ETHICS OF DATA AND ARTIFICIAL INTELLIGENCE, CERTIFICATE

The issues that most concern society in regards to data, machine learning, and AI are not exclusively computational; instead, they are ethical, social, and political in nature, and they demand understanding from across disciplines, especially humanistic ones.

Experts from all kinds of disciplinary backgrounds—in academia as well as business, policy, and government—are increasingly collaborating on joint projects and beginning to "speak the same language." For students to join such teams tackling ethical issues of data and AI of any kind, they must learn to speak that same language and be equipped with the conceptual resources and interdisciplinary skills necessary for addressing the ethical, legal, and societal implications of AI.

This certificate integrates multiple humanities and social science perspectives, including from philosophy, history, data policy, science and technology studies, and media studies. Students will explore ethically and socially urgent questions like:

- How can we ensure that AI systems assess everyone in a just and unbiased way?
- Is it justifiable to base decisions about individuals on statistical generalizations?
- If AI outputs are not fully explainable, should they still be deployed?
- How important are long-term risks related to the safety of highly sophisticated future AI tools in comparison to other kinds of risks here and now?

HOW TO GET IN

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- Complete one course from Foundation A: Philosophical Reasoning and Writing and one course from Foundation B: Technical Basis with a grade of B or higher in each course. Students having difficulties meeting these requirements should schedule a meeting with a certificate advisor to discuss alternatives.
- To declare, fill out the declaration form on the program website.

REQUIREMENTS

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Students must complete five courses of a minimum of 3 credits each for a minimum of 15 total credits. Students must complete distinct courses in each requirement; they may not reuse courses to meet multiple requirements.

Code	Title	Credits
Foundation A: Philosophical Reasoning and Writing		
Complete one course of at least 3 credits from:		3-4
PHILOS 101	Introduction to Philosophy	
PHILOS 104	Special Topics in Philosophy for Freshmen	
PHILOS 141	The Meaning of Life	
PHILOS 241	Introductory Ethics	
PHILOS 243	Ethics in Business	
PHILOS 244	Introductory Artificial Intelligence (AI) and Data Ethics	
PHILOS 304	Topics in Philosophy: Humanities	
PHILOS 320	Philosophy of Science	
PHILOS 340	19th Century Philosophy: Idealism and Its Critics	
PHILOS 341	Contemporary Moral Issues	
PHILOS/ MED HIST 344	Food Ethics	
Foundation B: Technical Basis		
Complete one course of at least 3 credits from:		3-4
COMP SCI 220	Data Science Programming I	
COMP SCI 540	Introduction to Artificial Intelligence	
ECON 310	Statistics: Measurement in Economics	
L I S 351	Introduction to Digital Information	
L I S 408	Generative Artificial Intelligence: Strategic Application, Evaluation, and Critique	
L I S 440	Navigating the Data Revolution: Concepts of Data & Information Science	
PSYCH 210	Basic Statistics for Psychology	
STAT 240	Data Science Modeling I	
STAT 301	Introduction to Statistical Methods	
STAT 324	Introduction to Statistics for Science and Engineering	
STAT 371	Introductory Applied Statistics for the Life Sciences	
SOC/ C&E SOC 360	Statistics for Sociologists I	
Ethics Requirement		
Complete one course of at least 3 credits from:		3
PHILOS 241	Introductory Ethics	
PHILOS 243	Ethics in Business	
PHILOS 244	Introductory Artificial Intelligence (AI) and Data Ethics	
PHILOS 341	Contemporary Moral Issues	
PHILOS/ MED HIST 344	Food Ethics	
PHILOS/ ENVIR ST 441	Environmental Ethics	
PHILOS 541	Modern Ethical Theories	
PHILOS 543	Special Topics in Ethics	
PHILOS/L I S 544	Advanced Ethics of Data and Artificial Intelligence	
PHILOS 549	Great Moral Philosophers	
L I S 461	Data and Algorithms: Ethics and Policy	

