FALL 2025

DSO 599

AGILE FRAMEWORKS FOR DATA SCIENCE DEPLOYMENT

THURSDAY | 6:30 – 9:30 PM PT

INSTRUCTOR: ANASTASIA EGOROVA

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Units: 1.5   Office: TBD

WHY TAKE THIS COURSE?

This course is for students and professionals in data science, product, project management, and business analytics who want to bridge the gap between data science, solution design, and business strategy. You will gain hands-on experience with industry case studies, agile sprint development, prototyping, interaction with industry experts, and collaborative projects to develop scalable, impactful solutions.

🌐 SCHEDULE OF CLASSES

COURSE OBJECTIVES

This interdisciplinary course equips students with the in-demand skills to design, deploy, and scale data science and AI solutions in an organization. It provides hands-on experience and practical approaches to solving complex business problems.

KEY CONCEPTS

Explore agile methods and data mining frameworks across the full data science lifecycle, from ideation to deployment, including data governance, ethics, securing organizational buy-in, and integrating AI to drive business value and innovation at scale in diverse business environments.

Course Description

This class introduces the agile and data science methodologies and incorporates ideation workshops, prototyping exercises, case studies, and data analysis assignments using data visualization, data mining techniques, and software like Python, Tableau, Figma, and ChatGPT. The workshops will guide students through the CRISP-DM framework for data science solutions, including user research, ideation, design, development, testing, and deployment. Prototyping exercises will allow students to iteratively develop and refine concepts. The course will incorporate agile sprints to simulate real-world data science product development, emphasizing user-centric design, iterative progress, continuous feedback, and collaboration. The capstone project will offer an opportunity to work in a team and apply the knowledge and skills acquired throughout the course to a specific business problem.

Draft

USC Marshall
School of Business

DSO 599: Agile Frameworks for Data Science Deployment
Fall 2025
1.5 Units, 2ⁿᵈ half of Fall semester, Thursday, 6:30-9:30 pm

Instructor:	*Anastasia Egorova*
Office:	*TBD*
Office Hours:	*Days and Times TBD (1 hour per week) and by appointment*
Phone:	*(###) ###-####*
Email:	*Anastasia.Egorova@marshall.usc.edu*

COURSE DESCRIPTION

This 8-week interdisciplinary course equips students with the skills to design, deploy, and scale data science solutions in an organization. It provides practical approaches to solving complex business problems using the data mining CRISP-DM framework and agile methodologies. The course emphasizes data governance, ethics, securing organizational buy-in and integrating AI and Generative AI to drive innovation through actionable insights and scalable solutions.

The course combines theoretical foundations with hands-on practice, real-world examples, and interaction with industry experts, enhancing students' employability, critical thinking, problem-solving, and ability to foster data culture in diverse business environments.

COURSE OBJECTIVES

The course blends theoretical foundations with practical experience. It incorporates ideation workshops, prototyping exercises, case studies, and data analysis assignments using data visualization, data mining techniques and software like Python, Tableau, Figma, and ChatGPT.

- **Workshops:** The workshops will guide students through the CRISP-DM framework for data science solutions, including user research, ideation, design, development, testing, and deployment.
- **Exercises**: Prototyping exercises will allow students to iteratively develop and refine concepts.
- **Agile Sprints**: The course will incorporate agile sprints to simulate real-world data science product development, emphasizing iterative progress, continuous feedback, and collaboration.

Upon successful completion of this course, students will be able to:
1. Formulate and articulate data science solutions and implementation strategy aligned with organizational goals, addressing data governance, AI ethics, and data integrity considerations.
2. Apply agile principles and best practices to ideate, prototype, and test user-centric data science solutions that meet specific business needs.
3. Utilize CRISP-DM data science framework and appropriate analytical techniques and tools to extract meaningful insights from data and inform decision-making.
4. Evaluate and define data-driven solutions, including AI, for complex business problems and to foster data culture in diverse business environments.
5. Develop strategies for gaining organizational buy-in, communicating impact, and deploying data science at scale from ideation to launch.

