

# St. Xavier's College (Autonomous), Ahmedabad

Syllabus of Semester – I of the following departments under  
Faculty of Data Science based on Undergraduate Curriculum  
Framework to be implemented from the Academic Year 2025-26.

## DEPARTMENT OF DATA SCIENCE

### BSc. Artificial Intelligence and Machine Learning (Hons.)

#### Multi-Disciplinary Course: Beyond Algorithms; Ethics and the social impact of Artificial Intelligence

#### CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course Title & Code	Credit Distribution of The Course			Eligibility Criteria	Prerequisite(s) of the Course (if any)
	Lecture	Tutorial	Practical / Practice		
Beyond Algorithms: Ethics and the social impact of Artificial Intelligence	4	0	0	10 + 2 from a recognized board in any stream	Nil

Course Objectives:

After completing this course, students will be able to:

- CO-1: Understand how AI affects and is affected by social, economic, ethical, and policy contexts.
- CO-2: Critically evaluate the societal implications of AI applications.
- CO-3: Reflect on their role as responsible developers, researchers, and citizens in the AI ecosystem.
- CO-4: Engage with global frameworks and debates on AI governance and values.

UNIT	TOPICS / SUBTOPICS	Hours
1	<ul style="list-style-type: none"> <li>• <b>AI in the Social and Economic Landscape:</b> Machine Learning and the Real World: How ML impacts productivity, efficiency, and labor, AI Investment and Business Development: Global trends in funding, startups, and diffusion, Case discussion: Winners and losers in AI business, Economic Characteristics of AI; Scale effects, platform power, and inequality, Global Differences in AI Development: Digital divides and disparities.</li> </ul>	15
2	<ul style="list-style-type: none"> <li>• <b>AI Applications and Sectoral Impact:</b> AI in Health, Science, and Agriculture, AI in Justice, Security, and the Public Sector, AI in Transportation, Finance, and Marketing, Cross-sectoral Risks and Opportunities</li> </ul>	15
3	<ul style="list-style-type: none"> <li>• <b>Ethics, Values, Responsible, and Policy in AI :</b> Human-Centered AI &amp; Inclusive Growth, Transparency, Accountability, and Explainability, Discrimination in algorithms, Security, Robustness, and Trust, Principles for AI in Society (OECD, national, and international), National and Private Initiatives, The Role of AI Developers in Policy, Visioning AI Futures</li> </ul>	15
4	<ul style="list-style-type: none"> <li>• <b>Hands on exercise :</b> AI in Environment: Predicting Air Pollution, Bias Detection, Pandemic Forecasting, Stock Market Trading, Disinformation Detection</li> </ul>	15

**Essential / Recommended Readings:**

- AI in Society, a book contribution by OECD

**Suggestive Readings:**

- Christo EI Morr (2023) AI and Society Tensions and Opportunities, CRC Press, Taylor and Francis Group.