Manas Saini

Professional Title

Short and engaging pitch about yourself.

sainimanas73@gmail.com Phone Number

EDUCATION

Study Program
Institution/Place of Education

WORK EXPERIENCE

Title/Position
Workplace/Company

SKILLS

Skill

PERSONAL PROJECTS

Project Name

ORGANIZATIONS

Organization Name

CERTIFICATES

Certificate Name

LANGUAGES

Language
Full Professional Proficiency

INTERESTS

Interest

SURESH GYAN VIHAR UNIVERSITY
Accredited by NAAC with 'A' Grade

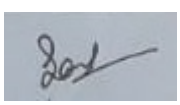
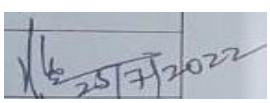
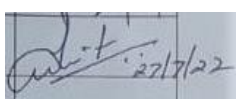
FROM ACADEMIC SESSION 2022-2023
Learning Center of Excellence with Google
DEPARTMENT OF COMPUTER APPLICATION
Teaching and Examination Scheme for Bachelor of Computer Application 3 Year Program

2022-23 Year – I | Semester - I

S.No.	Course Code	Course Name	Credits	Contact Hrs/Week			Exam Hrs.	Weightage (in %)	
				L	T/S	P		CE	ESE
	Program Core								
1.	New	Principles of Programming using 'C'	3	3	0	0	3	40	60
2.	CA 107	Introduction to IoT	3	3	0	0	3	40	60
3.	New	'C' Programming Lab	2	0	0	3	2	60	40
4.	CA 103	Ecommerce and Digital Marketing	3	3	0	0	3	40	60
5.	CA 108	Ecommerce and Digital Marketing Lab	2	0	0	3	2	60	40
	University Core								
7.	ES 101	Environmental Studies	3	3	0	0	3	40	60
8.	MA 103	Elementary Mathematics	3	3	0	0	3	40	60
9.	DE101	Proficiency in co-curricular Activities -I	2	0	0	2	-	100	-
10.	HS 101	Human Value & Ethics	1	1	0	0	-	-	-
11.	FD-101	Foundation Course-I	1	1	0	0	2	25	75
		Total	**23**	**17**	**0**	**8**			

Theory (15 Credits) + Labs (4 Credits)+ Foundation Course- I (1 Credit) + Human Value & Ethics (1 Credit) Proficiency in Co-curricular Activities (2 Credit) = 23 Credits

L – Lecture
S – Seminar
T – Tutorial
P – Practical
CE – Continuous Evaluation
ESE – End Semester Evaluation

Course Title : Principles of Programming using 'C'	Course Code : New
Semester : I	Core / Elective : Core
Teaching Scheme in Hrs. (L:T:P:C) : 3:0:0:3	Credits : 3
Type of course : Lecture	Total Contact Hours : 35
Continuous Internal Evaluation : **40 Marks**	ESE : **60 Marks**
Programs: Bachelor Of Computer Applications	

Pre-Requisites:

Basics of C Language

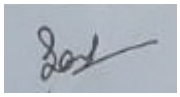
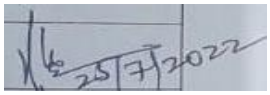
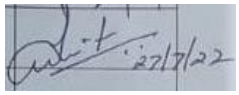
Course Objective:

The major objective of this course that student should understand various Principles of programming languages design; specification of syntax and semantics; underlying implementation of block structured languages; dynamic memory allocation for strings, lists, and arrays; imperative versus applicative programming; logic programming; modern programming languages.

Course Contents:

Units	Course Contents	Hrs.
1	Introduction to Programming: Programming Domains, Evolution of Major Programming languages, syntax and semantics, Pseudo Code, Basic Difference between Procedure Oriented Language and Object Oriented Language, Concepts of Machine level, Assembly level and High level programming, Flow charts and Algorithms. Compiler and Interpreter.	07
2	Fundamentals of 'C': Features of C language, structure of C program, comments, header files, data types, constants and variables, operators, expressions, evaluation of expressions, type conversion, precedence and associativity, I/O functions.	07
3	Control Structures in 'C': Simple statements, Decision making statements, Looping statements, Nesting of control structures, break and continue statement, go to statement.	07
4	Array & String: Concept of array, One and Two dimensional arrays, declaration and initialization of arrays, String, String storage, Built-in string functions.	07
5	Functions: Need and elements for User defined functions, function definition, declaration, return values and their types, parameter passing, scope visibility and lifetime of a variable.	07
	Total	**35**

Reference: Programming in ANSI C by E Balaguruswamy
The C Programming Language, 2nd Edition by Brian Kernighan and Dennis Ritchie

Course Outcomes:

On successful completion of the course, the student will be able to:

- Learn about the basic components of C language
- Learn about the C program structure.
- Learn about the basic programs of C language.

Course Assessment & Evaluation:

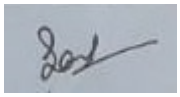
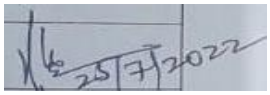
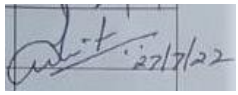
The Course will be delivered through lectures, classroom interaction, exercises and self-study cases.

Method	What		To Whom	When/where (Frequency in the course)	Max marks	Evidence collected	Contributing to course outcomes
Direct Assessment	CIE	Mid Term Test	Students	Two Tests	20	Midterm Answer Sheets	1 to 8
		Weekly Test		Two Weekly Tests	10	Weekly Test Copies	7 to 9
		Graded Assignments		Two Assignments	10	Log of records	1 to 6
				Total	**40**		
	ESE	End Sem Evolution		**End of the course**	**60**	Answer Scripts	1 to 9
Indirect Assessment	Student Feedback		Students	Middle of the course	-NA-	Feedback forms	1 to 4, Delivery of the course
	End of Course survey			End of course		Questionnaire	1 to 9, Effectiveness of delivery of instructions and assessment methods

Composition of Educational Components:

Questions for CIE and SEE will be designed to evaluate the various educational components (Bloom's taxonomy) such as:

S. No	Educational Component	Weightage (%)
1	Remembering and Understanding	35
2	Applying the knowledge acquired from the course	25
3	Analysis and Evaluation	40

Course Title : **Introduction to IoT**	Course Code : CA 107
Semester : I	Core / Elective : Core
Teaching Scheme in Hrs. (L:T:P:C) : 3:0:0:3	Credits : 3
Type of course : Lecture	Total Contact Hours : 35
Continuous Internal Evaluation : **40 Marks**	ESE : **60 Marks**
Programs: Bachelor Of Computer Applications	

Pre-Requisites:

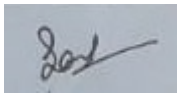
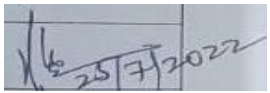
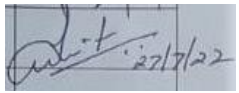
Basic knowledge of Computer Networks and Internet.

Course Objective:

Students will explore the interconnection and integration of the physical world and the cyber space. They are also able to design & develop IOT Devices.

Course Contents:

Topic and Contents	Hours
UNIT-1	07
Introduction & Concept: Introduction, physical design of IoT, Logical design of IoT, IoT enabling Technologies, IoT level and development Template	
UNITS-2:	07
Domain Specific IoT's: Home automation, Cities, Environment, Energy, Retail, Logistics, Agriculture, Industry, Health & Lifestyle.	
UNITS-3	07
IoT and Machine to Machine(M2M): M2M, Difference between IoT and M2M, SDN and NFV for IoT	
UNIT-4:	07
IoT System Management with NETCONF-YANG : Need for IoT system management, simple network management protocol (SNMP), Network Orator Requirement, NETCONF, YANG, IoT systems management with NETCONF-YANG	
UNIT 5:	07
Developing Internet of things : Introduction, IoT Design Methodology, Case study on Internet of things for weather Monitoring	
TOTAL	**35**

Reference:

Arshdeep Bahga . Vijay Madisetti

Course Outcomes:

On successful completion of the course, the student will be able to:

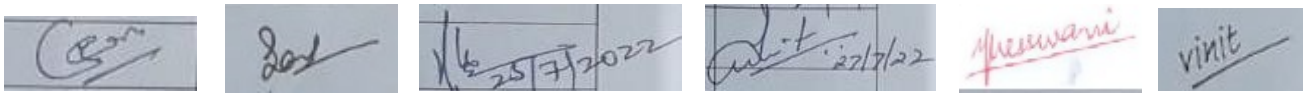
- Able to understand the application areas of IOT
- Able to realize the revolution of Internet in Mobile Devices, Cloud & Sensor Networks
- Able to understand building blocks of Internet of Things and characteristics.

Course Assessment & Evaluation:

The Course will be delivered through lectures, classroom interaction, exercises and self-study cases.

Method	**What**		To Whom	**When/where (Frequency in the course)**	**Max marks**	**Evidence collected**	**Contributing to course outcomes**
Direct Assessment	CIE	Mid Term Test	Students	Two Tests	20	Midterm Answer Sheets	1 to 8
		Weekly Test		Two Weekly Tests	10	Weekly Test Copies	7 to 9
		Graded Assignments		Two Assignments	10	Log of records	1 to 6
				Total	**40**		
	ESE	End Sem Evolution		**End of the course**	**60**	Answer Scripts	1 to 9
Indirect Assessment	Student Feedback		Students	Middle of the course	-NA-	Feedback forms	1 to 4, Delivery of the course
	End of Course survey			End of course		Questionnaire	1 to 9, Effectiveness of delivery of instructions and assessment methods

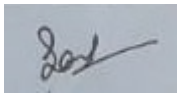
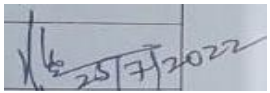
CIE – Continuous Internal Evaluation **ESE** –End Semester Examination

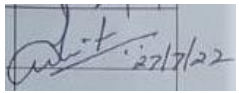


Composition of Educational Components:

Questions for CIE and SEE will be designed to evaluate the various educational components (Bloom's taxonomy) such as:

S. No	Educational Component	Weightage (%)
1	Remembering and Understanding	35
2	Applying the knowledge acquired from the course	25
3	Analysis and Evaluation	40




Course Title : 'C' Programming Lab	Course Code : New
Semester : I	Core / Elective : Core
Teaching Scheme in Hrs. (L:T:P:C) : 0:0:3:2	Credits : 2
Type of course : Practical Assignments	Total Contact Hours : 20
Continuous Internal Evaluation : **60 Marks**	ESE : **40 Marks**
Programs: Bachelor Of Computer Applications	

Pre-Requisites:

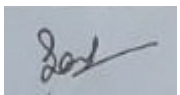
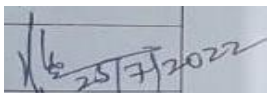
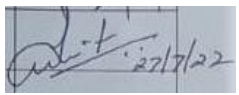
Basic concepts of Programming Language.

Course Objective:

The major objectives of this course that student should have knowledge of Principles of programming languages design; specification of syntax and semantics; underlying implementation of block structured languages; dynamic memory allocation for strings, lists, and arrays; imperative versus applicative programming; logic programming; modern programming languages.

Course Contents:

S.No.	List of Experiments	Total Contact Hrs
1	Simple input output program integer, real character and string. (Formatted & Unformatted).	2 hours weekly
2	Conditional statement programs (if, if-else-if, switch-case).	2 hours weekly
3	Looping Program. (for, while, do-while).	2 hours weekly
4	Program based on array (one, two, and three dimensions).	2 hours weekly
5	Program using structure and unions.	2 hours weekly
6	Write a program to perform the complex arithmetic.	2 hours weekly
7	Write a program to perform the rational number arithmetic.	2 hours weekly
8	To implement Tower of Hanoi problem.	2 hours weekly
9	To implement a Program with 4 Different Function and call in One program.	2 hours weekly
10	To implement different types of pyramid.	2 hours weekly

Course Title : **E-Commerce & Digital Marketing**	Course Code : CA 103
Semester : I	Core / Elective : Core
Teaching Scheme in Hrs. (L:T:P:C) : 3:0:0:3	Credits : 3
Type of course : Lecture	Total Contact Hours : 35
Continuous Internal Evaluation : **40 Marks**	ESE : **60 Marks**
Programs: Bachelor Of Computer Applications	

Pre-Requisites:

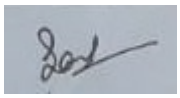
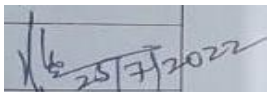
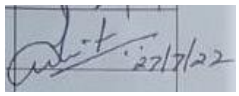
Students should have knowledge about Amazon, Flipkart like Electronic commerce companies
Basic knowledge of web development like Html.
Working knowledge of social media handles.

Course Objective:

Digital Marketing Course is an initiative designed to educate students and practitioners in the area of Digital Marketing analytics and make them ready for jobs or prepare them to launch campaigns for their own organizations.

Course Contents:

Units	Course Contents	Hrs.
1	Introduction: Motivation, Forces behind E-Commerce Industry Framework, Brief history of E Commerce, Advantages and Disadvantages of E-Commerce, Inter Organizational E-Commerce Intra Organizational E-Commerce.	7
2	Electronic Payments and Encryption: Overview of Electronics payments, Digital Token based Electronics payment System, Smart Cards, Credit Card I Debit Card based EPS Emerging Financial Instruments, Home Banking, security, Secret Key Encryption Public Key Encryption, Virtual Private Network (VPM), Implementation Management Issues.	7
3	Introduction to Digital Marketing, Basic digital marketing skills, SEO Overview, On Page , Off page, Local, Technical SEO, SEO guidelines, SEO algorithms, Mobile SEO, Schema Markup, Backlink Audits using SEMrush, SEO Audits, SEO Resources.	7
4	Introduction of Social Media, Social Media Optimization, email Marketing, Mobile Marketing, performance marketing, online public relations, content marketing, search engine optimization, search engine marketing.	7
5	Introduction to Digital Marketing Tools: Google Analytics, Google AdWords, Google AdSense, Hootsuite, Facebook Campaign Manager, Twitter Campaign Manager.	7
	Total	35

Reference:

Digital Marketing: Strategy, Implementation & Practice by Dave Chaffey & Fiona Ellis-Chadwick.
Digital Marketing all in one for dummies by Stephania Diamond.
Big book of Digital Marketing: advance digital marketing book by digital marketing community.
Managing social media practices in the digital economy by Shirin alavi.

Course Outcomes:

On successful completion of the course, the student will be able to:

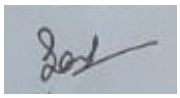
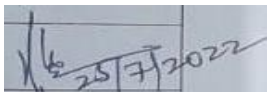
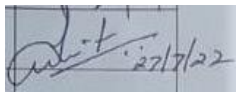
- Students will be learning about Digital Marketing.
- Students will be learning about getting traffic on social sites.
- Analyze the confluence of marketing, operations, and human resources in real-time delivery.
- Interpret the traditional marketing mix within the context of a changing and extended range of digital strategies and tactics.
- Analyze cross-cultural and ethical issues in globalized digital markets.

Course Assessment & Evaluation:

The Course will be delivered through lectures, classroom interaction, exercises and self-study cases.

Method	What		To Whom	When/where (Frequency in the course)	Max marks	Evidence collected	Contributing to course outcomes
Direct Assessment	CIE	Mid Term Test	Students	Two Tests	20	Midterm Answer Sheets	1 to 8
		Weekly Test		Two Weekly Tests	10	Weekly Test Copies	7 to 9
		Graded Assignments		Two Assignments	10	Log of records	1 to 6
				Total	**40**		
	ESE	End Sem Evolution		**End of the course**	**60**	Answer Scripts	1 to 9
Indirect Assessment	Student Feedback		Students	Middle of the course	-NA-	Feedback forms	1 to 4, Delivery of the course
	End of Course survey			End of course		Questionnaire	1 to 9, Effectiveness of delivery of instructions and assessment methods

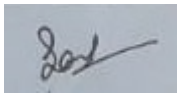
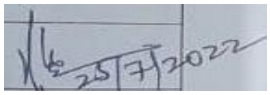
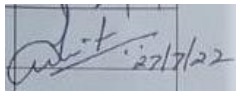
CIE – Continuous Internal Evaluation **ESE** –End Semester Examination

Composition of Educational Components:

Questions for CIE and SEE will be designed to evaluate the various educational components (Bloom's taxonomy) such as:

Sl. No.	Educational Component	Weightage (%)
1	Remembering and Understanding	35
2	Applying the knowledge acquired from the course	25
3	Analysis and Evaluation	40

Course Title : **E-Commerce & Digital Marketing Lab**	Course Code : CA 108
Semester : I	Core / Elective : Core
Teaching Scheme in Hrs. (L:T:P:C) : 0:0:3:2	Credits : 2
Type of course : Practical Assignments	Total Contact Hours : 20
Continuous Internal Evaluation : **60 Marks**	ESE : **40 Marks**
Programs: Bachelor Of Computer Applications	

Pre-Requisites:

Basic knowledge of Ecommerce tools and technologies and Digital Marketing

Course Objective:

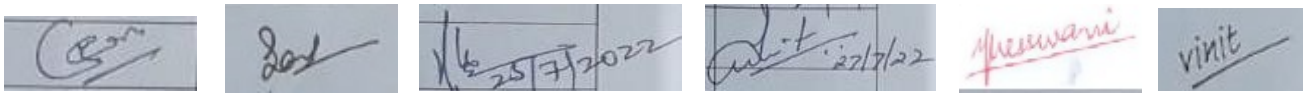
- Understanding about the Digital Marketing, Basics of Website creation, SEO and SEM, etc.
- Understanding about new terms like Google Analytics and Social Media Traffic etc.

Course Contents:

Units.	List of Experiments	Total Contact Hrs
1	Marketing	**2 hours weekly**
2	Website Basic	**2 hours weekly**
3	SEO	**2 hours weekly**
4	SEM	**2 hours weekly**
5	Email Marketing	**2 hours weekly**
6	ORM	**2 hours weekly**
7	Google Analytics	**2 hours weekly**
8	Google AdSense	**2 hours weekly**
9	Facebook & twitter Traffic	**2 hours weekly**
10	Google web traffic	**2 hours weekly**

Course outcomes:

On successful completion of the course, the student will be able to make campaigns and be able to boost ads on social media platforms as well as on Google.



Course Title : **Environmental Studies**	Course Code : ES 101
Semester : I	Core / Elective : Core
Teaching Scheme in Hrs. (L:T:P:C) : 0:0:3:2	Credits : 2
Type of course : Lecture + Assignments	Total Contact Hours : 35
Continuous Internal Evaluation : **40 Marks**	ESE : **60 Marks**
Programs: Bachelor Of Computer Applications	

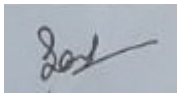
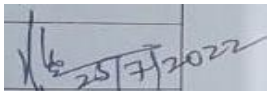
Pre-Requisites:

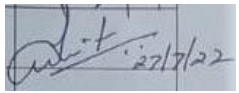
Basics of environmental science

Course Objective:

The major objective of this course that student should understand:

- About the basic components of environment.
- About the natural resources.
- About the ecosystems.
- About the biological diversity.
- About the environment pollution.




Course Contents:

Topic and Contents	Hours
UNIT-1: MAN & ENVIRONMENT	07
Definition of Environment & its various components. Ecosystem concepts. Dependence of Man on nature for its various needs. Human population growth & its impacts on the environment. Environment & human health. Environmental concerns including climate change, Global warming, Acid Rain, Ozone layer Depletion etc. Environmental ethics. Traditional ways of utilizing various components of environment. Sustainable developments.	
UNITS-2: NATURAL RESOURCES	07
Forest resources, Mining, Dams & their effects on forests & tribal people. Water resources-over utilization of water, floods, droughts and conflicts over water resources. Mineral Resources- Use of various minerals for Human welfare & environmental effects of mining. Food resources -World food problem. Impacts of changing Agriculture practices on Environment. Energy Resources- Renewable and non-renewable energy Resources & exploration of alternative energy sources. Land Resources- land degradation, soil erosion, and desertification & soil contamination.	
UNITS-3: ECOSYSTEMS	07
Structure & function, energy flow, food chains, food webs, Ecological pyramids. Basics of forest grasslands, desert & aquatic ecosystem (Ponds, Streams, Lakes, Rivers, Oceans & Estuaries).	
UNIT-4: BIOLOGICAL DIVERSITY	07
Genetic, species & ecosystem diversity, Values of Biodiversity, Global, and National & Local Biodiversity. Hot-spots of Biodiversity, threat to biodiversity. Endangered & endemic species of India. Conservation of biodiversity in situ & ex-situ	
UNIT 5: ENVIRONMENT POLLUTION	07
Causes, effects & control of- Air pollution, Water pollution, Soil pollution, Noise Pollution, Thermal pollution & Nuclear Hazards. Solid wastes & their Management. Disaster Management-Flood, Drought, Earthquake, Landslides etc.	
TOTAL	**35**

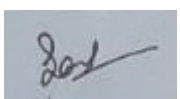
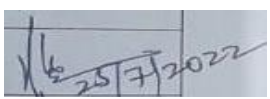
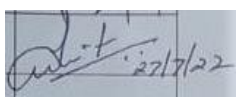
Reference:

Agarwal KC, 2001. Environmental Biology, Nidi Publishers Ltd. Bikaner

Course Outcomes:

On successful completion of the course, the student will be able to:

- Learn about the basic components of environment.
- Learn about the natural resources including forest resources, energy resources etc.
- Learn about the ecosystems including food chains, food webs etc.
- Learn about the biological diversity including global, national and local biodiversity.

