

**Criterion**: I – Curricular Aspects

Metric: 1.1.1 - Programme Outcomes (POs), Programme Specific Outcomes (PSOs) and

Course Outcomes (COs) - B.C.A & P.G.D.C.A

Year : 2015 - 2020



#### FATIMA COLLEGE (AUTONOMOUS), MADURAI – 625018

B.C.A & P.G.D.C.A

NAME OF THE PROGRAMME: B.C.A

PROGRAMME CODE: USCA

#### **PROGRAMME OUTCOMES:**

The learners will be able to

**PO1:** Apply acquired scientific knowledge to solve complex issues.

**PO2:** Attain Analytical skills to solve complex cultural, societal and environmental issues.

**PO3:** Employ latest and updated tools and technologies to analyse complex issues.

**PO4:** Demonstrate Professional Ethics that foster Community, Nation and Environment Building Initiatives.

#### PROGRAMME SPECIFIC OUTCOMES:

**PSO 1:** To achieve significant understanding of theoretical and programming concepts in key areas of Computer Applications.

PSO 2: To expand and sharpen practical and problem solving skills to provide solutions to industry, society and



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business problems.

<b>PSO 3:</b>	To apply modern practices ar	nd	strategies	in	software	project	development	using	open	source	and	other
	programming environments.											

- **PSO 4:** To inculcate the ability to analyze and interpret problems, make inferences from the resulting data and apply technical skills to solve real time problems.
- **PSO 5:** To make graduates understand various professional, technical and ethical issues prevailing in the industry
- **PSO 6:** To gain exposure in preventive, ethical hacking and security technologies in recent trends
- **PSO 7:** To equip the students to meet the requirement of Corporate world and Industry standards
- **PSO 8:** To engage in professional development and to pursue post graduate education in the fields of Information Technology and Computer Applications
- **PSO 9:** To generate ideas of innovation and to identify, formulate and solve problems in software solutions, outsourcing services, public and private sectors
- **PSO 10:** To engage the students technically on par with the societal and environmental responsibilities added with professional ethics



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#### 2019 - 2020

COURSE CODE	Course Title	NATURE OF THE COURSE (LOCAL/NATIONAL /REGIONAL/ GLOBAL)	Course Description	Course Outcomes
19J1CC1	Programming in C	Global	To learn the basic knowledge of structured programming in C control structures, data structures and functions along with basic problem solving techniques	CO1: Acquire basic understanding of C programming  CO2: Illustrate how arrays and strings are implemented in C  CO3: Utilize the knowledge of Functions and Pointers  CO4: Analyze the memory management concept in C using structure and Unions  CO5: Outline the file operations in C
19J1CC2	Lab In C	Global	To learn the practical	CO1: Acquire basic understanding of C



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	Programming		implementation of	programming
			structured programming using control structures, data structures and functions along with basic problem solving techniques	CO2: Illustrate how arrays and strings are implemented in C  CO3: Utilize the knowledge of Functions and Pointers  CO4: Analyze the memory management concept in C using structure and Unions  CO5: Outline the file operations in C
19J1NME	Non Major Elective – I Multimedia Lab – Flash	Global	This course helps to become familiar with the elements and tools in Flash that is used to create interactive animated media such as motion graphics, videos, presentations and websites	CO1: Apply tweens and articulated motions to morph shapes  CO 2:Design, create and edit flash based navigation menus and interactive movies  CO3: Utilize flash components to create interactivity



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				CO4: Demonstrate load, control
			000	and remove movie clips
				and masks in movie content
			FAD	CO5:Utilize and understand
			LEMO	different sounds and sound
				formats in flash movies
				Publish flash movies in
				numerous formats and
				contexts in a
19J2CC3	Object Oriented	Global	To get better	CO1: Assess the object – oriented
	Programming in		understanding in the	concepts in C++
	C++		OOPS Concept and to	CO2: Illustrate the usage of Functions
	N N		have basic knowledge in	in C++
		KIN	writing programs using	CO3: Analyze advanced features of C++
			C++ Programming	specifically stream I/O and
				overloading
			DITO	overloading
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			COL	CO4: Demonstrate on Inheritance and Virtual Classes CO5: Outline the file operations in C++
19J2CC4	Lab in C++	Global	To learn the basic knowledge of Object Oriented Programming in C++ and write code in all aspects of C++ Language	CO1: Read, understand and trace the execution of programs written in C++ language  CO2: Demonstrate class and object functions  CO3; Assess operator overloading and function overloading to specific problem definition  CO4: Demonstrate file operations in C++.  CO5: Write C++ code to demonstrate each concept



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COURSE	Course Title	NATURE OF THE COURSE (LOCAL/NATIONAL /REGIONAL/ GLOBAL)	Course Description	Course Objectives
J3CC7	Operating Systems	Global	To Study about the concepts, structure and mechanisms of operating systems. To examine the operations of processes and threads, scheduling, deadlock, memory management and file systems	<ul> <li>Outline the structure of OS, basic architectural components</li> <li>Analyze on the different scheduling algorithms and critical section problems</li> <li>Critique device and resource management techniques by concentrating on deadlocks</li> <li>Identify and know about memory management techniques</li> <li>Interpret the mechanisms adopted for file sharing in distributed Applications</li> </ul>



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J3CC8	Relational Database	Global	To have in-depth	Understand the basic concepts of
	Management System		knowledge in the	database and relational database
			database concepts.	management systems
			LEAD	Analyze the various normalization
				concepts
				Disseminate SQL commands to
		4/		create tables and indexes
				Apply DDL and DML commands in
			7	real time applications
	5			Write dynamic queries and
		<b>8</b>		programming language SQL to
		A		demonstrate the concept of RDBMS
J3AC3	Management	Global	To know the usage of	Understand the need and basic
	Information		information systems in	concept of MIS
	Systems		the field of management	Analyze MIS and various functional
		36	10)0133	information system
				Analyze MIS information and



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			LEAD (	<ul> <li>System concepts</li> <li>Outline kinds of decision making techniques</li> <li>Apply business applications of information system</li> </ul>
J3CC9	Lab III –	National	To give in-depth	Critique SQL commands to create
	Relational		practical approach to	tables and indexes
	Database		the dat <mark>ab</mark> ase concepts.	Apply DDL and DML commands in
	Management		777	real time applications
	System			Understand the needs of triggering applications
		4		Disseminate knowledge of RDBMS
		MINI	DLY	and SQL, both in terms of design
				and implementation usage
			Berna	Write dynamic queries to
			DOM	demonstrate the concepts of RDBMS



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J3SB1	Skill Based – I Introduction to Photoshop	Global	To introduce and impart knowledge and skills about Photoshop.	<ul> <li>Understand the basic photoshop tools</li> <li>Outline the resizing options available in photoshop</li> <li>Explore various rotation operations</li> <li>Disseminate filter operations in photoshop</li> <li>Analyze various distort filter operations in photoshop</li> </ul>
J4CC10	Software Engineering	Global	Aims to provide a thorough knowledge about various phases involved in software development along with the testing techniques	<ul> <li>Compare the various software models</li> <li>Use knowledge, techniques, skills and modern tools necessary for software engineering practice</li> <li>Analyze on the design factors and guidelines</li> </ul>



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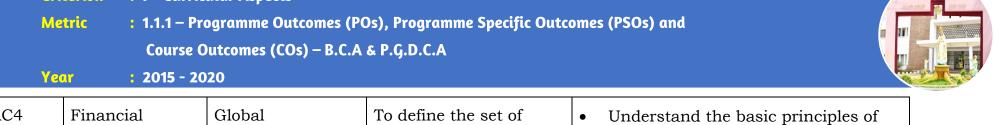
Course Outcomes (COs) – B.C.A & P.G.D.C.A



				Understand the different types of
				testing used in software's
			COI	Compare the various types of
			LEAD	Testing styles
J4CC11	Web	Global	To impart knowledge on	Select and apply mark-up languages
	Programming		various concepts in	for processing and presenting
			internet – html – Active	information in web pages.
			Server Pages.	Design and implement dynamic
			77	websites with good aesthetic sense of
	-		RITTE	designing.
		<b>3</b>		Use fundamental skills to maintain
		$\Sigma$		web server services required to host a
		(A)	DLY LIGHT	website.
				Prepare the students to write a well
				formed DB connection
			DIR	Create WebPages for any application
				using database connectivity
	<u> </u>	<u> </u>		



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J4AC4	Financial	Global	To define the set of	Understand the basic principles of
	Accounting and		accounting method and	accounting
	Accounting and Tally		accounting method and disclosure practices from which firms select when providing information to external parties. The primary emphasis of this course is to assist you in developing the skills required to interpret, analyze and evaluate information contained in published financial statements. To gain indepth knowledge in Accounting package -	<ul> <li>Analyze the final accounts and its classification</li> <li>Acquire knowledge in maintaining cash books</li> <li>Disseminate thorough understanding of TALLY package</li> <li>Perform and manage stock and go down entries in the form of vouchers</li> </ul>
		140	Tally.	



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J4CC12	Lab IV – Web	Global	To impart the practical	Select and apply mark-up languages
	Programming		aspects in the	for processing and presenting
			development of web	information in web pages.
	5		pages.	<ul> <li>Design and implement dynamic websites with good aesthetic sense of designing.</li> <li>Use fundamental skills to maintain web server services required to host a website.</li> <li>Prepare the students to write a well formed DB connection</li> </ul>
		<b>A</b>		Create WebPages for any application
J4SB2	Skill Based – II Financial Accounting Software Package – Tally	Global	To gain in-depth knowledge in Accounting package – Tally	<ul> <li>Understand the basic concepts of company creation in tally</li> <li>Perform journal, ledger and trial balance entries in tally</li> <li>Perform tally entries in the form of</li> </ul>
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			LEAD LEAD	<ul> <li>Vouchers</li> <li>Create and display single and multiple stock groups and stock categories</li> <li>Explore voucher operations in tally</li> </ul>
J5CC11	Computer Networks	Global	Aims to provide a thorough knowledge about various phases involved in software development along with the testing techniques	<ul> <li>Compare the various software models</li> <li>Use knowledge, techniques, skills and modern tools necessary for software engineering practice</li> <li>Analyze on the design factors and guidelines</li> <li>Understand the different types of testing used in software's</li> <li>Compare the various types of Testing styles</li> </ul>



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J5CC12	Java Programming	Global	To acquire knowledge on Object Oriented Programming using Multithreading, Exceptions, GUI & database Applications	<ul> <li>Acquire in depth knowledge in Java programming concepts</li> <li>Identify and analyze platform independent environment and byte code generation</li> <li>Build, Execute and Debug java programs along with Exceptions</li> <li>Design and Implement packages</li> <li>Write, Compile and Execute applet programs which includes GUI</li> </ul>
J5CC13	Lab V – Java Programming	Global	To acquire practical knowledge on Object Oriented Programming using Multithreading, Exceptions, GUI & database Applications	<ul> <li>Acquire in depth knowledge in Java programming concepts</li> <li>Identify and analyze platform independent environment and byte code generation</li> <li>Build, Execute and Debug java</li> </ul>



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J5CC14	Lab VI – Dot Net Programming	Global	To know the rapid development of powerful Window applications and Web application which makes the web development easier  To know the rapid	<ul> <li>programs along with Exceptions</li> <li>Design and Implement packages</li> <li>Write, Compile and Execute applet programs which includes GUI</li> <li>Use Dot Net Framework along with the features of C#</li> <li>Create websites to explore database connectivity</li> <li>Analyze debugging WebPages through case studies</li> <li>Use the different types of master page creation</li> <li>Create different dynamic websites for applications</li> </ul>
J5ME1	Dot Net Programming	Global	development of powerful Window applications	Understand the basic concept of dot net



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			and Web application	Outline the control statements in dot
			which makes the web	net with sample programs
		100	development easier.	Analyze procedures and structures in
			LEAD	dot net with real time examples
				Disseminate knowledge in database
				with dot net
		4/		Explore web application with vb.net
				and asp.net
J5ME2	Computer	Global	To kno <mark>w</mark> about	Outline the need and basic concept of
	Graphics		computer graphics	computer graphics
		<b>8</b>	techniques and to	
			implement the	Explore various algorithms and its
	\	4	technologies in	designs
		MINI	computer world.	Analyze the attributes of output
				primitives
			Down A	Disseminate knowledge in 2-
			1010135	Dimensional geometric
				transformations



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				• Explore the concepts of 2- Dimensional viewing
J5SB3	Skill Based – III CorelDraw	Global	To introduce the concept of essential graphics and visual communication skills.	<ul> <li>Outline the basic concepts of CorelDraw</li> <li>Explore drawing and colouring feature in CorelDraw</li> <li>Disseminate knowledge in mastering with text</li> <li>Outline the effects of applying in CorelDraw</li> <li>Explore how to work with bitmap commands</li> </ul>
J5SB4	Skill Based – IV PHP	Global	To be familiar with the structured approach by identifying the needs, interests and functionalities that	<ul> <li>Demonstrate how server – side programming works on the web</li> <li>Use PHP built – in functions and creating custom functions</li> </ul>



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			helps in creating dynamic websites	<ul> <li>Create a database in phpMyAdmin</li> <li>Create dynamic web pages</li> <li>Design websites for various applications</li> </ul>
J6CC15	Python	Global	This course helps to get knowledge in python language and to know about the different types of data like lists, dictionaries and files handling	<ul> <li>Identify different Python object types</li> <li>Discuss how to use indexing and slicing to access data in Python programs</li> <li>Assess structure and components of a Python program</li> <li>Write programs to demonstrate loops and decision statements in Python</li> <li>Build and package in Python modules for reusability</li> </ul>
J6CC16	Lab VII – Python Lab	Global	This course helps to get practical knowledge in python language and to	<ul><li>Identify different Python object types</li><li>Discuss how to use indexing and</li></ul>



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			know about the different types of data like lists, dictionaries and files handling	<ul> <li>slicing to access data in Python programs</li> <li>Assess structure and components of a Python program</li> <li>Write programs to demonstrate loops and decision statements in Python</li> <li>Build and package in Python modules for reusability</li> </ul>
J6ME3	Artificial Intelligence	Global	To learn the need and basic concepts in artificial intelligence and their real time applications	<ul> <li>Outline the needs and concepts of artificial intelligence in day-to-day life</li> <li>Explore various search techniques</li> <li>Disseminate various knowledge representation in AI</li> <li>Explore the uncertainty techniques involved in AI</li> <li>Analyze the learning concepts and</li> </ul>



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				methods
J6ME4	Data Mining	Global	On Successful Completion of this subject the students should have knowledge on Data mining Concepts	<ul> <li>Analyze data mining algorithms, methods, and tools</li> <li>Identify business applications of data mining</li> <li>Predict quantitative analysis report to make decisions</li> <li>Outline the developing areas web mining, text mining, and ethical aspects of data mining</li> <li>Compare the various applications of Data Mining</li> </ul>
J6ME5	Cloud Computing	Global	To give an introduction to cloud computing and its technologies	<ul> <li>Outline problems and evaluate         various cloud computing solutions</li> <li>Outline Cloud service and         deployment models</li> </ul>



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J6ME6	Mobile Computing	Global	On Successful Completion of this subject the students should have knowledge on Mobile Computing Concepts and emerging technologies and applications.	<ul> <li>Identify the architecture and infrastructure of cloud computing including SaaS, PaaS, IaaS, public cloud, private cloud, hybrid cloud and community cloud</li> <li>Predict security issues and formulate recovery mechanisms</li> <li>Understand the concept of virtualization</li> <li>Create the infrastructure to develop mobile communication systems</li> <li>Assess the characteristics of emerging technologies in mobile communication</li> <li>Critique new knowledge in the field of computer science by using appropriate search methodologies</li> </ul>
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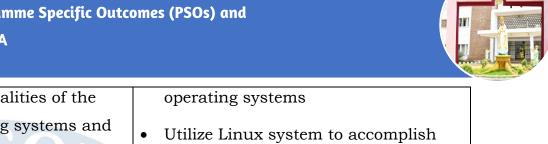
			COZZ	<ul> <li>Analyze on the various software kits available</li> <li>Assess the characteristics of Mobile Components and Applications</li> </ul>
J6SB5	Skill Based-V-Alice	Global	To develop programming skills and impart animation techniques using Alice.	<ul> <li>Explore the interface concepts in Alice</li> <li>Understand how to set the scene and characters in Alice</li> <li>Analyze the programming skills and expertise</li> <li>Disseminate various event handling techniques and methods</li> <li>Assess the characteristics of 3D and billboards and various sound effect options</li> </ul>
J6SB6	Skill Based Lab-	Global	To have a depth knowledge about the	Analyze the inner workings of LINUX