The course may introduce guest speakers and capstone project partners to provide students with current business problems and expert interactions.

- *Guest Speakers: Engaging industry experts as guest speakers will provide business perspectives on data-driven innovation, AI applications, and challenges of implementation and scaling.*
- *Capstone Project Partners: Partnering with companies to provide business challenges for the capstone project will enhance practical learning and industry relevance.*

COURSE MATERIALS

Required Text/Readings
- *Required readings: Selections from "The Lean Startup" by Eric Ries (free on Audiobooks), "Transformed" by Marty Cagan, "Creative Confidence" by David Kelley, "Data Science for Business" by Foster Provost and Tom Fawcett, and HBR Guide to Data Analytics Basics for Managers*
- *Frameworks: CRISP-DM by Data Science Process Alliance, IDEO Design Thinking, An Introduction to Design Thinking Process by Stanford d.school (PDF), Agile methodologies in data science*
- *Case Studies: Netflix: Data-Driven Decision Making in Content Development (various), Google's Innovation Lab (Google X) Case Study by HBS, Nike's Use of Data and Analytics (various), "Building Data-Driven Organizations" from MIT Sloan Management Review*
- *DataCamp: Interactive data science and analytics courses (access provided through USC)*

Software and Tools
The use of specific software will be determined based on the need to address a specific business problem as part of the course objectives and may include:
- *Data analysis and data mining software: Python*
- *Data visualization: Tableau*
- *Prototyping: Figma, Miro*
- *AI tools: ChatGPT, Claude, other*
- *Microsoft Office: Excel, Word, PowerPoint*
- *Collaboration platforms: Slack, other as applicable*
- *Brightspace (https://brightspace.usc.edu)*

If you have any questions or need assistance with the Brightspace Course Pages, please contact the Marshall Help Desk at 213-740-3000 (option 2) or HelpDesk@marshall.usc.edu. Alternatively, (213) 740-5555 will get you the USC ITS Help Desk.

Supplementary Materials
To be determined. The instructor may source readings from white papers, blogs, research papers, AI and analytics vendor sites to provide students with insights into the latest advancements and industry practices.

Technology Requirements:
You are responsible for ensuring that you have the necessary computer equipment and reliable internet access. You are invited to explore what lab or loaner options exist. Marshall has site licenses for a variety of software that students can access free of charge. A list of available software is located here. Contact the Marshall Help Desk (213-740-3000 or HelpDesk@marshall.usc.edu) if you need assistance.

The following components will determine your grade in this course:
- Class Participation (10%): Active engagement in discussions, workshops, and presentations.
- Homework Assignments (60%): Individual and team assignments covering data analysis, research and prototyping exercises, and case study analyses.
- Capstone Project (30%): Development and presentation of a data science solution to a real-world business problem, incorporating design thinking, CRISP-DM, and agile methodologies.

Assignments	Points	% of Overall Grade
Class Participation	10	10%
Homework		
Individual assignments	50	50%
Team assignments	10	10%
Capstone Project	30	30%
TOTAL	100	100%

CLASS PARTICIPATION

Active and engaged participation is crucial for this course. Students are expected to come prepared to discuss assigned readings, contribute thoughtfully to class discussions, and actively participate in group activities.

Evaluation Criteria for Class Participation:

- **Quality of Contributions:** Thoughtful, insightful, and relevant comments that demonstrate a thorough understanding of course material will be highly valued.
- **Engagement:** Active listening, respectful interaction.

The other considerations for effective class participation evaluation will include:
- How relevant and thoughtful are the points made and do they contribute to the discussion?
- Do the comments reference the materials and concepts introduced in the course?
- Does the student consistently show engagement in class activities?

Class participation accounts for 10% of the overall course grade. **For further details on the evaluation and grading criteria, see the attached Class Participation Statements (Appendix III) and the Grading Rubrics (Appendix V).**

HOMEWORK

Homework assignments will consist of a variety of individual and team tasks intended to reinforce concepts and develop practical skills. Team assignments are designed to evolve and refine concepts of a data science solutions that will contribute to the final capstone project.

