

GRADTDA 5911 Syllabus

MTDA Capstone I Autumn 2026

Course Information

- **Course times and location:** The Autumn 2026 semester will begin on August 25, 2026. To provide a meaningful online learning experience, we will use a blend of synchronous and asynchronous delivery. See “How This Online Course Works” for more details. The synchronous session meets Mondays 5:30 PM – 7:30 PM. **The first synchronous session is scheduled for Tuesday, September 8, 2026** (Monday, September 7 is Labor Day).
- **Credit hours:** 3
- **Mode of delivery:** Distance Learning

Instructor

- **Name:** Dr. Krishna Chaitanya Rao (he/him)
- **Email:** kathala.1@osu.edu
- **Office location:** 350A Pomerene Hall (Project Zone)
- **Office hours:** By appointment only; use the below link to schedule a meeting.
 - [Schedule a meeting](#)

Graduate Teaching Associate

- **Name:** Vincent Davidson, M.S. (he/him)
- **Email:** davidson.805@osu.edu
- **Office hours:** [Schedule a meeting](#)

Preferred means of communication

- My preferred method of communication for questions is email at kathala.1@osu.edu. You may also reach the Graduate Teaching Associate at davidson.805@osu.edu.
- My class-wide communications will be sent through the Announcements tool in Carmen Canvas. Please check your [notification preferences](https://go.osu.edu/canvasnotifications) (go.osu.edu/canvasnotifications) to be sure you receive these messages.

Course Description

This course will provide experiential learning for students in data analysis with design thinking on non-trivial data sets. Students in cooperation with project sponsors formulate data questions and create complete workflows. Emphasis on teamwork, translational competency and professional competency in data rich environments by deploying and using computing technology, data analysis methods and creation of user interfaces.



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Learning Outcomes

The goal of the MTDA Capstone sequence is to enhance student's learning through authentic real-world experiences. To meet this goal, the program focuses on the following learning outcomes:

Outcome Name	Outcome Definition
1. Perform Professionally	Students individually exhibit integrity, accept responsibility, take initiative, and provide leadership necessary to ensure project success as part of a diverse team.
2. Demonstrate an organized approach to a data analytics project	Students will collectively use an iterative process to align project expectations and guide progress.
3. Establish Team Relationships for Quality Performance	Students establish relationships and implement practices with team members, advisors, and clients that support high performance and continuous improvement.
4. Manage Project Schedule and Resources	Students plan, monitor, and manage project schedule, resources, and work assignments to ensure timely completion.
5. Apply Knowledge, Research and Creativity	Students utilize prior knowledge, independent research, published information, and original ideas in addressing problems and generating solutions.
6. Make Decisions Using Broad-Based Criteria	Students make project decisions based on business and data understanding.
7. Use Contemporary Tools	Students demonstrate effective use of contemporary tools for data analysis, data visualization, and data story telling.
8. Data Preparation and Modeling for Evaluation	Students evaluate project outcomes based on appropriate modeling techniques.
9. Communicate for Project Success	Students use formal and informal communications with team members, advisors, and clients to document and facilitate progress and to enhance impact of projects.

How This Online Course Works

Mode of delivery: This course is 100% online. There is a scheduled synchronous (real-time) session in Zoom which will be held Mondays 5:30 PM – 7:30 PM.

Meet as class: There will be three times where attendance is mandatory. We will meet at the beginning of the semester for a project pitch day (Tue Sep 8), middle for mid-semester presentations (Mon Oct 5), and end of semester for final presentations (Mon Dec 7).

Synchronous Session: Most weeks, we will meet synchronously for a short lecture, and teams will meet in breakout rooms. Instructors will be available for questions. These sessions are strongly encouraged. Teams are expected to meet weekly to discuss the project in addition to meeting with their sponsors weekly.

Pace of online activities: This course is divided into weekly modules that are released at least one week ahead of time. Student teams are expected to keep pace with weekly deadlines but may schedule their efforts freely within that time frame.



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Credit hours and work expectations: This is a 3 credit-hour course. According to Ohio State bylaws on instruction (go.osu.edu/credithours), students should expect around 3 hours per week of direct instruction in addition to 6 hours of homework (readings, team meetings, client meetings, and project assignments) to do well in the course.

