KCE Society's

Moolji Jaitha College, Jalgaon

"An Autonomous College Affiliated to K.B.C. North Maharashtra University Jalgaon"

• NAAC Accredited with A Grade, CGPA- 3.15 (3rd Cycle)

• UGC Honored "College of Excellence" • ISO 9001:2015 Certified

• Department of Biotechnology, Ministry of Science & Technology, New Delhi honored "Star College" • DST (FIST) Recognized

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BACHELOR OF COMPUTER APPLICATION (BCA)

Structure for 2019-2022 Batch

Curriculum Overview:

Program Objectives

The program is designed to achieve the following objectives.

- To produce employable IT workforce, that will have sound knowledge of IT and business fundamentals that can be applied to develop and customize solutions for Small and Medium Enterprises (SME).
- To develop skilled manpower in the various areas of information technology like: Data base management, Software Development, Computer-Languages, Software engineering, Web based applications etc. To develop entrepreneurial skills among students that can help them to become successful entrepreneurs.
- To develop necessary technical, scientific as well as basic managerial and financial procedures to enable the students to analyze and solve real world problems within their work domain To develop social and ethical values in conducting business operations.

Eligibility

Following Candidates will be eligible to get admission in BCA Course

1) A candidate for being eligible for admission to the Degree course in Bachelor of Computer Application shall have passed 12^{th} Std. Examination (H.S.C. 10+2) from any stream with English as passing subject and has secured 45% marks at 12^{th} Std.

2) Two years Diploma in Pharmacy after H.S.C., Board of Technical Education conducted by Government of Maharashtra or its equivalent.

3) Three Year Diploma Course (after H.S.C., i.e. 10^{th} Standard) of Board of Technical Education conducted by Government of Maharashtra or its equivalent.

4) MCVC

**Candidate must appear and qualify common entrance test "MJCET" conducted by the college to be eligible for admission in the BCA Program*

Duration of Program

The Program shall be of three years divided into six semesters. A candidate must complete his/her degree within Five (5) Academic years from date of his/her admission to the first semester.

Medium of Instruction

Medium of Instruction shall be in English.

Attendance

A student shall be considered to have satisfied the requirement of attendance for the semester, if he/she has attended not less than 75% in aggregate of number of working periods in each of the subjects compulsorily. A student who has failed to complete the course in manner stated above shall not be permitted to take the end semester examination.

Course Structure

Third Year Bachelor of Computer Application (2021-22)

TYBCA SEM V	Subject Code	Theory	Credits
DSE 1 A	BCA 351	Python Programming - I	02
	BCA 352	Python Programming - II	02
	BCA 353	Practical's on Python Programming	02
DSE 2 A	BCA 354	ASP. NET - I	02
	BCA 355	ASP. NET - II	02
	BCA 356	Practical's on ASP. NET	02
DSE 3 A	BCA 357	Cyber Security & Forensics - I	02
	BCA 358	Cyber Security & Forensics - II	02
	BCA 359	Practical's on Cyber Security & Forensics	02
SEC 3	BCA 350	Mathematics for Managers -II	02
		TOTAL CREDITS	**20**

TYBCA SEM VI	Subject Code	Theory	Credits
DSE 1 B	BCA 361	Cloud Computing -I	02
	BCA 362	Cloud Computing -II	02
	BCA 363	Practical's on Cloud Computing	02
DSE 2 B	BCA 364	Server side Scripting using PHP – I	02
	BCA 365	Server side Scripting using PHP – II	02
	BCA 366	Practical's on Server side Scripting using PHP	02
DSE 3 B	BCA 367	Project Report	06
SEC 3	BCA 360	Entrepreneurship Development	02
		TOTAL CREDITS	**20**

Abbreviation	Long form
AECC	Ability Enhancement Compulsory Course
DSC	Discipline Specific Course
DSE	Discipline Specific Elective
SEC	Skill-Enhancement Elective Course

KCES's, M J College, Jalgaon (Autonomous College)
School of Computer Science
Syllabus of BCA 2021-22
Semester - V
BCA351: Python Programming - I
40+10 Pattern: ESE 40 Marks CIA 10 Marks Maximum Total Marks 50
Required Lectures 30 (30 Hours)

A) Title of Paper	**Python Programming - I**
B) Course Objectives	• To introduce Python programming fundamentals • To expose application development and prototyping using Python • To apply fundamental problem solving techniques using Python • To use regular expression for searching patterns in given strings.
C) Level of Knowledge Expected	Basic Knowledge of Python.
D) Medium of Instruction	English
E) Instructions on lectures and examination	• Each Lecture shall be of 1 hour duration. • Question paper shall be set in English. Students have to attempt the paper in English language only. • Question paper Attempt any 5 out of 8.
F) Course Structure	Syllabus will cover Four topics as discussed in detail below

Topics	Lectures	Credits
UNIT-I – Introduction to Python • Datatypes in Python- Built-in data types, bool Datatype, Sequences in Python, Sets . Literals in Python, Determining the Datatype of a Variable User-defined Datatypes, Constants in Python, Identifiers and Reserved words ,Naming Conventions in Python, Operators in Python, Input and Output statements,	**10**	**1**
UNIT-II- Control Structures • if Statement, for Loop, Two Dimensional Lists, while Loop, More Loop Patterns, Additional Iteration Control Statements.	**05**	
UNIT-III- Arrays and Functions • Arrays in Python-Types of Arrays, Comparing Arrays, Aliasing the Arrays ,Viewing and Copying Arrays, Dimensions of Arrays ,Attributes of an Array, The reshape() Method ,The flatten() Method Working with Multi-dimensional Arrays, • Strings and Characters- Operations on Strings, • Index Operator: Working with the Characters of a String, Functions- Calling Functions, Passing Functions, Formal Arguments, Variable length Arguments, Functional Programming, Recursive Functions, Anonymous Functions or Lambdas, Function Decorators, Lists and Tuples- Tuples, Tuple operators and built-in functions, Tuples and Mutability, Tuple Assignment,	**10**	**1**

Tuples as Return Values.		
UNIT-IV- Dictionaries • Dictionaries, Dictionary Operations, Dictionary Methods, Dictionary Keys, Hash Tables, Aliasing and Copying, Sparse Matrices, Working with Data Files, • Object Oriented Programming, Classes, Instances, Class method Calls, Coding Class Tree, Attributes, Building and Method Invocation, Composition, Inheritance, Operator Overloading, Encapsulation and Information Hiding.	**05**	
Total	**30 Hours**	**2 Credits**

Note: 1 Credit is equal to 15 hours of study. Therefore 1 credit is earned after each 15 hours of study is completed

G) Course outcomes/ Skill Development	By the end of the course students will be able to • Explain basic principles of Python programming language • Implement object oriented concepts, • Implement database and GUI applications.

