

**B.Tech(ElectricalEngineering)SyllabusforAdmissionBatch2017-18 7<sup>th</sup> /8<sup>th</sup> Semester**

<b>SEVENTH SEMESTER</b>					
<b>Theory / Practical / Sessional</b>					
<b>Subject Code</b>	<b>Subject Name</b>	<b>Hours/ Week L/T</b>	<b>Credit Theory</b>	<b>University Marks</b>	<b>Internal Evaluation</b>
PEE7J001/ PEE7J002/ PEE7J003	Switch gear and ProtectiveDevices/ Biomedical Instrumentation/ Mobile Communication	3-0-0	3	100	50
PEE7J004/ PEE7J005/ PEE7J006	Communication Engineering / Digital Image Processing / Adaptive Signal Processing	3-0-0	3	100	50
PCP7H007 / PCP7H008/ PCP7H009	Internet of Things (IOT)/ NanoScience&BioTechnology/ IntellectualPropertyRights( IPR)	3-0-0	3	100	50
PCP7H010 / PCP7H011/ PCP7H012	Soft Computing/ IntroductiontoManagement&Function/ MarketingManagement	3-0-0	3	100	50
PCP7H013 / PCP7H014 / PCP7H015	Entrepreneurship Development/ E-Commerce & ERP / Business Regulatory Framework	3-0-0	3	100	50
<b>Total Credit/Marks (Theory)</b>			<b>15</b>	<b>750</b>	
<b>Practical</b>					
PEE7N201	Seminar	0-0-2	2	-	100
PEE7N202	Minor Project	0-0-2	4	-	200
PEE7N203	Comprehensive Viva	0-0-1	2	-	100
<b>Total (Practical) Credit/Marks</b>			<b>08</b>	<b>400</b>	
<b>Total Semester Credit/ Marks</b>			<b>23</b>	<b>1150</b>	

**B.Tech(ElectricalEngineering)SyllabusforAdmissionBatch2017-18 7<sup>th</sup> /8<sup>th</sup> Semester**

<b>Eighth Semester</b>					
<b>Sl. No.</b>	<b>Subject Category</b>	<b>Subject Name</b>	<b>Credit</b>	<b>University Marks</b>	<b>Internal Marks</b>
<b>Practical</b>					
1	PEE8N201	Internship/ Major Project	10	-	500
<b>Total Credit/Marks (Practical)</b>			<b>10</b>	<b>500</b>	
<b>Total Semester Credit/ Marks</b>			<b>10</b>	<b>500</b>	

**PEE7J001 SWITCH GEAR AND PROTECTIVE DEVICES**

**3-0-0**

Module- I

[10 Hours]

University Portion (80%) : (8 Hours)

Introduction: Principle and need for protective schemes, Nature and causes of faults, Zones of protection, Primary and back-up protection, Basic principle of operation of protective system, Components of Protection System.

[Text Book 1 : CH 1.1, 1.2, 1.5, 1.6, 1.7, 1.8, 2.1, 2.2, 2.3]

Sequence Components and Fault Analysis: Sequence components (positive, negative and zero) and their significance, Average 3-phase power in terms of symmetrical components, sequence impedance, fault calculations, Single line to ground fault, Line to ground fault with  $Z_f$ , Faults in Power systems, Concept of short circuit capacity of a Bus. [Ref. Book 1: CH 13.1, 13.2, 13.3, 13.4, 13.5, 13.6, 13.7, 13.8, 13.10, 13.13]

Module- II

[10 Hours]

University Portion (80%) : (8 Hours)

Operating Principles and Relay Construction: Relay design and construction, Relay classification, Types of Electromagnetic relays, Theory of Induction relay torque, General Equations of Comparators and Electromagnetic Relays, Over Current relays, Directional relays, Distance relays, Differential relays.

Feeder Protection: Over current, Distance and Pilot Protection. Static Relays: (Comparators and different relays)

Amplitude comparator, Phase Comparator, Coincidence type phase comparator, Basic elements of a static relay, Over Current Relays, Differential Protection, Static distance Protection.

