



Integral University, Lucknow

Effective from Session: 2017-2018							
Course Code	CA313	Title of the Course	.NET FRAMEWORK WITH VB .NET	L	T	P	C
Year	III	Semester	VI	3	1	0	4
Pre-Requisite	NONE	Co-requisite	CA322				
Course Objectives	<ul style="list-style-type: none"> To understand basics knowledge of .NET Framework architecture and Visual Basic. To learn programming concepts of Visual Basic in .NET Framework environment. To learn advance programming concepts of .NET Framework architecture. To learn advance features of Visual Basic and exception handling techniques. To learn ADO. NET and object model. 						

Course Outcomes	
CO1	Understand .NET Framework architecture, its components and basics of Visual Studio
CO2	Analyze the problem and create window-based program with Visual Basic.
CO3	Develop and implement window-based application using Visual Basic.
CO4	Investigate and solve difficulties in the implementation of VB applications using advanced features of Visual Basic and exception handling techniques
CO5	Know database concepts of ADO.NET technology and develop applications using ADO. NET

Unit No.	Title of the Unit	Content of Unit	Contact Hrs.	Mapped CO
1	Introduction to Microsoft .NET Framework and VB.NET	Overview of Microsoft .NET Framework, The .NET Framework Components, The Common Language Runtime (CLR) Environment, The .NET Framework Class Library. Getting Started with Visual Basic .NET IDE: Toolbars, New Project Dialog Box, Graphical Designers, Code Designers, Intelligence, Object Explorer, Toolbox, The Solution Explorer, The Class View Window, Properties Window, Dynamic Help Window, Server Explorer, Output Window, Command Window. Visual Basic Language Concept: Variables, Constants, Data Types, Operators, Control Structures and Loops. Arrays: Single and Multidimensional Array, Declaring, Dynamic Array.	7	CO1
2	Introduction to Windows Common Controls	Working with Form: Properties, Appearance, Behavior, Layout, Windows Style, Methods and Events, Differentiate Procedure Oriented, Object Oriented and Event Driven Programming, Input Box, Message Box, Working with Common Tool Box Controls: Label and Button, Textbox, NumericUpDown, Check Box, Radio Button, Group Box Control and all-important Methods and Events.	9	CO2
3	Additional Controls and Menus of Windows	Working with other Controls of Toolbox: Date Time Picker, List Box, Combo Box, Picture Box, Rich Text Box, Progress Bar, Masked Text Box, Link Label, Checked List Box, Scroll Bars, Timer. Working with Menus: Creating Menu, Inserting, Deleting, Assigning Short Cut Keys, Popup Menu.	8	CO3
4	Advanced Features of VB.NET	Dialog Boxes, Open File Dialog, Save File Dialog, Font Dialog, Color Dialog, Print Dialog. Sub Procedures and Functions: Declaring, Passing and Returning Arguments, Exiting from it, Pass by Value and Pass by Ref. Exception Handling: Structured Error Handling (Try, Catch, Finally), Unstructured Error Handling. Multiple Documents Interface (MDI): MDI Parent Form and Child Form.	8	CO4
5	Inbuilt Functions and Database Access using ADO.NET	Inbuilt Functions, Mathematical Functions, The abs Function, The exp Function, The fix Function, The int Function, The log Function, The rnd Function, String Manipulation, Format Functions. ADO.NET Object Model: ADO.NET, Data Provider, Dataset, ADO.NET Programming: Creating a Database Application, Connection to Database with Server Explorer, Data Binding, DataGrid View, Data Form Wizard, Data Validation, Populating Data in ADO.NET, Browsing Records, Editing, Saving, Adding and Deleting Records using Bounded and Unbounded Controls, Generic Reports using Crystal Report Viewer.	8	CO5

Reference Books:	
1.	Deitel and Deitel, "Visual Basic.NET How to Program", Pearson Education.
2.	Richard Blair, Mathew Renolds, "Beginning VB.NET 2003", Wrox Publication.
3.	Bill Evjen, Billy, Hollis, "Professional VB.NET 2003", 3rd edition, Wrox Publication.
4.	Michael Halvorson, "VB.Net", PHI.
e-Learning Source:	
1.	https://www.javatpoint.com/vb-net
2.	https://www.tutorialspoint.com/vb.net/index.htm

Course Articulation Matrix: (Mapping of COs with POs and PSOs)																		
PO- PSO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO4	PSO5	PSO6	PSO7
CO1	3	1	1		1								3	1				
CO2	1	3	3			2							2	3				
CO3		1	1	3	1	1							2	2				
CO4	1	2	3			3							1	3				
CO5	2	1	3		1	1							2	1				

1- Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation



Integral University, Lucknow

Effective from Session: 2017-2018							
Course Code	CA314	Title of the Course	INTRODUCTION TO OPEN SOURCE ENVIRONMENT	L	T	P	C
Year	III	Semester	VI	3	1	0	4
Pre-Requisite	NONE	Co-requisite	CA323				
Course Objectives	<ul style="list-style-type: none"> To learn basic concepts, syntax and uses of PHP as server-side scripting language. To learn and implement PHP script and Arrays. To learn and implement decision making, looping and object oriented features supported by PHP To learn various tools and implement forms in PHP To demonstrate the use of MySQL database in phpMyAdmin and build dynamic web site using server side PHP Programming and MySQL 						

Course Outcomes	
CO1	Able to understand the basic concepts, syntax and uses of PHP as general-purpose language
CO2	Able to understand basic of PHP as scripting Language and implement Arrays in PHP.
CO3	Able to understand and implement decision making, looping and other object-oriented features supported by PHP.
CO4	Students able to understand latest framework supported by PHP and implement forms using PHP.
CO5	Students able to develop a web application using PHP and MySQL as database.

