E.G.S. PILLAY ENGINEERING COLLEGE

(Autonomous)

Approved by AICTE, New Delhi | Affiliated to Anna University, Chennai

Accredited by NAAC with 'A' Grade | Accredited by NBA (CSE, EEE, MECH)

NAGAPATTINAM – 611 002

B.Tech. Information Technology

Full Time Curriculum and Syllabus

Second Year – Fourth Semester

Course Code	Course Name	L	T	P	C	Maximum Marks		
						CA	ES	Total
Theory Course								
1701MA401	Probability and Queuing Theory	3	2	0	4	40	60	100
1702IT401	Software Engineering and Project Management	3	0	0	3	40	60	100
1702IT402	Java Programming	2	0	4	4	50	50	100
1702IT403	Internet of Things	2	4	0	4	40	60	100
1702IT404	Operating Systems	3	0	2	4	50	50	100
1702IT405	Computer Networks	3	0	0	3	40	60	100
Laboratory Course								
1702IT451	Networks Lab	0	0	2	1	50	50	100
1704GE451	Life Skills: Verbal Ability	0	0	2	0	100	-	100

L – Lecture | T – Tutorial | P – Practical | CA – Continuous Assessment | ES – End Semester

1701MA401	PROBABILITY AND QUEUEING THEORY	L	T	P	C
	(Common to B.E / B.Tech – CSE, IT)	3	2	0	4

PREREQUISITE:

Engineering Mathematics I
Engineering Mathematics II
Engineering Mathematics III

COURSE OBJECTIVES:

1. To establish the necessary background in basic probability tools and concepts.
2. To provide students with the ability to understand and conduct computer systems modeling and performance analysis.
3. To emphasis on more advance topics that are particularly useful in modeling, such as Markov models and queuing theory.

UNIT I PROBABILITY AND RANDOM VARIABLES 12 Hours

Probability- Conditional probability-Baye's theorem-Discrete and continuous random variables –Expectation-Variance- Moments – Moment generating functions –Real Time Problems

UNIT II THEORETICAL DISTRIBUTIONS 12 Hours

Discrete Distributions: Binomial, Poisson, Geometric - Continuous Distributions: Uniform, Exponential, Normal, Gamma distributions - Application of Distribution in Engineering Problems

Unit III TWO - DIMENSIONAL RANDOM VARIABLES 12 Hours

Joint distributions – Marginal and conditional distributions – Covariance – Correlation and Linear regression

UNIT IV RANDOM PROCESSES 12 Hours

Classification – Stationary process – Markov process - Poisson process – Discrete parameter - Markov chain – Chapman Kolmogorov equations – Limiting distributions.

UNIT V QUEUEING MODELS 12 Hours

Birth and Death processes – Single and multiple server queueing models – Little's formula - Queues with finite waiting rooms- Computer Science Applications - Finite source models - M/G/1 queue – Pollaczek-Khinchine formula - M/D/1 and M/EK/1 as special case

TOTAL: 60 HOURS

FURTHER READING / CONTENT BEYOND SYLLABUS / SEMINAR :

1.Transformation of random variables.
2.Series queues, Jackson networks.

COURSE OUTCOMES:

After completion of the course, Students will be able to

CO1: Determine the parameters of unpredictable experiments using probability concepts.
CO2: Construct probabilistic models for observed phenomena through discrete and continuous distributions.
CO3: Associate the random variables, by designing joint distribution and correlate the random variables.
CO4: Make use of discrete time Markov chains in probabilistic manner, to model computer systems.
CO5: Solve the queuing approaches problems using basic characteristics of queuing theory.
CO6: Utilize the queuing models to minimize the time of service in a queuing system.

