

**NIRMA UNIVERSITY**  
**Institute of Technology**  
**B.Tech (Electronics & Communication Engineering)**  
**Semester I**

**Encl: I**

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<b>Course Code</b>	<b>EC101</b>
<b>Course Title</b>	<b>Introduction to Electronics and Communication Engineering</b>

**Course Learning Outcome:**

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

- recognize core components of electronics and communication engineering,
- understand the role of electronics and communication engineer in society
- exploring opportunities and future trends of electronics and communication engineering

Unit No.	Syllabus	Teaching hours: 15
<b>I.</b>	<b>About Engineering:</b> Definitions, History, Quality attributes, Role in the society	02
<b>II.</b>	<b>Introduction:</b> Introduction to Electronics and Communication Engineering, Historical development, Role and Responsibility of EC Engineer.	02
<b>III.</b>	<b>Aspects of EC engineering:</b> Electronics Circuit Design, Embedded System Design, Communication Engineering, VLSI Design, Digital Signal Processing.	03
<b>IV.</b>	<b>Emerging Trends:</b> FPGA basics, Next Generation Telecommunication Technologies, Spintronics, Wearable electronics, High Performance Computing, Mobile computing	02
<b>V.</b>	<b>Interdisciplinary approach:</b> Artificial Intelligence, Image processing and Computer Vision, Internet of Things, Cyber physical system	02
<b>VI.</b>	<b>Career Opportunities:</b> Defense and Space applications, Automation and Robotics, Telecommunications, Electronics system design, R & D Labs, MNCs.	02
<b>VII.</b>	<b>Case study:</b> Case study based on evolution and application of Electronics & Communication Engineering	02

**Self Study:**

1. Electronics and Communication applications to achieve the sustainable goals for the world
2. Computational tools for EC Engineering

**Suggested Readings:**

1. Saeed Moaveni, Engineering Fundamentals: An Introduction of Engineering, Cengage Learning
2. Quamrul H. Mazumdar, Introduction to Engineering: An Assessment and Problem Solving Approach, CRC Press
3. Magazine: Electronics for You
4. Magazine: Embedded for You
5. Magazine: IEEE Navigator
6. Communication Today
7. IEEE Spectrum (spectrum.ieee.org)
8. www.weforum.org