Unit No.	Title of the Unit	Content of Unit	Contact Hrs.	Mapped CO
1	Introduction to PHP	Introduction, Uses of PHP, Using PHP in Web Application, Using PHP for Database Applications, Using PHP with your File System, Using PHP for System Commands, Understanding the working of PHP, PHP as a General-Purpose Language, PHP for the Web, keeping up with Changes in PHP, PHP 5, Writing PHP Statements, Adding PHP Sections to HTML File, PHP Output Statement, Documenting your Scripts.	7	CO1
2	Basics of PHP Script & Working with Data	Understanding Data Types, Performing Arithmetic, Manipulating Characters String, Using Date and Time, Naming Variables, assigning values to Variable, Removing Variables, Using Constants, Handling Errors. Storing Data in Group by using Arrays: Introduction, Building Arrays, Assigning values to Arrays, Sorting Arrays, using value in Arrays, Building Multidimensional Arrays.	9	CO2
3	Controlling the Flow Script & Reusing PHP Code	Introduction, Changing the order of Statements Executed, setting up Condition, Joining Simple Conditions to make Complex Conditions, Using Conditions in Conditional Statements and Loops, writing if Statements, Building and using Loops, Breaking Loop, Including Files in Scripts, Understanding Store for included Files, Writing Functions, Using Functions in PHP. Object Oriented Concepts in PHP: Introduction, Understanding Object Oriented Programming, Identifying Objects, Writing Classes, Object Oriented Concepts.	8	CO3
4	Web Application and PHP	Introduction, Understanding Web Security, Displaying Static Pages, Collecting Information from User with HTML Forms, Processing Information received from Users, Passing Information from Page to Page, Using Cookies, Using Hidden Fields in HTML Forms, Using HTTP Session Functions, Adding JavaScript to PHP Scripts, Writing and Reading Flat Files in PHP. Introduction to CMS (Drupal, Joomla) and PHP Framework (Cake PHP).	8	CO4
5	PHP and MySQL	Introduction to MySQL, Effectiveness of MySQL, MySQL Tools, Prerequisites for MySQL Connection, Displaying Queries in Tables, Database Tables, Database Manipulation in MySQL (CREATE, INSERT, UPDATE, DELETE) Operation, SQL Functions. Exchanging Data between PHP and other Programs, Understanding Database supports in PHP, Using PHP to Interact with a Database, PHP/MYSQL Connection, Handling Database-Connection Errors, Validating User Input using JavaScript.	8	CO5

Reference Books:

1. Vikram Vaswani, "PHP and MySQL", Tata McGraw-Hill, 2005.
2. Ben Forta, "MySQL Crash Course", SAMS, 2006.
3. Tim Converse, Joyce Park and Clark Morgan, "PHP 5 and MySQL", Wiley India Reprint, 2008.
4. Robert Sheldon, Geoff Moes, "Beginning MySQL", Wrox, 2005.

e-Learning Source:

1. <https://www.tutorialspoint.com/php/index.htm>
2. https://www.w3schools.com/php/php_mysql_intro.asp

Course Articulation Matrix: (Mapping of COs with POs and PSOs)																		
PO- PSO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO4	PSO5	PSO6	PSO7
CO1	3		1		1		1						3	1				
CO2	3	1	2	1		2	1						3	1				
CO3	2	1	2		1	2	1						3	1				
CO4	1	1	2	1		3	1	2					2	1				
CO5		1	3		1	2	2	3					1	2				

1- Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation



Integral University, Lucknow

Effective from Session: 2017-2018							
Course Code	CA315	Title of the Course	CYBER LAW AND INTERNET SECURITY	L	T	P	C
Year	III	Semester	VI	3	1	0	4
Pre-Requisite	NONE	Co-requisite	NONE				
Course Objectives	<ul style="list-style-type: none"> To study the concepts of Fundamentals of E-commerce and understand the Impact of E-Commerce on Business, Issues, Problems and Prospects of E-commerce. To learn Internet Security and their fundamentals for securing Transactions on web, issue related to firewall. To learn use of Encryption Techniques and their application in the field of computer science to solve security problems and digital signature. To learn Fundamentals of Cyber Law like Object and Scope of the IT Act 2000, Introduction to Indian Cyber Law, and Law related to Semiconductor Layout and Design. To learn Investigation and Ethics and, Internet Security Treats. 						

Course Outcomes	
CO1	Understand the different theoretical and cross-disciplinary approaches (criminological, political, legal and information security/management) to the study of cyber-security and the regulation of the Internet and the Internet of Things
CO2	Understand the structure, mechanics and evolution of the Internet in the context of emerging crime threats and technological and other trends in cyberspace.
CO3	Understand how to Distinguish and classify the forms of cybercriminal activity and the technological and 'social engineering' methods used to undertake such crimes.
CO4	Understand to Analyze and assess the impact of cybercrime on government, businesses, individuals and society. Evaluate the effectiveness of cyber-security, cyber-laws and other countermeasures against cybercrime and cyber warfare.
CO5	Understand to Investigate assumptions about the behavior and role of offenders and victims in cyberspace, and use basic web-tools to explore behavior on-line .

