Shri Vaishnav Vidyapeeth Vishwavidyalaya, Indore

Shri Vaishnav Institute of Computer Applications

Name of Program: BCA (Big Data Analytics) in association with IBM

COURSE CODE	CATEGORY	COURSE NAME	L	T	P	CREDITS	THEORY END SEM University Exam	THEORY Two Term Exam	THEORY Teachers Assessment*	PRACTICAL END SEM University Exam	PRACTICAL Teachers Assessment*
BCABDA301	Major	Cloud Computing Concepts	3	0	0	3	60	20	20	0	0

Legends: **L** - Lecture; **T** - Tutorial/Teacher Guided Student Activity; **P** – Practical; **C** - Credit;
*__Teacher Assessment__ shall be based following components: Quiz/Assignment/ Project/Participation in Class, given that no component shall exceed more than 10 marks.

Course Objectives:

The goal of this course is to provide students with an understanding of basic concepts of cloud computing, various features along with cloud management, its applications and cloud security.

Course Outcomes: After course completion Students will be able to understand:

1. Concept of cloud computing with broader perspectives like requirement, advantages, characteristics, Cloud Service Model and Deployment Model,
2. Cloud Management, Interoperability, Standards, Scalability and Cloud Virtualization Technology Management.
3. Cloud Information security requirement, services and challenges.

UNIT- I   8 Hrs

Basics of Cloud Computing: Introduction, Historical development, principles and vision, Cloud services requirements, Types of Clouds, Advantages and disadvantages of cloud computing, Characteristics of Cloud Computing, key elements in adopting cloud.

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							THEORY			PRACTICAL	
BCABDA301	Major	Cloud Computing Concepts	3	0	0	3	60	20	20	0	0

UNIT-II   8 Hrs

Architecture for Cloud Computing: Cloud Computing Environments, Characteristics of cloud computing as per National Institute of Standard and Technology, Deployment Models and Service Models.

UNIT-III   8 Hrs

Cloud Management: Resiliency, Provisioning, Asset management, Concepts of Map reduce.

Virtualization Technology: Introduction, working process of virtualization and benefits of virtualization. Hardware, Virtualization and Software Virtualization.

UNIT-IV   8 Hrs

Types of Virtualizations- Memory Virtualization, Storage Virtualization, Data and Network Virtualization, Desktop and Application virtualization.

Technology used for virtualization, Hypervisor Virtualization Software, concept of Virtual LAN(VLAN) and Virtual SAN(VSAN).

UNIT-V   8 Hrs

Cloud Security: Introduction of cloud Information security services, Design principles, Secure Cloud Software Requirements, Policy Implementation, and Security Challenges.

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BCABDA301	Major	Cloud Computing Concepts	3	0	0	3	60	20	20	0	0

Textbooks:

1. Judith S. Hurwitz, Daniel Kirsch" Cloud Computing For Dummies, 2nd Edition, John Wiley and Sons inc., New Jersey, 2000.
2. Hashmi, Tahir, Landreau, Jean-Francois" Cloud Strategy: A Decision-based Approach to cloud migration" GregorHohpe: An architect Elevator Guide,2019-2020.
3. Kavis, Michael J. "Architecting the Cloud: Design Decisions for Cloud Computing Service Models (SaaS, PaaS, and IaaS) John Wiley and Sons inc., Hoboken, New Jersey, 2000.
4. Mr. Ray J Rafaels "Cloud Computing: From Beginning to End" Second edition, paperback, 2018.

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							THEORY			PRACTICAL	
							END SEM University Exam	Two Term Exam	Teachers Assessment*	END SEM University Exam	Teachers Assessment*
BCABDA302	Major	Python Programming	2	0	2	3	60	20	20	30	20

Legends: L – Lecture; T – Tutorial/Teacher Guided Student Activity; P – Practical; Q/A – Quiz/Assignment/Attendance; MST – Mid Semester Test.
*Teacher Assessment shall be based on following components: Quiz/Assignment/Project/Participation in class activities, given that no component shall exceed more than 10 marks.