Reference Books:

1. R. Nageswara Rao(2016), Core Python Programming, Dreamtech Press, 2016, ISBN-13: 9789351199427
2. John V Guttag (2013), Introduction to Computation and Programming Using Python, Prentice Hall of India, 2013, ISBN: 9780262525008
3. Michael T. Goodrich, Roberto Tamassia, Michael H. Goldwasser (2013), Data Structures and Algorithms in Pyhon", Wiley, 2013, ISBN : 978-1-118-54958-2, ISBN : 978-1-118-29027- 9 (HardCover)
4. Kenneth A. Lambert(2011), Fundamentals of Python – First Programs, CENGAGE Publication,2011, ISBN 1111822700, ISBN 9781111822705
5. Luke Sneeringer(2015), Professional Python, Wiley Inc.,2015, ISBN: 1119070856
6. Mark Lutz (2007), Learning Python, 3rd Edition, O'Reilly Media, Inc., 2007, ISBN-13: 978-0-596-51398- 6, ISBN-10: 0-596-51398-4

KCES's, M J College, Jalgaon (Autonomous College)
School of Computer Science
Syllabus of BCA 2021-22
Semester - V
BCA352: Python Programming - II
40+10 Pattern: ESE 10 Marks CIA 10 Marks Maximum Total Marks 50
Required Lectures 30 (30 Hours)

A) Title of Paper	**Python Programming - II**
B) Course Objectives	• To introduce Python programming fundamentals • To expose application development and prototyping using Python • To apply fundamental problem solving techniques using Python • To use regular expression for searching patterns in given strings.
C) Level of Knowledge Expected	Basic Knowledge of Python.
D) Medium of Instruction	English
E) Instructions on lectures and examination	• Each Lecture shall be of 1 hour duration. • Question paper shall be set in English. Students have to attempt the paper in English language only. • Question paper Attempt any 5 out of 8.
F) Course Structure	Syllabus will cover Four topics as discussed in detail below

Topics	Lectures	Credits
UNIT-I – Exceptions • Regular Expressions, Exceptions, Standard Exceptions, Exceptions Syntax, The try/except/else Statement, The try/finally Statement, Unified try/except/finally, • The raise Statement, The assert Statement, with/as Context Managers String-Based Exceptions, ClassBased Exceptions, General raise Statement Forms, Nesting Exception Handlers, Exception Idioms, Exception Design Tips. Catch All Exceptions, Catch A Specific Exception, Catch Multiple Specific Exceptions, Clean-up After Exceptions, • GUI Programming using TKinter.	**08**	**1**
UNIT-II- Functional Programming Tools • Filter and reduce, List Comprehensions Revisited: Mappings. • Modules: Python Program Architecture, Module Creation, Module usage, Module Namespaces, Reloading Modules, Module Packages	**07**	
UNIT-III- Data Hiding in Modules • Data Hiding in Modules, Enabling Future Language Features, Mixed Usage Modes, • Changing the Module Search Path, The import as Extension, • Relative Import Syntax, • Module Design Concepts	**08**	**1**

UNIT-IV - Database Connectivity • Types of Databases Used with Python Installation of MySQL Database Software, Setting the Path to MySQL Server. Verifying MySQL in the Windows Operating System Installing MySQL Connector Verifying the Connector Installation, Working with MySQL Database,Using MySQL from Python, Retrieving All Rows from a Table Inserting Rows into a Table Deleting Rows from a Table, Updating Rows in a Table Creating Database Tables through Python •	**07**	
Total	**30 Hours**	**2 Credits**

Note: 1 Credit is equal to 15 hours of study. Therefore 1 credit is earned after each 15 hours of study is completed

G) Course outcomes/ Skill Development	By the end of the course students will be able to • Explain basic principles of Python programming language • Implement object oriented concepts, • Implement database and GUI applications.

Reference Books:

1. R. Nageswara Rao(2016), Core Python Programming, Dreamtech Press, 2016, ISBN-13: 9789351199427
2. John V Guttag (2013), Introduction to Computation and Programming Using Python, Prentice Hall of India, 2013, ISBN: 9780262525008
3. Michael T. Goodrich, Roberto Tamassia, Michael H. Goldwasser (2013), Data Structures and Algorithms in Pyhon", Wiley, 2013, ISBN : 978-1-118-54958-2, ISBN : 978-1-118-29027- 9 (HardCover)
4. Kenneth A. Lambert(2011), Fundamentals of Python – First Programs, CENGAGE Publication,2011, ISBN 1111822700, ISBN 9781111822705
5. Luke Sneeringer(2015), Professional Python, Wiley Inc.,2015, ISBN: 1119070856
6. Mark Lutz (2007), Learning Python, 3rd Edition, O'Reilly Media, Inc., 2007, ISBN-13: 978-0- 596-51398- 6, ISBN-10: 0-596-51398-4

KCES's, M J College, Jalgaon (Autonomous College)
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Syllabus of BCA 2021-22
Semester - V
BCA353: Practical's on Python Programming
40+10 Pattern: ESE 40 Marks CIA 10 Marks Maximum Total Marks 50
Required Lectures 60 (60 Hours)

A) Title of Paper	**Practical's on Python Programming**
B) Course Objectives	• To introduce Python programming fundamentals • To expose application development and prototyping using Python • To apply fundamental problem solving techniques using Python • To use regular expression for searching patterns in given strings.
C) Level of Knowledge Expected	Basic Knowledge of Python.
D) Medium of Instruction	English
E) Instructions on lectures and examination	• Performed any two practical's for given examiners
F) Course Structure	Syllabus will cover Four topics as discussed in detail below

Topics	**Practical**	**Credits**
Practical's 1. Write a program using print Pascal triangle. 2. Write a program to find out the roots of the quadratic equations. 3. Write a program to display the Fibonacci series using generators. 4. Write a program to check the given number is palindrome or not. 5. Write a program to find the sum of digits of a given number 6. Write a Python program to remove the punctuations from a string. 7. Write a Python program to implement the simple calculator. 8. Write a Python function to reverse the given string. 9. Demonstrate implementation of the Anonymous Function Lambda. 10. Construct a GUI application to generate the employee pay slip 11. Construct a GUI application to perform the Arithmetic operations Read Input Values through input window and Display the result in Message Box.	**60**	**2**
Total	**60 Hours**	**2 Credits**

Note: 1 Credit is equal to 15 hours of study. Therefore 1 credit is earned after each 15 hours of study is completed

G) Course outcomes/ Skill Development	By the end of the course students will be able to • Explain basic principles of Python programming language • Implement object oriented concepts, • Implement database and GUI applications.

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Syllabus of BCA 2021-22
Semester - V
BCA354: ASP. NET - I
40+10 Pattern: ESE 40 Marks CIA 10 Marks Maximum Total Marks 50
Required Lectures 30 (30 Hours)

A) Title of Paper	**ASP. NET - I**
B) Course Objectives	• To provide insight into .NET technologies for web programming and enable them design and develop interactive and responsive web applications. • To explain learners the insights into the efficient usage of .NET technologies their facilities • To acquire knowledge of web development
C) Level of Knowledge Expected	Basic Knowledge of .NET technologies.
D) Medium of Instruction	English
E) Instructions on lectures and examination	• Each Lecture shall be of 1 hour duration. • Question paper shall be set in English. Students have to attempt the paper in English language only. • Question paper Attempt any 5 out of 8.
F) Course Structure	Syllabus will cover Four topics as discussed in detail below

Topics	Lectures	Credits
UNIT-I – Introduction to .Net Framework • What is .NET?-The Pieces of .NET, Why we need .NET? • The Common Language Runtime(CLR)- Common Functionality, • Namespaces, Common Type System.	**5**	**1**
UNIT-II- Web Applications in ASP.NET • ASP.NET Coding Models • Inline Code Model, • The Code-Behind Model.	**10**	
UNIT-III- ASP.NET Page • ASP.NET Page Directives, Page Events and Page Life Cycle, • ASP.NET Application Directory Structure, • ASP.NET Application Compilation Models- Normal Compilation Model, Deployment Pre-Compilation, Full Runtime Compilation.	**05**	**1**
UNIT-IV- State Management • Understanding the Problem of State, Using View State, Transferring Information Between Pages, • Using Cookies, Managing Session State, Configuring Session	**10**	

State, Using Application State, • Comparing State Management Options. • ASP.NET Security: Login Controls.		
Total	**30 Hours**	**2 Credits**

Note: 1 Credit is equal to 15 hours of study. Therefore 1 credit is earned after each 15 hours of study is completed

G) Course outcomes/ Skill Development	By the end of the course students will be able to • Acquire knowledge of .NET technologies framework • Implement various controls for creating a web Application • Develop Website in .NET Technology • Understand the security aspects of web Application.