The homework assignments will be due **on Brightspace by 11:00 PM PT** before the class. Due to the short duration of the course, late submissions will not be accepted. Partial credit will be given for incomplete assignments.

Homework consists of individual and team assignments, which may include:
- Design thinking challenges to develop a data science product concept, conducting user research, brainstorming solutions, prototyping, and presenting findings
- Data analysis, data visualization and modeling exercises that will involve analyzing a sample dataset, applying analytical techniques, and surfacing insights to address a specific business problem
- Case study analyses and a written report or presentation
- Research and reporting on emerging trends in data-driven innovation.

Individual homework assignments account for 50% and team assignments for 10% of the overall course grade. For further details on the grading standards, see the attached Grading Rubrics (Appendix V).

CAPSTONE PROJECT

Capstone project will offer an opportunity to apply the knowledge and skills acquired throughout the course to a real-world problem. Students will work in teams of 5-7 people to develop a data-driven solution to a business challenge, culminating in the final in-person team presentation and a written report. The teams will be self-selected.

The deliverables for the capstone project will include a written report and an in-person presentation of a data-driven solution to a specific business problem, incorporating best practices and the concepts learned throughout the course.

Peer evaluations will be conducted for team projects to ensure fair and accurate assessment of individual contributions. The peer evaluation form will be used to gather feedback on teamwork, communication, and contributions to project deliverables (see Appendix II).

Capstone project accounts for 30% of the overall course grade. For further details on the grading standards, see the attached Grading Rubrics (Appendix V).

EXAMS

There is no scheduled exam, but a summative experience will be had on the university scheduled exam date/time. Please see course outline for more details.

THE IMPORTANCE OF COURSE EVALUATIONS

Your feedback is valuable in shaping and improving the course. I encourage you to actively participate in course evaluations to share your experiences and suggestions.

EMERGENCY PREPAREDNESS

In case of a declared emergency, the USC Emergency Information website (https://emergency.usc.edu/) will provide safety and other information, including ways in which instruction will continue if travel to campus is not feasible.

USE OF RECORDINGS

Pursuant to the *USC Student Handbook* (https://policy.usc.edu/studenthandbook/, pages 13 and 27), students may not record a university class without the express permission of the instructor and announcement to the class. Distributing course material without the instructor's permission is prohibited.

USE OF AI GENERATORS

The use of AI generators is encouraged and permitted in this course for specific assignments, as indicated in the assignment instructions. However, all AI-generated content must be properly cited, attributed, and verified for potential biases, errors, and incomplete information. Using an AI tool without proper attribution will be considered plagiarism. Please refer to the university's policy on AI usage in the Academic Integrity section below.

COURSE OUTLINE AND ASSIGNMENTS

The course is broken out into 5 modules, following the agile and CRISM-DM frameworks. Each week incorporates lectures, interactive discussions, and hands-on activities to encourage application and innovation. The course outline blends technical rigor with human-centric principles, ensuring students learn to develop and deploy data science solutions responsibly and effectively.

The specific assignments and weekly schedule are subject to change.

Course Outline, Key Themes and Concepts:

Business Understanding and Strategy
- Course introduction, overview of data-driven innovation
- Defining business problems and understanding the business value of data science
- Data ethics, privacy, and governance considerations, including AI ethics
- Developing data science solutions aligned with organizational goals and strategy
- Identifying and evaluating data sources, data quality assessment
- Introduction to the CRISP-DM framework

Agile Methodologies for Data Science
- Understanding user needs, user research methods and personas
- Empathy and journey mapping for data science solution design
- Ideation and brainstorming of concepts
- Prototyping and testing, ongoing user feedback and continuous improvement
- Iterative design and agile principles in data science product development
- Presenting findings and recommendations

