SURESH GYAN VIHAR UNIVERSITY

Accredited by NAAC with 'A' Grade

Learning Center Of Excellence with Google

DEPARTMENT OF COMPUTER APPLICATIONS

Teaching and Examination Scheme for Bachelor of computer science

(Information Technology)

3 Year Course

EFFECTIVE FROM ACADEMIC SESSION 2017-18

Year: I **Semester: I**

S. No.		Course Code	Course Name	Credits LTPC	Exam Hrs.	Weightage (in%)	
						CE	ESE
1		CA 105	Fundamentals of Programming Language	3003	3	40	60
2		CA 107	Introduction to IoT	3003	3	40	60
3		CA 106	Programming Language Lab	0032	2	60	40
4		CA 103	Ecommerce and digital Marketing	3003	3	40	60
5		CA 108	Ecommerce and digital Marketing Lab	0032	2	60	40
6		CA 116	System analysis and designing Fundamentals	3003	3	40	60
7		CA 160	System analysis and designing Lab	0032	2	60	40
6		ES 101	Environmental Studies	3003	3	40	60
7		MA 103	Elementary Mathematics	3003	3	40	60
8		DE101	Proficiency in co-curricular Activities -I	2002	-	100	-
9		HS-101	Human Value & Ethics	1001			
10							
			Total	27			

Course Name: Fundamentals of Programming Language	Course Code : **CA 105**
Semester: I	Core / Elective : **CORE**
Teaching Scheme in Hrs (L:T:P) : 3**:1:0:4**	Credits : **3Credits**
Type of course : **Lecture**	Total Contact Hours : 35
Continuous Internal Evaluation : **40 Marks**	SEE : **60 Marks**
Program: **BSC-IT (GOOGLE APPS)**	

Pre-requisites:

Basics of C Language.

Course Objectives:

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.

Units	Course Contents	Hrs.
1	C program structures, Variables, Data Types, Declarations, Operators, Conditional statement, loops.	7
2	Array, Type of Array, Strings, Functions, parameter passing (call-by-value, call-by-reference), recursion, Pointers and addresses, Structures, Unions.	7
3	Introduction to C++ and OOPs, Different element of C++ (Tokens, Keywords, Identifiers, Variable, Constant, Operators, Expression, String), Functions, Exception Handling.	7
4	Overview of Java, Object Oriented Concepts in Java. Abstraction, java virtual machine, object oriented, robust, multithreading, architectural neutral, distributed and dynamic, Operators, Array, Java methods, Classes, Constructor, method overriding, method overloading, abstract class.	7
5	Multithreaded programming, New(),run(),Wait() ,join() method of thread class, Java applets and their use – Event Handling – AWT and working with Windows – Event Handling , JDBC – JDBC API, JDBC Drivers, Products, JDBC Design considerations, Two Tier and Three Tier client server model, setting up a connection to database, Creating and executing SQL statements, Result set and Result set Metadata Object	7
	Total	35

Reference:

1.Programming in ANSI C by E Balaguruswami

Course outcomes:

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

1. Learn about the basic components of C language
2. Learn about the C program structure.
3. Learn about the basic programs of C language.

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**
	CIE	Mid Term Test		Two tests	20	Midterm Answer books	1 to 8
		Weekly Test		Two Weekly Test	10	Weekly Test Copies	7 to 9
				Two Assignments	10	Log of record	1 to 6
				Total	**40**		
	ESE	End Sem Evaluation		End of the course	60	Answer scripts	1 to 9
	Student feedback			Middle of the course		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: INTRODUCTION TO IoT	Course Code : **CA-107**
Semester: 1	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
Programmes: **BSC-IT (GOOGLE APPS)**	

Prerequisites: Basic knowledge of Computer Networks and Internet.