Reference Books:

1. ASP.NET - The Complete Reference, Matthew MacDonald .. ***ISBN***, 0072195134
2. ASP.NET 4.5 IN SIMPLE STEPS (SIMPLE STEPS series), KOGENT LEARNING SOLUTIONS
3. INC., 2013 ***ISBN*** -10: 9350049996
4. Programming ASP.NET, J.Liberty, D.Hurwitz, (3rdEd), O'REILLY, 2006
5. ASP.NET and VB.NET Web Programming, by Crouch Matt J, Addison Wesley 2002. ***ISBN*** 13:9780201734409
6. NET Programming Covering C# 2005,Visual Basic 2005,ASP.NET and .NET Framework-Black Book
7. Bill Evjen, Scott Hanselman, Devin Rader (2008), Professional ASP .NET 3.5 in C# and VB, Wiley Publishing Inc.,2008 ISBN:978-0-470-18757-9.

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School of Computer Science
Syllabus of BCA 2021-22
Semester - V
BCA355: ASP. NET - II
40+10 Pattern: ESE 40 Marks CIA 10 Marks Maximum Total Marks 50
Required Lectures 30 (30 Hours)

A) Title of Paper	**ASP. NET - II**
B) Course Objectives	• To provide insight into .NET technologies for web programming and enable them design and develop interactive and responsive web applications. • To explain learners the insights into the efficient usage of .NET technologies their facilities with database • To acquire knowledge of web development GUI
C) Level of Knowledge Expected	Basic Knowledge of .NET technologies.
D) Medium of Instruction	English
E) Instructions on lectures and examination	• Each Lecture shall be of 1 hour duration. • Question paper shall be set in English. Students have to attempt the paper in English language only. • Question paper Attempt any 5 out of 8.
F) Course Structure	Syllabus will cover Four topics as discussed in detail below

Topics	Lectures	Credits
UNIT-I – ASP.NET Controls • ASP.NET Server Controls- The WebControl Class, The Label Control, The TextBox Control, The Button Control, The Hyper Link Control, The LinkButton Control, The DropDownList Control, Radio ButtonList Control, The Check Box Control, The Image Control.	**10**	**1**
UNIT-II - Server Controls and Validation • Validation Controls, • Rich Controls- The Calendar, • The Ad Rotator.	**05**	
UNIT-III- Master Pages and Navigation • Master Pages: Creating Simple and Nested Master Pages, Creating Content Pages, Themes. • Web Site Navigation and Properties: The Site Map Path Control, The TreeView Control, The Menu Control, Other navigation methods(Response. Redirect(),Server. Transfer()). •	**05**	**1**
UNIT-IV – Data Access With ADO.Net Object	**10**	

• Introduction to ADO.NET • Database using ADO.NET • ADO.NET Fundamentals: ADO.NET architecture and Objects (Data Reader, Data Set, Data Adaptor, Command), Editing data in Data Tables. • Data Bound Controls: Grid View Control, FormView Control, Details View Control, Repeater Control, DataList Control, Using Bound list Controls.		
Total	**30 Hours**	**2 Credits**

Note: 1 Credit is equal to 15 hours of study. Therefore 1 credit is earned after each 15 hours of study is completed

G) Course outcomes/ Skill Development	By the end of the course students will be able to • Acquire knowledge of .NET technologies framework • Implement various controls for creating a web Application • Develop Website in .NET Technology • Understand the security aspects of web Application.

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1. ASP.NET - The Complete Reference, Matthew MacDonald .. ***ISBN***, 0072195134
2. ASP.NET 4.5 IN SIMPLE STEPS (SIMPLE STEPS series), KOGENT LEARNING SOLUTIONS
3. INC., 2013 ***ISBN*** -10: 9350049996
4. Programming ASP.NET, J.Liberty, D.Hurwitz, (3rdEd), O'REILLY, 2006
5. ASP.NET and VB.NET Web Programming, by Crouch Matt J, Addison Wesley 2002. ***ISBN*** 13:9780201734409
6. NET Programming Covering C# 2005,Visual Basic 2005,ASP.NET and .NET Framework-Black Book
7. Bill Evjen, Scott Hanselman, Devin Rader (2008), Professional ASP .NET 3.5 in C# and VB, Wiley Publishing Inc.,2008 ISBN:978-0-470-18757-9.

KCES's, M J College, Jalgaon (Autonomous College)

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Syllabus of BCA 2021-22

Semester - V

BCA356: Practical's on ASP. NET

40+10 Pattern: ESE 40 Marks CIA 10 Marks Maximum Total Marks 50

Required Lectures 60 (60 Hours)

A) Title of Paper	**Practical's on ASP. NET**
B) Course Objectives	• To provide insight into .NET technologies for web programming and enable them design and develop interactive and responsive web applications. • To explain learners the insights into the efficient usage of .NET technologies their facilities with database • To acquire knowledge of web development GUI
C) Level of Knowledge Expected	Basic Knowledge of .NET technologies.
D) Medium of Instruction	English
E) Instructions on lectures and examination	• Performed any two practical's for given examiners
F) Course Structure	Syllabus will cover Four topics as discussed in detail below

Topics	**Practical**	**Credits**
1. Demonstrate the use of HTML and Web Server Controls. 2. Write an ASP .net program that demonstrates use of web controls. 3. Write an ASP .net that returns the windows name of your computer and URL of the page that you are visiting. 4. Demonstrate DropDown List box, CheckButton, RadioButton controls. 5. Demontrate the use of Calender and Adrotator Control. 6. Create a Registration Form to demonstrate the use of various validation controls. 7. Demonstrate the use of Master Pages with applying Themes. 8. Demonstrate Properties of website navigation controls. 9. Write an ASP .net page that used the connection object to connect the database and display information using datagrid Controls. 10. Demonstrate editing process in DataList controls. 11. Demosntrate editing in DataTable objects. 12. Create a web application to display Data binding using dropdownlist control.	**60**	**2**
Total	**60 Hours**	**2 Credits**

Note: 1 Credit is equal to 15 hours of study. Therefore 1 credit is earned after each 15 hours of study is completed

G) Course outcomes/ Skill Development	By the end of the course students will be able to • Acquire knowledge of .NET technologies framework • Implement various controls for creating a web Application • Develop Website in .NET Technology • Understand the security aspects of web Application.

