

VIKRAM UNIVERSITY, UJJAIN MP

(Session -2023-2024 onwards)

BCA (Hon's) FOUR YEARS (EIGHT SEMESTERS), CBCS SCHEME (NEP)

S.No.	Paper code	Course Component and Name of Course	Credits			Marks		Total
			T	P	Total	Max Marks CCE Internals	Max Marks Theory Externals	
1.	BCAH 501 Major-1	ASP.Net Using C#	4	0	4	30	45	100
	BCAH P	ASP.Net Using C#	0	1	1	10	15	
2.	BCAH 502 Major-2	Theory of Computation	5	0	5	40	60	100
3.	BCAH 503 Minor-1	Software Testing and Project Management	4	0	4	40	60	100
4.	BCAH-504 Generic Elective	Computer Oriented Optimization Technique	3	0	3	40	60	100
5.	BCAH-505 Ability Enhancement	Artificial Intelligence	3	0	3	40	60	100
Total Credits and marks					20			600

PART A: Introduction			
Program: Degree	Class: V Sem	Year: III Year	Session: 2025-26
Subject: Computer Application			
1.	Course Code	BCAH – 501	
2.	Course Title	ASP.NET TECHNOLOGY USING C#	
3.	Course Type (Core Course/Elective/Generic Elective/ Vocational)	Major-1	
4.	Pre-Requisite (if any)	Basic knowledge of HTML,C and C++ language	
5.	Course Learning Outcomes(CLO)	- Students will be able to design web applications using ASP.NET - Students will be able to use ASP.NET controls in web applications - Students will be able to debug and deploy ASP.NET web applications - Students will be able to create database driven ASP.NET web applications and web services	
6.	Credit Value	4 Credits	
7.	Total Marks	Max.Marks : 75	Min. Passing Marks: 28

PART B: Content of the Course		
Total No. of Lectures(in hours per week): 1 Hour per Day		
Total Lectures:60 Hours		
Unit	Topics	No. of Lectures
I	Introduction to DOT NET: DOT NET Framework- features & architecture, Common Language Runtime, Common Type System, MSIL, Assemblies and class libraries.Overview of ASP.NET framework, Importance and installation of IIS, Introducing the ASP.NET Development Server: Solution Explorer, toolbox, property window, Creating, Opening, and Using Web Sites and Pages, Running a Page.	12
II	Web Site Design: Creating a Master Page and Content Pages, Using Cascading Style Sheets in a Master Page, Understanding HTML controls and ASP. NET Controls, Web forms, Adding controls to a web form, Form designing controls: Labels, Textbox, Checkbox, radio button, Hyperlink, Image, Buttons, List Box, DropDownList , Calendar control, Ad rotator Control, Internet Explorer Control. Adding Events to the Page, The Postback Architecture, Different events for server controls, Global Events.	12
III	Form Validation: Client side validation, server Side validation, Validation Controls: Required Field, Comparison, Range, Regular Expression and Summary control. State management System- View state, Session state, Application state.Standard Files for ASP.NET Applications: Web.config, Global.asax. Login Security: Authentication, authorization, Adding users to roles. Styling with Themes: Styling a Site, Creating a Theme, Applying Themes to Pages, Applying Styling to a Site, Using skin.	12

IV	ADO.NET: Architecture of ADO.NET, Create Connection using ADO.NET Object Model, Working with Connection Class, Command Class, Data Reader class, Data Adapter Class and Dataset Class. Working with MS-SQL Server database software, Perform Insert, update, delete and select operation, display records on GridView Control, DataList and Repeater Controls. Introduction of XML: Writing datasets to XML, Reading datasets with XML. Web Application deployment.	12
V	C# Language: Overview of C#, C# and .NET, similarities & differences from JAVA, Structure of C# program Language, compiling and running C# program, features, Declaring variables and constants, data types, type conversions, Operators, Decision and looping control statements, namespaces, Creating class and object, constructor, inheritance, interfaces, polymorphism, boxing and unboxing.	12

PART C: Learning Resources	
Textbooks, Reference Books, Other Resources	
Suggested Readings: 1. Beginning with ASP.NET2.0 with C#- Chris Hart, John Kauffman, David Sussman, and Chris Ullman, Wrox Publication 2. ASP.NET Unleashed 3. C# programming–wrox publication 4. C# programming Black Book by Matt telles.	
https://www.tutorialspoint.com/asp.net/index.htm https://www.w3schools.com/asp/default.ASP https://www.javatpoint.com/asp-net-tutorial https://www.guru99.com/asp-net-tutorial.html https://www.geeksforgeeks.org/csharp-programming-language/	

