

PART A: Introduction			
Program: UG Level .		Class: I Year	Year: Session:
Subject: Foundation Course (English)			
1.	Course Code	UENGLCA101	
2.	Course Title	English Language and Indian Culture	
3.	Course Type (Core Course/Elective/Generic Elective/ Vocational	Foundation Course	
4.	Pre-Requisite (if any)	To study this course, a student should have basic knowledge of English language. This course will be studied by all the students of UG level under the Foundation Course category.	
5.	Course Learning Outcomes (CLO)	Through this course the students will be able to: 1. Prepare for various competitive exams by developing their English language competence. 2. Promote their comprehension skills by being exposed to a variety of texts and their interpretations. 3. Build and enhance their vocabulary. 4. Develop their communication skills by strengthening grammar and usages. 5. Inculcate values which make them aware of national heritage and environmental issues, making them responsible citizens.	
6.	Credit Value	4 Credit	
7.	Total Marks	Max. Marks: 40+60	Min. Pass Marks:16+24
PART 13: Content of the Course			
Total No. of Lectures-Tutorials- Practical (in hours per week): L-T-P			
Total No. of Lectures:			
Unit	Topics		No. of Lectures
I	Reading, Writing and Interpretation Skills: 1. Where The Mind is Without Fear— Rabindranath Tagore [Key Word: Patriotism] 2. National Education — M. K. Gandhi [Key Word: Edification] 3. The Axe- R.K Narayan [Key Word: Environment] 4. The Wonder That Was India- A.L Basham (an excerpt) [Key Word: Indianness] 5. Preface to the Mahabharata C. Rajagopalachari [Key Word: Indian Mythology]		05
II	Comprehension Skill: Unseen Passage followed by Multiple choice questions		05
III	Basic Language Skills 1: Vocabulary Building: Suffix, Prefix, Synonyms, Antonyms, Homophones, Homonyms and One-word substitution. 2: Basic Grammar: Noun, Pronoun, Adjective, Verb, Adverb, Prepositions, Articles, Time and Tense		05

PART C: Learning Resources	
Textbooks, Reference Books, Other Resources	
Suggested Readings Essential English Grammar - Raymond Murphy, Cambridge University Press. • Practical English Grammar Exercises 1- A. J. Thomson & A. V. Martinet, Oxford India. • Practical English Usage - Michael Swan, Oxford • English Grammar in Use - Raymond Murphy, Cambridge University Press.	

PART D: Assessment and Evaluation			
Internal Assessment : Continuous Comprehensive Evaluation (CCE) : 40 Marks Shall be based on allotted assignments and Class Tests. The marks shall be as follows:		External Assessment: University Exam (UE) : 60 Marks Time : 03.00 Hours	
Assessment and presentation of assignment	10 Marks	Section (A) : Five Very Short Questions (50 Words Each) OR MCQ Questions	05 x 02 = 10 Marks OR 10 x 01 = 10 Marks
Class Test I (Objective Questions)	10 Marks		
Class Test II (Descriptive Questions)	10 Marks	Section (B) : Five Short Questions (200 Words Each)	05 x 06 = 30 Marks
Class Test III (Based on OS commands)	10 Marks	Section (C): Two Long Questions (500 Words Each)	02 x 10 = 20 Marks
Total	40 Marks	Total	60 Marks
Any remarks/suggestions:			

Program: Certificate	PART A:. Introduction Class: B.C.A. Year: 1 Year Session:	
1	Course Code	UCOMPCA102
2	Course Title	Computer Fundamentals, Organization and Architecture
3	Course Type (Core Course/Elective/Generic Elective/ Vocational)	Major — Paper I
4	Pre-Requisite (if any)	To study this course, a student must have basic knowledge of Computer
5.	Course Learning Outcomes (CIO)	After the completion of this course, a successful student will be able to : 1. Understand the basic structure, operation and characteristics of digital computer. 2. Design simple combinational digital circuits based on given parameters. 3. Understand the working of arithmetic and logic unit. 4. Know about hierarchical memory system including cache memories and virtual memory, 5. Know the contributions of Indians in the field of computer architecture and related technologies.

