack channel and/or the MCommunity SIADS 593 course group lists.

Personal communication that may involve sensitive information may be emailed directly to the instructor(s) or course assistant. If you email the instructor(s) or course assistant, please prefix the email subject line with [SIADS 593]. Instructor and course assistant response time to email messages will be within 24 hours.

3.0 Help Desk(s): How to get Help

Need help? You may reach out to UMSI or Coursera depending on the type of question you have.

1. Degree program questions or general help, contact MADS at umsimadshelp@umich.edu
2. Coursera Technical Support (24/7), visit https://learner.coursera.help/.

4.0 Weekly Readings

There are no weekly readings for this course.

5.0 Learning Outcomes

Students will:

1. Have the opportunity to synthesize knowledge, as well as practice tools and techniques that have been covered in the prerequisite courses.
2. Create a project that is suitable for inclusion as part of a professional portfolio.
3. Be given the opportunity to discuss their progress in data science with a faculty member.

6.0 Office Hours

The instructional team holds weekly, synchronous office hours using the video-conferencing tool Zoom (all times Eastern time zone). The schedule of office hours can be found by clicking on the Coursera Live Events link in the left-hand navigation menu. Additionally, all office hours will be recorded and archived so that you can retrieve them at a later date. Archived office hours can be found at the end of their respective module.

7.0 Grading and Course Checklist

Course Item	Points	Weight	Due
Problem formulation, team formation, data acquisition, oral exam slot signup	0		Week 01
Team project proposal	30	.03	Week 02
Team project proposal peer reviews (min 2)	30	.03	Week 03
Team collaboration	30	.03	Weeks 02-05
Team progress meetings	30	.03	Weeks 02-05

Course Item	Points	Weight	Due
Team project report, notebooks, and other code assets	450	.45	Week 05
Team project peer review (min 2)	30	.03	Week 06
Comprehensive oral exam	400	.40	Weeks 07-08
Total	1000	100%	

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

8.0 Late Policy

Late assignments will be penalized 25% of the total points to be earned each day a submission is overdue. An assignment that is submitted four (4) calendar days after the due date will receive a score of zero (0).

Please note: Submitting your work on time is very important in this course. Your peers are relying on you to submit your work on time in this course so they can complete their work (in the form of peer reviews). The instructional team will periodically reach out to you and ask you about your progress; if you fall behind on your project work you will be overwhelmed and you will be at risk for not succeeding in the course.

9.0 Course Grades

Total points earned in the course translate to the following letter grades:

Grade	Points	Percentage
A+	970	97%

Grade	Points	Percentage
A	930	93%
A-	900	90%
B+	870	87%
B	840	84%
B-	810	81%
C+	780	78%
C	750	75%
C-	720	72%
D+	690	69%
D	660	66%
D-	630	63%
F	<= 629	

10.0 Academic Integrity/Code of Conduct

10.1 Collaboration

UMSI strongly encourages collaboration while working on some assignments, such as homework problems and interpreting reading assignments as a general practice. Active learning is effective. Collaboration with other students in the course will be especially valuable in summarizing the reading materials and picking out the key concepts. You must, however, write your homework submission on your own, in your own words, before turning it in. If you worked with someone on the homework before writing it, you must list any and all collaborators on your written submission. Each course and each instructor may

place restrictions on collaboration for any or all assignments. Read the instructions carefully and request clarification about collaboration when in doubt. Collaboration is almost always forbidden for take-home and in class exams.

If you are a more advanced student and are willing to help other students, please feel free to do so. Just remember that your goal is to help teach the material to the student receiving the help and not do their work for them.

10.2 Plagiarism

All written submissions must be your own, original work. Original work for narrative questions is not mere paraphrasing of someone else's completed answer: you must not share written answers with each other at all. At most, you should be working from notes you took while participating in a study session. Largely duplicate copies of the same assignment will receive an equal division of the total point score from the one piece of work.

You may incorporate selected excerpts, statements or phrases from publications by other authors, but they must be clearly marked as quotations and must be attributed. If you build on the ideas of prior authors, you must cite their work. You may obtain copy editing assistance, and you may discuss your ideas with others, but all substantive writing and ideas must be your own, or be explicitly attributed to another. See the (Doctoral, MSI, BSI) student handbooks available on the UMSI intranet for the definition of plagiarism, resources to help you avoid it, and the consequences for intentional or unintentional plagiarism.

10.3 Generative artificial intelligence

Emerging generative artificial intelligence (AI) tools provide news ways to learn and master computational thinking and creative programming. Using generative AI to complete SIADS 593 assignments is permitted, unless expressly prohibited by the assignment instructions. If you utilize generative AI to generate assignment code you *must* cite the tool(s), prompts, and outputs employed to complete the assignment. If you fail to disclose your use of generative AI you will receive a score of zero (`0`) for the assignment. Repeated use without disclosure will be reported to the Associate Dean for Academic Affairs.

