OIDD 255X: AI, Business, and Society (1 CU)

Instructor: Prasanna (Sonny) Tambe

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DRAFT SYLLABUS, ELEMENTS ARE SUBJECT TO CHANGE.

Course Objectives

The progression of AI-based technologies promises to transform many aspects of business, labor, and even society. The goal of this course is to provide students with an understanding of the capabilities of modern AI technologies, with an emphasis on being able to critically assess where they can provide societal value, and where they may create new societal challenges. The course is not intended to provide a deep-dive into the workings of these technologies in the same way as a computer science course might. Rather, business and policy decision-makers will be confronted with a number of important issues as AI becomes integrated into the social decision-making fabric. This course is intended to provide a framework for people who may have to confront these legal, ethical, and economic challenges. In doing so, a course objective is to ensure that students who complete the course are comfortable enough in the inner-workings of these technologies to think critically across many AI contexts as well as different domains ranging from public policy, to criminal justice, to healthcare, HR, and marketing.

This 1 CU course is oriented around hands-on critical written assessments, technical labs, exams, and presentations. Broadly, data rich firms in finance, tech, management, marketing, and other industries are increasingly adopting AI as a tool to accelerate and improve decision-making. It is important for modern managers to understand the opportunities and challenges introduced by AI-enabled decision-making so that they can credibly communicate about these issues with others in the firm. We will cover many of these issues, so that you will be able to think about the opportunities and challenges that arise when firms try to use AI to solve business problems.

Labs will reinforce your learning of how AI works, and how it is being used to solve business problems. We will focus in the labs on gaining experience with introductory machine learning concepts. Students will spend time inside and outside of the classroom combining data and algorithms to provide a foundation for understanding the deep challenges that this will bring to organizations. Some of these labs will be based in “no-code” tools that use drag-and-drop interfaces to allow students to experiment with machine learning. For others, students may be required to engage with a limited amount of code (Python or R). Coding is not required for this course, and no aspect of your course grade will depend on your coding background or your ability to code. However, students without a coding background may need to budget slightly more time for completing the labs.

Course Overview

Within the last decade, there has been a dramatic rise in interest in the use of AI technologies applied to many domains, including finance, HR, policy, marketing, and strategy. As a result, the modern “digital leader” increasingly requires the use of technology, statistics, and data analysis skills to facilitate business analysis as well as a grasp of where AI technologies can perform well, and where they may fail. This includes knowing how to a) effectively frame data-driven questions, b) use AI-driven algorithms, and c) understand the capabilities of this new generation of tools that are becoming available to automate decision-making from data.

The class includes readings and critical assessments due before class and in-class discussions

of topics related to the application of AI technologies, including ethics, bias, and the potential for AI to fuel gains in productivity. The class also requires the completion of labs to ensure that participants have a deep understanding of how algorithms are applied for decision-making and what the constraints are of these approach.

Throughout the semester, we will cover the applications of AI to a number of industries (e.g. medicine, journalism, criminal justice), including inviting guest speakers to hear about applications in specialized domains. A learning goal of this course is exposure to how AI is changing decision-making in different industry contexts, and how organizations are reacting to these changes.

Class time in most weeks will be dedicated to lecture and discussion of some of the most important topics facing the AI community. Class time in some weeks will be devoted to supervised work on projects that are meant to underscore AI-based challenges. Through these exercises and discussions, students are expected to become proficient at applying data to business decisions and at effectively analyzing big data sets to inform decisions about business problems using data analysis tools.

Course web site

We will be using Canvas to submit all assignments and receive grades. All course information will be posted on the Canvas website.

Required textbooks and software

There is no required textbook. There are frequent readings that will consist of selected online content which will be posted on the course site. As part of your homework, you may be expected to download and install some free, open source software.

Deliverables and grading

During this course, you will be assigned a number of hands on data projects which you will spend time on both in class and out of class. You are expected to participate in classroom discussions (there is more information below about participation). The breakdown of points is as follows:

Deliverable	Weight	Points
AI presentation	10%	50
Labs + writeups	25%	125
Quiz	20%	100
Exam	30%	150
Professionalism	15%	75
TOTAL	**100%**	**500**

With each project, you will be provided with a set of guidelines. Deliverables may include short, informal analyses and an accompanying recommendation. Any group projects will be completed in small groups (two to three students, no more than three). Presentations may be in larger groups, to be specified in class. You *may* also be asked to evaluate the contribution of each of your team members after the group project.

The classroom presentation and discussion presents a unique opportunity for you to develop and enhance your confidence and skills in articulating a personal position, sharing your knowledge, and reacting to new ideas. All of you have personal experience that can enhance our understanding of this subject, and we want to encourage you to share that experience.

Professionalism and participation

This course, like many other courses at Wharton, uses learning methods that require active involvement (e.g. attendance, participation in discussions, and in-class exercises). Not only is this the best way to learn, but it also develops your communication and presentation skills. Regular attendance, participation, presentations, and in general, presenting yourself professionally are all very important, and are an important part of your grade.

Active participation requires good preparation—thoughtful completion of homework before class is essential. We recognize that expressing viewpoints in a group is difficult, but it is an important skill for you to develop. We will do what we can to make this as easy as possible. Remember though that only regular and insightful contributions will be rewarded.

The grade we assign for your class participation and attendance is a careful, subjective assessment of the value of your input to classroom learning. We keep careful track of your contributions towards each class session, and these contributions can include (but are not restricted to) raising questions that make your classmates think, providing imaginative yet relevant analysis of a situation, contributing background or a perspective on a classroom topic that enhances its discussion, providing thoughtful feedback on the presentations of other students, asking questions of guest speakers, and simply answering questions raised in class. A lack of preparation, negative classroom comments, or improper behavior (such as talking to each other, sleeping in the classroom or walking in and out of the class while the lecture is in process) can lower this grade.

In particular, because this class emphasizes projects and learning-by-doing, attendance is expected. Missing an excessive amount of class without justification will negatively impact your final grade.

Participation grades will include attendance as well as contributions to the class discussion. It is very important to understand that this is not a "binary" score. The resulting score is not a simple high/low measure. The distribution of participation scores in past semesters has routinely been bell-shaped, with particularly high scores being awarded only to students that have distinguished themselves in terms of participation. These scores have historically played an important role in final grade determination for most students in the course.

Grading Guidelines

At Wharton, we strive to create courses that challenge students intellectually and that meet the Wharton standards of academic excellence. If you believe that an assignment or project grade you received was unjustified, you can appeal the grade. To appeal the grade you must write a one-page explanation as to the reason for your appeal and hand it along with your graded assignment back to the TA responsible for that assignment.

Please think twice before appealing a grade: the TA will completely re-grade the assignment, which may increase your grade, but may also lower it (e.g., if the TA catches more mistakes the second time around). If after re-grading you feel that your grade was again unjustified, you can appeal the grade with the instructor.

Points will be deducted from late assignments, labs, or projects at the rate of a 20% penalty for each day the submission is late.