Module	Topics	No of Lectures
1	Fundamentals of computers: and limitations. Definition, Characteristics, capabilities Types of Computers: Analog, Digital, Micro, Mini, Mainframe & Super computers. Generations of Computers Computers, Work Station. Server and applications. GIS, GPS, Cloud Computing and various public domains and Smart Systems: definition, characteristics Definition of Embedded system, Uses of computers in e-governance services.	8

II	Block diagram of computer and its functional units. Concept of hardware, software and firmware. Types of software. Input devices - keyboard, scanner, mouse, light pen, bar code reader, OMR, OCR. MICR, track hail, joystick, touch screen camera, ink etc. Output devices: monitors classification of monitors based on technology - CRT flat panel, LCD, LED monitors, speakers, printers — dot matrix printer, ink jet printer, laser printer, 3D Printers, Wi-Fi enabled printers, plotters , LCD/LED	10
III	Computer memory and its types, Storage devices: Magnetic tapes, Floppy Disks, Hard Disks, Compact Disc - CD-ROM, CD-RW, VCD, DVD, DVD-RW, <u>USB</u> drives, Blue Ray Disc, SD/MMC Mernot cards. Fundamentals of Digital Electronics: Data Types, Complements, Fixed-Point Representation, Floating-Point Representation, Binary and other Codes. Error Detection Codes Logic Gates, Boolean_ Algebra, Map Simplification, Combinational Circuits, Sequential Circuits, simple combinational circuit design problems. Combinational Circuits- Adder-Subtractor, Multiplexer, Demultiplexer, Decoders, Encoders	15

IV	Sequential Circuits - Flip Flops, Registers, Counters. IV Basic Computer Organization: Instruction codes, Computer Registers, Computer Instructions, Timing & Control, Instruction Cycles, Memory Reference Instruction, Input - Output & Interrupts Instruction formats, Addressing modes, Instruction codes, Machine language, Assembly language. Register Transfer and Micro operations: Register Transfer Language, Register Transfer, Bus & Memory Transfer, Arithmetic Micro-operations, Processor and Control Unit: Hardwired vs. Micro programmed Control Unit, General Register Organization, Stack Organization, Instruction Format, Data Transfer & Manipulation, Program Control, Introductory concept of RISC, CISC, advantages and disadvantages of both: Pipelining - concept of pipelining, introduction to Pipelined data path and control Data hazards & Control hazards. I/O Systems - Peripheral Devices, I/O Interface, Data Transfer Schemes - Program Control, Interrupt, DMA Transfer. I/O Processor. Memory Hierarchy, Processor vs. Memory Speed, High-Speed Memories, Main memory & its types, Auxiliary memory, Cache Memory, Associative Memory, Interleaving, concept of Virtual Memory, Hardware for Memory Management. Indian contribution to the field - Contributions of reputed scientists of Indian origin - like - Dr. Vinod Dham - Father of Intel Pentium Processor, Dr, Ajay Ghat Co-Inventor of USB Technology, Dr, Vinod Khosla- co-founder of Sun Microsystems, Dr. Vijay P Bhatkar - architect of India's national initiative in supercomputing, and many others. Parallel Computing projects of India PARAM, ANUPAM, FLOSOLVER, CHOPS etc. Other relevant contributors and contributions	30
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PART C
Suggested study material

<https://nptel.ac.in/>

<http://www.mphindigranthacademy.org/>

PART D: Assessment and Evaluation			
Internal Assessment : Continuous Comprehensive Evaluation (CCE) : 40 Marks Shall be based on allotted assignments and Class Tests. The marks shall be as follows:		External Assessment: University Exam (UE) : 60 Marks Time : 03.00 Hours	
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Class Test I (Objective Questions)	10 Marks		10 x 01 = 10 Marks
Class Test II (Descriptive Questions)	10 Marks	Section (B) : Five Short Questions (200 Words Each)	05 x 06 = 30 Marks
Class Test III (Based on OS commands)	10 Marks	Section (C): Two Long Questions (500 Words Each)	02 x 10 = 20 Marks
Total	40 Marks	Total	60 Marks
Any remarks/suggestions:			