Attendance and participation requirements: Consistent engagement is expected. Three synchronous sessions are considered mandatory, with other synchronous sessions strongly encouraged. Please communicate any concerns ahead of time, and we will work with you to make sure you have a positive learning experience.

- **Participating in online activities for attendance: MULTIPLE TIMES PER WEEK.** Log in to the course in Carmen multiple times per week for asynchronous content delivery.
- **Zoom meetings: ONE TIME PER WEEK.** Three live, scheduled classes are required, while others are strongly encouraged. Meet as a team at a minimum of one time per week, preferably during the synchronous weekly class session.
- **Live sessions / online meetings with client: ONE TIME PER WEEK.** Log in to CarmenZoom (or other virtual conferencing tool) for weekly team–client meetings.
- **Office hours: AS NEEDED.** Visiting during general office hours is optional but encouraged. Scheduling links are on Carmen Canvas.
- **Required course materials and technologies:** Carmen Canvas and CarmenZoom (if the client prefers another tool such as Teams, you may need to use that in addition to Zoom).

Textbooks

- **Required:** Required readings/materials will be provided through Carmen Canvas.
- **Recommended/optional:** Optional readings/materials will be provided through Carmen Canvas.
- **Other fees or requirements:** None.

Course Technology

For help with your password, university email, Carmen, or any other technology issues, questions, or requests, contact the Ohio State IT Service Desk. Standard support hours are available at ocio.osu.edu/help/hours, and support for urgent issues is available 24/7.

- Self-Service and Chat support: ocio.osu.edu/help
- Phone: 614-688-4357 (HELP)
- Email: servicedesk@osu.edu
- TDD: 614-688-8743

Baseline technical skills for online courses

- Basic computer and web-browsing skills.
- Navigating Carmen: access materials, check announcements, submit assignments, and check grades.



Required technology skills specific to this course

- CarmenZoom virtual meetings.
- Recording a slide presentation with audio narration (with captioning).
- Recording, editing, and uploading video.

Required equipment

- Computer: current Mac (macOS) or PC (Windows 10/11) with high-speed internet connection.
- Webcam: built-in or external, fully installed and tested.
- Microphone: built-in or external.
- A mobile device or landline for BuckeyePass authentication.

Required software

- Microsoft Office 365: free for OSU students via go.osu.edu/office365help.

Carmen access

You will need BuckeyePass multi-factor authentication to access your courses in Carmen. Register multiple devices, request backup passcodes, and download Duo Mobile so you can always connect. If none of these options meet your needs, contact the IT Service Desk at 614-688-4357 (HELP).

Course Assignment Elements

General: This course provides a “culminating design experience” required to earn a Master’s in Translational Data Analytics from the Ohio State University. Students work in multidisciplinary teams (typically 3–4 students) on realistic and open-ended data science projects in conjunction with an industry sponsor. Teams use the CRISP-DM process model with overarching team-based agile principles. Project concepts are pitched by sponsors, and teams rank projects in order of interest; best efforts are made to match projects to interest. Teams contact their sponsor and establish regular meeting times, and meet regularly as a team and with their sponsor in addition to required class meetings.

First semester focus: The first semester focuses on Business Understanding and Data Understanding of the CRISP-DM model and concludes with an Exploratory Data Analysis and a project sprint. The primary deliverable is a comprehensive project plan which serves as input for the second semester sprints.

Documentation: Documentation is key to project success. Use OSU-approved file sharing (Teams or OneDrive); a Teams channel will be established for the course. The use of Google Drive or Docs is not allowed to protect students and sponsors. All deliverables must be uploaded to Carmen. To protect sponsor information, all students sign a Student Participation Agreement at the beginning of the project.



Written assignments: Written documents follow the format in the respective assignment description. Some sections may not apply or may require modification to fit the project. Instructors review and comment on each deliverable.

Oral presentations: Typically in PowerPoint (or PDF) form. Teams are encouraged to review each presentation with the instructor before presenting to the sponsor.

Final deliverables: An initial data dictionary, project plan, and codebook are required as final deliverables, plus a one-page executive summary with recommendations for the second semester. Submit all final deliverables electronically to Carmen.