REFERENCES:

1. Ibe.O.C., "Fundamental of Applied Probability and random Processes", Elsevier, Ist Indian Reprint, 2007
2. Gross.D and Harris C.M, "Fundamentals of Queuing Theory", Wiley Student Edition, 2004.
3. Robertazzi, "Computer Networks and Systems: Queuing Theory and performance Evaluation", Springer, 3rd Edition, 2006
4. TahaH.A."Operations Research", Pearson education, Asia, 8th Edition, 2007
5. Trivedhi K.S, "Probability and statistics with Reliability, queuing and Computer Science Applications", John Wiley and Sons, 2nd Edition, 2002
6. nptel.ac.in/courses/111105035, www.nptelvideos.in/2012/11/Mathematics.html
7. www.learnerstv.com/Free-maths-video lectures - ltv348-page1.html

1702IT401	SOFTWARE ENGINEERING AND PROJECT MANAGEMENT	L	T	P	C
		3	0	0	3

PREREQUISITE :

1. Programming in C++.
2. Java Programming.
3. Database Management Systems.

COURSE OBJECTIVES:

1. Understand the phases in a software project.
2. Understand fundamental concepts of requirements engineering and Analysis Modeling.
3. Learn various testing and maintenance measures.
4. To learn Aspect Oriented Programming Concepts.
5. To outline the need for Software Project Management and to highlight different techniques for software cost estimation and change management.

UNIT I SOFTWARE PROCESS AND SPECIFICATIONS 9 Hours

Introduction to Software Engineering, Software Process, Perspective and Specialized Process Models, Software Requirements: Functional and Non-Functional, User requirements, System requirements, Software Requirements Document – Requirement Engineering Process: Feasibility Studies, Requirements elicitation and analysis, requirements validation, requirements management.

UNIT II SOFTWARE DESIGN 9 Hours

Overview of System Design -System Design Concepts – System Design Activities – Addressing Design Goals – Managing System Design-Architectural Design -User Interface Design-Component level .

UNIT III SOFTWARE IMPLEMENTATION AND TESTING 9 Hours

Software Implementation Techniques: Coding practices-Refactoring- Software testing fundamentals & Techniques: White box testing- Black box testing-Case study- Levels of testing: Unit Testing, Integration Testing – System Testing and Debugging-Regression Testing- Acceptance testing-reverse engineering and re-engineering.

UNIT IV ASPECT ORIENTED SOFTWARE DEVELOPMENT 9 Hours

AO Design Principles -Separations of Concerns, Subject Oriented Decomposition, Traits, Aspect Oriented Decomposition, Theme Approach, Designing Base and Crosscutting Themes, Aspect-Oriented Programming using Aspect-J.

UNIT V SOFTWARE PROJECT MANAGEMENT AND CONTROL 9 Hours

Estimation – FP Based, LOC Based, Make/Buy Decision, COCOMO Models - Project Plan, Planning Process, RFP Risk Management – Identification, Projection, RMMM - Scheduling and Tracking –Process and Project Metrics- Document Preparation and Production- Cost monitoring – Earned Value Analysis – Change control-Software Configuration Management – Managing contracts – Contract Management-Managing people.

TOTAL: 45 HOURS

FURTHER READING / CONTENT BEYOND SYLLABUS / SEMINAR :

Software Development - Software Testing - Software Quality Assurance - Software Configuration Management.

COURSE OUTCOMES:

After completion of the course, Student will be able to

CO1: Compare different Process models.
CO2: Understand different types of requirements and requirement Engineering process.
CO3: Understand the systematic procedure for software design and deployment.
CO4: Compare and contrast the various testing and maintenance.
CO5: Understand the concept of change management during development.
CO6: Explain the basic concepts of AOP.

