

MATH 572 DATA SCIENCE PRACTICUM – 6 credit hours

Course Description

In this project-oriented course, students will work in small groups to solve real-world data analysis problems and communicate their results. Innovation and clarity of presentation will be key elements of evaluation. Students will have an option to do this as an independent data analytics internship with an industry partner.

Prerequisites:

COM 523, CS 587, either CS 584 or MATH 569, and CSP/Math 571 Data Preparation and Analysis.

The goal of this project-based course is for students to learn how to apply data analysis skills and techniques to real-world problems and to interpret and communicate their results. Students will work in groups of 3 or 4 to solve data analysis problems on Kaggle.com or other industry data analytics challenges. Specific deliverables during the course include:

1. **Project Proposal:** This includes both a written proposal and a short oral presentation, explaining the problem and its importance, the methods the team proposes to apply to the problem, and what new understanding is to be expected.
2. **Project Plan:** This is a detailed plan and schedule of the tasks that the team will perform to successfully complete the project.
3. **Data Survey:** This is a short document discussing the state of the data supplied for the task, including any issues of inconsistency or incompleteness and how they will be addressed in the project, as well as a preliminary exploratory analysis of the structure of the data.
4. **Project Report:** This written report details the analytic methods that were applied and their results, together with an interpretation of the results and their implications for the project sponsor.
5. **Project Presentation:** Teams will also be required to orally present their analyses, and explain them in terms that a layman can understand.

Students with summer internships working on data science related projects may use their work experience for this course. Such students must also submit the key deliverables mentioned above, as well as attend class meetings or meet regularly with the course lecturer.

The steering committee of the degree program will appoint an instructor with the needed experience to teach this course. Course relief during the academic year or summer salary will be given to compensate for teaching this course. Sections of this course will be limited to 24 students.