Bachelor of Technology in Information Technology

The overall credits structure

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<th>Undergraduate Core (UC)</th>
<th>Undergraduate Elective(UE)</th>
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Total Overall Credits: 184

Applied Science

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Humanities and Management Sciences

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Engineering Arts & Sciences

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<td>ECL330</td>
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Department Elective

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<td>Intro. to ICT Systems</td>
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<td>DE-3</td>
<td>ITL202</td>
<td>Discrete Structures</td>
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<td>DE-4</td>
<td>ITL203</td>
<td>OOPS using C++</td>
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<td>ITL204</td>
<td>Basics of Telecommunication</td>
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<td>DE-6</td>
<td>ITL209</td>
<td>Data Structure and Algorithms</td>
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<td>ITL211</td>
<td>Database Management Systems</td>
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<td>DE-9</td>
<td>ITL212</td>
<td>Computer Graphics algorithms &amp; applications</td>
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<td>ITL222</td>
<td>Communication Theory</td>
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Department Core

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Project

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Seminar, Presentation & Training & Arts

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<td>ITL303 Interactive Multimedia (2-0-2) 3</td>
<td>ITL305 Soft. Engg. Concepts (3-1-2) 5</td>
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<td>ITL304 Network Programming/Server Side Programming (3-1-2)5</td>
<td>ITL326 Info. Security &amp; cryptography (3-0-2) 4</td>
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<td>ITD401 Major Project Part I (0-0-4) 2</td>
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**Total credit: 184**
**ITL 100 Introduction to computer Programming**

Credits: (3-1-3) 5.5


Lab: Programs based on theory contents.

**ITL 104 Object Oriented Programming Using C++**

Credits: (3-1-2) 5


Lab: Programs based on theory contents.

**ASL 125 Physics I**

5.0 credits (3-1-2)

Interference, Diffraction, polarization, special theory of relativity, quantum physics, fibre optics, laser, introduction to statistical mechanics, crystal structure, Bragg Diffraction, defects, free electron theory, Richardson equation.

**ASL 124 Physics II**

5.0 credits (3-1-2)

Nuclear physics, Dielectrics, review of vector calculus, electromagnetic waves, magnetic materials, band theory of solids, Nanotechnology

**ASL101 Mathematics-I**

4.0 Credits (3-1-0)

Infinite series- series of positive terms, alternating series and absolute convergence, Differential Calculus- Ordinary and Partial Differentiation, successive differentiation, series expansion, maxima and minima, Integral Calculus- double and triple integration and its Applications, Gradient, divergence and curl of a vector field and their physical interpretations.

Integration of vectors, Gauss, Stokes and Green’s Theorem and applications.

**ASL104 Mathematics-II**

4.0 Credits (3-1-0)

Pre-requisites: ASL 103


**ASL201 Probability and Statistics**

4 Credits (3-1-0)

Pre-requisites: MTH 103

Sample space and events, Axioms of probability, Frequency and histogram, measures of central tendency and dispersion, Conditional probability, independence of events, random variables, distribution function, probability density functions, moments generating function, Binomial, Geometric, Poisson, Normal distributions, Sampling distribution, Central Limit Theorem, Estimation of parameters, Test of Hypothesis, Regression Analysis.

**ITL 106 Basics of Telecommunication**

4 Credits (2-1-1)

Propagation of light in optical fiber; ray model.
Types of fiber: Single mode, steps index.
Graded index. Signal distortion: attenuation, dispersion.
Optical sources: LED, LASERS.

**ITL 201 Internet & Web Programming**
4 Credits (2-1-2)
Internet Fundamentals, Introduction to Web Concepts, TML Tags, Client Side Programming using JavaScript Separating style from structure with CSS, HTML Forms, object model and collections – event model – filters and transition – data binding – data control, HTML Editors and Case study on AJAX.
Introduction to Web Development, JAVA Fundamentals, Methods, Strings, Wrapper Classes, Inheritance, Polymorphism in Inheritance, Interfaces, Packages, Exception Handling, Input / Output Streams, Multi Threading, Applet and GUI Programming (Swings).
Lab: Programs based on theory contents.