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VI Linux	functionalities of the	operating systems
	operating systems and have a thorough knowledge about the Linux programming.	<ul> <li>Utilize Linux system to accomplish typical personal, office, technical, and software development tasks</li> <li>Use Linux utilities to create and manage simple file processing</li> <li>Use operations, organize directory structures with appropriate security</li> <li>Formulate shell scripts to perform more complex tasks</li> </ul>



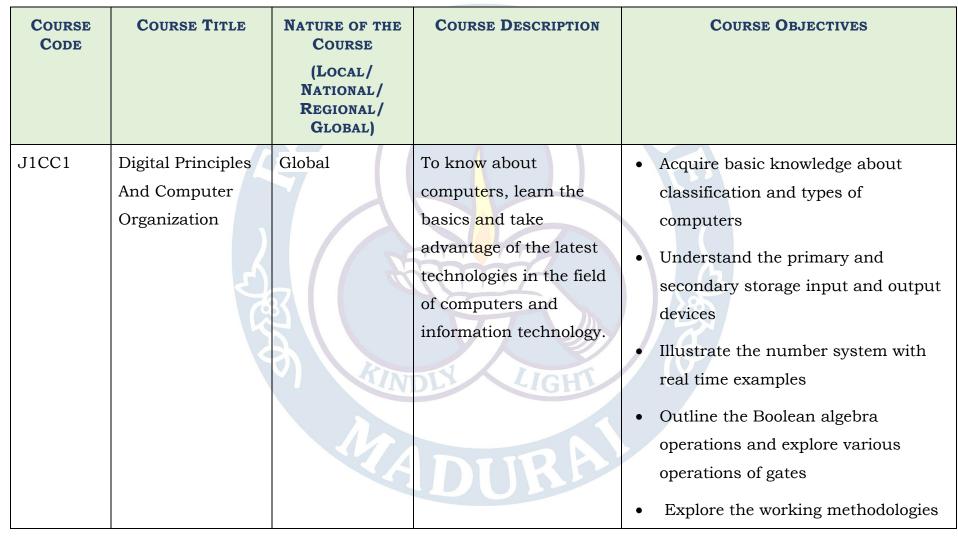
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				of flip flop gates and transfer
				circuits
J1CC2	Programming in C	Global	To learn the basic	Acquire basic understanding of C
			knowledge of structured	programming
			programming in C	Illustrate how arrays and strings are
			control structures, data	implemented in C
		3/	structu <mark>r</mark> es and	
			functions-along with	Utilize the knowledge of Functions
			basic problem solving	and Pointers
			techniques; to introduce	<ul> <li>Analyze the memory management</li> </ul>
	3		software testing and to	concept in C using structure and
	(6	3	teach module testing	Unions
			techniques.	• Outline the file operations in C
J1CC3	Lab I-C	Global	To develop programming	Acquire basic understanding of C
			skills in C.To learn the	programming
		14	practical	Illustrate how arrays and strings
		~	implementation of	are implemented in C
			structured programming	<b>p</b>



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			using control structures and functions along with basic problem solving techniques	<ul> <li>Utilize the knowledge of Functions and Pointers</li> <li>Analyze the memory management concept in C using structure and Unions</li> <li>Outline the file operations in C</li> </ul>
J1NME1	Non Major ElectIVe – I Multimedia Lab – Flash	Global	To develop Multimedia programming skills using Flash. This course helps to become familiar with the elements and tools in Flash that is used to create interactive animated media such as motion graphics, videos, presentations and websites	<ul> <li>Apply tweens and articulated motions to morph shapes</li> <li>Design, create and edit flash based navigation menus and interactive movies</li> <li>Utilize flash components to create interactivity</li> <li>Demonstrate load, control and remove movie clips and masks in movie content</li> <li>Utilize and understand</li> </ul>



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			LEAD (Z	different sounds and sound formats in flash movies Publish flash movies in numerous formats and contexts
J2CC4	Data Structures	Global	To familiarize students with the concept of various data structures and the logic behind their workings.	<ul> <li>Understand the need and basic concepts involved in data structures</li> <li>Explore the various tree operations in data structures</li> <li>Outline the various operations of sets and sorting techniques</li> <li>Analyze the cost and storage of data structures using graphs</li> <li>Assess the efficiency of different algorithmic techniques</li> </ul>
J2CC5	Object Oriented Programming in	Global	To introduce Object Oriented Programming	Assess the object – oriented concepts in C++



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	C++		concepts using C++ and	Illustrate the usage of Functions in
			improve OOP Skills.	C++
			LEAD	<ul> <li>Analyze advanced features of C++         specifically stream I/O and         overloading</li> <li>Demonstrate on Inheritance and         Virtual Classes</li> <li>Outline the file operations in C++</li> </ul>
J2CC6	Lab-II-Object	Global	To dev <mark>elo</mark> p object	Read, understand and trace the
	Oriented		oriented programming	execution of programs written in
	Programming in	3	skills using C++.	C++ language
	C++			Demonstrate class and object
		KIN	DLY LIGHT	functions
				Assess operator overloading and
				function overloading to specific
			DIRE	problem definition
				Demonstrate file operations in C++.



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				Write C++ code to demonstrate each concept
J3CC5	Operating Systems	Global	To have a depth knowledge about the functionalities of the operating systems and have a thorough knowledge about the Linux programming.	<ul> <li>Outline the structure of OS, basic architectural components</li> <li>Analyze on the different scheduling algorithms and critical section problems</li> <li>Critique device and resource management techniques by concentrating on deadlocks</li> <li>Identify and know about memory management techniques</li> <li>Interpret the mechanisms adopted for file sharing in distributed Applications</li> </ul>
J3CC6	Relational Database	Global	To have in-depth knowledge in the	Understand the basic concepts of database and relational database



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	Management		database concepts.	management systems
	Systems		COL	Analyze the various normalization concepts
			LEAD	Disseminate SQL commands to create tables and indexes
	1			Apply DDL and DML commands in real time applications
	3			Write dynamic queries and programming language SQL to demonstrate the concept of RDBMS
J3AC3	Management Information Systems	Global	To know the usage of information systems in the field of management	Understand the need and basic concept of MIS
	Systems			<ul> <li>Analyze MIS and various functional information system</li> <li>Analyze MIS information and system</li> </ul>
			DUKE	<ul><li>concepts</li><li>Outline kinds of decision making</li></ul>



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			COZ	<ul><li>techniques</li><li>Apply business applications of information system</li></ul>
J3CC7	Lab III- Relational Database Management System	Global	To give in-depth practical approach to the database concepts.	<ul> <li>Critique SQL commands to create tables and indexes</li> <li>Apply DDL and DML commands in real time applications</li> <li>Understand the needs of triggering applications</li> <li>Disseminate knowledge of RDBMS and SQL, both in terms of design and implementation usage</li> <li>Write dynamic queries to demonstrate the concepts of RDBMS</li> </ul>
J3SB1	Introduction to Photoshop	Global	To introduce and impart knowledge and skills	Understand the basic photoshop tools



**Criterion**: I - Curricular Aspects

Metric: 1.1.1 – Programme Outcomes (POs), Programme Specific Outcomes (PSOs) and

Course Outcomes (COs) – B.C.A & P.G.D.C.A



			about Photoshop.	<ul> <li>Outline the resizing options         available in photoshop</li> <li>Explore various rotation operations</li> <li>Disseminate filter operations in photoshop</li> <li>Analyze various distort filter operations in photoshop</li> </ul>
J4CC8	Software Engineering	Global	Aims to provide a thorough knowledge about various phases involved in software development along with the testing techniques	<ul> <li>Compare the various software models</li> <li>Use knowledge, techniques, skills and modern tools necessary for software engineering practice</li> <li>Analyze on the design factors and guidelines</li> <li>Understand the different types of testing used in software's</li> <li>Compare the various types of</li> </ul>



**Criterion**: I - Curricular Aspects

Metric: 1.1.1 – Programme Outcomes (POs), Programme Specific Outcomes (PSOs) and

Course Outcomes (COs) – B.C.A & P.G.D.C.A



				Testing styles
J4CC9	Web Programming	Global	To impart knowledge on various concepts in internet – html – Active Server Pages.	<ul> <li>Select and apply mark-up languages for processing and presenting information in web pages.</li> <li>Design and implement dynamic websites with good aesthetic sense of designing.</li> <li>Use fundamental skills to maintain web server services required to host a website.</li> <li>Prepare the students to write a well formed DB connection</li> <li>Create WebPages for any application using database connectivity</li> </ul>
J4AC4	Financial	Global	To define the set of	Understand the basic principles of



**Criterion**: I - Curricular Aspects

Metric: 1.1.1 – Programme Outcomes (POs), Programme Specific Outcomes (PSOs) and

Course Outcomes (COs) – B.C.A & P.G.D.C.A



	Accounting and		accounting method and	accounting
	Tally		disclosure practices from which firms select when providing information to external parties. The primary emphasis of this course is to assist you in developing the skills required to interpret, analyze and evaluate information contained in published financial statements. To gain in- depth knowledge in Accounting package - Tally.	<ul> <li>Analyze the final accounts and its classification</li> <li>Acquire knowledge in maintaining cash books</li> <li>Disseminate thorough understanding of TALLY package</li> <li>Perform and manage stock and go down entries in the form of vouchers</li> </ul>
J4CC10	Lab IV- Web Programming	Global	To impart the practical aspects in the	Select and apply mark-up languages for processing and



**Criterion**: I - Curricular Aspects

Metric: 1.1.1 – Programme Outcomes (POs), Programme Specific Outcomes (PSOs) and

Course Outcomes (COs) – B.C.A & P.G.D.C.A



			development of web	presenting information in web
			pages.	<ul> <li>presenting information in web pages.</li> <li>Design and implement dynamic websites with good aesthetic sense of designing.</li> <li>Use fundamental skills to maintain web server services required to host</li> </ul>
				<ul> <li>a website.</li> <li>Prepare the students to write a well formed DB connection</li> <li>Create WebPages for any application</li> </ul>
J4AC4	Financial Accounting and	Global	To define the set of accounting method and	Understand the basic principles of accounting
	Tally	MA	disclosure practices from which firms select when providing information to external	<ul> <li>Analyze the final accounts and its classification</li> <li>Acquire knowledge in maintaining</li> </ul>



**Criterion**: I - Curricular Aspects

Metric: 1.1.1 – Programme Outcomes (POs), Programme Specific Outcomes (PSOs) and

Course Outcomes (COs) – B.C.A & P.G.D.C.A



			parties. The primary emphasis of this course is to assist you in developing the skills required to interpret, analyze and evaluate information contained in published financial statements. To gain indepth knowledge in Accounting package - Tally.	<ul> <li>Disseminate thorough understanding of TALLY package</li> <li>Perform and manage stock and go down entries in the form of vouchers</li> </ul>
J4SB2	Skill Based – II Financial Accounting Software Package- Tally	Global	To gain in-depth knowledge in Accounting package – Tally	<ul> <li>Understand the basic concepts of company creation in tally</li> <li>Perform journal, ledger and trial balance entries in tally</li> <li>Perform tally entries in the form of vouchers</li> </ul>



**Criterion**: I - Curricular Aspects

Metric: 1.1.1 – Programme Outcomes (POs), Programme Specific Outcomes (PSOs) and

Course Outcomes (COs) – B.C.A & P.G.D.C.A



J5CC11	Computer Networks	Global	To become an efficient administrator in networking side, the concept of data communication is being introduced.	<ul> <li>Create and display single and multiple stock groups and stock categories</li> <li>Explore voucher operations in tally</li> <li>Outline the functionalities of OSI reference model</li> <li>Discuss guided and unguided media and its real time usage and applications</li> <li>Analyze on the design issues of DLL</li> <li>Demonstrate various routing algorithms through case studies</li> <li>Assess real time web and network security mechanisms</li> </ul>
J5CC12	Java Programming	Global	To develop OOPS Programming, To develop Multithreaded	Acquire in depth knowledge in Java programming concepts



**Criterion**: I - Curricular Aspects

Metric: 1.1.1 – Programme Outcomes (POs), Programme Specific Outcomes (PSOs) and

Course Outcomes (COs) – B.C.A & P.G.D.C.A



				Programs, To develop	•	Identify and analyze platform
				GUI Applications		independent environment and byte
						code generation
				I FAD	٠	Build, Execute and Debug java
				LEND		programs along with Exceptions
			V		•	Design and Implement packages
					•	Write, Compile and Execute applet
						programs which includes GUI
J5CC13	Lab V- Java	7	Global	To acquire practical		Acquire in depth knowledge in Java
	Programming			knowledge on Object		programming concepts
		C	3	Oriented Programming	•	Identify and analyze platform
				using Multithreading,		independent environment and byte
			AIN	Exceptions, GUI &		code generation
				database Applications	•	Build, Execute and Debug java
			1/2			programs along with Exceptions
				DUR	•	Design and Implement packages
					•	Write, Compile and Execute applet



**Criterion**: I - Curricular Aspects

Metric: 1.1.1 – Programme Outcomes (POs), Programme Specific Outcomes (PSOs) and

Course Outcomes (COs) – B.C.A & P.G.D.C.A



				programs which includes GUI
J5CC14	Lab VI- Dot Net Programming	Global	To develop web programming skills through the use of Dot Net Frameworks.	<ul> <li>Use Dot Net Framework along with the features of C#</li> <li>Create websites to explore database connectivity</li> <li>Analyze debugging WebPages through case studies</li> <li>Use the different types of master page creation</li> <li>Create different dynamic websites for applications</li> </ul>
J5ME1	Dot Net Programming	Global	To know the rapid development of powerful Window applications and Web application which makes the web development easier.	<ul> <li>Understand the basic concept of dot net</li> <li>Outline the control statements in dot net with sample programs</li> <li>Analyze procedures and structures</li> </ul>



**Criterion**: I - Curricular Aspects

Metric: 1.1.1 – Programme Outcomes (POs), Programme Specific Outcomes (PSOs) and

Course Outcomes (COs) – B.C.A & P.G.D.C.A



				in dot net with real time examples
			LEAD Z	<ul> <li>Disseminate knowledge in database with dot net</li> <li>Explore web application with vb.net and asp.net</li> </ul>
J5ME2	Computer Graphics	Global	To know about computer graphics techniques and to implement the technologies in computer world.	<ul> <li>Outline the need and basic concept of computer graphics</li> <li>Explore various algorithms and its designs</li> <li>Analyze the attributes of output primitives</li> <li>Disseminate knowledge in 2-Dimensional geometric transformations</li> <li>Explore the concepts of 2-Dimensional viewing</li> </ul>



**Criterion**: I - Curricular Aspects

Metric: 1.1.1 – Programme Outcomes (POs), Programme Specific Outcomes (PSOs) and

Course Outcomes (COs) – B.C.A & P.G.D.C.A



J5SB3	Skill Based – III – Corel Draw	Global	To introduce the concept of essential graphics and visual communication skills.	<ul> <li>Outline the basic concepts of CorelDraw</li> <li>Explore drawing and colouring feature in CorelDraw</li> <li>Disseminate knowledge in mastering with text</li> <li>Outline the effects of applying in CorelDraw</li> <li>Explore how to work with bitmap commands</li> </ul>
J5SB4	Skill Based IV - Php	Global	To be familiar with the structured approach by identifying the needs, interests and functionalities that helps in creating dynamic websites	<ul> <li>Demonstrate how server – side programming works on the web</li> <li>Use PHP built – in functions and creating custom functions</li> <li>Create a database in phpMyAdmin</li> <li>Create dynamic web pages</li> </ul>



**Criterion**: I - Curricular Aspects

Metric: 1.1.1 – Programme Outcomes (POs), Programme Specific Outcomes (PSOs) and

Course Outcomes (COs) – B.C.A & P.G.D.C.A



				Design websites for various
			COS	applications
J6CC15	Python	Global	To introduce open source programming language and to develop object oriented programs.	<ul> <li>Identify different Python object types</li> <li>Discuss how to use indexing and slicing to access data in Python programs</li> <li>Assess structure and components of a Python program</li> <li>Write programs to demonstrate loops and decision statements in Python</li> <li>Build and package in Python modules for reusability</li> </ul>
J6CC16	Lab VII- Python	Global	This course helps to get practical knowledge in python language and to know about the different	<ul> <li>Identify different Python object types</li> <li>Discuss how to use indexing and slicing to access data in Python</li> </ul>



