

## Society and Ethics in Information Technology

**Course Title:** Society and Ethics in Information Technology

**Course No:** CSC323

**Nature of the Course:** Theory + Lab

**Full Marks:** 60 + 20 + 20

**Pass Marks:** 24 + 8 + 8

**Credit Hrs:** 3

### Course Description:

This course covers different concepts related with sociology, and social and ethical issues related with the use of Information Technology. This course also covers social context of computing, software issues and new frontiers of computer ethics.

### Course Objective:

The basic objective of this course is to provide fundamental knowledge on the concept of sociology to understand social, cultural, economic, political and technical aspects, and knowledge of different social and ethical issues related with Information Technology.

### Detail Syllabus:

| <b>Unit 1</b>   | <b>Introduction</b>                          | <b>Teaching Hours (4)</b> |
|---|--|---------------------------|
| Concept and Evolution of Sociology                            | History, definitions                         | 1                         |
| Applications of Sociology                                     | Related to IT                                | 0.5                       |
| Emergence of Social and Ethical Problems                      | Need, Resilience, types                      | 0.5                       |
| Computer Ethics and Computer Ethics Education                 | Need, types                                  | 1                         |
| Ethics and Professions  | Difference, moral values                     | 1                         |
| <b>Unit 2</b>   | <b>Social and cultural change</b>            | <b>Teaching Hours (6)</b> |
| Process; Theories of Social Change                            | Evolution, Functional, Conflict              | 1                         |
| Factors of Social Change                                      | Economics, Technology, Education, Demography | 1                         |
| Role of Media and Communication in Social and Cultural Change | <b>CASE study</b>                            | 1                         |
| Innovation and Diffusion                                      | <b>CASE study</b>                            | 1                         |
| Resistance of Social Change                                   | <b>CASE study</b>                            | 1                         |

|  |  |                           |
|--|--|---------------------------|
| Technological Changes and its Consequences             | <b>CASE study</b>  | 1                         |
| <b>Unit 3</b>  | <b>Understanding development</b>   | <b>Teaching Hours (5)</b> |
| Definition and Approaches of Development               | Definition, approaches   | 1                         |
| Indicators of Development                              | Types  | 1                         |
| Features of Developing Countries                       | Types  | 1                         |
| Development Planning                                   | Techniques, Strategies   | 1                         |
| Role of National and International Community and State | <b>CASE study</b>  | 1                         |
| <b>Unit 4</b>  | <b>Process of transformation</b>   | <b>Teaching Hours (4)</b> |
| Modernization  | Basic concepts   | 1                         |
| Globalization  | Definition, Effect on morality   | 1                         |
| Migration  | Basic concepts   | 1                         |
| E-governance, E-commerce                               | CASE study   | 1                         |
| <b>Unit 5</b>  | <b>Ethics and Ethical Analysis</b>   | <b>Teaching Hours (4)</b> |
| Traditional Definition                                 | Definitions  | 0.5                       |
| Ethical Theories                                       | Consequentialism, Deontology, Human nature, Relativism, Hedonism, Emotivism    | 1                         |
| Functional Definition of Ethics                        | Functional definition covering different sets                                  | 0.5                       |
| Ethical Reasoning and Decision Making                  | Framework for ethical decision making, making and evaluating ethical arguments | 0.5                       |
| Codes of Ethics  | Preamble, objectives   | 1                         |
| Technology and Values                                  | Issues and discussion  | 0.5                       |
| <b>Unit 6</b>  | <b>Intellectual Property Rights and Computer Technology</b>                    | <b>Teaching Hours (6)</b> |
| Definitions  | Definitions  | 0.5                       |
| Computer Products and                                  | Basic concepts   | 05                        |