**ITP 309 Component Based Programming**
Credits: (1-0-2) 2

**CSL 300 Computer Networks**
Credits: (3-1-2)5
Overview of OSI reference model. Topology design, Media Access Control Level, Services, Problems and protocols, Practical local area network design and implementation. IEEE LAN Standards, Logical Link Control protocols, HDLC, ALOHA, SLOTTED ALOHA, FDDI, Client Server model and related softwares. Network Layer level services, problems and protocols. WAN, MAN, interconnection networks related softwares, TCP/IP, Novel NetWare, Routers, Bridges and Gateways their Practical implementation aspects. X.25, Internet and related softwares NETSCAPE and MOSAIC. Transport layer, services, problems and their protocol. Brief functioning of upper layers, E-mail and other application.

**ITL326 Information Security & Cryptography**
4 Credits (3-0-2)

**ITL316 Object Oriented Software Engineering**
Credits: (2-1-2) 4

**Section-D**


**ITL 332 Wireless Networks**

3 Credits (2-1-0)


**ITL 416 Component Based Software Engineering**

3 Credits (2-1-0)


**ITL 334 E-Commerce**

3 Credits (2-1-0)


**ITL 423M-Commerce**

3 Credits (2-1-0)

Introduction to m-commerce: emerging applications, wireless service providers, middleware, wireless infrastructure, different players in m-commerce, and m-commerce life cycle, Requirements and multi-layer frameworks, Mobile financial services, mobile entertainment services, and proactive service management, Location-based m-commerce services, Group-oriented mobile commerce services, Transactions in mobile commerce services, Management of mobile commerce services, Business models and revenue management among multiple players, The emerging issues in mobile commerce, The role of emerging wireless LANs and 3G/4G wireless networks, personalized content management, implementation challenges in m-commerce, futuristic m-commerce services.

**ITL 212 Database Management Systems**

5 Credits (3-1-2)

Introductory Concepts - Databases and Information Systems, Semantic Database Design ER Modeling concepts, Cardinality constraints, Enhanced ER Model (EER), Weak-entity types, Specialization and Generalization. Relational Model, Relational algebra, ER to relational mapping. SQL, Embedded SQL, DB2 Architecture, Functional dependencies, Normal forms Boyce-Codd Normal Forms, Multi-values dependencies and fourth normal form, fifth normal form, de-normalization, Inclusion dependencies, Storage and Indexing Structures,

ITL 420 Advance Database Management Systems
3 Credits (2-1-0)
Query Processing and Optimization, Introduction to Hadoop, Database Security and Authorization, Audit trails in the databases, E-security. Shadow paging, ARIES recovery algorithm, Object Oriented Database, Data types (arrays, multi-set etc) and structure in Object oriented databases using SQL, ODL and OQL, Distributed Databases, Centralised versus non centralized Databases, Homogeneous and Heterogeneous DDBMS, query processing in DDBMS, Distributed concurrency management, deadlock management, Distributed Commit Protocols: 2 PC and 3 PC, Concepts of replication servers, Database and XML, XML hierarchical tree data model, Documents DTD and XML schema, XML query and Transformation, Storage of XML data, Introduction to data warehousing and Data Mining, DSS and EIS, Architecture of Data Warehousing, Data warehousing Life Cycle, OLAP, MOLAP, ROLAP, Future open issue for data warehouse.

ITL 224 Service Oriented Architecture
3 Credits (2-1-0)
SOA Fundamentals: Introduction to Service Oriented Architecture, Evolution of SOA and enterprise computing, SOA characteristics, Enterprise Service Bus (ESB), SOA architecture, Understanding the technology of enterprise SOA: the goal of loose coupling, web services overview, SOA for Enterprise Application Integration (EAI), SOA-improved business process, Messaging Patterns in SOA: introduction, contracts and information hiding, message transformation, SOA modeling, design and analysis; WSDL, SOAP, SOA enterprise Software models, stages of SOA life cycle, SOA modeling building blocks, design of Service oriented applications, SOA analysis, SOA Implementation: Business to Business application integration, Impact of SOA on software quality, efficiency, security, performance and flexibility.

ITL 415 Software Project Management
3 Credits (2-0-2)
Introduction to software project management, creation of project plan, IEEE standards for SRS and Project Plan, software estimation, project scheduling, Traceability Matrix, project cost management, project team and project manager, cost management, human resource management, project communication management, project management process group, risk management, project monitoring and control, quality control. alternative approaches and emerging issues

CSL 303 Operating System
5 Credits (3-1-2)
Introductory concepts of Operating Systems; Process Management, Memory Management, File Systems - Security & Protection, Input- Output principles; Deadlocks detection and avoidance; Distributed computing; Examples of some widely used Operating Systems. Overview of cloud computing, various mobile operating systems. Case studies on Latest Operating systems.