**Criterion**: I - Curricular Aspects

Metric: 1.1.1 – Programme Outcomes (POs), Programme Specific Outcomes (PSOs) and

Course Outcomes (COs) – B.C.A & P.G.D.C.A



			types of data like lists, dictionaries and files handling	<ul> <li>Assess structure and components of a Python program</li> <li>Write programs to demonstrate loops and decision statements in Python</li> <li>Build and package in Python modules for reusability</li> </ul>
J6ME3	Artificial Intelligence	Global	To learn the need and basic concepts in artificial intelligence and their real time applications	<ul> <li>Outline the needs and concepts of artificial intelligence in day-to-day life</li> <li>Explore various search techniques</li> <li>Disseminate various knowledge representation in AI</li> <li>Explore the uncertainty techniques involved in AI</li> <li>Analyze the learning concepts and</li> </ul>



**Criterion**: I - Curricular Aspects

Metric: 1.1.1 – Programme Outcomes (POs), Programme Specific Outcomes (PSOs) and

Course Outcomes (COs) – B.C.A & P.G.D.C.A



				methods
J6ME4	Data Mining	Global	On Successful Completion of this subject the students should have knowledge on Data mining Concepts	<ul> <li>Analyze data mining algorithms, methods, and tools</li> <li>Identify business applications of data mining</li> <li>Predict quantitative analysis report to make decisions</li> <li>Outline the developing areas web mining, text mining, and ethical aspects of data mining</li> <li>Compare the various applications of Data Mining</li> </ul>
J6ME5	Cloud Computing	Global	To give an introduction to cloud computing and its technologies	<ul> <li>Outline problems and evaluate various cloud computing solutions</li> <li>Outline Cloud service and deployment models</li> </ul>



**Criterion**: I - Curricular Aspects

Metric: 1.1.1 – Programme Outcomes (POs), Programme Specific Outcomes (PSOs) and

Course Outcomes (COs) – B.C.A & P.G.D.C.A



J6ME6	Mobile Computing	Global	On Successful Completion of this subject the students should have knowledge on Mobile Computing Concepts and emerging technologies and		Identify the architecture and infrastructure of cloud computing including SaaS, PaaS, IaaS, public cloud, private cloud, hybrid cloud and community cloud  Predict security issues and formulate recovery mechanisms  Understand the concept of virtualization  Create the infrastructure to develop mobile communication systems  Assess the characteristics of emerging technologies in mobile communication  Critique new knowledge in the field of computer science by using
				•	Critique new knowledge in the field of computer science by using appropriate search methodologies



**Criterion**: I - Curricular Aspects

Metric: 1.1.1 – Programme Outcomes (POs), Programme Specific Outcomes (PSOs) and

Course Outcomes (COs) – B.C.A & P.G.D.C.A



			COL	<ul> <li>Analyze on the various software kits available</li> <li>Assess the characteristics of Mobile Components and Applications</li> </ul>
J6SB5	Skill Based-V-Alice	Global	To develop programming skills and impart animation techniques using Alice.	<ul> <li>Explore the interface concepts in Alice</li> <li>Understand how to set the scene and characters in Alice</li> <li>Analyze the programming skills and expertise</li> <li>Disseminate various event handling techniques and methods</li> <li>Assess the characteristics of 3D and billboards and various sound effect options</li> </ul>
J6SB6	Skill Based Lab-VI	Global	To have a depth knowledge about the	Analyze the inner workings of LINUX



**Criterion**: I - Curricular Aspects

Metric: 1.1.1 – Programme Outcomes (POs), Programme Specific Outcomes (PSOs) and

Course Outcomes (COs) – B.C.A & P.G.D.C.A



Linux	functionalities of the	operating systems
Linux	operating systems and have a thorough knowledge about the Linux programming.	Utilize Linux system to accomplish typical personal, office, technical, and software development tasks  Use Linux utilities to create and manage simple file processing  Use operations, organize directory structures with appropriate security  Formulate shell scripts to perform more complex tasks



Criterion : I – Curricular Aspects

: 1.1.1 – Programme Outcomes (POs), Programme Specific Outcomes (PSOs) and Metric

Course Outcomes (COs) – B.C.A & P.G.D.C.A

Year : 2015 - 2020



#### 2017-2018

2017-20	018				
	JRSE DDE	Course Title	NATURE OF THE COURSE (LOCAL/ NATIONAL/ REGIONAL/ GLOBAL)	Course Description	Course Objectives
J1CC	1	Programming in C	Global	To learn the basic knowledge of structured programming in C control structures, data structures and functions-along with basic problem solving techniques; to introduce software testing and to teach module testing techniques.	<ul> <li>Acquire basic understanding of C programming</li> <li>Illustrate how arrays and strings are implemented in C</li> <li>Utilize the knowledge of Functions and Pointers</li> <li>Analyze the memory management concept in C using structure and Unions</li> <li>Outline the file operations in C</li> </ul>



**Criterion**: I - Curricular Aspects

Metric: 1.1.1 – Programme Outcomes (POs), Programme Specific Outcomes (PSOs) and

Course Outcomes (COs) – B.C.A & P.G.D.C.A



J1CC2	Lab I- Programming in C	Global	To develop programming skills in C.To learn the practical implementation of structured programming using control structures and functions along with basic problem solving techniques	•	Acquire basic understanding of C programming  Illustrate how arrays and strings are implemented in C  Utilize the knowledge of Functions and Pointers  Analyze the memory management concept in C using structure and Unions  Outline the file operations in C
J1NME1	Non Major Elective – I Multimedia Lab – Flash	Global	To develop Multimedia programming skills using Flash.This course helps to become familiar with the elements and tools in Flash that is used to create interactive animated media	•	Apply tweens and articulated motions to morph shapes  Design, create and edit flash based navigation menus and interactive movies  Utilize flash components to



**Criterion**: I - Curricular Aspects

Metric: 1.1.1 – Programme Outcomes (POs), Programme Specific Outcomes (PSOs) and

Course Outcomes (COs) – B.C.A & P.G.D.C.A



			such as motion graphics,		create interactivity
			videos, presentations and websites	•	Demonstrate load, control and remove movie clips and masks in movie content  Utilize and understand different sounds and sound formats in flash movies  Publish flash movies in
					numerous formats and contexts
J2CC3	Object Oriented	Global	To introduce Object	•	Assess the object – oriented
	Programming in		Oriented Programming		concepts in C++
	C++	3) (3)	concepts using C++ and improve OOP Skills.	•	Illustrate the usage of Functions in C++
		W	ADURA	•	Analyze advanced features of C++ specifically stream I/O and overloading



**Criterion**: I - Curricular Aspects

Metric: 1.1.1 – Programme Outcomes (POs), Programme Specific Outcomes (PSOs) and

Course Outcomes (COs) – B.C.A & P.G.D.C.A



			A COL		Demonstrate on Inheritance and Virtual Classes Outline the file operations in C++
J2CC4	Lab-II-Object Oriented Programming In C++	Global	To develop object oriented programming skills using C++.		Read, understand and trace the execution of programs written in C++ language  Demonstrate class and object functions  Assess operator overloading and function overloading to specific problem definition  Demonstrate file operations in C++.  Write C++ code to demonstrate each concept
J3CC7	Relational Database Management	Global	To have in-depth knowledge in the database concepts.	•	Understand the basic concepts of database and relational database



**Criterion**: I - Curricular Aspects

Metric: 1.1.1 – Programme Outcomes (POs), Programme Specific Outcomes (PSOs) and

Course Outcomes (COs) – B.C.A & P.G.D.C.A



	Systems			management systems
			A COZ	Analyze the various normalization concepts
			LEAD	Disseminate SQL commands to
				create tables and indexes
				Apply DDL and DML commands in
		4/		real time applications
				Write dynamic queries and
			100 Km	programming language SQL to
	4			demonstrate the concept of RDBMS
J3AC3	Management	Global	To know the usage of	Understand the need and basic
	Information	3.	information systems in the	concept of MIS
	Systems	V	field of management	Analyze MIS and various functional
				information system
		1/2		Analyze MIS information and system
			addika?	concepts
				Outline kinds of decision making



**Criterion**: I - Curricular Aspects

Metric: 1.1.1 – Programme Outcomes (POs), Programme Specific Outcomes (PSOs) and

Course Outcomes (COs) – B.C.A & P.G.D.C.A



			A COZ	<ul><li>techniques</li><li>Apply business applications of information system</li></ul>
J3CC8	Lab III - Relational Database Management System	Global	To give in-depth practical approach to the database concepts.	<ul> <li>Critique SQL commands to create tables and indexes</li> <li>Apply DDL and DML commands in real time applications</li> <li>Understand the needs of triggering applications</li> <li>Disseminate knowledge of RDBMS and SQL, both in terms of design and implementation usage</li> <li>Write dynamic queries to demonstrate the concepts of RDBMS</li> </ul>
J3SB1	Skill Based –I- Client Side	Global	To give in-depth practical knowledge to the client side	Outline the basic HTML tags and its methods

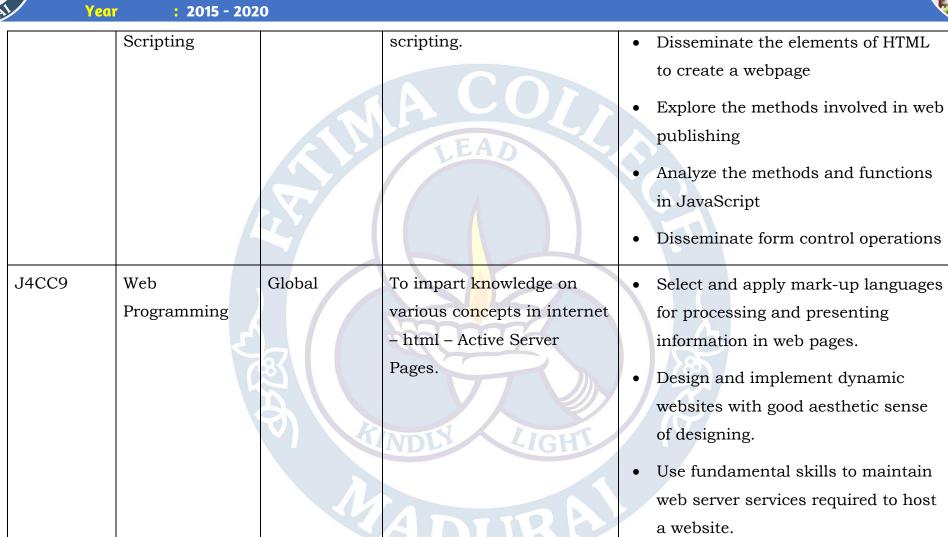
Prepare the students to write a well



**Criterion**: I - Curricular Aspects

Metric: 1.1.1 - Programme Outcomes (POs), Programme Specific Outcomes (PSOs) and

Course Outcomes (COs) - B.C.A & P.G.D.C.A





**Criterion**: I - Curricular Aspects

Metric: 1.1.1 – Programme Outcomes (POs), Programme Specific Outcomes (PSOs) and

Course Outcomes (COs) – B.C.A & P.G.D.C.A



			A COZ	formed DB connection  Create WebPages for any application using database connectivity
J4AC4	Financial Accounting And Tally	Global	To define the set of accounting method and disclosure practices from which firms select when providing information to external parties. The primary emphasis of this course is to assist you in developing the skills required to interpret, analyze and evaluate information contained in published financial statements. To gain indepth knowledge in	Understand the basic principles of accounting  Analyze the final accounts and its classification  Acquire knowledge in maintaining cash books  Disseminate thorough understanding of TALLY package  Perform and manage stock and go down entries in the form of vouchers



**Criterion**: I - Curricular Aspects

Metric: 1.1.1 – Programme Outcomes (POs), Programme Specific Outcomes (PSOs) and

Course Outcomes (COs) – B.C.A & P.G.D.C.A



			Accounting package - Tally.	
J4CC10	Lab IV- Web Programming	Global	To impart the practical aspects in the development of web pages.	<ul> <li>Select and apply markup languages for processing and presenting information in web pages.</li> <li>Design and implement dynamic websites with good aesthetic sense of designing.</li> <li>Use fundamental skills to maintain web server services required to host a website.</li> <li>Prepare the students to write a well formed DB connection</li> <li>Create WebPages for any application</li> </ul>
J4SB2	Skill Based Lab II-Introduction To Photoshop	Global	To introduce and impart knowledge and skills about Photoshop.	<ul> <li>Understand the basic photoshop tools</li> <li>Outline the resizing options</li> </ul>



**Criterion**: I - Curricular Aspects

Metric: 1.1.1 – Programme Outcomes (POs), Programme Specific Outcomes (PSOs) and

Course Outcomes (COs) – B.C.A & P.G.D.C.A



					available in photoshop
			100	•	Explore various rotation operations
			ACUI	•	Disseminate filter operations in
			LEAD	K	photoshop
					Analyze various distort filter
					operations in photoshop
J5CC13	Computer	Global	To become an efficient	•	Outline the functionalities of OSI
	Networks		administrator in networking		reference model
			side, the c <mark>onc</mark> ept of data		Discuss guided and unguided media
	3		communication is being introduced.		and its real time usage and
			introduced.		applications
		B 1		•	Analyze on the design issues of DLL
		A) (Q)	NDLY LIGHT	•	Demonstrate various routing
					algorithms through case studies
			ADVIDA	•	Assess real time web and network
					security mechanisms



**Criterion**: I - Curricular Aspects

Metric: 1.1.1 – Programme Outcomes (POs), Programme Specific Outcomes (PSOs) and

Course Outcomes (COs) – B.C.A & P.G.D.C.A



J5CC14	Java Programming	Global	To develop OOPS Programming, To develop Multithreaded Programs, To develop GUI Applications	<ul> <li>Acquire in depth knowledge in Java programming concepts</li> <li>Identify and analyze platform independent environment and byte code generation</li> <li>Build, Execute and Debug java programs along with Exceptions</li> <li>Design and Implement packages</li> <li>Write, Compile and Execute applet programs which includes GUI</li> </ul>
J5CC15	Lab V- Java Programming	Global	To acquire practical knowledge on Object Oriented Programming using Multithreading, Exceptions, GUI & database Applications	<ul> <li>Acquire in depth knowledge in Java programming concepts</li> <li>Identify and analyze platform independent environment and byte code generation</li> <li>Build, Execute and Debug java</li> </ul>



**Criterion**: I - Curricular Aspects

Metric: 1.1.1 – Programme Outcomes (POs), Programme Specific Outcomes (PSOs) and

Course Outcomes (COs) – B.C.A & P.G.D.C.A



J5CC16	Lab VI- Dot Net Programming	Global	To develop web programming skills through the use of Dot Net Frameworks.  To know the rapid	Design and Implement packages Write, Compile and Execute applet programs which includes GUI  Use Dot Net Framework along with the features of C# Create websites to explore database connectivity Analyze debugging WebPages through case studies Use the different types of master page creation Create different dynamic websites for applications
J5ME1	Dot Net Programming	Global	To know the rapid development of powerful Window applications and	Understand the basic concept of dot net



**Criterion**: I - Curricular Aspects

Metric: 1.1.1 – Programme Outcomes (POs), Programme Specific Outcomes (PSOs) and

Course Outcomes (COs) – B.C.A & P.G.D.C.A



			Web application which makes the web development easier.  To know about computer	<ul> <li>Outline the control statements in dot net with sample programs</li> <li>Analyze procedures and structures in dot net with real time examples</li> <li>Disseminate knowledge in database with dot net</li> <li>Explore web application with vb.net and asp.net</li> </ul>
J5ME2	Computer Graphics	Global	graphics techniques and to implement the technologies in computer world.	<ul> <li>Outline the need and basic concept of computer graphics</li> <li>Explore various algorithms and its designs</li> <li>Analyze the attributes of output primitives</li> <li>Disseminate knowledge in 2-Dimensional geometric transformations</li> </ul>



**Criterion**: I - Curricular Aspects

Metric: 1.1.1 – Programme Outcomes (POs), Programme Specific Outcomes (PSOs) and

Course Outcomes (COs) – B.C.A & P.G.D.C.A



				Explore the concepts of 2- Dimensional viewing
J5SB3	Skill Based III- Java Server Pages	Global	To impart knowledge on various concepts in Java server pages (JSP) and to develop practical aspects in the creation of Web pages.	<ul> <li>Outline the basic concepts of JSP</li> <li>Explore the JSP components</li> <li>Disseminate knowledge in scripting elements</li> <li>Outline the objects of JSP</li> <li>Explore how to work with database and understand the connectivity</li> </ul>
J5SB4	Skill Based IV- Php	Global	To be familiar with the structured approach by identifying the needs, interests and functionalities that helps in creating dynamic websites	<ul> <li>Demonstrate how server – side programming works on the web</li> <li>Use PHP built – in functions and creating custom functions</li> <li>Create a database in phpMyAdmin</li> <li>Create dynamic web pages</li> <li>Design websites for various</li> </ul>



