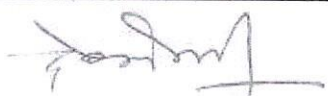


<b>Part A Introduction</b>			
<b>Program: Degree</b>	<b>Class :</b>	<b>Year: III</b>	<b>Session: 2023-24</b>
<b>Subject: BCA</b>			
<b>1</b>	<b>Course Code</b>	S3-BCAC3G	
<b>2</b>	<b>Course Title</b>	<b>Programming in C# (Theory)</b>	
<b>3</b>	<b>Course Type (Core Course/ Discipline Specific Elective/ Elective/ Generic Elective /Vocational/.....)</b>	Elective	
<b>4</b>	<b>Pre-requisite (if any)</b>		
<b>5</b>	<b>Course Learning outcomes (CLO)</b>	<p><b>On successful completion of this course, the students will be able to:</b></p> <ol style="list-style-type: none"> <li>1. Knowledge of the structure and model of the programming language C #.</li> <li>2. Determine logical alternatives with C# decision structures utilizing iteration, class methods, fields, and properties.</li> <li>3. Using the programming language C # for various programming technologies (understanding)</li> <li>4. Develop software in C #.</li> <li>5. Evaluate user requirements for software functionality required to decide whether the programming language C # can meet user requirements.</li> <li>6. Use of certain technologies by implementing them in the C # programming language to solve the given problem.</li> </ol>	
<b>6</b>	<b>Credit Value</b>	<b>4</b>	
<b>7</b>	<b>Total Marks</b>	Max. Marks: 30 + 70	Min. Passing Marks: 35
<b>Part B- Content of the Course</b>			
No. of Lectures (in hours per week): <b>3 Hrs. per week</b>			
Total No. of Lectures: <b>60 Hrs.</b>			
<b>Module</b>	<b>Topics</b>		<b>No. of Lectures</b>
Unit-I	Introduction to C#: What is C#, C++ vs C#, Java vs C#, History, Features, Variables, Data Types, Operators, Keywords, Comments. C# Control Statements: if-else, switch, For Loop, While Loop, Do-While Loop, Break, Continue, Goto.		12
Unit -II	C# Functions: Function, Call By Value, Call By Reference, Out Parameter. C# Arrays: Array to Function, Multidimensional Array, Jagged Arrays, Params, Array class, Command Line Args. C# Objects and Classes: Constructor, Destructor, this, static, static class, static constructor, Structs, Enum.		12

  
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Unit -III	C# Properties. C# Inheritance: Inheritance, Aggregation. C# Polymorphism: Member Overloading, Method Overriding, Base, Polymorphism, Sealed. C# Abstraction: Abstract, Interface. C# Namespace: Namespaces, Access Modifiers, Encapsulation.	12
Unit -IV	C# Strings. C# Exceptions: Exception Handling, try/catch, finally, Custom Exception, checked unchecked, System Exception. C# File I/O: FileStream, StreamWriter, StreamReader, TextWriter, TextReader, BinaryWriter, BinaryReader, StringWriter, StringReader, FileInfo, DirectoryInfo, Serialization, Deserialization, System.IO.	12
Unit V:	C# Generics, C# Delegates, C# Reflection. C# Multithreading: Multithreading, Thread Life Cycle, Thread class, Main Thread, Thread Sleep, Thread Abort, Thread Join, Thread Name, ThreadPriority. C# Synchronization, C# Web Service.	12

**Keywords/Tags:**

Introduction to C#, C# Control Statements, C# Functions, C# Arrays, C# Objects and Classes, C# Inheritance, C# Polymorphism, C# Abstraction, C# Namespace, C# Strings, C# Multithreading, C# Synchronization, C# Web Service.

**Part C-Learning Resources**

**Text Books, Reference Books, Other resources**

**Suggested Readings:**

**Textbooks:**

1. E Balagurusamy: Programming in C#, McGraw Hill Education, 4th edition, 2017.
2. Joydip Kanjilal: Mastering C# 8.0, BPB Publication, 2019.
3. J.G.R. Sathiaseelan: Programming With C Sharp .Net, PHI Learning, 2009.
4. मध्य प्रदेश हिन्दी ग्रंथ अकादमी की पुस्तकें।

**Reference Book:**

1. Bill Wagner: Effective C#, Pearson Education, Third edition, 2017.
2. Doyle B: C# Programming From Problem Analysis To Program Design, Cengage, 2014.
3. S. Thamarai Selvi, R. Murugesan: A TextBook on C#, Pearson Education India, 2003.
4. MILES: Begin to Code with C#, PHI Learning.