REFERENCES:

1. Roger S. Pressman, "Software Engineering – A Practitioner's Approach", Seventh Edition, Mc Graw-Hill International Edition, 2017.
2. Bernd Bruegge, Alan H Dutoit, Object-Oriented Software Engineering, 2nd ed, Pearson Education, 2014
3. Craig Larman, Applying UML and Patterns, 3rd ed, Pearson Education, 2015.
4. Stephen Schach, Software Engineering 7th ed, McGraw-Hill, 2015.
5. AspectJ in Action, Ramnivas Laddad, Manning Publications, 2013
6. Aspect-Oriented Software Development, Robert E. Filman, TzillaElrad, Siobhan Clarke, and Mehmet Aksit, October 2014.
7. http://nptel.ac.in/

1702IT402	JAVA PROGRAMMING	L	T	P	C
		2	0	4	4

PREREQUISITE:

1. Programming in C & C++.
2. Database Management Systems.

COURSE OBJECTIVES:

1. Enable learners to write Java programming using Object Oriented Programming Concepts
2. Develop Java programming using Event Driven and Strings.
3. Familiar with Swings concepts using Java.
4. Learn to think Java program using real time concepts and paradigms.

UNIT I CLASSES AND OBJECTS **8 Hours**

Object oriented Programming – Objects - Classes – Encapsulation – Methods – Constructor – Java Documents

UNIT II ARRAYS, STRINGS, INHERITANCE **8 Hours**

I/O operations - Arrays – Strings – Inheritance – Interface- Polymorphism

UNIT III EVENT DRIVEN PROGRAMMING **8 Hours**

Packages - Events Handlers - Applets – Swings – Exception

UNIT IV CONNECTIVITY **8 Hours**

ODBD-JDBC – Servlet – JSP – Scripting – Threading

LIST OF EXPERIMENTS:

MODULE – 1 **12 Hours**

1. Study of key features of the Java language, intro to the Java Development Kit (JDK) and Java Virtual Machine.
2. Play with Data types, keywords, encapsulation, conditional and control statements, looping, branching.
3. Implement Java programming concepts using Classes and Objects.
4. Implement Java programming concepts using Arrays, Inheritance and Interfaces.
5. Perform event handlers program using Java.

MODULE – 2 **16 Hours**

1. Design a class for Complex numbers in Java. In addition to methods for basic operations on complex numbers, provide a method to return the number of active objects created.
2. Develop a simple paint-like program that can draw basic graphical primitives in different dimensions and colors. Use appropriate menu and buttons.
3. Develop a scientific calculator using even-driven programming paradigm of Java.
4. Write a multi-threaded Java program to print all numbers below 100,000 that are both prime and Fibonacci number.
5. Develop Mini-Project for Library Automation System using Events, JDBC and Exception Handling.

Requirement for a batch of 30 students

Software:

Operating System: Windows /Linux operating system

Tool: JDK 1.6 (or above)

IDE: Net beans or Eclipse

TOTAL: 60 HOURS

FURTHER READING / CONTENT BEYOND SYLLABUS / SEMINAR :

J2EE, J2ME, Mobile Application Development, Software Development.

COURSE OUTCOMES:

After completion of the course, Student will be able to

CO1: Understand the basic concepts of Java Programming.

CO2: Develop Java program using classes, objects, and encapsulation.

CO3: Design Inheritance and Interface using Java.

CO4: Implement Event Handler, JDBC and Exception Handling concepts using Java.

CO5: Create real time application using Java.

REFERENCES:

1. Herbert Schidt, "The Complete Reference of Java", Ninth Edition, Oracle Press, 2017.
2. Cay S. Horstmann and Gary Cornell, "Core Java: Volume I – Fundamentals", Eighth Edition, Sun Microsystems Press, 2012.
3. K. Arnold and J. Gosling, "The JAVA programming language", Pearson Education, 2016.
4. Timothy Budd, "Understanding Object-oriented programming with Java", Updated Edition, Pearson Education, 2012.
5. C. Thomas Wu, "An introduction to Object-oriented programming with Java", Fourth Edition, Tata McGraw-Hill Publishing company Ltd., 2015.
6. https://ilearning.oracle.com/
7. http://nptel.ac.in/

1702IT403	INTERNET OF THINGS	L	T	P	C
		2	4	0	4

PREREQUISITE :

1. Basic Programming Knowledge.
2. Computer Architecture.

COURSE OBJECTIVES:

1. Study the concept of Microprocessor and Microcontrollers.
2. Study what is Internet of Things and learning concepts.
3. Get basic knowledge of RFID technology, sensor technology and satellite technology.
4. Students aware of resource management and security issues in Internet of Things.
5. Study the concept of Internet of Things in the real world scenario.