[Text Book 1: CH 3.1, 3.2, 3.3, 3.4, 4.2, 4.3, 4.4, 4.7, 4.8, 4.9, 5.2, 5.3, 5.4, 11.1, 11.2, 11.3, CH 12.1, 12.2, 12.3, 12.4]

Module- III

[10 Hours]

University Portion (80%) : (8 Hours)

Apparatus Protection: Transformer Protection, Generator Protection, Motor Protection, Bus bar protection schemes. [Text Book 1: CH 6.2, 6.3, 6.4, 6.5]

Numerical relays: Block Diagram of Numerical Relay, Signal Sampling & Processing, Numerical Over-current protection, Numerical Transformer differential Protection, Numerical distance Protection of Transmission Line. [Text Book 2: CH 11.2, 11.3, 11.7, 11.8, 11.9]

Module- I V

[10 Hours]

University Portion (80%) : (8 Hours)

Switchgears: Auto reclosing, Theory of Circuit interruption, Circuit constants in relation to Circuit breaking, Re-striking voltage transient, characteristics of Re-striking Voltage, Interaction between breaker and circuit, Current chopping.

Circuit Breakers: Types of circuit breakers (air blast, air break, oil, vacuum, SF<sub>6</sub> , DC circuit breaker), advantages and testing of circuit breaker. [Text Book 1: CH 7.1, 7.2, 7.3, 7.4, CH

13.1, 13.2, 13.3, 13.4, 13.5, 13.6, 14.2, 14.3, 14.4, 14.5, 14.6, 14.7, 15.2, 15.3, 15.5, 16.2, 16.3, 16.4, 18.2, 18.5, 18.6, 18.7, 18.8]

**Text Books:**

1. Power System Protection and Switchgear – B.Ravindranath&M.Chander–New Age International Publishers (Second Edition).
2. Protection and Switchgear - B. Bhalja, R.P.Maheshwari, N.G. Chothani, OXFORD University Press.
2. Fundamentals of Power System Protection – Y.G.Paithankar and S.R.Bhide, PHI Publication. (Second Edition)

**Reference Books:**

1. Electrical Power System - C.L.Wadhwa New Age International Publishers. (Sixth Edition).
2. Power System Engineering - M.L.Soni, P.V.Gupta, U.S.Bhatnagar, A.Chakrabarti, Dhanpat Rai & Co. (P) Ltd.
3. Power System Protection and Switchgear - Badri Ram, Vishwakarma, Tata McGraw hill.
4. Switchgear and Protection – Sunil S Rao , Khanna Publishers, New Delhi.
5. Power System relaying by Horwitz, Phadke, Research Press.

TENTATIVE  
Likely to be Modified

PEE7J003

MOBILE COMMUNICATION

3-0-0

MODULE-I An Overview of Wireless Systems: Introduction, First- and Second-Generation Cellular Systems, Cellular Communications from 1G to 3G, Wireless 4G Systems, Future Wireless Networks Radio Propagation and Propagation Path-Loss Models: Introduction, Free-space Attenuation, Attenuation over Reflecting Surfaces, Radio wave Propagation, Characteristics of Wireless Channel, Signal Fading Statistics, Propagation Path-loss Models, Cost 231 Model

MODULE-II Fundamentals of Cellular Communications: Introduction, Cellular Systems, Hexagonal Cell Geometry, Co-channel Interference Ratio, Cellular System Design in Worst-Case Scenario with an Omni directional Antenna, Co-channel Interference Reduction, Directional Antennas in Seven- Cell Reuse Pattern, Cell Splitting, Adjacent Channel Interference (ACI), Segmentation,

MODULE-III

Multiple Access Techniques: Introduction, Narrowband Channelized Systems, Comparisons of FDMA, TDMA and DS-CDMA, Comparison of DS-CDMA vs. TDMA System Capacity, Multicarrier DS- CDMA (MC-DS-CDMA) Modulation schemes: Introduction, Introduction to modulation, Phase Shift Keying, Quadrature Amplitude Modulation, M-ary Frequency Shift Keying, Synchronization, MODULE-IV