Course Education Objectives (CEOs):

The goal of this course is to provide students with an understanding of basic concepts of Python Programming Language along with its features.

Course Outcomes (COs): After completion of this syllabus students will be able to

- Apply basic concepts of python programming.
- Write clear and effective python code based on conditional and iterative statements.
- Will be having an idea about string, list, tuple and functions.
- Create an applications using python programming.

Syllabus

Unit-I

Introduction: Basic Concept of python, its characteristics, Features, Names of popular application in python, various flavours of python, limitations of python, versions of python, Python-2 and Python-3 differences. Identifiers, keywords, datatypes, use of comments in python, variables and constants, various operators used in python.

Unit-II

Input-output and Conditional statements: input and output statements and basic simple programs using it. Decision Making statements: if statement, if-else statement and nested if statement.

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BCABDA302	Major	Python Programming	2	0	2	3	60	20	20	30	20

Iterative and Transfer Statements: Iterative statements: For Loop, While loop, nested loops. Transfer statement: break and continue statement.

Unit-III
Strings Used in Python Programming: Definition, accessingcharacters or values of a String, Updating Strings, String Special Operators, String Formatting Operator.
List, Tuples, Functions, Introductory concept of Python Lists and Python Tuples, list Vs tuples, Basic concept of python functions.

Unit-IV

Python File Handling: concept and types of files used in Python Programming language.

Operations like opening and closing a file with various modes, deleting a file.

Unit-V

Introduction of Python OOPs Concepts: Introduction of Class and Object, creating class and its instance, constructor (Parameterized Constructor and Non-Parameterized Constructor), destructors, polymorphism, inheritance (Multilevel and multiple), definition of data abstraction.

Text Books:

1. PratiyushGuleria," Basics of Python Programming, BPB Publications, March 2020.
2. Jason Cannon" Python programming for beginners, Kindle book, 2020
3. Ryan Turner, "Python Programming: 3 Books in 1: Ultimate Beginner's, Intermediate & Advanced Guide to Learn Python Step-by-Step", Kindle Edition, 2018.
4. Martin Brown, "Python: The Complete Reference", Mc-Graw-Hill, 2018.

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List of Practical:

1. Write python program to print Hello World.

2. Write python program to print your Bio Data.

3. Write a program to perform different Arithmetic Operations on numbers in Python.

4. Write python program to Hello World using string variable.

5. Write python program to show use of break statement.

6. Write python program to show use of continue statement.

7. Write a python program to find largest of three numbers.

8. Write a Python program to convert temperatures to and from Celsius, Fahrenheit.

 [Formula : c = (f-32)/1.8]

9. Write a python program to find Smallest of three numbers

10. Write python program to store data in list and then try to print them.

11. Write a python Program to print first five even numbers.

12. Write a python Program to print first five odd numbers.

13. Write python program to print list of numbers using for loop.

14. Write a python program to find factorial of a number using loop.

15. Write a python program to display Fibonacci series.

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							THEORY			**PRACTICAL**	
BCCA304	Minor	Operating Systems	3	0	0	3	60	20	20	0	0

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*Teacher Assessment shall be based on following components: Quiz/Assignment/Project/Participation in class (Given that no component shall be exceed 10 Marks)

Course Educational Objectives (CEOs): The course is designed to make students:
- Familiar with design of operating systems as resource manager of a computer system
- Aware about the basic concepts of operating system architecture
- Understand about the concepts of processor management and memory management techniques
- Familiar with deadlock handling and inter-process communication
- Understand the device management.

Course Outcomes (Cos):
- The student will be able to understand the internal design of operating system.
- The student will be able to demonstrate operating system structure.
- The student will be able to demonstrate the scheduling and memory management techniques.
- The student will be able to understand the IPC and other techniques.
- The student will be able to understand device management system of computer.

UNIT I
Introduction to Operating System:- Objectives, functions and the services provided by Operating System. Evolution of operating system:-Batch processing, Multiprogramming, Multithreading, Time-sharing systems, Real Time, Distributed systems. Operating system structure:-System calls and system programs.