PART A: Introduction		
Program: Certificate		Class: B.C.A. Year: I Year Session:
1.	Course Code	UOPERCA103
2.	Course Title	Operating System
3.	Course Type (Core Course/Elective/Generic Elective/ Vocational)	Minor
4.	Pre-Requisite (if any)	Open for all
5.	Course Learning Outcomes (CLO)	• After the completion of this course, a student shall be able to do the following: • Describe the importance of computer system resources and the role of operating system in their management policies and algorithms. • Specify objectives of modern operating systems and describe how operating systems have evolved over time. • Understand various process management concepts and can compare various scheduling techniques, synchronization, and deadlocks. • Describe the concepts of memory management techniques. • Identify the best suited process management technique for any process. • Describe various file operations, file allocation methods and disk space management. • To understand and identify potential threats to operating systems and the security features to guard against them. • Learn to operate the Linux system,
6.	Credit Value	Theory 4 Credits
7.	Total Marks	Max. Marks : 40+60 Min. Passing Marks: 16+24
PART B: Content of the Course		
No. of Lectures (in hours per week): 2 Hours per week		
Total No. of Lectures: 60 Hrs.		
Module	Topics	No. of Lectures
I	Introduction to Operating System: What is Operating System? History and Evolution of OS, Basic OS functions, Resource Abstraction, Types of Operating Systems— Batch Systems, Multiprogramming Systems, Multiprocessing Systems, Time Sharing Systems, Distributed OS, Real time systems. Operating System for Personal Computers, Workstations and Hand-held Devices. Applications of various operating system in real world. Some prevalent operating systems — Windows, UNIX/Linux, Android, MacOS, Blackberry OS, Symbian, Bada etc.	6
II	Process Management: Process Concepts, Process states & Process Control Block. Process Scheduling: Scheduling Criteria, Scheduling Algorithms, 1 (Preemptive & Non- Preemptive) — FCFS, SJF, SRTN, RR, Priority,	14

	Multiple-Processor, Real-Time, Multilevel Queue and Multilevel Feedback Queue Scheduling. Deadlock - Definition, Deadlock Characterization, Necessary and Sufficient Conditions for Deadlock. Deadlock Handling Approaches: Prevention, Avoidance, Detection and Recovery.	
III	Memory Management: Introduction, Address Binding, Logical versus Physical Address Space, Swapping, Contiguous & Non-Contiguous Allocation, Fragmentation (Internal & External), Compaction, Paging, Segmentation, Virtual Memory, Demand Paging, Performance of Demand Paging, Page Replacement Algorithms. File Management: Concept of File System (File Attributes, Operations, Types), Functions of File System, Types of File System, Access Methods (Sequential, Direct & other methods), Directory Structure (Single-Level, Two-Level, Tree-Structured, Acyclic-Graph, General Graph), Allocation Methods (Contiguous, Linked, Indexed)	14
IV	Disk Management: Structure, Disk Scheduling Algorithms (FCFS, SSTF, SCAN, C-SCAN, LOOK), Swap Space Management, Disk Reliability, Recovery. Security: Security Threats, Security policy mechanism, Protection, Trusted Systems, Authentication and Internal Access Authorization, Windows Security.	12
V	LINUX: Introduction, History and features of Linux, advantages, hardware requirements for installation, Linux architecture, file system of Linux - boot block, super block, mode table, data blocks. Linux standard directories, Linux kernel, Partitioning the hard drive for Linux, installing the Linux system, system - startup and shut-down process, init and run levels. Process, Swap, Partition, fdisk, checking disk free spaces. Difference between CLI OS & GUI OS, Windows v/s Linux, Importance of Linux Kernel, Files and Directories. Concept of Open Source Software.	12
VI	Indian contribution to the field — the BOSS operating system, open source softwares, growth of LINUX, Aryabhatt Linux, contributions of innovators — RajenSheth, Sunder Pichai etc.	2

PART C: Learning Resources

Textbooks, Reference Books, Other Resources

Suggested Readings

Textbooks:

- A Silberschatz, P.B. Galvin, G. Gagne, Operating Systems Concepts, 8th Edition, Publications.
- A.S. Tanenbaum, Modern Operating Systems, 3rd Edition, Pearson Education.
- Operating System by Peterson
- Linux by Sumitabha Das

Reference Books:

- G. Nutt, Operating Systems: A Modern Perspective, 2nd Edition Pearson Education.
- W. Stallings, Operating Systems, Internals & Design Principles, 8th Edition, Pearson
- M. Milenkovic, Operating Systems- Concepts and design, Tata McGraw Hill.
- Operating System design and Concepts by Milan Milenkovic.