Equalization Spread Spectrum(SS) and CDMA Systems: Introduction, Concept of Spread Spectrum, System Processing Gain, Requirements of Direct-Sequence Spread Spectrum, Frequency-Hopping Spread Spectrum Systems

Text Books: 1. Essential Reading: Selected portions from V K Garg, Wireless Communication and Networking; Morgan Kaufman Publishers India; 2008

Reference Book:

1. T S Rappaport, Wireless Communications, Pearson Education, India
2. W C Y Lee, Mobile Communtion Engineering – Theory and Applications; TMH
3. T L Singhal, Wireless Communicaions, Tata McGraw Hill 2010

PEE7J005                      DIGITAL IMAGE PROCESSING                      3-0-0  
MODULE-I

Fundamentals – Steps in digital image processing, sampling and quantization, relationship between pixels, imaging geometry

Image Transforms – Fourier Transform, Discrete Fourier Transform, Fast Fourier Transform, Discrete Cosine Transform, Walsh Transform, Hadamard Transform, Hotelling Transform.

MODULE-II

Image Enhancement – Point processing, spatial filtering (smoothing and sharpening filters), enhancement in frequency domain.

Filtering in the Frequency Domain: preliminary concepts, 2D DFT and its properties, basic filtering in the frequency domain, image smoothing and sharpening.

MODULE-III

Image Restoration and Reconstruction: Image restoration/degradation model, noise models, restoration in the presence of noise only, estimating the degradation function.

Color Image Processing: Color models, Color transformation.

MODULE-IV

Wavelets and Multi-resolution Processing: multiresolution expansions, wavelet transforms in one and two dimension.

Image Compression: Fundamentals, Some basic compression methods (Chapt: 8 of Text book 1)

Text books

1. Digital Image Processing, R.C. Gonzalez, R.E. Woods, Pearson Education , 3rd Edition, 2007
2. Digital Image Processing, S. Sridhar, Oxford University Press, 2011
3. Digital Image Processing And Analysis, B. Chanda, Dutta D. Majumder , PHI

Reference Books

1. Digital Image Processing using MATLAB, Rafael C. Gonzalez, Richard E. Woods Pearson Education, Inc., Seventh Edition, 2004.
2. Digital Image Processing, S. Sridhar, Oxford University Press, 2011
3. Digital Image Processing, William K. Pratt, John Wiley, New York, 2002

PEE7J004

Communication Engineering

3-0-0

**MODUE-I**

**INTRODUCTION:** Elements of an Electrical Communication System, Communication Channels and their Characteristics, Mathematical Models for Communication Channels

**MODULE-II**

**FREQUENCY DOMAIN ANALYSIS OF SIGNALS AND SYSTEMS:** Fourier series, Fourier

Transforms, Power and Energy, Sampling and Band limited signals, Band pass signals

**MODULE-III**

**ANALOG SIGNAL TRANSMISSION AND RECEPTION:** Introduction to modulation, Amplitude Modulation (AM), Angle Modulation, Radio and Television broadcasting

**MODULE-IV**

**PULSE MODULATION SYSTEMS:** Pulse amplitude modulation, Pulse Time Modulation .  
**PULSE CODE MODULATION:** PCM system, Intersymbol interference, Eye patterns, Equalization, Companding, Time Division Multiplexing of PCM signals, Line codes, Bandwidth of PCM system, Noise in PCM systems, Delta Modulation (DM), Limitations of DM, Adaptive Delta Modulation, Noise in Delta Modulation, Comparison between PCM and DM, Delta or Differential PCM (DPCM), S-Ary System

**Text Book:**

1. John G.Proakis, M. Salehi, COMMUNICATION SYSTEMS ENGINEERING, 2nd ed. New Delhi, India: PHI Learning Private Limited, 2009.; Selected portion from Chapter 1,2 and 3 for module MODULE-I and MODULE-II of the course.
2. R.P Singh and S.D Sapre, COMMUNICATION SYSTEMS Analog & Digital, 2nd ed. New Delhi, India: Tata McGraw Hill Education Private Limited, 2009; Selected portions from Chapter 7 and 8 of the book for MODULE-III.