Unit No.	Title of the Unit	Content of Unit	Contact Hrs.	Mapped CO
1	Fundamentals of E-commerce	Basic of E-Commerce, Types of E-Commerce, Benefits, Advantages and Disadvantages, Impact of E-Commerce on Business. Network Infrastructure for E-Commerce: Internet and Intranet. E-Commerce: Issues, Problems and Prospects, Network Access Equipment's, Broadband Telecommunication.	8	CO1
2	Internet Security	Security Issues on Web, Importance of Firewall, Components of Firewall, Transaction Security, Emerging Client Server, Security Threats, Network Security, Factors to Consider in Firewall Design, Limitation of Firewalls.	8	CO2
3	Encryption	Encryption Techniques, Symmetric Encryption Keys and Data Encryption Standard, Triple Encryption, Asymmetric Encryption Secret Key Encryption, Public and Private Pair Key Encryption, Digital Signatures, Virtual Private Network. Digital Signatures: Technical Issues, Legal Issues, Electronic Records, Digital Contracts and Requirements of Digital Signature System.	8	CO3
4	Fundamentals of Cyber Law	Jurisprudence of Cyber Law, Object and Scope of the IT Act 2000, Introduction to Indian Cyber Law, Unicitral Model Law, ISP Guideline, Intellectual Property Issues and Cyber Space, Indian Perspective, Overview of Intellectual Property related Legislation in India, Patent, Copyright, Trademark Law, Law related to Semiconductor Layout and Design. Introduction to CMS (Drupal, Joomla) and PHP Framework (Cake PHP).	8	CO4
5	Investigation and Ethics	Cyber Crime, Cyber Jurisdiction, Cyber Crime and Evidence Act, Treatment of Different Countries of Cyber Crime, Ethical Issues in Data and Software Privacy, Plagiarism, Pornography, Tampering Computer Documents, Data Privacy and Protection, Domain Name System, Software Piracy, Issues in Ethical Hacking. Internet Security Treats: Hacking, Cracking, Sneaking, Virus, Trojan horse, MaliciousCode and Logic Bombs, Introduction to Biometric Security and its Challenges, Finger Prints.	8	CO5

Reference Books:

1. Ravi Kalakota, Andrew Winston, "Frontiers of Electronic Commerce", Addison Wesley.
2. Bajaj and Nag, "E-Commerce: The Cutting Edge of Business", TMH.
3. Harish Chander, "Cyber Law and IT Protection", PHI Publication.
4. Merkov, Breithaupt, "Information Security", Pearson Education.
5. Farooq Ahmad, "Cyber Law in India", Pioneer Books.
6. K. K. Singh, Akansha Singh "Information Security and Cyber Law", Umesh Publication.

e-Learning Source:

1. <https://nptel.ac.in/courses/106105241>
2. <https://www.javatpoint.com/what-is-cyber-law>

Course Articulation Matrix: (Mapping of COs with POs and PSOs)																		
PO- PSO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO4	PSO5	PSO6	PSO7
CO1	3		1		1								3	1				
CO2	3	1	2			1	1						2	1				
CO3	2	2	1	1	2	1							2	1				
CO4	2	2	2	1	1		1						1	3				
CO5	2	1	3			2	2						2	2				

1-Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation



Integral University, Lucknow

Effective from Session: 2017-2018							
Course Code	CA316	Title of the Course	MANAGEMENT INFORMATION SYSTEM	L	T	P	C
Year	III	Semester	VI	3	1	0	4
Pre-Requisite	NONE	Co-requisite	NONE				
Course Objectives	<ul style="list-style-type: none"> To learn the basic knowledge and fundamentals of Information System and various types of Information System. To learn the concepts of Management Information System and Decision Support Systems. To learn the overall perspective of Planning and Control in an Organization. To learn how internet, E-Commerce and other technologies help in business processes. To learn the management of Information Technologies in organizations. To learn the role of various advance concepts in managing the business. 						

Course Outcomes	
CO1	Able to understand the basic concepts of Information Systems and applying the same to solve the business problems.
CO2	Able to develop the knowledge of Management Information system and how it differs from other Information systems
CO3	Able to define Control and Planning process in an Organization with the characteristics and nature of control process
CO4	Able to use various technologies like Internet, Intranet, Extranet and E-Commerce in business operations and for Managerial decision support.
CO5	Acquainted with the facing challenges in management and using various advance systems such as ERP, SCM, CRM etc.

Unit No.	Title of the Unit	Content of Unit	Contact Hrs.	Mapped CO
1	Foundation of Information Systems	Introduction to Information System in Business, Fundamentals of Information Systems, Solving Business Problems with Information Systems, Types of Information Systems, Effectiveness and Efficiency Criteria in Information System.	8	CO1
2	An Overview of Management Information System	Definition and Concept of a Management Information System, MIS Vs Data Processing, MIS and Decision Support System, MIS and Information Resources Management, End User Computing, Structure of a Management Information system.	8	CO2
3	Concepts of Planning and Control	Concept of Organizational Planning, The Planning Process, Computational Support for Planning, Characteristics of Control Process, The Nature of Control in an Organization.	8	CO3
4	Business Applications of Information Technology	Internet and Electronic Commerce, Intranet, Extranet and Enterprise Solutions, Information System for Business Operations, Information System for Managerial Decision Support, Information System for Strategic Advantage	8	CO4
5	Managing Information Technology	Enterprise and Global Management, Security and Ethical Challenges, Planning and Implementing Changes. Advanced Concepts in Information Systems: Enterprise Resource Planning, Supply Chain Management, Customer Relationship Management and Procurement Management.	8	CO5

