

(** Tentative Curriculum - Can be subject to minor changes)

Introduction to AI & AI Ethics

Total Course Hours: 10 hours

[Tuition assistance available based on eligibility]

Number of Sessions: 10

Session Length: 55 minutes (40 min Lecture, 10 min Activity, 5 min Q&A)

Mode: In-person OR Synchronous Online Session options available.

One session Every week starting Sept 9th (Day/Time to be determined)

Session 1: What is AI? Understanding the Basics

- **Lecture (40 min):**
 - Defining AI: Current AI Landscape & Beyond
 - Brief History of AI (early concepts, key milestones)
 - Types of AI: Narrow AI, General AI, Superintelligence (conceptual)
 - Everyday examples of AI (Siri, Netflix recommendations, self-driving cars)
 - How AI "learns" (very basic concept of data and patterns)
- **Activity (10 min):**
 - Brainstorming: Students list 5 AI technologies they interact with daily.
 - Discussion: Compare lists and identify common themes.
- **Q&A (5 min):** Open discussion on initial questions about AI.

Session 2: How AI Works

- **Lecture (40 min):**
 - Data: The Fuel for AI (importance of data, types of data)
 - AI Algorithms: The "Recipes" for AI (simplified explanation)
 - Machine Learning: Supervised vs. Unsupervised Learning
- **Activity (10 min):**
 - Mini Case Study: Students are given a simple dataset (e.g., house prices vs. size) and asked to think about how AI might "learn" to predict prices.
- **Q&A (5 min):** Clarification on data, algorithms, and basic ML concepts.

Session 3: The Power of AI: Opportunities and Applications

- **Lecture (40 min):**
 - Introduction to Neural Networks & Deep Learning

- Transforming Industries: Healthcare (diagnostics), Transportation (self-driving), Finance (fraud detection), Education (personalized learning)
- AI for Social Good: Environmental monitoring, disaster relief, accessibility tools
- Enhancing Human Capabilities: AI as a tool for creativity and problem-solving
- **Activity (10 min):**
 - Group Discussion: "How could AI improve our school/community?" Students brainstorm ideas and present one.
- **Q&A (5 min):** Discussion on the potential positive impacts of AI.

Session 4: AI Ethics: Fair, Accountable, and Transparent

- **Lecture (40 min):**
 - Introduction to AI Ethics: Why do we need AI and What is AI Ethics?
 - Key Ethical Principles: Fairness, Accountability & Transparency (FAT)
 - Bias in AI: What it is, how is bias created (biased data, biased algorithms), and its impact with example applications (facial recognition, loan applications)
- **Activity (10 min):**
 - Scenario Analysis: Present a simple scenario where AI might exhibit bias (e.g., job application screening) and ask students to identify potential issues.
- **Q&A (5 min):** Initial thoughts and concerns about AI ethics.

Session 5: Algorithmic Bias and Discrimination

- **Lecture (40 min):**
 - Deep Dive into Algorithmic Bias: How it perpetuates societal inequalities.
 - Examples of Real-World Bias: COMPAS criminal justice algorithm, gender bias in voice assistants.
 - Mitigating Bias: Data auditing, ethical AI design, diverse datasets.
- **Activity (10 min):**
 - Case Study Discussion: Students read a short article or watch a video about an AI bias incident and discuss its implication in a Group & share learnings.
- **Q&A (5 min):** Questions about specific examples of bias and potential solutions.

Session 6: Privacy and Data Security in the Age of AI

- **Lecture (40 min):**
 - The Value of Data: Classifications of Data (Collected) & Why companies collect so much.
 - Privacy Concerns: Data breaches, surveillance, targeted advertising.
 - Anonymization vs. De-anonymization: The challenge of true privacy.
 - Basic data security practices for individuals.
- **Activity (10 min):**
 - Role-Play: Students team up to take on roles (e.g., a company collecting data, a user concerned about privacy) and debate(for & against) the ethical implications of data collection.
- **Q&A (5 min):** Discussion on personal data privacy and digital footprints.

Session 7: AI Governance

- **Lecture (40 min):**
 - What is AI Governance? The need for rules and regulations.
 - Who is responsible? Governments, corporations, individuals.
 - Different approaches to AI governance (e.g., voluntary guidelines vs. laws).
 - Introduction to emerging AI regulations (e.g., EU AI Act - very brief mention).
- **Activity (10 min):**
 - "Design Your Own AI Rule": Students propose a simple rule or guideline for AI development or deployment and explain why it's important.
- **Q&A (5 min):** Questions about the role of government and industry in AI.

Session 8: The Future of Work and Society with AI

- **Lecture (40 min):**
 - Automation and Job Displacement: Real concerns vs. new opportunities.
 - AI and Education: Personalized learning, new skill requirements.
 - Human-AI Collaboration: The augmented human.
 - The importance of lifelong learning and adaptability.
- **Activity (10 min):**
 - Debate Prompt: "Will AI create more jobs than it destroys?" Students take sides and present arguments.

- **Q&A (5 min):** Discussion on the societal impact of AI on jobs and skills.

Session 9: Challenging Ethical Dilemmas in AI

- **Lecture (40 min):**
 - Autonomous Weapons Systems: The ethics of "killer drones."
 - AI in Healthcare: Moral decisions (e.g., resource allocation).
 - The "Trolley Problem" with self-driving cars.
 - The concept of "Explainable AI" (XAI): Understanding AI's decisions.
- **Activity (10 min):**
 - Ethical Dilemma Discussion: Present a complex AI ethical dilemma (e.g., a self-driving car crash scenario) and have students discuss how they would approach it.
- **Q&A (5 min):** Open discussion on the most challenging ethical questions surrounding AI.

Session 10: Responsible AI: Becoming an Informed Citizen

- **Lecture (40 min):**
 - Recap of key concepts: What is AI, its potential, and its challenges.
 - The role of individuals in shaping the future of AI.
 - Critical thinking about AI news and claims.
 - Becoming an informed and ethical AI user/developer.
 - Next steps for learning more about AI.
- **Activity (10 min):**
 - "My AI Pledge": Students write a short statement about one commitment they will make regarding responsible AI use or understanding.
- **Q&A (5 min):** Final thoughts, lingering questions, and course wrap-up.