KCES's, M J College, Jalgaon (Autonomous College)
School of Computer Science
Syllabus of BCA 2021-22
Semester - V
BCA357: Cyber Security & Forensics - I
40+10 Pattern: ESE 40 Marks CIA 10 Marks Maximum Total Marks 50
Required Lectures 30 (30 Hours)

A) Title of Paper	**Cyber Security & Forensics - I**
B) Course Objectives	• To study the fundamental Cyber Security concepts and learn • To prepare students with the technical knowledge and skills needed to protect and defend computer systems and networks. • To implement successful solutions to the security needs of a business through risk compliance, incident handling, integrated network solutions, and application development while maintaining an ethical profile. Implement Cyber security Best Practices and Risk Management
C) Level of Knowledge Expected	Basic Knowledge of Cyber security.
D) Medium of Instruction	English
E) Instructions on lectures and examination	• Each Lecture shall be of 1 hour duration. • Question paper shall be set in English. Students have to attempt the paper in English language only. • Question paper Attempt any 5 out of 8.
F) Course Structure	Syllabus will cover Four topics as discussed in detail below

Topics	Lectures	Credits
UNIT-I – Overview of Cyber Security & Networking Concepts • Introduction to Cyber Security , • Knowing some cybersecurity basics and putting them in practice for Business Protection, • Basics of Communication Systems, • Transmission Media, Topology and Types of Networks, OSI Layers, TCP/IP Protocol Stacks,Wireless Networks, • Overview of Identification and Authorization, • Overview of IDS , Intrusion Detection Systems and Intrusion Prevention Systems, • Virtual Private Networks - Need, Use of Tunnelling with VPN, , Types of VPNs and their Usage, Authentication Mechanisms	**7**	**1**
UNIT-II- Information Security Concepts and Indian Cyber Law • Information Security Overview: Background and Current Scenario, CIA Tried, Goals for E-Security, Computer Forensics, • Steganography- Introduction & Types, • Need for cyber law, Essence of information technology (IT) ACT ,IT Act	**8**	

2000 • Information Technology Amendment Act 2008 and its major strengths		
UNIT-III- Cryptography / Encryption & Online Communication • Introduction to Cryptography / Encryption, • Model of Cryptographic Systems, • Issues in Documents Security , • Requirements for Digital Signatures, • Applications of Cryptography , • Tools and techniques of Cryptography, • Online Communication- Introduction, Working Undercover, • Website Evidence, Background Searches on a Suspect, • Online Crime, Capturing Online Communications	**8**	
UNIT-IV- : Ethical Hacking • Security in mobile -2 way authentications and Wireless Computing, Security Policies and Cyber Insurance, Security Policy Standards, • Social engineering, Information Security risk analysis, • Data Privacy Fundamentals, Penetration Testing fundamentals, • Foot printing and scanning, • Trojans and Backdoors, • Viruses and worms, Sniffers, session Hijacking and Denial of Service, • System Hacking, Web Server Hacking, • Web application Vulnerabilities, Honey pots, Google dorks, • Phishing	**7**	**1**
Total	**30 Hours**	**2 Credits**

Note: 1 Credit is equal to 15 hours of study. Therefore 1 credit is earned after each 15 hours of study is completed

G) Course outcomes/ Skill Development	By the end of the course students will be able to • Evaluate and communicate the human role in security systems with an emphasis on ethics, social engineering vulnerabilities and training • Obtain basic knowledge of Ethical Hacking and its Benefits

Reference Books:

1. Godbole," Information Systems Security", Willey
2. Merkov, Breithaupt," Information Security", Pearson Education
3. Practical Mobile Forensics - Third Edition by Rohit Tamma, Oleg Skulkin, Heather Mahalik, Satish Bommisetty
4. Computer Forensics – Computer Crime Scene Investigation, Second Edition, John R. Vacca, Charles River Media Inc., ISBN 1-58450-389-0
5. Cyber Law and Cyber Crimes Simplified – Adv. Prashant Mali

KCES's, M J College, Jalgaon (Autonomous College)
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Syllabus of BCA 2021-22
Semester - I
BCA358: Cyber Security & Forensics - II
40+10 Pattern: ESE 40 Marks CIA 10 Marks Maximum Total Marks 50
Required Lectures 30 (30 Hours)

A) Title of Paper	**Cyber Security & Forensics - II**
B) Course Objectives	• Analyse and resolve security issues in networks and computer systems to secure an IT infrastructure. • To develop graduates that can plan, implement, and monitor cyber security mechanisms to help ensure the protection of information technology assets. • To develop graduates that can identify, analyse, and remediate computer security breaches. • Identify the key cyber security vendors in the marketplace.
C) Level of Knowledge Expected	Basic Knowledge of Cyber Security Mechanisms.
D) Medium of Instruction	English
E) Instructions on lectures and examination	• Each Lecture shall be of 1 hour duration. • Question paper shall be set in English. Students have to attempt the paper in English language only. • Question paper Attempt any 5 out of 8.
F) Course Structure	Syllabus will cover Four topics as discussed in detail below

Topics	**Lectures**	**Credits**
UNIT-I – Security and Cyber Forensics • Introduction to Cyber Crime and Cyber Forensics, • Basic Forensic Principles, • Network Forensics, Mobile Device Forensics, • Memory Forensics, • General Computing Principles, Search and Seizure of Computers, Forensic Imaging & Verification, • Data Recovery and Analysis, Investigative Techniques, • DNS & DNS Servers, The principles of digital evidence	**8**	
UNIT-II- Introduction to Mobile Forensics • Mobile Phone Basics, Types of memory on mobile phones , • Cell Phone Crime , • The Cellular Network, SIM Security , • Mobile forensic & its challenges , • Mobile phone evidence extraction process , • Evidence in Mobile Devices	**7**	

UNIT-III- Securing the Systems • Design of Secure, Operating System ,Trusted Operating Systems , • Operating System Hardening, Operating system controls , • Internet Protocols and Security , • Application Security WWW security - SHTTP, SMIME, • PGP, SET, • e-Mail and S-MIME security , • Access Control - Biometrics introduction, • Criteria for selection of Biometrics,Physical and Logical Biometrics , • Internet security protocols , Managing Personal Firewall and Antivirus , Remote Access Security , • Secure Configuration of Applications	**8**	**1**
UNIT-IV- : Security Concepts • Application Security, • Web Application Security -Web application Security Risks, • Identifying the Application Security Risks, Threat Risk Modelling, OWASP Top 5 Concepts,User Management • Overview of Firewalls, Types of Firewalls ,DMZ and Firewall Features, Drone Security, • Essential Types of Cyber security Solutions- Perimeter Security, Intranet Security and Human Security.	**7**	
Total	**30 Hours**	**2 Credits**

Note: 1 Credit is equal to 15 hours of study. Therefore 1 credit is earned after each 15 hours of study is completed

G) Course outcomes/ Skill Development	By the end of the course students will be able to • Interpret and forensically investigate security incidents. • Implement cyber security solutions.