Generative AI tools such as ChatGPT, UM-GPT, and Github Copilot can increase productivity and accelerate software development. But downsides exist and you *must* exercise caution when leveraging AI in your work. AI tools are imperfect and can produce content that is inappropriate, offensive, or otherwise problematic. AI tools can produce code that is inelegant, inefficient, insecure, unreliable, unreadable, and/or unmaintainable. Within a classroom context, AI tools can produce code that performs the desired computation but nevertheless fails to meet the requirements of an assignment problem.

You are responsible for the code you submit. If you are unfamiliar with the syntax, structure, and/or semantics of AI-generated code *do not* include the code in your assignment solution. If you cannot explain to your instructor the computations that AI-generated code performs *do not* include the code in your assignment solution. You do yourself no favors by submitting code that you do not understand.

In the end, however, you need to decide on the degree to which you use generative AI. Do you want to be the sort of data scientist who merely repeats what others have done, or do you want to be one who contributes to the future work of other data scientists? This is not a black-and-white distinction and we encourage you to use generative AI when appropriate, but consider lessening your reliance on the technology as you gain experience with data science tools.

11.0 Accommodations

Refer to the Accommodations for Students with Disabilities section of the UMSI Student Handbook.

Use the Student Application Form in Accommodate to begin the process of working with the University's Office of Services for Students with Disabilities.

12.0 Accessibility

Refer to the Screen reader configuration for Jupyter Notebook Content document to learn accessibility tips for Jupyter Notebooks.

13.0 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).

14.0 Student mental health and well-being

Students may experience stressors that can impact both their academic experience and their personal well-being. These may include academic pressure and challenges associated with relationships, mental health, alcohol or other drugs, identities, finances, etc. If you are experiencing concerns, seeking help is a courageous thing to do for yourself and those who care about you. If the source of your stressors is academic, please contact Anthony

so that he can find solutions together. For personal concerns, U-M offers the following resources:

- Counseling and Psychological Services (CAPS) - confidential; 734-764-8312; for after-hours urgent support, call and press 0; counseling, workshops, groups and more. Ashley Evearitt, a CAPS counselor is embedded in UMSI, information about how to schedule an appointment with her can be found here.
- Dean of Students Office - 734-764-7420; provides support services to students and manages critical incidents impacting students and the campus community.
- Ginsberg Center for Community Service Learning - 734-763-3548; opportunities to engage as learners and leaders to create a better community and world.
- Maize and Blue Cupboard (MBC) - 734-936-2794; Food pantry with groceries, kitchen and cooking supplies, personal and household items, and support.
- Multi-ethnic Student Affairs (MESA) - 734-763-9044; diversity and social justice through the lens of race and ethnicity.
- Office of Student Conflict Resolution - 734-936-6308; offers multiple pathways for resolving conflict.
- Office of the Ombuds - 734-763-3545; students can raise questions and concerns about the functioning of the university.
- Services for Students with Disabilities (SSD) - 734-763-3000; accommodations and access to students with disabilities.
- SilverCloud - Students may also use an online, self-guided, interactive mental health resource that provides cognitive behavioral interventions.

- Sexual Assault Prevention and Awareness Center (SAPAC) - confidential; 734-764-7771 or 24-hour crisis line 734-936-3333; addresses sexual assault, intimate partner violence, sexual harassment, and stalking.
- Spectrum Center - 734-763-4186; support services for LGBTQ+ students.

15.0 Student Services

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

16.0 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; 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.

17.0 Religious holidays

Although the University of Michigan, as an institution, does not observe religious holidays, it has long been the University's policy that every reasonable effort should be made to help students avoid negative academic consequences when their religious obligations conflict with academic requirements. Absence from classes or examinations for religious reasons does not relieve students from responsibility for any part of the course work required during the period of absence. Students who expect to miss classes, examinations, or other assignments as a consequence of their religious observance shall be provided with a reasonable alternative opportunity to complete such academic responsibilities. It is the obligation of students to provide faculty with reasonable notice of the dates of religious holidays on which they will be absent. Such notice must be given by the drop/add deadline of the given term. Students who are absent on days of examinations or class assignments shall be offered an opportunity to make up the work, without penalty, unless it can be demonstrated that a make-up opportunity would interfere unreasonably with the delivery of the course. Should disagreement arise over any aspect of this policy, the parties involved should contact the Department Chair, the Dean of the School, or the Ombudsperson. Final appeals will be resolved by the Provost.

The Office of the Provost maintains a list of religious holidays that may pose a conflict with the academic calendar.

18.0 Technology Tips

We will be using Slack, Zoom, Google Docs, and Google Sheets to facilitate communication. The comprehensive oral exam will be conducted using Zoom, and the team project will be Python-based and Jupyter notebook-based.

This course differs from your other MADS courses in many ways including technology. We have created a Jupyter environment for you that is functionally equivalent to SIADS 516, which is a superset of the base MADS environment.

You can access that environment via the “ungraded lab assignment” in Coursera. You can use that environment or choose to use any of the environments from courses you have already completed. Alternatively, you can use your own locally installed environment. Another possibility is to use Deepnote or Google Collaboratory which may facilitate collaboration.