Data Preparation, Modeling and Deployment Strategy
- Data preparation techniques: cleaning, transformation, and feature engineering
- Exploratory data analysis (EDA) and data visualization
- Choosing appropriate analytical techniques and algorithms
- Data science for business applications, including AI
- Development, evaluation, and interpretation
- Data storytelling and communication of insights

Analytics in Action
- Operationalizing data science solutions at scale
- AI business use cases and applications across industries
- Deployment and implementation: challenges and best practices
- Generative AI and its impact on business innovation

- Securing organizational buy-in for data science initiatives and fostering data culture

Capstone Project

The capstone project spans the entire course duration, with dedicated work time allocated in each module, including in-class activities, workshops, and homework assignments. The goal is to build towards the final project presentation iteratively and progressively. Students will form teams, define a real-world business problem, develop a data science solution concepts and prototypes, and present their findings.

The capstone project will incorporate CRISP-DM and agile methodologies for data science, along with AI ethics, data governance and implementation best practices. Use of relevant generative AI tools is encouraged and will provide an opportunity to build and practice critical skills in using AI for various business applications.

A detailed schedule of topics, readings, and assignments will be provided on Brightspace. Course outline and homework assignments may include:

Week	Theme/Topic	Key Activities	Deliverables *Due on Brightspace by 11:00 PM PT on Monday before class (see instructions below for the Capstone Project Presentation)*
1	*Introduction to the course:* *Overview of CRISP-DM Data Science framework and Agile approach for Data Science Solutions, including AI*	*Overview of the course and key concepts:* *CRISP-DM phases (Business Understanding, Data Understanding, etc.)* *Agile methods and user-centric approach for Data Science (Emphasize, Define, Ideate, Prototype, Test), including application of AI and Generative AI for business innovation* *Activity: Discuss examples and case studies of data- and AI-powered human-centered solutions*	*Assignment:* *Identify a real-world problem and define objectives (aligned with CRISP-DM Business Understanding Phase), explore AI's role* *Read chapter 1 of "Data Science for Business" by Provost and Fawcett,* *Review use cases and articles on CRISP-DM for data science and AI* *Review IDEO Design Kit*
2	*Empathy, Problem Framing and Ethical Considerations*	*Workshop: Empathy and journey mapping to understand user needs* *Translating user insights into problem statements that can be solved with data, considering AI ethics, biases, and the importance of fairness* *Activity: Create personas and define data innovation goals*	*Assignment:* *Building on the week 1 assignment, write a problem statement and refine objectives, explore potential use of AI* *Watch TED Talk by AI ethics researcher Sasha Luccioni* *Read chapter 2 of "Data Science for Business" by Provost and Fawcett: Business Problems and Data Science Solutions, HBR article "The Role of Human-Centric AI in Business"*
3	*Data Understanding, Governance and Ideation*	*CRISP-DM Data Understanding phase:*	*Assignment:*