PART D: Assessment and Evaluation			
Internal Assessment : Continuous Comprehensive Evaluation (CCE) : 40 Marks Shall be based on allotted assignments and Class Tests. The marks shall be as follows:		External Assessment: University Exam (UE) : 60 Marks Time : 03.00 Hours	
Assessment and presentation of assignment	10 Marks	Section (A) : Five Very Short Questions (50 Words Each) OR MCQ Questions	05 x 02 = 10 Marks OR
Class Test I (Objective Questions)	10 Marks		10 x 01 = 10 Marks
Class Test II (Descriptive Questions)	10 Marks	Section (B) : Five Short Questions (200 Words Each)	05 x 06 = 30 Marks
Class Test III (Based on OS commands)	10 Marks	Section (C): Two Long Questions (500 Words Each)	02 x 10 = 20 Marks
Total	40 Marks	Total	60 Marks
Any remarks/suggestions:			

PART A: Introduction		
Program: Certificate		Class: B.C.A.
		Year: I Year
		Session:
Subject: Computer Application		
1.	Course Code	UORGACA104
2.	Course Title	Organization Behaviour
3.	Course Type (Core Course/Elective/Generic Elective/ Vocational)	Generic Elective
4.	Pre-Requisite (if any)	Not required
5.	Course Learning Outcomes (CLO)	After the completion of this course, a student shall be able to do the following: 1. Understand the effect of interpersonal behavior in an organizational work-life 2. Understand perspective in diverse cultural environment. 3. Understand the principles of organizational human behavior with relevance to the Indian business context.
6.	Credit Value	Theory 6 Credits
7.	Total Marks	Max. Marks: 40+60 Min. Passing Marks: 16+24
PART B: Content of the Course		
No. of Lectures (in hours per week): 3 Lectures per week		
Total No. of Lectures: 90 Hrs.		
Module	Topics	No. of Lectures
I	Concept of Organizational Behavior, Evolution of OB, Contributing Disciplines to Organizational Behavior; Framework of OB, Challenges and opportunities in the field of OB.	10
II	Individual Behavior, Personality, Perception, Social Perception and Impression Management, Attitude-characteristics, components, formation and measurement, Values, Learning and Re-enforcement.	15
III	Leadership- Concepts and Theories of Leadership, Qualities of a good Leader. Group Dynamics- group formation, Nature of groups, Types of Group, Group Member Resources, Reasons of joining groups, Functions of group within organization.	20
IV	Stress Management- Meaning, Causes, Effects and coping strategies for stress. Work Stress, Concepts and theories of motivation.	10
V	Organizational change, conflict and peer: Forces of change, planned change, resistance, approaches. Conflict management and negotiation techniques. Organization structure and personnel management.	25
VI	International Dimensions of Organizational Behavior, Equal Employment Opportunities, Organizational Culture, Managing Cultural Diversity, Learning Organization. Case Studies.	10
PART C: Learning Resources		
Textbooks, Reference Books, Other Resources		
Suggested Readings		
Textbooks: • Udai Pareek, Understanding Organization Behaviour, 3rd Ed., Oxford University Press, 2011		

Robbins S. P., Organizational Behaviour, 7th Ed., New Delhi, PHI, 1996

- Huse, F E and Cunnings T G, Organization Development and Change, 3rd ed., New York. West, 1985
- Shekcharam Uma, Organizational Behaviour, Text & cases, New Delhi THM, 1989.
- Singh Dalip, Emotional Intelligence at work, Response Books, Sage Publication, Delhi 2001.
- Book published by M.P. Granth Academy, Bhopal

Reference Books:

- Luthans Fred., "Organizational Behaviour", McGraw Hill.
- Hellriegel, Slocum and Woodman, Organizational Behavior, South-Western, Thomson Learning, 9th edition, 200 I.
- Behavior in Organizations, Jerald Greenberg, 8th ed, Pearson Education.
- Arnold, John, Robertson, Ivan t. and Cooper, Cary, I., "Work psychology: understanding human behavior in the workplace", Macmillan India Ltd., Delhi.
- Dwivedi, R. S., "Human relations and Organizational Behaviour: a global perspective", Macmillan India Ltd., Delhi.