**Reference Book:**

1. Taub, Schilling, Saha, Taub's Principles of Communication Systems, TMH.
2. Modern Digital and Analog Communication Systems, by B.P. Lathi, Oxford

PEE7J006

ADAPTIVE SIGNAL PROCESSING

3-0-0

**MODULE-I (10 Hours)**

Introduction: Adaptive Systems – Definition and characteristics, General properties, Open and Closed Loop Adaptations, Applications.

The Adaptive Linear Combiner: Performance function, Gradient and Mean Square Error, Examples.

**MODULE – II(14 Hours)**

Theory of Adaptation with Stationary Signals: Properties of the Quadratic Performance Surface, Significance of eigen values, eigen vectors, correlation matrix.

Searching the Performance Surface: A simple gradient search algorithm, Stability and Rate of convergence, the learning curve.

**MODULE-III (16 Hours)**

Gradient Estimation and its effects on Adoption: The performance penalty, Variance of the gradient estimate, Misadjustment.

Adaptive Algorithms and Structures: The LMS Algorithm, Convergence, learning Curve, Performance analysis, Filtered X LMS algorithm,

**MODULE-IV**

Applications: Adaptive Modelling and System Identification using adaptive filter, Inverse Adaptive Modelling, Deconvolution, and equalization using adaptive filter.

**Text Books**

1. Adaptive Signal Processing, Bernard Widrow and Samuel D. Stearns, Pearson Education, 2nd impression, 2009.

**Reference Books**

1. Adaptive Filter Theory, Simon Haykin, Pearson Education, 4th Edn.

PEE7J002

BIOMEDICAL INSTRUMENTATION

3-0-0

University level: 80%

Module I (13 Hours)

Introduction to Bioengineering, Biochemical Engineering, Biomedical Engineering, Sources of Biomedical Signals, Basic medical Instrumentation system, Performance requirements of medical Instrumentation system, use of microprocessors in medical instruments, PC based medical Instruments, general constraints in design of medical Instrumentation system & Regulation of Medical devices.

Bioelectrical Signals & Electrodes: Origin of Bioelectric Signals, Electrocardiogram, Electroencephalogram, Electromyogram, Electrode-Tissue Interface, Polarization, Skin Contact Impedance, Motion Artifacts.

Module -II (14 Hours)

Electrodes for ECG: Limb Electrode, Floating Electrodes, Prejelled disposable Electrodes, Electrodes for EEG, Electrodes for EMG.

Physiological Transducers: Introduction to Transducers, Classification of Transducers, Performance characteristics of Transducers, Displacement, Position and flow and pressure Transducers.

Strain gauge pressure transducers, Thermocouples, Electrical Resistance Thermometer, The mister, Photovoltaic transducers, Photo emissive Cells & Biosensors or Biochemical sensor

Module –III (13 Hours)

Recording Systems: Basic Recording systems, General considerations for Signal conditioners, Preamplifiers, Differential Amplifier, Isolation Amplifier, Electrostatic and Electromagnetic Coupling to AC Signals, Proper Grounding (Common Impedance Coupling) 20% Course (Institute Level)

Transformation techniques in biomedical signals ie. Laplace transform, Z-transform, DFT, DTFT, STFT, Wavelet transform, Effects of noise in biomedical instruments-filtering in biomedical instruments.

Text Books:-

1. Hand Book of Biomedical Instrumentation-2nd Ed by R.S.Khandpur, Tata McGraw Hill, 2003
2. Introduction to Biomedical Engineering by Michael M. Domach, Pearson Education Inc,- 2004

Reference Books:

1. Introduction to Biomedical equipment technology, 4e. By JOSEPH.J.CAAR& JOHN M.BROWN (Pearson education publication)
2. Medical Instrumentation-application & design. 3e – By JOHN.G.WEBSTER John Wiley & sons publications

PCP7H007

IOT

3-0-0

Course description and objectives:

Students will be explored to the interconnection and integration of the physical world and the cyber space. They are also able to design & develop IOT Devices.

Course Outcomes:

- Able to understand the application areas of IOT
- Able to realize the revolution of Internet in Mobile Devices, Cloud & Sensor Networks
- Able to understand building blocks of Internet of Things and characteristics.