Reference Books:	
1.	Brian, "Management Information System", Tata Mcgraw-Hill Education Pvt. Ltd.
2.	Gordon B. Davis and Margrethe H. Olson, "Management Information System", Tata Mcgraw-Hill Education Pvt. Ltd.
3.	Brian, "Introduction to Information System", Tata Mcgraw-Hill Education Pvt. Ltd.
4.	Murdick, "Information System for Modern Management", PHI Learning Private Limited, Delhi India.
5.	Jawadekar, "Management Information System", Tata Mcgraw-Hill Education Pvt. Ltd.
6.	Brian, "Management Information System", Tata Mcgraw-Hill Education Pvt. Ltd.

e-Learning Source:	
1.	https://ebooks.lpude.in/management/mba/term_4/DMGT505_MANAGEMENT_INFORMATION_SYSTEM.pdf
2.	https://repository.dinus.ac.id/docs/ajar/Kenneth_C.Laudon.Jane_P.Laudon_-_Management_Information_System_13th_Edition_.pdf

Course Articulation Matrix: (Mapping of COs with POs and PSOs)																		
PO-PSO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO4	PSO5	PSO6	PSO7
	CO1	3	2	1	1	1							3	1				
CO2	3	1	2			1	1						2	2				
CO3	2	2	1	1	1								2	1				
CO4		1	2		1	3	1						3	1				
CO5	1	2	2	1		1	1						2	2				

1-Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation



Integral University, Lucknow

Effective from Session: 2017-2018							
Course Code	CA317	Title of the Course	E-GOVERNANCE	L	T	P	C
Year	III	Semester	VI	3	1	0	4
Pre-Requisite	NONE	Co-requisite	NONE				
<ul style="list-style-type: none"> • Course Objectives 	<ul style="list-style-type: none"> • To learn Concept of E-Governance and E-Kranti framework. • To provide an idea of using various open source software's and Framework for Adoption of Open Source Software in E-Governance Systems. • To learn basic concept of Policy on Open Application Programming Interfaces (APIs) for Government of India and Email Policy of Government of India. • To learn basics concept of Policy on Use of IT Resources of Government of India and Policy on Collaborative Application Development by Opening the Source Code of Government Applications. • To learn basics concept of Application Development & Re-Engineering Guidelines for Cloud Ready Applications. 						

Course Outcomes	
CO1	Able to understand basics of E-Governance and E-Kranti framework.
CO2	Able to understand various open source software's and Framework for adoption of Open Source in E-Governance Systems.
CO3	To understand the basic concepts of Policy on Open Application Programming Interfaces (APIs) and for Government of India and Email Policy of Government of India
CO4	To understand the basics concept of Policy on Use of IT Resources of Government of India and Policy on Collaborative Application Development by Opening the Source Code of Government Applications.
CO5	Able to understand basics concept of Application Development & Re-Engineering Guidelines for Cloud Ready Applications.

Unit No.	Title of the Unit	Content of Unit	Contact Hrs.	Mapped CO
1	Basic Concept of E-Governance	Meaning of E-Governance, Concept and need of E-Governance, Meaning of Digital India, Overview of E-Governance Framework. The E-Kranti Framework: Preamble, Role of E-Kranti in Digital India and its Approval, Objectives of E-Kranti, Principles of E-Kranti, Approach and Methodology for Implementing E-Kranti, Implementation Strategy of E-Kranti.	8	CO1
2	Policy on Adoption of Open Source Software for Government of India	Objective, Policy Statement, Nature of Compliance, Applicability, How to Comply, Exception, Implementation Mechanism, Review of Policy. Framework for Adoption of Open Source Software in E-Governance Systems: Metadata, Scope and Applicability, OSS Current Scenario, Factors Influencing the Adoption of OSS, Impact of Adoption of OSS, Types of OSS Support Models, OSS Licenses, Security Aspects, Unified Software Development, Rapid Application Development, Localization and OSS, Device Driver, Procurement Guidelines, Stages for Induction of OSS Solution, Proposed Ecosystem	8	CO2
3	Policy on Open Application Programming Interfaces (APIs) for Government of India	Objectives and Definition, Policy Statement, Nature of Compliances, Applicability, Implementation Mechanism, Review of Policy. Email Policy of Government of India: Objectives, Roles Specified for Implementation of the Policy, Basic Requirements of GoI E-mail Service, Responsibilities of User Organizations, Responsibilities of Users, Service Level Agreement, Scrutiny of E-mails/Release of Logs, Security Incident Management Process, Intellectual Property, Enforcement, Deactivation, Exemption, Audit.	8	CO3
4	Policy on Use of IT Resources of Government of India	Scope, Objectives, Roles and Responsibilities, Access to the Network, Monitoring and Privacy, E-mail Access from the Government Network, Access to Social Media Sites, Security Incident Management Process, Intellectual Property, Enforcement, Deactivation, Audit. Policy on Collaborative Application Development by Opening the Source Code of Government Applications: Metadata, Preamble and Effective Date, Objectives, Applicability, Policy Statement, Responsibilities, Review.	8	CO4
5	Application Development & Re-Engineering Guidelines for Cloud Ready Applications	Introduction, Need for Software Development and Re-Engineering Guidelines, Evolution of E=Gov App Store, Solution Architecture, Standards, Adoption and Solution Engineering, Integration and Interoperability, Quality Certification, Release Management and Documentation, Solution Sizing and Scalability, Language and Interface, Legacy Integration: Digitization and Migration, Intellectual Property Rights (for Center and State-owned Applications). Cloud Enablement of Applications: Application Migration to Cloud, Software as a Service Characteristics, Utilizations of Indian Theory in Public Administration, Raising Competence of Administration: Role of Indian Theory.	8	CO5

Reference Books:

1. "e-Governance Policy Initiatives under Digital India", by Department of Electronics and Information Technology, Ministry of Communication and Information Technology, Government of India, <http://negd.gov.in/ebook-e-governance-policy-initiatives-under-digital-india>.
2. M.G. Gupta and R.K. Tiwari (eds.), Reinventing the Government, IIPA, 1998.
3. Richard Hecks, Implementing and Managing e-Governance, Vistar Publications.
4. Jan Erik Lane, New Public Management, Rout ledges, 2000.