Grading

How your grade is calculated:

Week	Assignments (Week Due)	Points
1	Welcome Module (Class begins)	0
2	Introduction / Ambiguous Problems	5
3	Sponsor Pitches / Project Selection	0
4	Discussion Post: Agile & SCRUM	10
5	Team Assignment: Work Styles (Business Chemistry & Inclusive Teams)	10
6	Team Jigsaw: Researching the Problem Space	15
7	Business Understanding Presentation	20
8	Data Understanding: Data Dictionary (First Draft)	20
9	Autumn Break: Catch-Up Week	0
10	Data Understanding: EDA Team Choice	15
11	Project Plan	20
12	Sprint 1: Story-point Planning	15
13	Mid-Sprint Check-in	0
14	Data and Code Submission	15
15	Thanksgiving: Catch-Up Week	0
16	Semester 1: Final Presentation	20
16	Executive Summary Written Report	20
	Total	185

See course schedule on Carmen for all detailed assignments and due dates.

Late assignments

Each student will be assigned three “flex-points” to use as needed. For each day late, it will cost one flex-point. Once a student has used all flex-points, individual grades on late assignments will be deducted 10% per day late.

Team and individual assignments



The capstone is a team-based course, but individual contribution is required. Grades on assignments will be a combination of individual contributions and team synthesis and evaluation of the projects.

Grading scale

93–100: A 90–92.9: A– 87–89.9: B+ 83–86.9: B 80–82.9: B– 77–79.9: C+ 73–76.9: C
70–72.9: C– 67–69.9: D+ 60–66.9: D Below 60: E

Instructor feedback and response time

- **Grading and feedback:** for large weekly assignments, you can generally expect feedback within 7 days.
- **Email:** I will reply to emails within 48 hours on days when class is in session.

Course evaluation

A series of evaluation tools will be used throughout the course, including the University SEI and instructor-developed forms. Halfway through the semester, students will be asked to perform an optional rapid evaluation of their team and the course. Students are encouraged to speak up about difficulties early so we can quickly work toward a solution.

Other Course Policies

Health and Safety Requirements

All students, faculty and staff are required to comply with and stay up to date on all university safety and health guidance (<https://safeandhealthy.osu.edu>).

Discussion and communication guidelines

The following are my expectations for how we should communicate as a class. Above all, please remember to be respectful and thoughtful.

- **Writing style:** use good grammar, spelling, and punctuation; a conversational tone is fine for non-academic topics.
- **Tone and civility:** maintain a supportive learning community where people can disagree amicably. Sarcasm doesn't always come across online.
- **Citing your sources:** in academic discussions, cite your sources (author, title, and page numbers; include links for online sources).
- **Backing up your work:** compose academic posts in a word processor saved to your team's OSU-approved storage, then copy into Carmen Canvas.

Academic integrity policy

Academic integrity is essential to maintaining an environment that fosters excellence in teaching, research, and other scholarly activities. The Ohio State University and the Committee on Academic Misconduct (COAM) expect that all students have read and understand the



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university's Code of Student Conduct and will complete all assignments with fairness and honesty. The Code (Section 3335-23-04) defines academic misconduct as "any activity that tends to compromise the academic integrity of the university or subvert the educational process," including plagiarism, unauthorized collaboration, copying another student's work, and possession of unauthorized materials during an examination.

If I suspect academic misconduct, I am obligated to report it to COAM. Sanctions may include a failing grade and suspension or dismissal from the university. Additional resources include the COAM web pages, "Ten Suggestions for Preserving Academic Integrity," and the "Eight Cardinal Rules of Academic Integrity." Please contact me with any questions.

Copyright disclaimer

The materials used in connection with this course may be subject to copyright protection and are only for the use of students officially enrolled in the course for the educational purposes associated with the course. Copyright law must be considered before copying, retaining, or disseminating materials outside of the course.

Diverse and Inclusive Class

The Ohio State University affirms the importance and value of diversity in the student body. We are committed to a community that recognizes the inherent worth and dignity of every person and fosters mutual respect. Discrimination based on protected status — age, color, disability, gender identity or expression, national origin, race, religion, sex, sexual orientation, or veteran status — is prohibited. You can report incidents of bias to the Bias Assessment and Response Team.

Title IX makes it clear that violence and harassment based on sex and gender are civil-rights offenses. If you or someone you know has been harassed or discriminated against based on sex or gender — including sexual harassment, sexual assault, relationship violence, stalking, or sexual exploitation — you may find information about your rights and options at titleix.osu.edu or by contacting the Title IX Coordinator at titleix@osu.edu. Title IX is part of the Office of Institutional Equity (equity.osu.edu; equity@osu.edu).