ITL209 Data Structures & Applications
5 Credits (3-1-2)
Introduction to data structures, Stacks, Queues, Linked Lists with applications, Trees, B -trees, AVL tree, Graphs, Sorting and performance measurements, searching. Introduction to algorithm complexity (time and space), Asymptotic Notations O Ω Θ ., recursion and its applications.
In Lab section experiments are done using C++.

ITL310 Algorithms Analysis & Design
4 Credits (2-2-0)
Recapitulation of Sets, Functions and Relations, Vectors and Matrices, Linear Inequalities and Linear Equations. Algorithm Analysis, Computational Complexity of an algorithm. Divide and Conquer Algorithms: Master theorem,
Recurrence relation. Sorting Bubble Sort Insertion Sort Selection Sort Heap Sort Merge Sort Quick Sort. Greedy Algorithms. Knapsack Problem, Fractional Knapsack Kruskal's Algorithm, Prim's Algorithm, Dijkstra's Algorithm. Dynamic Programming Algorithms. 0/1 Knapsack Problem. All pair shortest Path , Activity Selection Problem, Algorithm. Back Tracking General Method, the 8 Queen Problem, Sum of Subset Problem, Graph Coloring Problem, Hamiltonian Cycle, Branch & Bound, The Least cost Search, FIFO, LC branch & bound, 0/1 Knapsack Problem, NP Hard and NP complete Problems, Cooks Theorem.

**ITL 427 Cloud Computing**  
3 Credits (2-1-0)  

**ITL 305 Software Engineering Concepts**  
5 Credits (3-1-2)  
Software engineering paradigms, process models, complexity models, requirement engineering, different models of effort, schedule-and cost-estimation, risk analysis and management, different software design methodologies, verification and validation, testing philosophy and methods, software metrics, software reliability and availability, software maintenance and software re-engineering, development of applications using software engineering concepts.

**ITL 322 Embedded Systems**  
4 Credits (2-1-2)  
Intro. to embedded microcontrollers, microcontroller architecture, assembly programming, interrupts and I/O ports, software programming with microcontrollers, synchronization and communication issues, basic peripherals and analog interfaces.

**ITL 304 Network Programming/ Server Side programming**  
5 Credits (3-1-2)  
Network technology: Address and domain management, overview on transport layer protocols, ongoing network technologies (e-mail, ftp, http, slip/PPP, broadband and internet searching tools), security issues in scripting, application layer protocols.  
Network Programming: TCP/IP protocol architecture, internet addressing, subnets, super netting, RAP,RARP, datagram format for IP, UDP and TCP. Commonly used network management tools.  
Socket programming: Intro. to TCP & UDP socket, TCP and UDP I/O functions, node and address conversion, echo service. Algorithm and issues in server software designing, RPC concepts, RPC models, Program design using RPC, Network file system.  
Introduction to Server Side Technologies, Programming languages for server Side Scripting, Introduction to JSP, JSP processing, JSP Application Design, Tomcat Server, Implicit JSP objects, Conditional Processing, Declaring variables and methods, Error Handling and Debugging, Sharing data between JSP pages-Sharing Session and Application Data.  
Java Servlets, Intro. to AJAX, MVC.

**ITL 431 Knowledge Management System**  
3 Credits (2-1-0)  
KM definitions, frameworks and literature, KM behavior within and across organizations, Characteristics of knowledge-intensive organizations and knowledge workers ,Creating and sustaining a knowledge sharing culture, uncovering KM bottlenecks, Identification, measurement and management of intellectual capital, Accounting and financial disclosure of knowledge assets, Implementation of KM tools and technologies, characteristics of Chief
Knowledge officers, Storytelling as a learning process; organizational learning processes, Human capital measurement, development and intangible asset monitoring and allocation, Evaluation of best and worst case practices for KM initiatives, Repositories (library science), exchanges (auction), document management (portals), Macro-economic, national and international knowledge capital issues, Customer relationship management, competitive intelligence, knowledge creativity.