5.	Work Bank Report, Good Governance, The Business of Government, 1997.
6.	IJPA Special No. on “Indian Theory and Public Administration”, July-September, 2000.
7.	IJPA Special No. on “Towards Good Governance”, July-September, 2000.
8.	Articles on Indian Theory, e-Governance and Good governance for IJPA, ISDA Journal and Administrative Change.
e-Learning Source:	
1.	https://byjus.com/free-ias-prep/significance-of-e-governance/
2.	https://wikieducator.org/images/0/0f/Egovbook.pdf

Course Articulation Matrix: (Mapping of COs with POs and PSOs)																		
PO-PSO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO4	PSO5	PSO6	PSO7
CO1	3	1	1	1	1		1						3	1				
CO2	3	1	2	1		2	1						3	1				
CO3	1	1	2		2		1						3	1				
CO4	1	1	3		1	2	2						2	2				
CO5	2	1	2	1		1							2	2				

1-Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation



Integral University, Lucknow

Effective from Session: 2017-2018							
Course Code	CA318	Title of the Course	FUNDAMENTALS OF E-COMMERCE	L	T	P	C
Year	III	Semester	VI	3	1	0	4
Pre-Requisite	NONE	Co-requisite	NONE				
Course Objectives	<ul style="list-style-type: none"> To provide knowledge of e-commerce with its technology, benefits, limitations and impact on business. To enhance practical knowledge for different applications of e-commerce such as e-banking, eLearning and e-shopping etc. To give knowledge for architecture framework and security aspects in e-commerce. To offer knowledge of encryption techniques used in e-commerce. To construct the concept of process of electronic payment in e-commerce along with its risk. To give the implementation knowledge about Electronic Data Interchange with respect to architecture and standards. To provide the practical knowledge of security issues in Electronic Data Interchange. To develop business skill and techniques for digital marketing. 						

Course Outcomes	
CO1	Gain knowledge of e-commerce with its technology, benefits, limitations, impact on business.
CO2	Understand practical knowledge of applications of e-commerce such as e-banking, eLearning and e-shopping etc.
CO3	Learn about the knowledge of architecture framework and security aspects in e-commerce
CO4	Apply knowledge of encryption techniques used in e-commerce
CO5	Understand the concept of process of electronic payment in e-commerce along with its risk.
CO6	Implementation knowledge about Electronic Data Interchange with respect to architecture and standards.
CO7	Apply practical knowledge of security issues in Electronic Data Interchange.
CO8	Establish business skill and techniques for digital marketing

Unit No.	Title of the Unit	Content of Unit	Contact Hrs.	Mapped CO
1	E-Business and E-Commerce	Introduction, Potential Benefits, Limitations, Classifications, Impact of E-Commerce on Business Models. E-Commerce Applications: Entertainment, E-Marketing, E-Advertising, Search Engines, E-Banking, Mobile Commerce, Online Trading, E-Learning, E-Shopping, Information Superhighway.	8	CO1
2	Architecture Framework of E-Commerce	Application Services, Brokerage and Data Management, Interface Layers, Secure Messaging, Middleware Services and Network Infrastructure. Security Protocols: Open Systems Interconnection (OSI), TCP/IP, FTP, HTTP, SMTP, S-HTTP, SSL, NNTP. Messaging Protocols: Basic Mail Protocol, Security Enhanced Mail Protocol, Web Security Issues, Encryption Techniques: Symmetric and Asymmetric.	8	CO2
3	E-Commerce Applications	Consumer Oriented E-Commerce Applications, Mercantile Process Model: Consumers Perspective and Merchant's Perspective. Electronic Payment Systems: Advantages and Risks, Types of Payment System (Credit Cards, E-Cash, Smart-Cards), etc.	8	CO3
4	Electronic Data Interchange	EDI Architecture, EDI Standards, Non EDI System, Partial EDI System, Fully Integrated EDI System, Prerequisites for EDI. Issues of EDI: Legal Issues, Security Issues, Privacy Issues, Fundamentals of Financial Electronic Data Interchange, Taxation Rules in the E-Commerce.	8	CO4
5	Digital Marketing	Search Engines, Directories, Registrations, Solicited Targeted E-mails, Interactive Sites, Banners, Advertising, Spam Mails, E-mail, Chain Letters. Applications of 5P's (Product, Price, Place, Promotion, People). E-Advertising Techniques: Banners, Sponsorships, Portals, Online Coupons, Digital Assets of Company.	8	CO5

Reference Books:

1. David Whiteley, "E-Commerce", Tata McGraw Hill, 2000.
2. Greenstein and Feinman, "Electronic Commerce – Security: Risk Management & Control", McGraw-Hill, 1999.
3. Ravi Kalakota and A.B. Whinston, "Frontiers of Electronic Commerce", Pearson Education, 2005.
4. Eframi Turban, Jae Lee, David King, K. Michale Chung, "Electronic Commerce", Pearson Education, 2000.
5. Henry Chan, Raymond Lee, Elizabeth Chang, "E-commerce: Fundamentals and Applications", Wiley, 2001.

e-Learning Source:

1. https://www.tutorialspoint.com/e_commerce/index.htm
2. <https://www.geeksforgeeks.org/e-commerce/>