Part D: Assessment and Evaluation		
Suggested Continuous Evaluation Methods:		
Maximum Marks: 75		
Continuous Comprehensive Evaluation (CCE): 30 Marks		
University Exam (UE): 45 Marks		
Internal Assessment:	Class Test	15
Continuous	Assignment/Presentation	15
Comprehensive		Total Marks: 30
Evaluation (CCE)		
External Assessment:		
University Exam (UE)	Section (A): Five Short Questions	03 × 05 = 15
Time: 03.00 Hours	Section (B): Five Long Questions	06 × 05= 30
		Total Marks: 45

PART A: Introduction			
Program: Degree		Class: V Sem	Year: III Year
Session: 2025-26			
Subject: Computer Applications			
1.	Course Code	BCAH – 501 P	
2.	Course Title	ASP. NET TECHNOLOGY USING C#	
3.	Course Type (Core Course/Elective/Generic Elective/ Vocational	Practical	
4.	Pre-Requisite (if any)	Basic knowledge of HTML,C and C++ language	
5.	Course Learning Outcomes(CLO)	• Students will be able to design web applications using ASP.NET • Students will be able to use ASP.NET controls in web applications • Students will be able to debug and deploy ASP.NET web applications • Students will be able to create database driven ASP.NET web applications and web services	
6.	Credit Value	Practical – 1 Credits	
7.	Total Marks	Max. Marks : 10+15	Min. Passing Marks: 10
PART B: Content of the Course			
No. of Lab Practicals (in hours per week): 2 hours per week			
Total No. of Lab.: 60 Hrs.			
	Suggestive list of Practicals		No. of Labs.
	1. Write the procedure for creating, opening and running ASP.NET web site. 2. Write a procedure for creating master page and content pages. 3. Write a procedure for using stylesheets in master page. 4. Write a procedure for adding ASP.NET controls on web page. 5. Design a registration page using Label, textbox, checkbox, radio button and button and write whole code with ASP.Net controls code. 6. Write a procedure and complete code for using Ad-Rotator control for publishing at least three Ad images. 7. Write a procedure for using Menu control to link at least three web pages. 8. Write a program for adding data to DropDownList and listbox using textbox control after clicking a button. 9. Write a program that use IsPostBack property. 10. Apply all validation controls on registration form and write all validation code. 11. Write a program for all three stat management system-ViewState, session and application. 12. Write a program for creating a them and apply on you website. Write a complete procedure with code. 13. Write a program for creating a skin for textbox, checkbox and button and apply. Write a complete procedure with code. 14. Write a program that can protect some secure page from unauthenticated users. 15. Create a table in MS-SQL database for registration and write a ADO.NET to insert, update, search and delete records. 16. Write a program that can display records on Gridview control, dataset and repeater controls.		60

	17. Write a program that can read XML data to dataset and display on GridView controls. 18. Write a C# program for prime number. 19. Write a C# program for inheritance. 20. Write a C# program for boxing and unboxing.	
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PART C: Learning Resources

Textbooks, Reference Books, Other Resources

Suggested Readings

1. Beginning with ASP.NET2.0 with C#- Chris Hart, John Kauffman, David Sussman, and Chris Ullman, Wrox Publication
2. ASP.NET Unleashed
3. C# programming–wrox publication
4. C# programming Black Book by Matt telles.

Reference Books:

Suggestive digital platform web links

<https://www.tutorialspoint.com/asp.net/index.htm>
<https://www.w3schools.com/asp/default.ASP>
<https://www.javatpoint.com/asp-net-tutorial>
<https://www.guru99.com/asp-net-tutorial.html>
<https://www.geeksforgeeks.org/csharp-programming-language/>