Course Assessment & Evaluation:

The Course will be delivered through lectures, classroom interaction, exercises and self-study cases

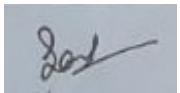
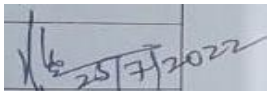
Method	What		To Whom	When/where (Frequency in the course)	Max marks	Evidence collected	Contributing to course outcomes
Direct Assessment	CIE	Mid Term Test	Students	Two Tests	20	Midterm Answer Sheets	1 to 8
		Weekly Test		Two Weekly Tests	10	Weekly Test Copies	7 to 9
		Graded Assignments		Two Assignments	10	Log of records	1 to 6
				Total	**40**		
	ESE	End Sem Evolution		**End of the course**	**60**	Answer Scripts	1 to 9
Indirect Assessment	Student Feedback		Students	Middle of the course	-NA-	Feedback forms	1 to 4, Delivery of the course
	End of Course survey			End of course		Questionnaire	1 to 9, Effectiveness of delivery of instructions and assessment methods

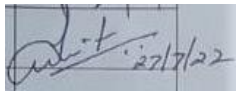
CIE – Continuous Internal Evaluation **ESE** –End Semester Examination

Composition of Educational Components:

Questions for CIE and SEE will be designed to evaluate the various educational components (Bloom's taxonomy) such as:

Sl. No.	Educational Component	Weightage (%)
1	Remembering and Understanding	35
2	Applying the knowledge acquired from the course	25
3	Analysis and Evaluation	40




Course Title : **Elementary Mathematics**	Course Code : MA 103
Semester : I	Core / Elective : Core
Teaching Scheme in Hrs. (L:T:P:C) : 0:0:3:2	Credits : 3
Type of course : Lecture + Assignments	Total Contact Hours : 35
Continuous Internal Evaluation : **40 Marks**	ESE : **60 Marks**
Programs: Bachelor Of Computer Applications	

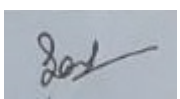
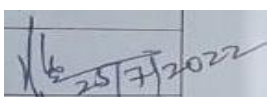
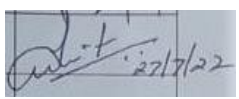
Pre-Requisites:

Basics of Mathematics

Course Objective:

The major objective of this course that student should understand

- About the set theory.
- About the limits & continuity.
- About the concepts of differentiation.
- About the concepts of integration.
- About the concepts of matrix and determinants.

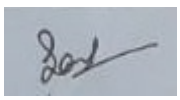
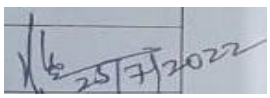
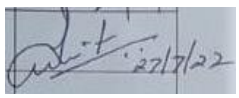





Course Contents:

Topic and Contents	Hours
UNIT-1: SETS	07
Sets, subsets, equal sets, null set, universal set, Venn diagrams, Finite & infinite sets, open & closed sets etc., Union, Intersection, Difference and Compliment of sets, Partition of sets, Cartesian product, Inclusion & Exclusion Principle, Induction method.	
UNITS-2: LIMITS & CONTINUITY	07
Limit at a point, properties of limit, computation of limits of various types of functions. Continuity at a point, continuity over an interval, Intermediate value theorem. Type of discontinuities.	
UNITS-3: DIFFERENTIATION	07
Derivative, derivatives of sum, differences, product & quotients, chain rule, logarithmic differentiation, Rolle's theorem, mean value theorem, expansion of functions (Taylor's & Maclaurin's theorem.), Indeterminate forms, L'Hospital rule, maxima & minima, successive differentiation & Liebnitz theorem.	
UNIT-4: INTEGRATION	07
Integral as limit of a sum, fundamental theorem of calculus, indefinite & definite integrals, methods of integration: substitution, by parts, partial fractions, integration of algebraic and transcendental functions,, reduction Formulae for trigonometric functions.	
UNIT 5: MATRIX & DETERMINANTS	07
Introduction, definition of matrix, types of matrices, algebra of matrices, determinants, minors & cofactors, properties of determinants, inverse of a matrix, ad joint of a matrix, rank of a matrix, solution of linear system of Equations.	
TOTAL	**35**

Reference:

- Elementary mathematics by Shanti Narayan: Integral Calculus, S.Chand & Co.
- Sharma, Gokhroo, Saini: Elements of matrices and Determinants, Jaipur Publishing House
- Schum Series: Discrete mathematics, Tata Mcgraw Hil

Course Assessment & Evaluation:

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	End of Course survey			End of course		Questionnaire	1 to 9, Effectiveness of delivery of instructions and assessment methods

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Sl. No.	Educational Component	Weightage (%)
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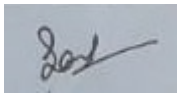
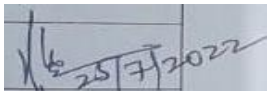
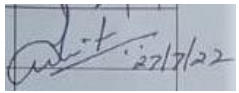
2	Applying the knowledge acquired from the course	25
3	Analysis and Evaluation	40

Course Title : **Human Values & Ethics**	Course Code : HS 101
Semester : I	Core / Elective : Core
Teaching Scheme in Hrs. (L:T:P:C) : 1:0:0:1	Credits : 3
Type of course : Lecture + Assignments	Total Contact Hours : 12
Continuous Internal Evaluation : **60 Marks**	ESE : **40 Marks**
Programs: Bachelor Of Computer Applications	

Pre-Requisites:

Basics of Mathematics

Course Objective:

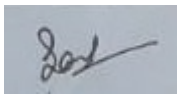
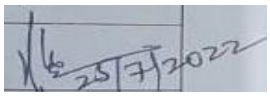
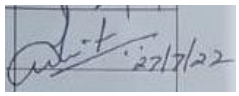
- Student should aware about Human Values.
- Student should aware about the human as well as business ethics.

Course Contents:

Topic and Contents	Hours
UNIT-1	6
Universal human aspirations: Happiness and prosperity; Human values and ethics: Concept, definition, significance and sources; Fundamental values: Right conduct, peace, truth, love and non-violence; Ethics: professional, environmental, ICT; Sensitization towards others particularly senior citizens, developmentally	
UNIT-2	6
Spirituality, positive attitude and scientific temper; Team work and volunteering; Rights and responsibilities; Road safety; Human relations and family harmony; Modern challenges and value conflict: Sensitization against drug abuse and other social evils; developing personal code of conduct (SWOT Analysis); Management of anger and stress.	
Total	**12**

Reference:

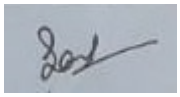
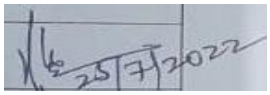
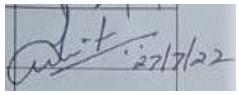
- Gaur RR, Sangal R & Bagaria GP. 2011. A Foundation Course in Human Values and Professional Ethics. Excel Books.
- Mathur SS. 2010. Education for Values, Environment and Human Rights. RSA International.
- Sharma RA. 2011. Human Values and Education -Axiology, Inculcation and Research. R. Lall Book Depot.
- Sharma RP & Sharma M. 2011. Value Education and Professional Ethics. Kanishka Publishers.
- 5.Srivastava S. 2011. Human Values and Professional Ethics. S K Kataria & Sons.
- Srivastava S. 2011. Environmental Science. S K Kataria & Sons.
- Tripathi A.N. 2009. Human Values. New Age International (P) Ltd Publishers.

Course Outcomes:

On successful completion of the course, the student will be able to:

- Student should aware about Human Values.
- Student should aware about the human as well as business ethics.

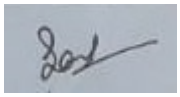
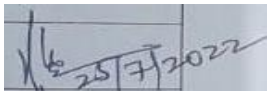
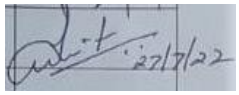





Learning Centre of Excellence with Google
DEPARTMENT OF COMPUTER APPLICATION
Teaching and Examination Scheme for Bachelor of Computer Application 3 Year Program
2022-23 Year – I | Semester - II

S. No.	Course Code	Course Name	Credits	Contact Hrs/Week			Exam Hrs.	Weightage (in %)	
				L	T/S	P		CE	ESE
	Program	**Core**							
1.	CA 178	Programming in Java	3	3	0	0	3	40	60
2.	CA 110	Fundamental of Operating System	3	3	0	0	3	40	60
3.	CA 180	Java Lab	2	0	0	3	2	60	40
4.	CA 157	Web Development Lab	2	0	0	3	2	60	40
5.	CA 261	Colloquium lab	1	0	0	3	2	60	40
6.	CA 111	Web Development	3	3	0	0	3	40	60
	University	**Core**							
7.	EM 112	Employability Skills – I	1	0	2	0	3	60	40
8.	PE 205	Industrial Project-I	2	0	0	3	2	60	40
9.	DE 102	Proficiency in Co-curricular Activities- II	2	0	0	2	-	100	-
10.	FD104	Foundation Course – II	1	1	0	0		25	75
11.	BM 517	Advance Digital Marketing	3	3	0	0	3	40	60
	Program	**Elective**							
12.	CA 505	Internet & Graphics Designing Tools	3	3	0	0	3	40	60
	CA 116	System analysis and designing Fundamentals							
		Total	**26**	**16**	**2**	**12**			

Theory (15 Credits) + Labs (7 Credits)+ Employability Skills (1 Credits) +Proficiency in Co-curricular Activities (2 Credit)+ Foundation Course – II(1 Credit) = 25 Credits

L – Lecture
S – Seminar
T – Tutorial
P – Practical
CE – Continuous Evaluation
ESE– End Semester Evaluation

Course Title :	**Programming in Java**	Course Code	: CA 178
Semester	: II	Core / Elective	: Core
Teaching Scheme in Hrs. (L:T:P:C)	: 3:0:0:3	Credits	: 3
Type of course	: Lecture + Assignments	Total Contact Hours	: 35
Continuous Internal Evaluation	: **40 Marks**	ESE	: **60 Marks**
Programs: Bachelor Of Computer Applications			

Pre-Requisites:

The major objective of this course that student should know the basic concepts of Object Oriented Programming Language.

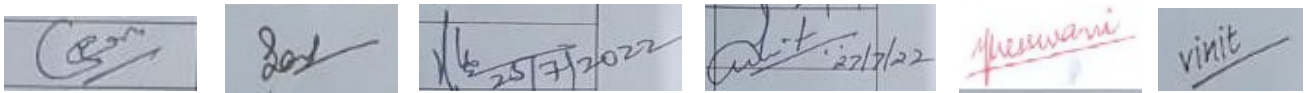
Course Contents:

Topic and Contents	Hours
UNIT-1 Introduction to Java	07
Enterprise, J2EE Architecture, API JDBC, API J2EE Fundamentals, J2EE multi-tier Applications in J2EE, Apache Tomcat 5.0, Server Configuration and important file. Http protocol with client and server model.	
UNITS-2: INHERITANCE AND POLYMORPHISM	07
Basic concepts, Types of inheritance, Member access rules, Usage of this and Super key word, Method Overloading, Method overriding, Abstract classes, Dynamic method dispatch, Usage of final keyword. PACKAGES AND INTERFACES: Defining package, Access protection, importing packages, Defining and Implementing interfaces, and Extending interfaces. I / O STREAMS: Concepts of streams, Stream classes- Byte and Character stream, Reading console Input and Writing Console output, File Handling.	
UNITS-3: AWT CONTROLS	07
The AWT class hierarchy, user interface components- Labels, Button, Text Components, Check Box, Check Box Group, Choice, List Box, Panels – Scroll Pane, Menu, Scroll Bar. Working with Frame class, Colour, Fonts and layout managers. EVENT HANDLING: Events, Event sources, Event Listeners, Event Delegation Model (EDM), Handling Mouse and Keyboard Events, Adapter classes, Inner classes.	
UNIT-4: JSP fundamentals	07
architecture,JSP Life Cycle, Difference between JSP and Servlet, JSP elements (JSP Expression, JSPScriptlet , JSP Directives, JSP Declaration) Standard actions, (setProperities, get Properties, get Parameter, set Parameter, use Bean, param), Implicit objects, JSP errors, JSP with JDBC connection.	
UNIT 5: SWINGS	07
Introduction to Swings, Hierarchy of swing components. Containers, Top level containers - JFrame, JWindow, JDialog, JPanel, JButton, JToggleButton, JCheckBox, JRadioButton, JLabel,JTextField, JTextArea, JList, JComboBox, JScrollPane.APPLETS: Life cycle of an Applet, Differences between Applets and Applications, Developing applets, simple applet.	
TOTAL	**35**

Reference:

1. Ivan Bay Ross- Web Enable Commercial Application Using HTML, DHTML, BPB Publication
2. Programming in java by E. Balagurusamy.
3. H.M Dietal and P.J Dietal -Java How to Program, PHI, New Delhi- 2005
4. Java Server Side Programming -WROX Publication

Course outcome:



A student completing this module unit should be able to:

1. Develop solutions for a range of problems using object-oriented programming.
2. Apply divide and conquer strategy to searching and sorting problems using iterative and/or recursive solutions.
3. Design and implement simple GUI applications.

Course Assessment & Evaluation:

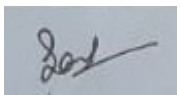
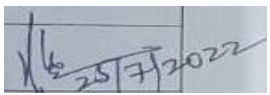
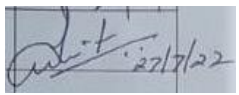
The Course will be delivered through lectures, class room interaction, exercises and self-study cases.

Method	**What**		To Whom	**When/where (Frequency in the course)**	**Max marks**	**Evidence collected**	**Contributing to course outcomes**
Direct Assessment	CIE	Mid Term Test	Students	Two Tests	20	Midterm Answer Sheets	1 to 8
		Weekly Test		Two Weekly Tests	10	Weekly Test Copies	7 to 9
		Graded Assignments		Two Assignments	10	Log of records	1 to 6
				Total	**40**		
	ESE	End Sem Evolution		**End of the course**	**60**	Answer Scripts	1 to 9
Indirect Assessment	Student Feedback		Students	Middle of the course	-NA-	Feedback forms	1 to 4, Delivery of the course
	End of Course survey			End of course		Questionnaire	1 to 9, Effectiveness of delivery of instructions and assessment methods

CIE – Continuous Internal Evaluation **ESE** –End Semester Examination

Composition of Educational Components:

Questions for CIE and SEE will be designed to evaluate the various educational components (Bloom's taxonomy) such as:

Course Title :	**Fundamental of Operating System**	Course Code	: CA-110
Semester	: II	Core / Elective	: Core
Teaching Scheme in Hrs. (L:T:P:C)	: 3:0:0:3	Credits	: 3
Type of course	: Lecture	Total Contact Hours	: 35
Continuous Internal Evaluation	: **40 Marks**	ESE	: **60 Marks**
Programs: Bachelor Of Computer Applications			

Pre-Requisites:

Basics of Operating System

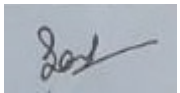
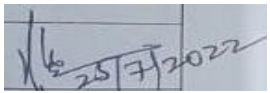
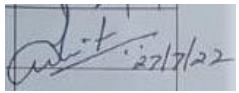
Course Objectives:

The major objective of this course that:

- Students will be learning about types of operating system
- Students will be learning about process management.
- Students will be learning about process synchronization.
- Students will be learning about storage management.
- Students will be learning about protection and security goals.

Course Contents:

Topic and Contents	Hours
UNIT-1: INTRODUCTION	07
Definition and types of operating systems, Batch Systems, multi programming, time–sharing parallel, Distributed and real-time systems, Operating system structure, Operating system components and services, System calls, system programs, Virtual machines.	
UNITS-2: PROCESS MANAGEMENT	07
Process concept, Process scheduling, Cooperating processes, Threads, Inter- process communication, CPU scheduling criteria, Scheduling algorithms, Multiple-processor scheduling, Real-time scheduling and Algorithm evaluation.	
UNITS-3: PROCESS SYNCHRONIZATION AND DEADLOCKS	07
Process Synchronization and Deadlocks: The Critical-Section problem, synchronization hardware, Semaphores, Classical problems of synchronization, Critical regions, Monitors, Deadlocks-System model, Characterization, Deadlock prevention, Avoidance and Detection, Recovery from deadlock.	
UNIT-4: STORAGE MANAGEMENT	07
Memory Management-Logical and Physical Address Space, Swapping, Contiguous Allocation, Paging, Segmentation with paging, Virtual Memory, Demand paging and its performance, Page replacement algorithms, Allocation of frames, Thrashing, Page Size and other considerations, Demand segmentation, File systems, secondary Storage Structure, File concept, access methods, directory implementation, Efficiency and performance, recovery, Disk structure, Disk scheduling methods, Disk management, Recovery, Disk structure, disk scheduling methods, Disk management.	
UNIT 5: PROTECTION AND SECURITY	07
Goals of protection, Domain of protection, Revocation of Access Rights, language based protection, The Security problem, Authentication, One Time passwords, Program threats, System threats, Threat Monitoring, Encryption.	
TOTAL	**35**

Reference:

1. Tanenbaum, "Operating System Design and Implementation", PHI.
2. Stalling, William, "Operating System", Maxwell Macmillan
3. Silveschatza, Peterson J, "Operating System Concepts", Willey.

Course Outcomes:

On successful completion of the course, the student will be able to:

- Students will be learning about types of operating system with its system calls, virtual machines etc.
- Students will be learning about process management with its CPU Scheduling Criteria etc.
- Students will be learning about process synchronization.
- Students will be learning about storage management.
- Students will be learning about protection and security goals.

Course Assessment and Evaluation:

The Course will be delivered through lectures, class room interaction, exercises and self-study cases.

Method	**What**		To Whom	**When/where (Frequency in the course)**	**Max marks**	**Evidence collected**	**Contributing to course outcomes**
Direct Assessment	CIE	Mid Term Test	Students	Two Tests	20	Midterm Answer Sheets	1 to 8
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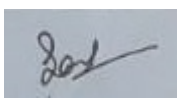
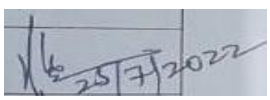
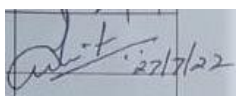
CIE – Continuous Internal Evaluation **ESE** –End Semester Examination

Composition of Educational Components:

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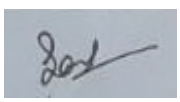
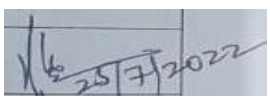
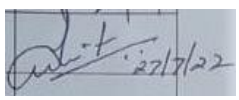
Sl. No.	Educational Component	Weightage (%)
1	Remembering and Understanding	35
2	Applying the knowledge acquired from the course	25
3	Analysis and Evaluation	40

Course Title : **Java Lab**	Course Code : CA-180
Semester : II	Core / Elective : Core
Teaching Scheme in Hrs. (L:T:P:C) : 0:0:3:2	Credits : 2
Type of course : Practical Lab	Total Contact Hours : 20
Continuous Internal Evaluation : 60 **Marks**	ESE : 40 **Marks**
Programs: Bachelor Of Computer Applications	

Pre-Requisites:

Knowledge of OOPs concepts

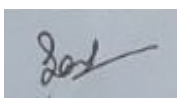
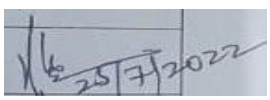
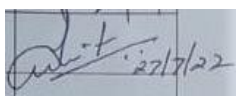
Course Objectives:

The major objective of this course that student should understand to learn the concept of Java technology.

S.no	Topic and Contents	Hours
1	WAP to swap two numbers without using third variable.	2 hours weekly
2	WAP to check whether a number is Armstrong or not.	2 hours weekly
3	WAP to implement the Concept of Function overloading.	2 hours weekly
4	WAP to implement the calculator.	2 hours weekly
5	WAP to implement the Exceptional Handling.	2 hours weekly
6	WAP of an applet that receives two numerical values as the input from user and displays the sum of these two numbers.	2 hours weekly
7	WAP for displaying product list along with their prices and then allow user to buy any1 item from them with required quantity.	2 hours weekly
8	WAP to implement multithreading(three threads using single run method).	2 hours weekly
9	WAP for Sending email in Java.	2 hours weekly

Course Outcomes:

On successful completion of the course, the student will be able to understand the java concepts.

Course Title : **Industrial Project - I**	Course Code : PE 205
Semester : II	Core / Elective : Core
Teaching Scheme in Hrs. (L:T:P:C) : 0:0:3:2	Credits : 2
Type of course : Experiment	Total Contact Hours : 20
Continuous Internal Evaluation : 60 **Marks**	ESE : 40 **Marks**
Programs: Bachelor Of Computer Applications	

Pre-Requisites:

Basics in software development phases.

