

NIRMA UNIVERSITY
Institute of Technology
M Tech Computer Science and Engineering
Semester – I

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Course Code	6CS281
Course Title	Ethics for Data Science

Course Learning Outcomes (CLOs):

At the end of the course, students will be able to -

1. describe the principles of fairness, accountability and transparency in data science
2. realize the ethical considerations regarding research, privacy and control of information and big data
3. comprehend the contemporary practices in data handling

Syllabus:

**Teaching
Hours:
6**

Unit I

Ethics: Simple utilitarian ethics, concept of informed consent, data ownership, privacy, anonymity, data validity, data forging and fabrication, algorithmic fairness, societal consequences, code of ethics, Attributions, philosophical frameworks for assessing fairness, contemporary theories of fairness, research ethics for data science, legal aspects

Unit II

Big Data and Impact: Overview of ethical issues in data-driven organizations, Significance of big data, neutral data, important concepts and terms, Mosaic data, found data and designed data

Values and Actions: Articulating values, Turning values into action, ethical decision points, Aligning values and actions, Methods and tools, Alignment Methodology Framework

Unit III

Current Practices: Findings summary, Opt-in Versus Opt-out, Correlation through aggregation, Data Ownership, Manifestation of values, Ethical Incoherence, Cultural Values, data ethics for researchers, ethics of data scraping and storage, privacy and surveillance

Self-Study:

The self-study contents will be declared at the commencement of semester. Around 10% of the questions will be asked from self-study contents.



Suggested Readings^:

1. Davis, Kord, Ethics of Big Data: Balancing risk and innovation, O'Reilly Media, Inc.
2. Craig, Terence, and Mary E. Ludloff, Privacy and big data: The players, regulators, and stakeholders, O'Reilly Media
3. Richards, Neil M., Jonathan H. King, Big data ethics, Wake Forest L. Rev.
4. O'Neil, Cathy, and Rachel Schutt, Doing data science: Straight talk from the frontline, O'Reilly Media.
5. Minelli, Michael, Michele Chambers, and AmbigaDhiraj, Big data, big analytics: emerging business intelligence and analytic trends for today's businesses, John Wiley & Sons

L=Lecture, T=Tutorial, P=Practical, C=Credit

^this is not an exhaustive list

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