UNIT II
Process Management: -Process concept, Process Control Block, Process states, Process scheduling, CPU scheduling: - Basic concept and scheduling criteria, Long term, medium term , short term schedulers, various Scheduling algorithms, Measurement of performance of processor.

UNIT III
Memory management:-Logical and physical address spaces, Memory management without Swapping or Paging, Swapping and paging, Contiguous, allocation and its drawbacks, Non-contiguous allocation.

COURSE CODE	CATEGORY	COURSE NAME	L	T	P	CREDITS	TEACHING & EVALUATION SCHEME				
							THEORY			PRACTICAL		
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BCCA304	Minor	Operating Systems	3	0	0	3	60	20	20	0	0

Virtual memory: - Demand paging and its need, Performance of demand paging, Page replacement and its need, Thrashing and allocation of frames.

UNIT IV
Deadlocks: - Characterization of deadlock, Methods of handling prevention, detection and avoidance, Recovery from deadlock.

Case Study of Linux: History, Features, Architecture of Unix and Linux, Linux Shell and kernel, Linux file system, simple shell commands, Editors, using Vi editors, working with files, absolute and relative paths.

UNIT V
I/O system: - Various I/O devices, Device drivers, structure of I/O software, TransformingI/O request of h/w operation. Secondary storage structure:- Disk structure, Disk Scheduling algorithms (First come first serve, shortest seek time first, SCAN, C-SCAN, LOOK and C-LOOK algorithms), Disk management, Swap space management and Disk reliability.

Text Books:
1. Silberschatz Galvin, Operating System concept, 5th edition.
2. D. M. Dhamdhare, System Programming and operating system, Tata McGraw Hill,2nd edition.
3. Milan Milenkovi'c, Operating System concept and design, Tata McGraw Hill.
4. Tanenbaum, A.S. "Modern Operating System", Prentice Hall of India Pvt. Ltd..
5. William Stallings "Operating Systems" , Prentice Hall of India Pvt. Ltd.
6. Joshi R.C. "Operating System" Wiley India.

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							THEORY			**PRACTICAL**	
BCABDA303	Minor	Computer Organization and Architecture	3	0	0	3	60	20	20	0	0

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Course Education Objectives (CEOs):

a) To introduce the fundamental knowledge needed for the design of computer systems.
b) Explain in detail the logical operation of the most common standard digital components.
c) To show how the various data types found in digital computers are represented in binary form in computer registers.
d) To introduce a register transfer language and show how it is used to express microoperations in symbolic form.
e) To present the organization and design of a basic digital computer.
f) To deal with the central processing unit (CPU).
g) To understand the concepts in modern computer architecture.

Course Outcomes (COs):
Students will have thorough knowledge about:

a) The logical operation of the most common standard digital components.
b) The design of computer systems.
c) The various data types found in digital computers and how are they represented in binary form in computer registers.
d) Register transfer language and will be able to show how it is used to express micro operations in symbolic form.
e) The concepts in modern computer architecture.

Unit-I
Number System: Binary, Octal, Hexadecimal; Character Codes: BCD, ASCII, EBCDIC; Logic gates, Boolean Algebra, Canonical and Standard Forms, K-map simplification, Half Adder, Full Adder, Half Subtractor, Full Subtractor.

COURSE CODE	CATEGORY	COURSE NAME	L	T	P	CREDITS	TEACHING & EVALUATION SCHEME				
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BCABDA303	Minor	Computer Organization and Architecture	3	0	0	3	60	20	20	0	0

Unit-II

Combinational logic Design: Binary Parallel Adder, Carry look ahead adder, BCD Adder, Decoders, Encoders, Multiplexers, Demultiplexers; Sequential Logic: Flip-Flops – RS, JK, D and T Flip Flops.

UNIT-III

Register Transfer and Micro-operations: Register Transfer Language, Register Transfer, Bus and Memory Transfers, Arithmetic Micro-operations, Logic Micro-operations, Shift Micro operations, Arithmetic logic shift unit.

