



Mahavir Education Trust's
SHAH & ANCHOR KUTCHHI ENGINEERING COLLEGE
Chembur, Mumbai - 400 088
UG Program in Electronics & Telecommunication Engineering
Academic Year:- 2019-20

Semester - VII

Unique Course Number: 1.ECC7011

Course Name: Microwave Engg

Unique CO Number	Course Outcome (CO) Statement
1.ECC7011	Recognize devices at higher frequencies
1.ECC7012	Design & analyze microwave circuits
1.ECC7013	Understand various parameters of waveguide and use of component as per applications.
1.ECC7014	Analyze and find applications and limitations of microwave tube Generators and Amplifiers.
1.ECC7015	Find and apply applications and limitations of microwave Semiconductor devices in microwave circuits.
1.ECC7016	apply measure and deploy of advance microwave networks

Unique Course Number: 6.ECC702

Course Name: Mobile Communication Systems

Unique CO Number	Course Outcome (CO) Statement
6. ECC7021	Develop knowledge and understanding towards the engineering principles of cellular systems.
6. ECC7022	Evaluate the coverage and capacity of cellular systems
6. ECC7023	Classify different types of propagation models and analyze the link budget.
6. ECC7024	Develop a thorough knowledge of different design and evaluation aspects of different wireless network generations.
6. ECC7025	Elaborate the principles of 3G and 3GPP LTE.
6. ECC7026	Create a distinguished view towards existing cellular technologies and identify the emerging ones for upcoming mobile communication systems.



Mahavir Education Trust's
SHAH & ANCHOR KUTCHHI ENGINEERING COLLEGE
Chembur, Mumbai - 400 088
UG Program in Electronics & Telecommunication Engineering
Academic Year:- 2019-20

Unique Course Number: 6.ECC703

Course Name: Optical Communication

Unique CO Number	Course Outcome (CO) Statement
6.ECC7031	Explain the fundamental principles of optics and light waves.
6.ECC7032	Understand the working of different components of fiber optic communication.
6.ECC7033	Apply the characteristics and calculate parameters of fiber optic components.
6.ECC7034	Analyze and illustrate the performance of the various components of fiber optic communication.
6.ECC7035	Evaluate and discriminate between the various types of optical sources and detectors.
6.ECC7036	Evaluate key fiber parameters for optimum system performance.

Unique Course Number: 6.ECCDL07031 Course Name: Neural Networks and Fuzzy Logic

Unique CO Number	Course Outcome (CO) Statement
6.ECCDL070311	To understand the fundamental building blocks of Artificial Neural Networks(ANN)
6.ECCDL070312	Comprehend fuzzy logic and concept of fuzziness in various systems
6.ECCDL070313	To apply and understand Neural network training and design concepts
6.ECCDL070314	Apply concept of fuzzy logic to real world applications
6.ECCDL070315	Analyze Feed-forward and Feedback Neural Networks and their learning algorithms
6.ECCDL070316	Analyze the application of neural nets to real world problems



Mahavir Education Trust's
SHAH & ANCHOR KUTCHHI ENGINEERING COLLEGE
Chembur, Mumbai - 400 088
UG Program in Electronics & Telecommunication Engineering
Academic Year:- 2019-20

Unique Course Number: 8.ECCDL07033 Course Name: Internet Communication Engineering

Unique CO Number	Course Outcome (CO) Statement
8.ECCDL070331	To understand the functions of transport layer protocols
8.ECCDL070332	To understand the security protocols and services in the Internet.
8.ECCDL070333	To understand the system design principles of multimedia communication systems
8.ECCDL070334	To understand the system design principles of multimedia communication systems
8.ECCDL070335	To apply Transport layer and network layer protocols to model simple networks
8.ECCDL070336	Analyze the operation of the application layer and network layer protocols.

Unique Lab Course Number:1.ECL7011

Course Name: Microwave Engineering Lab

Unique LO Number	Lab Outcome (LO) Statement
1.ECL7011	Understand the effect of fixed and variable attenuator
1.ECL7012	Measure the coupling coefficient and directivity of directional coupler and isolator
1.ECL7013	Evaluate performance and modes of reflex klystron
1.ECL7014	Evaluate and plot power and frequency characteristics of reflex klystron
1.ECL7015	Understand designing of low and High pass network using V-Smith software
1.ECL7016	Understand designin g of impedance network using V-Smith software



Mahavir Education Trust's
SHAH & ANCHOR KUTCHHI ENGINEERING COLLEGE
Chembur, Mumbai - 400 088
UG Program in Electronics & Telecommunication Engineering
Academic Year:- 2019-20

