

NIRMA UNIVERSITY

Institute of Technology

B. Tech. CSE

Semester I/II

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Course Code	CE105
Course Title	Introduction to Computer Science and Engineering

Course Learning Outcomes (CLO):

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

1. explain core components of computer science and engineering and linkage between them,
2. summarize role of computer engineering in other domains,
3. illustrate challenges and future trends of computer engineering,
4. infer role of computer engineering in real world applications.

Syllabus

Teaching Hours

UNIT 1: Difference between Computer Science and Computer Engineering. Various components of Computer Science and Engineering (i.e. Programming, Data structures and algorithms, Computer Organization, Networks, Databases, Operating Systems etc.) and their interrelationships	3
UNIT 2: Inter-relation of Computer Science and Engineering with other Domains Relationship with various Engineering Domains, Business Management, Social Sciences/Humanities, Basic Sciences	4
UNIT 3: Role of Mathematical concepts in computer engineering problems Probability and statistics, Differ, Linear Algebra(Matrix), Set theory	2
UNIT 4: Contemporary issues in Computer Science and Engineering Network infrastructure, Security, Data Handling, E-waste management, standardization	1
UNIT 5: Career opportunities Entrepreneurship, Startup: Scope, Funding Opportunities, Other career opportunities, Further studies	1
UNIT 6: Future Trends and Research opportunities Futuristic Developments in Robotics, IoT, Data Analytics, Human Machine Interface etc.	2
UNIT 7: Case Studies Success stories of Google, Facebook, Walmart, Uber etc. in socio-economic	2

progress

Suggested Readings ^:

1. Misty E. Vermaat, et.al, Discovering Computers ©yyyy: Digital Technology, Data, and Devices, Cengage
2. Genn Brookshear, Dennis Brylow, Computer Science: an Overview, Pearson
3. Relevant e-resources, magazines

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

^ this is not an exhaustive list