**Criterion**: I - Curricular Aspects

Metric: 1.1.1 – Programme Outcomes (POs), Programme Specific Outcomes (PSOs) and

Course Outcomes (COs) – B.C.A & P.G.D.C.A



				applications
J6CC17	Multimedia	Global	To understand the concept of multimedia and its applications	<ul> <li>Outline the basic concepts of GUI</li> <li>Explore the building blocks of multimedia</li> <li>Create images, video and animations in multimedia</li> <li>Explore the graphics with flash</li> <li>Disseminate deep knowledge in action scripting</li> </ul>
J6CC19	Lab VII-Flash	Global	To develop Multimedia programming skills using Flash.	<ul> <li>Apply tweens and articulated motions to morph shapes</li> <li>Design, create and edit flash based navigation menus and interactive movies</li> <li>Utilize flash components to create interactivity</li> </ul>



**Criterion**: I - Curricular Aspects

Metric: 1.1.1 – Programme Outcomes (POs), Programme Specific Outcomes (PSOs) and

Course Outcomes (COs) – B.C.A & P.G.D.C.A



			A COL	<ul> <li>Demonstrate load, control and remove movie clips and masks in movie content</li> <li>Utilize and understand different sounds and sound formats in flash movies</li> </ul>
J6ME3	Artificial Intelligence	Global	To learn the need and basic concepts in artificial intelligence and their real time applications	<ul> <li>Outline the needs and concepts of artificial intelligence in day-to-day life</li> <li>Explore various search techniques</li> <li>Disseminate various knowledge representation in AI</li> <li>Explore the uncertainty techniques involved in AI</li> <li>Analyze the learning concepts and methods</li> </ul>



**Criterion**: I - Curricular Aspects

Metric: 1.1.1 – Programme Outcomes (POs), Programme Specific Outcomes (PSOs) and

Course Outcomes (COs) – B.C.A & P.G.D.C.A



J6ME4	Data Mining And Data Warehousing	Global	On Successful Completion of this subject the students should have knowledge on Data mining Concepts	<ul> <li>Analyze data mining algorithms, methods, and tools</li> <li>Identify business applications of data mining</li> <li>Predict quantitative analysis report to make decisions</li> <li>Outline the developing areas web mining, text mining, and ethical aspects of data mining</li> <li>Compare the various applications of Data Mining</li> </ul>
J6ME5	Cloud Computing	Global	To give an introduction to cloud computing and its technologies	<ul> <li>Outline problems and evaluate various cloud computing solutions</li> <li>Outline Cloud service and deployment models</li> <li>Identify the architecture and infrastructure of cloud computing</li> </ul>



**Criterion**: I - Curricular Aspects

Metric: 1.1.1 – Programme Outcomes (POs), Programme Specific Outcomes (PSOs) and

Course Outcomes (COs) – B.C.A & P.G.D.C.A



				A CO	including SaaS, PaaS, IaaS, public cloud, private cloud, hybrid cloud and community cloud  Predict security issues and formulate recovery mechanisms  Understand the concept of virtualization
J6ME6	Mobile Computing	A CONTRACTOR	Global	On Successful Completion of this subject the students should have knowledge on Mobile Computing Concepts and emerging technologies and applications.	Create the infrastructure to develop mobile communication systems  Assess the characteristics of emerging technologies in mobile communication  Critique new knowledge in the field of computer science by using appropriate research methodologies  Analyze on the various software kits available



**Criterion**: I - Curricular Aspects

Metric: 1.1.1 – Programme Outcomes (POs), Programme Specific Outcomes (PSOs) and

Course Outcomes (COs) – B.C.A & P.G.D.C.A



				•	Assess the characteristics of Mobile Components and Applications
J6SB5	Skill Based-V- Animation Technique – 1- Alice	Global	To develop programming skills and impart animation techniques using Alice.		Explore the interface concepts in Alice  Understand how to set the scene and characters in Alice  Analyze the programming skills and expertise  Disseminate various event handling techniques and methods  Assess the characteristics of 3D and billboards and various sound effect options
J6SB6	Skill Based-VI- Image J	Global	To develop image processing and analyzing skills using ImageJ	•	Outline the basic concepts of imageJ Understand the methods, operations and techniques



**Criterion**: I - Curricular Aspects

Metric: 1.1.1 – Programme Outcomes (POs), Programme Specific Outcomes (PSOs) and

Course Outcomes (COs) – B.C.A & P.G.D.C.A

Year : 2015 - 2020



	Analyze image generation	
	techniques	
	Illustrate working with macro	
S EAD	commands in imageJ	
	Disseminate plug-ins in imageJ	

#### 2016 - 2017

COURSE	Course Title	NATURE OF THE COURSE (LOCAL/ NATIONAL/ REGIONAL/ GLOBAL)	Course Description	Course Objectives
J1CC1	Digital Principals & Computer Organization	National	To know about computers, learn the basics and take advantage of the latest technologies in the field of	<ul> <li>Acquire basic understanding of Digital Principles</li> <li>Illustrate how number systems are</li> </ul>



**Criterion**: I - Curricular Aspects

Metric: 1.1.1 – Programme Outcomes (POs), Programme Specific Outcomes (PSOs) and

Course Outcomes (COs) – B.C.A & P.G.D.C.A



			·	
			computers and information	implemented in DP
			technology	Utilize the knowledge of Gates an
			ACOL	Logic Design
J1CC2	Programming in	Global	To learn the basic	Acquire basic understanding of C
	С		knowledge of structured	programming
		339	programming in C control	Illustrate how arrays and strings are
		4	structures, data structures	implemented in C
			and functi <mark>on</mark> s-along with basic problem solving	Utilize the knowledge of Functions
			techniques; to introduce	and Pointers
	E		software testing and to	Analyze the memory management
		3	teach module testing	concept in C using structure and
		3 1	techniques.	Unions
		V	NDLY LIGHT	Outline the file operations in C
J1CC3	Lab I- C	Global	To develop programming	Acquire basic understanding of C
			skills in C. To learn the	programming
			practical implementation of structured programming	Illustrate how arrays and strings are implemented in C



**Criterion**: I - Curricular Aspects

Metric: 1.1.1 – Programme Outcomes (POs), Programme Specific Outcomes (PSOs) and

Course Outcomes (COs) – B.C.A & P.G.D.C.A



		using control structures and functions along with basic problem solving techniques	<ul> <li>Utilize the knowledge of Functions and Pointers</li> <li>Analyze the memory management concept in C using structure and</li> </ul>
			<ul><li>Unions</li><li>Outline the file operations in C</li></ul>
Non Major Elective – I Multimedia Lab – Flash	Global	To develop Multimedia programming skills using Flash. This course helps to become familiar with the elements and tools in Flash that is used to create interactive animated media such as motion graphics, videos, presentations and websites	<ul> <li>Apply tweens and articulated motions to morph shapes</li> <li>Design, create and edit flash based navigation menus and interactive movies</li> <li>Utilize flash components to create interactivity</li> <li>Demonstrate load, control and remove movie clips and masks in movie content</li> <li>Utilize and understand</li> </ul>



**Criterion**: I - Curricular Aspects

Metric: 1.1.1 – Programme Outcomes (POs), Programme Specific Outcomes (PSOs) and

Course Outcomes (COs) – B.C.A & P.G.D.C.A



			A COZZ	different sounds and sound formats in flash movies Publish flash movies in numerous formats and contexts.
J2CC4	Data Structures & Algorithms	Global	To familiarize students with the concept of various data structures and the logic behind their workings	<ul> <li>Assess the concepts in design an analysis.</li> <li>Illustrate the usage of ADT's</li> <li>Analyze advanced features of Trees &amp; Graphs</li> </ul>
J2CC5	Object Oriented Programming in C++	Global	To introduce Object Oriented Programming concepts using C++ and improve OOP Skills.	<ul> <li>Assess the object – oriented concepts in C++</li> <li>Illustrate the usage of Functions in C++</li> <li>Analyze advanced features of C++ specifically stream I/O and overloading</li> </ul>



**Criterion**: I - Curricular Aspects

Metric: 1.1.1 – Programme Outcomes (POs), Programme Specific Outcomes (PSOs) and

Course Outcomes (COs) – B.C.A & P.G.D.C.A



			A COZY	•	Demonstrate on Inheritance and Virtual Classes Outline the file operations in C++
J2CC6	Lab-Ii-Object Oriented Programming in C++	Global	To develop object oriented programming skills using C++.		Read, understand and trace the execution of programs written in C++ language  Demonstrate class and object functions  Assess operator overloading and function overloading to specific problem definition  Demonstrate file operations in C++.  Write C++ code to demonstrate each concept
J2CC7	Operating System	Global	To have a depth knowledge about the functionalities of the operating systems and	•	Analyze on the various Scheduling Algorithms



J3CC8

Criterion : I - Curricular Aspects

: 1.1.1 - Programme Outcomes (POs), Programme Specific Outcomes (PSOs) and Metric

about the Linux

To have in-depth

concepts.

programming.

Course Outcomes (COs) - B.C.A & P.G.D.C.A

Global

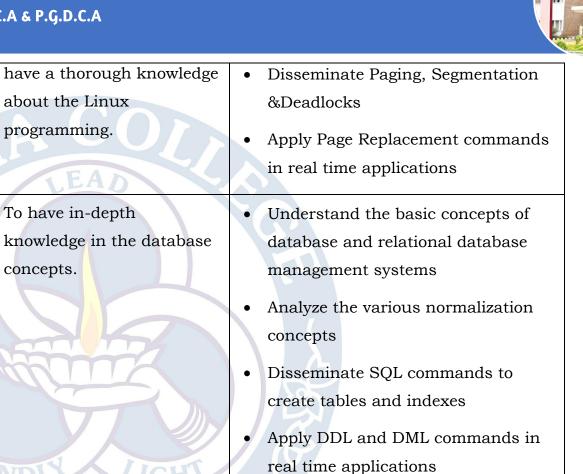
Year **:** 2015 - 2020

Relational

Database

Systems

Management



Write dynamic queries and

programming language SQL to

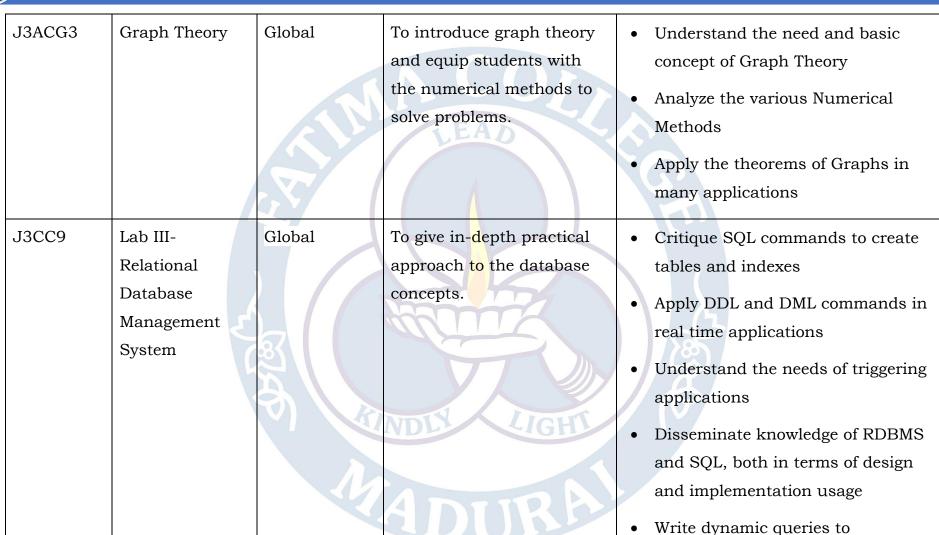
demonstrate the concept of RDBMS



**Criterion**: I - Curricular Aspects

Metric: 1.1.1 - Programme Outcomes (POs), Programme Specific Outcomes (PSOs) and

Course Outcomes (COs) - B.C.A & P.G.D.C.A





**Criterion**: I - Curricular Aspects

Metric: 1.1.1 – Programme Outcomes (POs), Programme Specific Outcomes (PSOs) and

Course Outcomes (COs) – B.C.A & P.G.D.C.A



				demonstrate the concepts of RDBMS
J3SB1	Skill Based –I- PC Software Lab	Global	To give programming skills on various concepts in MS Office	<ul> <li>Outline the basic formatting features of MS Package</li> <li>Disseminate the elements of Word, Excel and PowerPoint</li> <li>Explore the methods involved in Mail Merging &amp; Presentations</li> </ul>
J4CC10	Web Programming	Global	To impart knowledge on various concepts in internet – html – Active Server Pages.	<ul> <li>Select and apply mark-up languages for processing and presenting information in web pages.</li> <li>Design and implement dynamic websites with good aesthetic sense of designing.</li> <li>Use fundamental skills to maintain web server services required to host a website.</li> <li>Prepare the students to write a well</li> </ul>



**Criterion**: I - Curricular Aspects

Metric: 1.1.1 – Programme Outcomes (POs), Programme Specific Outcomes (PSOs) and

Course Outcomes (COs) – B.C.A & P.G.D.C.A



			A COL	•	formed DB connection  Create WebPages for any application using database connectivity
J4CC11	Software Engineering	Global	Aims to provide a thorough knowledge about various phases involved in software development along with the testing techniques		Compare the various software models  Use knowledge, techniques, skills and modern tools necessary for software engineering practice  Analyze on the design factors and guidelines  Understand the different types of testing used in software's  Compare the various types of Testing styles
J4AC4	Financial Accounting And	Global	To define the set of accounting method and disclosure practices from	•	Understand the basic principles of accounting



**Criterion**: I - Curricular Aspects

Metric: 1.1.1 – Programme Outcomes (POs), Programme Specific Outcomes (PSOs) and

Course Outcomes (COs) – B.C.A & P.G.D.C.A



	Tally		which firms select when	•	Analyze the final accounts and its
			providing information to		classification
		N	external parties. The primary emphasis of this	>	Acquire knowledge in maintaining cash books
			course is to assist you in developing the skills required to interpret,		Disseminate thorough understanding of TALLY package
			analyze an <mark>d</mark> evaluate	•	Perform and manage stock and go
			information contained in		down entries in the form of vouchers
			published financial		
	5		statements. To gain in-		
		<u> </u>	depth knowledge in Accounting package - Tally.		
J4CC12	Lab IV - Web	Global	To impart the practical		Select and apply mark-up languages
	Programming		aspects in the development		for processing and presenting
			of web pages.		information in web pages.
			4DURA	•	Design and implement dynamic websites with good aesthetic sense



**Criterion**: I – Curricular Aspects

Metric: 1.1.1 – Programme Outcomes (POs), Programme Specific Outcomes (PSOs) and

Course Outcomes (COs) – B.C.A & P.G.D.C.A



				of designing.
			ACODE	<ul> <li>Use fundamental skills to maintain web server services required to host a website.</li> <li>Prepare the students to write a well formed DB connection</li> <li>Create WebPages for any application</li> </ul>
J4SB2	Skill Based Lab II - Introduction To Photoshop	Global	To introduce and impart knowledge and skills about Photoshop.	<ul> <li>Understand the basic photoshop tools</li> <li>Outline the resizing options available in photoshop</li> <li>Explore various rotation operations</li> <li>Disseminate filter operations in photoshop</li> <li>Analyze various distort filter operations in photoshop</li> </ul>



**Criterion**: I – Curricular Aspects

Metric: 1.1.1 – Programme Outcomes (POs), Programme Specific Outcomes (PSOs) and

Course Outcomes (COs) – B.C.A & P.G.D.C.A



J5CC13	Computer Networks	Global	To become an efficient administrator in networking side, the concept of data communication is being introduced.	<ul> <li>Outline the functionalities of OSI reference model</li> <li>Discuss guided and unguided media and its real time usage and applications</li> <li>Analyze on the design issues of DLL</li> <li>Demonstrate various routing algorithms through case studies</li> <li>Assess real time web and network security mechanisms</li> </ul>
J5CC14	Java Programming	Global	To develop OOPS Programming, To develop Multithreaded Programs, To develop GUI Applications	<ul> <li>Acquire in depth knowledge in Java programming concepts</li> <li>Identify and analyze platform independent environment and byte code generation</li> <li>Build, Execute and Debug java</li> </ul>