UNIT-IV

Basic Computer Organizations and Design: Instruction Codes, Computer Registers, Computer Instructions, Timing and Control, Instruction Cycle, Memory-Reference Instructions, Register reference instructions, Input-Output Instructions,

UNIT-V

Central Processing Unit: Introduction, General Register Organization, Stack Organization, Instruction Formats, Addressing Modes, Difference between RISC and CISC.

Text Books:
1. M. Morris Mano, "Computer System Architecture", 3e, Pearson Education, Inc. 2007
2. William Stallings, "Computer Organization and Architecture", 8e, Pearson, 2010
3. Subrata Ghoshal, "Computer Architecture and Organization" , 1e, Pearson, 2011
4. Malvino, "Digital Computer Electronics: An Introduction to Microcomputers", 2e, McGraw Hill Education, 1984.

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			THEORY			PRACTICAL					
			END SEM University Exam	TwoTerm Exam	Teachers Assessment*	ENDSEM UniversityExam	Teachers Assessment*	L	T	P	CREDITS
BBAI501	AECC	Human Values and Professional Ethics	60	20	20	-	-	4	-	-	4

Legends: **L** - Lecture; **T** - Tutorial/Teacher Guided Student Activity; **P** – Practical:**C** - Credit; **AECC-** Ability Enhancement Compulsory Course

*** Teacher Assessment** shall be based on following components: Quiz /Assignment/ Project/ Participation in Class, given that no component shall exceed more than 10 marks.

Course Objective

The objective of the course is to disseminate the theory and practice of moral code of conduct and familiarize the students with the concepts of "right" and "good" in individual, social and professional context

Examination Scheme

The internal assessment of the students' performance will be done out of 40 Marks. The semester Examination will be worth 60 Marks. The question paper and semester exam will consist of two sections A and B. Section A will carry 36 Marks and consist of 5 questions, out of which student will be required to attempt any three questions. Section B will comprise of one or more cases / problems worth 24 marks.

Course Outcomes

1. Help the learners to determine what action or life is best to door live.
2. Right conduct and good life.
3. To equip students with understanding of the ethical philosophies, principles, models that directly and indirectly affect business.

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			THEORY			PRACTICAL					
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BBAI501	AECC	Human Values and Professional Ethics	60	20	20	-	-	4	-	-	4

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***TeacherAssessment**shallbebasedonfollowingcomponents:Quiz/Assignment/Project/ParticipationinClass,given thatnocomponentshallexceedmorethan10marks.

COURSE CONTENTS

UNITI: Human Value

1. Definition, Need for Human Values, Sources of Values
2. Essence of Values
3. Classification of Values (Temporal Values, Universal Values)
4. Values Across Culture

UNIT II: Morality

1. Morality its meaning and definition
2. Values Vs Ethics Vs Morality
3. Concept of Impression Management
4. Impression Management Strategies (Intimidation, Ingratiation, Self-promotion, Supplication, Exemplification)

UNIT III: Leadership in Indian Ethical Perspective.

1. Leadership, Pre-requisites of Leadership
2. Approaches to Leadership, Leadership Styles
3. Ethical Leadership
4. Values in Leadership

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BBAI501	AECC	Human Values and Professional Ethics	60	20	20	-	-	4	-	-	4

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UNIT IV: Business Ethics
1. Business Ethics its meaning and definition
2. Relevance of Ethics in Business organizations.
3. Theories of Ethics(Teleological, Deontological)
4. Code of Ethics

UNIT V: Globalization and Ethics
1. Globalization and Business Changes
2. Values for Global Managers
3. Corporate Social Responsibility
4. Benefits of Managing Ethics in Work Place.

Suggested Readings:
1. Kaur,T.(2004).*Values and Ethics in Management***.** Galgotia Publishing Company: New Delhi
2. Kauhal, S.L.(2006). ***Business Ethics. Concepts, CrisisandSolutions.*** Deep & Deep Publications Pvt. Ltd.: New Delhi
3. Beteille, Andre (1991).*Society and Politicsin India*. Athlone Press: New Jersey.
4. Chakraborty, S.K.(1999).*Values and Ethics for Organizations*. Oxford University Press Fernando, A.C. (2009). ***Business Ethics - An Indian Perspective .***India: Pearson Education: India.