Unique Course Number: 6.ECL702

Course Name: Mobile Communication System Lab

Unique CO Number	Course Outcome (CO) Statement
6.ECL7021	Understand and analyze basic cellular systems
6.ECL7022	To analyze the concept of frequency reuse and Co-channel Interference and different methods of cell splitting and sectoring.
6.ECL7023	To apply the knowledge of the spread spectrum techniques and differentiate multiple access techniques
6.ECL7024	To understand the basic of 2G and 3G
6.ECL7025	To develop knowledge of SIR for cellular system
6.ECL7026	To understand propagation models

Unique Lab Number: 6.ECL703

Lab Name: Optical Communication Laboratory

Unique LO Number	Lab Outcome (CO) Statement
6.ECL7031	Describe the principles in optical transmission using waveguide transmission theory
6.ECL7032	Apply principles and study characteristics of fibers, sources, detectors and optical components.
6.ECL7033	Apply theories of fiber optics for selecting the right component in the fiber optic network design.
6.ECL7034	Analyze the electrical specifications and requirements of optical communication components.
6.ECL7035	Evaluate key fiber parameters for optimum system performance.
6.ECL7036	Demonstrate knowledge and understanding of optical communication in real time applications.



Mahavir Education Trust's
SHAH & ANCHOR KUTCHHI ENGINEERING COLLEGE
Chembur, Mumbai - 400 088
UG Program in Electronics & Telecommunication Engineering
Academic Year:- 2019-20

Unique Course Number: 6.ECLDL07031 Course Name: Neural Networks and Fuzzy Logic LAB

Unique CO Number	Course Outcome (CO) Statement
6.ECLDL070311	Apply system thinking to understand complex behavior including interactions between components in Neural Network architecture.
6.ECLDL070312	Apply appropriate learning rules for different neural network architectures.
6.ECLDL070313	Identify and describe soft computing techniques and their roles in building intelligent machines
6.ECLDL070314	Evaluate Neural network model applicability, accuracy and limitations in real time applications
6.ECLDL070315	Demonstrate knowledge and understanding of fuzzy system as they apply in engineering and science
6.ECLDL070316	Develop models for different applications using fuzzy system and Matlab

Unique Course Number:8.ECLDL07033 Course Name: Internet Communication Engineering Lab

Unique CO Number	Course Outcome (CO) Statement
8.ECLDL070331	Understand the concept of Networking and operations of different application layer protocols
8.ECLDL070332	Apply the different application layer protocols to configure different servers
8.ECLDL070333	Illustrate the use of network layer protocols to configure different servers
8.ECLDL070334	Apply the concept of network addressing to model a network
8.ECLDL070335	Interpret the concept of Network Security
8.ECLDL070336	Assess the different protocols involved in TCP/IP protocol Suite



Mahavir Education Trust's
SHAH & ANCHOR KUTCHHI ENGINEERING COLLEGE
Chembur, Mumbai - 400 088
UG Program in Electronics & Telecommunication Engineering
Academic Year:- 2019-20

Unique Course Number: 9.ECCILO7016

Course Name: Cyber Security and Laws

Unique CO Number	Course Outcome (CO) Statement
9.ECCILO70161	Recognizing and remembering IT laws in various legal issues by analyzing the type of cybercrime committed.
9.ECCILO70162	Understanding the concept of concepts of cybercrime.
9.ECCILO70163	Applying Information Security Standards compliance during software design and development by categorizing the information and also the possible attacks associated with it.
9.ECCILO70164	Analyzing the effects of cybercrime on outside world.
9.ECCILO70165	Evaluate the application of amendments of IT Act 2008 in various cyber crimes.
9.ECCILO70166	Creating an understanding towards distinguished aspects of cyber crime and cyber law.

Unique Course Number:9.ECCILO70174 Course Name: Disaster Management and Mitigation Measures

Unique CO Number	Course Outcome (CO) Statement
9.ECCILO701741	Remembering physics of various disasters occurring around the world
9.ECCILO701742	Understand the effects of different disaster happening in surrounding and its response of an individual.
9.ECCILO701743	Applying knowledge of effects to various methods for overcoming the Disaster
9.ECCILO701744	Analyzing role of an individual and various organizing unit
9.ECCILO701745	Evaluating the different applications in the field of disaster management
9.ECCILO701746	Creating new techniques which will help the society in case of disaster.



Mahavir Education Trust's
SHAH & ANCHOR KUTCHHI ENGINEERING COLLEGE
Chembur, Mumbai - 400 088
UG Program in Electronics & Telecommunication Engineering
Academic Year:- 2019-20

Unique Course Number: 7.ECC707

Course Name: Project-I

Unique CO Number	Course Outcome (CO) Statement
7.ECC7071	identify the application of chosen field in professional practice
7.ECC7072	design and develop industrial, practical application
7.ECC7073	select design procedure for hardware/software for practical application
7.ECC7074	work harmoniously in a team