		Exploring data sources, assessing data quality, relevance, viability, and conducting preliminary analysis Data Governance and Compliance Workshop: Ideation techniques, using data insights and ChatGPT or similar tools	Using a sample data set (open source or generated data), analyze the data and prepare an initial data exploration report for the problem defined in weeks 1 and 2 Reference "Data Science for Business" by Provost and Fawcett: A Proposal Review Guide
4	Data Preparation, Modeling and Prototyping	CRISP-DM Data Preparation and Modeling phases: cleaning, transforming, structuring data, and choosing modeling and analytics techniques Workshop: Rapid prototyping techniques to create iterative solution concepts and vet assumptions Activity: Create a sample low-fidelity prototype using Figma or similar tools	Design thinking challenge: Develop a low-fidelity prototype and concept of a solution for the previously defined problem Use real data sets and applicable GenAI tools to validate assumptions and refine the prototype Read the Netflix AI Recommender System case study
5	Evaluation, Performance and Testing	CRISP-DM Evaluation and Testing phase: assessing performance and alignment with user needs, user testing, and ethics review Activity: User testing and iterative improvement techniques, assessing a minimum viable product (MVP)	Assignment: Conduct user testing and refine the solution, present an updated MVP prototype and an evaluation report Read Chapters 5-8 of "The Lean Startup" by Eric Ries
6	Deployment and Scaling of Data Science Solutions, Securing Organizational Buy-In and Adoption	CRISP-DM Deployment phase: operationalizing data science solutions at scale, considering data integrity, and impact on the organization (quantitative and qualitative assessment) Steps to creating a deployment strategy, securing organization buy-in and adoption Industry Guest Speaker: challenges and opportunities of deploying and scaling data science and AI solutions	Assignment: Create a deployment strategy with governance and integrity guardrails Read "How to Scale AI in Your Organization" by HBR Read Part VI: The Product Model in Action and Partnering with Customers, Chapter 27: Innovation Story: Gympass of "Transformed" by Marty Cagan
7	Capstone Project Presentations	Teams present final solutions and deployment strategies Activity: feedback session and key takeaways	Assignment: Prepare the final Capstone Project Presentation Submit written report and presentation
8	Course Wrap-Up and Reflections	Future applications of data science solutions, ethical dilemmas, frameworks, skills, and adaptability in the age of AI	Assignment: Peer and instructor reviews and feedback

			Suggested reading: "Competing in the Age of AI" by Marco Iansiti and Karim Lakhani (HBR)
Finals week	Final Exam/Final Capstone Project		On University Scheduled Final Exam Day/Time

Note: This course outline is tentative and subject to change at the instructor's discretion.

The date/time of the Final Exam/Final Capstone Project is determined by the University. For the date and time of the final for this class, consult the USC *Schedule of Classes* at www.usc.edu/soc. Select the corresponding semester to view and click on the "Final Examinations Schedule" link on the left side of the screen.

OPEN EXPRESSION AND RESPECT FOR ALL

An important goal of the educational experience at USC Marshall is to be exposed to and discuss diverse, thought-provoking, and sometimes controversial ideas that challenge one's beliefs. This course encourages open dialogue and the respectful exchange of diverse viewpoints. In this course, we will support and adhere to the values articulated in the USC Marshall "Open Expression Statement" (https://www.marshall.usc.edu/open-expression-statement).

ACADEMIC INTEGRITY

The University of Southern California is foremost a learning community committed to fostering successful scholars and researchers dedicated to the pursuit of knowledge and the transmission of ideas. Academic misconduct is in contrast to the university's mission to educate students through a broad array of first-rank academic, professional, and extracurricular programs and includes any act of dishonesty in the submission of academic work (either in draft or final form).

This course will follow the expectations for academic integrity as stated in the USC Student Handbook. All students are expected to submit assignments that are original work and prepared specifically for the course/section in this academic term. You may not submit work written by others or "recycle" work prepared for other courses without obtaining written permission from the instructor(s). Students suspected of engaging in academic misconduct will be reported to the Office of Academic Integrity.

Other violations of academic misconduct include, but are not limited to, cheating, plagiarism, fabrication (e.g., falsifying data), knowingly assisting others in acts of academic dishonesty, and any act that gains or is intended to gain an unfair academic advantage.

Academic dishonesty has a far-reaching impact and is considered a serious offense against the university. Violations will result in a grade penalty, such as a failing grade on the assignment or in the course, and disciplinary action from the university itself, such as suspension or even expulsion.

For more information about academic integrity see the student handbook or the Office of Academic Integrity's website, and university policies on Research and Scholarship Misconduct. Please ask your instructor if you are unsure what constitutes unauthorized assistance on an exam or assignment or what information requires citation and/or attribution.

STATEMENT ON UNIVERSITY ACADEMIC AND SUPPORT SYSTEMS

Students and Disability Accommodations:
USC welcomes students with disabilities into all of the University's educational programs. The Office of Student Accessibility Services (OSAS) is responsible for the determination of appropriate accommodations for students who encounter disability-related barriers. Once a student has completed the OSAS process (registration, initial appointment, and submitted documentation) and accommodations are determined to be reasonable and appropriate, a Letter of Accommodation (LOA) will be available to generate for each course. The LOA must be given to each course instructor by the student and followed up with a discussion. This should be done as early in the semester as possible as accommodations are not retroactive. More information can be found at osas.usc.edu. You may contact OSAS at (213) 740-0776 or via email at osasfrontdesk@usc.edu.