**Criterion**: I – Curricular Aspects

Metric: 1.1.1 – Programme Outcomes (POs), Programme Specific Outcomes (PSOs) and

Course Outcomes (COs) – B.C.A & P.G.D.C.A



			A COLL		programs along with Exceptions  Design and Implement packages  Write, Compile and Execute applet  programs which includes GUI
J5CC15	Lab V- Java Programming	Global	To acquire practical knowledge on Object Oriented Programming using Multithreading, Exceptions, GUI & database Applications	•	Acquire in depth knowledge in Java programming concepts  Identify and analyze platform independent environment and byte code generation  Build, Execute and Debug java programs along with Exceptions  Design and Implement packages  Write, Compile and Execute applet programs which includes GUI
J5CC16	Lab VI- Dot Net Programming	Global	To develop web programming skills through the use of Dot Net	•	Use Dot Net Framework along with the features of C#



**Criterion**: I – Curricular Aspects

Metric: 1.1.1 – Programme Outcomes (POs), Programme Specific Outcomes (PSOs) and

Course Outcomes (COs) – B.C.A & P.G.D.C.A



			Frameworks.	<ul> <li>Create websites to explore database connectivity</li> <li>Analyze debugging WebPages through case studies.</li> <li>Use the different types of master page creation .</li> <li>Create different dynamic websites for applications.</li> </ul>
J5ME1	Dot Net Programming	Global	To know the rapid development of powerful Window applications and Web application which makes the web development easier.	<ul> <li>Understand the basic concept of dot net</li> <li>Outline the control statements in dot net with sample programs</li> <li>Analyze procedures and structures in dot net with real time examples</li> <li>Disseminate knowledge in database with dot net</li> <li>Explore web application with vb.net</li> </ul>



**Criterion**: I – Curricular Aspects

Metric: 1.1.1 – Programme Outcomes (POs), Programme Specific Outcomes (PSOs) and

Course Outcomes (COs) – B.C.A & P.G.D.C.A



				and asp.net
J5ME2	Computer Graphics	Global	To know about computer graphics techniques and to implement the technologies in computer world.	<ul> <li>Outline the need and basic concept of computer graphics</li> <li>Explore various algorithms and its designs</li> <li>Analyze the attributes of output primitives</li> <li>Disseminate knowledge in 2-Dimensional geometric transformations</li> <li>Explore the concepts of 2-Dimensional viewing</li> </ul>
J5SB3	Skill Based III- Animation Technique I - Flash	Global	To develop Multimedia programming skills using Flash	<ul> <li>Outline on the basic concepts of Flash</li> <li>Explore the Flash components</li> <li>Disseminate knowledge in Action</li> </ul>



**Criterion**: I – Curricular Aspects

Metric: 1.1.1 – Programme Outcomes (POs), Programme Specific Outcomes (PSOs) and

Course Outcomes (COs) – B.C.A & P.G.D.C.A



				scripting
J5SB4	Skill Based IV-Php	Global	To be familiar with the structured approach by identifying the needs, interests and functionalities that helps in creating dynamic websites	<ul> <li>Demonstrate how server – side programming works on the web</li> <li>Use PHP built – in functions and creating custom functions</li> <li>Create a database in phpMyAdmin</li> <li>Create dynamic web pages</li> <li>Design websites for various applications</li> </ul>
J6CC17	Advanced Java	Global	To understand the concept of multimedia and its applications	<ul> <li>Familiarize students with Object Oriented Applications.</li> <li>Impart knowledge on Packages and Threads</li> <li>Create Applications with database connectivity, along with Applets</li> </ul>
J6CC19	Lab VII-	Global	To understand the concept	Familiarize students with Object



**Criterion**: I – Curricular Aspects

Metric: 1.1.1 – Programme Outcomes (POs), Programme Specific Outcomes (PSOs) and

Course Outcomes (COs) – B.C.A & P.G.D.C.A



	Advanced Java		of multimedia and its applications	<ul> <li>Oriented Applications.</li> <li>Impart knowledge on Packages and Threads</li> <li>Create Applications with database connectivity, along with Applets</li> </ul>
J6ME3	Image Processing	Global	To provide an introduction to graphics and image processing	<ul> <li>Understand the basic concepts of image processing</li> <li>Analyze intensity transformations and spatial filtering mechanisms</li> <li>Disseminate image restoration and reconstruction methods</li> <li>Analyze wavelets and image compression techniques</li> <li>Outline image segmentation and edge detection techniques</li> </ul>
J6ME4	Data Mining	Global	On Successful Completion of this subject the students	Analyze data mining algorithms,



**Criterion**: I – Curricular Aspects

Metric: 1.1.1 – Programme Outcomes (POs), Programme Specific Outcomes (PSOs) and

Course Outcomes (COs) – B.C.A & P.G.D.C.A



	And Data		should have knowledge on	methods, and tools
	Warehousing		Data mining Concepts	Identify business applications of data mining
			LEAD	<ul> <li>Predict quantitative analysis report to make decisions</li> <li>Outline the developing areas web mining, text mining, and ethical aspects of data mining</li> </ul>
	حا			Compare the various applications of  Data Mining
J6ME5	Major Elective – III - CLOUD COMPUTING	Global	To give an introduction to cloud computing and its technologies	<ul> <li>Outline problems and evaluate various cloud computing solutions</li> <li>Outline Cloud service and deployment models</li> <li>Identify the architecture and infrastructure of cloud computing including SaaS, PaaS, IaaS, public</li> </ul>



**Criterion**: I – Curricular Aspects

Metric: 1.1.1 – Programme Outcomes (POs), Programme Specific Outcomes (PSOs) and

Course Outcomes (COs) – B.C.A & P.G.D.C.A



			ACOV	cloud, private cloud, hybrid cloud and community cloud  • Predict security issues and formulate recovery mechanisms  • Understand the concept of virtualization
J6ME6	Major Elective – III MOBILE COMPUTING	Global	On Successful Completion of this subject the students should have knowledge on Mobile Computing Concepts and emerging technologies and applications.	<ul> <li>mobile communication systems</li> <li>Assess the characteristics of emerging technologies in mobile communication</li> </ul>



**Criterion**: I – Curricular Aspects

Metric: 1.1.1 – Programme Outcomes (POs), Programme Specific Outcomes (PSOs) and

Course Outcomes (COs) – B.C.A & P.G.D.C.A



				Components and Applications
J6SB5	Skill Based-V-Alice	Global	To develop programming skills and impart animation techniques using Alice.	<ul> <li>Explore the interface concepts in Alice</li> <li>Understand how to set the scene and characters in Alice</li> <li>Analyze the programming skills and expertise</li> <li>Disseminate various event handling techniques and methods</li> <li>Assess the characteristics of 3D and billboards and various sound effect options</li> </ul>
J6SB6	Skill Based-VI- Image J	Global	To develop image processing and analyzing skills using ImageJ	<ul> <li>Outline the basic concepts of image j</li> <li>Understand the methods, operations and techniques</li> <li>Analyze image generation</li> </ul>



**Criterion**: I – Curricular Aspects

Metric: 1.1.1 - Programme Outcomes (POs), Programme Specific Outcomes (PSOs) and

Course Outcomes (COs) – B.C.A & P.G.D.C.A

Year : 2015 - 2020



	techniques
	Illustrate working with macro
	commands in imageJ
LEAD	Disseminate plug-ins in imageJ

#### 2015 - 2016

COURSE CODE	Course Title	NATURE OF THE COURSE (LOCAL/ NATIONAL/ REGIONAL/ GLOBAL)	Course Description	Course Objectives
J1CC1	Digital Principals & Computer Organization	National	To know about computers, learn the basics and take advantage of the latest technologies in the field of	<ul> <li>Acquire basic understanding of Digital Principles</li> <li>Illustrate how number systems are</li> </ul>



**Criterion**: I – Curricular Aspects

Metric: 1.1.1 – Programme Outcomes (POs), Programme Specific Outcomes (PSOs) and

Course Outcomes (COs) – B.C.A & P.G.D.C.A



			computers and information technology	<ul><li>implemented in DP</li><li>Utilize the knowledge of Gates an Logic Design</li></ul>
J1CC2	Programming in C	Global	To learn the basic knowledge of structured programming in C control structures, data structures and functions-along with basic problem solving techniques; to introduce software testing and to teach module testing techniques.	<ul> <li>Acquire basic understanding of C programming</li> <li>Illustrate how arrays and strings are implemented in C</li> <li>Utilize the knowledge of Functions and Pointers</li> <li>Analyze the memory management concept in C using structure and Unions</li> <li>Outline the file operations in C</li> </ul>
J1CC3	Lab I- C	Global	To develop programming skills in C.To learn the practical implementation of structured programming	<ul> <li>Acquire basic understanding of C programming</li> <li>Illustrate how arrays and strings are</li> </ul>



**Criterion**: I – Curricular Aspects

Metric: 1.1.1 – Programme Outcomes (POs), Programme Specific Outcomes (PSOs) and

Course Outcomes (COs) – B.C.A & P.G.D.C.A



			using control structures and functions along with basic problem solving techniques	<ul> <li>implemented in C</li> <li>Utilize the knowledge of Functions and Pointers</li> <li>Analyze the memory management concept in C using structure and Unions</li> <li>Outline the file operations in C</li> </ul>
J1NME1	Non Major Elective – I Multimedia Lab – Flash	Global	To develop Multimedia programming skills using Flash. This course helps to become familiar with the elements and tools in Flash that is used to create interactive animated media such as motion graphics , videos, presentations and websites	<ul> <li>Apply tweens and articulated motions to morph shapes</li> <li>Design, create and edit flash based navigation menus and interactive movies</li> <li>Utilize flash components to create interactivity</li> <li>Demonstrate load, control and remove movie clips and masks in movie content</li> </ul>



**Criterion**: I – Curricular Aspects

Metric: 1.1.1 – Programme Outcomes (POs), Programme Specific Outcomes (PSOs) and

Course Outcomes (COs) – B.C.A & P.G.D.C.A



			A CO	<ul> <li>Utilize and understand         different sounds and sound         formats in flash movies         Publish flash movies in         numerous formats and         contexts</li> </ul>
J2CC4	Data Structures & Algorithms	Global	To familiarize students with the concept of various data structures and the logic behind their workings	<ul> <li>Assess the concepts in design an analysis</li> <li>Illustrate the usage of ADT's</li> <li>Analyze advanced features of Trees &amp; Graphs</li> </ul>
J2CC5	Object Oriented Programming In C++	Global	To introduce Object Oriented Programming concepts using C++ and improve OOP Skills.	<ul> <li>Assess the object – oriented concepts in C++</li> <li>Illustrate the usage of Functions in C++</li> <li>Analyze advanced features of C++ specifically stream I/O and</li> </ul>



**Criterion**: I – Curricular Aspects

Metric: 1.1.1 – Programme Outcomes (POs), Programme Specific Outcomes (PSOs) and

Course Outcomes (COs) – B.C.A & P.G.D.C.A



			A COLL	<ul> <li>overloading</li> <li>Demonstrate on Inheritance and Virtual Classes</li> <li>Outline the file operations in C++</li> </ul>
J2CC6	Lab-II -Object Oriented Programming In C++	Global	To develop object oriented programming skills using C++.	<ul> <li>Read, understand and trace the execution of programs written in C++ language</li> <li>Demonstrate class and object functions</li> <li>Assess operator overloading and function overloading to specific problem definition</li> <li>Demonstrate file operations in C++.</li> <li>Write C++ code to demonstrate each concept</li> </ul>
J3CC7	Operating	Global	To have a depth knowledge	Analyze on the various Scheduling



**Criterion**: I – Curricular Aspects

Metric: 1.1.1 – Programme Outcomes (POs), Programme Specific Outcomes (PSOs) and

Course Outcomes (COs) – B.C.A & P.G.D.C.A



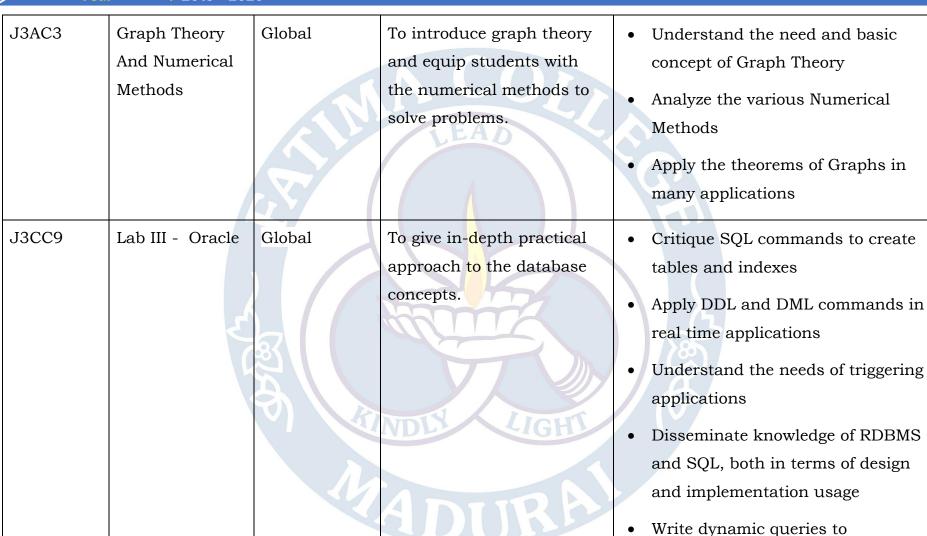
	System		about the functionalities of the operating systems and have a thorough knowledge about the Linux programming.		Algorithms  Disseminate Paging, Segmentation &Deadlocks  Apply Page Replacement commands in real time applications
J3CC8	Relational Database Management Systems	Global	To have in-depth knowledge in the database concepts.	•	Understand the basic concepts of database and relational database management systems  Analyze the various normalization concepts  Disseminate SQL commands to create tables and indexes  Apply DDL and DML commands in real time applications  Write dynamic queries and programming language SQL to demonstrate the concept of RDBMS



**Criterion**: I - Curricular Aspects

Metric: 1.1.1 - Programme Outcomes (POs), Programme Specific Outcomes (PSOs) and

Course Outcomes (COs) - B.C.A & P.G.D.C.A





**Criterion**: I – Curricular Aspects

Metric: 1.1.1 – Programme Outcomes (POs), Programme Specific Outcomes (PSOs) and

Course Outcomes (COs) – B.C.A & P.G.D.C.A



				demonstrate the concepts of RDBMS
J3SB1	Skill Based –I- Pc Software Lab	Global	To give programming skills on various concepts in MS Office	<ul> <li>Outline the basic formatting features of MS Package</li> <li>Disseminate the elements of Word, Excel and PowerPoint</li> <li>Explore the methods involved in Mail Merging &amp; Presentations</li> </ul>
J4CC10	Web Programming	Global	To impart knowledge on various concepts in internet – html – Active Server Pages.	<ul> <li>Select and apply mark-up languages for processing and presenting information in web pages.</li> <li>Design and implement dynamic websites with good aesthetic sense of designing.</li> <li>Use fundamental skills to maintain web server services required to host a website.</li> <li>Prepare the students to write a well</li> </ul>



**Criterion**: I – Curricular Aspects

Metric: 1.1.1 – Programme Outcomes (POs), Programme Specific Outcomes (PSOs) and

Course Outcomes (COs) – B.C.A & P.G.D.C.A



			A COL	•	formed DB connection  Create WebPages for any application using database connectivity
J4CC11	Software Engineering	Global	Aims to provide a thorough knowledge about various phases involved in software development along with the testing techniques		Compare the various software models  Use knowledge, techniques, skills and modern tools necessary for software engineering practice  Analyze on the design factors and guidelines  Understand the different types of testing used in software's  Compare the various types of Testing styles
J4AC4	Financial Accounting And	Global	To define the set of accounting method and disclosure practices from	•	Understand the basic principles of accounting



**Criterion**: I – Curricular Aspects

Metric: 1.1.1 – Programme Outcomes (POs), Programme Specific Outcomes (PSOs) and

Course Outcomes (COs) – B.C.A & P.G.D.C.A



	Tally		which firms select when	•	Analyze the final accounts and its
					·
			providing information to		classification
		6	external parties. The	•	Acquire knowledge in maintaining
			primary emphasis of this		cash books
			course is to assist you in		
			developing the skills	•	Disseminate thorough
			required to interpret,		understanding of TALLY package
		4	analyze a <mark>nd</mark> evaluate	•	Perform and manage stock and go
			informatio <mark>n</mark> contained in		down entries in the form of vouchers
			published financial		
	_		statements. To gain in-	N	
	E		depth knowledge in		163
		<b>10</b>	Accounting package - Tally.		
J4CC12	Lab IV- Web	Global	To impart the practical		Select and apply mark-up languages
	Programming		aspects in the development		for processing and presenting
			of web pages.		information in web pages.
			ADTIRA	•	Design and implement dynamic
					websites with good aesthetic sense