Course Objectives:

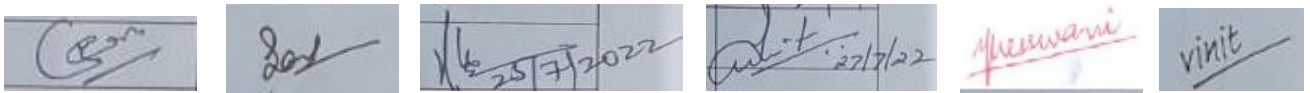
The major objective of this course is that students should understand the student will develop a software application.

Course Contents:

Topic and Contents	Hours
Software application design & development with the help of Industry	2 hrs. weekly

Course Outcomes:

On successful completion of the course, the student will be able to develop a software application.



Course Title : **Colloquium Lab**	Course Code : CA 261
Semester : II	Core / Elective : Core
Teaching Scheme in Hrs. (L:T:P:C) : 0:0:3:1	Credits : 1
Type of course : Lecture + Assignments	Total Contact Hours : 20
Continuous Internal Evaluation : 60 **Marks**	ESE : 40 **Marks**
Programs: Bachelor Of Computer Applications	

Pre-Requisites:

Confidence, knowledge, willing to learn.

Course Objectives:

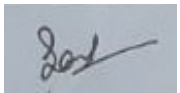
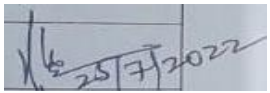
- Group discussion about various topics will increase the technical growth of students.
- Group discussion will increase the confidence level of students.

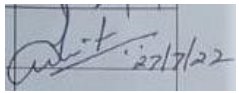
Course Contents:

List of Experiments	Total Contact Hrs.
Group Discussion among students on various topics related to the recent technological issues or social issues as well.	2 hrs Weekly

Course Outcomes:

On successful completion of the course, the student will be able to build up the confidence level of the student so that he/she will be able to face placement interviews in an effective manner.



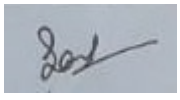
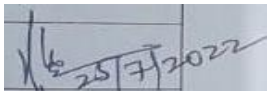
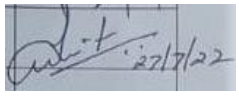

Course Title : **Internet & Graphics Designing Tools**	Course Code : CA 505
Semester : II	Core / Elective : Elective
Teaching Scheme in Hrs. (L:T:P:C) : 3:0:0:3	Credits : 3
Type of course : Lecture + Assignments	Total Contact Hours : 35
Continuous Internal Evaluation : 40 **Marks**	ESE : 60 **Marks**
Programs: Bachelor Of Computer Applications	

Course Objective:

To succeed in this course, you will need access to a computer. You can complete this course without one but it will be tougher. Access to, and a beginner's level knowledge of Adobe Creative Suite programs, such as Illustrator, Photoshop and InDesign will help you, especially if you want to complete the optional briefs

Course Content:

S. No.	Topic and Content	Hours
1	**Unit:1 Adobe Flash**	**07**
	Introduction to Animation, Introduction to Adobe Flash, Tools in Adobe Flash, Shape Tween and Motion Tween, Frame Animation, Various Flash Effect, Creating Flash Banners, Creating Flash Intro's, Creating Flash Website, Basics of Action Scripting.	
2	**Unit:2 Web Hosting**	**07**
	Web Hosting Basics, Types of Hosting Packages, Registering domains, Defining Name Servers, Using Control Panel, Creating Emails in C-panel, Using FTP Client, Maintaining a Website	
3	**Unit:3 SEO Concepts**	**07**
	Basics of SEO, Importance of SEO, On page Optimization Basics	
4	**Unit:4 Lice Website Design Project**	**07**
	Designing a Professional Photoshop Template, Conversional of PSD to CSS, Adding Menu System to Project, Slideshow Integration, Implementing Gallery Script, Adding the Contact Form, Form validations using JS, Writing the Mail Function in form with PHP, Manual Website Testing	
5	**Unit:5 Web Design Resources and Value-Added Services**	**07**
	Graphics (Icon, Buttons, Backgrounds), Photoshop (Brushes, Patterns, Texture, Style, Gradients, Action), PSD Templates, Study Material in PDF, Daily Notes, All class examples files in our server space for easy access, Professional CSS Templates, Professional Flash Templates, 100 Stock Photos for Website Work, Java Scripts (Date, Slideshow, Dropdowns, Model and Ajax Scripts), 100% Job Assistance till you get placed, Live Project in course, course Certificate, Email Supporting for 3 Months	

Reference:

www.w3school.com

Course Outcomes:

Exhibit a thoughtful application of the elements and principles of visual design, color theory, information hierarchy, and typography to successfully communicate narratives, concepts, emotions, and/or identities across a variety of media.

Course Assessment and Evaluation:

The Course will be delivered through lectures, class room interaction, exercises and self-study cases.

Method	What		To Whom	When/where (Frequency in the course)	Max marks	Evidence collected	Contributing to course outcomes
Direct Assessment	CIE	Mid Term Test	Students	Two Tests	20	Midterm Answer Sheets	1 to 8
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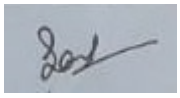
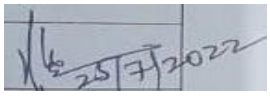
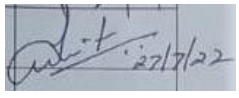




Course Title :	**Employability Skills - I**	Course Code :	EM 112
Semester	: II	Core / Elective	: Core
Teaching Scheme in Hrs. (L:T:P:C)	: 0:2:0:1	Credits	: 1
Type of course	: Lecture + Assignments	Total Contact Hours	: 35
Continuous Internal Evaluation	: 60 **Marks**	ESE	: 40 **Marks**
Programs: Bachelor Of Computer Applications			

Pre-Requisites:

Basics of Employability Skills

Course Objectives:

- Learning the basic concept of employability skills.
- Learn skills that can make a student employable

Course Contents:

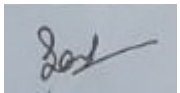
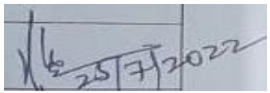
Topic and Contents	Hours
UNIT-1: INTRODUCTION	07
Pronunciation, functional grammar, reading, writing.	
UNITS-2: COMMUNICATION SKILLS	07
Need for communication, principles and process of effective communication.	
UNITS-3: LISTENING SKILLS	07
Hearing and listening, effective listening. Active listening skills.	
UNIT-4: MOTIVATIONAL TRAINING	07
Power of positive attitude, self-awareness, importance of commitment.	
UNIT 5: FACING INTERVIEWS	07
Manners, dress code and do & don'ts for interview.	
TOTAL	**35**

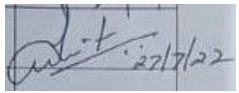
Reference:

Employability skills by David W.G. Hine, Stuart Moss

Course outcomes:

- On successful completion of the course, the student will be able to:
- Develop professional skills so that they can make student more employable.




Course Title :	**Advance Digital Marketing**	Course Code	: BM 517
Semester	: II	Core / Elective	: Core
Teaching Scheme in Hrs. (L:T:P:C)	: 3:0:0:3	Credits	: 3
Type of course	: Lecture + Assignments	Total Contact Hours	: 35
Continuous Internal Evaluation	: 40 **Marks**	ESE	: 60 **Marks**
Programs: Bachelor Of Computer Applications			

Course Prerequisites:

- A person who has an interest in the area and wishes to gain further knowledge in the field

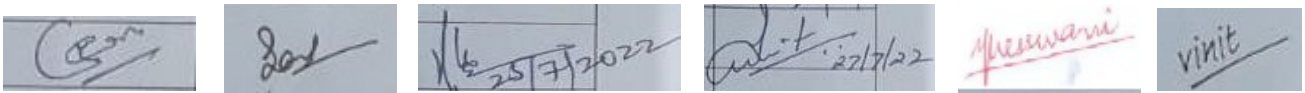
Course Objective:

A strong foundation in digital marketing is essential in order to capitalize on the undeniable potential of online marketing. The course in Digital Marketing, has the following objectives:

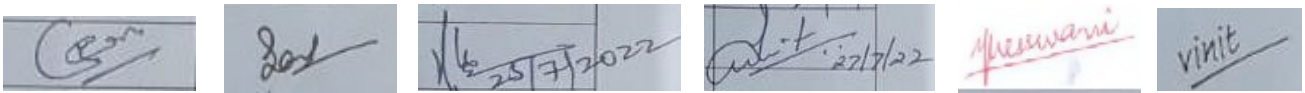
- Understand the concept of digital marketing
- Various digital marketing platforms
- Understand to make different digital marketing strategies
- Use of various tools and techniques for digital marketing
- Planning and managing digital marketing budget and campaigns
- Evaluation of various internet-marketing metrics
- Enhanced consumer segregation and analytics.
- Tracking digital marketing metrics and reporting

Course Content:

S. No.	Topic and Contents	Hours
1	**Unit:1 Search Engine Optimization (SEO)**	07
	On-page SEO Elements, Technical SEO, Mobile SEO, Schema Markup, Link Building, Social SEO, Local SEO, Backlink Audits using SEMrush, SEO Audits, Algorithm Updates, Measurement with Google Analytics, SEO Resources, Careers in SEO	



2	**Unit:2 Social Media Marketing**	**07**
	Facebook Marketing, Creating Content for Facebook & Social Media, Tools for Content Creation, Facebook Marketing, What is Facebook Marketing, How does Facebook Advertising Work, Instagram & LinkedIn Marketing, Marketing on Instagram, LinkedIn as a Marketing Platform, Twitter and Snapchat Marketing, Pinterest Marketing & Creating a Successful Digital Marketing Strategy, Social Media Marketing Tools, Crafting a Successful Social Media Strategy	
3	**Unit:3 Search Engine Marketing**	**07**
	Creation of Google Display Network, Mobile Ad Campaigns, Shopping Campaigns – Introduction, YouTube Marketing – Introduction & Ad Formats	
4	**Unit:4 Email Marketing**	**07**
	Effective Email Content, Customer Acquisition Strategies, Effective Creative Introducing, Nurturing & Automation, Resources to do Situational Analysis & Progressive Updates, Email Automation, Introduction to Automation, Choosing an Automation Platform, Simple Automation Functions from MailChimp	
5	**Unit:5 Advance Digital Marketing concepts**	**07**
	Google Analytics, Content Performance Analysis, Visitors Analysis, Social Media Analytics, Actionable Insights and the Big Picture, Social CRM & Analysis, Digital Analytics, Platform Principles	



Reference:

Advanced Digital Marketing: Strategy, Implementation & Practice by Dave Chaffey & Fiona Ellis-Chadwick.
Advanced Digital Marketing all in one for dummies by Stephania Diamond.
Big book of Advanced Digital Marketing: advance digital marketing book by digital marketing community.
Managing social media practices in the digital economy by Shirin alavi.

Course Outcomes:

On successful completion of the course students will be able to:

1. Analyses the confluence of marketing, operations, and human resources in real-time delivery.

2. Demonstrate cognitive knowledge of the skills required in conducting online research and research on online markets, as well as in identifying, assessing and selecting digital market opportunities

3. Explain emerging trends in digital marketing and critically assess the use of digital marketing tools by applying relevant marketing theories and frameworks.

4. Investigate and evaluate issues in adapting to globalized markets that are constantly changing and increasingly networked.

5. Interpret the traditional marketing mix within the context of a changing and extended range of digital strategies and tactics.

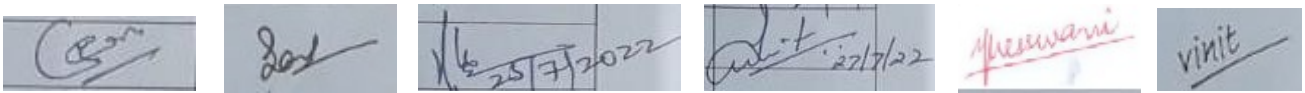
6. Comprehend the importance of conversion and working with digital relationship marketing.

7. Analyses cross-cultural and ethical issues in globalized digital markets.

Course Assessment and Evaluation:

The Course will be delivered through lectures, class room interaction, exercises and self-study cases.

Method	What		To Whom	When/where (Frequency in the course)	Max marks	Evidence collected	Contributing to course outcomes
Direct Assessment	CIE	Mid Term Test	Students	Two Tests	20	Midterm Answer Sheets	1 to 8
		Weekly Test		Two Weekly Tests	10	Weekly Test Copies	7 to 9
		Graded Assignments		Two Assignments	10	Log of records	1 to 6



				Total	**40**		
	ESE	End Sem Evolution		**End of the course**	**60**	Answer Scripts	1 to 9
Indirect Assessment	Student Feedback		Students	Middle of the course	-NA-	Feedback forms	1 to 4, Delivery of the course
	End of Course survey			End of course		Questionnaire	1 to 9, Effectiveness of delivery of instructions and assessment methods

CIE – Continuous Internal Evaluation **ESE** –End Semester Examination

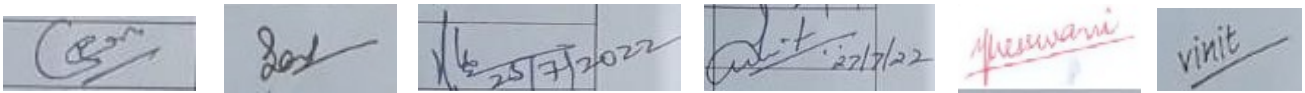
Composition of Educational Components:

Questions for CIE and SEE will be designed to evaluate the various educational components (Bloom's taxonomy) such as:

Sl. No.	Educational Component	Weightage (%)
1	Remembering and Understanding	35
2	Applying the knowledge acquired from the course	25
3	Analysis and Evaluation	40

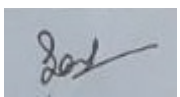
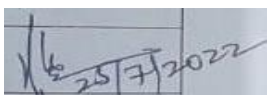
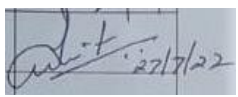
Reference Books:

- Digital marketing | second edition by seema gupta
- How to rule the internet and make money on every click
- Digital marketing all in one for dummies by stephania diamond
- Big book of digital marketing : advance digital marketing book by digital marketing community
- Managing social media practices in digital economy by shirin alavi
- Innovations in digital branding and content marketing by subhankar das
- The ultimate digital marketing course by jatin kushwaha



FOUNDATION COURSE	[FD-104]

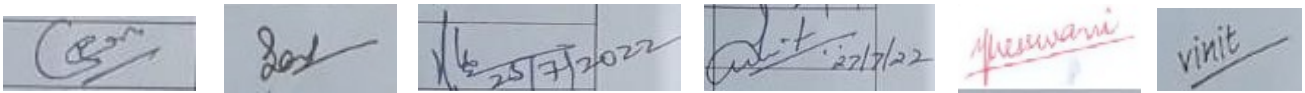
Unit	Contents of the Subject	No. of Teaching Periods required
1	**Ethics and Logics** a) Consequentialism, Deontological Ethics b) Teological Ethics, Utilitarianism c) Value of life: suicide and euthanasia d) Capital Punishment, Terrorism e) Equality, Discrimination, and preferential treatment f) Freedom and Responsibility, Laws of Thought g) Theory of the Square of Opposition of Categorical Propositions. The problem of existential import. (Syllogisms) h) Laws of Conversion, Obversion and Contraposition of Categorical propositions	1
2	**India culture and Heritage-I** a) Ancient, Medieval and Modern India b) Various Indian Languages and their origins c) Various Literature of Indian Languages d) Indian Painting e) Indian Architecture f) Music, Dance and Drama	1
3	**India culture and Heritage-II** **Religious Reforms in modern India** - BrahmoSamaj and Raja Rammohan Roy. - Arya Samaj and DayanandSaraswati. - Ramakrishna Mission and Swami Vivekananda. - The Aligarh Movement and Sayyid Ahmad Khan. **Indian Social Structure** - Untouchability - Family and Marriage in India - Position of women **Socio Cultural Issues** - Caste System - Issues Related to women-Dowry system,the problems of girls child and women - Communalism - Issues of poverty and unemployment - Beggary - Problem of Children	1
4	**Indian Polity-I** a) Phases of Nationalist Movement and different ideological streams: Moderates and Extremists within Congress and revolutionary radicals; Formation of the Muslim League b) Gandhi and mass mobilisation: Khilafat, Non-cooperation and Civil DisobedienceMovements c) Socialist alternatives: Congress socialists, Communists d) Salient Features e) Fundamental Rights f) Directive Principles of State Policy g) Security Laws a) Executive	1

	b) Judiciary c) Legislative	
5	**Indian Polity-II** a) Panchayati Raj- 73rd Amendment b) Municipality- 74th Amendment c) Caste in politics and the politicization of caste; interaction of caste with class and gender; caste discrimination and affirmative action policies. d) Environmental, rights of forest dwellers **e)** Civil liberties and democratic rights movements, Rights to education and information	1
	Total	**5**

Suggested Readings

1. Bandopadhyay, S. (2004) From Plassey to Partition: A History of Modern India.
2. Raj To Swaraj :A Textbook On Colonialism And Nationalism In India by Ram Chandra Pradhan
3. Politics and Ethics of the Indian Constitution- Rajeev Bhargava
4. Desai, A.R (ed.) (1986) Violation of Democratic Rights in India (Volume 1). Bombay:
5. Popular Prakashan.
6. Austin, G. (2000) Working a Democratic Constitution
7. Caste in Indian Politics, Rajni Kothari
8. Saxena, R. (2011) 'Introduction', in Saxena, R (eds.) Varieties of Federal Governance:Major Contemporary Models.
9. Hargopal, G and Balagopal, K. (1998) 'Civil Liberties Movement and the State in India', in Mohanty, M. Mukherji, P.N. with Tornquist, O. People's Rights. New Delhi.
10. Sinha, S. (2002) 'Tribal Solidarity Movements in India: A Review' in Shah, G. (ed.)Social Movements and the State.
11. Sethi, H. (1993) 'Survival and Democracy: Ecological Struggles in India' in Wignaraja, P. (ed.) New Social Movements in the South: Empowering the People. New Delhi



Course Title : **Web Development Lab**	Course Code : CA 157
Semester : II	Core / Elective : Elective
Teaching Scheme in Hrs. (L:T:P:C) : 0:0:3:2	Credits : 2
Type of course : Practical	Total Contact Hours : 20
Continuous Internal Evaluation : 60 **Marks**	ESE : 40 **Marks**
Programs: Bachelor Of Computer Applications	

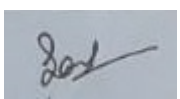
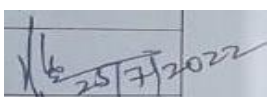
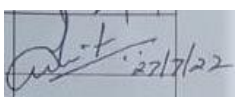
Course Contents:

Units.	List of Experiments	Total Contact Hrs.
1	Introduction of PHP MySQL and setup XAMPP	2 hours
2	Testing Page , troubleshooting installation errors	2 hours
3	Embed php in html and print value in next page	2 hours
4	Using data type & variable in php	2 hours
5	Conditional statement and array	2 hours
6	Making and using function string function etc.	2 hours
7	Using array and types of array	2 hours
8	Accessing array and array function	2 hours
9	Basics of database and Query	2 hours
10	Table Records, RDBMS, working PHPMyAdmin	2 hours

Reference:

www.w3school.com

Course outcomes:
On successful completion of the course, the student will be able to make a simple website on ASP.NET

Course Title : **System Analysis & Designing Fundamentals**		Course Code	: CA 116
Semester	: II	Core / Elective	: Elective
Teaching Scheme in Hrs. (L:T:P:C)	: 3:0:0:3	Credits	: 3
Type of course	: Lecture + Assignments	Total Contact Hours	: 35
Continuous Internal Evaluation	: 40 **Marks**	ESE	: 60 **Marks**
Programs: Bachelor Of Computer Applications			

Pre-Requisites:

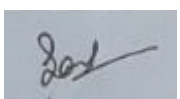
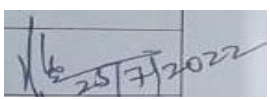
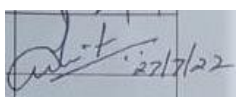
Basics of System

Course Objectives:

- Students will be learning about system concept.
- Students will be learning about initial investigation.
- Students will be learning about structured analysis.
- Students will be learning about documentation for the new system.
- Students will be learning about system security.

Course Contents:

Topic and Contents	Hours
UNIT-1: SYSTEM CONCEPT	07
Definition, Characteristics, Elements of system, Physical and abstract system, open and closed system, manmade information systems. System Development Life Cycle: Various phases of system development, Considerations for system planning and control for system success. System Planning.	
UNITS-2: System Planning and Information Gathering	07
Initial Investigations, Identification of user needs, Project Identification and Selection; Needs of Information Gathering, Determination of requirements, Information gathering tools: interviews, group communication, questionnaires, presentations and site visits.	
UNITS-3: STRUCTURED ANALYSIS	07
Tools of System Analysis Structured Design: Tools of System Design with I/O and Form Design	
UNIT-4: System Implementation and Maintenance	07
Need of System Testing, Types of System Testing, Quality Assurance; System Conversion, Conversion methods, procedures and controls, System evaluation and performance, Maintenance activities and issues.	
UNIT 5: System Implementation and Maintenance	07
Need of System Testing, Types of System Testing, Quality Assurance; System Conversion, Conversion methods, procedures and controls, System evaluation and performance, Maintenance activities and issues.	
TOTAL	**35**

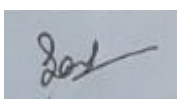
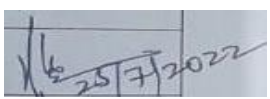
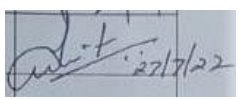
Reference:

Modern System Analysis & Design by A Hoffer, F George, S Valacich Low Priced Ed. Pearson Education

Course outcomes:

On successful completion of the course

- Students will be learning about system concept with various elements of system.
- Students will be learning about initial investigation.
- Students will be learning about structured analysis
- Students will be learning about documentation for the new system
- Students will be learning about system security.