UNIT I MICROPROCESSOR AND MICROCONTROLLERS 9 Hours

Evolution of Microprocessors – Architecture of Intel 8085 Microprocessor - Addressing modes - Intel 8086 microprocessor – Microprocessor architecture - Architecture of Intel 8051microcontroller

UNIT II EXPERIMENTS USING MICROPROCESSOR AND MICROCONTROLLERS 9 Hours

8085 programs - Arithmetic and Logical operations, Code conversion, Traffic light control, Stepper motor control, Key board and Display interface.

8086 programs - Data block without overlap, Floating Point Operations, Password checking, Print RAM size and system date, Printer status, Serial interface and Parallel interface.

8051 programs - Arithmetic and Logical operations, Square and Cube program, Find 2"s complement of a number Unpacked BCD to ASCII.

UNIT III INTRODUCTION TO IOT 9 Hours

What is the Internet of Things: History of IoT, About IoT, Overview and Motivations, Examples of Applications, Internet of Things Definitions and Frameworks: IoT Definitions, IoT Architecture, General Observations, ITU-T Views, Working Definition, IoT Frameworks, Basic Nodal Capabilities.

UNIT IV IOT PROTOCOLS 9 Hours

Sensors - Protocol Standardization for IoT – Efforts – M2M and WSN Protocols – SCADA and RFID Protocols – Issues with IoT Standardization – Unified Data Standards.

UNIT V CASE STUDY 8 Hours

IEEE 802.15.4 – BACNet Protocol– Modbus – KNX – Zigbee Architecture - Software & Management Tools for IoT.

UNIT VI BUILDING IOT WITH RASPBERRY PI AND GALILEO/ARDUINO 8 Hours

Physical device – Raspberry Pi Interfaces – Programming – APIs / Packages – Web services - Intel Galileo Gen2 with Arduino- Interfaces - Arduino IDE – Programming - APIs and Hacks – path planning – obstacle avoidance technique.

UNIT VII EXPERIMENTS USING IOT 8 Hours

Home Automation – Cities – Environment – Energy – Retail – Logistics - Agriculture - Industry - Health and Lifestyle - IoT and M2M.

TOTAL: 60 HOURS

FURTHER READING / CONTENT BEYOND SYLLABUS / SEMINAR :

Raspberry PI and Arduino Tool Kit

COURSE OUTCOMES:

After completion of the course, Student will be able to

CO1: Understand the microprocessor and microcontrollers.
CO2: Apply microprocessor and microcontrollers concepts to solve various problems.
CO3: Explain the concepts of IoT and protocols.
CO4: Illustrate various case studies and protocol architecture.
CO5: Develop a portable IOT using Arduino or equivalent boards and relevant protocols.
CO6: Analyze applications of IOT in real time scenario.

REFERENCES:

1. Romesh Gaonkar , "Microprocessor Architecture, Programming, and Applications with the 8085", Penram International Publishing (India) LTD, 2017.
2. Yu-Cheng Liu, Glenn A.Gibson, "Microcomputer Systems: The 8086 / 8088 Family - Architecture, Programming and Design", Second Edition, Prentice Hall of India, 2014.
3. Mohamed Ali Mazidi, Janice Gillispie Mazidi, Rolin McKinlay, "The 8051 Microcontroller and Embedded Systems: Using Assembly and C", Second Edition, Pearson Education, 2013.
4. Daniel Minoli, "Building the Internet of Things with IPv6 and MIPv6: The Evolving World of M2M Communications", ISBN: 978-1-118-47347-4, Willy Publications. 2017.
5. Bernd Scholz-Reiter, Florian Michahelles, "Architecting the Internet of Things", ISBN 978-3- 642-19156-5 e-ISBN 978-3-642-19157-2, Springer.,2016.
6. Arshdeep Bahga, Vijay Madisetti, "Internet of Things – A hands-on approach", Universities Press, 2015.
7. http://nptel.ac.in
8. http://coursera.org