Student Financial Aid and Satisfactory Academic Progress:
To be eligible for certain kinds of financial aid, students are required to maintain Satisfactory Academic Progress (SAP) toward their degree objectives. Visit the Financial Aid Office webpage for undergraduate- and graduate-level SAP eligibility requirements and the appeals process.

Support Systems:
Counseling and Mental Health - *(213) 740-9355 – 24/7 on call*
Free and confidential mental health treatment for students, including short-term psychotherapy, group counseling, stress fitness workshops, and crisis intervention.

988 Suicide and Crisis Lifeline - *988 for both calls and text messages – 24/7 on call*
The 988 Suicide and Crisis Lifeline (formerly known as the National Suicide Prevention Lifeline) provides free and confidential emotional support to people in suicidal crisis or emotional distress 24 hours a day, 7 days a week, across the United States. The Lifeline consists of a national network of over 200 local crisis centers, combining custom local care and resources with national standards and best practices. The new, shorter phone number makes it easier for people to remember and access mental health crisis services (though the previous 1 (800) 273-8255 number will continue to function indefinitely) and represents a continued commitment to those in crisis.

Confidential Advocacy, Resources, and Education Center (CARE-SC) - *(213) 740-9355(WELL) – 24/7 on call*
Free and confidential therapy services, workshops, and training for situations related to gender- and power-based harm (including sexual assault, intimate partner violence, and stalking).

Office for Equity, Equal Opportunity, and Title IX (EEO-TIX) - *(213) 740-5086*
Information about how to get help or help someone affected by harassment or discrimination, rights of protected classes, reporting options, and additional resources for students, faculty, staff, visitors, and applicants.

Reporting Incidents of Bias or Harassment - *(213) 740-2500*
Avenue to report incidents of bias, hate crimes, and microaggressions to the Office for Equity, Equal Opportunity, and Title for appropriate investigation, supportive measures, and response.

The Office of Student Accessibility Services (OSAS) - *(213) 740-0776*
OSAS ensures equal access for students with disabilities through providing academic accommodations and auxiliary aids in accordance with federal laws and university policy.

USC Campus Support and Intervention - *(213) 740-0411*
Assists students and families in resolving complex personal, financial, and academic issues adversely affecting their success as a student.

Diversity, Equity and Inclusion - *(213) 740-2101*
Information on events, programs and training, the Provost's Diversity and Inclusion Council, Diversity Liaisons for each academic school, chronology, participation, and various resources for students.

USC Emergency - *UPC: (213) 740-4321, HSC: (323) 442-1000 – 24/7 on call*
Emergency assistance and avenue to report a crime. Latest updates regarding safety, including ways in which instruction will be continued if an officially declared emergency makes travel to campus infeasible.

USC Department of Public Safety - *UPC: (213) 740-6000, HSC: (323) 442-1200 – 24/7 on call*
Non-emergency assistance or information.

Office of the Ombuds - *(213) 821-9556 (UPC) / (323-442-0382 (HSC)*
A safe and confidential place to share your USC-related issues with a University Ombuds who will work with you to explore options or paths to manage your concern.

Occupational Therapy Faculty Practice - *(323) 442-2850 or otfp@med.usc.edu*
Confidential Lifestyle Redesign services for USC students to support health promoting habits and routines that enhance quality of life and academic performance.

SAMPLE PEER EVALUATION FORM

Grades for individual student contributions to team projects are assigned by me, based on my observations of the team's working dynamics, my assessment of the team's project quality, and thoughtful consideration of the information provided through your peer evaluations.