Suggestive digital platform web links

- <https://www.coursera.org/courses?query=economics>
- <https://www.mooc-list.com/tags/economics>
- <https://www.coursera.org/learn>
- <https://ocw.mit.edu/courses>
- https://onlinecourses.nptel.ac.in/noc23_ec06/preview
- <https://archive.nptel.ac.in/courses/110/101/110101149/>
- <http://www.mphindigranthacademy.org/>

PART D: Assessment and Evaluation

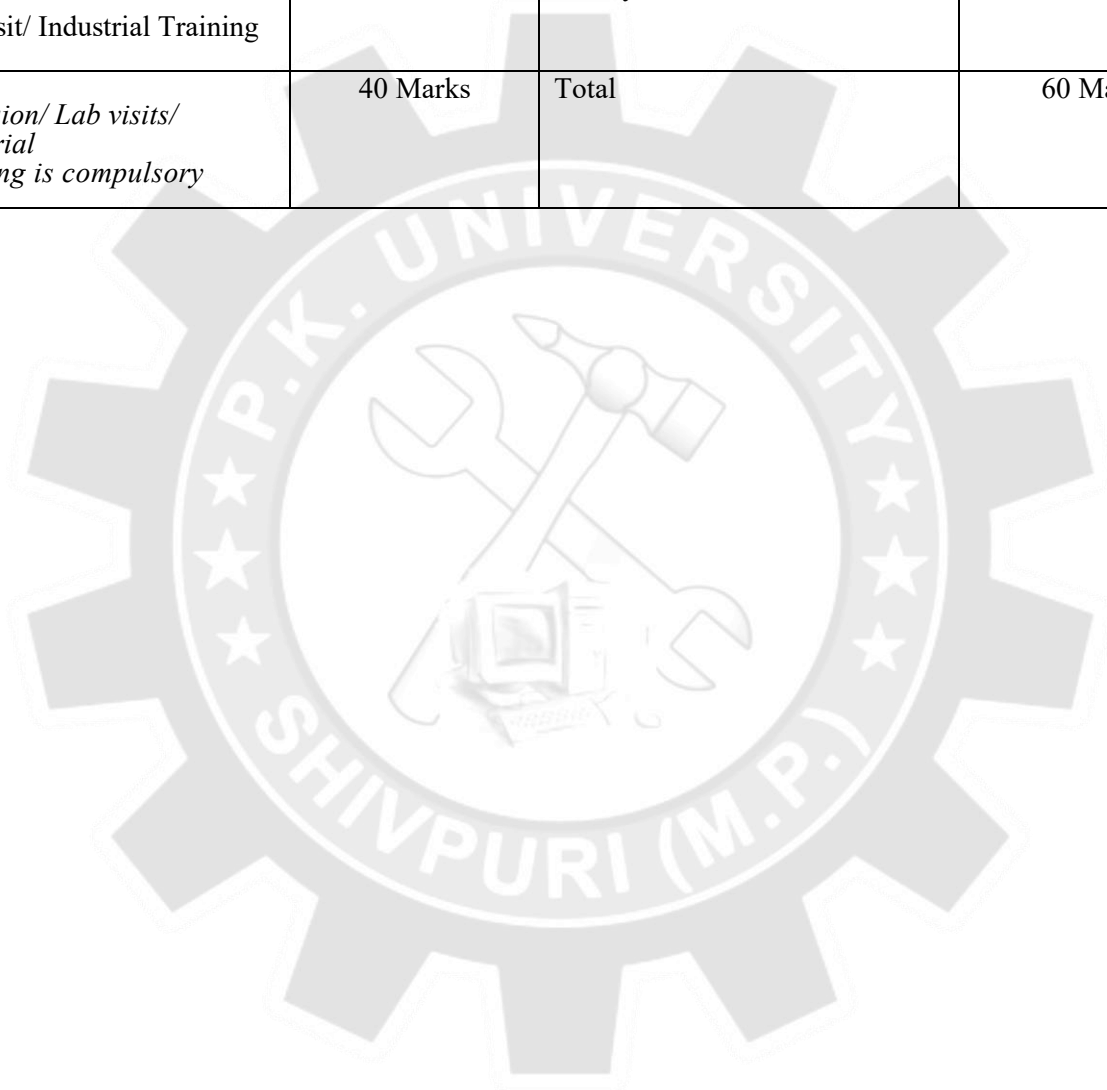
Internal Assessment : Continuous Comprehensive Evaluation (CCE) : 40 Marks Shall be based on allotted assignments and Class Tests. The marks shall be as follows:		External Assessment: University Exam (UE) : 60 Marks Time : 03.00 Hours	
Assessment and presentation of assignment	10 Marks	Section (A) : Five Very Short Questions (50 Words Each) OR MCQ Questions	05 x 02 = 10 Marks OR 10 x 01 = 10 Marks
Class Test I (Objective Questions)	10 Marks		
Class Test II (Descriptive Questions)	10 Marks	Section (B) : Five Short Questions (200 Words Each)	05 x 06 = 30 Marks
Class Test III (Based on OS commands)	10 Marks	Section (C): Two Long Questions (500 Words Each)	02 x 10 = 20 Marks
Total	40 Marks	Total	60 Marks
Any remarks/suggestions:			