1702IT404	OPERATING SYSTEMS	L	T	P	C
		3	0	2	4

PREREQUISITE :

1. Programming in C & C++.
2. Database Management Systems
3. Computer Architecture.

COURSE OBJECTIVES:

1. To Study the basic concepts and functions of operating systems.
2. Learn about Processes, Threads and Scheduling algorithms.
3. Understand the principles of concurrency and Deadlocks.
4. Learn various memory management schemes.
5. Learn the basics of Linux system and perform administrative tasks on Linux Servers.

UNIT I INTRODUCTION AND PROCESS MANAGEMENT 9 Hours

Operating system functions and characteristics - historical evolution of operating systems - Different types of Operating Systems - Issues in operating system design. Process abstraction - process address space - process management - system calls, threads - process hierarchy.

UNIT II CPU SCHEDULING AND DEADLOCK 9 Hours

Levels of scheduling, comparative study of scheduling algorithms – Dead Lock: Characterization, Prevention Detection, Avoidance and Recovery.

UNIT III CONCURRENT PROCESSES AND MEMORY MANAGEMENT 9 Hours

Critical section problem: Semaphores, monitors, Inter-process communication, message passing - Storage allocation methods, virtual memory concept, demand paging, page replacement algorithms, segmentation, thrashing.

UNIT IV FILE SYSTEMS AND DEVICE MANAGEMENT 9 Hours

Functions, file access and allocation methods, directory system, file protection mechanisms, implementation issues, file system hierarchy. Hardware organization, device scheduling policies, device drivers.

UNIT V CASE STUDY 9 Hours

Linux System- Basic Concepts; System Administration-Requirements for Linux System Administrator, Setting up a LINUX Multifunction Server, Domain Name System, Setting Up Local Network Services; Virtualization- Basic Concepts, Setting Up Xen, VMware on Linux Host and Adding Guest OS.

LIST OF PROGRAMS 15 Hours

1. Installing of operating system and resource allocation.
2. Shell Programming: Creating a script, making a script executable, shell syntax (variables, conditions, control structures, functions, commands).
3. Simulate the following CPU scheduling algorithms.
4. Simulate Bankers Algorithm for Dead Lock Avoidance.
5. Simulate Bankers Algorithm for Dead Lock Prevention.
6. Simulate all file allocation strategies.
7. Process synchronization using semaphores.
8. Simulate all File Organization Techniques.
9. Simulate all page replacement algorithms.
10. Study of Linux OS, Microsoft, Mobile OS.

TOTAL: 60 HOURS

FURTHER READING / CONTENT BEYOND SYLLABUS / SEMINAR :

Android, iOS

COURSE OUTCOMES:

After completion of the course, Student will be able to

CO1: Experiment with various CPU scheduling algorithms with the understanding of operating system concepts.

CO2: Explain the need for process coordination and memory management scheme.

CO3: Compare and Correlate deadlock detection and prevention techniques.

CO4: Solve process synchronization and file organization problems.

CO5: Illustrate the various file management strategies and apply various page replacement techniques to solve real time concepts.

CO6: Explain various operating system architecture and functions.

REFERENCES:

1. Abraham Silberschatz, Peter Baer Galvin and Greg Gagne, Operating System Concepts‖, John Wiley & Sons (Asia) Pvt. Ltd, Ninth Edition, 2017.
2. Gary Nutt, ―Operating Systems- A Modern Perspective‖, Pearson Education Pvt. Ltd, Second Edition, 2013.
3. Andrew S. Tanenbaum, ―Modern Operating Systems‖, 3rd edition Prentice Hall of India Pvt. Ltd, 2015.
4. Harvey M. Deitel, Operating Systems‖, Pearson Education Pvt. Ltd, Third Edition, 2013.
5. William Stallings, Operating System‖, Pearson Education, Sixth edition, 2015.
6. http://nptel.ac.in

1702IT405	COMPUTER NETWORKS	L	T	P	C
		3	0	0	3

PREREQUISITE :

1. Digital Principals and System Design.
2. Principles of Communication.

COURSE OBJECTIVES:

1. Identify the component required to build different types of networks.
2. To learn about the division of network functionalities into layers.
3. Identify solution for each functionality at each layer.
4. Choose the required functionality at each layer for given application.