Course Assessment and Evaluation:

The Course will be delivered through lectures, class room interaction, exercises and self-study cases.

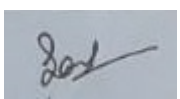
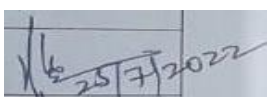
Method	What		To whom	When/where (frequency in the course)	Max Marks	Evidance Collected	Contributing to course outcomes
DIRECT ASESS-MENT	CIE	MID TERM TEST	Student	Two tests	20	Midterm Answer Books	1 to 8
		Weekly Test		Two Weekly Tests	10	Weekly Test Copies	7 to 9
		Graded Assignments		Two Assignments	10	Log of Record	1 to 6
				Total	**40**		
	ESE	End Semester Evolution		End of the Course	60	Answer Scripts	1 to 9
Indirect Assess-ment	Students Feedback		Students	Middle of the course	-NA-	Feedback forms	1 to 4, Delivery of the course
	End of the Course Survey			End of the course	-NA-	Questionnaire	1 to 9, Effectiveness of delivery of Instructions And Assessment Methods

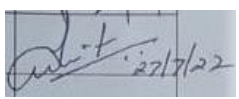
CIE – Continuous Internal Evaluation **ESE** –End Semester Examination

Composition of Educational Components:

Questions for CIE and SEE will be designed to evaluate the various educational components (Bloom's taxonomy) such as:

Sl. No.	Educational Component	Weightage (%)
1	Remembering and Understanding	35
2	Applying the knowledge acquired from the course	25
3	Analysis and Evaluation	40




Course Title : **Web Development**	Course Code : CA 111
Semester : II	Core / Elective : Core
Teaching Scheme in Hrs. (L:T:P:C) : 3:0:0:3	Credits : 3
Type of course : Lecture + Assignments	Total Contact Hours : 35
Continuous Internal Evaluation : 40 **Marks**	ESE : 60 **Marks**
Programs: Bachelor Of Computer Applications	

Pre-Requisites:

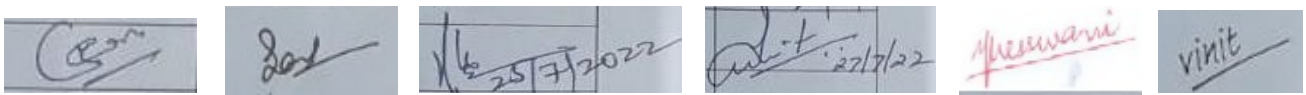
Knowledge of Internet

Course Objectives:

This course enables students to understand web page site planning, management and maintenance. The course explains the concepts of developing advanced HTML pages with the help of frames, scripting languages, and evolving technologies like DHTML, and XML.

Course Contents:

Topic and Contents	Hours
UNIT-1:	6
HTML & Forms Introduction To HTML, WWW, W3C, web publishing, Common HTML, Tags Physical & Logical, Some basic tags like <body> , changing background color of page, text color etc., Text formatting tags, <p> , <hr> tags, Ordered & Unordered Lists Tags, Inserting image, Links: text, image links, image mapping , Tables , Frames, Form Introduction with text box, text area, buttons, List box, radio, checkbox etc	
UNITS-2:	07
CSS Introduction To Style sheet, types of style sheets- Inline, External, Embedded CSS, text formatting properties, CSS Border, margin properties, Positioning Use of classes in CSS, color properties, use of &	
UNITS-3:	07
JavaScript Intro to script, types, intro of JavaScript, JavaScript identifiers, operators, control & Looping structure, Intro of Array, Array with methods, Math, String, Date Objects with methods User defined & Predefined functions, DOM	



objects, Window Navigator, History, Location, Event handling, Validations On Forms	
UNIT-4:	07
JavaScript Intro to script, types, intro of JavaScript, JavaScript identifiers, operators, control & Looping structure, Intro of Array, Array with methods, Math, String, Date Objects with methods User defined & Predefined functions, DOM objects, Window Navigator, History, Location, Event handling, Validations On Forms	
UNIT 5:	07
ASP Introduction of ASP, Working with ASP page, Request & Response object, Application & Session, Role of Global.asa file, Server Object, Error Handling in ASP Database Handling: Connection, Recordset, Command Object	

Reference:

www.w3school.com

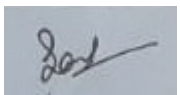
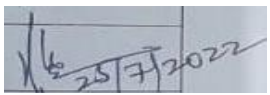
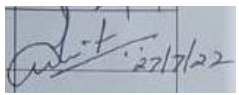
Course outcomes:
On successful completion of the course, the student will be able to make a simple website on ASP.NET

Course Assessment and Evaluation:

The Course will be delivered through lectures, class room interaction, exercises and self-study cases.

Method	**What**		To Whom	**When/where (Frequency in the course)**	**Max marks**	**Evidence collected**	**Contributing to course outcomes**
Direct Assessment	CIE	Mid Term Test	Students	Two Tests	20	Midterm Answer Sheets	1 to 8
		Weekly Test		Two Weekly Tests	10	Weekly Test Copies	7 to 9
		Graded Assignments		Two Assignments	10	Log of records	1 to 6
				Total	**40**		
	ESE	End Sem Evolution		**End of the course**	**60**	Answer Scripts	1 to 9
Indirect Assessment	Student Feedback		Students	Middle of the course	-NA-	Feedback forms	1 to 4, Delivery of the course
	End of Course survey			End of course		Questionnaire	1 to 9, Effectiveness of delivery of instructions and assessment methods

CIE – Continuous Internal Evaluation **ESE** –End Semester Examination

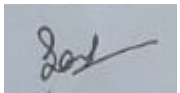
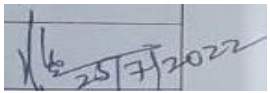
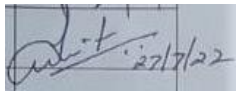
SURESH GYAN VIHAR UNIVERSITY
Accredited by NAAC with 'A' Grade

Learning Center of Excellence with Google
DEPARTMENT OF COMPUTER APPLICATION
Teaching and Examination Scheme for Bachelor of Computer Application 3 Year Program
2023-24 Year – II | Semester - III

S.No.	Course Code	Course Name	Credits	Contact Hrs/Week			Exam Hrs.	Weightage (in %)	
				L	T/S	P		CE	ESE
	Program Core								
1.	CA 271	Introduction to Android	3	3	0	0	3	40	60
2.	CA 213	Database Management System	3	3	0	0	3	40	60
3.	CA 281	Android Lab	2	0	0	3	2	60	40
4.	CA 257	Industrial Project Oriented DBMS Lab	2	0	0	3	2	60	40
5.	CA 273	Angular JS	3	3	0	0	3	40	60
6.	CA 283	Angular JS Lab	2	0	0	2	2	60	40
7.	PE 305	Industrial Project II	2	0	0	3	2	60	40
	University Core								
8.	EM 201	Employability Skills – II	1	0	2	0	3	60	40
9.	SM 302	Practical Training Seminar I	2	0	0	3	3	60	40
10.	DE 201	Proficiency in Co-curricular Activities – III	2	0	0	2	2	100	-
	Program Elective								
11.	CA 222	Introduction to Embedded System	3	3	0	0	3	40	60
	CA 217	Introduction to Distributed Systems							
	CA 275	Advance Web Development							
		Total	**25**	12	2	16			

Theory (12) + Labs (10) + Employability Skills (1 Credits) + Proficiency in Co-curricular Activities (2 Credit) = 25 Credits

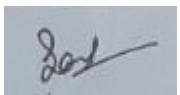
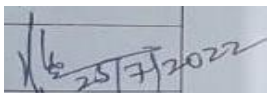
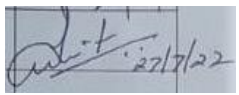
L – Lecture T – Tutori12al CE – Continuous Evaluation
S – Seminar P – Practical ESE – End Semester Evaluation

Course Title : **Introduction to Android**	Course Code : CA 271
Semester : III	Core / Elective : Core
Teaching Scheme in Hrs. (L:T:P:C) : 3:0:0:3	Credits : 3
Type of course : Lecture + Assignments	Total Contact Hours : 35
Continuous Internal Evaluation : 40 **Marks**	ESE : 60 **Marks**
Programs: Bachelor Of Computer Applications	

Course Contents:

Units	Course Contents	Total Contact Hrs.
1	**Hello Android** Introduction to Android Android Flavors Android OS Architecture Gradle Build System Setting up Android Development Environment System Requirements Android Studio Installation Create First Android Application Understand Project Hierarchy. **User Interface & Event Handling** Layouts & Views Resources User Input Control ListView and Scrolling Views Recyclerview & Card View Themes & Styles Material Design Providing Resources for adaptive layouts Dialogs –Alert, Progress and Custom Floating Action Button Localization	7
2	**Activities and Intents** Activity Lifecycle Activity State Explicit Intent Implicit Intent Intent resolution. **Exploring Actionbar** Getting Access of Action Bar Option Menus Context Menus Popup Menus Navigation Drawer Tab Navigation Swipe View with View Pager	7
3	**Broadcast Receivers & Notification:** Broadcastreceiver Sending a Broadcast,Creating Receiver Registering broadcast receiver Notification Integrating notification with broadcast receiver. **Services** Service Types of Service Service Declaration Creating a Service ,Extending Service Class Start a Service Stop a Service Creating a Bound Service Life cycle of Service.	7
	Fragments What is Fragment? Creating a Fragment Fragment Lifecycle	

4	Handling Fragment Events Fragment Communication	7
5	**Background Tasks & Networking** Asynctask with Progress Bar Android Networking Connecting to Internet using AsyncTask Downloading an Image using AsyncTask Alarm Manager Job Scheduler Thread Handlers.	7
	Total	35

Reference:

- www.tutorialspoint.com

Course Outcomes:

On successful completion of the course, the student will be able to:

- Learn project development.

Reference:

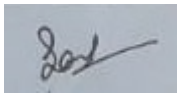
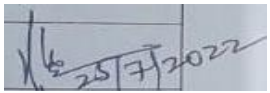
- www.tutorialspoint.com

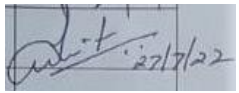
Course Outcomes:

On successful completion of the course, the student will be able to:

- Learn the project development.

Course Assessment & Evaluation:




The Course will be delivered through lectures, class room interaction, exercises and self-study cases.

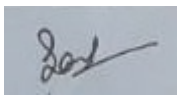
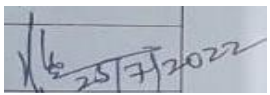
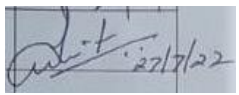
Method	What		To Whom	When/where (Frequency in the course)	Max marks	Evidence collected	Contributing to course outcomes
Direct Assessment	CIE	Mid Term Test	Students	Two Tests	20	Midterm Answer Sheets	1 to 8
		Weekly Test		Two Weekly Tests	10	Weekly Test Copies	7 to 9
		Graded Assignments		Two Assignments	10	Log of records	1 to 6
				Total	**40**		
	ESE	End Sem Evolution		**End of the course**	**60**	Answer Scripts	1 to 9
Indirect Assessment	Student Feedback		Students	Middle of the course	-NA-	Feedback forms	1 to 4, Delivery of the course
	End of Course survey			End of course		Questionnaire	1 to 9, Effectiveness of delivery of instructions and assessment methods

CIE – Continuous Internal Evaluation **ESE** –End Semester Examination

Course Assessment & Evaluation:

Questions for CIE and SEE will be designed to evaluate the various educational components (Bloom's taxonomy) such as:

Sl. No.	Educational Component	Weightage (%)
1	Remembering and Understanding	35
2	Applying the knowledge acquired from the course	25
3	Analysis and Evaluation	40

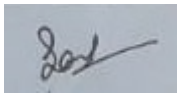
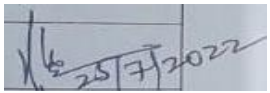
Course Title : **Database Management System**	Course Code : CA 213
Semester : III	Core / Elective : Core
Teaching Scheme in Hrs. (L:T:P:C) : 3:0:0:3	Credits : 3
Type of course : Lecture + Assignments	Total Contact Hours : 35
Continuous Internal Evaluation : 40 **Marks**	ESE : 60 **Marks**
Programs: Bachelor Of Computer Applications	

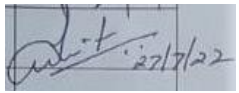
Pre-Requisites:

Basics of DBMS

Course Objectives:

- learning the basic overview of DBMS
- learning the basics of data models.
- Analyzing the basic of data modelling.
- learning the basics of relational model
- learning the basics introduction to SQL.

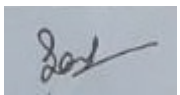
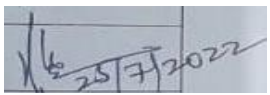
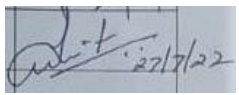



Course Contents:

Topic and Contents	Hours
UNIT-1: Introduction to Databases and Transactions	07
What is database system, purpose of database system, view of data, relational databases, database architecture, transaction management,	
UNITS-2: INTRODUCTION TO DATA MODELS	07
Introduction to data models: entity relationship model, hierarchical model: from network to hierarchical, relational model, comparison of network, hierarchical and relational models	
UNITS-3: Database Design ,ER-Diagram and Unified Modeling Language	07
Database design and ER Model: overview, ER-Model, Constraints, ER-Diagrams, ERD Issues, weak entity sets, Codd's rules, Relational Schemas, Introduction to UML Relational database model: Logical view of data, keys, integrity rules. Relational Database design: features of good relational database design, atomic domain and Normalization (1NF, 2NF, 3NF, BCNF).	
UNIT-4: RELATIONAL MODEL	07
Relational model: storage organizations for relations, relational algebra, relational calculus. Normalization: Functional dependencies, normal forms, first, second, third normal forms, BCNF, inclusion dependencies, loss less join decompositions, normalization using FD, MVD,and JDs, alternative approaches to database design	
UNIT 5: INTRODUCTION TO SQL	07
Introduction to SQL: Characteristics of SQL, Advantages of SQL, SQL datatypes and literals, Types of SQL commands, SQL operators and their procedure, Tables, views and indexes, Queries and sub queries, Aggregate functions, insert, update and delete operations, Joins, Unions, Intersection, Minus in SQL	
TOTAL	35

Reference:

- Database Management Systems by Raghu Ramakrishnan
- Fundamentals of Database Management Systems by Mark L. Gillenson.

Course Outcomes:

On successful completion of the course, the student will be able to:

- Will learning the important concept of DBMS
- Will learn about data models.
- Analyze the basic of data modelling.

Course Assessment & Evaluation:

The Course will be delivered through lectures, class room interaction, exercises and self-study cases.

Method	What		To Whom	When/where (Frequency in the course)	Max marks	Evidence collected	Contributing to course outcomes
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				Total	**40**		
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	End of Course survey			End of course		Questionnaire	1 to 9, Effectiveness of delivery of instructions and assessment methods

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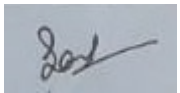
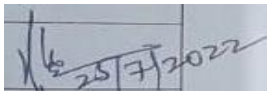
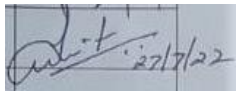
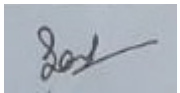
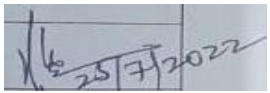
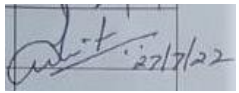
2	Applying the knowledge acquired from the course	25
3	Analysis and Evaluation	40

Course Title : **Android Lab**	Course Code : CA 281
Semester : III	Core / Elective : Core
Teaching Scheme in Hrs. (L:T:P:C) : 3:0:3:2	Credits : 2
Type of course : Practical Assignments	Total Contact Hours : 20
Continuous Internal Evaluation : 60 **Marks**	ESE : 40 **Marks**
Programs: Bachelor Of Computer Applications	

Course Contents:

S.No.	**List of Experiments**	***Contact Hours***
1	*Create the simple calculator.*	*2 hours weekly*
2	*Create an app that explores the life-cycle of an activity.*	*2 hours weekly*
3	*Create an app of registration form.*	*2 hours weekly*
4	*Create a simple game.*	*2 hours weekly*
5	*Create a Music Player using Spiner.*	*2 hours weekly*
6	*Create a chat application.*	*2 hours weekly*
7	*Create an application using Navigation Drawer.*	*2 hours weekly*
8	*Create an application of notification.*	*2 hours weekly*
9	*Create an application of game.*	*2 hours weekly*
10	*Create an application of android tutorial using Sqlite.*	*2 hours weekly*

Reference:

- www.tutorialspoint.com

Course Outcomes:

On successful completion of the course, the student will be able to:

Learn the project development.

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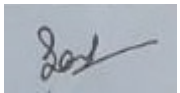
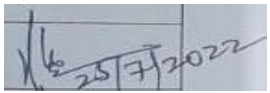
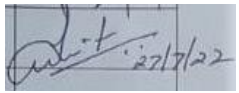
On successful completion of the course, the student will be able to:

- Learn the project development.




Course Title : **DBMS Lab**	Course Code : CA 257
Semester : III	Core / Elective : Core
Teaching Scheme in Hrs. (L:T:P:C) : 0:0:3:2	Credits : 2
Type of course : Experiment	Total Contact Hours : 20
Continuous Internal Evaluation : 60 **Marks**	ESE : 40 **Marks**
Programs: Bachelor Of Computer Applications	

Pre-Requisites: Basics of DBMS

Course Objectives:

- Learning the basic programs related to DBMS.
- Learning the basics programs related to data models.
- Analyzing the basic programs related to RDBMS
- Learning the basics programs related to database design.
- Learning the basics programs related to SQL

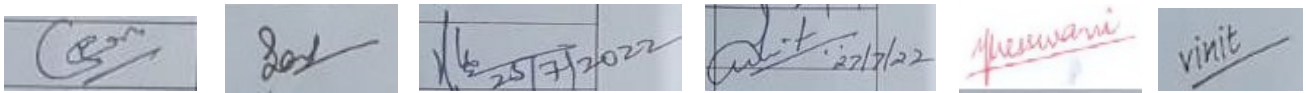
Course Contents:

Units.	List of Experiments	Total Contact Hrs
1	Data Definition Language (DDL) commands in RDBMS	2 hours weekly
2	Data Manipulation Language (DML) and Data Control Language (DCL)	2 hours weekly
3	High level language extensions with cursors	2 hours weekly
4	High level language extension with Triggers	2 hours weekly
5	Procedures and Function.	2 hours weekly
6	Embedded SQL	2 hours weekly
7	Database design using E-R model and Normalization	2 hours weekly
8	Design and implementation of payroll processing system	2 hours weekly
9	Design and implementation of Banking system	2 hours weekly
10	Design and implementation of Library Information System	2 hours weekly

Course Outcomes:

On successful completion of the course, the student will be able to:

Learn the basic programs related to DBMS, data models, RDBMS, SQL.



Course Name: : AngularJS	Course Code : CA 273
Semester: III	Core / Elective : Core
Teaching Scheme in Hrs (L:T:P) : 3:0:0:3	Credits : 3
Type of course : Lecture + Assignments	Total Contact Hours : 35
Continuous Internal Evaluation : 40 Marks	SEE : 60 Marks
Programme: Bachelor Of Computer Applications	

Programme: Bachelor Of Computer Application

Pre-Requisites:

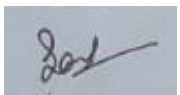
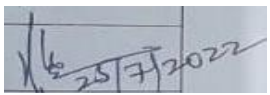
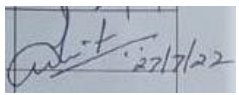
Knowledge about JavaScript, Html, CSS.

Course Objective:

The objective of this course is to empower members to create web applications that depend on the Model-View-Controller Architecture, and decline the reliance on JavaScript required to functionalize web applications.

Course Contents:

UNIT	CONTENT	HOURS
1	Overview of AngularJS - AngularJS architecture overview, The Angular Batarang, Using Karma, Get Setup, Angular Seed Tour, Build: Hello World, Bind tweet to input , Disable button, if tweet is empty, Character count binding	7
2	Data Binding - Wiring up a controller, Binding, Iteration,Filters, Forms binding and validation, Build: A two-way bound form with validation , Post: add tweet to list, Show error validation message (tweet too long), Search filter by tag/username/text	7
3	Services and DI - Overview of the built-in AngularJS services,Using angular's $http and $resource services, Promises, Service registration and injection, Using services to build a service,Injecting services, Build: Create a twitter search service, Submit simple search, Set result size, Create a paging stream (with promises),Pass tests	7
4	Templates and Routing - Linking and images, The routing API,PushState, hasbangs and SEO, Build: Using templates with iteration, Create a template for each tweet in the list, Build: Using templates and routing for master/details navigation, Create a details page for a tweet Directives - Simple directives, Using templates, Working with	7
5	controllers, Transclusion, Directive scope and isolate	7

	scope,Build: Tweet Directive, Add a timer that updates tweet time continuously, Add a marquee news ticker that can accept data from the incoming tweets, Bonus: Use D3 to create a chart of something	

Reference:

www.w3school.com

Course outcomes
On successful completion of the course, the student will be able to make websites on angular.