**ITL428 Parallel Computing**
3 Credits (2-1-0)

**ITL 102 Discrete Structures**
4 Credits (3-1-0)
Set Theory, Relations, Partial ordering relations and lattices, Functions, Composition of functions and relations, Cardinality and inverse relations, Propositional Calculus, Techniques Of Counting, Recursion And Recurrence Relation, Introduction, definition and important properties of Boolean Algebra, Algebraic Structures: Group Theory, Introduction to Ring, Graph Theory: Basic concepts of Graph theory, paths, reachability and connectedness, matrix representation of graph, Definition/Examples of Fuzzy Sets & Operations on fuzzy sets.

**ITL 211 Formal language & Automata Theory**
4 Credits (2-2-0)
Regular Languages, Finite Automata, equivalence, minimization, Myhill-Nerode Theorem, introduction to nondeterminism, Context free grammars, Pushdown automata, equivalence and applications. Turing machines, Recursive and Recursively enumerable sets, non-determinism, RAMs and equivalence, Universal Turing Machines, undecidability, Rice's theorems for RE sets, Post machines, Basics of Recursive function theory. Equivalence, Church's thesis, computational complexity, space and time complexity of Turing Machines, Relationships, Savage's theorem, Complexity classes, Complete problems, NP-completeness, Cook-Levin theorem.

**ITL 210: Computer Organization & Design**
4 Credits (3-1-0)

**ITL 218 Computer Graphics Algorithms & Applications**
5 Credits (3-1-2)
Graphics and its applications, graphics displays-input and output devices, how to draw a pint, line, circle and polygon, Coloring the polygon, 2D and 3D graphics- Graphics transformations, clipping line and polygons, projections, Hidden surface area detections with the help of different algorithms, draw curves and surfaces- hermite curve and bazer curve.
Shading and image processing with blender software.

Applications:–

How Computer Animation works:
Introduction to animation; Traditional animation; Computer-assisted animation; Computer animation: key-framing, procedural and behaviour animation; Dynamics of numbers.

How Real-time Rendering works:
Hierarchy of coordinate systems; Modelling transformations and transformations of coordinate systems; Spatial partitioning; Bounding boxes; Level of detail; Current transformation matrix.

How Graphical User Interfaces work:
Designing user interfaces; state diagrams; Visual design rules.

How Virtual Reality Works:
Definitions; Generic VR system; VR hardware and software; Sensory conflict in VR; VR applications.

ITL303 Interactive Multimedia
3 Credits (2-0-2)

Introduction To Multimedia Software's:

ITP 100 Hardware Lab
1 Credits (0-0-2)

ITL419 Software Metrics
3 Credits (2-1-0)

ITL412 Mobile Computing
4 Credits (3-0-2)
Introduction to mobile computing highlighting requirements for design of mobile applications. Computational model and distributed algorithms for mobile environment. Mobility management...

Data delivery models, broadcast disks, and application of caching for speeding up data dissemination and delivery. Distributed file system and indexing techniques for mobile environment. Mobile Agent System

**ITP 200 Introduction to ICT systems**

2 Credits (1-0-2)

Types and components of computer systems, recent developments in ICT. The effects of using ICT - software copyright, hacking, capabilities and limitations of ICT, describe the use of internet developments such as Web 2.0, problems related to the prolonged use of ICT equipment. Applications of ICT-Communication applications, interactive communication applications, data handling applications, measurement applications, control applications, modelling applications System level designing, embedded system design.

**ASL204 Probability and Statistics**

3.0 Credits (2-1-0)

Pre-requisites: MTH 103

Sample space and events, Axioms of probability, Frequency and histogram, measures of central tendency and dispersion, Conditional probability, independence of events, random variables, distribution function, probability density functions, moments generating function, Binomial, Geometric, Poisson, Normal distributions, Sampling distribution, Central Limit Theorem, Estimation of parameters, Test of Hypothesis, Regression Analysis

**ITL 222 Communication Theory**

4 Credits (2-2-0)

Digital transmission, signaling formats, modulation techniques, multiplexing techniques, carrier systems, synchronization and signaling Introduction to switching techniques, data communication circuits, communication codes, serial and parallel data interfaces

**ITL 330 Software Testing**

3 Credits (2-1-0)

Software Testing Principles: Need for testing - Psychology of testing - Testing economics - White box, Black box, Grey box testing – SDLC and Testing - Verification & Validation - Weyuker's adequacy axioms.

Testing Strategies: White box testing techniques, Statement coverage, Branch Coverage, Condition coverage, Decision/Condition Coverage, Multiple condition coverage, Dataflow coverage, Mutation testing, Automated code coverage. Analysis, Black box testing techniques, Boundary value analysis, Robustness testing, Equivalence partitioning - Syntax testing, Finite state testing, Levels of testing, Unit, Integration and System Testing.


