CHANDIGARH ENGINEERING COLLEGE
CGC, LANDRAN, MOHALI
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Chandigarh Engineering College-CGC
Landran, Mohali, Punjab
Department of Electronics and Communication Engineering

Subject List M.Tech

Sr. No.	Code	PTU code	Subject Name
1	C101	MTEC-101-18	Advanced Communication Networks
2	C102	MTEC-102-18	Wireless and Mobile Communication
3	C103	MTEC-PE1B-18	Optical Networks
4	C104	MTEC-PE2C-18	Information Theory and Coding
5	C105	MTEC-111-18	Advanced Communication Networks Lab
6	C106	MTEC-112-18	Wireless and Mobile Communication Lab
7	C107	MTRM-101-18	Research Methodology and IPR
8	C108	MTAXX-18	Audit Course
9	C201	MTEC-103-18	Antennas and Radiating Systems
10	C202	MTEC-104-18	Advanced Digital Signal Processing
11	C203	MTEC-PE3X-18	Satellite Communication
12	C204	MTEC-PE4Y-18	Nano-Electronics
13	C205	MTEC-113-18	Antennas and Radiating Systems lab
14	C206	MTEC-114-18	Advanced Digital Signal Processing lab
15	C207	MTEC-MP1-18	Mini Project
16	C208	MTEC-MP1-18	Mini Project
17	C209	MTA104-18	AC-II
18	C301	MTEC-PE5X-18	Subject Name Remote Sensing
19	C302	MTOE-O301X-18	Waste to Energy
20	C302	MTOE O301X-18	Name Waste to Energy -
21	C303	(MTEC-DS1-18 & MTEC-DS2-18	Subject Name Dissertation Phase –I & Dissertation Phase - II

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1st Semester	Course Outcomes
Advanced Communication Networks(MTEC-101-18):C101	
C101.1	Classify advanced concepts in Communication Networking.
C101.2	Design and develop protocols for Communication Networks.
C101.3	Illustrate the mechanisms in Quality of Service in networking.
C101.4	Demonstrate the Network Design.
C101.5	Summarize MPLS network and engineering issues.
Wireless and Mobile Communication(MTEC-102-18):C102	
C102.1	Design appropriate mobile communication systems. Apply frequency-reuse concept in mobile communications, and to analyze its effects on interference, system capacity, handoff techniques
C102.2	Distinguish various multiple-access techniques for mobile communications e.g. FDMA, TDMA, CDMA, and their advantages and disadvantages
C102.3	Analyze path loss and interference for wireless telephony and their influences on a mobile communication system's performance.
C102.4	Analyze and design CDMA system functioning with knowledge of forward and reverse channel details, advantages and disadvantages of using the technology
C102.5	Explore upcoming technologies like 3G, 4G etc.
Optical Networks(MTEC-PE1B-18):C103	
C103.1	Summarize the basic concepts of optical networks
C103.2	Describe about the SONET/SDH and architecture of optical networks
C103.3	Contribute in the areas of optical network and WDM network design.
C103.4	Recognize the network survivability by various protection schemes
C103.5	Implement simple optical network and understand further technology developments for future enhanced network

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Information Theory and Coding (MTEC)PE2C-18(3)):C104	
C104.1	Characterize and apply probabilistic techniques in modern digital communication systems, such as information systems, receivers, filtering and statistical operations
C104.2	Demonstrate mathematical modelling and problem solving using such models.
C104.3	Comparatively evolve key results developed for applications to signal processing and communications systems
C104.4	List various digital modulation techniques
C104.5	Develop framework based in different error coding techniques.
Advanced Communication Networks Lab(MTEC-111-18):	
C105.1	Identify the different types of network devices and their functions within a network.
C105.2	Explain and build the skills of sub-netting and routing mechanisms.
C105.3	Examine basic protocols of computer networks, and how they can be used to assist in network design and implementation
Wireless and Mobile Communication Lab(MTEC-112-18):C106	
C106.1	Analyze Cellular concepts, GSM and CDMA networks
C106.2	Illustrate GSM handset by experimentation and fault insertion techniques
C106.3	Outline 3G communication system by means of various AT commands usage in GSM
C106.4	Examine CDMA concept using DSSS kit
C106.5	Determine and develop concepts of Software Radio in real time environment
Research Methodology and IPR(MTRM-101-18):C107	
C107.1	Examine research problem formulation.
C107.2	Analyze research related information
C107.3	Follow research ethics
C107.4	Simplify that today's world is controlled by Computer, Information Technology, but tomorrow world will be ruled by ideas, concept, and creativity.
C107.5	Explore that when IPR would take such important place in growth of individuals & nation, it is needless to emphasis the need of information about Intellectual Property Right to be promoted among students in general & engineering in particular.

