

Course Syllabus for DS 770: Making Ethical Decisions with Data

NOTE: This syllabus document contains the basic information of this course. The most current syllabus is available in the full course.

Course Description

This course examines how data science relates to developing strategies for organizations. The emphasis is on using an organization's data assets to inform better decisions. The course investigates the use of data science findings to develop solutions to competitive organizational challenges. Special attention is given to critically examining decisions to ensure that they are ethical and avoid unfair bias. Professional codes of conduct, as well as local and international regulations, are also considered.

Prerequisites: DS 740 suggested but not required.

Course Objectives

By the end of this course, you will be able to:

- Identify the role and responsibilities of design and development in creating ethical data tools.
- Apply conceptual tools to analyze the ethical dimensions of data and analytics.
- Identify ethical issues within the different stages of data analytics.
- Identify ethical issues in AI/ML/predictive analytics.
- Situate data analytics between company and market values and business ethics.
- Have constructive conversations about ethical dilemmas in data analytics.
- Ask good questions of a data analytics program in order to efficiently identify possible ethical issues.
- Understand the decision processes pertaining to data and data analytics within an organization.
- Make data decisions to maximize value in an organization.
- Consult and interpret laws, professional codes of conduct, and company values intended to guide data practices.

Course Components

Concept Papers: You will write a short paper for almost every lesson in this course. The goal of these short papers is to work with and absorb the concepts introduced in the weekly reading assignments. The papers ask you to address a set of questions or do some kind of exercise. Please write these as organized, coherent papers and not as numbered questions or exercises. The purpose, again, is to work with the material and internalize it. Writing about it in an organized way is a tool to achieve that purpose. All concept papers are expected to be between one and two pages. (I leave the judgment of spacing to you—some students require more words to get their points across than

others.) The professor is interested in seeing you grapple with the concepts of the week and not so much in having you produce a perfectly written paper. Please do not have AI write your paper, for that would entirely defeat the point.

Case Study Video Presentation: You will be asked to sign up for either a data science presentation topic of moral significance that is covered in the course (already listed on the sign-up sheet under topic) or one that you come up with on your own. In either case, your resources for this topic should come from an internet search and could, but need not, include peer-reviewed journals. Often, resources for this presentation consist of reputable newspaper and magazine articles or videos that are posted online. You will present the issue in a recorded 5-7 minute presentation. You should post 1-2 publicly accessible links to resources that discuss the subject in greater depth for your classmates to look through. Your presentation should be a summary and not an analysis of any kind. You are not to say your thoughts on what is moral or immoral and why. Rather, you should point out the facts and make clear what some of the moral questions are. The class will be discussing the topic of your presentation, and you will need to participate in this discussion like everyone else.

Online Discussions: You will be asked to participate in the following discussions:

- Lesson Discussions: Online discussions related to the assigned readings (small group or class)
- Case Study Video Presentation Discussions: Online discussions of the Case Study Video Presentations (class)

By the end of the course, you should have contributed to every discussion—no make-ups are allowed. The discussions are learning tools, and the better quality of your input, the more that you and your classmates will learn. A discussion related to the weekly lesson will be labeled “Small Group Discussion” or “Class Discussion.” In both cases, these discussions will have questions to guide you. In small group discussions, you will be expected to participate more than in class discussions, which are discussions with the entire class.

For all discussions, your contribution must consist of a real effort to engage in actual discussion with your classmates. That means that you will need to log in to a discussion multiple times during a weekly lesson. You will be expected to read what your classmates are posting and respond to them. You will be graded on how much you participate in the discussion; on the degree to which your contributions are thoughtful, original, respectful, and incite further quality discussion; and, importantly, on how much your posts indicate that you are actually listening to what your classmates are saying. Sometimes students will post relevant outside sources, which is fine. The goal in all the discussions is a real “back and forth” conversation on the assigned topics.

Small group discussions require about 5-8 posts, but this will depend on the task assigned, and there may be times when more posts are required to get the task done. Full class discussions take place among the entire class and will require about 3-6 posts, depending on how much they satisfy the requirements listed above. Some

students will want to post more, and that is fine so long as they are not dominating the conversation.

Final Project: For this project, you will develop a presentation to share data with decision-makers at various levels within an organization. You will choose an industry and company you find interesting, but also one that you think introduces some moral complexity. You are encouraged to select a company from among those that were featured in your classmates' case study presentations, but you may choose a different company if you prefer. However, to ensure you have access to the information required for completing this assignment, the company you choose must be a publicly traded firm, which some subjects of the case study presentations might not be.

Grading

Your mastery of course content is assessed using a variety of methods:

Activity	Percentage
Final Project Paper	20%
Concept Papers (lowest 2 dropped)	40%
Lesson Discussions (lowest 2 dropped)	15%
Case Study Video Presentation Discussions	15%
Case Study Video Presentations	10%
Total	100%

Final grades are assigned using the following scale:

90–100%	A
80–89%	B
60–79%	C
0–59%	F