**Criterion**: I – Curricular Aspects

Metric: 1.1.1 – Programme Outcomes (POs), Programme Specific Outcomes (PSOs) and

Course Outcomes (COs) – B.C.A & P.G.D.C.A



					of designing.
					or designing.
				•	Use fundamental skills to maintain
		N.	ACUIS		web server services required to host
		A	LEAD	1	a website.
				•	Prepare the students to write a well
					formed DB connection
		27		•	Create WebPages for any application
J4SB2	Skill Based Lab	Global	To introdu <mark>ce</mark> and impart		Understand the basic photoshop
	II -Introduction		knowledge and skills about		tools
	To Photoshop		Photoshop.		Outline the resizing options
		3			available in photoshop
		\$\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\		•	Explore various rotation operations
		A GO	NDLY LIGHT	•	Disseminate filter operations in
					photoshop
		45	10-10A		Analyze various distort filter
			ADUM.		operations in photoshop

Identify and analyze platform

Build, Execute and Debug java

code generation

independent environment and byte

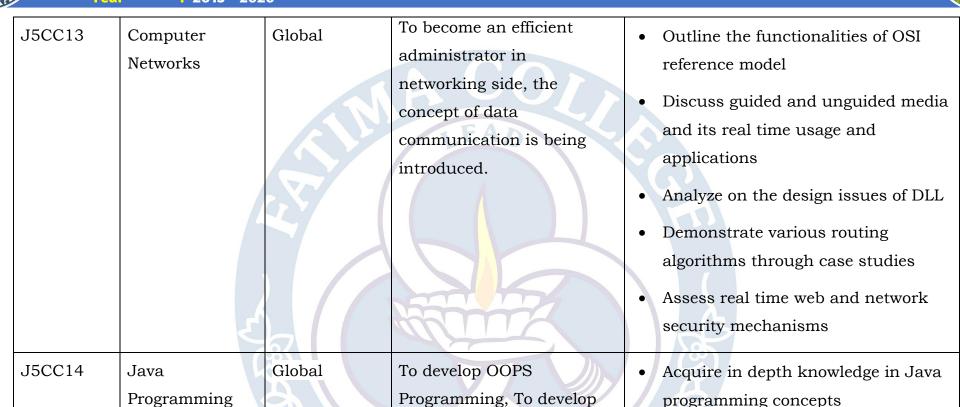


**Criterion**: I - Curricular Aspects

Metric: 1.1.1 - Programme Outcomes (POs), Programme Specific Outcomes (PSOs) and

Course Outcomes (COs) - B.C.A & P.G.D.C.A

**Year** : 2015 - 2020



Multithreaded Programs,

To develop GUI

**Applications** 



**Criterion**: I – Curricular Aspects

Metric: 1.1.1 – Programme Outcomes (POs), Programme Specific Outcomes (PSOs) and

Course Outcomes (COs) – B.C.A & P.G.D.C.A



					programs along with Exceptions
			1 CON	•	Design and Implement packages
			H COL	•	Write, Compile and Execute applet
			LEAD	个	programs which includes GUI
J5CC15	Lab V- Java	Global	To acquire practical	•	Acquire in depth knowledge in Java
	Programming		knowledge on Object		programming concepts
			Oriented Programming	•	Identify and analyze platform
			using Multithreading,		independent environment and byte
			Exceptions, GUI &database		code generation
	2		Applications	•	Build, Execute and Debug java
		<b>3</b>			programs along with Exceptions
		3			Design and Implement packages
			VDLY LIGHT	•	Write, Compile and Execute applet
					programs which includes GUI
J5CC16	Lab VI- Dot Net	Global	To develop web	•	Use Dot Net Framework along with
	Programming		programming skills		the features of C#
			through the use of Dot Net		



**Criterion**: I – Curricular Aspects

Metric: 1.1.1 – Programme Outcomes (POs), Programme Specific Outcomes (PSOs) and

Course Outcomes (COs) – B.C.A & P.G.D.C.A



1 601	• 2015	1020			· · · · · · · · · · · · · · · · · · ·
			Frameworks.	•	Create websites to explore database connectivity  Analyze debugging WebPages through case studies  Use the different types of master page creation  Create different dynamic websites for applications
J5ME1	Dot Net Programming	Global	To know the rapid development of powerful Window applications and Web application which makes the web development easier.		Understand the basic concept of dot net  Outline the control statements in dot net with sample programs  Analyze procedures and structures in dot net with real time examples  Disseminate knowledge in database with dot net  Explore web application with vb.net



**Criterion**: I – Curricular Aspects

Metric: 1.1.1 – Programme Outcomes (POs), Programme Specific Outcomes (PSOs) and

Course Outcomes (COs) – B.C.A & P.G.D.C.A



				and asp.net
J5ME2	Computer Security	Global	To provide in-depth knowledge about Cryptography and Network Security	<ul> <li>Outline the need and basic concept of computer Security</li> <li>Explore various algorithms and its designs of security</li> <li>Analyze the attributes of Attacks &amp; service with Security features</li> </ul>
J5SB3	Skill Based III - Java Server Pages	Global	To impart knowledge on various concepts in Java server pages (JSP) and to develop practical aspects in the creation of Web pages.	<ul> <li>Outline the basic concepts of JSP</li> <li>Explore the JSP components</li> <li>Disseminate knowledge in scripting elements</li> <li>Outline the objects of JSP</li> <li>Explore how to work with database and understand the connectivity</li> </ul>
J5SB4	Skill Based IV- Php	Global	To be familiar with the structured approach by	Demonstrate how server – side



**Criterion**: I – Curricular Aspects

Metric: 1.1.1 – Programme Outcomes (POs), Programme Specific Outcomes (PSOs) and

Course Outcomes (COs) – B.C.A & P.G.D.C.A



			identifying the needs, interests and functionalities that helps in creating dynamic websites	<ul> <li>programming works on the web</li> <li>Use PHP built – in functions and creating custom functions</li> <li>Create a database in phpMyAdmin</li> <li>Create dynamic web pages</li> <li>Design websites for various applications</li> </ul>
J6CC17	Multimedia	Global	To understand the concept of multimedia and its applications	<ul> <li>Outline the basic concepts of GUI</li> <li>Explore the building blocks of multimedia</li> <li>Create images, video and animations in multimedia</li> <li>Explore the graphics with flash</li> <li>Disseminate deep knowledge in action scripting</li> </ul>
J6CC19	Lab VII-Flash	Global	To develop Multimedia	Apply tweens and articulated
			103	



**Criterion**: I – Curricular Aspects

Metric: 1.1.1 – Programme Outcomes (POs), Programme Specific Outcomes (PSOs) and

Course Outcomes (COs) – B.C.A & P.G.D.C.A



			programming skills using		motions to morph shapes
			Flash.  CO  LEAD  LEAD  TO THE STATE OF THE		Design, create and edit flash based navigation menus and interactive movies  Utilize flash components to create interactivity  Demonstrate load, control and remove movie clips and masks in movie content  Utilize and understand different sounds and sound formats in flash movies
J6ME3	Computer Graphics & Image Processing	Global	To provide an introduction to graphics and image processing	•	Understand the basic concepts of image processing  Analyze intensity transformations and spatial filtering mechanisms  Disseminate image restoration and



**Criterion**: I - Curricular Aspects

Metric: 1.1.1 – Programme Outcomes (POs), Programme Specific Outcomes (PSOs) and

Course Outcomes (COs) – B.C.A & P.G.D.C.A



			A COV	<ul> <li>reconstruction methods</li> <li>Analyze wavelets and image compression techniques</li> <li>Outline image segmentation and edge detection techniques</li> </ul>
J6ME4	Data Mining And Data Warehousing	Global	On Successful Completion of this subject the students should have knowledge on Data mining Concepts	<ul> <li>Analyze data mining algorithms, methods, and tools</li> <li>Identify business applications of data mining</li> <li>Predict quantitative analysis report to make decisions</li> <li>Outline the developing areas web mining, text mining, and ethical aspects of data mining</li> <li>Compare the various applications of Data Mining</li> </ul>

Assess the characteristics of

emerging technologies in mobile

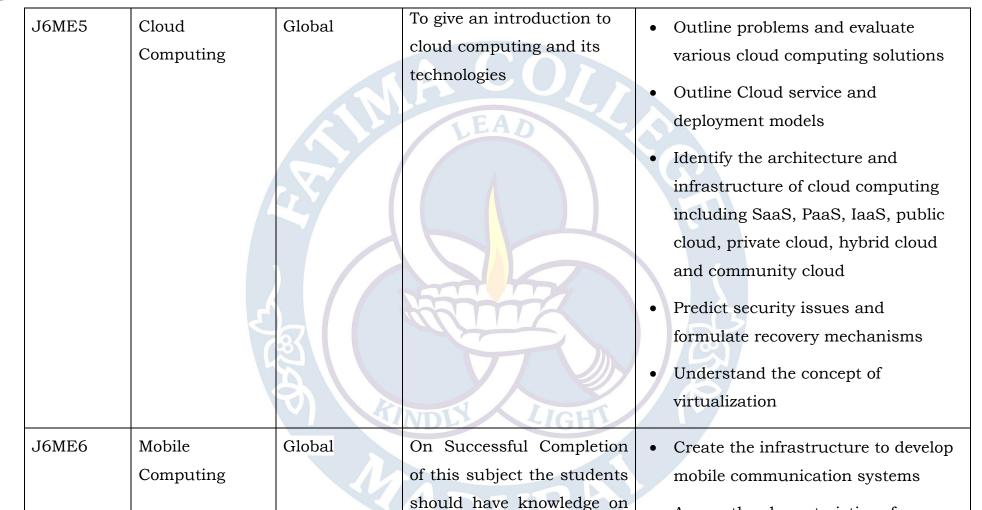


**Criterion**: I - Curricular Aspects

Metric: 1.1.1 - Programme Outcomes (POs), Programme Specific Outcomes (PSOs) and

Course Outcomes (COs) - B.C.A & P.G.D.C.A

Year : 2015 - 2020



Mobile

Computing



**Criterion**: I - Curricular Aspects

Metric: 1.1.1 – Programme Outcomes (POs), Programme Specific Outcomes (PSOs) and

Course Outcomes (COs) – B.C.A & P.G.D.C.A



			Concepts and emer	erging	communication
			technologies	and •	Critique new knowledge in the field
		S	applications.		of computer science by using
			(EAD)		appropriate search methodologies
			Land		Analyze on the various software kits
		V			available
					Assess the characteristics of Mobile
					Components and Applications
J6SB5	Skill Based-V-	Global	To devel <mark>op</mark> programr	nming •	Explore the interface concepts in
	Alice		skills and impart anima	nation	alice
		3	techniques using Alice.	•	Understand how to set the scene
	V	3	J/K		and characters in alice
		Y W	NDLY LIGH	TT.	Analyze the programming skills and
					expertise
		14	15-50		Disseminate various event handling
				3	techniques and methods
				•	Assess the characteristics of 3D and



**Criterion**: I - Curricular Aspects

Metric: 1.1.1 – Programme Outcomes (POs), Programme Specific Outcomes (PSOs) and

Course Outcomes (COs) – B.C.A & P.G.D.C.A



				billboards and various sound effect options
J6SB6	Skill Based-VI- Imagej	Global	To develop image processing and analyzing skills using ImageJ	<ul> <li>Outline the basic concepts of imageJ</li> <li>Understand the methods, operations and techniques</li> <li>Analyze image generation techniques</li> <li>Illustrate working with macro commands in imageJ</li> <li>Disseminate plug-ins in imageJ</li> </ul>



Metric: 1.1.1 - Programme Outcomes (POs), Programme Specific Outcomes (PSOs) and

Course Outcomes (COs) – B.C.A & P.G.D.C.A

Year : 2015 - 2020



#### FATIMA COLLEGE (AUTONOMOUS), MADURAI – 625018

NAME OF THE PROGRAMME: P.G.D.C.A PROGRAMME CODE: OSCA

#### 2019 - 2020

COURSE	Course Title	NATURE OF THE COURSE (LOCAL/ NATIONAL/ REGIONAL/ GLOBAL)	Course Description	Course Outcomes
19PDB101	Computer Fundamentals and OS	National	Fundamentals course begins with basic concepts and builds	<ul> <li>co 1: Bridge the fundamental concepts of computers with the present level of knowledge of the students.</li> <li>CO 2: Understand binary, hexadecimal and octal number systems and their arithmetic</li> </ul>



**Criterion**: I - Curricular Aspects

Metric: 1.1.1 – Programme Outcomes (POs), Programme Specific Outcomes (PSOs) and

Course Outcomes (COs) – B.C.A & P.G.D.C.A



				<b>CO 3:</b> Familiarise operating systems,
				programming languages,
				peripheral devices, networking,
		ANI.		multimedia and internet.
			LEAD	CO 4: Learner will be able to
	6	3///		appreciate the role of operating
		7   1	<b>A</b>	system as System software.
				<b>CO 5:</b> To control the behaviour of OS
				by writing Shell scripts.
19PDB102	Problem solving	National	To develop programs	<b>co 1:</b> Understand the fundamentals
	using C		using C	of C programming
			programming language, in	<b>CO 2:</b> Choose the loops and decision
			order to solve simple to	making statements to solve the
		TIND	moderate problems	problem.
				<b>CO 3:</b> Implement different Operations
		YIA	DIDA	on arrays
		The state of the s	DUN	<b>CO 4:</b> Use functions to solve the



**Criterion**: I - Curricular Aspects

Metric: 1.1.1 – Programme Outcomes (POs), Programme Specific Outcomes (PSOs) and

Course Outcomes (COs) – B.C.A & P.G.D.C.A



			COL	given problem.  CO 5: Program with pointers and arrays, perform pointer arithmetic, and use the preprocessor. the students will be able to develop applications
19PDB103	Web Designing	National	To planning & designing effective web pages; implementing web pages by writing HTML and CSS code;	<ul> <li>CO 1: Student will discover how does web works really, what makes web sites work.</li> <li>CO 2: Writing valid and concise code for web pages.</li> <li>CO 3: To create web elements like buttons, banners.</li> <li>CO 4: Forms and validations for your website.</li> <li>CO 5: How to and where to start</li> </ul>



**Criterion**: I - Curricular Aspects





**Criterion**: I - Curricular Aspects

Metric: 1.1.1 – Programme Outcomes (POs), Programme Specific Outcomes (PSOs) and

Course Outcomes (COs) – B.C.A & P.G.D.C.A



	Photo Editing Techniques		programming knowledge and skills for application development on the Internet. &  To create and design	CO 2: To create web elements like buttons, banners.  CO 3: Forms and validations for your website.
			digital images and illustrations for print and Web publication.	<ul><li>co 4: Students will gain a working knowledge of Photoshop.</li><li>co 5: Preparation and processing photos for the Web</li></ul>
19PDB106	Lab III – Tally with Spreadsheet	Local	To give an opportunity to the undergraduate student to get acquainted with Tally Accounting Software.	<ul> <li>CO 1: To maintain a record of all monetary transactions</li> <li>CO 2: To create balance sheet, voucher and ledgers.</li> <li>CO 3: To Preview and print worksheets.</li> <li>CO 4: Indicate the names and functions of the Excel interface</li> </ul>



**Criterion**: I - Curricular Aspects

Metric: 1.1.1 – Programme Outcomes (POs), Programme Specific Outcomes (PSOs) and

Course Outcomes (COs) – B.C.A & P.G.D.C.A



			COLLEAD	components.  CO 5: Construct formulas, including the use of built-in functions, and relative and absolute references.
19PDB107	Mini Project	National	This course provides leadership and management guidelines for the project	<ul> <li>CO 1: Demonstrate a sound technical knowledge of their selected project topic.</li> <li>CO 2:Undertake problem identification, formulation and solution.</li> <li>CO 3: Design engineering solutions to complex problems utilising a systems approach.</li> </ul>
19PDB201	Database Management System	Global	nature of relational	<ul><li>CO 1: To describe data models and schemas in DBMS</li><li>CO 2: To understand the features of</li></ul>