**Suggested Digital Platforms Web links:**

<https://www.eshiksha.mp.gov.in/mpdhe>

**Suggested equivalent online courses:**

<https://ict.iitk.ac.in/courses/introduction-to-c-sharp/>

**Suggested Continuous Evaluation Methods:**

Maximum Marks : 100

Continuous Comprehensive Evaluation (CCE) : 30 Marks University Exam (UE): 70 Marks

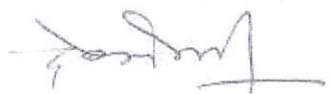
<b>Internal Assessment :</b> Continuous Comprehensive Evaluation (CCE)	Class Test Assignment/Presentation	30
<b>External Assessment :</b>	<b>Section(A) :</b> Very Short Questions	

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Dor Goswami



University Exam Section Time : 03.00 Hours	<b>Section (B) : Short Questions</b> <b>Section (C) : Long Questions</b>	70
<b>Any remarks/ suggestions:</b>		

<b>Part A Introduction</b>			
<b>Program: Degree:Degree</b>		<b>Class :UG</b>	<b>Year: III</b>
<b>Session: 2023-24</b>			
<b>Subject: BCA</b>			
1	Course Code	S3-BCAC3R	
2	Course Title	<b>Programming in C# (Practical)</b>	
3	Course Type (Core Course/ Discipline Specific Elective/ Elective/ Generic Elective /Vocational/.....)	<b>Elective</b>	
4	Pre-requisite (if any)		
5	Course Learning outcomes (CLO)	<b>On successful completion of this course, the students will be able to:</b> <ol style="list-style-type: none"> <li>1. Knowledge of the structure and model of the programming language C #.</li> <li>2. Determine logical alternatives with C# decision structures utilizing iteration, class methods, fields, and properties.</li> <li>3. Using the programming language C # for various programming technologies (understanding)</li> <li>4. Develop software in C #.</li> <li>5. Evaluate user requirements for software functionality required to decide whether the programming language C # can meet user requirements.</li> <li>6. Use of certain technologies by implementing them in the C # programming language to solve the given problem.</li> </ol>	
6	Credit Value	<b>2</b>	
7	Total Marks	Max. Marks: 100	Min. Passing Marks:35
<b>Part B- Content of the Course</b>			
Total No. of Lectures-Tutorials-Practical (in hours per week): L-T-P: 0-0-1			
Topics		No. of Lectures -30 (2 Hours Each)	
List of Practicals:			
<ol style="list-style-type: none"> <li>1. Write a c# program to print Fibonacci series without using recursion and using recursion.</li> <li>2. Write a c# program to check prime number.</li> <li>3. Write a c# program to check palindrome number.</li> <li>4. Write a c# program to print factorial of a number.</li> </ol>			

  
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5. Write a c# program to check Armstrong number.
6. Write a c# program to print sum of digits.
7. Write a c# program to reverse given number.
8. Write a c# program to swap two numbers without using third variable.
9. Write a c# program to convert decimal number to binary.
10. Write a c# program to print alphabet triangle.
11. Write a c# program to print number triangle.
12. Write a c# program to generate Fibonacci triangle.
13. Write a c# program to convert number in characters.

**Keywords/Tags:**

### Part C-Learning Resources

#### Text Books, Reference Books, Other resources

**Suggested Readings:**

1. E Balagurusamy: Programming in C#, McGraw Hill Education, 4th edition, 2017.
2. Joydip Kanjilal: Mastering C# 8.0, BPB Publication, 2019.
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7. MILES: Begin to Code with C#, PHI Learning.

**Suggestive digital platforms/ web links:**

<https://www.eshiksha.mp.gov.in/mpdhe>

**Suggested equivalent online courses:**

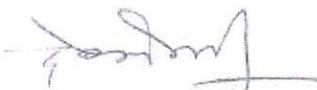
<https://ict.iitk.ac.in/courses/introduction-to-c-sharp/>

### Part D-Assessment and Evaluation

**Suggested Continuous Evaluation Methods:**

Internal Assessment	Marks	External Assessment	Marks
Class Interaction /Quiz	<b>30</b>	Viva Voce on Practical	<b>70</b>
Attendance		Practical Record File	
Assignments (Charts/ Model Seminar / Rural Service/ Technology Dissemination/ Report of Excursion/ Lab Visits/ Survey / Industrial visit)		Table work / Experiments	
		<b>Total Marks : 100</b>	

**Any remarks/ suggestions:**

  
 Dr. Goswami