Course Outcomes:

On successful completion of the course, the student will be able to:

- Learn about the basic components of Java script
- Learn about the angular js
- Learn about the lightweight website design

Course Assessment & Evaluation:

The Course will be delivered through lectures, classroom interaction, exercises and self-study cases.

Method	What		To Whom	When/where (Frequency in the course	Max marks	Evidence collected	Contributing to course outcomes
Direct Assessment	CIE	Mid Term Test	Students	Two Tests	20	Midterm Answer Sheets	1 to 8
		Weekly Test		Two Weekly Tests	10	Weekly Test Copies	7 to 9
		Graded Assignments		Two Assignments	10	Log of records	1 to 6
				Total	40		
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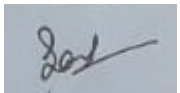
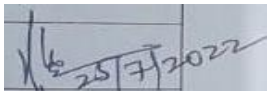
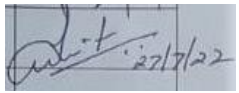
Indirect Assessment	Student Feedback		Students	Middle of the course	-NA-	Feedback forms	1 to 4, Delivery of the course



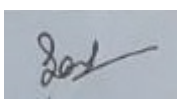
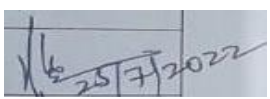
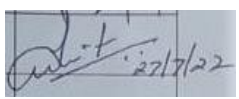
	End of Course survey		End of course		Questionnaire	1 to 9, Effectiveness of delivery of instructions and assessment methods

CIE – Continuous Internal Evaluation **ESE** –End Semester Examination

Composition of Educational Components:

Questions for CIE and SEE will be designed to evaluate the various educational components (Bloom's taxonomy) such as:

Sl. No.	Educational Component	Weightage (%)
1	Remembering and Understanding	35
2	Applying the knowledge acquired from the course	25
3	Analysis and Evaluation	40

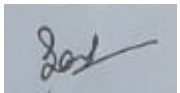
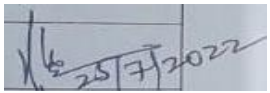
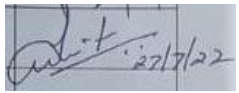





Course Name: : Angular JS Lab	Course Code : CA 283
Semester: III	Core / Elective : Elective
Teaching Scheme in Hrs (L:T:P) : 0:0:2:2	Credits : 2
Type of course : Practical Assignments	Total Contact Hours : 18
Continuous Internal Evaluation : 60 Marks	SEE : 40 Marks

Programme: Bachelor Of Computer Applications

Course Contents:

S.No.	List of Experiments	Contact Hours
1	Organizing Code Using Modules	2 hours weekly
2	Defining an Application with `angular.module()`	2 hours weekly
3	Bootstrapping an Application with `ng App`	2 hours weekly
4	Managing Dependencies with Dependency Injection	2 hours weekly
5	Dealing with Minification Issues	2 hours weekly
6	AngularJS Directive Overview	2 hours weekly
7	Behavior-Driven Directives 1) `ngChange` 2)`ngClick` 3)`ng Submit`	2 hours weekly
8	DOM-Driven Directives 1)`ngShow/ngHide` 2)`ngIf/ng Switch` 3) `ngSrc/ng Href`	2 hours weekly
9	Data-Driven Directives 1)`ng Bind` 2) `ng Init` 3)`ngModel` 4)`ngClass/ngStyle`	2 hours weekly

Course outcomes

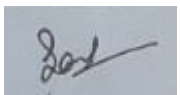
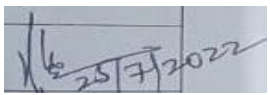
On successful completion of the course, the student will be able to make websites on angular.

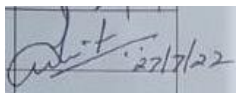
Reference:

AngularJS: Up and Running: Enhanced Productivity with Structured Web Apps By: Shyam Seshadri, Brad Green

Course Outcomes:

On successful completion of the course, the student will be able to learn AngularJS.




Course Name: Industrial Project - II	Course Code : PE 305
Semester: III	Core / Elective : Core
Teaching Scheme in Hrs (L:T:P) : 0:0:3:2	Credits : 2
Type of course : Experiment	Total Contact Hours : 10
Continuous Internal Evaluation : 60 Marks	SEE : 40 Marks
Programme: Bachelor Of Computer Applications	

Pre-Requisites:

Basics in software development phases.

Course Objectives:

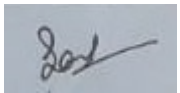
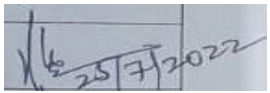
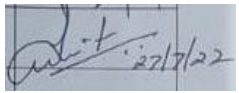
The student will develop a software application

Course Contents:

Topic and Contents	Hours
Software Application Design	2 hrs. weekly

Course Outcomes:

On successful completion of the course, the student will be able to develop a software application

Course Name: Employability Skills - II	Course Code : EM 201
Semester: III	Core / Elective : Core
Teaching Scheme in Hrs (L:T:P) : 0:2:0:1	Credits 1
Type of course : Lecture + Assignments	Total Contact Hours : 12
Continuous Internal Evaluation : 40 Marks	SEE : 60 Marks
Programme: Bachelor Of Computer Applications	

Pre-Requisites:

Employability Skills - I

Course Objective:

- Learning the basics of mindfulness.
- Learning the basics of DBT life skills.
- Analyzing the basics of interpersonal effectiveness.
- Will learn the basics of disorders.
- Will learn the basics of dialectic.

Course Contents:

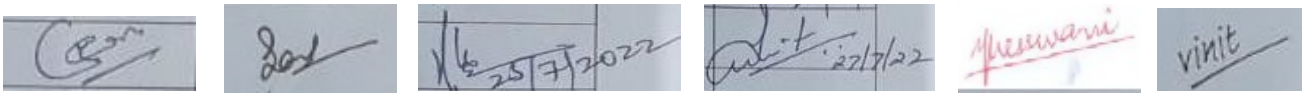
Topic and Contents	Hours
UNIT-1: MINDFULNESS	03
Introduction to Mindfulness, Mindfulness Exercise, DBT Life Skills – Distress Tolerance.	
UNITS-2: MINDFULNESS EXERCISE	03
Mindfulness Exercise, DBT Life Skills – Emotion Regulation	
UNITS-3: DBT Life Skills	03
Mindfulness Exercise, DBT Life Skills – Interpersonal Effectiveness.	
UNIT-4: ANXIETY DISORDERS	03
Mindfulness Exercise, Anxiety Disorders, Depression, and Personality Disorders, Acceptance: Living in the Here-and-Now as a Way of Life.	
TOTAL	**12**

Reference:

Employability skills by David W.G. Hind

Course Outcomes:

On successful completion of the course, the student will be able to Learn the basics of mindfulness, DBT etc.



Course Title: **Practical Training Seminar - I**	Course Code: **SM 302**
Semester : **III**	Core / Elective : **Core**
Teaching Scheme in Hrs. (L:T:P:C) : **0:0:3:2**	Credits : **2 Credit**
Type of course : **Practical**	Total Contact Hours: **12 Hours**
Continuous Internal Evaluation: **60 Marks**	ESE : **40 Marks**
Programs: **BACHELOR OF COMPUTER APPLICATIONS**	

Pre-Requisites: Basics of Seminar

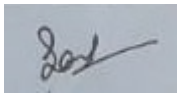
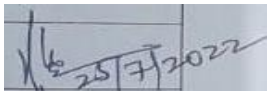
Course Objective:

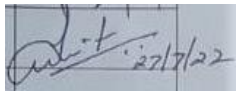
Learning the basic overview of seminar.

Units	List of Experiments	Total Contact Hrs. 10
1	Presentations on topics of Computer Application / Science / Information Technology.	3 hrs weekly

Course Outcomes:

On successful completion of the course, the student will be able to Learn the basic overview of seminar.



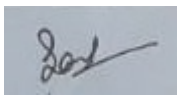
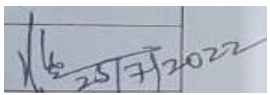
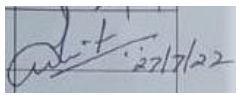

Course Name: : Introduction to Embedded Systems	Course Code : CA 222
Semester: III	Core / Elective : Elective
Teaching Scheme in Hrs (L:T:P) : 3:0:0:3	Credits : 3
Type of course : Lecture + Assignments	Total Contact Hours : 35
Continuous Internal Evaluation : 40 Marks	SEE : 60 Marks

Pre-Requisites:

Basics of embedded systems concepts.

Course Objectives:

- Apply the concept of embedded system.
- Apply the various embedded platforms

Course Contents:

Topic and Contents	Hours
UNIT-1: EMBEDDED COMPUTING REQUIREMENTS	7
Embedded Computing Requirements: Characteristics and applications of embedded systems; Components of Embedded Systems; challenges in Embedded System Design and design process;	
UNITS-2: Embedded Systems - Application and Domain Specific	07
Embedded Systems – Application and Domain Specific: Application specific – washing machine, domain specific - automotive. Embedded Hardware: Memory map, i/o map, interrupt map, processor family, external peripherals, memory – RAM , ROM, types of RAM and ROM, memory testing, CRC ,Flash memory. Peripherals: Control and Status Registers, Device Driver, Timer Driver - Watchdog Timers.	
UNITS-3: THE 8051 MICROCONTROLLERS	07
The 8051 Microcontrollers: Microcontrollers and Embedded processors, Overview of 8051 family. 8051 Microcontroller hardware, Input/output pins, Ports, and Circuits, External Memory 8051 Programming in C: Data Types and time delay in 8051 C, I/O Programming, Logic operations, Data conversion Programs	
UNIT-4: EMBEDDED COMPUTING PLATFORM	7
Embedded Computing Platform: CPU Bus – Bus protocols, DMA, system bus configurations, ARM bus;	
UNIT 5: REAL TIME OPERATING SYSTEM (RTOS)	07
Real Time Operating System (RTOS): Operating system basics, types of operating systems, Real-Time Characteristics, Selection Process of an RTOS. Design and Development: Embedded system development Environment – IDE, types of file generated on cross compilation, disassembler/ decompiler, simulator, emulator and debugging, embedded product development life-cycle, trends in embedded industry.	
TOTAL	35

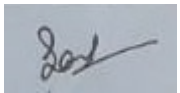
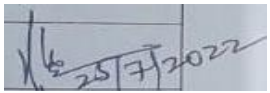
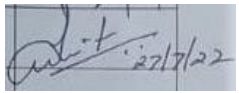
Reference:

- Embedded System Design by Steve Heath published by Elsevier Inc
- Embedded System design: A unified hardware/software Introduction by Frank Vahid & Tony Jiwaji by John Wiley

Course Outcomes:

On successful completion of the course, the student will be able to:

- Find the concept of embedded system.
- Find the merits/demerits of embedded system.

Course Assessment & Evaluation:

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	End of Course survey			End of course		Questionnaire	1 to 9, Effectiveness of delivery of instructions and assessment methods

CIE – Continuous Internal Evaluation **ESE** –End Semester Examination

Course Assessment & Evaluation:

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S. No.	Educational Component	Weightage (%)
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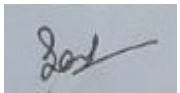
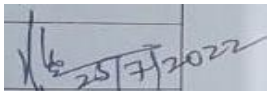
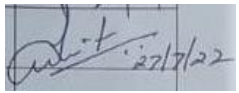
2	Applying the knowledge acquired from the course	25
3	Analysis and Evaluation	40

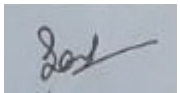
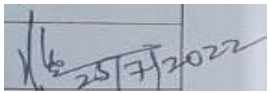
Course Name: : Introduction to Distributed Systems	Course Code : CA 217
Semester: III	Core / Elective : Elective
Teaching Scheme in Hrs (L:T:P) : 3:0:0:3	Credits : 3
Type of course : Lecture + Assignments	Total Contact Hours : 35
Continuous Internal Evaluation : 40 Marks	SEE : 60 Marks

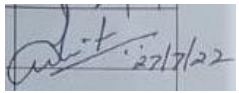
Pre-Requisites:

Basics of distributed system

Course Objectives:

The student should learn about the basics of distributed system.




Course Contents:

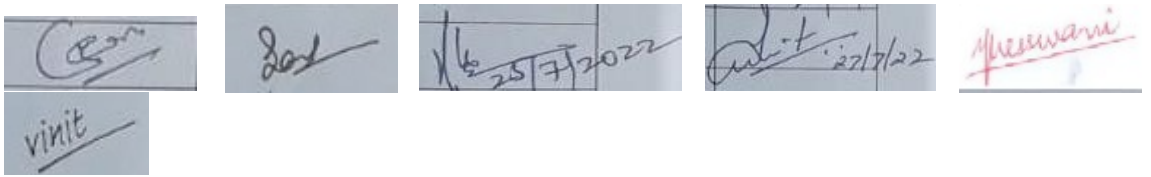
Topic and Contents	Hours
UNIT-1: INTRODUCTION	07
Introduction: Definition –Relation to computer system components –Motivation –Relation to parallel systems – Message-passing systems versus shared memory systems –Primitives for distributed communication –Synchronous versus asynchronous executions –Design issues and challenges. A model of distributed computations: A distributed program –A model of distributed executions –Models of communication networks –Global state – Cuts –Past and future cones of an event –Models of process communications. Logical Time: A framework for a system of logical clocks –Scalar time –Vector time – Physical clock synchronization: NTP.	
UNITS-2: MESSAGE ORDERING & SNAPSHOTS	07
Message ordering and group communication: Message ordering paradigms – Asynchronous execution with synchronous communication –Synchronous program order on an asynchronous system –Group communication – Causal order (CO) – Total order. Global state and snapshot recording algorithms: Introduction –System model and definitions –Snapshot algorithms for FIFO channels	
UNITS-3 DISTRIBUTED DEADLOCK DETECTION	07
system model, resource Vs communication deadlocks, deadlock prevention, avoidance, detection & resolution, centralized deadlock detection, distributed deadlock detection, path pushing algorithms, edge chasing algorithms	
UNIT-4: DISTRIBUTED OBJECTS AND REMOTE INVOCATION: SECURITY	07
Overview of security techniques, Cryptographic algorithms, Digital signature Cryptography pragmatics, Case studies: Needham Schroeder, Kerberos, SSL & Millicent.	
UNIT 5: TRANSACTIONS AND CONCURRENCY CONTROL	07
Transactions, Nested transactions, Locks, Optimistic Concurrency control, Timestamp ordering, Comparison of methods for concurrency control. DISTRIBUTED FILE SYSTEMS: File service architecture, Sun Network File System, The Andrew File System, Recent advances.	
TOTAL	**35**

Reference:

- Coulouris, dollimore, kindberg “distributed system concept and design”
- Distributed system, principles and paradigm by AS tanenbaum.

Course Outcomes:

On successful completion of the course, the student will be able to learn about the important concepts of distributed systems



Course Assessment & Evaluation:

The Course will be delivered through lectures, class room interaction, exercises and self-study cases

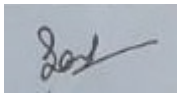
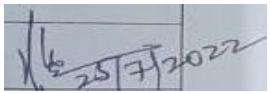
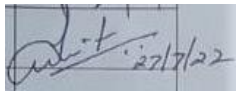
Method	What		To Whom	When/where (Frequency in the course	Max marks	Evidence collected	Contributing to course outcomes
Direct Assessment	CIE	Mid Term Test	Students	Two Tests	20	Midterm Answer Sheets	1 to 8
		Weekly Test		Two Weekly Tests	10	Weekly Test Copies	7 to 9
		Graded Assignments		Two Assignments	10	Log of records	1 to 6
				Total	40		
	ESE	End Sem Evolution		End of the course	60	Answer Scripts	1 to 9
Indirect Assessment	Student Feedback		Students	Middle of the course	-NA-	Feedback forms	1 to 4, Delivery of the course
	End of Course survey			End of course		Questionnaire	1 to 9, Effectiveness of delivery of instructions and assessment methods

CIE – Continuous Internal Evaluation **ESE** –End Semester Examination

Course Assessment & Evaluation:

Questions for CIE and SEE will be designed to evaluate the various educational components (Bloom's taxonomy) such as:

Sl. No.	Educational Component	Weightage (%)
1	Remembering and Understanding	35
2	Applying the knowledge acquired from the course	25
3	Analysis and Evaluation	40

Course Name: : Advance Web Development	Course Code : CA 275
Semester: III	Core / Elective : Elective
Teaching Scheme in Hrs (L:T:P) : 3:0:0:3	Credits : 3
Type of course : Lecture + Assignments	Total Contact Hours : 35
Continuous Internal Evaluation : 40 Marks	SEE : 60 Marks

Programmes: Bachelor Of Computer Applications

Pre-Requisites:

Knowledge about web technology

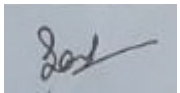
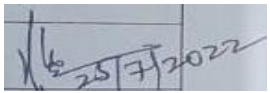
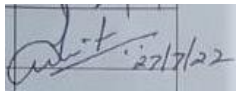
Course Objectives:

Giving the students the insights of the Internet programming and how to design and implement complete applications over the web.

- It covers the notions of Web servers and Web Application Servers, Design Methodologies with concentration on Object-Oriented concepts, Client-Side Programming, Server-Side Programming, Active Server Pages, Database Connectivity to web applications, Adding Dynamic content to web applications, Programming Common Gateway Interfaces, Programming the User Interface for the web applications.

Course Contents:

Topic and Contents	Hours
UNIT-1:	7
Overview of PHP: Introduction to web & internet,Introduction to server, Understanding localhost server,Starting PHP , PHP syntax and variables, Operators and Expressions, Conditional Branching and Looping Statements, Learning Arrays in PHP.	
UNITS-2:	07
Advance PHP: String and Math functions in PHP,Introduction HTML Form	

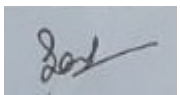
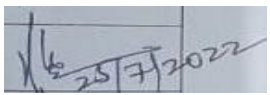
Elements and Fields, Accessing PHP, Query Strings and Hyperlinks, Describing Pre-Defined Variables - Super Global Arrays, Understanding Functions, What Introduction to filesHandling, Classes and Objects.	
UNITS-3:	07
WordPress: Overview, Setting up and Installing WordPress, Introduction to Blogging, Designing, Theme Installation, Theme Customization, Working with WordPress Plugin, Working with ECommerce plugin .	
UNIT-4:	07
Magento and Opencart: Installing and Working with Magento and Opencart, Installing Magento and Opencart Theme .	
Unit-5	07
MYSQL Database	
TOTAL	**35**

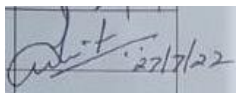
Reference:

www.w3school.com

Course outcomes:

On successful completion of the course, the student will be able to make websites on PHP.



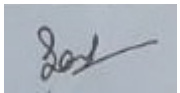
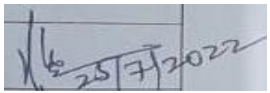

Reference:

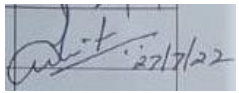
- Blanck, Peter. eQuality: The Struggle for Web Accessibility by Persons with Cognitive Disabilities, Cambridge Disability Law and Policy Series, 2015.
- Burgstahler, Sheryl. Universal Design in Higher Education: From Principles to Practice, Harvard Education Press, 2008.

Course Outcomes:

On successful completion of the course, the student will be able to:

- Will learning the important concept of DBMS
- Will learn about data models.
- Analyze the basic of data modelling.




Course Assessment & Evaluation:

The Course will be delivered through lectures, class room interaction, exercises and self-study cases.