Module I

Introduction & Concepts: Introduction to Internet of Things, Physical Design of IOT, Logical Design of IOT, IOT Enabling Technologies, IOT Levels.

Domain Specific IOTs: Home Automation, Cities, Environment, Energy, Retail, Logistics, Agriculture, Industry, Health & Life Style.

Module II

M2M & System Management with NETCONF-YANG: M2M, Difference between IOT and M2M, SDN and NFV for IOT, Software defined Networking, Network Function Virtualization, Need for IOT Systems Management, Simple Network Management Protocol, Limitations of SNMP, Network Operator Requirements, NETCONF, YANG, IOT Systems management with NETCONF-YANG.

Module III

Developing Internet of Things & Logical Design using Python: Introduction, IOT Design Methodology, Installing Python, Python Data Types & Data Structures, Control Flow, Functions, Modules, Packages, File Handling, Date/ Time Operations, Classes, Python Packages

Module IV

IOT Physical Devices & Endpoints: What is an IOT Device, Exemplary Device, Board, Linux on Raspberry Pi, Interfaces, and Programming & IOT Devices.

TEXT BOOKS:

1. VijayMadiseti, ArshdeepBahga, "Internet of Things A Hands-On-Approach", 2014, ISBN:978 0996025515

REFERENCE BOOKS:

1. AdrianMcEwen, "Designing the Internet of Things", Wiley Publishers, 2013, ISBN:978-1-118-43062-0
2. Daniel Kellmerit, "The Silent Intelligence: The Internet of Things". 2013, ISBN:0989973700

PCP7H008

Nano Science & Biotechnology

3-0-0

Module -1(6 Hours)

Fundamental and process of fabrication

The world of small dimensions, Nanoscale Properties (Electrical, Optical, Chemical, Mechanical), Nanoscale visualization techniques , Electron microscopy (TEM, SEM, Cryo-SEM), Scanning probe microscopy (AFM, STM), Diffraction techniques (XRD,synchrotron),Top-down and Bottom-Up approach , nanoparticles (synthesis,properties and applications).

Module-2 (12 Hours)

Nano-Device and Components:

Structure of carbon nanotube, Classification and physical properties of CNT, Graphene: structure, synthesis and properties, Nanophotonics (Photonic crystal in one, two and three dimensions), Quantum dot, quantum wire, Nanofluidics: nanopores and Nano capillaries, Debye length, Nanomechanics (elastic, thermal and kinetic material properties).

Module-3 (10 Hours)

Quantum Electronics:

Coulomb blockade in nano capacitors and quantum dot circuits. Single Electron Transistor (SET), Quantum information and computing, Spintronics devices and its classifications, Structural and optical properties of nanomaterials, Molecular Electronics, NEMS, Optical and Magnetic computer.

Module -4 (10 Hours)

Bio-Device and application

Bio-nanostructures (nanofibers, nanotubes, nanocellulose), Biological nanomachines Ribosomes, Photosynthesis systems,Near-field Bioimaging, Nanoparticles for optical diagnosticsand Targeted Therapy,Protein nanotechnology, DNA nanotechnology, Nano robot and its application, Nanocapsule, Nanosomes, Medibots, Artificial pancreas, Artificial Muscle,Nanoclinic for Gene delivery and photodynamic therapy Nanoparticle in cancer, Bionanomotors.

ADDITIONAL MODULE (Terminal Examination-Internal) (05 hr)

Nanotechnology safety and the environment,Impact of nanotechnology on society and industry, Biosensors (fabrication, functionalization, applications), Current research on nanotechnology.

Books:

1. Rishal Singh, S.M. Gupta,Introduction to nanotechnologyOxford university press,(2016).
2. Paras N. Prasad, Nanophotonics, John Wiley & Sons, (2016).
3. C. M. Niemeyer, C. A. Mirkin, —Nanobiotechnology: Concepts, Applications and Perspectives, Wiley – VCH, (2004).
2. 4 T. Pradeep, —Nano: The Essentials, McGraw – Hill education, (2007).
4. Challa, S.S.R. Kumar, Josef Hormes, CarolaLeuschaer, Nanofabrication Towards Biomedical Applications, Techniques, Tools, Applications and Impact,

**B.Tech(ElectricalEngineering)SyllabusforAdmissionBatch2017-18 7<sup>th</sup> /8<sup>th</sup> Semester**

Wiley – VCH, (2005).

