

## Syllabus: CS/STAT/MATH 4475.001: Capstone Project, Spring 2025

---

### Course Information

Section	Class/Course Number	Schedule	Location
CS 4475.001	23149 / 015573	Fridays, 8:30am – 11:15am	<a href="#">AD 2.232</a>
MATH 4475.001	20546 / 015577		
STAT 4475.001	21394 / 015580		

### Professor Contact Information

Professor	Kemelli Estacio-Hiroms
Office Phone	972-883-4511
Office Location	<a href="#">FO 2.106</a>
Email Address	<a href="mailto:kemelli@utdallas.edu">kemelli@utdallas.edu</a>
Office Hours	By appointment.
Teaching Assistant	Ms. Tingfang Wang, <a href="mailto:tingfang.wang@utdallas.edu">tingfang.wang@utdallas.edu</a>

### Course Pre-requisites, Co-requisites, and/or Other Restrictions

STAT 4355 and CS 4375.

---

### Course Description

Capstone Project (4 semester credit hours). This course is intended to provide hands-on experience in a data science project. Students will work in teams on projects and will be involved in formulating a relevant problem, collecting the requisite data, finding a solution, and developing the necessary computational tools. The deliverables will include a final project report that details these steps and presentation of the project. More information at <https://datascience.utdallas.edu/utdiscovery/>

---

### Course Platform

Class will meet in person a few times throughout the semester and as needed, see the Tentative Agenda for the details. An online (MS Teams) meeting may replace the in-person class if needed/deemed appropriate.

Additional meetings with faculty and industry mentors are required. The format for the students' team meetings and weekly meetings with the sponsor/advisor will be defined once the project is assigned. Team will meet with Faculty advisor (weekly) and company mentor (at least once a week), depending on project.

---

### Student Learning Objectives/Outcomes

Upon completion, the students would have a demonstrated ability to:

- Acquire teamwork skills and translate broad goals and objectives into measurable tasks and deliverables.
- Produce deliverables that successfully address the project goals as defined in the statement of work.
- Effectively allocate tasks across team members and track progress against those goals.
- Integrate knowledge from previous coursework with other necessary tools to advance and achieve project goals.

- Demonstrate oral and written communication skills through a formal report and presentation of project outcomes.
- Learn to receive and provide constructive feedback (peers and/or mentors).

### Required Textbooks and Materials

No book is required. In most cases, students need to research and collect information from various sources relevant to their project.

### Grading Policy

A letter grade will be assigned based on several criteria, including extent of participation in and contribution to the project\*, quality of work, faculty advisor’s input, project report, and project presentation.

Grading Policy (also see rubric)		Scale	
Weekly Reports & Quizzes & Exit Survey*	15%	A+ [97, ∞)	C+ [77, 80)
Team peer-Evaluation**	5%	A [93, 97)	C [73, 77)
Project Proposal (midterm) or Final Project Report	20%	A- [90-93)	C- [70-73)
Sponsor Feedback	30%	B+ [87, 90)	D+ [67, 70)
Faculty Advisor Feedback	20%	B [83, 87)	D [63, 67)
Final Presentation	10%	B- [80-83)	D- [60-63)
Total	<b>100</b>		F [0,60)

\* Average of 6 assignments: 2 randomly selected Weekly Reports; 3 Quizzes and Exit Survey.

\*\* Students shall submit project participation information twice (once at mid-semester and once at the end) of their team members as an honest assessment of their contributions to the project throughout the course. Criteria include but are not limited to the following:

- Lack of meaningful participation in team activities or lack of meaningful contribution to the team’s work
- Substantially unequal team member contributions
- Unprofessional or unethical conduct (including actions while on project-related travel, if any)
- Misuse of client provided data or equipment for failure to return client supplied equipment (if any)
- Actions that impede or hinders the progress of the project team or
- Substantially unfinished project deliverables
- Unacceptable or incomplete final documentation/presentation

The instructor will then take into consideration such information, in addition to mentor’s input, when assigning mid-term and final grades. It is important to note that performance that is far below expectations may result in a student's removal from a project team and an individual or team final course grade of "F" regardless of actual numerical grades.

### Tentative Schedule

Every week students are expected to:

- Work with mentor/faculty on project progress and deliverables.
- Track and manage project actions/issue.
- Identify weekly activities and plan accordingly. Submit weekly reports (progress and time log).
- Provide project status updates, track action items/issues and work with faculty on what needs to be done.

**In addition to the above activities,** please see the “assignments” list below. WR = weekly report.

## Tentative Agenda

Date	Topic	Class meets?	Activities	Assignments	Notes
Jan 24, Jan 28	First day of Capstone class! Teams are formed and bid on projects (Jan 24). Projects assigned (Jan 28).	✓	After Jan 25: Contact faculty advisor Contact sponsor and schedule kickoff meeting	Resume submission	<i>Project Assignment:</i> Project descriptions are made available, and students review them. Students form teams and submit preferences online. Project is assigned to teams and the kickoff meeting is scheduled.
Jan 31	<b>Riipen</b> Teams have online orientation meeting at 8:30-9am.  Class canceled to other teams to facilitate all the kickoff meetings.	Riipen ✓	<b>Kickoff meeting must be scheduled by this date</b>		
Feb 7	Class canceled to facilitate all the kickoff meetings.		<b>Kickoff meeting must have happened by this date.</b>  Watch video on eLearning: <b>Project Management</b>	WR01	<i>Project Scope:</i> After the kickoff meeting, regular meetings are scheduled. The project sponsor and the team define the project scope through requirement gathering and analysis. Weekly meetings and reports are set.
Feb 14	<b>University Career Center gives a talk.</b> Report progress.	✓	Watch video on eLearning: <b>Ethics; Communication</b>	WR02, Quiz01	
Feb 21			Watch video on eLearning: <b>Innovation; Global mindset</b>	WR03, Quiz02	
Feb 28				WR04, Quiz03	
March 7	Proposal presentations. Most classes cancelled all the way to April last week so that you can use class time to focus on the project.	✓	<b>Sponsor Midterm Grade Feedback Due (email to kemelli@utdallas.edu)</b>	Project proposal (team). Mid-term peer review (individual).	
Mar 14				WR05	<i>Project Development:</i> Team focuses on implementing and integrating required features/solutions. Testing, bugs are fixed.
Mar 21	Spring Break				
Mar 28	Report progress.	✓		WR06	
April 4				WR07	
April 11				WR08	
April 18				WR09	