PART A: Introduction		
Program: Certificate		Class: B.C.A Year: I Year Session:
1.	Course Code	UCOMPCA105
2.	Course Title	Computer Fundamentals Organization And Architecture Lab
3.	Course Type (Core Course/Elective/Generic Elective/ Vocational)	Major — Paper I
	Pre-Requisite (if any)	Open for All
4.	Course Learning Outcomes(CLO)	After the completion of this course, a successful student will be able to do the following: 1. Familiarity with parts of the computer and peripheral devices used with the computer. 2. Realization of the basic logic and universal gates. 3. Verify the behavior of logic gates using truth tables. 4. Implement Binary-to -Gray, Gray-to -Binary code conversions. 5. Design half and full adder circuit using basic gates. 6. Design and construct flip flops and verify the excitation tables.
	Credit Value	Practical - 2 Credits
	Total Marks	Max.Marks: 40+60 Min. Passing Marks: 16+24
PART B: Content of the Course		
No. of Lab. Practicals (in hours per week): 1 Hrs. per week		
Total No. of Labs: 30 Hrs.		
	Suggestive list of Practicals	No. of Labs.
	I. Computer Fundamentals a) Identify various parts of the computer by physical examination. b) Identify various parts inside the CPU like motherboard, SMPS, ports, buses, IC chips, Processor, HDD, RAM etc. c) Identify various I/O devices available in the lab physically. II. Digital Electronics a) Verification and interpretation of truth table for AND, OR, NOT gates b) Verification and interpretation of truth table for NAND, NOR gates c) Verification and interpretation of truth table for Ex-OR, Ex-NOR gates d) Study of half adder using XOR and NAND gates and verification of its operation e) Study of full adder using XOR and NAND gates and verification of its operation	30 Hrs.

1. M,Morris Mario, "Computer System Architecture", PHI. 2. Hearing Jordan , "Computer System Design & Architecture" (A.W.L.) Reference Hooks: 3. William Stalling, "Computer Organization & Architecture", Pearson Education Asia. 4. V. Carl Hamaeher , "Computer Organization", TMH 5. Tannenbaum, -Structured Computer Organization", PHI. 6. Er. Rajiv Chopra, "Computer Architecture", Revised 3rd Edition, S. Chand & Company Pvt. Ltd		
	f) Study of half subtractor and verification of its operation g) Study of full subtractor and verification of its operation h) Realization of logic functions with the help of NAND -Universal Gates i) Realization of logic functions with the help of NOR -Universal Gates j) Verify the truth table of RS flip-flops using NAND and NOR gates k) Verify the truth table of JKflip-flops using NAND and NOR gates l) Verify the truth table of T and D flip-flops using NAND and NOR gates m) Implementation of 4x1 multiplexer using logic gates n) Implementation of 1x4 demultiplexer using logic gates o) Verify Gray to Binary conversion using NAND gates only p) Verify Gray to Binary conversion using NAND gates only	
PART C: Learning Resources		
Textbooks, Reference Books, Other Resources		
Suggested Readings		
Textbooks: 1.M.Morris Mano, "Computer System Architecture", PHI. 2. Heuring Jordan , "Computer System Design & Architecture" (A.W.L.)		
Reference Books: 3. William Stalling, "Computer Organization & Architecture", Pearson Education Asia. 4. V. Carl Hamacher , "Computer Organization", TMH 5. Tannenbaum, "Structured Computer Organization", PHI,		
Suggestive digital platform web links		
Suggested equivalent online courses		
https://nptel.ac.in		