5. Nicholas A. Kotov, —Nanoparticle Assemblies and Superstructures, CRC, (2006).
6. David S Goodsell, “Bionanotechnology, John Wiley & Sons, (2004).

PCP7H009

IPR

3-0-0

Module I:

Introduction to Intellectual property: Introduction, types of intellectual property, international organizations, agencies and treaties, importance of intellectual property rights.

Trade Marks: Purpose and function of trade marks, acquisition of trade mark rights, protectable matter, selecting and evaluating trade mark, trade mark registration processes.

Module II:

Law of copy rights: Fundamental of copy right law, originality of material, rights of reproduction, rights to perform the work publicly, copy right ownership issues, copy right registration, notice of copy right, international copy right law.

Law of patents: Foundation of patent law, patent searching process, ownership rights and transfer

Module III:

Trade Secrets: Trade secrete law, determination of trade secrete status, liability for misappropriations of trade secrets, protection for submission, trade secrete litigation.

Unfair competition: Misappropriation right of publicity, False advertising.

Module IV:

New development of intellectual property: new developments in trade mark law; copy right law, patent law, intellectual property audits.

International overview on intellectual property, international - trade mark law, copy right law, international patent law, international development in trade secrets law.

TEXT BOOKS & REFERENCES:

1. Intellectual property right, Deborah, E. Bouchoux, cengage learning.
2. Intellectual property right - Unleashing the knowledge economy, prabuddhaganguli, Tata Mc Graw Hill Publishing Company Ltd.

PCP7H010

SOFT COMPUTING

3-0-0

MODULE – I (8 hours)

Basic tools of soft Computing: Fuzzy logic, Neural Networks and Evolutionary Computing, Approximations of Multivariate functions, Non – linear Error surface and optimization.

MODULE – II (8 hours)

Fuzzy Logic Systems: Basics of fuzzy logic theory, Crisp and fuzzy sets; Basic set operations; Fuzzy relations, Composition of Fuzzy relations, Fuzzy inference, Zadeh's compositional rule of inference; Defuzzification ; Fuzzy logic control; Mamdani and Takagi and Sugeno architectures. Applications to pattern recognition.

MODULE—III (16 hrs)

Neural networks: Single layer networks, Perceptron; Activation functions; Adalinc- its training and capabilities, weights learning, Multilayer perceptrons; error back propagation, generalized delta rule; Radial basis function networks and least square training algorithm, Kohonen self – organizing map and learning vector quantization networks; Recurrent neural networks, Simulated annealing neural networks; Adaptive neuro-fuzzy information; systems (ANFIS),

MODULE—IV (08 hrs)

Evolutionary Computing: Genetic algorithms: Basic concepts, encoding, fitness function, reproduction. Differences of GA and traditional optimization methods. Basic genetic, basic evolutionary programming concepts Applications, hybrid evolutionary algorithms.

Text Books

- 1) F. O. Karry and C. de Silva, "Soft Computing and Intelligent Systems Design – Theory, Tools and Applications". Pearson Education. (Printed in India).

Reference Books

- 1) J. S. R. Jang. C. T. SUN and E. Mizutani, "Neuro-fuzzy and soft-computing". PHI Pvt. Ltd., New Delhi.
- 2) Fredric M. Ham and Ivica Kostanic, "Principle of Neuro Computing for Science and Engineering", Tata McGraw Hill.
- 3) S. Haykins, "Neural networks: a comprehensive foundation". Pearson Education, India.
- 4) V. Keeman, "Learning and Soft computing", Pearson Education, India.
- 5) R. C. Eberhart and Y. Shi, "Computational Intelligence Concepts to Implementation". Morgan Kaufmann Publishers (Indian Reprint).