Course Articulation Matrix: (Mapping of COs with POs and PSOs)																		
PO-PSO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO4	PSO5	PSO6	PSO7
CO1	3	1	1		1		1						3	1				
CO2	2	1	1			3	1						2	1				
CO3	2	2	1	1		2							3	1				
CO4		1	2		1	3	1	1					1	2				
CO5	3	1	2	1		1	1						2	2				
CO6	1	1	3	1	2	1							3	1				
CO7		1	2		1	3	1						2	2				
CO8	1	2	2	1	2	1							3	1				

1-Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation



Integral University, Lucknow

Effective from Session: 2017-2018							
Course Code	CA319	Title of the Course	ERP SYSTEMS	L	T	P	C
Year	III	Semester	VI	3	1	0	4
Pre-Requisite	NONE	Co-requisite	NONE				
Course Objectives	<ul style="list-style-type: none"> To learn the basic concepts of Enterprise Resource Planning. To learn different technologies used in ERP. To learn the concepts of ERP Manufacturing Perspective and ERP Modules. To learn what are the benefits of ERP To study and understand the ERP life cycle. To learn the different tools used in ERP. 						

Course Outcomes	
CO1	Able to understand the basic knowledge of Enterprise Resource Planning.
CO2	Abel to Identify different technologies used in Enterprise Resource Planning.
CO3	Abel to understand and apply the concepts of ERP Manufacturing Perspective and ERP Modules.
CO4	Discuss the benefits, Success and Failure Factors of an ERP Implementation.
CO5	Abel to understand and implement the ERP life Cycle. Apply different tools and Software used in ERP.

Unit No.	Title of the Unit	Content of Unit	Contact Hrs.	Mapped CO
1	Introduction to ERP	Common Myths, Advantages, Basic Concepts, Risks and Benefits. Evolution of ERP: Material Requirement Planning, Manufacturing Resource Planning, ERP, e-ERP. ERP and Related Technologies: Business Process Reengineering (BPR), Data Warehousing, Data Mining, Online Analytical Processing (OLAP), Online Transaction Processing (OLTP), Supply Chain Management (SCM) and Customer Relationship Management (CRM).	10	CO1
2	ERP Marketplace and Marketplace Dynamics	Market Overview, Marketplace Dynamics, Changing ERP Market, Functional Modules. ERP Implementation Basics: Technological, Operational, and Business reasons for Implementing ERP, Implementation Challenges, Implementation Life Cycle, Package Selection	8	CO2
3	ERP Transition Strategies	Big Bang Strategy, Phased Implementation, Parallel Implementation, Process Line Transition Strategy, Hybrid Transition Strategy. ERP Implementation Process: Implementation Methodologies, Implementation Plan, Risk Assessment, ERP Project Teams, Implementation Vendors Evaluation Criterion.	8	CO3
4	Success and Failure Factors of an ERP Implementation	Success Factors, Failure Factors. ERP Operation and Maintenance: After Going Live, Ongoing Implementation Efforts, Upgrading Vs New Software, Operation and Maintenance of the ERP System, ERP Maintenance Phase, Maximizing the ERP System	8	CO4
5	Emerging Trends in ERP	Supply Chain Integration, The E-Business Process Model, Components of E-Business Supply Chain, Future of ERP, Faster Implementation Methodologies, Customization Tools, Business Models, Challenges of E-Commerce. Commonly Used ERP Packages: Tally ERP, TCS-ION, SAP.	8	CO5

Reference Books:

1. Lexis Leon, "Enterprise Resource Planning", TMH.
2. Brady, Manu, Wegner, "Enterprise Resource Planning", TMH.
3. V.K Garg, N.K. Venkitakrishnan, "ERP Ware: ERP Implementation Framework", Prentice Hall of India.

e-Learning Source:

1. https://www.tutorialspoint.com/management_concepts/enterprise_resource_planning.htm
2. <https://www.javatpoint.com/erp-full-form>

Course Articulation Matrix: (Mapping of COs with POs and PSOs)																		
PO- PSO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO4	PSO5	PSO6	PSO7
CO1	3		1		1								3	1				
CO2	2	3	1	2		1		1					2	2				
CO3	2	1	2	1		2	1						3	1				
CO4	1	1	2		1		3						1	2				
CO5	2	1	3	1		2	2	1					3	1				

1-Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation



Integral University, Lucknow

Effective from Session: 2017-2018							
Course Code	CA320	Title of the Course	AI AND EXPERT SYSTEMS	L	T	P	C
Year	III	Semester	VI	3	1	0	4
Pre-Requisite	NONE	Co-requisite	NONE				
Course Objectives	<ul style="list-style-type: none"> To learn the concepts of Artificial Intelligence (AI). Understand the concepts of searching techniques. To develop the logical skills of knowledge and its representational structure. Learn the concepts how to design the program in LISP. Understand the concepts of Expert system. 						