Reference Books:

1. Practical Cyber Forensics , Niranjan Reddy

2. Merkov, Breithaupt," Information Security", Pearson Education

3. Yadav, "Foundations of Information Technology", New Age, Delhi

4. Penetration Testing: A Hands-on Introduction to Hacking - Georgia Weidman

5. Handbook of Digital Forensics and Investigation, Edited by Eoghan Casay, Elsevier Academic Press, ISBN 13 : 978-0-12-374267-4

KCES's, M J College, Jalgaon (Autonomous College)
School of Computer Science
Syllabus of BCA 2021-22
Semester - V
BCA359: Practical's on Cyber Security & Forensics
40+10 Pattern: ESE 40 Marks CIA 10 Marks Maximum Total Marks 50
Required Lectures 60 (60 Hours)

A) Title of Paper	**Practical's on Cyber Security & Forensics**
B) Course Objectives	• To study the Cyber Security concepts • To know the process of online security and scams in real life. • To give the practical knowledge of Cyber Security and Cyber Forensics
C) Level of Knowledge Expected	Basic Knowledge of Cyber Security.
D) Medium of Instruction	English
E) Instructions on lectures and examination	• Performed any two practical's for given examiners
F) Course Structure	Syllabus will cover Four topics as discussed in detail below

Topics	**Practical**	**Credits**
1. Study of Network related Commands(Linux) a. Recover deleted files from pen drive 2. Create a PGP secure message and use it in email a. Prepare E-Mail Health Report. b. Analyze e-mail Headers. 3. Hacking using Webcam for accession of vedios . 4. Hide Text inside Text using Steganography. 5. Application of maintenance of Gmail security 6. Locate mobile device using Gmail 7. Find IP address of website using command prompt & other ways. 8. Check DNS Propagation for a website, demonstrate the use of DNS Map. 9. Display call Spoofing.	**60**	**2**

a. Case Study – Job Fraud b. Case study 2: Sharing of morphed obscene contents through email & Facebook c. Case study 3: E-mail spoofing case 10. Creation of Antivirus and virus scripts.		
Total	**60 Hours**	**2 Credits**

Note: 1 Credit is equal to 15 hours of study. Therefore 1 credit is earned after each 15 hours of study is completed

G) Course outcomes/ Skill Development	By the end of the course students will be able to • Aware about Cyber Terrorism. • Practical implementation of Cyber Investigation. • Design & Implement Risk Analysis ,Security policies and damage Assessment

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School of Computer Science
Syllabus of BCA 2021-22
Semester - V
BCA350: Mathematics for Managers -II
40+10 Pattern: ESE 40 Marks CIA 10 Marks Maximum Total Marks 50
Required Lectures 30 (30 Hours)

A) Title of Paper	**Mathematics for Managers -II**
B) Course Objectives	• To build the foundation of computer algorithms using mathematical base • To know the process logic development • To apply statistical measures on the data and represent it graphically
C) Level of Knowledge Expected	Basic Knowledge of mathematical programming.
D) Medium of Instruction	English
E) Instructions on lectures and examination	• Each Lecture shall be of 1 hour duration. • Question paper shall be set in English. Students have to attempt the paper in English language only. • Question paper Attempt any 5 out of 8.
F) Course Structure	Syllabus will cover Four topics as discussed in detail below

Topics	**Lectures**	**Credits**
UNIT-I – Linear Programming • Quantitative Techniques and their field of applications, Classification of Quantitative Techniques, Limitations of Quantitative Techniques • Linear Programming Problems – Basic Feasible Solutions	**7**	**1**
UNIT-II- Dual Problems • Relation between Primal and Dual Problems – Dual Simplex Method	**8**	
UNIT-III- Network Models • Definitions – CPM and PERT Network Minimization, Shortest Route Problem • Critical Path Calculations, PERT Calculation, Float Analysis.	**7**	**1**
UNIT-IV – Game Theory • Introduction, Two-Person Zero-Sum Games, Some Basic Terms, the Maxmini Minimax Principle • Games Without Saddle Points-Mixed Strategies	**8**	
Total	**30 Hours**	**2 Credits**

Note: 1 Credit is equal to 15 hours of study. Therefore 1 credit is earned after each 15 hours of study is completed

G) Course outcomes/ Skill Development	By the end of the course students will be able to • Enter basic logic development. • Prepare simple computational mathematics

Reference Books:

1) Rudin, Walter (1976). Principles of Mathematical Analysis, (McGraw Hill).
2) Courant, R. and John, F. (1965). Introduction to Calculus and Analysis, (Wiley).
3) Apostol, T. M. (1985). Mathematical Analysis, (Narosa, Indian Ed.).
4) Ash, Robert. (1972). Real Analysis and Probability, (Academic Press).
5) Kambo N.S, "Mathematical Programming Technqies", McGraw Hill.
6) Kanti Swarup, Gupta P.K. "Peration Research", Sultan Chand & Sons.
7) Principle, Games Without Saddle Points-Mixed Strategies ISBN:9780131391994, Pearson Education.
8) Prem Kumar Gupta, D. S. Hira, "Operations Research", 7th Edition, 2014, ISBN:9788121902816, S. Chand & Company LTD.
9) R. PanneerSelvam, "Operations Research", 2nd Edition, 2016, ISBN:9788120329287, Prentice Hall of India.
10) L.C. Jhamb, "Quantitative Techniques for Managerial Decisions: Vol. I",3rd Edition,ISBN:9788186314623, Everest Publishing House.

KCES's, M J College, Jalgaon (Autonomous College)
School of Computer Science
Syllabus of BCA 2021-22
Semester - VI
BCA361: Cloud Computing -I
40+10 Pattern: ESE 40 Marks CIA 10 Marks Maximum Total Marks 50
Required Lectures 30 (30 Hours)

A) Title of Paper	**Cloud Computing -I**
B) Course Objectives	• To become familiar with Cloud Computing and its ecosystem. • To learn basics of virtualization and its importance. • To evaluate in-depth analysis of Cloud Computing capabilities. • To give technical overview of Cloud Programming and Services. • To understand security issues in cloud computing. • To be exposed to Ubiquitous Cloud and Internet of Things.
C) Level of Knowledge Expected	Basic Knowledge of Cloud Computing.
D) Medium of Instruction	English
E) Instructions on lectures and examination	• Each Lecture shall be of 1 hour duration. • Question paper shall be set in English. Students have to attempt the paper in English language only. • Question paper Attempt any 5 out of 8.
F) Course Structure	Syllabus will cover Four topics as discussed in detail below

Topics	Lectures	Credits
UNIT-I – Introduction to Cloud Computing • Overview, Roots of Cloud Computing, Layers and Types of Cloud, • Desired Features of a Cloud, Benefits and Disadvantages of Cloud Computing, • Cloud Infrastructure Management, Infrastructure as a Service Providers, Platform as a Service Providers, • Challenges and Risks, Assessing the role of Open Standards	**10**	**1**
UNIT-II- Cloud Architecture, Services and Applications • Exploring the Cloud Computing Stack, Connecting to the Cloud • Infrastructure as a Service, Platform as a Service, Saas vs. Paas, Using PaaS Application Frameworks • Software as a Service, Identity as a Service and Compliance as a Service.	**05**	
UNIT-III- Virtualization • Introduction to Virtualization Technologies, • Load Balancing and Virtualization, • Understanding Hyper visors,	**10**	**1**

• Understanding Machine Imaging, • Porting Applications,		
UNIT-IV- Abstraction • Virtual Machines Provisioning and Manageability Virtual Machine Migration Services, • Virtual Machine Provisioning and Migration in Action, • Provisioning in the Cloud Context	**05**	
Total	**30 Hours**	**2 Credits**

Note: 1 Credit is equal to 15 hours of study. Therefore 1 credit is earned after each 15 hours of study is completed

G) Course outcomes/ Skill Development	By the end of the course students will be able to • To understand the need of Cloud based solutions. • To understand Security Mechanisms and issues in various Cloud Applications • To explore effective techniques to program Cloud Systems. • To understand current challenges and trade-offs in Cloud Computing. • To find challenges in cloud computing and delve into it to effective solutions. • To understand emerging trends in cloud computing.