**PCP7H011 INTRODUCTION TO MANAGEMENT AND FUNCTION 3-0-0**

**Module – I: Introduction**

Introduction to Management: Concept, Definition, Functions; Levels of Management, Skills and Roles of a Manager; Management Process, School of Management thoughts: Pre-Scientific, Classical, Behavioral and Modern; Types of business organizations, merits and demerits, Public Organizations.

**Module – II:Planning**

Nature & Elements of Planning, Planning Types, Steps, MBO, MBE, Planning Premises. Decision making process, Decision Making under Risk and Uncertainty, Participation in Decision making, Creativity in decision making

**Module – III:Organizing and Staffing**

Formal and Informal, Line and Staff Relationship, Centralization Vs. Decentralization, Basic issues in Organizing, Work Specialization, Chain of Command, Delegation, Span of Management, Principles of organizing; Organization Structure for Departmentalization.

**Module – IV: Directing and Controlling: Process, Standards and Bench Marking; Control techniques, Factors influencing control effectiveness, Co-ordination-Principles of Co-ordination; Inter-Dependence.**

**Reference Books**

1. Management Theory & Practice; SubbaRao P &HimaBindu, HPH
2. Principles and Practices of Management – Kaul, Vikas
3. Management, Robbins, Coulter &Vohra, Pearson.
4. Management: Text and Cases-VSP Rao, Excel Books

PCP7H012

MARKETING MANAGEMENT

3-0-0

Objective of the Course: The course aims at introducing the basic concepts of marketing to the undergraduate students in engineering. The learning shall help the students in better designing, manufacturing and selling product/ service packages keeping competitive market, customers and cost in view.

Module – I (10 hours)

Marketing Management: Concept, Process, Functions and relevance in the current context. Marketing Environment: Elements of micro and macro environment Competition Analysis: Factors contributing to competition, porter's five forces model, Identifying and analyzing competitors. Marketing Planning : Exploring Opportunity, Product –market selection, Marketing Planning Process. Market Research and Information Systems: Research Process, The Internet and World Wide Web based Information collection and processing, Database, Data Warehouses and Data Mining, Global Market Research. Consumer Behavior: Factors influencing consumer behavior, consumer decision process. Organizational buying behavior.

Module II (10 hours)

Market Segmentation, Targeting and Positioning: Definition, Bases of segmenting consumer and Industrial markets. Target Market strategies: Market Positioning. Market Demand Forecasting: Key Terms, Forecasting Tools: Short term tools: Moving average and Exponential smoothing methods, Long-term forecasting Tools: Time series analysis, Econometrics methods, Qualitative tools : Buying Intention Survey, Sales Force Opinion and Delphi Techniques. Product Planning : Product Life Cycle, New Product Development Process, Branding Strategy, Positioning a Brand, Brand Equity, Packaging and Labeling, Product-mix and Product Line, Planned Obsolescence.

Module – III (10 hours)

Pricing Decision: Objectives and Factors influencing pricing, Pricing method and strategies. Integrated Marketing Communication(IMC)- Concept of IMC, the marketing communication process, Promotion Mix, elements of promotion mix, Direct marketing. Channels of Distributions: Types of intermediaries, functions of distribution channels, channel levels, Designing Distribution Channels, Physical Distribution, Supply Chain Management (Basic only). Trends in Marketing: Green Marketing, Customer Relationship Management, Emarketing, Rural Marketing and Service Marketing (concepts only)

Text Book:

1. Etzel , Walker ,Stanton and Pandit, Marketing, 14/e, Tata McGraw Hill.
2. Saxena, "Marketing Management" Tata McGraw Hill, 4/e.

Reference

1. Grewal, Levy, 'Marketing' Tata McGraw Hill, special Indian edition.
2. Karunakaran "Marketing Management", Himalaya Publishing House, 2010/e.