PART D: Assessment and Evaluation	
Internal Assessment : Continuous Comprehensive Evaluation (CCE) : 40 Marks	External Assessment: University Exam (UE) : 60 Marks Time 03.00 Hours

Internal Assessment	Marks	External Assessment	Marks
Hands-on Lab Practice	10 Marks	Practical record file	10 Marks
Viva	10 Marks	Viva voce practical	10 Marks
Lab Test from practical list	10 Marks	Table works/ Exercise Assigned (02) in practical exam	30 Marks
Assignments (Charts/ Model)/ Technology Dissemination/ Excursion/ Lab visit/ Industrial Training	10 Marks	Reports of excursion/ Lab visits/ Industrial training/ Survey/ Collection/ Models	10 Marks
Total <i>Excursion/ Lab visits/ Industrial Training is compulsory</i>	40 Marks	Total	60 Marks



PART A: Introduction				
Program: Certificate		Class: B.C.A.	Year: 1 Year	Session:
1.	Course Code	UOPERCA106		
2.	Course Title	Operating System Lab		
3.	Course Type (Core Course/Elective/Generic Elective/ Vocational	Minor		
4.	Pre-Requisite (if any)	Open for All		
5.	Course Learning Outcomes (CLO)	After the completion of this course, a student shall be able to: • Operate the Linux system. • Do administration • Use Vi Editor		
6.	Credit Value	Practical 2 Credits		
7.	Total Marks	Max. Marks : 40+60	Min. Passing Marks: 16+24	
PART B: Content of the Course				
No. of Lab. Practicals (in hours per week): 1 Hr. per week				
Total No. of Lab.: 30 Hrs.				
	Suggestive List of Practicals			No. of Labs.
	Linux: a) Linux Directory Commands: pwd, mkdir, rm rf, ls, cd,cd / , cd b) Linux File Commands: touch, cat, cat >, cat >>, rm , cp, mv, rename c) Linux Permission Commands:su, id, useradd, passwd, groupadd, chmod, groupdel, chown, chgrp d) Linux File Content & Filter Commands: head, tail, tac, more, less, grep, cat, cut, grep, comm, sed, tee, tr, uniq, we, od, sort, diff. e) Linux Utility Commands: find, bc, locate, date, cal, sleep, time, df, mount, exit, clear, gzip, gunzip. f) Linux Networking Commands: ip, ssh, mail, ping, host g) Edit Crontab file: to wall message on system on particular time automatically. h) Vi editor: Create file, edit, save and quit. Highlighting the searched term within a file. cut, yank, undo.			30
PART C: Learning Resources				
Textbooks, Reference Books, Other Resources				
Suggested Readings				
Textbooks: • Linux by Sumitabha Das • Linux Bible				

PART D: Assessment and Evaluation			
Internal Assessment : Continuous Comprehensive Evaluation (CCE) : 40 Marks		External Assessment: University Exam (UE) : 60 Marks Time 03.00 Hours	
Internal Assessment	Marks	External Assessment	Marks
Hands-on Lab Practice	10 Marks	Practical record file	10 Marks
Viva	10 Marks	Viva voce practical	10 Marks
Lab Test from practical list	10 Marks	Table works/ Exercise Assigned (02) in practical exam	30 Marks
Assignments (Charts/ Model)/ Technology Dissemination/ Excursion/ Lab visit/ Industrial Training	10 Marks	Reports of excursion/ Lab visits/ Industrial training/ Survey/ Collection/ Models	10 Marks
Total	40 Marks	Total	60 Marks
<i>Excursion/ Lab visits/ Industrial Training is compulsory</i>			