**ITL 414 Intellectual Property Rights and Bioethics**

3 Credits (2-1-0)

Engineering Ethics and Bioethics: Senses of "Engineering Ethics" - variety of moral issue - types of inquiry - moral dilemmas - moral autonomy - Kohlberg’s theory - Gilligan’s theory - consensus and controversy – Models of

Regulatory Affairs: Regulation, national and international guidelines of Biosafety, r-DNA guidelines, Regulatory requirements for drugs and Biologics GLP and GMP.


Global Issues: Multinational corporations - Environmental ethics - computer ethics - weapons development and bioterrorisms - engineers as managers-consulting engineers-engineers as expert witnesses and advisors - moral leadership-sample code of Ethics.

ITL 417 Data Compression
3 Credits (2-1-0)
Information theory, probability coding, Lempel-ziv algorithms, lossless and lossy compression techniques, scalar vector quantization, transform coding, wavelet compression, fractal compression, model-based compression

ITL328 Signal Theory

ITL 429 Machine Learning
3 Credits (2-1-0)
Supervised learning (generative/discriminative learning, parametric/non-parametric learning, neural networks, support vector machines); unsupervised learning (clustering, dimensionality reduction, kernel methods); learning theory (bias/variance tradeoffs; VC theory; large margins); reinforcement learning and adaptive control

ITL 421 Management of Computing & Comm. System
3 Credits (2-1-0)
Factors strongly impacting the success of new computing and communications products and services (based on underlying technologies such as electronics and software) in commercial applications. Technology trends and limits, economics, standardization, intellectual property and patents, government policy and industrial organization. Strategies to manage the design and marketing of successful products and services.

ITL 418 Soft Computing
3 Credits (2-1-0)
Introduction to AI and expert systems of soft computing and rough sets, soft computing vs. hard computing, various types of soft computing techniques and its application. Fuzzy systems and applications: fuzzy sets; fuzzy reasoning; fuzzy inference systems; fuzzy control; fuzzy clustering; applications of fuzzy systems. Artificial neural networks and applications: Different artificial neural network models; learning in artificial neural networks; neural network applications in control systems.. Genetic Algorithms: Simple GA, crossover and mutation, genetic algorithms in search and optimization, application of fuzzy, Artificial neural networks and Genetic Algorithms in computer science and engineering

ITL 425 Mobile Communication
3 Credits (2-1-0)
Part 1

Part 2

Part 3

ITL 422 Telecommunication Systems
3 Credits (2-1-0)

Introduction to satellite communications satellite orbits- satellite communication systems –earth stations- applications: surveillance, navigation, mobile communication, tv broadcast, satellite radio, satellite telephone-the internet.

Introduction to fiber optic communication light wave communication systems – fiber structure and function types of fiber – optical transmitter & receiver –fiber optic data communication systems unit iv telephone system and its application telephones –telephone system- facsimile-cellar telephone system-paging system – integrated services digital networks (isdn) cellular radio Citizen’s band radio, cordless telephone, improved mobile telephone service (imts), introduction to advanced mobile phone service (amps), gsm – rf channels and time slots – voice transmission – frequency hopping - subscriber id module – gsm privacy and security – is-95 cdma pcs – channels – forward channel – reverse channel – voice coding – power control – hand-off and cdma security

Other Departments:

ASL101 Mathematics I
4.0 Credits (3-1-0)

ASL102 Mathematics-II
4.0 Credits (3-1-0)

ASL121 Physics I
5.0 Credits (3-1-2)

**ASL122 Physics II**
5.0 Credits (3-1-2)

**ASL201 Mathematics III**
4.0 Credits (3-1-0)
Pre-requisites: ASL101 and ASL102

**ASV 140 Environmental Studies**
0 Credit (3-0-0)
The Multidisciplinary nature of environmental studies, Natural Resources, Ecosystem, Biodiversity and its conservations, Environmental Pollution, Social issues and the Environment, Human population and the Environment, Field Work.