Reference Books:

1. Sosinsky B., "Cloud Computing Bible", Wiley India ISBN 13: 9788126529803.
2. Buyya R., Broberg J., Goscinski A., "Cloud Computing: Principles and Paradigm", John Wiley & Sons ISBN NO: 81–7758– 575-4
3. Velte T., Velte A., Elsenpeter R., "Cloud Computing – A practical Approach", Tata McGraw-Hill./ ISBN 13: 9780070683518
4. "Cloud Computing: Concepts, Technology & Architecture" by Thomas Erl
5. "The Little Book of Cloud Computing" by Lars Nielsen
6. "Cloud Computing Explained" by John Rhoton
7. "Cloud Computing for Programmers" by Daniele Casal
8. "Cloud Computing: From Beginning to End" by Mr Ray J Rafaels
9. "Cloud Computing – An Introduction" by subu sangameswar
10. "Cloud Computing: A Hands-On Approach" by Arshdeep Bahga and Vijay Madisetti

KCES's, M J College, Jalgaon (Autonomous College)
School of Computer Science
Syllabus of BCA 2021-22
Semester - VI
BCA362: Cloud Computing -II
40+10 Pattern: ESE 10 Marks CIA 10 Marks Maximum Total Marks 50
Required Lectures 30 (30 Hours)

A) Title of Paper	**Cloud Computing -II**
B) Course Objectives	• To become familiar with Cloud Computing and its ecosystem. • To learn basics of virtualization and its importance. • To evaluate in-depth analysis of Cloud Computing capabilities. • To give technical overview of Cloud Programming and Services. • To understand security issues in cloud computing. • To be exposed to Ubiquitous Cloud and Internet of Things.
C) Level of Knowledge Expected	Basic Knowledge of Cloud Computing.
D) Medium of Instruction	English
E) Instructions on lectures and examination	• Each Lecture shall be of 1 hour duration. • Question paper shall be set in English. Students have to attempt the paper in English language only. • Question paper Attempt any 5 out of 8.
F) Course Structure	Syllabus will cover Four topics as discussed in detail below

Topics	Lectures	Credits
UNIT-I – Managing & Securing the Cloud • Administrating the Clouds, Cloud Management Products, • Emerging Cloud Management Standards, • Securing the Cloud, Securing Data, • Establishing Identity and Presence, • Storage Area Networks, Disaster • Recovery in Clouds	**08**	**1**
UNIT-II- Risk of Cloud computing and Related Cost • Risk Assessment and Management – Risk of Vendor Lock- in – Risk of Loss of control over IT services- • Risk of Poor Provisioning – Risk of Multi-tenant environment • Risk failure of cloud provider – SLA risk –security, malware and Internet Attacks – Risk with Application Licensing.	**07**	
UNIT-III- CLOUD SECURITY AND ISSUES • Basic Terms and Concepts, Threat Agents, Cloud Security Threats and Attacks, Additional Considerations. • Cloud Security Mechanisms: Encryption, Hashing, Digital Signature, Public Key Infrastructure (PKI), Identity and Access Management	**08**	**1**

(IAM), Single Sign-On (SSO), Hardened Virtual Server Images. • Cloud Issues: Stability, Partner Quality, Longevity, Business Continuity, Service-Level Agreements, Agreeing on the Service of Clouds, Solving Problems, Quality of Service, Regulatory Issues and Accountability.		
UNIT-IV - Cloud Applications • Integration of Private and Public Clouds, Cloud Best Practices, • The Web on Amazon Cloud,Hosting Massively Multiplayer Games on Cloud, • Content Delivery Networks Using Clouds and Hosting Twitter and Facebook on Cloud	**07**	
Total	**30 Hours**	**2 Credits**

Note: 1 Credit is equal to 15 hours of study. Therefore 1 credit is earned after each 15 hours of study is completed

G) Course outcomes/ Skill Development	By the end of the course students will be able to • To understand the need of Cloud based solutions. • To understand Security Mechanisms and issues in various Cloud Applications • To explore effective techniques to program Cloud Systems. • To understand current challenges and trade-offs in Cloud Computing. • To find challenges in cloud computing and delve into it to effective solutions. • To understand emerging trends in cloud computing

Reference Books:

1. Sosinsky B., “Cloud Computing Bible”, Wiley India ISBN 13: 9788126529803.
2. Buyya R., Broberg J., Goscinski A., “Cloud Computing: Principles and Paradigm”, John Wiley & Sons ISBN NO: 81–7758– 575-4
3. Velte T., Velte A., Elsenpeter R., “Cloud Computing – A practical Approach”, Tata McGraw-Hill./ ISBN 13: 9780070683518
4. “Cloud Computing: Concepts, Technology & Architecture” by Thomas Erl
5. “The Little Book of Cloud Computing” by Lars Nielsen
6. “Cloud Computing Explained” by John Rhoton
7. “Cloud Computing for Programmers” by Daniele Casal
8. “Cloud Computing: From Beginning to End” by Mr Ray J Rafaels
9. “Cloud Computing – An Introduction” by subu sangameswar
10. “Cloud Computing: A Hands-On Approach” by Arshdeep Bahga and Vijay Madisetti

KCES's, M J College, Jalgaon (Autonomous College)

School of Computer Science
Syllabus of BCA 2021-22
Semester - VI
BCA363: Practical's on Cloud Computing
40+10 Pattern: ESE 40 Marks CIA 10 Marks Maximum Total Marks 50
Required Lectures 60 (60 Hours)

A) Title of Paper	**Practical's on Cloud Computing**
B) Course Objectives	• To provide students with the fundamentals and essentials of Cloud Computing. • To provide students a sound foundation of the Cloud Computing so that they are able to start using and adopting Cloud Computing services and tools in their real life scenarios. • To enable students exploring some important Cloud Computing driven commercial systems and applications. • To expose the students to frontier areas of Cloud Computing and information systems, while providing sufficient foundations to enable further study and research.
C) Level of Knowledge Expected	Basic Knowledge of Cloud Computing.
D) Medium of Instruction	English
E) Instructions on lectures and examination	• Performed any two practical's for given examiners
F) Course Structure	Syllabus will cover Four topics as discussed in detail below

Topics	**Practical**	**Credits**
Practical's 1. Study and implementation of Infrastructure as a Service. 2. Study of Cloud Computing & Architecture 3. Installation and Configuration of virtualization using KVM. 4. Study and implementation of Infrastructure as a Service. 5. Study and implementation of Storage as a Service. 6. Study and implementation of identity management. 7. Study Cloud Security management 8. Write a program for web feed. 9. Study and implementation of Single-Sing-On. 10. User Management in Cloud. 11. Case study on Amazon EC2/Microsoft Azure/Google Cloud Platform	**60**	**2**
Total	**60 Hours**	**2 Credits**

Note: 1 Credit is equal to 15 hours of study. Therefore 1 credit is earned after each 15 hours of study is completed

G) Course outcomes/ Skill Development	By the end of the course students will be able to • Explain the core concepts of the cloud computing paradigm: how and why this paradigm shift came about, the characteristics, advantages and challenges brought about by the various models and services in cloud computing. • Apply fundamental concepts in cloud infrastructures to understand the tradeoffs in power, efficiency and cost, and then study how to leverage and manage single and multiple datacenters to build and deploy cloud applications that are resilient, elastic and cost-efficient. • Analyze various cloud programming models and apply them to solve problems on the cloud.

