

St. Xavier's College (Autonomous), Ahmedabad

Syllabus of Semester – III of the following departments under Faculty of
Computer Science based on Under Graduate Curriculum Framework to be
implemented from the Academic Year 2026-27.

DEPARTMENT OF COMPUTER SCIENCE

BSC IT(Hons) Category - IV

Skill Enhancement Course – 1: Digital Ethics and advanced Excel

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		
Digital Ethics and advanced Excel ITSE331C	2	0	0	10 + 2 from a recognized board in any stream	Nil

Learning Objectives

The course is designed to:

1. Develop understanding of ethical theories and professional standards in IT.
2. Create awareness of privacy, intellectual property, and cybersecurity issues in the data-driven world.
3. Equip learners with advanced Excel tools for data analysis, visualization, and modeling.
4. Enable ethical interpretation and communication of analytical results.
5. Prepare students for responsible data-driven decision-making in professional environments.

Learning Outcome

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

- Explain ethical principles, theories, and professional codes in IT. (*Understand*)
- Evaluate ethical issues in data privacy, surveillance, intellectual property, and cybersecurity. (*Analyze*)
- Apply ethical frameworks to real-world data handling and analytics scenarios. (*Apply/Evaluate*)
- Use advanced Excel functions, data tools, and dashboards for analysis and reporting. (*Apply*)
- Develop business models using What-If analysis, Solver, and financial functions. (*Apply/Create*)
- Demonstrate ethical responsibility while collecting, analyzing, and presenting data. (*Evaluate/Create*)

Syllabus of SEC : Digital Ethics and advanced Excel

UNIT - I	Data Ethics in Information Technology (Theory)	15 Hours
	Foundations of Ethics in IT • Meaning and importance of ethics in IT • Ethical theories: Utilitarianism, Deontology, Virtue Ethics • Professional codes: ACM, IEEE • Ethical decision-making frameworks	
	Data Privacy and Confidentiality • Personal data and privacy principles • Data protection laws and guidelines • Surveillance, tracking, and digital monitoring • Case studies of privacy violations	
	Intellectual Property and Data Ownership • Copyrights, patents, trademarks • Software piracy and licensing • Open-source vs proprietary software	

- Data ownership and consent

Ethical Issues in Data and AI

- Ethical data collection practices
- Algorithmic bias and fairness
- Responsible AI and big data ethics
- Social media data and misinformation
- Emerging issues: AI ethics, sustainability, digital divide

UNIT - II Advanced Excel for Data Analysis and Business Modelling 30 Hours – (Practical)

Advanced Formulas and Functions

- Logical functions: IF, IFS, AND, OR
- Lookup functions: VLOOKUP, XLOOKUP, INDEX–MATCH
- Text, Date, and Financial functions (PMT, NPV, IRR)
- Named ranges and structured references
- Nested and array formulas

Data Preparation and Management

- Data cleaning techniques
- Sorting, filtering, and data validation
- Conditional formatting
- Excel tables and structured datasets

Data Analysis and Visualization

- PivotTables and PivotCharts
- Slicers and interactive filters
- Advanced charting techniques
- Dashboard design and development

Decision Models and Automation

- What-If Analysis: Goal Seek, Scenario Manager, Data Tables
- Solver for optimization models
- Forecasting and trend analysis
- Macro recording and editing
- Introduction to VBA automation

Essential / Recommended Readings:

1. Ethics in Information Technology – George W. Reynolds
2. Microsoft Excel Data Analysis and Business Modelling – Wayne L. Winston

Suggestive Readings:

1. Microsoft Excel 365 Bible – Michael Alexander & Richard Kusleika
2. Excel Data Analysis for Dummies – Stephen L. Nelson
3. Computer Ethics – Deborah G. Johnson