**HML101 Effective Communication**
4.0 Credits (2-2-0)
Vocabulary-1 Word building and enriching vocabulary
Essentials of Grammar-1 Errors pertaining to Nouns, Pronouns, Verbs, Adverbs and Adjectives
Writing Skills-1 Business Correspondence,
Reading Skills-1 Theme detection, Literal comprehension
Speaking Skills-1 Introducing oneself mini presentation, collaborative task.
Listening Skills -1 listening specific information, theme detection, gap filling

**MEL 102: Introduction to mechanical & Production Engineering**
5.0 credits (3-1-2)
Mechanical: Laws of thermodynamics, concept of internal energy, entropy ad enthalpy, properties of steam tables, dryness fraction, classification of boilers, constructional details and operation of Cochran and Babcock and Wilcox boilers, constructional details and working of two-stroke engine, Otto, Dual and Diesel cycles, working principles of gas turbines, construction details of Pelton, Francis and Kaplan turbines, classification of water pumps and their working.
Production: Introduction to manufacturing processes, industrial safety, accident prevention, first aid & fire fighting, plant layout, knowledge of engineering material cast iron, steels, copper and aluminium alloys, their properties and applications, casting and forging processes, fettling, rolling, extrusion, sheet metal working, introduction to metal cutting, basic operations on lathe, drill and shaper machines, use of coolants, welding processes arc and gas welding, brazing soldering and braze welding.
Lab work will include five experiments from mechanical course contents and five from production course contents (related to machine shop and welding works only).

**SML300 Entrepreneurship**
L-T-P (2-0-2)

**SML200 Engineering Economics**
LTP(2-0-2)
Replacement Analysis; Cost- Benefit Analysis; Break Even Analysis; Choice of Best Project

SML340 Principles and Practices of Management
L-T-P (2-0-2)

HMP 100 Language Lab
0.5 Credits (0-0-1)
- Error Detection
- Word stress
- Pause group
- Pitch change(Intonation)
- Practicing sounds: classification, description
- Syllable
- Short presentation

MEP110: Engineering Graphics and Drawing
(3 credits; 1-0-4)

ECL330 Microprocessor & its Applications
(5 credits; 3-1-2)
Introduction to microprocessor, Architecture of typical 16 bit microprocessors( Intel 8086),memory segmentation ,Interrupts, Instruction set of 8086,comparison of 8086 and 8088,data transfer techniques , 8155,8251A,8259A,8255,8257,Microprocessor Interfacing Techniques, Introduction to advance Processors 80186/188,286,386&486,Pentium pro to Pentium-IV.

ECL110 Basics of Electrical and Electronics Engg.
5 Credits (3-1-2)
D.c. network Laws and theorems : Ohm's Law, Kirchoff’s Laws, Nodal and Loop methods of analysis, Star to Delta & Delta to Star transformation, Thevenin's theorem, Norton's theorem, superposition theorem, maximum
power transfer theorem, Millman's theorem, Source Transformation.

Single phase a.c. circuits: Sinusoidal signal, instantaneous and peak values, RMS and average values, crest and peak factor, Concept of phase, phasor representation -polar & rectangular, exponential and trigonometric forms, behaviors of R,L and C components in A.C. circuits, Analysis of Series and parallel A.C circuits, resonance in series and parallel R-L-C circuits, bandwidth, Q-factor.

Three phase a.c. circuits: Phase and line voltages and currents in balanced star and delta connected 3-phase systems, power in 3-phase balanced circuits, measurement of power by two wattmeter method.

Basic Concepts of materials: Brief review of nature of bonding, crystal structure, Fermi energy

Conducting material and Dielectric material:
Review of energy bands, description of materials, Insulators, semiconductors and metals, drift velocity, collision time, Mean free path, mobility, conductivity, relaxation time, Intrinsic and extrinsic semiconductors, Hall effect, Behaviour of dielectric materials in static electric field, Dipole moments, Polarization, Dielectric constant.

Semiconductor Material & magnetic material:
Magnetic materials, diamagnetism, Parahmagnetism, ferromagnetism, anti ferromagnetism, Magnetic Properties: Magnetic dipole moment, Field intensity, flux density, magnetic permeability, magnetic susceptibility.

Current Technology: Introduction of Pspice, Orcad and Matlab and application of these software in simple circuit designing.

**ECL200 Digital Electronics**
(5 credits; 3-1-2)
Perquisites: Basic electronics
Digital signal, logic gates, Number system, error detection and correction codes, Boolean Algebra and switching functions, combinational logic modules and their functions, sequential circuits and their applications, digital logic families, A/D and D/A convertors, Programmable logic devices, Advances in Technology, simulation softwares(2)