Please identify your team and team members for the project(s) that you worked on. Then rate all your team members, *including yourself,* based on the **contributions** of each team member for the selected assignment according to each of five the criteria listed below.

> **Rating Scale:**
> - 0 – does not meet expectations
> - 1 – meets expectations
> - 2 – exceeds expectations

Lastly, add up the points for each person with the maximum number of points for each person being 10. In the box below, describe the exact contributions of each team member, including yourself.

Team Name: _____

Project: _____

Team Members/ Assessment Criteria of Team Contributions	**Team Member 1**	**Team Member 2**	**Team Member 3**	**Yourself**
1. Role Performance				
2. Assists Team Members				
3. Listening and Discussing				
4. Research and Information Sharing				
5. Time Management				
Total				

Contribution details:

Appendix III

CLASS PARTICIPATION STATEMENTS

Class participation is an extremely important part of the learning experience in this course as the richness of the learning experience will be largely dependent upon the degree of preparation by *all* students prior to each class session.

A course that incorporates the frequent use of case studies and business trends to illustrate the practical application of concepts and practices requires the student to diligently and thoroughly study the materials, prepare homework assignments and actively offer the results of the analyses and conclusions derived as well as recommendations during each class session. The expectation is that you are prepared for *all* classes and will actively take part in and meaningfully contribute to class discussions.

In-class participation is also a critical part of this course's learning experience. Cold calling may take place to encourage active participation and to gain multiple perspectives and points of view, thus lending itself to the richness of the learning experience. In-class participation grading will be based on students' demonstrated willingness to engage in class activities and discussions and the quality of the comments expressed, rather than quantity. While some students are far more comfortable than others with class participation, *all* students should make an effort to contribute meaningfully.

Students will be expected to offer their opinions in group settings many times in their careers; thus, class participation gives an opportunity to prepare students for business experience. The evaluation of in-class participation is based on the following:

- *Relevance* – Does the comment or question meaningfully bear on the subject at hand? Irrelevant or inappropriate comments can detract from the learning experience.
- *Responsiveness* – Does the comment or question connect to what someone else has said?
- *Analysis* – Is the reasoning employed consistent and logical? Has data from course materials, personal experience, or general knowledge been employed to support the assertions/findings?
- *Value* – Does the contribution further the understanding of the issues at hand?
- *Clarity* – Is the comment concise and understandable?

During class sessions, the instructor may assume the role of a facilitator to encourage a discussion that includes perspectives from a variety of viewpoints and to help pull together prevailing analyses and recommendations. The direction and quality of a discussion is the *collective responsibility of the class*.

Class participation accounts for 10% of the overall grade for the course. For further details on the grading standards, see the Behavioral Anchor Rating Scale below and the attached Grading Rubrics (Appendix V).

Class Participation—Behavioral Anchor Rating Scale:

Excellent Performance
- Initiates information relative to topics discussed
- Accurately exhibits knowledge of assignment content
- Clarifies points that others may not understand
- Shares personal experiences or opinions related to topic
- Offers relevant / succinct input to class
- Actively participates in class exercises
- Demonstrates ability to apply, analyze, evaluate & synthesize course material.
- Demonstrates willingness to attempt to answer unpopular questions
- Builds on other students' contributions

Average Performance
- Participates in group discussions when asked
- Demonstrates knowledge of course material
- Offers clear, concise, "good" information on class assignments
- Offers input, but tends to reiterate the intuitive
- Attends class regularly

Unacceptable Performance
- Fails to participate even when directly asked
- Gives no input to discussions
- Does not demonstrate knowledge of the readings
- Shows up to class: does nothing
- Distracts group / class
- Irrelevant discussion

<p style="text-align: center;">**Appendix IV**</p>

MIDPOINT COURSE EVALUATION QUESTIONS

Faculty are encouraged to give students midpoint course evaluations to gauge student concerns and adjust the course early on. Student feedback is for instructor use only and not a part of the formal performance review process. Instructors are encouraged to review the comments and discuss in the following class session.