**Criterion**: I - Curricular Aspects

Metric: 1.1.1 – Programme Outcomes (POs), Programme Specific Outcomes (PSOs) and

Course Outcomes (COs) – B.C.A & P.G.D.C.A



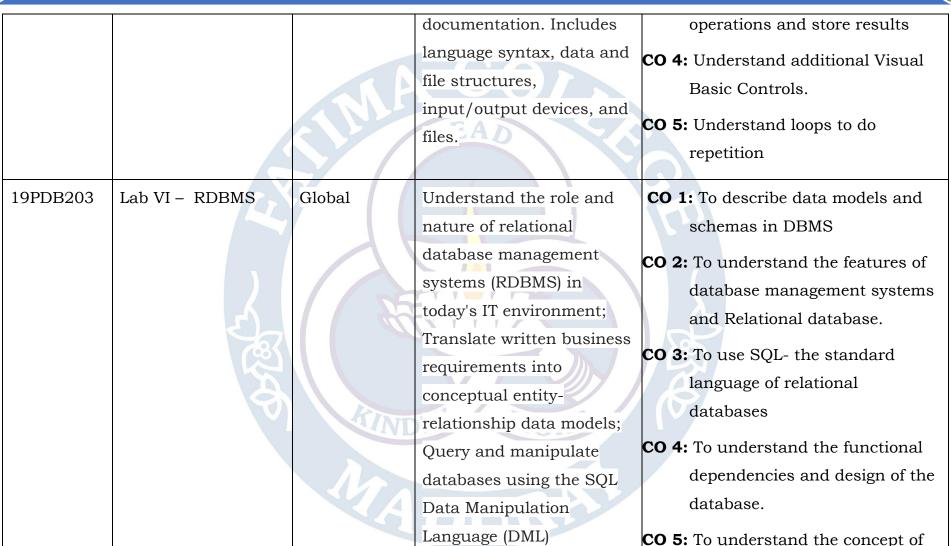
				today's IT environment;	database management systems
				Translate written business	and Relational database.
			AA	requirements into	<b>CO 3:</b> To use SQL- the standard
				conceptual entity-	language of relational
				relationship data models;	databases
			7/	Query and manipulate	CO 4. To see departed of the formation of
			<b>Y</b> //	databases using the SQL	<b>CO 4:</b> To understand the functional
				Data Manipulation	dependencies and design of the
				Language (DML)	database.
					<b>CO 5:</b> To understand the concept of
			1 55		Transaction and Query
					processing.
		186			1785
19PDB202	Visual Basic		National	Introduction to computer	CO 1: Understand Visual Basic
		191	1	programming using VB.	applications.
			JAIND	Emphasis on the	<b>CO 2:</b> Develop a Graphical User
				fundamentals of	Interface (GUI) based on
			1/1 A	structured design,	problem description
				development, testing,	
				implementation, and	<b>CO 3:</b> Understand how to perform
	<u>1</u>		I		.1



**Criterion**: I – Curricular Aspects

Metric: 1.1.1 - Programme Outcomes (POs), Programme Specific Outcomes (PSOs) and

Course Outcomes (COs) - B.C.A & P.G.D.C.A





**Criterion**: I - Curricular Aspects

Metric: 1.1.1 – Programme Outcomes (POs), Programme Specific Outcomes (PSOs) and

Course Outcomes (COs) – B.C.A & P.G.D.C.A



				Transaction and Query processing.
19PDB204	Lab VII – Visual Basic	National	programming using VB. Emphasis on the fundamentals of structured design, development, testing, implementation, and documentation. Includes language syntax, data and file structures,	<ul> <li>CO 1: Understand Visual Basic applications.</li> <li>CO 2:Develop a Graphical User Interface (GUI) based on problem description</li> <li>CO 3: Understand how to perform operations and store results</li> <li>CO 4: Understand additional Visual Basic Controls.</li> <li>CO 5: Understand loops to do repetition</li> </ul>
PDB205	Project & Viva-Voce	Local	leadership and management guidelines for	<ul><li>CO 1: Demonstrate a sound technical knowledge of their selected <i>project topic</i>.</li><li>CO 2: Undertake problem</li></ul>



**Criterion**: I - Curricular Aspects

Metric: 1.1.1 - Programme Outcomes (POs), Programme Specific Outcomes (PSOs) and

Course Outcomes (COs) – B.C.A & P.G.D.C.A



				COL	identification, formulation and solution.  CO 3: Design engineering solutions to complex problems utilising a systems approach.
PDB206	Internship	<b>分詞分</b>	Local	An <i>internship</i> experience provides the student with an opportunity to explore career interests while applying knowledge.	co 1: Explore career alternatives     prior to graduation.  co 2:Integrate theory and practice.  co 3:Assess interests and abilities     in their field of study.  co 4:Learn to appreciate work and     its function in the economy.



**Criterion**: I - Curricular Aspects

Metric: 1.1.1 - Programme Outcomes (POs), Programme Specific Outcomes (PSOs) and

Course Outcomes (COs) – B.C.A & P.G.D.C.A

Year : 2015 - 2020



#### 2018 - 2019

COURSE CODE	Course Title	NATURE OF THE COURSE (LOCAL/NATIONAL/ REGIONAL/GLOBAL)	Course Description	Course Objectives
PDB102	Web Designing	National	To planning & designing effective web pages; implementing web pages by writing HTML and CSS code;	Students are able to develop a dynamic webpage.
PDB103	Lab I – Programming in C	National	To develop programs using C programming language, in order to solve simple to moderate problems	Ability to define and manage data structures based on problem subject domain.
PDB104	Lab II – Web Programming	National	To planning & designing effective web pages;	Students are able to develop a dynamic



**Criterion**: I - Curricular Aspects

Metric: 1.1.1 – Programme Outcomes (POs), Programme Specific Outcomes (PSOs) and

Course Outcomes (COs) – B.C.A & P.G.D.C.A



		an A C	implementing web pages by writing HTML and CSS code.	webpage.
PDB105	Lab III – Tally with Spreadsheet	National	To give an opportunity to the undergraduate student to get acquainted with Tally Accounting Software.	<ul> <li>To Create Financial Statements &amp; to identify</li> <li>spreadsheet</li> <li>terminology and concepts;</li> </ul>
PDB106	Lab IV - Photo Editing Techniques	Local	To create and design digital images and illustrations for print and Web publication.	To create and design digital images and illustrations for print and Web publication.
PDB107	LIVe Mini Project	Local	This course provides leadership and management guidelines for the project	Demonstrate a sound     technical knowledge of     their     selected project topic.     Undertake problem



Metric: 1.1.1 – Programme Outcomes (POs), Programme Specific Outcomes (PSOs) and

Course Outcomes (COs) – B.C.A & P.G.D.C.A



		SIMA C		identification, formulation and solution. Design engineering solutions to complex problems utilising a systems approach.
PDB201	Object Oriented Programming using Java	Global	To build robust applications using Java's object-oriented features as well as develop platformindependent GUIs.	• On completion of the course the student should be able to: Use an integrated development environment to write, compile, run, and test simple object-oriented Java programs
PDB202	Database  Management System	Global	Understand the role and nature of relational database management systems (RDBMS) in	At the end of this class,     the successful student     will: have a broad     understanding of



**Criterion**: I - Curricular Aspects

Metric: 1.1.1 – Programme Outcomes (POs), Programme Specific Outcomes (PSOs) and

Course Outcomes (COs) – B.C.A & P.G.D.C.A



			today's IT environment;	database concepts and
			Translate written business	database management
			requirements into	system software. have a
			conceptual entity-	high-level understanding
		J.E.A	relationship data models;	of major DBMS
			Query and manipulate	or major <i>BB</i> ME
		7 / /	databases using the SQL	• components and their
		7 ( ( ( ( ( ( ( ( ( ( ( ( ( ( ( ( ( ( (		function.
			Data Manipulation	
			Language (DML);	
PDB203	Lab V –	Global	To build robust	On completion of
	Programming in		applications	the course the student
	Java		using Java's object-	should be able to: Use an
	18		oriented features as well	integrated development
	18	A STATE OF THE STA	as develop platform-	environment to write,
		MANDLY	independent GUIs.	compile, run, and test
				simple object-
		MADE	TO A	oriented Java programs
PDB204	Lab VI - RDBMS	National	Understand the role and	• At the end of this class,



Metric: 1.1.1 – Programme Outcomes (POs), Programme Specific Outcomes (PSOs) and

Course Outcomes (COs) – B.C.A & P.G.D.C.A



PDB205  Lab VII – Visual Basic  PDB205  Lab VII – Visual Basic  PDB206  Lab VII – Visual Basic  PDB207  Lab VII – Visual Basic  PDB208  Lab VII – Visual Basic  PDB208  Lab VII – Visual Basic  PDB209  PDB209  Lab VII – Visual Basic  PDB209  PDB209  Lab VII – Visual Basic  PDB209  PDB209			·		
systems (RDBMS) in today's IT environment; Translate written business requirements into conceptual entity-relationship data models; Query and manipulate databases using the SQL Data Manipulation Language (DML);  PDB205  Lab VII – Visual Basic  National  Introduction to computer programming using VB. Emphasis on the fundamentals of structured design,  systems (RDBMS) in tunderstanding of database concepts and database management system software. have a high-level understanding of major DBMS  • components and their function.  Design, formulate, and construct applications with VB.NET. Integrate variables and constants into calculations				nature of relational	the successful student
today's IT environment; Translate written business requirements into conceptual entity-relationship data models; Query and manipulate databases using the SQL Data Manipulation Language (DML);  PDB205 Lab VII - Visual Basic  National  Introduction to computer programming using VB. Emphasis on the fundamentals of structured design,  today's IT environment; Translate written business requirements into database concepts and database management system software. have a high-level understanding of major DBMS  • components and their function.  • Design, formulate, and construct applications with VB.NET. Integrate variables and constants into calculations				database management	will: have a broad
Translate written business requirements into conceptual entity-relationship data models; Query and manipulate databases using the SQL Data Manipulation Language (DML);  PDB205  Lab VII – Visual Basic  National  Introduction to computer programming using VB. Emphasis on the fundamentals of structured design,  Translate written business requirements into conceptual entity-relationship data models; Query and manipulate databases using the SQL Data Manipulation.  Introduction to computer programming using VB. Emphasis on the fundamentals of structured design, into calculations			AL	systems (RDBMS) in	understanding of
requirements into conceptual entity-relationship data models; Query and manipulate databases using the SQL Data Manipulation Language (DML);  PDB205  Lab VII – Visual Basic  National  Introduction to computer programming using VB. Emphasis on the fundamentals of structured design,  Figure 1				today's IT environment;	database concepts and
Conceptual entity-relationship data models; Query and manipulate databases using the SQL Data Manipulation Language (DML);   Design, formulate, and construct applications with VB.NET. Integrate fundamentals of structured design,   high-level understanding of major DBMS   components and their function.			LEA	Translate written business	database management
relationship data models; Query and manipulate databases using the SQL Data Manipulation Language (DML);  PDB205  Lab VII – Visual Basic  National  Introduction to computer programming using VB. Emphasis on the fundamentals of structured design,  of major DBMS  components and their function.  • Design, formulate, and construct applications with VB.NET. Integrate variables and constants into calculations			7//	requirements into	system software. have a
PDB205  Lab VII – Visual Basic  National  Emphasis on the fundamentals of structured design,  Query and manipulate databases using the SQL Data Manipulation Language (DML);  • components and their function.  • Design, formulate, and construct applications with VB.NET. Integrate variables and constants into calculations			Y / / / / / /	conceptual entity-	high-level understanding
PDB205  Lab VII – Visual Basic  National Basic  Introduction to computer programming using VB. Emphasis on the fundamentals of structured design,  into calculations  • Components and their function.  • Design, formulate, and construct applications with VB.NET. Integrate variables and constants into calculations				relationship data models;	of major DBMS
databases using the SQL Data Manipulation Language (DML);  PDB205 Lab VII – Visual Basic National Emphasis on the fundamentals of structured design,  databases using the SQL Data Manipulation Language (DML);  • Design, formulate, and construct applications with VB.NET. Integrate variables and constants into calculations				Query and manipulate	<ul> <li>components and their</li> </ul>
PDB205  Lab VII – Visual Basic  National Emphasis on the fundamentals of structured design,  Language (DML);  Design, formulate, and construct applications with VB.NET. Integrate variables and constants into calculations				databases using the SQL	-
PDB205 Lab VII – Visual Basic Introduction to computer programming using VB. Emphasis on the fundamentals of structured design,  Introduction to computer programming using VB. Emphasis on the fundamentals of structured design, into calculations			No.	Data Manipulation	
Basic programming using VB. construct applications with VB.NET. Integrate fundamentals of structured design, into calculations		67		Language (DML);	
Emphasis on the fundamentals of variables and constants structured design, into calculations	PDB205	Lab VII – Visual	National	Introduction to computer	Design, formulate, and
fundamentals of variables and constants structured design, into calculations		Basic	A	programming using VB.	construct applications
structured design, into calculations			AINDLY	Emphasis on the	with VB.NET. Integrate
				fundamentals of	variables and constants
			A TA	structured design,	into calculations
development, testing, applying VB			WID:	development, testing,	applying VB
implementation, and				implementation, and	



**Criterion**: I - Curricular Aspects

Metric: 1.1.1 – Programme Outcomes (POs), Programme Specific Outcomes (PSOs) and

Course Outcomes (COs) – B.C.A & P.G.D.C.A



		TEA	documentation. Includes language syntax, data and file structures, input/output devices, and files.	
PDB206	Project	Regional	This course provides leadership and management guidelines for the project	<ul> <li>Demonstrate a sound technical knowledge of their selected project topic.</li> <li>Undertake problem identification, formulation and solution.</li> <li>Design engineering solutions to complex problems utilising a systems approach.</li> </ul>
PDB207	Internship	Local	An internship experience provides the student with	• Explore career alternatives prior to



**Criterion**: I - Curricular Aspects

Metric: 1.1.1 - Programme Outcomes (POs), Programme Specific Outcomes (PSOs) and

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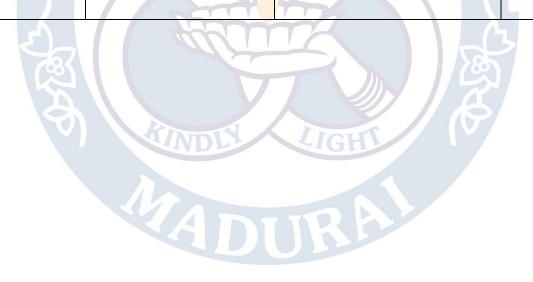
Year : 2015 - 2020



an opportunity to explore career interests while applying knowledge.

graduation.

- Integrate theory and practice.
- Assess interests and abilities in their field of study.
- Learn to appreciate work and its function in the economy.





**Criterion** : I – Curricular Aspects

Metric: 1.1.1 - Programme Outcomes (POs), Programme Specific Outcomes (PSOs) and

Course Outcomes (COs) – B.C.A & P.G.D.C.A

Year : 2015 - 2020



#### 2017 - 2018

COURSE	Course Title	NATURE OF THE COURSE (LOCAL/NATIONAL/ REGIONAL/GLOBAL)	Course Description	Course Objectives
PDB102	Web Designing	National	To planning & designing effective web pages; implementing web pages by writing HTML and CSS code;	Students are able to develop a dynamic webpage.
PDB103	Lab I – Programming in C	Global	To develop programs using C programming language, in order to solve simple to moderate problems	Ability to define and manage data structures based on problem subject domain.
PDB104	Lab II – Web	Global	To planning & designing	Students are able to develop a dynamic



**Criterion**: I - Curricular Aspects

Metric: 1.1.1 – Programme Outcomes (POs), Programme Specific Outcomes (PSOs) and

Course Outcomes (COs) – B.C.A & P.G.D.C.A



	Programming	MAC	effective web pages; implementing web pages by writing HTML and CSS code;	webpage.
PDB105	Lab III – Tally with Spreadsheet	National	To give an opportunity to the undergraduate student to get acquainted with Tally Accounting Software.	<ul> <li>To Create Financial Statements &amp; to identify</li> <li>spreadsheet</li> <li>terminology and concepts;</li> </ul>
PDB106	Lab IV - Photo Editing Techniques	Local	To create and design digital images and illustrations for print and Web publication.	To create and design     digital images and     illustrations for print and     Web publication.
PDB201	Object Oriented Programming using Java	Global	To build robust applications using Java's object- oriented features as well as develop platform-	On completion of     the course the student     should be able to: Use     an integrated     development



**Criterion**: I - Curricular Aspects

Metric: 1.1.1 – Programme Outcomes (POs), Programme Specific Outcomes (PSOs) and

Course Outcomes (COs) – B.C.A & P.G.D.C.A



			independent GUIs.	environment to write,
				compile, run, and test
		AL		simple object-
		A FA		oriented Java programs
PDB202	Database	Global	Understand the role and	• At the end of this class,
	Management System	7 / / _ /	nature of relational	the successful student
		7	database management	will: have a broad
			systems (DBMS) in today's	understanding of
			IT environment; Translate	database concepts and
		Residence	written business	database management
	6		requirements into	system software. have a
	(3)		conceptual entity-	high-level
	T A		relationship data models;	understanding of
		Anny	Query and manipulate	major DBMS
		MANDE	databases using the SQL	<ul> <li>components and their</li> </ul>
			Data Manipulation	function.
		MADI	Language (DML);	
PDB203	Lab V –	Global	To build robust	On completion of