Course Outcomes	
CO1	Study the concepts of AI.
CO2	Develop the searching algorithms.
CO3	Understand the knowledge skills and it's representational structure in AI.
CO4	Study the concepts of Learn the concepts how to design the program in LISP.
CO5	To learn the concepts of Expert system

Unit No.	Title of the Unit	Content of Unit	Contact Hrs.	Mapped CO
1	Overview of AI	Definition of AI, The AI Problems, Application of AI, Water Jug Problem, Defining the Problem as a State Space Search, Problem Characteristics, Production Systems, Control Strategies, Forward and Backward Chaining	10	CO1
2	Search Techniques	Depth First Search, Breadth First Search, Depth Limited Search, Iterative Deepening First Search, Hill Climbing, Best First Search and A* Algorithm, OR Graphs, Problem Reduction, AO* Algorithm, Constraint Satisfaction Problems.	8	CO2
3	Knowledge Representation	Approach to Knowledge Representation, Issues in Knowledge Representation, First Order Predicate Logic, Horn's Clauses, Conversion to Clausal Form, Resolution Principle in Propositional Logic, Semantic Networks, Frame Structure.	8	CO3
4	Introduction to Functional Programming Language	Introduction to LISP and its Syntax, Numeric Function, Basic List Manipulation Function, Input/ Output and Local Variables, Recursion Function, Property of List, Arrays.	8	CO4
5	Expert System	Introduction to Expert Systems, Rule Based System Architecture, Knowledge Acquisition and Validation, Expert System Shells. Case Studies: MYCIN	8	CO5

Reference Books:	
1.	Elaine Rich and Kevin Knight, "Artificial Intelligence", Tata McGraw Hill.
2.	Dan W.Patterson, "Introduction to Artificial Intelligence and Expert Systems", Prentice Hall of India.
3.	Nils J.Nilsson, "Principles of Artificial Intelligence", Narosa Publishing house.
4.	Stuart Rusell, Peter Norvig, "Artificial Intelligence: A Modern Approach", Pearson Edition 2.
e-Learning Source:	
1.	https://nptel.ac.in/courses/106106140
2.	https://www.techtarget.com/searchenterpriseai/definition/AI-Artificial-Intelligence

Course Articulation Matrix: (Mapping of COs with POs and PSOs)																		
PO- PSO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO4	PSO5	PSO6	PSO7
CO1	3	1			1								2	2				
CO2	1	1	3	1		2	2	1					2	2				
CO3	3	1	1	1		1	1						3	1				
CO4	2	1	3		1		2						1	2				
CO5	2	1	1	1		1		1					3	1				

1-Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation



Integral University, Lucknow

Effective from Session: 2017-2018							
Course Code	CA321	Title of the Course	PROJECT LAB	L	T	P	C
Year	III	Semester	VI	0	0	6	3
Pre-Requisite	None	Co-requisite	None				
Course Objectives	<ul style="list-style-type: none"> To offer students a glimpse into real world problems, able to gather and document the requirement of real world. To developed an prototype so that student can overcome the gap of academic and industry. To enable students to create very precise specifications of the IT solution to be designed and able to implement solution using programming language. To create awareness among the students of the characteristics of several domain areas where IT can be effectively used. To improve the team building, communication and management skills of the students. 						

Course Outcomes	
CO1	Identify the problem related to the project work, analyze and Design project documentation.
CO2	Implement the solution for the chosen problem using the concepts and techniques in the curriculum.
CO3	Gain practical insights of testing and coding and practical insights of selected technology.
CO4	Experience the actual work environment in an IT organization, Explore career opportunities in the IT sector.
CO5	Explore the maximum possible ways to create and handle the software project in different technology

Experiment	Title of the unit	Content of Unit	Contact Hrs.	Mapped CO
1	Phase1	To offer students a glimpse into real world problems, able to gather and document the requirement of real world.	6	CO1
2	Phase2	To enable students to create very precise specifications of the IT solution to be designed and able to implement solution using programming language.	6	CO2
3	Phase3	To create awareness among the students of the characteristics of several domain areas where IT can be effectively used.	6	CO3
4	Phase4	To improve the team building, communication and management skills of the students.	6	CO4

Reference Books:	
1.	Jessica Burdman, "Collaborative Web Development", Pearson Education Asia
2.	Ivan Bayross, "HTML, DHTML, JavaScript, Perl CGI", BPB Publication.
3.	Mark O'Ncile, "Web Services – Security", TMH.

e-Learning Source:	
1.	https://www.mcu.ac.in/wp-content/uploads/2020/06/Major-Project-BCA-Guidelines-10062020.pdf
2.	http://www.kthmcollege.ac.in/images/department/download-20182408115813.pdf

Course Articulation Matrix: (Mapping of COs with POs and PSOs)																		
PO-PSO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO4	PSO5	PSO6	PSO7
	CO1	1	3	2	2	1		1						3	2			
CO2	2	1	3	1		2	1						2	2				
CO3	3	1	1	2	1	1							3	1				
CO4	2	1	2	1		1	1						2	2				
CO5	3	1		1	1		2						2	1				

1-Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation



Integral University, Lucknow

Effective from Session: 2017-2018

Course Code	CA322	Title of the Course	ADVANCED TECHNOLOGY LAB	L	T	P	C
Year	III	Semester	VI	0	0	2	1
Pre-Requisite	None	Co-requisite	CA313				
Course Objectives	<ul style="list-style-type: none"> Able to understand the use of .Net Frameworks Able to solve real world problems using OOP techniques. Able to understand the use various properties, methods, and events. Able to understand the use of Packages and Interface in .Net Able to develop and understand console, window and web applications Able to understand connectivity with vb.net Able to design GUI based applications and develop web applications. Able to understand ADO.Net 						

Course Outcomes	
CO1	Understand .NET Framework and describe some of the major enhancements to the new version of Visual Basic.
CO2	Describe the basic structure of a Visual Basic.NET project and use main features of the integrated development environment (IDE)
CO3	Design forms to test its various properties, methods, and events.
CO4	Introduce the design of Graphical User Interface using applets and swing controls
CO5	Create applications using Microsoft Windows Forms and ADO.NET classes to access databases