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C107.6	Show that IPR protection provides an incentive to inventors for further research work and investment in R & D, which leads to creation of new and better products, and in turn brings about, economic growth and social benefits.
Audit Course I(MTAXX-18):C108	
C108.1	Model how to improve your writing skills and level of readability
C108.2	Illustrate about what to write in each section
C108.3	list the skills needed when writing a Title
C108.4	Learn about reviewing tjhe literature
C108.5	Analyze the skills required to write the results and conclusion of a reserach paper
Antennas and Radiating Systems(MTEC-103-18):C201	
C201.1	Compute the far field distance, radiation pattern and gain of an antenna for given current distribution.
C201.2	Estimate the input impedance, efficiency and ease of match for antennas.
C201.3	Compute the array factor for an array of identical antennas.
C201.4	Design antennas and antenna arrays for various desired radiation pattern characteristics.
Advanced Digital Signal Processing(MTEC-104-18):C202	
C202.1	Summarize theory of different filters and algorithms.
C202.2	Illustrate theory of multirate DSP, solve numerical problems and write algorithms.
C202.3	Ilustrate theory of prediction and solution of normal equations.
C202.4	Explain the principles of adaptive filters and estimation of PSD
C202.5	Examine applications of DSP at block level.
2nd Semester	**Course Outcomes**
Satellite Communication(MTEC-PE3X-18):C203	
C203.1	Visualize the architecture of satellite systems as a means of high speed, high range communication system.
C203.2	State various aspects related to satellite systems such as orbital equations, sub-systems in a satellite, link budget, modulation and multiple access schemes.
C203.3	Solve numerical problems related to orbital motion and design of link budget for the given parameters and conditions.

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C203.4	Study of various modulations and multiple access techniques used in satellite communication
Nano-Electronics(MTEC-PE4Y-18):C204	
C204.1	Basic concepts of Nano sciences and scale of Nano technology
C204.2	Analyze formation of Nano tubes applications & properties
C204.3	Summarize Nano –electronics advance instruments and their characteristics
C204.4	Compare connectivity of Nano devices with electronics
Antennas and Radiating Systems lab(MTEC-113-18):C205	
C205.1	Determine specifications, design, construct and test antenna.
C205.2	Explore and use tools for designing, analyzing and testing antennas. These tools include
C205.3	Antenna design and analysis software, network analyzers, spectrum analyzers, and antenna pattern measurement techniques.
Advanced Digital Signal Processing lab(MTEC-114-18):C206	
C206.1	Design different digital filters in software.
C206.2	Apply various transforms in time and frequency.
C206.3	Perform decimation and interpolation.
Mini Project(MTEC-MP1-18):C207	
C207.1	Design different circuits/ networks in Hardware/software
C207.2	Apply various transforms in time and frequency
C207.3	Perform decimation and interpolation
C207.4	May apply various optimisation techniques
AC-II(MTA104-18) :C208	
C208.1	Illustrate the premises informing the twin themes of liberty and freedom from a civil rights perspective.
C208.2	To address the growth of Indian opinion regarding modern Indian intellectuals' constitutional role and entitlement to civil and economic rights as well as the emergence of nationhood in the early years of Indian nationalism.

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C208.3	To address the role of socialism in India after the commencement of the Bolshevik Revolution in 1917 andits impact on the initial drafting of the Indian Constitution.
3rd Semester	**Course Outcomes**
Subject Name Remote Sensing(MTEC-PE5X-18):C301	
C301.1	Explore basic concepts, principles and applications of remote sensing, particularly the geometric and radiometric principles
C301.2	Provide examples of applications of principles to a variety of topics in remote sensing, particularly related to data collection, radiation, resolution, and sampling.
Subject Name Waste to Energy (MTOE-O301X-18):C302	
C302.1	Explore the concept of Waste to Energy.
C302.2	To link legal, technical and management principles for production of energy form waste.
C302.3	List about the best available technologies for waste to energy.
C302.4	Design composting systems, maintain and operate the aerobic and anaerobic composting process
C302.5	Illustrate the concepts of conservation of energy
4th Semester	**Course Outcomes**
Subject Name Dissertation Phase –I & Dissertation Phase - II (MTEC-DS1-18 & MTEC-DS2-18):C303	
C303.1	Ability to synthesize knowledge and skills previously gained and applied to an in-depth study and execution of new technical problem.
C303.2	Compare to select from different methodologies, methods and forms of analysis to produce a suitable research design, and justify their design.
C303.3	Analyze of their technical solution in a written report.
C303.4	Make use of the work in International/ National conference or reputed journals.
C303.5	Utilize physical activity as a tool to manage stress, pressure & work in life.

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