Method	What		To Whom	When/where (Frequency in the course	Max marks	Evidence collected	Contributing to course outcomes
Direct Assessment	CIE	Mid Term Test	Students	Two Tests	20	Midterm Answer Sheets	1 to 8
		Weekly Test		Two Weekly Tests	10	Weekly Test Copies	7 to 9
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Indirect Assessment	Student Feedback		Students	Middle of the course	-NA-	Feedback forms	1 to 4, Delivery of the course
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Course Assessment & Evaluation:

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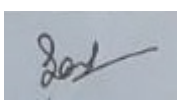
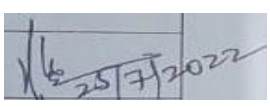
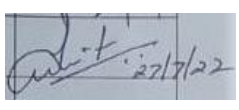
3	Analysis and Evaluation	40

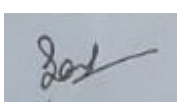
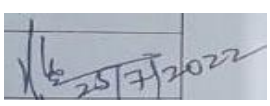
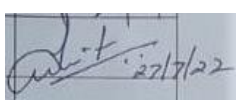
SURESH GYAN VIHAR UNIVERSITY
Accredited by NAAC with 'A' Grade

Learning Centre of Excellence with Google
DEPARTMENT OF COMPUTER APPLICATION
Teaching and Examination Scheme for Bachelor of Computer Application 3 Year Program
2023-24 Year – II | Semester – IV

S.No.	Course Code	Course Name	Credits	Contact Hrs/Week			Exam Hrs.	Weightage (in %)	
				L	T/S	P		CE	ESE
	Program Core								
1.	CA 208	Data Structure & Algorithm	3	3	0	0	3	40	60
2.	CA 216	Software Engineering Fundamentals	3	3	0	0	3	40	60
3.	CA 269	Cloud Computing with GCCF	3	3	1	0	2	40	60
4.	CA 256	Data Structure Algorithm Lab	2	0	0	3	2	60	40
5.	PE 204	Project Stage-I	2	0	0	3	2	60	40
6.	CA 264	Advance Android Development Lab	2	0	0	3	2	60	40
	Program Elective								
7.	CA 113 / CA 115/CA 211	Programming Logic & Techniques / Operations Research/ Computer Organization & Architecture	3	3	0	0	3	40	60
	University Core								
8.	EM 202	Employability Skills – III	1	0	2	0	3	60	40
9.	BM 302	Entrepreneurship &Small Scale Business Management	3	3	0	0	3	40	60
10.	DE 202	Proficiency in Co-curricular Activities – IV	2	0	0	2	-	100	-
		Total	**24**	**15**	**3**	**11**			

Theory (15)+ Labs (6)+ Employability Skills (1 Credits) + Proficiency in Co-curricular Activities (2 Credit) = 24 Credits.

L – Lecture
S – Seminar
T – Tutorial
P – Practical
CE – Continuous Evaluation
ESE – End Semester Evaluation

Course Title: **Data Structure & Algorithm**	Course Code: **CA 208**
Semester : IV	Core / Elective : **Core**
Teaching Scheme in Hrs. (L: T:P) : **3:0:0:3**	Credits : **3 Credit**
Type of course : **Lecture + Assignment**	Total Contact Hours: **35 Hours**
Continuous Internal Evaluation : **40 Marks**	ESE : **60 Marks**
Programs: **BACHELOR OF COMPUTER APPLICATIONS**	

Pre-Requisites:

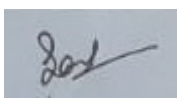
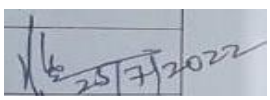
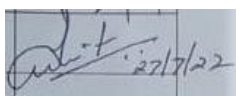
Student should have Basic knowledge of C programming language.

Course Objective:

- Apply the concept of some C algorithm.
- Apply the C language code for illustration.
- Analyse the algorithm.

Course Contents:

Topic and Contents	Hours
UNIT-1 : TIME AND SPACE COMPLEXITY, DATA STRUCTURES	7
Time and space complexity, Data Structures – Introduction to Data Structures, abstract data types, Linear list – singly linked list implementation, insertion, deletion and searching operations on linear list, circular linked list implementation, Double linked list implementation, insertion, deletion and searching operations. Applications of linked lists.	
UNITS-2 : STACKS	07
Stacks-Operations, array and linked representations of stacks, stack applications -infix to postfix conversion, postfix expression evaluation, recursion implementation.	
UNITS-3 : LINKED LIST	07
Introduction to the Linked List , Basic operations on linked list, Stacks and queues linked list, Header nodes, Doubly Linked List, Circular Linked List, Stacks & Queues as a Circular Linked List, Application of Linked List.	
UNIT-4 : SEARCHING AND SORTING	7
Searching and Sorting – Sorting- selection sort, bubble sort, insertion sort, quick sort, merge sort, shell sort, radix sort, Searching-linear and binary search methods, comparison of sorting and searching methods.	
UNIT 5: WEB SERVICES AND XML	07
Analysis of algorithm, complexity using big 'O' notation. Searching: linear search, Binary search, their comparison. Sorting :Insertion sort, Selection sort, Quick sort, Bubble sort, Heap sort, Comparison of sorting methods. Hash Table, Collision resolution Techniques.	
TOTAL	**35**

Reference:

- Fundamentals Of Data Structure, By S. Sawhney & E. Horowitz
- Data Structure : By Trembley & Sorenson
- Data Structure : By lipschutz (Schaum's Outline Series Mcgraw Hill Publication)
- Fundamentals Of Computer Algorithm: By Ellis Horowitz & Sartaj Sawhney

Course Outcomes:

On successful completion of the course, the student will be able to:

- Will find the analysis of algorithms using C implementation
- Will able to determine complexity of various types of algorithms.

Course Assessment & Evaluation:

The Course will be delivered through lectures, classroom interaction, exercises and self-study cases.

Method	**What**		To Whom	**When/where (Frequency in the course)**	**Max marks**	**Evidence collected**	**Contributing to course outcomes**
Direct Assessment	CIE	Mid Term Test	Students	Two Tests	20	Midterm Answer Sheets	1 to 8
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		Graded Assignments		Two Assignments	10	Log of records	1 to 6
				Total	**40**		
	ESE	End Sem Evolution		**End of the course**	**60**	Answer Scripts	1 to 9
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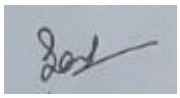
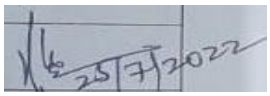
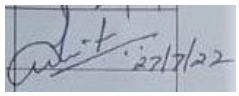
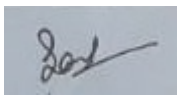
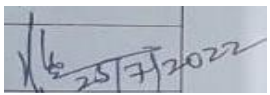
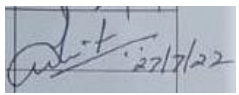
CIE – Continuous Internal Evaluation **ESE** –End Semester Examination

Composition of Educational Components:

Questions for CIE and SEE will be designed to evaluate the various educational components (Bloom's taxonomy) such as:

Sl. No.	Educational Component	Weightage (%)
1	Remembering and Understanding	35
2	Applying the knowledge acquired from the course	25
3	Analysis and Evaluation	40

Course Title: **Software Engineering Fundamentals**	Course Code : CA 216
Semester : IV	Core / Elective : Core
Teaching Scheme in Hrs. (L: T:P) : 3:0:0:3	Credits : **3**
Type of course : Lecture + Assignments	Total Contact Hours : 35
Continuous Internal Evaluation: **40 Marks**	ESE : **60 Marks**
Programs: **BACHELOR OF COMPUTER APPLICATIONS**	

Pre-Requisites:

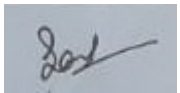
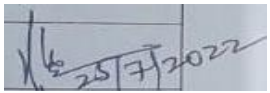
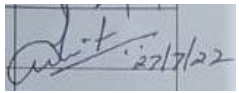
Basics in software and its various merits and demerits.

Course Objective:

- Apply the concept of software development life cycle.
- Apply the software testing.

Course Contents:

Topics & Contents	Hours
UNIT-1: INTRODUCTION	07
Introduction to Software Engineering: Introduction, Definitions of Software Engineering, Program V/s. Software, Software Characteristics, Software Components, Software Applications, Software Crisis, Software Processes, Software Quality Attributes, Key challenges faced by the Software Engineering, Software Engineer, SDLC, Software System Development Methodologies, CASE tools.	
UNITS-2: SOFTWARE REQUIREMENTS ANALYSIS AND SPECIFICATION	07
Software Requirements Analysis and Specification: Software Requirements: Need for SRS, Requirement Process, Problem Analysis, Time Estimation, Resource Allocation, Software Maintenance: Categories of Maintenance, Coding: Coding Standard and Guidelines.	
UNITS-3: TESTING FUNDAMENTALS	07
Testing Fundamentals: Error Fault and Failure, Test Cases and Test Criteria, Testing: Black Box Testing and White Box Testing, Unit Testing, Integration Testing. Coding: Programming Principles and Guidelines: Common Coding Errors, Structured Programming, Programming Practices.	
UNIT-4: SOFTWARE DESIGN PRINCIPLES	07
Software Design Principles: Software Design, Design Process, Design Principles: Abstraction, Refinement, Modularity, Information Hiding. Project Scheduling & Staffing: Overall Scheduling, Detailed Scheduling, Team Structure.	
UNIT 5: QUALITY ASSURANCE ACTIVITIES	07
Types of Quality Assurance Activities, Verification and Validation, Testing, Testing Fundamentals, Strategic Issues in Testing, Test Plan, Testing Principles, General Testing Strategies, Code Testing, Specification Testing, Black Box Testing, White Box Testing, Testing Process.	
TOTAL	**35**

Reference:

- Sabharwal S., Software Engineering: Principles, Tools and Techniques, Second Ed., Umesh Publications, Delhi, 2005
- Gill N.S., Software Engineering: Software Reliability, Testing and Quality Assurance, Khanna Book Publishing Co (P) Ltd, New Delhi, 2002
- Keswani & Banerjee, Software Engineering, Genius Publications, 2009

Course Outcomes : On successful completion of the course, the student will be able to:

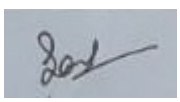
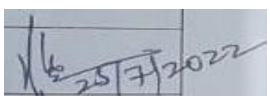
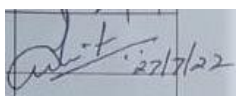
- Find the analysis of various software models.
- Find the various testing methods.

Course Assessment & Evaluation:

The Course will be delivered through lectures, classroom interaction, exercises and self-study cases.

Method	**What**		To Whom	**When/where (Frequency in the course)**	**Max marks**	**Evidence collected**	**Contributing to course outcomes**
Direct Assessment	CIE	Mid Term Test	Students	Two Tests	20	Midterm Answer Sheets	1 to 8
		Weekly Test		Two Weekly Tests	10	Weekly Test Copies	7 to 9
		Graded Assignments		Two Assignments	10	Log of records	1 to 6
				Total	**40**		
	ESE	End Sem Evolution		**End of the course**	**60**	Answer Scripts	1 to 9
Indirect Assessment	Student Feedback		Students	Middle of the course	-NA-	Feedback forms	1 to 4, Delivery of the course
	End of Course survey			End of course		Questionnaire	1 to 9, Effectiveness of delivery of instructions and assessment methods

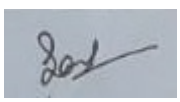
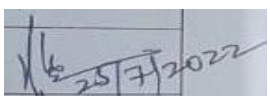
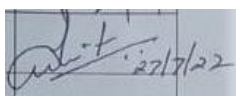
CIE – Continuous Internal Evaluation **ESE** –End Semester Examination

Composition of Educational Components:

Questions for CIE and SEE will be designed to evaluate the various educational components (Bloom's taxonomy) such as:

Sl. No.	Educational Component	Weightage (%)
1	Remembering and Understanding	35
2	Applying the knowledge acquired from the course	25
3	Analysis and Evaluation	40

Course Title : **Cloud Computing with GCCF**	Course Code : CA 269
Semester : IV	Core / Elective : Core
Teaching Scheme in Hrs. (L: T:P) : 3:1:0:3	Credits : **3**
Type of course : Lecture	Total Contact Hours : 35
Continuous Internal Evaluation : **40 Marks**	ESE : **60 Marks**
Programs: Bachelor Of Computer Applications	

Pre-Requisites:

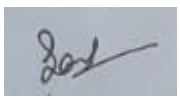
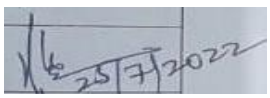
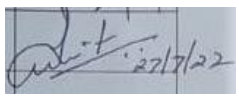
- Having basic knowledge of operating system
- As visualization play a major role in Cloud Computing you need to have the understanding of it
- All operations need cloud platform involving networking, as it is an essential element
- Understanding the difference between the public and private cloud
- Last but not the least, you must have basic command over coding

Course Objective:

- Identify the technical foundations of cloud systems architectures.
- Analyze the problems and solutions to cloud application problems.
- Apply principles of best practice in cloud application design and management.
- Identify and define technical challenges for cloud applications and assess their importance

Course Contents:

Units	Topics	Hours
1	Google Cloud Platform (GCP) Infrastructure ,Compute resources ,Networking Services ,Storage and Database offering , Bigdata and AI services, Basics of GCP Project, Introduction to Primitive role	7
2	Managing GCP environment with GCP console, Control GCP environment using CLI, GCP environment management using Cloud Shell, GCP environment management using Gcloud , GCP environment management using Gsutil, Install and configure cloud SDK	7
3	Cloud Network Virtual Network, Virtual Private , Virtual Private Cloud , Proxies / Gateway and Endpoints, Network/Subnetwork DNS Resolution, Firewalls and Routes, Cloud Router, Interconnecting networks, Security aspect	7

4	Understand Identity and Access Management (IAM), Understanding Organizations, Roles, Members, Service accounts, Policy Policy, Hierarchy, Understanding different role and permission, Creating custom role, Basic IAM APIs, Best Practices, Key Management Systems , Data security, Resource Sharing and Isolation , Auditing, Penetration testing, Security controls	7
5	Understand Compute Engine,Understand and implement Compute options (vCPU and Memory) specific to workload, Persistent disk – HDD, SSD , Load Balancing , Common Compute Engine actions	7
	Total	35

Reference:

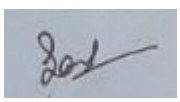
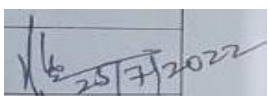
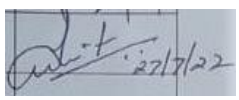
- Google Cloud Cookbook: Practical Solutions for Building and Deploying Cloud Services by O'REILLY
- Official Google Cloud Certified Associate Cloud Engineer by Sybex

Course Outcomes:

CO1: Understand the fundamental principles of distributed computing.
CO2: Understand how the distributed computing environments known as Grids can be built from lower level services.
CO3: Understand the importance of virtualization in distributed computing and how this has enabled the development of Cloud Computing.
CO4: Analyze the performance of Cloud Computing.
CO5: Understand the concept of Cloud Security.
CO6: Learn the Concept of Cloud Infrastructure Model.

Course Assessment & Evaluation:

The Course will be delivered through lectures, classroom interaction, exercises and self-study cases.

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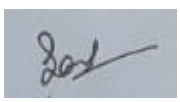
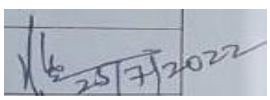
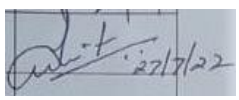

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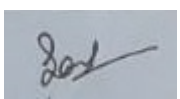
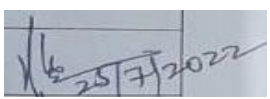
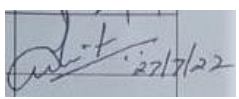






Course Title: **Data Structure & Algorithm Lab**	Course Code : CA 256
Semester : IV	Core / Elective : Core
Teaching Scheme in Hrs. (L: T:P) : 0:0:3:2	Credits : **2**
Type of course : Lecture + Assignments	Total Contact Hours : 20
Continuous Internal Evaluation: **60 Marks**	ESE : **40 Marks**
Programs: BACHELOR OF COMPUTER APPLICATIONS	

:

Pre-Requisites:

Basics of C++ and DSA

Course Objective:

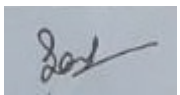
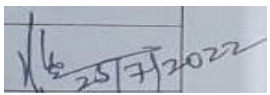
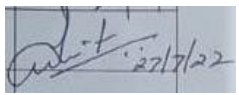
- To apply the concept of C/C++.
- To apply the various techniques for algorithms.

Course Contents:

S.No.	List of Experiments	Total Contact Hrs.
1	Linear Search	Weekly 2 hours
2	Finding the maximum element in an array	Weekly 2 hours
3	Create 5 nodes in singly linked list	Weekly 2 hours
4	Insert an element in the beginning of singly linked list.	Weekly 2 hours
5	Insert an element in the end of singly linked list.	Weekly 2 hours
6	Insert an element at any position in singly linked list.	Weekly 2 hours
7	Counting the number of nodes in singly linked list.	Weekly 2 hours
8	Implement stack using array.	Weekly 2 hours
9	Insert an element at any position in doubly linked list.	Weekly 2 hours
10	Implement circular queue	Weekly 2 hours

Course Outcomes:

On successful completion of the course, the student will be able to understand about the data structure.

Course Title : **Project Stage - I**	Course Code : PE 204
Semester : IV	Core / Elective : Core
Teaching Scheme in Hrs. (L: T:P) : 0:0:3:2	Credits : **2**
Type of course : Experiment	Total Contact Hours : 20
Continuous Internal Evaluation: **60 Marks**	ESE : **40 Marks**
Programs: Bachelor Of Computer Applications	

Pre-Requisites:

Basic knowledge of software development and its various phases.

Course Objective:

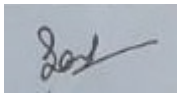
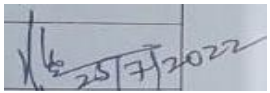
Student should develop a software application.

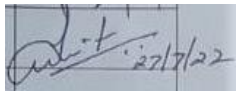
Course Contents:

Topic and Contents	Hours
Software application design and Development (Minor Project)	2 hrs. weekly

Course Outcomes:

On successful completion of the course, the student will be able to develop a software application.




Course Name: Computer Organization & Architecture	Course Code : CA 211
Semester: III	Core / Elective : Elective
Teaching Scheme in Hrs (L:T:P) : 3:0:0:3	Credits : 3
Type of course : Lecture + Assignments	Total Contact Hours : 35
Continuous Internal Evaluation : 40 Marks	SEE : 60 Marks
Programme: Bachelor Of Computer Applications	

Pre-Requisites:

Basics of BCA

Course Objective:

The student should learn about the basics of CA

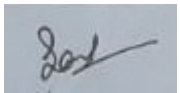
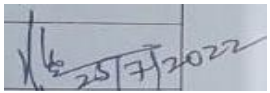
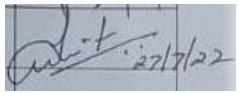
Course Contents:

Topic and Contents	Hours
UNIT-1: DATA MOVEMENT AROUND REGISTERS	07
Data Movement around registers, Data movement from/to memory arithmetic and logic micro operations. Concept of bus and timings in register transfer	
UNITS-2: ADDRESSING MODES	07
Addressing Modes, Instruction Format, CPU organization with large registers, stacks and handling of interrupts & subroutines Instruction pipelining.	
UNITS-3: ARRAY MULTIPLIER BOOTH'S ALGORITHM	07
Array multiplierBooth's algorithm, Addition/subtraction for signed/unsigned number and 2's complement number. Basic organization of microprogrammed controller	
UNIT-4: CONCEPT OF RAM/ROM	07
Concept of RAM/ROM, basic cell of RAM, Associative memory, Cache memory organization, Virtual memory organization	
UNIT 5: INTRODUCTION TO PERIPHERALS & THEIR INTERFACING	07
Introduction to Peripherals & their interfacing. Strobe based and handshake based communication, DMA based transfer, I/O Processor, DMA Controller	
TOTAL	35

Reference:

- J.P. Hayes-Computer Architecture & Organization, Mc-Graw Hill.
- Heuring-Computer System Design and Architecture, Pearson Education.
- M.Morris Mano-Computer System Architecture Prentice Hall of India.
- Bartee-Computer Architecture, Tata Mc-Graw Hill.
- Stallings-Computer Organization and Architecture Pearson Education

Course Outcomes: On successful completion of the course, the student will be able to learn basic concepts of CA.

Course Assessment & Evaluation:

The Course will be delivered through lectures, classroom interaction, exercises and self-study cases.