Your mental health

As a student you may experience issues that can create barriers to learning. The Ohio State University offers services to help at ccs.osu.edu. You can reach an on-call counselor when CCS is closed at 614-292-5766. For urgent help, call or text the 988 Suicide & Crisis Lifeline (988) or visit 988lifeline.org. The Ohio State Wellness app is also available at go.osu.edu/wellnessapp.

Student financial and food support

The Student Emergency Fund is available to students at risk of dropping out due to an unexpected financial emergency; the Student Advocacy Center can help you apply. The Student Wellness Center offers peer financial coaching through Scarlet & Gray Financial. For food support, we recommend OSU's [Buckeye Food Alliance](#) pantry (Lincoln Tower 150) and the [Mid-Ohio Food Collective](#). Check current hours online or contact the pantry to schedule an appointment.



Accessibility accommodations for students with disabilities

The university strives to make all learning experiences as accessible as possible. If you anticipate or experience academic barriers based on your disability (including mental health, chronic, or temporary medical conditions), please let me know immediately so we can privately discuss options. To establish reasonable accommodations, I may request that you register with Student Life Disability Services; afterward, make arrangements with me as soon as possible. SLDS: slds@osu.edu; 614-292-3307; slds.osu.edu; 098 Baker Hall, 113 W. 12th Avenue.

If you need additional services to use Carmen or other course technologies, please request accommodations with your instructor (CarmenCanvas accessibility, streaming audio/video, CarmenZoom accessibility, and collaborative course tools).

Course Topics

These topics will be discussed throughout the course:

- Ambiguous Problems and Project Management
- CRISP-DM Process Model
 - Agile and Scrum
- Business Understanding
 - Business Chemistry: Team Analysis and Team Inclusivity
 - Do Some Research: Library Resources
 - Understand Your Sponsor
- Data Understanding
 - Data Dictionary
- Effective Data Storytelling
- Project Plan Development for Second Semester
- Project Quality: Reliability and Repeatability
- Exploratory Data Analysis

Course Schedule

The synchronous session meets Mondays 5:30–7:30 PM. Assignment details and deadlines are provided on Carmen Canvas. Dates follow the OSU Autumn 2026 academic calendar.

Week	Date	Topics	Class Meeting	Assignments Due
1	8/25	Welcome Module / Course Introduction	Asynchronous	None
2	8/31	Capstone Project Introduction / Ambiguous Problems	Asynchronous	Introduction / Ambiguous Problems Discussion Post



Week	Date	Topics	Class Meeting	Assignments Due
3	9/8 (Tue)	Sponsor Pitches / Project Selection (Labor Day Mon 9/7 — no class)	Synchronous, Required	Project Selection
4	9/14	Setting the Stage: CRISP-DM / Agile	Synchronous	Business Chemistry and Inclusive Teams (Work Styles)
5	9/21	Doing Some Research	Synchronous	CRISP-DM / Agile & SCRUM Discussion Post
6	9/28	Business Understanding	Synchronous	Jigsaw: Research the Problem Space
7	10/5	Data Dictionary	Synchronous, Required	Business Understanding: Presentation
8	10/12	Preliminary EDA	Synchronous	Data Dictionary
9	10/19	No Class: Catch-Up Week (Autumn Break 10/15–16)	No Class	None: Autumn Break
10	10/26	Project Plan	Individual Teams	Exploratory Data Analysis Team Choice
11	11/2	Story-point Sprint 1 Planning	Asynchronous	Project Plan
12	11/9	Data and Code Submission: Reliability and Repeatability (Veterans Day Wed 11/11 — no class)	Individual Teams	Sprint Planning
13	11/16	Mid-Sprint Check-in	Individual Teams	None
14	11/23	Final Wrap-Up (Thanksgiving Break 11/25–27)	Asynchronous	Data and Code Submission
15	11/30	Catch-Up Week	Asynchronous	None
16	12/7	Semester 1 Presentation (last day of classes 12/9)	Synchronous, Required	Semester 1 Final Presentation
Finals	12/11 (Fri)	Finals Week — no class	No Class	Executive Summary Written Report

Syllabus version 3.0 · last updated August 19, 2026.

