

AI+X DEGREES AT UNIVERSITY AT BUFFALO

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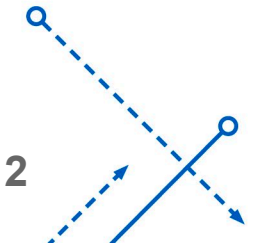
Department of AI and Society

School of Engineering and Applied Sciences
College of Arts and Sciences



Vision of AI and Society (AIS) department

is to create a future world where AI systems are built by society, for society

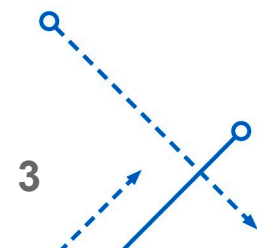


Mission of AIS...

Mission

The Department of AI and Society (AIS) is committed to:

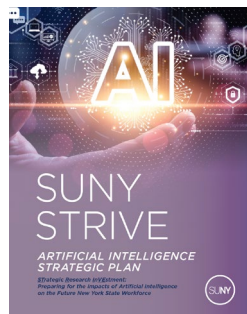
- Conducting transdisciplinary research to develop new AI systems that are built via true collaboration across traditionally siloed disciplines by incorporating insights across AI and the arts, humanities and/or one or more of the social sciences.
- Shaping the next generation of citizens who will contribute to our vision of a future world where AI systems are designed to be built by society, for society.
- Respectfully and meaningfully engaging the community (broadly construed) in the process of creating these new AI systems.
- Doing all of the above with humility in recognizing the limitations of AI. Specifically, being cognizant of the fact that sometimes AI *might* not be the solution for a societal problem.





Timeline of AIS

Aug 2023 – May 2024



Departments, Centers & Institutes of AI and Society 2024-25 Request for Pproposals (RFP)

RFP #25-01-STRIVE

Issued: October 21, 2024

Submission Deadline: November 25, 2024

October 2024

January 2025

AI & Society Core Curriculum Committee formed

April 2025

Faculty Senate approves creation of AIS

May 2025

AI+X degrees proposals submitted to SUNY... gets approved in 2 weeks!

AIS is formally approved as a department at UB

July 2025

NYS SED approves AI+X degrees proposals ... In 2.5 months!!!!!!

AI+X BS degrees

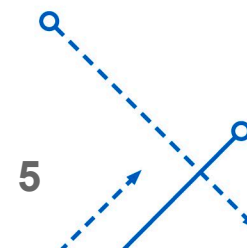
Inspired by the CS+X model developed at UIUC

Key features

A component managed by AIS including a Society Core and a Technology Core

An “X” component managed by another department, corresponding to a more traditional area of study

Integrative courses and a capstone designed to help students bridge the “AI” and “X” components of their degrees



Development process

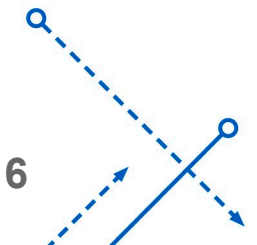
Before AIS existed, a committee was convened of Arts and Sciences and Engineering and Applied Sciences faculty

The faculty were given the parameters of a general degree framework

They worked collaboratively to propose and develop the specific courses

When AIS was established, the “AI” part of the curriculum was placed under its control

AIS will also manage the further development of the AI+X framework





Current AI+X BS degrees



AI and Geospatial Analytics BS



AI and Language and Intercultural Competence BS



AI and Language Technology BS



AI and Logic and Ontology BS



AI and Philosophy, Politics, and Economics



AI and Policy Analysis BS



AI and Quantitative Economics BS



AI and Responsible Communication BS

Degrees are managed by the “X” department

Current degrees are all housed within the College of Arts and Sciences

Any unit can participate, and additional degrees are in development

Soft launch: Fall 2025

Hard launch: Fall 2026

Two additional minors

AI and Ethics

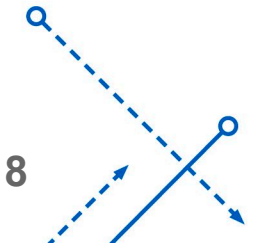
Artificial Intelligence, Crime, and Society

Current AI+X BS degrees

	AI and Geospatial Analytics BS
	AI and Language and Intercultural Competence BS
	AI and Language Technology BS
	AI and Logic and Ontology BS
	AI and Philosophy, Politics and Economics
	AI and Policy Analysis BS
	AI and Quantitative Economics BS
	AI and Responsible Communication BS

AI and Quantitative Economics	53
AI and Logic and Ontology	10
AI and Responsible Communications	9
AI and Geospatial Analytics	6
AI and Language Technology	6
AI and Policy Analysis	5
AI and Language and Intercultural Competence	2
Total	91

Half of the current student count is from students enrolling in Fall 2026. Around 225 students were accepted in these majors this cycle.