In order to continuously improve the effectiveness of our class, could you please take a few moments to answer the following questions:

1. How well do the course objectives support your general business knowledge and personal career goals?

2. What have you liked about this course so far?

3. Do you have any suggestions for improving the course experience?

Appendix V

GRADING RUBRICS

CLASS PARTICIPATION (10%)

Class participation will be evaluated based on quality of points made, communication, active and regular engagement, collaboration with peers, preparation and understanding of course material.

Criteria	Weight	Description
Preparation	40%	Comes prepared by reviewing assigned readings and materials prior to class. Demonstrates understanding of key concepts during discussions and effectively applies them to class activities. Shares relevant and thoughtful ideas that contribute to discussions and show critical and analytical thinking, drawing upon case studies, examples, data, and insights where applicable.
Engagement	40%	Actively contributes to discussions, provides insightful comments, and asks relevant questions. Participates meaningfully in group activities. Communicates clearly and presents ideas in a compelling and professional way.
Collaboration	20%	Demonstrates respect, actively listens to instructor and peers, and contributes to a constructive learning environment, valuing peer participation and diversity of perspectives. Consistently contributes to in-class team activities and shows initiative.

Assessment:
- Weekly score on preparation, engagement and collaboration.
- Peer reviews on teamwork during in-class activities.

TEAM HOMEWORK ASSIGNMENTS (10%)

Criteria	Weight	Description
Quality of Analysis	50%	Demonstrates thorough understanding and application of course concepts. Provides insightful, data-driven solutions and conclusions. Written reports and presentations are compelling and professional.
Team Contribution	40%	Equal participation and effective collaboration from all team members. Evidence of peer input in the final work.
Adherence to Instructions	10%	Complete submission of all required deliverables in adherence to assignment instructions and on time*

Assessment:
- Graded based on quality, completeness and adherence to instructions specific to each assignment's deliverables.
- Peer evaluations to assess effective collaboration and individual contributions.

Due to the short duration of the course, late submissions will not be accepted. Partial credit will be given for incomplete assignments.

INDIVIDUAL HOMEWORK ASSIGNMENTS (50%)

Criteria	Weight	Description
Concept Mastery	40%	Demonstrates strong understanding of theoretical and practical applications of course concepts.
Clarity and Organization	20%	Submissions are well-organized, clearly written, and logically structured. Arguments are concise and compelling, presented in a professional and effective manner.
Originality and Application	20%	Shows critical and original thinking by using unique examples, case studies, or personal insights to enrich analysis. Integrates data and frameworks effectively and meaningfully.
Adherence to Instructions	10%	Complete submission of all required deliverables in adherence to assignment instructions and on time*

Assessment:
- Graded based on quality, completeness and adherence to instructions specific to each assignment's deliverables, focusing on mastery of concepts, structure and originality.

Due to the short duration of the course, late submissions will not be accepted. Partial credit will be given for incomplete assignments.

TEAM CAPSTONE PROJECT AND REPORT (30%)

Criteria	Weight	Description
Problem Definition	15%	Clearly defines the business problem and connects it to data science solutions that are practical and scalable. Clearly articulates the problem and why it is important to address it, including impact and opportunities.
Innovation and Design	25%	Creative and effective use of CRISP-DM, Agile, and Design Thinking methodologies. Proposes innovative, practical solutions that integrate data science best practices and consider governance and ethical use of data and AI. Provides concepts of a minimal viable product or a prototype for the proposed solution, where applicable.
Implementation Plan	20%	Demonstrates feasibility with a detailed plan for execution, deployment, and scaling, including change management and organizational buy-in strategies.
Report Quality	20%	Clear, concise, and visually compelling report. Data analysis and data visualizations are relevant and well-designed. Insights and findings are outlined in a logical and professional way.
Presentation and Collaboration	20%	Engages the audience, explains key concepts effectively, and shows equal team contributions and collaboration.

Assessment:
- Graded by instructor based on content, report quality, presentation, and students' feedback.
- Peer evaluations included for team dynamics and contribution balance.