

Digital CMOS circuits. Overview. Design and performance analysis of CMOS inverter. Logic Gate Circuits. Pass-transistor logic. Dynamic Logic Circuits. SPICE examples.

Text Book:

1. "Microelectronic Circuits", Adel Sedra and K.C. Smith, 5th Edition, Oxford University Press, Interantional Version, 2009.

Reference Book:

1. "Fundamentals of Microelectronics", Behzad Razavi, John Wiley India Pvt. Ltd, 2008.

2. "Microelectronics – Analysis and Design", Sundaram Natarajan, Tata McGraw-Hill, 2007

ANTENNAS AND PROPAGATION

Subject Code	: 10EC64	IA Marks	: 25
No. of Lecture Hrs/Week	: 04	Exam Hours	: 03
Total no. of Lecture Hrs.	: 52	Exam Marks	: 100

UNIT - 1

ANTENNA BASICS: Introduction, basic Antenna parameters, patterns, beam area, radiation intensity, beam efficiency, diversity and gain, antenna apertures, effective height, bandwidth, radiation, efficiency, antenna temperature and antenna filed zones.

UNIT - 2

POINT SOURCES AND ARRAYS: Introduction, point sources, power patterns, power theorem, radiation intensity, filed patterns, phase patterns. Array of two isotropic point sources. Endfire array and Broadside array.

UNIT - 3

ELECTRIC DIPOLES AND THIN LINEAR ANTENNAS: Introduction, short electric dipole, fields of a short dipole(no derivation of field components), radiation resistance of short dipole, radiation resistances of $\lambda/2$ Antenna, thin linear antenna, micro strip arrays, low side lobe arrays, long wire antenna, folded dipole antennas.

UNIT - 4 & 5

LOOP, SLOT, PATCH AND HORN ANTENNA: Introduction, small loop, comparison of far fields of small loop and short dipole, loop antenna general case, far field patterns of circular loop, radiation resistance, directivity, slot antenna, Babinet's principle and complementary antennas,

impedance of complementary and slot antennas, patch antennas, horn antennas, rectangular horn antennas.

UNIT - 6

ANTENNA TYPES: Helical Antenna, Yagi-Uda array, corner reflectors, parabolic reflectors, log periodic antenna, lens antenna, antenna for special applications – sleeve antenna, turnstile antenna, omni directional antennas, antennas for satellite antennas for ground penetrating radars, embedded antennas, ultra wide band antennas, plasma antenna, high-resolution data, intelligent antennas, antenna for remote sensing.

UNIT - 7 & 8

RADIO WAVE PROPAGATION: Introduction, Ground wave propagation, free space propagation, ground reflection, surface wave, diffraction.

TROPOSPHERE WAVE PROPAGATION: Troposcopic scatter, Ionosphere propagation, electrical properties of the ionosphere, effects of earth's magnetic field.

TEXT BOOKS:

1. **Antennas and Wave Propagation**, John D. Krauss, 4th Edn, McGraw-Hill International edition, 2010.
2. **Antennas and Wave Propagation** - Harish and Sachidananda: Oxford Press 2007

REFERENCE BOOKS:

1. **Antenna Theory Analysis and Design** - C A Balanis, 3rd Edn, John Wiley India Pvt. Ltd, 2008
2. **Antennas and Propagation for Wireless Communication Systems** - Sineon R Saunders, John Wiley, 2003.
3. **Antennas and wave propagation** - G S N Raju: Pearson Education 2005

OPERATING SYSTEMS

Subject Code	: 10EC65	IA Marks	: 25
No. of Lecture Hrs/Week	: 04	Exam Hours	: 03
Total no. of Lecture Hrs.	: 52	Exam Marks	: 100

UNIT - 1

INTRODUCTION AND OVERVIEW OF OPERATING SYSTEMS:

Operating system, Goals of an O.S, Operation of an O.S, Resource allocation and related functions, User interface related functions, Classes of operating