AI+X Degree Model



GENERAL REQUIREMENTS

GENERAL ED. COURSES (36-40 Credits)

PREREQUISITE COURSES (4-10 Credits)

X REQUIREMENTS

INTEGRATIVE COURSES (6-9 Credits)

X COURSES* (30 Credits)

**Required courses for a specific program. View the programs we currently offer at: engineering.buffalo.edu/ai-society/academics*

AI & SOCIETY REQUIREMENTS

TECH CORE (16 Credits)

SOCIETY CORE (15 Credits)

CAPSTONE (3 Credits)



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AI+X Degree Model



AI & SOCIETY REQUIREMENTS

TECH CORE *(16 Credits)*

CAPSTONE *(3 Credits)*

SOCIETY CORE *(15 Credits)*



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AI+X Degree Model

AI & SOCIETY REQUIREMENTS *(cont.)*

SOCIETY CORE *(15 Credits)*

CAPSTONE *(3 Credits)*

REQUIRED

AI 101: Intro to AI & Society

AI 111: AI & Ethics

AI 211: Technological Disruption and Diffusion

CHOOSE 2

AI 321: AI & Policy

AI 323: AI & Social Structures

AI 325: AI & The Information Environment



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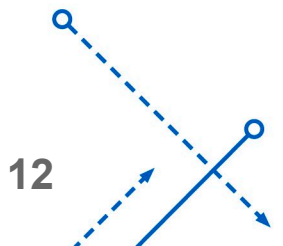
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These are the most distinctive courses in the degrees, the true “AI and Society” portion

The courses are open to all students, and, for now, there are no formal prerequisites

The “Choose 2” set can expand, but this will only be done intentionally



AI+X Degree Model

AI & SOCIETY REQUIREMENTS

TECH CORE (16 Credits)

TRACK 1

AI 102: Intro to Computational Fundamentals
AI 104: Intro to Programming for AI
AI 210: Intro Mathematics for AI
AI 212: Probability and Statistics for AI

TRACK 2

AI 102: Intro to Computational Fundamentals
AI 104: Intro to Programming for AI
AI 220: Foundational Mathematics for AI
AI 320: Computation for the Social Sciences

TRACK 3

CSE 115: Intro to Computer Science I
CSE 116: Intro to Computer Science II
AI 220: Foundational Mathematics for AI
AI 300: Applied Machine Learning



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A key curricular value is making sure all students can participate in these degrees

The default math level is Pre-Calculus

We have developed three tracks for students with different math and computational comfort levels

Some degrees require a more advanced track, but only if this is needed for “X”

Students can opt to move “up” a track, or, in some cases, “down” a track if that will help them succeed

The math courses are designed to synthesize topics that are central to understanding AI systems



Built around project-based learning

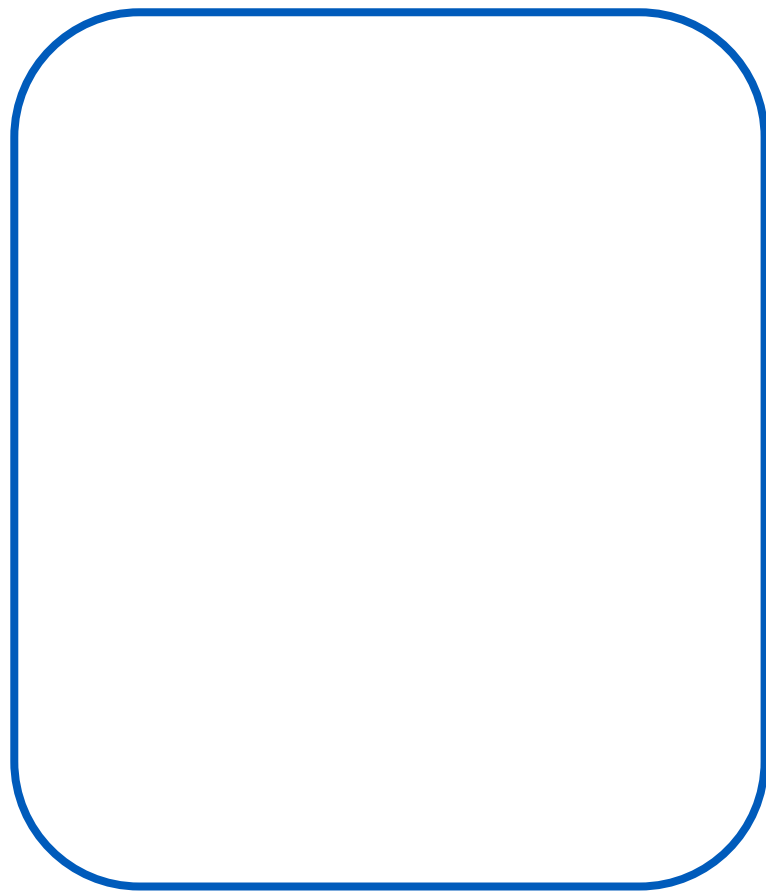
Students across different AI+X majors will work together in predetermined groups

We will develop community-based projects for students where possible

Check back in two years!