PART D: Assessment and Evaluation

Internal Assessment : Continuous Comprehensive Evaluation (CCE) : **10Marks**

External Assessment: University Exam (UE) : **15 Marks**
Time : **02.00 Hours**

Internal Assessment	Marks	External Assessment	Marks
Hands-on Lab Practice	2 Marks	Practical record file	5 Marks
Viva	3 Marks	Viva voce practical	5 Marks
Lab Test from practical list	2 Marks	Table works/ Exercise Assigned (02) in practical exam	2 Marks
Assignments (Charts/ Model)/ Technology Dissemination/ Excursion/ Lab visit/ Industrial Training	3 Marks	Reports of excursion/ Lab visits/ Industrial training/ Survey/ Collection/ Models	3 Marks
Total <i>Excursion/ Lab visits/ Industrial Training is compulsory</i>	10 Marks	Total	15 Marks

PART A: Introduction				
Program: Degree		Class: V SEM	Year: III Year	Session: 2025-26
Subject: Computer Application				
1.	Course Code	BCAH 502		
2.	Course Title	Theory of Computation		
3.	Course Type (Core Course/Elective/Generic Elective/ Vocational	Major 2		
4.	Pre-Requisite (if any)	To study this course, a student must have the basic knowledge of Computing Mathematics .		
5.	Course Learning Outcomes(CLO)	• Demonstrates Models, Turing Machine, Regular Expression, Push Down Automata. • Model, Compare and analyze different Computational Models. • Apply and Prove properties of Languages, Grammars and Automata. • Apply Knowledge of Computing and Mathematics to Solve Problem • Apply Mathematical Foundations, Algorithmic Principles and Computer Science Theory to the Modeling		
6.	Credit Value	5 Credit		
7.	Total Marks	Max. Marks : 100		Min. Passing Marks: 35

PART B: Content of the Course		
Total No. of Lectures (in hours per week): 01 Hours per day		
Total Lectures: 60 Hours		
Unit	Topics	No. of Lectures
I	Automata: Basic machine, FSM , Transition graph, Transition matrix, Deterministic and nondeterministic FSM'S, Equivalence of DFA and NDFA, minimization of finite automata, Construction of Finite Automata.	12
II	Finite automata and regular expression: Regular Expressions, Regular Expression to Finite Automata, Finite Automata to Regular Expression, Two-way Finite Automata, Crossing Sequence of Two way Finite Automata Finite Automata with Output, Closure Properties of Regular Sets.	12
III	Context Free Grammars: Motivation and Introduction, Context-free Grammars, Derivation trees and Ambiguity, Normal Forms (Chomsky Normal Form), Unit Production Chomsky Normal Forms, ambiguous context-free languages, Construction of Reduced Grammars, Elimination of null production.	12

IV	Pushdown Automata: Definition of PDA, Deterministic Pushdown Automata, PDA corresponding to given CFG, CFG corresponding to a given PDA. Context Free Languages: The pumping lemma for CFL's, Closure properties of CFL's, Decision problems involving CFL's.	12
V	Turing Machines: Introduction, TM model, representation and languages acceptability of TM Design of TM, Universal TM & Other modification, Church's hypothesis, composite & iterated TM. ,Universal Turing Machine.	12

PART C: Learning Resources	
Textbooks, Reference Books, Other Resources	
Suggested Readings: 1. Introduction to Automata Theory, Languages & Computation, J E Hopcraft & JD Ullman, Narosa Publications. 2. Theory of Computer Science, KLP Mishra & N Chandra Sekhar, PHI 3. Mathematical Foundations of Computer Science, Beckman 4. John C Martin, "Introduction to languages and theory of computation", McGraw Hill 5. Anami & Aribasappa , " Formal Languages and Automata Theory",Wiley India	
Suggestive digital platform web links: https://onlinecourses.nptel.ac.in/noc19_cs79/preview https://onlinecourses.nptel.ac.in/noc23_cs31/preview https://www.classcentral.com/course/youtube-computer-science-theory-of-computation-47562	
Suggested equivalent online courses: https://archive.nptel.ac.in/courses/106/104/106104148/ https://archive.nptel.ac.in/courses/106/104/106104028/	

Part D: Assessment and Evaluation		
Suggested Continuous Evaluation Methods: Maximum Marks: 100 Continuous Comprehensive Evaluation (CCE): 40 Marks University Exam (UE): 60 Marks		
Internal Assessment: Continuous Comprehensive Evaluation (CCE)	Class Test Assignment/Presentation	20 20 Total Marks: 40
External Assessment: University Exam (UE) Time: 03.00 Hours	Section (A):Short Answer type questions Section (B): Long Answer Type Questions (50 Words Each)	04 × 05 = 20 08 × 05 = 40 Total Marks: 60