KCES's, M J College, Jalgaon (Autonomous College)
School of Computer Science
Syllabus of BCA 2021-22
Semester - VI
BCA364: Server side Scripting using PHP – I
40+10 Pattern: ESE 40 Marks CIA 10 Marks Maximum Total Marks 50
Required Lectures 30 (30 Hours)

A) Title of Paper	**Server side Scripting using PHP – I**
B) Course Objectives	• Understand how server-side programming works on the web. • Creating conditional structures • How to receive and process form submission data. • Security tips
C) Level of Knowledge Expected	Basic Knowledge of PHP
D) Medium of Instruction	English
E) Instructions on lectures and examination	• Each Lecture shall be of 1 hour duration. • Question paper shall be set in English. Students have to attempt the paper in English language only. • Question paper Attempt any 5 out of 8.
F) Course Structure	Syllabus will cover Four topics as discussed in detail below

Topics	Lectures	Credits
UNIT-I – Introduction to PHP • Web architecture, web Server (xamp Server, apache server) • History, Features & Drawbacks of PHP	**5**	**1**
UNIT-II- The Basics of PHP • Data types in PHP, Structure & Syntax of PHP, • PHP with HTML, Comments, Variables, Literals, Operator, • Operator Precedence	**10**	
UNIT-III- Flow Control Statements • Conditional Statements • Looping Statements • Exit, Return, Die, Include and Require Statements	**05**	**1**
UNIT-IV- Array, Function and String • Index Vs Associative Array, Multidimensional Array, Different array function in PHP • Introduction to Function- Defining and Calling a function, Scope of variables in function, Function Parameters, Returning Values from a function, Recursive Functions	**10**	

• Types of strings in PHP, Comparing strings, Manipulating and Searching strings, Regular Expressions		
Total	**30 Hours**	**2 Credits**

Note: 1 Credit is equal to 15 hours of study. Therefore 1 credit is earned after each 15 hours of study is completed

G) Course outcomes/ Skill Development	By the end of the course students will be able to • Knowledge of the structure and model of the PHP • Create an error-free simple PHP program • Demonstrates a working knowledge of Dynamic WebSite Design and Publishing • Offers a career differentiator, with enhanced credibility and marketability • Takes you beyond basic user's knowledge to the IT Pros who know how to create web sites

Reference Books:

1. Beginning PHP and MySQL, 3rd Ed., W. Jason Gilmore, A press Publication.
2. PHP 5.1 for Beginners, Ivan Bayross and Sharnam Shah, SPD Publication
3. Beginning PHP5 Dave Mercer et al. Wrox Press
4. PHP for Beginners [Book] / auth. Ivan Bayross, Sharnam Shah, THE X Team. - [s.l.]: SPD.
5. “PHP: A Beginner’s Guide” by Vikram Vaswani
6. “Learning PHP 5” by David Sklar
7. “PHP Object – Oriented Solutions” by David Powers
8. “Build Your Own Database Driven Web Site Using PHP & MySQL” by Kevin Yank
9. “PHP Programming For Beginners: The Simple Guide to Learning PHP Fast!” by Tim Warren
10. “PHP for the Web: Visual QuickStart Guide” by Larry Ullman
11. “Programming PHP: Creating Dynamic Web Pages” by Kevin Tatroe and Peter MacIntyre
12. PHP & MySQL Novice to Ninja – by Kevin Yank

KCES's, M J College, Jalgaon (Autonomous College)

School of Computer Science
Syllabus of BCA 2021-22
Semester - VI
BCA365: Server side Scripting using PHP – II
40+10 Pattern: ESE 40 Marks CIA 10 Marks Maximum Total Marks 50
Required Lectures 30 (30 Hours)

A) Title of Paper	**Server side Scripting using PHP – II**
B) Course Objectives	• Understand how server-side programming works on the web. • Creating conditional structures • How to receive and process form submission data. • Security tips
C) Level of Knowledge Expected	Basic Knowledge of PHP.
D) Medium of Instruction	English
E) Instructions on lectures and examination	• Each Lecture shall be of 1 hour duration. • Question paper shall be set in English. Students have to attempt the paper in English language only. • Question paper Attempt any 5 out of 8.
F) Course Structure	Syllabus will cover Four topics as discussed in detail below

Topics	Lectures	Credits
UNIT-I –PHP class • Creating a Class, Object, Adding a Method, Properties • Visibility (Public, Private and Protected)	**05**	
UNIT-II - Object-Oriented PHP • Constructor and Destructors • Abstract classes, Final classes • Inheritance, Interfaces • Exception handling	**10**	**1**
UNIT-III- Web Techniques • HTTP Basics, Processing Forms • Using PHP $_GET, PHP $_POST, GET vs. POST • File Uploads, Form Validation • Maintaining State- Cookies, Sessions	**10**	**1**
UNIT-IV – PHP with MySQL • Introduction to MySQL • Interaction between PHP and MySQL	**5**	

• Connecting to a Database • Execute SQL Statements		
Total	**30 Hours**	**2 Credits**

Note: 1 Credit is equal to 15 hours of study. Therefore 1 credit is earned after each 15 hours of study is completed

G) Course outcomes/ Skill Development	By the end of the course students will be able to • Knowledge of the structure and model of the PHP • Create an error-free simple PHP program • Demonstrates a working knowledge of Dynamic WebSite Design and Publishing • Offers a career differentiator, with enhanced credibility and marketability • Takes you beyond basic user's knowledge to the IT Pros who know how to create web sites

Reference Books:

1. Beginning PHP and MySQL, 3rd Ed., W. Jason Gilmore, A press Publication.
2. PHP 5.1 for Beginners, Ivan Bayross and Sharnam Shah, SPD Publication
3. Beginning PHP5 Dave Mercer et al. Wrox Press
4. PHP for Beginners [Book] / auth. Ivan Bayross, Sharnam Shah, THE X Team. - [s.l.]: SPD.
5. "PHP: A Beginner's Guide" by Vikram Vaswani
6. "Learning PHP 5" by David Sklar
7. "PHP Object – Oriented Solutions" by David Powers
8. "Build Your Own Database Driven Web Site Using PHP & MySQL" by Kevin Yank
9. "PHP Programming For Beginners: The Simple Guide to Learning PHP Fast!" by Tim Warren
10. "PHP for the Web: Visual QuickStart Guide" by Larry Ullman
11. "Programming PHP: Creating Dynamic Web Pages" by Kevin Tatroe and Peter MacIntyre
12. PHP & MySQL Novice to Ninja – by Kevin Yank

KCES's, M J College, Jalgaon (Autonomous College)
School of Computer Science
Syllabus of BCA 2021-22
Semester - VI
BCA366: Practical's on Server side Scripting using PHP
40+10 Pattern: ESE 40 Marks CIA 10 Marks Maximum Total Marks 50
Required Lectures 60 (60 Hours)

A) Title of Paper	**Practical's on Server side Scripting using PHP**
B) Course Objectives	• Understand how server-side programming works on the web. • Creating conditional structures • How to receive and process form submission data. • Security tips
C) Level of Knowledge Expected	Basic Knowledge of PHP.
D) Medium of Instruction	English
E) Instructions on lectures and examination	• Performed any two practical's for given examiners
F) Course Structure	Syllabus will cover Four topics as discussed in detail below

Topics	**Practical**	**Credits**
1. Write PHP scripts that demonstrate fundamentals PHP Prime number 2. Write PHP scripts that demonstrate fundamentals PHP Factorial 3. Write PHP scripts that demonstrate fundamentals PHP Number triangle 4. Write PHP script that will display grade based on criteria given below using the marks obtained in Examination. a. Distinction (70 and above) b. First Class (60 - 69) c. Pass (40 - 59) d. Fail (below 40) 5. Write a PHP script to demonstrate different String functions. 6. Write a PHP script to Demonstrate OOPS Concept in PHP. 7. Write a PHP script to demonstrate Form Data Handling using Get and Post methods. 8. Design a database in MYSQL. Create table in database. Store, Update, Delete and Retrieve data from the table. Display the data from the table. 9. Write a PHP script to store, retrieve and delete cookies on your local machine. 10. Write a PHP script to store, retrieve and delete data using session variables.	**60**	**2**
Total	**60 Hours**	**2 Credits**