AI and Quantitative Economics BS



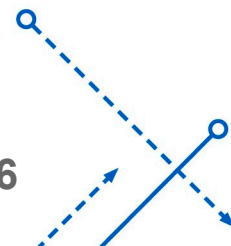
AI

+



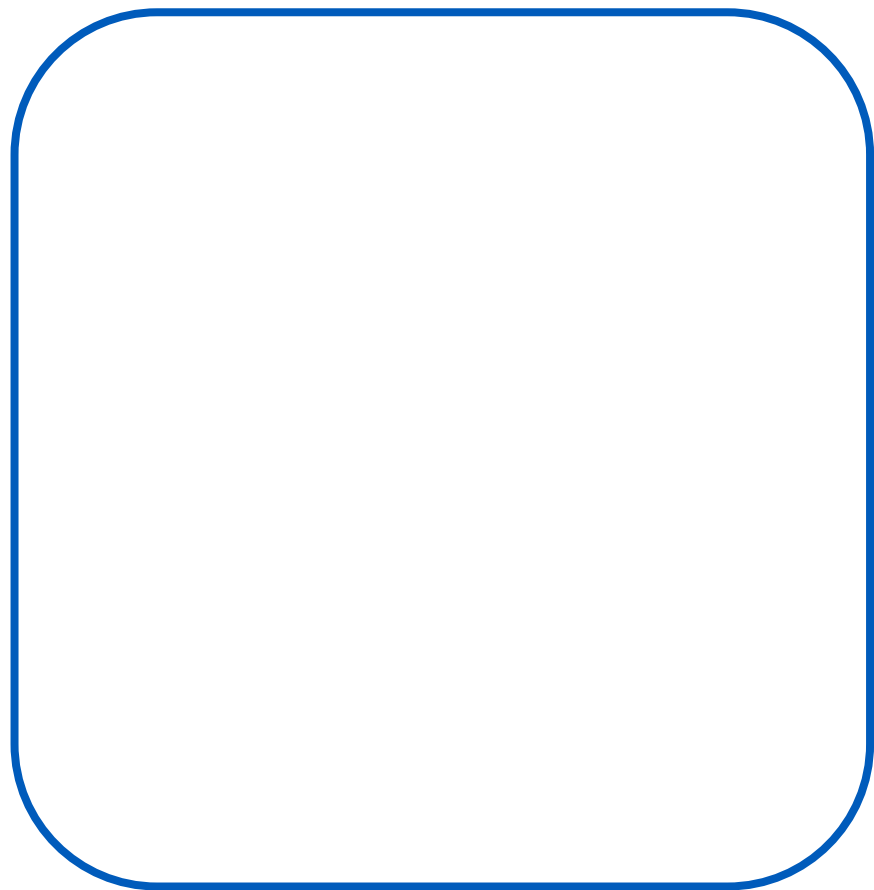
X

16





AI and Responsible Communication BS

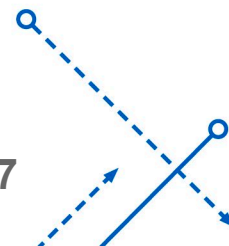


AI

+



X



Some general design considerations

Relatively high number of credits for liberal arts degrees, in part to address degree-applicable credit concerns, which is an issue for many students

Build on existing course offerings for the “X” topics so that degrees can be developed without significant new resources

Keep AIS classes as open as possible to non-majors looking for AI training
Problem to be addressed: Avoiding redundancy across classes

Leave possibilities for “X” quite open and not limited to existing degrees

How well is it working?...we don't really know yet!



Future plans for AI+X undergraduate degrees

AI+X BS degrees in areas outside of the humanities and social sciences

A general AI and Society minor for students interested in an “X” where no AI+X degree is available yet

Combined Bachelors/Masters degree programs

AI+X MS degrees

This academic year a framework was developed for AI+X MS degrees

Two key courses

AI 501: Foundations of AI and Society

AI 502: Mathematical and Computational Fundamentals for AI and Society

A shared capstone course (with details flexible)

The rest of the credits are associated with “X”, with at least one explicitly integrative course

The first graduate programs using these courses were recently approved by SUNY and NYS SED



THANK YOU

Challenges at the graduate level

- Fewer overall credits, which means thinking hard about what content to prioritize in the core AIS classes
- More diverse curricular needs, especially when professional schools are involved with their own accreditation and licensure requirements
- Both in-person and remote offerings need to be equally prioritized
- Possible solutions
 - Extra 1-credit “lab” sessions for different areas of specialization
 - Summer “boot camps” for students lacking prerequisites
- Soft launch in Fall 2026, and we will learn from this year’s experiences

Opportunities at the graduate level

- There is a real need for flexible AI curricula for mid-career professionals
- Many of them specifically need training about AI and society rather than pure, technical AI (e.g., in the health professions)
- We believe there is a demand for “stackable” micro-credentials and advanced graduate certificates
 - For some students, these can build towards a Masters degree
 - For others, this could build on their existing graduate training