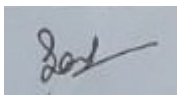
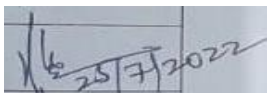
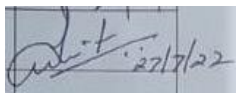
Method	What		To Whom	When/where (Frequency in the course)	Max marks	Evidence collected	Contributing to course outcomes
Direct Assessment	CIE	Mid Term Test	Students	Two Tests	20	Midterm Answer Sheets	1 to 8
		Weekly Test		Two Weekly Tests	10	Weekly Test Copies	7 to 9
		Graded Assignments		Two Assignments	10	Log of records	1 to 6
				Total	40		
	ESE	End Sem Evolution		End of the course	60	Answer Scripts	1 to 9
Indirect Assessment	Student Feedback		Students	Middle of the course	-NA-	Feedback forms	1 to 4, Delivery of the course
	End of Course survey			End of course		Questionnaire	1 to 9, Effectiveness of delivery of instructions and assessment methods

CIE – Continuous Internal Evaluation **ESE** –End Semester Examination

Composition of Educational Components:

Questions for CIE and SEE will be designed to evaluate the various educational components (Bloom's taxonomy) such as:

S. No.	Educational Component	Weightage (%)
1	Remembering and Understanding	35
2	Applying the knowledge acquired from the course	25
3	Analysis and Evaluation	40

Course Title : **Programming Logic & Techniques**	Course Code : CA 113
Semester : IV	Core / Elective : Elective
Teaching Scheme in Hrs. (L: T:P) : 3:0:0:3	Credits : **4**
Type of course : Lecture + Assignments	Total Contact Hours : 35
Continuous Internal Evaluation : **40 Marks**	ESE : **60 Marks**
Programs: Bachelor Of Computer Applications	

Pre-Requisites:

Basics of Programming

Course Objective:

Learning the basic concepts of programming

Course Contents:

Topic and Contents	Hours
UNIT-1: **Introduction to Logic Design with Verilog :**	07
Structural models of combination logic, logic simulation, design verification, test methodology, propagation delay, truth table models of combinational and sequential logic with Verilog modules, ports, gate types, gate delays, dataflow modelling, continuous assignments delays, expressions, operators, operands, operator types	
UNITS-2: **MAKING DECISIONS**	07
Making Decisions, Looping, Control Breaks, Arrays, Advanced Array Manipulation	
UNITS-3: **USING MENUS**	07
Using Menus and Validating Input, Sequential File Merging, Matching, and Updating, Advanced Modularization Techniques and Object-Oriented Programming.	
UNIT-4: **PROGRAMMING GUI**	07
Programming Graphical User Interfaces, Program Design, System Modeling with UML	
UNIT 5: **USING DATABASES**	07
Using Databases Appendices, Solving Difficult Structuring Problems, Understanding Numbering Systems and Computer Codes, Using a Large Decision Table.	
TOTAL	**35**

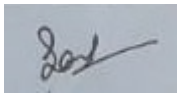
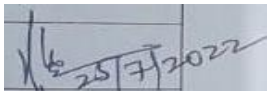
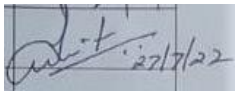
Reference:

Principles of programming language by BPB Publications

Course Outcomes:

On successful completion of the course, the student will be able to:

- Will Learn the basic concepts of programming.

Course Assessment & Evaluation:

The Course will be delivered through lectures, classroom interaction, exercises and self-study cases.

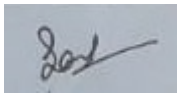
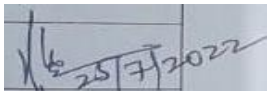
Method	What		To Whom	When/where (Frequency in the course)	Max marks	Evidence collected	Contributing to course outcomes
Direct Assessment	CIE	Mid Term Test	Students	Two Tests	20	Midterm Answer Sheets	1 to 8
		Weekly Test		Two Weekly Tests	10	Weekly Test Copies	7 to 9
		Graded Assignments		Two Assignments	10	Log of records	1 to 6
				Total	**40**		
	ESE	End Sem Evolution		**End of the course**	**60**	Answer Scripts	1 to 9
Indirect Assessment	Student Feedback		Students	Middle of the course	-NA-	Feedback forms	1 to 4, Delivery of the course
	End of Course survey			End of course		Questionnaire	1 to 9, Effectiveness of delivery of instructions and assessment methods

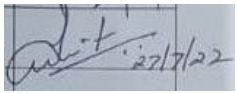
CIE – Continuous Internal Evaluation **ESE** –End Semester Examination

Composition of Educational Components:

Questions for CIE and SEE will be designed to evaluate the various educational components (Bloom's taxonomy) such as:

Sl. No.	Educational Component	Weightage (%)
1	Remembering and Understanding	35
2	Applying the knowledge acquired from the course	25
3	Analysis and Evaluation	40




Course Title : **Operations Research**	Course Code : CA 115
Semester : IV	Core / Elective : Elective
Teaching Scheme in Hrs. (L: T:P) : 3:0:0:3	Credits : **4**
Type of course : Lecture + Assignments	Total Contact Hours : 35
Continuous Internal Evaluation : **40 Marks**	ESE : **60 Marks**
Programs: Bachelor Of Computer Applications	

Pre-Requisites:

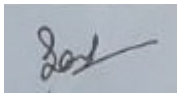
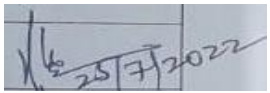
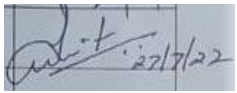
Basics of Programming

Course Objective:

The main objective of this course to create awareness about optimization in utilization of resources and enable the students to understand and apply operations research techniques in industrial operations. This also increases the understanding nuance of project management through operations research models.

Course Contents:

Topic and Contents	Hours
UNIT-1: **Overview of operations Research**	07
OR models: OR Techniques **Linear Programming:** Introduction, Graphical solution, Graphical sensitivity analysis. The standard form of linear programming problems. Basic feasible solutions, unrestricted variables, simplex algorithm, artificial variables. Big M and two phase method, Degeneracy, alternative optima, unbounded solutions , infeasible solutions.	
UNITS-2: **Dual problems**	07
Relation between primal and dual problems, Dual simplex method **Transportation model:** starting solutions. North West corner Rule , lowest cost method ,Vogels approximation method, Transportation algorithms ,Assignment problem , Hungarian Method.	
UNITS-3: **Network Models**	07
Definitions, CPM and PERT: Their Algorithms Integer Programming: Branch and Bound Algorithms cutting plan algorithm.	
UNIT-4: **Dynamic Programming**	07
Recursive nature of dynamic programming – Forward and Backward Recursion, **Deterministic Inventory Models:** Static EOQ Models and Dynamic EOQ models.	
UNIT 5: **Game theory**	07
Two person Zero Sum Games; Mixed strategy games and their Algorithms.	
TOTAL	**35**

Reference:

1. Operations Research – An Introduction, Handy A Taha – Pearson Education.
2. Operations Research Panneer Selvan Prentice Hall of India.
3. Hamdy A Taha, "Operations Research – An Introduction", New Delhi: Pearson Education, 2009.
4. J.K.Sharma, "Operations Research - Theory and Application", Noida: Mac Millan India, 2003.
5. N.D.Vohra, "Quantitative Techniques in Management", New Delhi: Tata McGraw Hill Publishing Co. Ltd, 2007.
6. R.Paneerselvam, "Operations Research", New Delhi: Prentice Hall of India, 2008.
7. Frederick S.Hillier and Gerald J. Lieberman, "Operations Research", New Delhi: Tata McGraw Hill, 2005.

Course Outcomes:

On successful completion of the course, the student will be able to:

- Will Learn the basic concepts of Operations Research.

Course Assessment & Evaluation:

The Course will be delivered through lectures, classroom interaction, exercises and self-study cases.

Method	**What**		To Whom	**When/where (Frequency in the course)**	**Max marks**	**Evidence collected**	**Contributing to course outcomes**
Direct Assessment	CIE	Mid Term Test	Students	Two Tests	20	Midterm Answer Sheets	1 to 8
		Weekly Test		Two Weekly Tests	10	Weekly Test Copies	7 to 9
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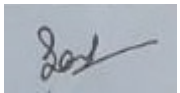
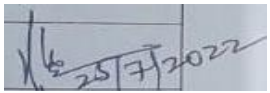
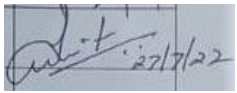

	End of Course survey		End of course		Question naire	1 to 9, Effectiveness of delivery of instructions and assessment methods

CIE – Continuous Internal Evaluation **ESE** –End Semester Examination

Composition of Educational Components:

Questions for CIE and SEE will be designed to evaluate the various educational components (Bloom's taxonomy) such as:

Sl. No.	Educational Component	Weightage (%)
1	Remembering and Understanding	35
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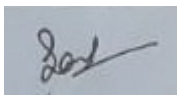
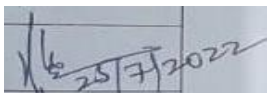
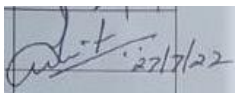
3	Analysis and Evaluation	40

Course Title : **Employability Skills - III**	Course Code : EM 202
Semester : IV	Core / Elective : Core
Teaching Scheme in Hrs. (L: T:P) : 3:0:0:1	Credits : 1
Type of course : Lecture + Assignments	Total Contact Hours : 35
Continuous Internal Evaluation : **60 Marks**	ESE : **40 Marks**
Programs: Bachelor Of Computer Applications	

Pre-Requisites:

Analytical Thinking

Course Objective:

- Apply the concept of analytical thinking.
- Apply the various techniques for solving problems.

Course Contents:

Topic and Contents	Hours
UNIT-1: INTRODUCTION	07
Logical Sequence of Words, Blood Relation Test, Syllogism.	
UNITS-2: SERIES	07
Series Completion, Cause and Effect, Dice.	
UNITS-3: VENN DIAGRAM	07
Venn Diagrams, Cube and Cuboids Analogy.	
UNIT-4: SEATING ARRANGEMENT	07
Seating Arrangement, Character Puzzles, Direction Sense Test.	
UNIT 5: CLASSIFICATION	07
Classification, Data Sufficiency, Arithmetic Reasoning, Verification of Truth	
TOTAL	**35**

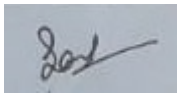
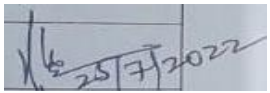
Reference:

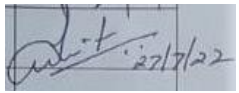
Reasoning' by R.S. Aggarwal

Course Outcomes:

On successful completion of the course, the student will be able to:

- Will able to find the concept of analytical reasoning.
- Will able to find various types of verbal and nonverbal reasoning techniques




Course Name: **Entrepreneurship & Small Scale Business Management**	Course Code : BM 302
Semester : IV	Core / Elective : Core
Teaching Scheme in Hrs. (L: T:P) : 3:0:0:3	Credits : 1
Type of course : Lecture + Assignments	Total Contact Hours : 35
Continuous Internal Evaluation : **40 Marks**	ESE : **60 Marks**
Programs: Bachelor Of Computer Applications	

Pre-Requisites :

Basics in management rules and techniques.

Course Objective:

- Apply the concept of management techniques.
- Apply the various techniques for business management

Course Contents:

Topic and Contents	Hours
UNIT-1: INTRODUCTION:	**07**
Definition, meaning, importance and relevance types & characteristics and classification of entrepreneurship, identification of business barriers to entrepreneurship. Opportunities, environment scanning in rough 7 Domains of market attractiveness & porter's 5-forcus model.	
UNITS-2: NEEDS, TOOLS TECHNIQUES	**07**
For market assessment & survey, entrepreneurship motivations & environment innovations & creativity.	
UNITS-3: BUSINESS PLAN WRITING	**07**
scope, type, process of identifying target market, survey industry & competition analysis.	
UNIT-4: ENTREPRENEURSHIP DEVELOPMENT PROGRAM	**07**
Objectives, Programs of EDP, Entrepreneurial development cause Relevance & Accruements or EDP	
UNIT 5: SMALL BUSINESS MANAGEMENT	**07**
Starting up a new business venture, Scope of fund raising to start up a new venture.	
TOTAL	**35**

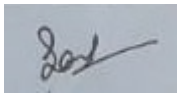
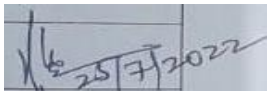
Reference:

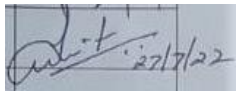
- Jain P.C handbook for New Entrepreneurs: Oxford University Press
- Drucker Peter F: Innovation & Entrepreneur
- Lalitha D Rani : Women Entrepreneur. APH Publishing Corporation

Course Outcomes:

On successful completion of the course, the student will be able to:

- Will able to find the concept of small scale business management.
- Will able to find various types of business management techniques.




Course Assessment & Evaluation:

The Course will be delivered through lectures, classroom interaction, exercises and self-study cases.

Method	What		To Whom	When/where (Frequency in the course)	Max marks	Evidence collected	Contributing to course outcomes
Direct Assessment	CIE	Mid Term Test	Students	Two Tests	20	Midterm Answer Sheets	1 to 8
		Weekly Test		Two Weekly Tests	10	Weekly Test Copies	7 to 9
		Graded Assignments		Two Assignments	10	Log of records	1 to 6
				Total	**40**		
	ESE	End Sem Evolution		**End of the course**	**60**	Answer Scripts	1 to 9
Indirect Assessment	Student Feedback		Students	Middle of the course	-NA-	Feedback forms	1 to 4, Delivery of the course
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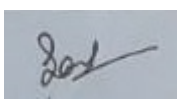
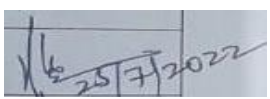
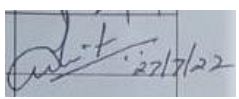
Composition of Educational Components:

Questions for CIE and SEE will be designed to evaluate the various educational components (Bloom's taxonomy) such as:

Sl. No.	Educational Component	Weightage (%)
1	Remembering and Understanding	35
2	Applying the knowledge acquired from the course	25
3	Analysis and Evaluation	40

Course Title: Advance Android Development Lab	Course Code : CA264
Semester : IV Core / Elective : Core	Teaching Scheme in Hrs (L:T:P) : 0:0:3:2
Credits : 2 Credits	Type of course : Practical Assignments
Total Contact Hours : 2 hours weekly	Continuous Internal Evaluation : 60 Marks ESE : 40 Marks
Programmes: BACHELOR OF COMPUTER APPLICATIONS	

Pre-requisites:

Basic understanding about animation and knowledge about subject

Course Objectives:

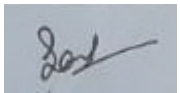
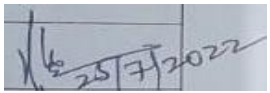
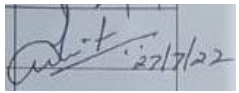
The objective of this course is to provide students with a basic understanding of multimedia systems.

Course Content:

1	Create activity and debug the app
2	Create user input sections and screen navigation
3	Testing user interface.
4	Handling background task.
5	Connection to internet.
6	Handle Multiple tasks, notification pop up, Broadcast Receiver.
7	Overview about SQLite database and its using in android.
8	Storing data using SQLite and sorting data.
9	Sharing data and loading data using loader.
10	Testing the app and Publish.

Course outcomes:

On successful completion of the course, the student will be able to make android application. , to deploy android application.

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Learning Center of Excellence with Google
DEPARTMENT OF COMPUTER APPLICATION
Teaching and Examination Scheme for Bachelor of Computer Application 3 Year Program
2024-25 Year – III | Semester - V

S.No.	Course Code	Course Name	Credits	Contact Hrs/Week			Exam Hrs.	Weightage (in %)	
				L	T/S	P		CE	ESE
	Practical & Sessional								
1.	PT 304	Industrial Training	18	-	-	-	3	120	80
		Total	**18**	**-**	**-**	**-**			

Industrial Training (18 Credits) = 18 Credits

L – Lecture T – Tutorial CE – Continuous Evaluation

S – Seminar P – Practical ESE – End Semester Evaluation

Course Name: **Industrial Training**		Course Code	: PT 304
Semester	: V	Core / Elective	: Core
Teaching Scheme in Hrs. (L: T:P)	: 3:0:0:3	Credits	: 18
Type of course	: Experiment	Total Contact Hours	: 18 Hrs/Week
Continuous Internal Evaluation	: **120 Marks**	ESE	: **80 Marks**
Programs: Bachelor Of Computer Applications			

Pre-Requisites:

Domain Specific Knowledge.

Course Objective:

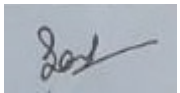
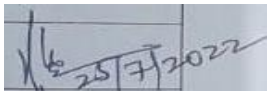
To provide industry exposure to the student, 6months training in a repute software industry is mandatory for every student of V Semester.

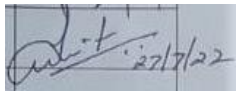
Course Contents:

Units	Course Contents	Total Contact Hrs.
1	Trainings as per the industrial requirements.	18 hrs week

Course Outcomes:

Successful completion of this course make student more employable, skilled and equipped with more knowledge.

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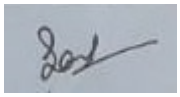
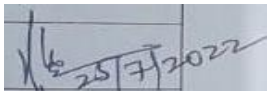
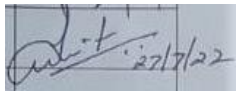
Learning Centre of Excellence with Google
DEPARTMENT OF COMPUTER APPLICATION
Teaching and Examination Scheme for Bachelor of Computer Application 3 Year Program
2024-25 Year – II | Semester – VI

S. No.	Course Code	Course Name	Credits	Content Hrs./Weeks			Exam Hrs.	Weightage (in%)	
				L	T/S	P		CE	ESE
	Program Core								
1	CA 307	Advance Android Development II	3	3	0	0	3	40	60
2	CA 316	Programming in PYTHON	3	3	0	0	3	40	60
3	CA 306	Advance Android Development Lab II	2	0	0	3	3	60	40
4	PE 307	Project Stage-II	2	0	0	3	3	60	40
5	CA 354	PYTHON Lab	2	0	0	3	3	60	40
6	CA 311	Computer Networks with AWS	3	3	0	0	3	40	60
7	CA 305	Networking AWS lab	2	0	0	3	3	60	40
8	EM 301	Employability Skills – IV	1	0	2	0	3	60	40
9	SM 304	Project Training Seminar-II	2	0	0	3	3	60	40
10	CA 313	Intellectual Property & Rights	3	3	0	0	3	40	60
		Total	23	12	2	15			

Theory (12) + Labs (10) + Employability Skills (1 Credits) = 23 Credits

L – Lecture T – Tutorial CE – Continuous Evaluation
S – Seminar P – Practical ESE – End Semester Evaluation

+

Course Name: **Advance Android Development II**	Course Code : CA 307
Semester : VI	Core / Elective : Core
Teaching Scheme in Hrs. (L: T:P) : 3:0:0:3	Credits : 18
Type of course : **Lecture + Assignments**	Total Contact Hours : 35
Continuous Internal Evaluation : **40 Marks**	ESE : **60 Marks**
Programs: Bachelor Of Computer Applications	

Pre-requisites:

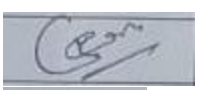
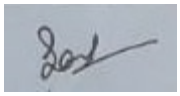
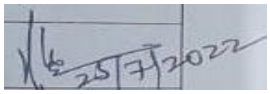
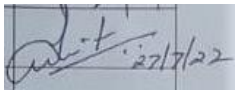
Student should have knowledge of java, advance java and basic android.

Course Objectives:

Student will be able to, Create location-aware applications,Create custom "services" that multi-task and run in the background,Monitor, manage and control Android's WiFi networking capabilities,Monitor, manage and control Android's Bluetooth networking capabilities,Monitor, manage and control Android's telephony capabilities (abilities to place receive and manage calls.)

Course Content:

Unit No.	Topic	Hours
1	Introduction to adv. Android-II, Network Logger, Network Security	7
2	Firebase Introduction, Firebase Auth, Firebase Real time Database, Firebase Cloud Message	7
3	GitHub Introduction, Working on Github repository setup github in PC, GITBASH Commands, github errors	7
4	working on XAMPP and create localhost server, Application Programming Interface(APIs), JSON Object and JSON Array(Google and json library), working on POSTMAN	7
5	Introduction of Retrofit Library in Android Studio, create a request for data from server using Retrofit, send data to server using Retrofit, server error handling	7
	Total	35

Reference:
Android Programming: The Big Nerd Ranch Guide (Big Nerd & Brian Hardy Ranch Guides) By: Bill Philip

Course outcomes:
On successful completion of the course, the student will be able to how to create custom advanced Android applications,create location-aware applications that use animations, work with the built-in camera, use sensors, create and use advanced content providers and manage Bluetooth, telephony and networking connectivity.

Course Assessment and Evaluation:

The Course will be delivered through lectures, class room interaction, exercises and self-study cases.

Course Assessment and Evaluation:

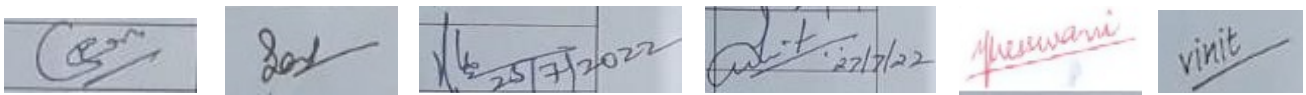
The Course will be delivered through lectures, class room interaction, exercises and self-study cases.

Method	**What**		To Whom	**When/where (Frequency in the course)**	**Max marks**	**Evidence collected**	**Contributing to course outcomes**
Direct Assessment	CIE	Mid Term Test	Students	Two Tests	20	Midterm Answer Sheets	1 to 8
		Weekly Test		Two Weekly Tests	10	Weekly Test Copies	7 to 9
		Graded Assignments		Two Assignments	10	Log of records	1 to 6
				Total	**40**		
	ESE	End Sem Evolution		**End of the course**	**60**	Answer Scripts	1 to 9
Indirect Assessment	Student Feedback		Students	Middle of the course	-NA-	Feedback forms	1 to 4, Delivery of the course
	End of Course survey			End of course		Questionnaire	1 to 9, Effectiveness of delivery of instructions and assessment methods

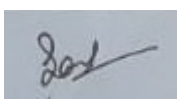
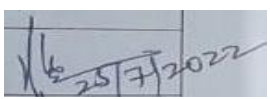
CIE – Continuous Internal Evaluation **ESE** –End Semester Examination

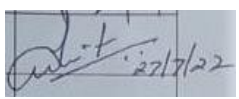
Composition of Educational Components:

Questions for CIE and SEE will be designed to evaluate the various educational components (Bloom's taxonomy) such as:



Sl. No.	Educational Component	Weightage (%)
1	Remembering and Understanding	35
2	Applying the knowledge acquired from the course	25
3	Analysis and Evaluation	40




Course Name: **PROGRAMMING IN PYTHON**	Course Code : CA 316
Semester : VI	Core / Elective : Core
Teaching Scheme in Hrs. (L: T:P) : 3:0:0:3	Credits : 3
Type of course : **Lecture + Assignments**	Total Contact Hours : 35
Continuous Internal Evaluation : **40 Marks**	ESE : **60 Marks**
Programs: Bachelor Of Computer Applications	

Pre-requisites:

Student should have knowledge of oops concepts.