April 25	Report progress.	✓	Schedule presentation to sponsor to be week of April 28 or May 5. Request <b>Sponsor Approval Form (Signed)</b>	WR10	
May 2	Final Presentations for Sponsor – dry run	✓	<b>Final Sponsor Grade Feedback Due (email to kemelli@utdallas.edu)</b>  Presentations to sponsor should happen this week or next.	Submit Single Slide/ Sponsor Approval Form (team)	<i>Project Delivering</i>
May 9	<b>UTDiscovery Day Teams’ oral presentation – details TBD, possibly online on MS Teams in the afternoon</b>	✓		Final Report (team). Final peer-review (individual). Exit survey (individual).	

## Course Policy

### 1. General

- a. This course will require you to work on realistic and challenging data science problems. Consequently, you should expect to spend a considerable amount of time on your project. As a guideline, at least 10 hours of project work per week from each student is typically required for successful project completion. Be aware of this requirement and plan your schedule accordingly. Team members with significant extra-curricular obligations (especially jobs) should be aware that they will need to be available to meet with their team and fully participate in all course activities.
- b. Students are expected to attend and participate in all meetings with your instructor/mentor/faculty advisor and project team.
- c. Announcements or changes will be through the eLearning and/or UT Dallas email and it is your responsibility to log into eLearning periodically (e.g., weekly, daily) and review the provided materials.
- d. Read the syllabus thoroughly and get familiar with course policy, assignments, due dates and expectations.
- e. You will be assigned to a team (normally 4-6 students) with a team lead who submits the reports/assignments before the due dates.
- f. Without exception, you **MUST** communicate with your official UTD email account only. Do not use a personal email account, it will not be answered.
- g. Any student who is found responsible for committing an act of academic dishonesty will receive a grade of “F” or “0” (zero) on that project or course.
- h. Projects in this course may involve meeting at the client’s office or other location for meetings, presentations, site visits, etc. Students are expected to comply with all university policies related to off-campus travel (check the link to UTD syllabus and policy at the end of this document for

more information). Students are expected to conduct themselves with professionalism and comply with all university regulations when traveling or participating in activities at a client's site. Under no circumstances is a student obligated to participate in any off-campus activity which, in their judgment, is unsafe or violates their moral or ethical beliefs. In such circumstances, the student should politely state their preference to not participate, and communicate the instructor of record. Also, clients are expected to treat all students equally and respectfully. Students should feel free to report any concerns to their instructor.

- i. The instructor reserves the right to:
  - i. Change the grading policy without any notice due to unforeseen circumstances such as dishonesty, cheating, etc.
  - ii. Change the already published grades on eLearning and/or Galaxy if there has been a miscalculation.

## **2. Deliverables/Reports/Documents**

- a. It is the student's responsibility to ensure having internet access in order to submit deliverables by the scheduled due dates. A late team deliverable submission is not accepted for grading (no exception) and will result in no credit for all team members. This policy is strictly enforced because it is an integral part of the developing skills expected in the professional community. Teams are advised to have a procedure in place to make sure that team deliverables are submitted on time.
- b. Computer problems, lack of network access are not acceptable excuses for late submissions. Do not submit documents a few minutes before the deadline, instead, allow yourself enough time in case there is an issue with your system, internet or document. Submitting deliverables well ahead of deadlines is the best way to avoid complications due to unexpected, last-minute problems.
- c. Due to diversity of projects and activities in this course, team members are expected to communicate to their instructor any issues which they feel may affect their performance in this course (e.g., difficulties/issues with team members).

## **3. Confidentiality & Intellectual Property**

- a. Students MUST always treat sponsor information with care, regardless of the existence of an agreement or non-disclosure agreement. In particular, students should make confidentiality requirements a priority when using computer resources (e.g., email, file storage, social media). Additionally, all publicly presented materials must be cleared by the client first. If student has any doubts about these matters, consult with the instructor immediately.
- b. Before the start of the project, students may need to sign a non-disclosure agreements (NDA), or intellectual property (IP) agreement with the client/sponsoring companies. Consult with the instructor before signing any type of agreement.
- c. Student teams use the UTD resources for the secure storage of documents related to the project. Web-based storage services such as Google Drive or Dropbox should NOT be used without the client's approval.

---

### **Academic Support Resources**

The information contained in the following link lists the University's academic support resources for all students.

Please see <http://go.utdallas.edu/academic-support-resources>.

---

## **UT Dallas Syllabus Policies and Procedures**

The information contained in the following link constitutes the University's policies and procedures segment of the course syllabus. Please go to <http://go.utdallas.edu/syllabus-policies> for these policies.

---

### **Comet Creed**

This creed was voted on by the UT Dallas student body in 2014. It is a standard that Comets choose to live by and encourage others to do the same:

***"As a Comet, I pledge honesty, integrity, and service in all that I do."***

---

*The descriptions and timelines contained in this syllabus are subject to change at the discretion of the Professor.*