L I S 462	Data and Algorithms: Ethics and Policy (Communications Intensive)	
Distribution Requirement		
Distribution 1		
Complete one course of at least 3 credits from:		3
COM ARTS 343	Human Communication in the Age of Artificial Intelligence (AI)	
COMP SCI 540	Introduction to Artificial Intelligence	
HIST SCI/ILS 330	Can Machines Think?: The History of Artificial Intelligence, 1650-Present	
L I S 408	Generative Artificial Intelligence: Strategic Application, Evaluation, and Critique	
PHILOS/L I S 544	Advanced Ethics of Data and Artificial Intelligence	
Distribution 2		
Complete one course of at least 3 credits from:		3
ART HIST 102	Seeing Through Conspiracy Theories	
HIST SCI 150	The Digital Age	
L I S/ LEGAL ST 460	Surveillance, Privacy, and Police Powers	
L I S 461	Data and Algorithms: Ethics and Policy	
L I S 462	Data and Algorithms: Ethics and Policy (Communications Intensive)	
PHILOS 551	Philosophy of Mind	
Total Credits		**15**

RESIDENCE AND QUALITY OF WORK

- At least 8 certificate credits must be completed in residence.
- Minimum 2.000 GPA on all certificate courses.

CERTIFICATE COMPLETION REQUIREMENT

This undergraduate certificate must be completed concurrently with the student's undergraduate degree. Students cannot delay degree completion to complete the certificate.

LEARNING OUTCOMES

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1. Interpret complex texts accurately and analyze them logically by identifying explicit and implicit background assumptions, and by understanding which conclusions necessarily follow from them.
2. Communicate precisely and concisely in both writing and speech, in a way that adequately captures ethical nuances and ambiguities arising in AI design and deployment.
3. Gain the basic statistical and/or conceptual tools necessary to grasp the moral, legal, political, or societal issues raised by data science and AI.
4. Identify and evaluate the ethical, legal, and political implications of AI, as well as their historical and societal context.
5. Demonstrate understanding of the distinctive value of humanistic inquiry into AI and data ethics as compared to, and in addition to, technical efforts to better understand and improve AI and other emerging technologies.

ADVISING AND CAREERS

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STUDY ABROAD

Learning in Letters & Science emphasizes discovery, growth, understanding different perspectives, and challenging yourself, which makes studying abroad an excellent fit for many L&S students: studyabroad.wisc.edu (https://studyabroad.wisc.edu/)

As a university with global influence, we have more than 300 study abroad programs (https://studyabroad.wisc.edu/programs/) in over 80 countries. These vary in length, academic focus, teaching format, language requirements, cost, and level of independence. There are many programs to complement every major (https://studyabroad.wisc.edu/academics/major-advising-pages-maps/#L&S) and any year of college (including the final semester)—and all meet UW–Madison's high academic standards. Students admitted into Letters & Science can even choose a short program in the summer before they start college or their whole first year: studyabroad.wisc.edu/launch (http://studyabroad.wisc.edu/launch/). Talk with your academic advisor about how studying abroad might fit with your academic plan.

SUCCESSWORKS

SuccessWorks (https://successworks.wisc.edu/) at the College of Letters & Science helps you turn the academic skills learned in your classes into a fulfilling life, guiding you every step of the way to securing jobs, internships, or admission to graduate school.

Through one-on-one career advising, events, and resources, you can explore career options, build valuable internship and research experience, and connect with supportive alumni and employers who open doors of opportunity.

- What you can do with your major (https://successworks.wisc.edu/what-you-can-do-with-your-major/) (Major Skills & Outcomes Sheets)
- Make a career advising appointment (https://successworks.wisc.edu/make-an-appointment/)
- Learn about internships and internship funding (https://successworks.wisc.edu/finding-a-job-or-internship/)
- Try "Jobs, Internships, & How to Get Them," (https://successworks.wisc.edu/canvas/) an interactive guide in Canvas for enrolled UW–Madison students