|  |  |                           |
|--|--|---------------------------|
| Services                                       |  |                           |
| Foundations of Intellectual Property           | Copyrights, Patents, Trade secrets, Trademarks, Personal identity  | 0.5                       |
| Ownership                                      | Politics of ownership, Psychology of ownership   | 0.5                       |
| Intellectual Property Crimes                   | Infringement, first sale doctrine, Fair use doctrine   | 1                         |
| Protection of Ownership Rights                 | Domain, source, Duration and strategies of protection  | 1                         |
| Protecting Computer Software                   | Software piracy, Protection of software under copyright, Patent, Trademarks and Trade secrets                                    | 1                         |
| Transnational Issues and Intellectual Property | Basic concepts   | 1                         |
| <b>Unit 7</b>                                  | <b>Social Context of Computing</b>   | <b>Teaching Hours (4)</b> |
| Introduction; Digital Divide                   | Access, Technology, Human capacity, Infrastructure, Enabling Environments  | 1                         |
| Obstacles to Overcome the Digital Divide       | Techniques   | 0.25                      |
| ICT in the Workplace                           | Electronic office, Office on wheels and wings, Virtual workplace, Quiet revolution : Telecommuters and Telecommuting             | 0.75                      |
| Employee Monitoring                            | Workplace privacy and surveillance, Electronic monitoring  | 1                         |
| Workplace, Employee, Health, and Productivity  | Ergonomics   | 1                         |
| <b>Unit 8</b>                                  | <b>Software Issues</b>   | <b>Teaching Hours (5)</b> |
| Definitions                                    | Standards, Reliability, Security, Safety, Quality, Quality of Service  | 1.5                       |
| Causes of Software Failures                    | Human factors, Nature of software  | 1                         |
| Risk; Consumer Protection                      | Risk assessment and management, Risk hazards in workplace systems, Buyer and provider rights, A-service provider – user contract | 1.75                      |
| Improving Software Quality                     | Techniques   | 0.5                       |
| Producer Protection                            | Basic concepts   | 0.25                      |
| <b>Unit 9</b>                                  | <b>New Frontiers for Computer Ethics</b>   | <b>Teaching Hours (7)</b> |
| Artificial                                     | Basic concepts, Definitions, Requirements, Challenges  | 2                         |

|                             |  |   |
|-----------------------------|--|---|
| Intelligence and Ethics     |  |   |
| Virtualization              | Terminologies, Types, Benefits   | 1 |
| Virtual Reality, and Ethics | Types, Social and ethical implication of virtualization  | 2 |
| Cyberspace and Ethics       | Introduction, Concept of telepresence and immersion, Detecting attacks in cyberspace, Intellectual property rights in cyberspace | 1 |
| Cyberbullying               | Legal definition, Types, Legislation, Effects and Dealing with cyberbullying   | 1 |

### Laboratory works:

- 5 Case Studies that are specified in the micro syllabus
- Practical related to quality assurance, risk analysis, VR, reliability, security, safety, quality, quality of service.
  - **Selenium** for automation testing of functional aspects of web based applications, wide range of platforms and browsers.
  - **Apache Jmeter** for load testing
  - **Jira** for task, effort, team performance and defect tracking
  - Development of RMMM (Risk Monitoring, Management, Mitigation) plan for any scenario.

*The students should write reports for 5 case studies and other practical works.*

### Recommended Books:

1. Alex Inkles, “*What is Sociology? Introduction in the Discipline & Profession*”, Prentice Hall of India
2. Joseph MiggaKizza, *Ethical and Social Issues in the Information Age*, Springer International Publishing , 6<sup>th</sup> Edition, 2017
3. Michael J. Quinn, *Ethics for the Information Age*, 7th Edition, Pearson Education, 2017
4. G. M. Foster, “*Traditional Culture & Impact of Technological Change*”
5. C.N.S. Rao, “*Principle of Sociology with an Introduction of Social Thought*”, S. Chand & Co. Ltd.
6. Pratley Peter, “*The Essence of Business Ethics*”, Prentice Hall of India, New Delhi
7. A .Giddens & D. Mitchell, “*Introduction to Sociology*”, 3rd Ed., London, W.W. Norton & company

## Model Question

**Course Title:** Society and Ethics in Information Technology  
**Course No:** CSC323  
**Semester:** V

**Full Marks:** 60  
**Pass Marks:** 24  
**Credit Hrs:** 3

### Section A

*Attempt any two questions. (2 × 10 = 20)*

1. What significant role does media and communication play in social and cultural change? Explain with respect to real examples. (10)
2. List out different forms that ethical codes can take depending on domain. Summarize ACM code of ethics and professional conduct. (2+8)
3. Explain the role of E-governance for the development of the nation with respect to relevant case study. You should write Title of the case study, a short summary, Strengths and Weaknesses, vision and Conclusion. (10)

### Section B

*Attempt any eight questions. (8 × 5 = 40)*

4. Compare and contrast on personal ethics and professional ethics. (5)
5. List down the features of a developing countries. Highlight on the development planning strategies. (1+4)
6. Why is it difficult to apply patent laws to software? Explain. (5)
7. "There are a multitude of causes and enablers, and as long as these exist in any society, the digital divide will exist." Justify the statement.
8. Why SLA is important? Explain different layers of SLAs based on the product and the user of the product. (1+4)
9. List out different types of Virtual Reality. Explain social and ethical implication of virtualization.
10. What is the effect of globalization on morality?
11. Discuss about the problems that may arise by the reuse of existing software components.
12. Write short notes on: (2 × 2.5 = 5)
  - a. Implied warranties
  - b. Cyberbullying