Course Objectives:

To impart advance content of programming language like python which is now popular in industry.

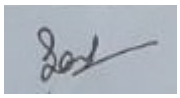
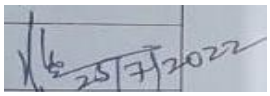
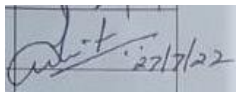
Course Content:

Topic and Contents	Hours
UNIT-1: INTRODUCTION	07
Introduction to Python. An introduction to the Python programming language. Covers details of how to start and stop the interpreter and write programs. Introduces Python's basic data types, files, functions, and error handling	
UNITS-2: STRINGS	07
Strings, Creating and Storing Strings, Basic String Operations, Accessing Characters in String by Index Number, String Slicing and Joining, String Methods, Formatting Strings, Lists, Creating Lists, Basic List Operations, Indexing and Slicing in Lists, Built-In Functions Used on Lists, List Methods, The del Statement.	
UNITS-3: FUNCTIONS	07
Program Organization and Functions. More information about how to organize larger programs into functions. A major focus of this section is on how to design functions that are reliable and can be easily reused in other settings. Also covers technical details of functions including scoping rules and documentation strings.	
UNIT-4: MODULES AND LIBRARIES	07
Object-Oriented Programming, Classes and Objects, Creating Classes in Python, Creating Objects in Python, The Constructor Method, Classes with Multiple Objects, Class Attributes versus Data Attributes, Encapsulation, Inheritance, The Polymorphism.	
UNIT 5 SELF-STUDY	07
Dictionaries, Creating Dictionary, Accessing and Modifying key- value Pairs in Dictionaries, Built-In Functions Used on Dictionaries, Dictionary Methods, The del Statement, Tuples and Sets, Creating Tuples, Basic Tuple Operations, Indexing and Slicing in Tuples, Built-In Functions Used on Tuples, Relation between Tuples and Lists, Relation between Tuples and Dictionaries, Tuple Methods, using zip () Function, Sets, Set Methods, Traversing of Sets, Frozen set.	
TOTAL	**35**

Reference:

1. E. Balaguruswamy," Introduction to Computing and Problem Solving Using Python", McGraw Hill Education Private Limited, New Delhi.

2. Mark Lutz, David Acher," Learning Python", Shroff Publishers & Distributors Private Linited, 2009.

Course outcomes:

On successful completion of the course, the student will be able to: design and develop projects in python language as per industry demand.

Course Assessment and Evaluation:

The Course will be delivered through lectures, class room interaction, exercises and self-study cases.

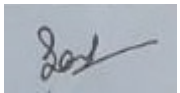
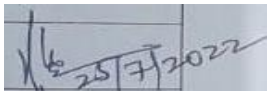
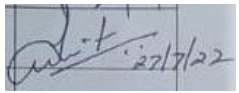
Method	What		To Whom	When/where (Frequency in the course)	Max marks	Evidence collected	Contributing to course outcomes
Direct Assessment	CIE	Mid Term Test	Students	Two Tests	20	Midterm Answer Sheets	1 to 8
		Weekly Test		Two Weekly Tests	10	Weekly Test Copies	7 to 9
		Graded Assignments		Two Assignments	10	Log of records	1 to 6
				Total	**40**		
	ESE	End Sem Evolution		**End of the course**	**60**	Answer Scripts	1 to 9
Indirect Assessment	Student Feedback		Students	Middle of the course	-NA-	Feedback forms	1 to 4, Delivery of the course
	End of Course survey			End of course		Questionnaire	1 to 9, Effectiveness of delivery of instructions and assessment methods

CIE – Continuous Internal Evaluation **ESE** –End Semester Examination

Composition of Educational Components:

Questions for CIE and SEE will be designed to evaluate the various educational components (Bloom's taxonomy) such as:

S. No.	Educational Component	Weightage (%)
1	Remembering and Understanding	35
2	Applying the knowledge acquired from the course	25
3	Analysis and Evaluation	40

Course Name: **Advance Android Development Lab II**	Course Code : CA 306
Semester : VI	Core / Elective : Core
Teaching Scheme in Hrs. (L:T:P:C) : **0:0:2:2**	Credits : 1
Type of course : **Lecture + Assignments**	Total Contact Hours : 20
Continuous Internal Evaluation : **60 Marks**	ESE : **40 Marks**
Programs: Bachelor Of Computer Applications	

Pre-requisites:

Basic understanding about animation and knowledge about subject

Course Objectives:

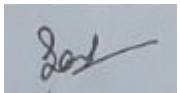
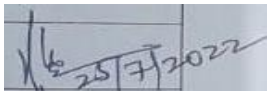
The objective of this course is to provide students with a basic understanding of multimedia systems.

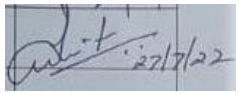
Course Content:

1	Create app for Exoplayer.
2	Create app for music player with background service.
3	Create app for Notification with Firebase cloud messaging.
4	Upload a project on GIT HUB.
5	Create the database in SQL, create an API to fetch all data from database.
6	Installation of postman and checking API.
7	Create app for display content of API using volley library.
8	Create app for display content of API using retrofit library.
9	Create app for Insert a data into SQL database on server using retrofit and API.
10	Create a whole project for the e-commerce using XAMPP server.

Course outcomes:

On successful completion of the course, the student will be able to make android application. , to deploy android application.




Course Name: **PROJECT STAGE-II**		Course Code	: PE 307
Semester	: VI	Core / Elective	: Core
Teaching Scheme in Hrs. (L:T:P:C)	: **0:0:3:2**	Credits	: 2
Type of course	: Experiment	Total Contact Hours	: 20
Continuous Internal Evaluation	: **60 Marks**	ESE	: **40 Marks**
Programs: Bachelor Of Computer Applications			

Pre-requisites:

Student should have knowledge of oops concepts.

Course Objectives:

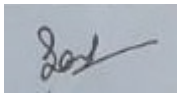
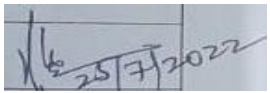
To impart advance content of programming language like python which is now popular in industry.

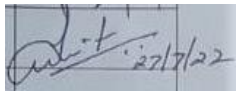
Course Content:

Topic and Contents	Hours
Student should develop a software application as his/her major Project with the consultation of industry experts.	2 hrs. weekly

Course outcomes:

This course provides learning exposer to students to solve major industry problem in the form of software with the help of software industry.




Course Name: **PYTHON LAB**	Course Code : CA 354
Semester : VI	Core / Elective : Core
Teaching Scheme in Hrs. (L:T:P:C) : **0:0:2:1**	Credits : 1
Type of course : Experiment	Total Contact Hours : 20
Continuous Internal Evaluation : **60 Marks**	ESE : **40 Marks**
Programs: Bachelor Of Computer Applications	

Pre-requisites:

Basics in programming language.

Course Objectives:

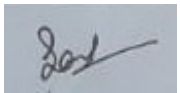
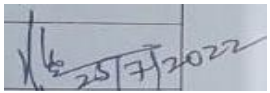
1.The student will be doing programs related to python.

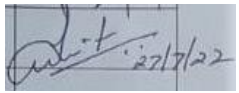
Course Content:

S.No	Name of Experiments	Total contact Hours
1	Write a program to implement the operations on stacks using Python.	2 hours weekly
2	Write a program to implement the operations on circular queue using python.	2 hours weekly
3	Write a program for sorting a list using Bubble sort and then apply binary search using python.	2 hours weekly
4	Write a program to create a binary search tree and for implementing the in-order, preorder, post-order traversal using recursion using python.	2 hours weekly
5	Write a program for finding the Depth First Search of graph, and Breadth First Search of a graph using python.	2 hours weekly
6	Write a program for converting a given infix expression to postfix form using python.	2 hours weekly
7	Write a program for evaluating a given postfix expression using python.	2 hours weekly
8	Write a program for implementing the operations of a dequeuer using python.	2 hours weekly
9	Write a program for quick sort using python.	2 hours weekly
10	Write a program for Heap sort using python.	2 hours weekly

Course outcomes:

On successful completion of the course, the student will be able to: design and develop projects in python language as per industry demand.




Course Name: **Computer Networks With AWS**		Course Code	: CA 311
Semester	: VI	Core / Elective	: **Elective**
Teaching Scheme in Hrs. (L:T:P:C)	: 3**:0:0:3**	Credits	: 3
Type of course	: **Lecture + Assignments**	Total Contact Hours	: 36
Continuous Internal Evaluation	: **40 Marks**	ESE	: **60 Marks**
Programs: Bachelor Of Computer Applications			

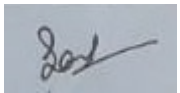
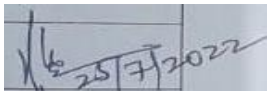
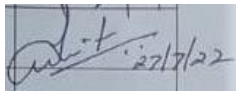
Pre-Requisites:

- Having basic knowledge of operating system
- As visualization play a major role in AWS you need to have the understanding of it
- All operations need cloud platform involving networking, as it is an essential element
- Understanding the difference between the public and private cloud
- Last but not the least, you must have basic command over coding

Course Objective:

- Identify the technical foundations of cloud systems architectures.
- Analyze the problems and solutions to cloud application problems.
- Apply principles of best practice in cloud application design and management.
- Identify and define technical challenges for cloud applications and assess their importance.

Course Code:	Computer Networks with AWS	C(L,T,P):3(3,0,0)
Unit	Content of the Course	Total Contact Hrs.
I	**UNIT-I** Introduction: Data communication Components: Representation of data and its flow Networks, Various Connection Topology, Protocols and Standards, Reference Models, Transmission Media, LAN, Techniques for Bandwidth utilization	7
II	**UNIT-II** Data Link Layer and Medium Access Sub Layer: Error Detection and Error Correction - Fundamentals, Block coding, Hamming Distance, CRC; Flow Control and Error control protocols, Multiple access protocols.	8
III	**UNIT-III** Network Layer: Switching, Logical addressing, Address mapping – ARP, RARP, BOOTP and DHCP–Delivery, Forwarding and Unicast Routing protocols.	7
IV	**UNIT-IV** Transport Layer: Process to Process Communication, User Datagram Protocol (UDP), Transmission Control Protocol (TCP), SCTP Congestion Control; Quality of Service, QoS improving techniques: Leaky Bucket and Token Bucket algorithm.	7
V	**UNIT-V** Application Layer: Domain Name Space (DNS), DDNS, TELNET, EMAIL, File Transfer Protocol (FTP), WWW, HTTP, SNMP, Bluetooth, Firewalls, Introduction to AWS Cloud Computing	7
	Total	36

Reference:

1. Data Communication and Networking, 4th Edition, Behrouz A. Forouzan, McGraw-Hill.
2. Data and Computer Communication, 8th Edition, William Stallings, Pearson Prentice Hall India
3.Computer Networks 4th Ed.: andrew S. Tanenbaum; Pearson Education
4. Computer Networking: J. F. Kurose and K. W .Ross; Pearson Education Asia.

Course Outcomes:

1. Identify the components of the International Standards Organization(ISO)/Open Systems Interconnect(OSI) model;
2. Understand and design control algorithms for local-area networks;
3. Apply the high components of the ISO/OSI reference model in a high level programming language.
4. Analyze QoS over wire and wireless channels
5. Evaluate the requirements for a given organizational structure and select the most appropriate networking architecture and technologies;.
6. Specify and identify deficiencies in existing protocols, and then create new and better protocols.

Course Assessment and Evaluation:

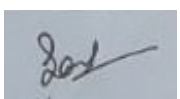
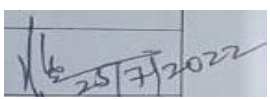
The Course will be delivered through lectures, class room interaction, exercises and self-study cases.

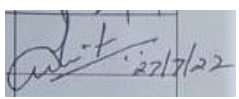
Method	**What**		To Whom	**When/where (Frequency in the course)**	**Max marks**	**Evidence collected**	**Contributing to course outcomes**
Direct Assessment	CIE	Mid Term Test	Students	Two Tests	20	Midterm Answer Sheets	1 to 8
		Weekly Test		Two Weekly Tests	10	Weekly Test Copies	7 to 9
		Graded Assignments		Two Assignments	10	Log of records	1 to 6
				Total	**40**		
	ESE	End Sem Evolution		**End of the course**	**60**	Answer Scripts	1 to 9
Indirect Assessment	Student Feedback		Students	Middle of the course	-NA-	Feedback forms	1 to 4, Delivery of the course
	End of Course survey			End of course		Questionnaire	1 to 9, Effectiveness of delivery of instructions and assessment methods

CIE – Continuous Internal Evaluation **ESE** –End Semester Examination

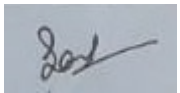
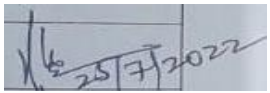
Composition of Educational Components:

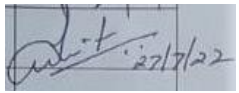
Questions for CIE and SEE will be designed to evaluate the various educational components (Bloom's taxonomy) such as:




Sl. No.	Educational Component	Weightage (%)
1	Remembering and Understanding	35
2	Applying the knowledge acquired from the course	25
3	Analysis and Evaluation	40




Course Name: **NETWORKING AWS LAB**	Course Code : CA 305
Semester : VI	Core / Elective : **Elective**
Teaching Scheme in Hrs. (L:T:P:C) : 0:0:2:1	Credits : 1
Type of course : **Experiments**	Total Contact Hours : 20
Continuous Internal Evaluation : **60 Marks**	ESE : **40 Marks**
Programs: Bachelor Of Computer Applications	

Pre-requisites:

Student should have basic knowledge of method of communication and communication devices using Amazon Web Services and computer Networks.

Course Objectives:

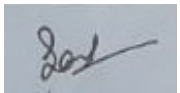
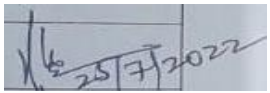
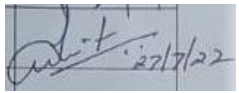
To impart the knowledge of network models, various topologies of network, networking devices, tools and Analyze the networking algorithm.

Course Content:

S.No	List of Experiments	Hrs
1	Study of network IP. Connect the computers in Local Area Network.	2
2	Performing an Initial Switch Configuration Performing an Initial Router Configuration	2
3	Configuring WEP on a Wireless Router	2
4	Using the Cisco IOS Show Commands	2
5	Interpreting Ping and Traceroute Output	2
6	Demonstrating Distribution Layer Functions	2
7	Implementing an IP Addressing Scheme	2
8	Examining Network Address Translation (NAT) and Observing Static and Dynamic Routing	2
9	create a instance windows using ec2	2
10	Deploy a website on windows server using EC2	2
11.	Deploy a website on linux machine using EC2	
	Total	20

Course outcomes:

On successful completion of the course, the student will be able to develop new architecture and working of computer network with the use of various network topologies.

Course Name: **EMPLOYABILITY SKILLS - IV**	Course Code : EM 301
Semester : VI	Core / Elective : **Core**
Teaching Scheme in Hrs. (L:T:P:C) : 3**:0:0:1**	Credits : 1
Type of course : **Lecture + Assignments**	Total Contact Hours : 12
Continuous Internal Evaluation : **60 Marks**	ESE : **40 Marks**
Programs: Bachelor Of Computer Applications	

Pre-requisites:

Student should have knowledge of Employability skills- III

Course Objectives:

To develop skills of communication and technical writing.

Course Content:

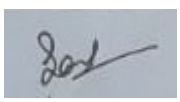
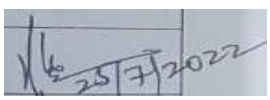
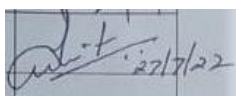
Topic and Contents	Hours
UNIT-1: INTRODUCTION	3
Writing Process- Intro of various types of writings, Gathering, Writing, Reviewing, Editing, Indexing, Testing.	
UNITS-2: WRITING PROCESS	3
Review Writing- Internal, Friendly and Anonymous reviews, Quantity review, Quality review, Precis Wring, Paragraph Writing, Report Writing- Science and research reports, business Reports, Business Report, Business overview.	
UNITS-3: LETTER WRITING	2
Letter Writing- Letter of Inquiry, Letter of adjustment, Claim Letter and follow of Letter, Letter of acceptance, Letter of refusal	
UNIT-4: JOB SEARCH CORRESPONDENCE	2
Job search correspondence- cover letter, CV and resume	
UNIT 5: E-MAILS	2
Writing Mails- User Guides, Reference Guide, Online helps, Website, Technical Proposal Writing.	
TOTAL	**12**

Reference:

1. Reasoning by R.S. Agarwal.

Course outcomes:

On successful completion of the course, the student will be able to understand concept of technical writing and its techniques

Course Name: **PROJECT TRAINING SEMINAR -II**	Course Code : SM 304
Semester : VI	Core / Elective : **Core**
Teaching Scheme in Hrs. (L: T:P) : 0**:0:3:2**	Credits : 2
Type of course : Experiments	Total Contact Hours : 10
Continuous Internal Evaluation : **60 Marks**	ESE : **40 Marks**
Programs: Bachelor Of Computer Applications	

Pre-requisites:

student should develop a software project prior to deliver seminar on the theme.

Course Objectives:

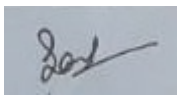
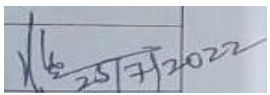
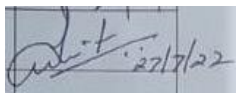
To make student more presentable and make them confident and delivery and demonstration of his project in front of experts.

Course Content:

Units	**List of Experiments**	**Total Contact Hrs. 10**
1	Preparation / demonstration of software project.	3 hrs weekly

Course outcomes:

On successful completion of the course, student will be able to demonstrate his work in front of audiences with full confidence and effective manner.

Course Name: **INTELLECTUAL PROPERTY & RIGHTS**	Course Code : CA 313
Semester : VI	Core / Elective : Elective
Teaching Scheme in Hrs. (L: T:P) **: 3:0:0:3**	Credits : 3
Type of course : **Lecture**	Total Contact Hours : 35
Continuous Internal Evaluation : **40 Marks**	ESE : **60 Marks**
Programs: Bachelor Of Computer Applications	

Pre-requisites:

1. Basics in corporate culture and its principles.

Course Objectives:

To develop basic understanding about the intellectual property and its rights to originator.

Course Content:

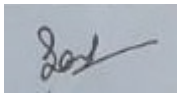
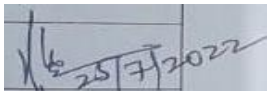
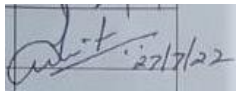
Topic and Contents	Hours
UNIT-1: INTRODUCTION	7
Introduction to IPR, Issue in IPR	
UNITS-2: ISSUES	07
COPY RIGHT Issues	
UNITS-3: TRADEMARKS	07
TRADEMARKS Issues	
UNIT-4: ACT RULES	07
Information Technology Act	
UNIT 5: CASE STUDY	07
CASE STUDY on IPR	
TOTAL	**35**

Reference:

1. Intellectual property & rights by K.R.G. Nair

Course outcomes:

On successful completion of the course, the student will be able to know his rights related to intellectual property.

Course Assessment and Evaluation:

The Course will be delivered through lectures, class room interaction, exercises and self-study cases.

Method	What		To Whom	When/where (Frequency in the course)	Max marks	Evidence collected	Contributing to course outcomes
Direct Assessment	CIE	Mid Term Test	Students	Two Tests	20	Midterm Answer Sheets	1 to 8
		Weekly Test		Two Weekly Tests	10	Weekly Test Copies	7 to 9
		Graded Assignments		Two Assignments	10	Log of records	1 to 6
				Total	**40**		
	ESE	End Sem Evolution		**End of the course**	**60**	Answer Scripts	1 to 9
Indirect Assessment	Student Feedback		Students	Middle of the course	-NA-	Feedback forms	1 to 4, Delivery of the course
	End of Course survey			End of course		Questionnaire	1 to 9, Effectiveness of delivery of instructions and assessment methods

CIE – Continuous Internal Evaluation **ESE** –End Semester Examination

Composition of Educational Components:

Questions for CIE and SEE will be designed to evaluate the various educational components (Bloom's taxonomy) such as:

Sl. No.	Educational Component	Weightage (%)
1	Remembering and Understanding	35
2	Applying the knowledge acquired from the course	25
3	Analysis and Evaluation	40