Experiment No.	Title of the Experiment	Content of Unit	Contact Hrs.	Mapped CO
1	.NET Framework	1. Observe and Draw Visual .NET IDE layout and hands on practice to create, save and open the project. 2. Write, test and debug at least five loop, array and operator based VB.NET programs. 3. Design forms and write, test and debug programs to test its various properties, methods, and events.	6	CO1
2	Visual Basic.NET	1. Write, test and debug program to test inputbox and message box. 2. Write, test and debug applications to use textbox, label, and button. 3. Write, test and debug applications to use radio button, checkbox, numericupdown and group box controls.	6	CO2
3	Microsoft Windows Forms	1. Write, test and debug application using datetimepicker, listbox, combo box, picture box. 2. Write, test and debug application using rich text box, progress bar, masked text box, link label.	6	CO3
4	GUI using applets and swing controls	1. Write, test and debug application using checked list box, scroll bars, timer. 2. Write, test and debug applications using sub procedures and functions. 3. Write, test and debug applications using math and string manipulation functions.	6	CO4
5	ADO.NET classes to access databases	1. Create and test connection using ADO.NET to view SQL Express Server/Microsoft Access data in textbox controls. 2. Write, test and debug small application to add, edit, search, and delete record in database in unbounded mode i.e. through coding.	6	CO5

Reference Books:

1. Deitel and Deitel, "Visual Basic.NET How to Program", Pearson Education.
2. Daniel Cazzulino, "Beginning Web Programming using VB.NET and Visual Studio .NET", Wrox Press.
3. David Vitter, "Designing VB.NET Application - A Developer's Indispensable Guide to VB.NET", Dreamtech Press.
4. Richard Blair, Mathew Renolds, "Beginning VB.NET 2003", Wrox Publication.

e-Learning Source:

1. <https://dotnet.microsoft.com/en-us/learn>
2. <https://dotnettutorials.net/>

Course Articulation Matrix: (Mapping of COs with POs and PSOs)

PO-PSO CO	Course Articulation Matrix: (Mapping of COs with POs and PSOs)																	
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO4	PSO5	PSO6	PSO7
CO1	3	1	1		1		1						2	1				
CO2	3	2	1			1	1						2	1				
CO3	1	2	3	1		1							2	2				
CO4	2	1	2	1	2		1						3	1				
CO5	1	1	3	2	1	2							2	2				

1-Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation



Integral University, Lucknow

Effective from Session: 2017-2018							
Course Code	CA323	Title of the Course	OPEN SOURCE LAB	L	T	P	C
Year	III	Semester	VI	0	0	2	1
Pre-Requisite	None	Co-requisite	CA314				
Course Objectives	<ul style="list-style-type: none"> Ability to demonstrate knowledge of Computer science and its applications in order to enhance basic understanding of various software technologies. Ability to analyze and identify various business and technical problems to further solve problems with effective communication. Ability to adapt analytical, logical and managerial skills with the technical aspects in order to design and deploy reliable software programs and application for real world problems. Ability to investigate complex problems and provide computer-based solutions. Ability to understand and deliver ethical, social and cultural responsibilities in professional environment as an individual and team. Ability to adapt new technologies for upgrading their skills and contributing to a lifelong learning. Ability to create and manage multidisciplinary projects and successfully apply software and project management principles. 						

Course Outcomes	
CO1	Understand, analyze and apply the role of languages like HTML, DHTML, CSS, JavaScript and PHP.
CO2	Analyze a web page and identify its elements and attributes.
CO3	Create web pages using HTML, DHTML and Cascading Style Sheets.
CO4	Create dynamic web pages using JavaScript, XML.
CO5	Build web applications using PHP

Exper iment No.	Title of the Experiment	Content of Unit	Contact Hrs.	Mapped CO
1	Web pages Programming using PHP	1. Creating simple web pages using PHP. 2. Use of conditional statements in PHP. 3. Use of looping statements in PHP.	6	CO1
2	Arrays, User defined functions and File manipulation	1. Creating different types of arrays in PHP. 2. Creating user defined functions in PHP. 3. Creation of files in PHP. 4. File manipulation using PHP.	6	CO2
3	PHP Application using Sessions and Cookies	1. Creation of sessions in PHP. 2. Creation of cookies in PHP. 3. Creating simple applications using PHP.	6	CO3
4	Working with MySQL, Transactions on MySQL	1. Creating simple table with constraints using MYSQL. 2. Insertion, Updating and Deletion of rows in MYSQL tables. 3. Usage of aggregate functions in MYSQL. 4. Working with set operators using MYSQL	8	CO4
5	string, numeric and date functions, Database connectivity	1. Working with string, numeric and date functions using MYSQL. 2. Database connectivity in PHP with MYSQL. 3. Validating Input. 4. Creating simple Application using PHP and MYSQL	8	CO5

Reference Books:	
1.	Vikram Vaswani, "PHP and MySQL", Tata McGraw-Hill, 2005.
2.	Tim Converse, Joyce Park and Clark Morgan, "PHP 5 and MySQL", Wiley India Reprint, 2008.
3.	Robert Sheldon, Geoff Moes, "Beginning MySQL", Wrox, 2005.
4.	Alexis Leon and Mathews Leon, "Database Management Systems", Vikas, 2008.
e-Learning Source:	
1.	https://www.geeksforgeeks.org/php-tutorials/
2.	https://www.javatpoint.com/php-programs

Course Articulation Matrix: (Mapping of COs with POs and PSOs)																			
PO- PSO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO4	PSO5	PSO6	PSO7	
	CO1	3		1		1		1							3	1			
CO2	3	1	2	1		2	1							1	3				
CO3	2	1	2		1	2	1							2	2				
CO4	1	1	2	1		3	1	2						2	2				
CO5		1	3		1	2	2	3						2	1				

1-Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation