19ES5506H: **TELECOMMUNICATIONS FOR SOCIETY**

Course Code	19ES5506H	**Year**	III	**Semester**	I
Course Category	Program Core	**Branch**	ECE	**Course Type**	Theory
Credits	3	**L-T-P**	3-0-0	**Prerequisites**	Analog Communications Digital Communications
Continuous Internal Evaluation:	30	**Semester End Evaluation:**	70	**Total Marks:**	100

Course Outcomes	
Upon successful completion of the course, the student will be able to	
CO1	Infer the basic knowledge of telecommunication system, regulation and standards of telecom regulatory bodies (L2).
CO2	Able to deduce cost of different devices such as mobile, Wi-Fi and DTH operators and carry out investigation of Frequency Management and Business on Bandwidth. (L3).
CO3	Make use of revolutionary changes in mobile and wireless technologies to understand recent developments(L3).
CO4	Examine different optical communication components. (L4).
CO5	Justify the use of satellite orbits, different components and sub-systems in advanced communication systems (L4).

Mapping of course outcomes with Program outcomes (CO/ PO/PSO Matrix)

Note: 1- Weak correlation 2-Medium correlation 3-Strong correlation

* - Average value indicates course correlation strength with mapped PO

COs	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**	**PSO2**
CO1	**3**	**3**	**2**	**2**								**2**	**2**	**2**
CO2	**3**	**3**	**2**	**2**								**2**	**2**	**2**
CO3	**3**	**3**	**2**	**2**								**2**	**2**	**2**
CO4	**3**	**3**	**2**	**2**								**2**	**2**	**2**
CO5	**3**	**3**	**2**	**2**								**2**	**2**	**2**
Average* (Rounded to nearest integer)	**3**	**3**	**2**	**2**								**2**	**2**	**2**

Syllabus		
Unit No.	**Contents**	**Mapped CO**
I	**Telecommunication Systems:** Telephones, Telephone System, Facsimile, Internet Telephony. Telecommunication Standards and Regulations - International telecommunication union (ITU) - TRAI and its role –	CO1

	Frequency management – Cost computations – Mobile and DTH operations – Role of wireless planning commission (WPC) for telecommunications in India.	
II	**Telecom business management:** Automated teller machines – Teleconferencing – Telecommuting –Customer oriented communication aspects – Telecom billing - Concepts of data rate and bandwidth requirements – Digital subscriber line – Broadband technologies – Digital home – Voice enabled DSL.	CO2
III	**Cell Phone Technologies**: Cellular Telephone Systems, A Cellular Industry Overview, 2G and 3G Digital Cell Phone Systems, Long Term Evolution and 4G Cellular Systems **Wireless Technologies:** Wireless LAN, PANs and Bluetooth, ZigBee and Mesh Wireless Networks,WiMAX and Wireless Metropolitan -Area Networks	**CO3**
IV	**Optical Communication:** Optical Principles, Optical Communication Systems, Fiber-Optic Cables, Optical Transmitters and Receivers.	**CO4**
V	**Satellite Communication:** Satellite Orbits, Satellite Communication Systems, Satellite Subsystems, Ground Stations, Satellite Applications, Global Navigation Satellite Systems.	**CO5**

Learning Resources

Text Books

1. Louis E. Frenzel Jr., Principles of Electronic Communication Systems, 4/e, Mc Graw Hill Publications, McGraw-Hill Education, 2016.
2. Willium C. Y. Lee, "Wireless & Cellular Telecommunications", McGraw-Hill Companies Inc, Third Edition, 2006.

Reference Books

1. Wayne Tomasi, Electronic Communication Systems, 5/e, Pearson Education, 2009.
2. Wayne Tomasi, Advanced Electronic Communication Systems, 4/e, Pearson Education, 2013.
3. Dennis Roddy, Electronic Communications, 4/e, Pearson Education, 2003.