**B.Tech(ElectricalEngineering)SyllabusforAdmissionBatch2017-18 7<sup>th</sup> /8<sup>th</sup> semester**

3. Kotler, Keller, Koshy and Jha, "Marketing Management", 13/e, Pearson Education.

**PCP7H013 ENTREPRENEURSHIP DEVELOPMENT**

**Module-I**

Entrepreneurship: Concept of entrepreneurship and intrapreneurship, Types of Entrepreneur, Nature and Importance, Entrepreneurial Traits and Skills, Entrepreneurial Motivation and Achievement, Entrepreneurial Personality

**Module II**

Entrepreneurial Environment, Identification of Opportunities, Converting Business Opportunities into reality. Start-ups and business incubation, Setting up a Small Enterprise. Issues relating to location, Environmental Problems and Environmental pollution Act, Industrial Policies and Regulations,

**Module III**

Need to know about Accounting, Working capital Management, Marketing Management, Human Resources Management, and Labour Laws. Organizational support services - Central and State Government, Incentives and Subsidies.

**Module IV**

Sickness of Small-Scale Industries, Causes and symptoms of sickness, cures of sickness, Role of Banks and Governments in reviving industries.

**Reference Book:**

1. Entrepreneurship Development and Management, Vasant Desai, HPH
2. Entrepreneurship Management, Bholanath Dutta, Excel Books
- 3 Entrepreneurial Development, Sangeeta Sharma, PHI
4. Entrepreneurship, Rajeev Roy, Oxford University Press

PCP7H014 E-Commerce & ERP

Module I

Overview of Electronic Commerce, Driving the Electronic Commerce Revolution, The Internet, Portals. Open Systems Inter Connection (OSI) Model, XML, Data Warehousing, Building ownWebsite,InternetSecurity

Module II

E-Commerce and Internet, Electronic Market, Business to Business E-Commerce, Four C`s (Convergence, Collaborative Computing, Content Management and Call Center) , Wireless Application Protocol (WAP), Intranet and Extranets. Data Interchange (EDI), Electronic PaymentSystems,E-Security

Module-III

Overview of enterprise systems – Evolution - Risks and benefits - Fundamental technology - Issues to consider in planning designing and implementation of cross functional integrated ERP systems. Small, medium and large enterprise vendor solutions, BPR, and best business practices

- Business process Management, Functional modules.

Module IV

ERP IMPLEMENTATION: Planning Evaluation and selection of ERP systems, Implementation life cycle - ERP implementation, Methodology, Data Migration, Success and Failure factors of ERP Implementation. Extended ERP systems and ERP add-ons -CRM, SCM, Manufacturing prospective, Business analytics .

**Reference Book:**

1. E- Commerce and Enterprise Resource Planning ; CSV Murthy, HPH
2. Enterprise Resource Planning- Concepts and Practices ; V K Garg and N K Venkatkrishna, PHI
3. Enterprise Resource Planning; AlexixLeon ; TMH

PCP7H015 Business Regulatory Framework

Module – I

Overview of legal world, Law of Contract: Contract Act: Indian Contract Act, 1872, Agreement, Contract, Essentials of Contract (Offer & Acceptance, Consideration, Capacity of Parties, Free Consent, and Legality of Object), Performance and Discharge of Contract, Remedies for breach of contract, Quasi-Contract and Contingent Contract.

Module – II

Special Contracts: Contract of Agency: Mode of creating & revocation of Agency, Rights and Duties of Agents and Principals. Contract of Bailment (Rights and duties of Bailer and Bailee). Sales of Goods Act: Sale and agreement to sell, Condition and Warranty, Transfer of properties, Finder of Goods, Performance of Contract of sale, Unpaid seller and his rights.

Module- III

Consumer Protection Law: Consumers, Rights of Consumers, Redressal Machinery under the Act, Procedure of Complaint, Relief available to the consumers, Procedure of filing appeal, Powers of Redressal agencies, Unfair Trade Practices. Overview of Competition Act,

Module – IV

Company Law: Indian Companies Act 2013, Salient features and Classes of Company. Lifting of corporate veil, Procedure of Incorporation and Certificate of commencement of business, Memorandum and Articles of Association, Doctrine of ultra vires and Indoor Management, Management of Company: Qualification, Appointment of Directors, Company Meetings, Resolutions, Winding-up of Companies and their modes.

Reference:

1. Business Regulatory Framework–Mohapatra and Patra,HPH
2. Business Law – N D Kapoor, SChand
3. Business Law – Pathak, Tata Mc GrawHill
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