UNIT I PHYSICAL AND DATA LINK LAYER 9 Hours

Computer Network – OSI Model – Communication Systems – Protocol and Standards – Wired vs Wireless – Data link layer – Error and Flow Control – Hamming Code – MAC - Case study: CSMA/CD & CA, Token Bus, Token Ring, Hub, Bridges.

UNIT II NETWORK AND TRANSPORT LAYER 9 Hours

Internetworking – Virtual and Datagram - IP Address: IPv4, IPv6 – Routing: Link state, Distance vector – UDP – TCP – Case study: Switch, Router.

UNIT III ROUTING SERVICES 9 Hours

Inter domain Routing – RIP – OSPF – BGP – ICMP – ARP – DHCP – Multicast routing.

UNIT IV APPLICATION LAYER 9 Hours

Link Layer Services – Framing – FTP – Web Services - Email – HTTP – DNS.

UNIT V CASE STUDY 9 Hours

IEEE Standards - Blue tooth – Wi-Fi – Network Management – SNMP – SNA – QoS – Congestion Control – Gateway.

TOTAL: 45 HOURS

FURTHER READING / CONTENT BEYOND SYLLABUS / SEMINAR :

Distributed Computing - Cloud Computing - Network Programming.

COURSE OUTCOMES:

After completion of the course, Student will be able to

CO1: Illustrate the concepts of physical and data link layers
CO2: Explain the operations of network and transport layers
CO3: Understand various routing services
CO4: Design and implement a networking application incorporating the different layering protocols
CO5: Simulate various application layers and real time network manage protocols

REFERENCES:

1. Larry L. Peterson, Bruce S. Davie, Computer Networks: A systems approach‖, Fifth Edition, Morgan Kaufmann Publishers, 2016.
2. Forouzan, Behrouz A., and Firouz Mosharraf. "Computer networks: a top-down approach", McGraw-Hill, Special Indian Edition 2016.
3. James F. Kurose, Keith W. Ross, ―Computer Networking - A Top-Down Approach Featuring the Internet‖, Sixth Edition, Pearson Education, 2013.
4. Ying-Dar Lin, Ren-Hung Hwang, Fred Baker, ―Computer Networks: An Open Source Approach‖, McGraw Hill Publisher, 2012.
5. Nader. F. Mir, ―Computer and Communication Networks‖, Pearson Prentice Hall Publishers, 2015.
6. http://nptel.ac.in.

1702IT451	NETWORKS LAB	L	T	P	C
		0	0	2	1

PREREQUISITE :

Programming Knowledge.

COURSE OBJECTIVES:

The students should be made to learn about the low-level network programming concepts using APIs and Simulation tools.

LIST OF EXPERIMENTS:

1. Write a network application program.
2. Use tools to visualize packet flow
3. Configure Router/Switch to set up network (network administration)
4. Simple Chat Program using TCP Sockets
5. Simulation of HTTP Protocol using TCP Sockets
6. Simulation of Sliding Window Protocol using TCP Sockets
7. Simulation of DNS using UDP Sockets
8. Simulation of Ping using Raw Sockets
9. Learn to use commands like TCP Dump, Netstat, Trace Route
10. Study of TCP/UDP performance using simulation tool
11. Simulate networks using network simulators like NS-2
12. Performance comparison of MAC protocols using simulation tool
13. Performance comparison of Routing protocols using simulation tool

Requirement for a batch of 30 students

JDK1.6 or Equivalent,
Network Simulator - 2

TOTAL: 45 HOURS

ADDITIONAL EXPERIMENTS/ INNOVATIVE EXPERIMENTS:

J2EE, J2ME, Mobile Application Development, Software Development

COURSE OUTCOMES:

After completion of the course, Student will be able to

CO1: Apply and Configure the network using TCP and UDP.
CO2: Simulate various TCP sockets program.
CO3: Simulate various UDP sockets program.
CO4: Compare and Contrast performance of MAC and Routing protocols.