Note: 1 Credit is equal to 15 hours of study. Therefore 1 credit is earned after each 15 hours of study is completed

G) Course outcomes/ Skill Development	By the end of the course students will be able to • Knowledge of the structure and model of the PHP • Create an error-free simple PHP program • Demonstrates a working knowledge of Dynamic WebSite Design and Publishing • Offers a career differentiator, with enhanced credibility and marketability • Takes you beyond basic user's knowledge to the IT Pros who know how to create web sites

KCES's, M J College, Jalgaon (Autonomous College)
School of Computer Science
Syllabus of BCA 2021-22
Semester - VI
BCA367: Project Report
75+75 Pattern: ESE 75 Marks CIA 75 Marks Maximum Total Marks 150
Required Lectures 90 (90 Hours)

A) Title of Paper	**Project Report**
B) Course Objectives	• To provide comprehensive learning platform to students where they can enhance their employ ability skills and become job ready along with real corporate exposure. • To enhance students' knowledge in one technology. • To increase self-confidence of students and helps in finding their own proficiency.
C) Level of Knowledge Expected	Basic Knowledge of project.
D) Medium of Instruction	English
E) Instructions on lectures and examination	• Each Lecture shall be of 1 hour duration. • Question paper shall be set in English. Students have to attempt the paper in English language only. • Question paper Attempt any 5 out of 8.
F) Course Structure	Syllabus will cover Four topics as discussed in detail below

Topics	Lectures	Credits
Project Guidelines: 1. Any open problem statement can be taken for implementation. 2. Each student shall have to carry out the project work based on System Development which may include Application Program, Database Management System, Web Based Application, Smart phone Application, System Tools, Network System Application, etc. A project may be carried out at any outside organization or on a sub system of an organization. 3. The project work should be carried out individually. No group work is allowed in the Project work. The project title should not be repeated. 4. The topic of the project should be decided with the consultation & guidance of an internal guide-teacher of the institute/college. The project should be necessarily innovative and problem solving. No teacher shall be entrusted with more than 15 students for guidance and supervision. 5. The student should clearly mention the need of project , database(s), files required for the project, DFD , Normalization, ERD, software used for the project, reasons for selection of that software, inputs required, outputs produced etc. 6. Duration of project completion will be full semester.	**90**	**6**

7. Student should fill the status of the project work on the progress report and get the Signature of project guide regularly. 8. Student needs to spend minimum 90 hours for the project implementation. 9. No student will be permitted to appear for Viva-Voce examinations, unless and until the project report is submitted within the stipulated time. 10. Project report should be submitted with two hard copies. 11. Student will have to submit the spiral bound project report in college prescribed format at the end of the semester. For project report the specifications are – Font size 12, Name – Times New Roman, Spacing 1.**5** with header and footer.		
Total	**90 Hours**	**6 Credits**

Note: 1 Credit is equal to 15 hours of study. Therefore 1 credit is earned after each 15 hours of study is completed

G) Course outcomes/ Skill Development	By the end of the course students will be able to • Improve communication skills. • Become updated with all the latest changes in technological world. • Develop multi-skilled Computer Science professional with good technical knowledge, management, leadership and entrepreneurship skills. • Identify, formulate and model problems and find engineering solution based on a systems approach.

KCES's, M J College, Jalgaon (Autonomous College)
School of Computer Science
Syllabus of BCA 2021-22
Semester - VI
BCA360: Entrepreneurship Development
40+10 Pattern: ESE 40 Marks CIA 10 Marks Maximum Total Marks 50
Required Lectures 30 (30 Hours)

A) Title of Paper	**Entrepreneurship Development**
B) Course Objectives	• To Promote First Generation Businessman and Industrialists • To Create Awareness about Availability of Resources • To Promote Small, Cottage & Local Industries • To Encourage Self Employment Tendencies
C) Level of Knowledge Expected	Develop Entrepreneurs in different Areas.
D) Medium of Instruction	English
E) Instructions on lectures and examination	• Each Lecture shall be of 1 hour duration. • Question paper shall be set in English. Students have to attempt the paper in English language only. • Question paper Attempt any 5 out of 8.
F) Course Structure	Syllabus will cover Four topics as discussed in detail below

Topics	Lectures	Credits
UNIT-I – INTRODUCTION TO ENTREPRENEURSHIP • Understanding the Meaning of Entrepreneur; Characteristics and Qualities of an Entrepreneur; • Entrepreneurs Vs. Intrapreneurs and Managers; • Classification of Entrepreneurs; Factors Influencing Entrepreneurship; Entrepreneurial Environment; Entrepreneurial Growth; • Problems and Challenges of Entrepreneurs; Entrepreneurial Scenario in India	**8**	**1**
UNIT-II- MICRO, SMALL AND MEDIUM ENTERPRISES (MSMES) • MSMEs – Definition and Significance in Indian Economy; MSME Schemes, • Challenges and Difficulties in availing MSME Schemes, Forms of Business; Women Entrepreneurship; • Rural Entrepreneurship; Family Business and First Generation Entrepreneurs	**7**	
UNIT-III- IDEA GENERATION AND FEASIBILITY ANALYSIS • Idea Generation; Creativity and Innovation; Identification of Business Opportunities; • Market Entry Strategies; Marketing Feasibility; Financial	**8**	**1**

Feasibilities; Political Feasibilities; Economic Feasibility; Social and Legal Feasibilities; Technical Feasibilities; Managerial Feasibility, Location and Other Utilities Feasibilities.		
UNIT-IV – FINANCING AND HOW TO START UP BUSINESS? • Financial opportunity identification; Banking sources; Non-banking Institutions and Agencies; Venture Capital – Meaning and Role in Entrepreneurship; • Government Schemes for funding business; Pre launch, Launch and Post launch requirements; Procedure for getting License and Registration; Challenges and Difficulties in Starting an Enterprise.	**7**	
Total	**30 Hours**	**2 Credits**

Note: 1 Credit is equal to 15 hours of study. Therefore 1 credit is earned after each 15 hours of study is completed

G) Course outcomes/ Skill Development	By the end of the course students will be able to • Develop idea generation, creative and innovative skills • Aware of different opportunities and successful growth stories • Learn how to start an enterprise and design business plans those are suitable for funding by considering all dimensions of business. • Understand entrepreneurial process by way of studying different case studies and find exceptions to the process model of entrepreneurship. • Run a small enterprise with small capital for a short period and experience the science and art of doing business.

Reference Books:

1. The Design of Business, Martin Roger, Harvard Business Publishing, 2009
2. Entrepreneurship, Roy Rajiv, Oxford University Press, 2011
3. Innovation and Entrepreneurship,Drucker.F, Peter, Harper business, 2006.
4. Vasanth Desai "Dynamics of Entrepreneurial Development and Management Himalaya Publishing House ISBN 81-7014-619-4
5. N.P.Srinivasan&G.P.Gupta," Entrepreneurial Development ", Sultanchand&Sons. ISBN:8185386196
6. Robert D.Hisrich, Michael P.Peters, “Entrepreneurship Development, Tata McGraw Hill edition ISBN : 1259001636