**Criterion**: I - Curricular Aspects

Metric: 1.1.1 – Programme Outcomes (POs), Programme Specific Outcomes (PSOs) and

Course Outcomes (COs) – B.C.A & P.G.D.C.A



	Τ	Т	T		
	Programming in		applications		the course the student
	Java		using Java's object-		should be able to: Use
		AL	oriented features as well		an integrated
			as develop platform-		development
		LEA	independent GUIs.		environment to write,
		7//			compile, run, and test
		Y / ( )			simple object-
			100		oriented Java programs
PDB204	Lab VI – RDBMS	Global	Understand the role and	•	At the end of this class,
		Residence	nature of relational		the successful student
	5)		database management		will: have a broad
	(8)		systems (RDBMS) in		understanding of
	X		today's IT environment;		database concepts and
		Alaman	Translate written business		database management
		MDL	requirements into		system software. have a
			conceptual entity-		high-level
		MADE	relationship data models;		understanding of
		WIII	Query and manipulate		major DBMS
			databases using the SQL	•	components and their



**Criterion**: I - Curricular Aspects

Metric: 1.1.1 – Programme Outcomes (POs), Programme Specific Outcomes (PSOs) and

Course Outcomes (COs) – B.C.A & P.G.D.C.A



			Data Manipulation Language (DML);	function.
PDB205	Lab VII – Visual Basic	National	Introduction to computer programming using VB. Emphasis on the fundamentals of structured design, development, testing, implementation, and documentation. Includes language syntax, data and file structures, input/output devices, and files.	Design, formulate, and construct applications with VB.NET. Integrate variables and constants into calculations applying VB
PDB206	Project	Regional	This course provides leadership and management guidelines for the project	<ul> <li>Demonstrate a sound technical knowledge of their selected project topic.</li> </ul>



**Criterion**: I - Curricular Aspects

Metric: 1.1.1 - Programme Outcomes (POs), Programme Specific Outcomes (PSOs) and

Course Outcomes (COs) – B.C.A & P.G.D.C.A

Year : 2015 - 2020



	Undertake problem
	identification,
	formulation and
	solution. Design
LEAD	engineering solutions to
	complex problems
	utilizing a systems
	approach.
	IA COLLEAD FILE

#### 2016 - 2017

Course Code	Course Title	NATURE OF THE COURSE (LOCAL/NATIONAL/ REGIONAL/GLOBAL)	Course Description	Course Objectives
PDB102	Programming in C	National	To develop programs using C	Ability to define and manage data



**Criterion**: I - Curricular Aspects

Metric: 1.1.1 – Programme Outcomes (POs), Programme Specific Outcomes (PSOs) and

Course Outcomes (COs) – B.C.A & P.G.D.C.A



		MAC	programming language , in order to solve simple to moderate problems	structures based on problem subject domain.
PDB103	Web Programming	Global	To planning & designing effective web pages; implementing web pag es by writing HTML and CSS code;	Students are able to develop a dynamic webpage.
PDB104	Lab I-DTP (CorelDraw, Photoshop)	National	To create and design digital images and illustrations for print and Web publication.	<ul> <li>Identify desktop publishing terminology and concepts.</li> <li>Manipulate text and</li> </ul>



Metric: 1.1.1 – Programme Outcomes (POs), Programme Specific Outcomes (PSOs) and

Course Outcomes (COs) – B.C.A & P.G.D.C.A



		TEA		graphics to create a balanced and focused layout.  Create fliers, brochures, and multiple page documents
PDB105	Lab II – Programming in C	National	To develop programs using C programming language in order to solve simple to moderate problems.	Ability to define and manage data structures based on problem subject domain.
PDB106	Lab III -Web Programming	Global	To planning & designing	Students are able to develop a dynamic



Metric: 1.1.1 – Programme Outcomes (POs), Programme Specific Outcomes (PSOs) and

Course Outcomes (COs) – B.C.A & P.G.D.C.A



		MAC	effectIVe web pages; implementing web pag es by writing HTML and CSS code;	webpage.
PDB107	Lab – IV Animation Using Flash	Global	Flash is Primarily an animation tool for the Web: Web Banners, Animated Buttons, Web Animated Adverti sements.	• Learn to create animated graphics, add sound and interactivity. Can develop Website CD based presentations
PDB201	Programming in JAVA	Global	To build robust applications using Java's object- oriented features as	On completion of the course the student should be able to: Use an



Metric: 1.1.1 – Programme Outcomes (POs), Programme Specific Outcomes (PSOs) and

Course Outcomes (COs) – B.C.A & P.G.D.C.A



			well as develop	integrated
			platform-independent	development
		A A C	GUIs.	environment to
		TEA		write, compile, run,
				and test simple
	AVS			object-
			/20	oriented Java progra
		1		ms
PDB202	Introduction to	Global	Understand the role	At the end of this
	RDBMS		and nature	class, the successful
		V	of relational	student will: have a
	18)	Knowl	database management	broad understanding
		MDL	systems (RDBMS) in	of database concepts
		1	today's IT	and database
		MADI	environment;	management system
			Translate written	software. have a



**Criterion**: I - Curricular Aspects

Metric: 1.1.1 – Programme Outcomes (POs), Programme Specific Outcomes (PSOs) and

Course Outcomes (COs) – B.C.A & P.G.D.C.A



			business requirements	high-level
			into conceptual entity-	understanding of
		AA	relationship data	major DBMS
		TEA	models; Query and	<ul> <li>components and</li> </ul>
		7	manipulate databases	their function.
			using the SQL Data	
			Manipulation	
		10	Language (DML);	
PDB203	Visual Basic	Global	Introduction to	Design, formulate,
	(A)		computer	and construct
			programming	applications
	18)	Knows	using VB. Emphasis	with VB.NET.
		MDL	on the fundamentals	Integrate variables
		100	of structured design,	and constants into
		MADI	of structured design, development, testing,	and constants into calculations
		AINDLY	programming using VB. Emphasis on the fundamentals	and construct applications with VB.NET. Integrate variables



Metric: 1.1.1 – Programme Outcomes (POs), Programme Specific Outcomes (PSOs) and

Course Outcomes (COs) – B.C.A & P.G.D.C.A



1 3 11	. 2013 2020			
			documentation.	
			Includes language	
			syntax, data and file	
		TEA	structures,	
		3	input/output devices,	
	6.39		and files.	
PDB204	Lab – V	Global	To build robust	On completion of
	Programming in		applications	the course the
	JAVA	Name of the last o	using Java's object-	student should be
	<b>187</b>		oriented features as	able to: Use an
	181	V	well as develop	integrated
	18)	Kuniy	platform-independent	development
		MDL	GUIs.	environment to
		10		write, compile, run,
		ADI	TRA	and test simple
				object-



**Criterion**: I - Curricular Aspects

Metric: 1.1.1 – Programme Outcomes (POs), Programme Specific Outcomes (PSOs) and

Course Outcomes (COs) – B.C.A & P.G.D.C.A



				oriented Java progra
			0.	ms
PDB205	Lab -VI RDBMS	Global	Understand the role	• At the end of this
		LEA	and nature	class, the successful
			of relational	student will: have a
			database management	broad understanding
			systems (RDBMS) in	of database concepts
			today's IT	and database
	4		environment;	management system
			Translate written	software. have a
		V	business requirements	high-level
	(9)	Annual A	into conceptual entity-	understanding of
		MDL	relationship data	major DBMS
		100	models; Query and	• components and
		ADI	manipulate databases	their function.
			using the SQL Data	



Metric: 1.1.1 – Programme Outcomes (POs), Programme Specific Outcomes (PSOs) and

Course Outcomes (COs) – B.C.A & P.G.D.C.A



	Manipulation	
	Language (DML);	
National	Introduction to	• Design, formulate,
LE	computer	and construct
	programming	applications
7 ( ( ( ( ( ( ( ( ( ( ( ( ( ( ( ( ( ( (	using VB. Emphasis	with VB.NET.
1	on the fundamentals	Integrate variables
	of structured design,	and constants into
1330	development, testing,	calculations
	implementation, and	applying VB
	documentation.	
4/ADIY	Includes language	
MDL	syntax, data and file	
1	structures,	
AD	input/output devices,	
	and files.	
	National	computer programming using VB. Emphasis on the fundamentals of structured design, development, testing, implementation, and documentation. Includes language syntax, data and file structures, input/output devices,

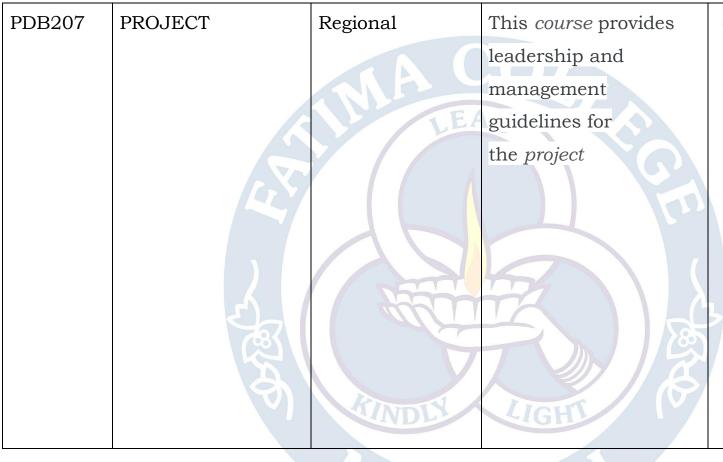


**Criterion**: I - Curricular Aspects

Metric: 1.1.1 - Programme Outcomes (POs), Programme Specific Outcomes (PSOs) and

Course Outcomes (COs) - B.C.A & P.G.D.C.A

**Year** : 2015 - 2020



• Demonstrate a sound technical knowledge of their selected **project** topi c. Undertake problem identification, formulation and solution. Design engineering solutions to complex problems utilizing a systems approach.



**Criterion**: I – Curricular Aspects

Metric: 1.1.1 - Programme Outcomes (POs), Programme Specific Outcomes (PSOs) and

Course Outcomes (COs) – B.C.A & P.G.D.C.A

Year : 2015 - 2020



#### 2015 - 2016

Course Code	Course Title	NATURE OF THE COURSE (LOCAL/NATIONAL/ REGIONAL/GLOBAL)	Course Description	Course Objectives
PDB102	Programming in C	National	To develop programs using C programming language, in order to solve simple to moderate problems	Ability to define and manage data structures based on problem subject domain.
PDB103	Web Programming	National	To planning & designing effective web pages; implementing web pages by writing HTML and CSS code;	Students are able to develop a dynamic webpage.
PDB104	Lab I-DTP (CorelDraw,	Local	The program of online desktop publishing	Identify desktop     publishing terminology



**Criterion**: I – Curricular Aspects

Metric: 1.1.1 – Programme Outcomes (POs), Programme Specific Outcomes (PSOs) and

Course Outcomes (COs) – B.C.A & P.G.D.C.A



	D1 1 )	1	111		1
	Photoshop)		and students to use		and concepts.
			computer software for	•	Manipulate text and
		AAU	designing and create a		graphics to create a
		N	number of different		balanced and focused
		LEA	document types, from		layout.
		7 / /	email newsletters to PDF	•	Create fliers, brochures,
	/3.9		files.		and multiple page
					documents.
PDB105	Lab II – Programming	National	To develop programs	•	Ability to define and
	in C	Record	using C		manage data structures
	6		programming language, in		based on problem
	(8)		order to solve simple to		subject domain.
	3		moderate problems		
PDB106	Lab III -Web	Global	To planning & designing	•	Students are able to
	Programming		effective web pages;		develop a dynamic
		1/1	implementing web pages		webpage.
		<b>K</b> GIN	by writing HTML and CSS		
			code;		
	<u>I</u>	1.4	_		



**Criterion**: I – Curricular Aspects

Metric: 1.1.1 – Programme Outcomes (POs), Programme Specific Outcomes (PSOs) and

Course Outcomes (COs) – B.C.A & P.G.D.C.A



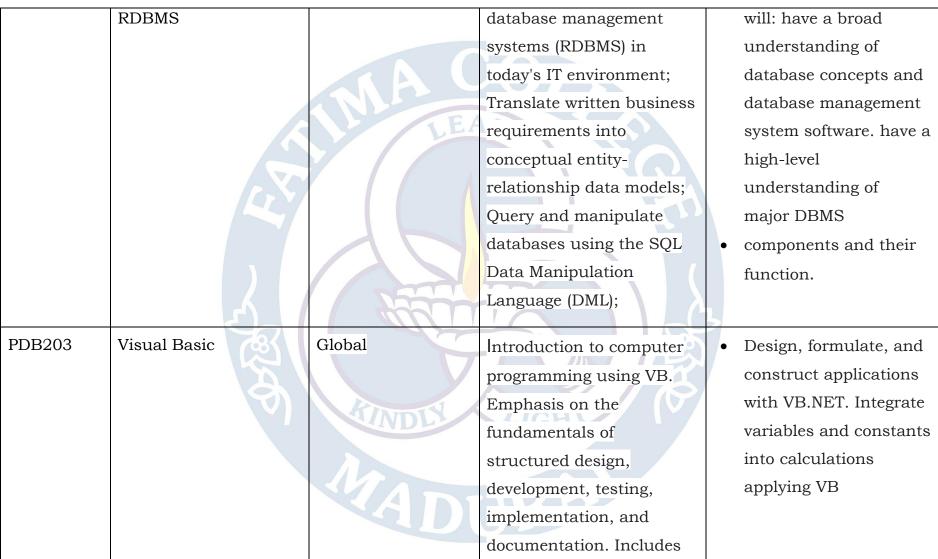
PDB107	Lab – IV Animation Using Flash	Global	Flash is Primarily an animation tool for the Web: Web Banners, Animated Button s, Web Animated Advertisements.	<ul> <li>Learn to create         <ul> <li>animated graphics, add</li> <li>sound and interactivity.</li> </ul> </li> <li>Can develop Website</li> <li>CD based presentations</li> </ul>
PDB201	Programming in JAVA	Global	To build robust applications using Java's object-oriented features as well as develop platformindependent GUIs.	• On completion of the course the student should be able to: Use an integrated development environment to write, compile, run, and test simple object-oriented Java programs
PDB202	Introduction to	Global	Understand the role and nature of relational	At the end of this class,     the successful student



Criterion : I - Curricular Aspects

Metric: 1.1.1 - Programme Outcomes (POs), Programme Specific Outcomes (PSOs) and

Course Outcomes (COs) - B.C.A & P.G.D.C.A





Metric: 1.1.1 – Programme Outcomes (POs), Programme Specific Outcomes (PSOs) and

Course Outcomes (COs) – B.C.A & P.G.D.C.A



		MAC	language syntax, data and file structures, input/output devices, and files.	
PDB204	Lab – V Programming in JAVA	Global	To build robust applications using Java's object-oriented features as well as develop platformindependent GUIs.	<ul> <li>On completion of         the course the student         should be able to: Use         an integrated         development         environment to write,         compile, run, and test         simple object-         oriented Java programs</li> </ul>
PDB205	Lab –VI RDBMS	Global	Understand the role and nature of relational database management systems (RDBMS) in today's IT environment;	At the end of this class,     the successful student     will: have a broad     understanding of     database concepts and



**Criterion**: I – Curricular Aspects

Metric: 1.1.1 – Programme Outcomes (POs), Programme Specific Outcomes (PSOs) and

Course Outcomes (COs) – B.C.A & P.G.D.C.A



			Translate written business	database management
			requirements into	system software. have a
		A	conceptual entity-	high-level
			relationship data models;	understanding of
		LEA	Query and manipulate	major DBMS
		7 / 6	databases using the SQL	• components and their
			Data Manipulation	function.
			Language (DML);	
PDB206	Lab-VII Visual Basic	Local	Introduction to computer	Design, formulate, and
		Range	programming using VB.	construct applications
	٤)_		Emphasis on the	with VB.NET. Integrate
	(8)		fundamentals of	variables and constants
			structured design,	into calculations
	(8)	KIN IN A	development, testing,	applying VB
		MANDE	implementation, and	
			documentation. Includes	
		1/1/1	language syntax, data and	
		<b>W</b>	file structures,	
			input/output devices, and	
			1,	



**Criterion**: I – Curricular Aspects

Metric: 1.1.1 – Programme Outcomes (POs), Programme Specific Outcomes (PSOs) and

Course Outcomes (COs) – B.C.A & P.G.D.C.A



			files.	
PDB207	Project	Regional	This course provides leadership and management guidelines for the project	Demonstrate a sound technical knowledge of their selected <i>project</i> topic.     Undertake problem identification, formulation and solution. Design engineering solutions to complex problems utilizing a systems approach.