PART A: Introduction			
Program: Degree		Class: VSem	Year: III Year
Session: 2025-26			
Subject:Computer Application			
1.	Course Code	BCAH-503	
2.	Course Title	Software Testing and Project Management	
3.	Course Type (Core Course/Elective/Generi c Elective/ Vocational	Minor 1	
4.	Pre-Requisite (if any)	To study this course, a student must have the basic knowledge of System Analysis and Design and Software Engineering.	
5.	Course Learning Outcomes (CLO)	By the end of this course, students will be able to: 1. Understand the fundamental concepts and principles of software testing and project management. 2. Apply various software testing techniques and methodologies to identify and rectify defects in software applications. 3. Create effective test plans, test cases, and test scripts for different types of software projects. 4. Utilize automated testing tools to streamline the testing process and increase efficiency. 5. Assess and analyze software requirements to develop comprehensive test scenarios. 6. Demonstrate proficiency in executing test cases and documenting test results accurately. 7. Understand the fundamental concepts and principles of software testing and project management. 8. Apply various software testing techniques and methodologies to identify and rectify defects in software applications. 9. Create effective test plans, test cases, and test scripts for different types of software projects. 10. Utilize automated testing tools to streamline the testing process and increase efficiency.	
6.	Expected job role /career opportunities	Software Testing: • Software Tester/Quality Assurance Analyst: Responsible for designing and executing test cases, identifying and reporting defects, and ensuring the quality and reliability of software applications. • Test Automation Engineer: Specializes in developing automated test scripts, implementing testing frameworks, and improving testing efficiency using automation tools. • Performance Test Engineer: Focuses on testing the performance, scalability, and responsiveness of software applications, ensuring they meet performance requirements. Project Management: • Project Manager: Responsible for planning, executing, and closing projects, managing project teams, resources, timelines, and budgets to achieve project objectives. • Program Manager: Manages a group of related projects and oversees their alignment with organizational goals and strategic objectives. • Project Coordinator: Assists project managers in organizing	

		project activities, maintaining documentation, and coordinating communications between team members.	
7.	Credit Value	3 credits	
8.	Total Marks	Max.Marks: 100	Min. Passing Marks:35

PART B: Content of the Course		
Total No. of Lectures(in hours per week): 01 Hour per Day		
Total Lectures:60 Hours		
Unit	Topics	No. of Lectures
I	Testing Basics and Development Models: Principals and context of testing in software production usability and accessibility. Testing phases of software project, process models to represent different phases, software quantity Control and its relation with testing, validating and verification, software development life cycle models, various development models. White box testing: white box testing –static testing, structural testing-unit code functional testing, code coverage testing, code complexity testing, Black box testing. What? Why and when to do black box testing, requirement-based testing, positive and negative testing, boundary value testing. Decision tables, equivalence portioning, state-based or graph-based testing, compatibility testing user documentation testing, and domain testing.	12
II	Integration testing, introduction and types of integration testing, scenario testing, defect bash system, and acceptance testing, overview functional and non-functional testing, acceptance testing. overview of some software testing tools. Winrunner, loadrunner, test director.	12
III	Performance testing -introduction, factors related to performance testing, methodology for performing testing, regression testing, Ad hoc testing overview, buddy and pair testing, exploratory testing, interactive testing, agile and extreme testing. testing of object-oriented testing-introduction, difference in OO testing.	12
IV	Software project management: overview, software project management framework, software development life cycle, organization issue and project management,managing process, project execution, problems in software projects, project management myths and its clarification .software project scope: need to scope a software project ,scope management process ,communication techniques and tools, communication methodologysoftware requirement gathering and resource allocation ,requirement specification,SRS document preparation, resource type for software projects,requirement for resource allocation.	12
V	Software project estimation: work breakdown structure (WBS), steps in WBS, measuring efforts for a project, techniques for estimation –SLOC, FP, COCOMO, and Delphi methods, projects scheduling; scheduling and its need, scheduling basics, Gantt chart, network scheduling techniques, pert and CPM using a project management tools: Introduction to MS project 2000, managing task in Project 2000, tracing a project plan, creating and displaying project information reports.	12

PART C: Learning Resources

Textbooks, Reference Books, Other Resources

Suggested Readings:

1. Software Testing: Principles and practice By Gopalaswamy and srinivasn, Pearson Education India.
2. Software Testing Tools: Covering Winrunner, Silk Test, Loadrunner, JMeter and TestDirector with case By Dr. K.V.K.K. Prasad ,ISBN:8177225324, Wiley Dreamtech,
3. Basics of Software project Management, Prentice Hall of India, ISBN 81-203-2490-0
4. Software project Management by Bob Huges & Mike Cotterell, Tata McGraw Hill.

Suggestive digital platforms web links:

Software Testing and Project Management

- Udemey - www.udemy.com
- Coursera - www.coursera.org
- Ministry of Testing - www.ministryoftesting.com
- Project Management Institute (PMI) - www.pmi.org
- ProjectManagement.com - www.projectmanagement.com

Part D: Assessment and Evaluation

Suggested Continuous Evaluation Methods:

Maximum Marks: **100**

Continuous Comprehensive Evaluation (CCE): **40 Marks**

University Exam (UE): **60 Marks**

Internal Assessment:	Class Test	20
Continuous Comprehensive Evaluation (CCE)	Assignment/Presentation	20
		Total Marks: 40
External Assessment:		
University Exam (UE)	Section (A): Two Short Questions	04 × 05 = 20
Time: 03.00 Hours	Section (B): Two Long Questions	08 × 05 = 40
		Total Marks: 60

PART A: Introduction			
Degree	Class: V Semester	Year: III Year	Session: 2025-26
Subject: Computer Application			
1.	Course Code	BCAH -504	
2.	Course Title	Computer Oriented Optimization Technique	
3.	Course Type (Core Course/Elective/Generic Elective/ Vocational	Generic Elective	
4.	Pre-Requisite (if any)	Fundamentals of Computing and Programming.	
5.	Course Learning Outcomes(CLO)	Upon successful completion of this course, students will be able to: • Distinguish different computer aided optimization techniques. • Understand the concept of optimization and classification of optimization problems. • Create simple architecture for evolutionary algorithms. • Have the knowledge of applying evaluation optimization technique ti engineering applications. • Learn efficient computational procedures to solve optimization problems.	
6.	Credit Value	3 Credits	
7.	Total Marks	Max. Marks : 100	Min. Passing Marks:35

PART B: Content of the Course		
Total No. of Lectures (in hours per week): 1 Hour per Day		
Total Lectures:60 Hours		
Unit	Topics	No. of Lectures
I	Optimization and Operations Research: Linear Simultaneous Equations, Solution of Simultaneous Equations by Gauss-Jordan method, Linear Programming: Introduction, Formulation of LP Problems, Assumptions and Applications of linear programming.	12
II	Graphical Solution of LP Problems, Important geometric properties of LP Problems, Principles of simplex methods, Computational Procedure of Simplex Methods, Two Phase Method.	12
III	Duality in Linear Programming: Concepts of duality, Definition of Primal-Dual Problems, General rules for Converting Primal into It's Dual, Duality Theorems, Dual simplex method, sensitivity analysis.	12
IV	Special types of Linear programming problems- Transportation and Assignment problems.	12

V	Integer Linear Programming: Introduction, Importance of Integer Programming Problems, Definitions, Branch and Bound techniques, Computational demonstration of Branch and Bound Method.	12
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PART C: Learning Resources	
Textbooks, Reference Books, Other Resources	
Suggested Readings: 1. Hiller, F.S. & Liberman, G.J. : Introduction to Operations Research ,2nd Edn. Holdewn Day Inc. London, 1974. 2. Tara, H.A. : Operation Research,3rd Edn. McMillan Publishing Company, 1982. 3. Bightler, C.S. & Phillips ,D.T. : Foundation of Optimization, 2nd Edn. Prentice-Hall,1979. 4. McMillan Claude Jr. : Mathematical programming ,2nd Edn. Wiley series ,1979	
Suggestive digital platform web links: https://onlinecourses.nptel.ac.in/noc23_ma92/preview https://www.amrita.edu/course/optimization-techniques-3/ https://onlinecourses.nptel.ac.in/noc21_me10/preview	
Suggested equivalent online courses: https://nptel.ac.in/courses/111105039 https://nptel.ac.in/courses/108103108	

Part D: Assessment and Evaluation		
Suggested Continuous Evaluation Methods: Maximum Marks: 100 Continuous Comprehensive Evaluation (CCE): 40 Marks University Exam (UE): 60 Marks		
Internal Assessment: Continuous Comprehensive Evaluation (CCE)	Class Test Assignment/Presentation	20 20 Total Marks: 40
External Assessment: University Exam (UE) Time: 03.00 Hours	Section (A): Five Short Questions Section (B): Five Long Questions	04× 05 = 20 08 ×05= 40 Total Marks: 60

PART A: Introduction			
Program: Degree	Class: V SEM	Year: III Year	Session: 2023-24
Subject: Computer Application			
1.	Course Code	BCAH -505	
2.	Course Title	Artificial Intelligence	
3.	Course Type (Core Course/Elective/Generic Elective/ Vocational)	Ability Enhancement course	
4.	Pre-Requisite (if any)	Basic knowledge of Computer.	
5.	Course Learning Outcomes(CLO)	After the successful completion of the course, the student shall be able to-: • Working with Machine Learning • Development of Robotics • Development of Expert Systems • Development of AI Tool	
6.	Expected job role /career opportunities	• Open AI • AI Tool • Machine Learning	
7.	Credit Value	3	
8.	Total Marks	Max. Marks : 100	Min. Passing Marks: 35

PART B: Content of the Course		
Total No. of Lectures (6 hours per week): 01 Hours per day		
Total Lectures: 60 Hours		
Unit	Topics	No. of Lectures
I	Introduction of Artificial Intelligence: What is AI ? The Importance of AI. AI and related fields, Applications, Limitations. Approaches to AI: Turing Test ,State Space search.	12
II	Searching Strategies: introduction, importance, applications; Uninformed Search techniques: DFS,BFS, uniform cost search techniques, depth- limited Search techniques. Informed Search techniques: Heuristic Search Techniques: Min-Max Search, Alpha Beta Cutoff Procedures, Hill Climbing Search Techniques, A* Search , AO* Search, Best First Search techniques.	12
III	Knowledge Representation: Logic, Semantic Networks, Frames, Rules, Scripts, Conceptual Dependency. Expert Systems: Structure, Applications, Limitations.	12
IV	Formalized Symbolic Logics: Introduction, Syntax and Semantics for Propositional Logic, Syntax and Semantics for FOPL, Properties of Wffs, Conversion to Clausal Form.	12

V	Neural Network: What is Artificial Neural Network, The architecture of an artificial neural network, Advantages and Disadvantages of Artificial Neural Network, Working of ANN. Types of Artificial Neural Network: Feedback ANN, Feed-Forward ANN. Artificial Neural Networks (ANN): Supervised, Unsupervised and Reinforcement Learning;	12
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PART C: Learning Resources	
Textbooks, Reference Books, Other Resources	
Suggested Readings:	
1. Textbooks: 1. Rajsekaran & Pai – Neural Networks, fuzzylogic & Genetic algorithms, PHI 2. Rich E and Knight K, Artificial Intelligence, TMH, New Delhi. 3. Hagan, Dernuth & Beale, Neural network design, Thomson learning, VP. 4. Philip D. Wasserman, Neural Computing, Van Nostrand Reinhold Pub. 5. Kecman: Learning & soft Computing, Pearson Edu. 2. Suggestive digital platforms web links: https://www.includehelp.com/soft-computing/ https://www.vssut.ac.in/lecture_notes/lecture1423723637.pdf https://digitalthinkerhelp.com/what-is-soft-computing-and-its-applications-and-techniques/ Suggested equivalent online courses: https://onlinecourses.nptel.ac.in/noc20_cs17/preview	

Part D: Assessment and Evaluation		
Suggested Continuous Evaluation Methods:		
Maximum Marks: 100		
Continuous Comprehensive Evaluation (CCE): 40 Marks		
University Exam (UE): 60 Marks		
Internal Assessment: Continuous Comprehensive Evaluation (CCE)	Internal Assessment: Continuous Comprehensive Evaluation (CCE)	Internal Assessment: Continuous Comprehensive Evaluation (CCE)
External Assessment: University Exam (UE) Time: 03.00 Hours	External Assessment: University Exam (UE) Time: 03.00 Hours	External Assessment: University Exam (UE) Time: 03.00 Hours