REFERENCES:

1. Larry L. Peterson, Bruce S. Davie, Computer Networks: A systems approach‖, Fifth Edition, Morgan Kaufmann Publishers, 2016
2. Forouzan, Behrouz A., and Firouz Mosharraf. "Computer networks: A top-down approach", McGraw-Hill, Special Indian Edition 2016.
3. James F. Kurose, Keith W. Ross, ―Computer Networking - A Top-Down Approach Featuring the Internet‖, Sixth Edition, Pearson Education, 2013.
4. Ying-Dar Lin, Ren-Hung Hwang, Fred Baker, ―Computer Networks: An Open Source Approach‖, McGraw Hill Publisher, 2012.
5. Nader. F. Mir, ―Computer and Communication Networks‖, Pearson Prentice Hall Publishers, 2015.
6. http://nptel.ac.in.
7. www.vlab.co.in/broad-area-computer-science-and-engineering.

1704GE451	LIFE SKILLS: VERBAL ABILITY	L	T	P	C
		0	0	2	0

PREREQUISITE:

Technical English – I and II

COURSE OBJECTIVES:

1. To help students comprehend and use vocabulary words in their day to day communication.
2. To apply appropriate reading strategies for interpreting technical and non-technical documents used in job-related settings.
3. To ensure students will be able to use targeted grammatical structures meaningfully and appropriately in oral and written production.
4. To enable the students to arrange the sentences in meaningful unit and to determine whether constructions rely on active or passive voice.
5. To apply the principles of effective business writing to hone communication skills.

UNIT I VOCABULARY USAGE **6 Hours**

Introduction - Synonyms and Antonyms based on Technical terms – Single word Substitution – Newspaper, Audio and video listening activity.

UNIT II COMPREHENSION ABILITY **6 Hours**

Skimming and Scanning – Social Science passages – Business and Economics passages – latest political and current event based passages – Theme detection – Deriving conclusion from passages.

UNIT III BASIC GRAMMAR AND ERROR DETECTION **6 Hours**

Parallelism – Redundancy – Ambiguity – Concord - Common Errors – Spotting Errors – Sentence improvement – Error Detection FAQ in Competitive exams.

UNIT IV REARRANGEMENT AND GENERAL USAGE **6 Hours**

Jumble Sentences – Cloze Test - Idioms and Phrases – Active and passive voice – Spelling test.

UNIT V APPLICATION OF VERBAL ABILITY **6 Hours**

Business Writing - Business Vocabulary - Delivering Good / Bad News - Media Communication - Email Etiquette – Report Writing - Proposal writing – Essay writing– Indexing –Market surveying.

Total: 30 Hours

ASSESSMENT PATTERN

1. Two assignments (2 x 25 marks = 50 marks)
2. Pragmatic assessment (50 marks)

COURSE OUTCOMES:

After completion of the course, Student will be able to

CO1: Use new words in their day to day communication.

CO2: Gather information swiftly while reading passages.

CO3: Students are proficient during their oral and written communication.

CO4: Rearrange the sentences and able to identify the voice of the sentence.

CO5: Students use their knowledge of the best practices to craft effective business documents

REFERENCES:

1. Arun Sharma and Meenakshi Upadhyav, How to Prepare for Verbal Ability and Reading Comprehension for CAT, McGrawHill Publication, Seventh Edition 2017.
2. R S Aggarwal and Vikas Aggarwal , Quick Learning Objective General English, S.Chand Publishing House, 2017.
3. Dr.K.Alex , Soft Skills, S.Chand Publishing House, Third Revise Edition, 2014.
4. Raymond Murphy, Essential English Grammar in Use, Cambridge University press, New Delhi, Third Edition, 2007.