Course Objectives:

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 Content:

Topic and Contents	Hours	Marks
UNIT-1	07	20
Introduction & Concept: Introduction, physical design of IoT, Logical design of IoT, IoT enabling Technologies, IoT level and development Template		
UNITS-2:	07	20

Domain Specific IoT's: Home automation, Cities, Environment, Energy, Retail, Logistics, Agriculture, Industry, Health & Lifestyle.		
UNITS-3	07	20
IoT and Machine to Machine(M2M): M2M, Difference between IoT and M2M, SDN and NFV for IoT		
UNIT-4:	07	20
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	20
Developing Internet of things : Introduction, IoT Design Methodology, Case study on Internet of things for weather Monitoring		
TOTAL	**35**	**100**

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 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
		Mid Term Test		Two tests	20	Midterm Answer books	1 to 8

ASSMENT		Weekly Test		Two Weekly Test	10	Weekly Test Copies	7 to 9
				Two Assignments	10	Log of record	1 to 6
				Total	**40**		
	ESE	End Sem Evaluation		End of the course	60	Answer scripts	1 to 9
	Student feedback			Middle of the course		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 Language lab	Course Code : **CA 106**
Semester: I	Core / Elective : **CORE**
Teaching Scheme in Hrs (L:T:P) : 0**:0:3:2**	Credits : **2Credits**
Type of course :practical assignments	Total Contact Hours : 20
Continuous Internal Evaluation : **60 Marks**	SEE : 4**0 Marks**
Programme: **BSC-IT (GOOGLE APPS)**	

Pre-requisites:

Basic concepts of Programming Language.

Course Objectives:

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.

Units	List of Experiments	Total Contact Hrs
1	Simple input output program integer, real character and string. (Formatted & Unformatted). (C & C++)	2 hours weekly
2	Conditional statement programs (if, if-else-if, switch-case). (C & C++)	2 hours weekly
3	Looping Program. (for, while, do-while). (C & C++)	2 hours weekly
4	Program based on array (one, two, and three dimensions). (C & C++)	2 hours weekly
5	Program using structure and unions. (C & C++)	2 hours weekly
6	Write a program to perform the complex arithmetic. (C & C++)	2 hours weekly
7	Write a program to perform the rational number arithmetic. (JAVA)	2 hours weekly
8	To implement Tower of Hanoi problem. (JAVA)	2 hours weekly
9	To implement a Program with 4 Different Function and call in one program. (JAVA)	2 hours weekly
10	To implement different types of pyramid. (JAVA)	2 hours weekly

Course Name: Ecommerce and Digital Marketing	Course Code : **CA 103**
Semester: I	Core / Elective : **CORE**
Teaching Scheme in Hrs (L:T:P) : 3**:1:0:4**	Credits : **3 Credits**
Type of course : **Lecture**	Total Contact Hours : 35
Continuous Internal Evaluation : **40 Marks**	SEE : **60 Marks**
Program: **BSC-IT (GOOGLE APPS)**	

Pre-requisites:

Student should have knowledge about Amazon, Flipkart like Electronic commerce companies.

Course Objectives:

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 campaign for their own organisations.

Course Content:

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	Architectural framework, Network Infrastructure for E-Commerce Network Infrastructure for E Commerce, Market forces behind I Way, Component of I way Access Equipment, Global Information Distribution Network, Broadband Telecommunication.	7
3	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, Online Banking, World Wide Web & Security, Encryption, Transaction security, Secret Key Encryption, Public Key Encryption, Virtual Private Network (VPM), Implementation Management Issues.	7
4	Introduction of Social Media, Social Media Optemization, 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, Hootsuit, Facebook Campaign Manager, Twitter Campaign Manager	7
	Total	35

Reference:

1. **Digital Marketing: Strategy, Implementation & Practice by Dave Chaffey & Fiona Ellis-Chadwick**

Course outcomes:

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

1.Students will be learning about digital marketing.
2. Students will be learning about getting traffic on social sites.

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
		Mid Term Test		Two tests	20	Midterm Answer books	1 to 8
		Weekly Test		Two Weekly Test	10	Weekly Test Copies	7 to 9
				Two Assignments	10	Log of record	1 to 6
				Total	**40**		
	ESE	End Sem Evaluation		End of the course	60	Answer scripts	1 to 9
	Student feedback			Middle of the course		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: Ecommerce and digital Marketing Lab	**Course Code CA 108**
Semester: 1	**Core / Elective : Core**
Teaching Scheme in Hrs LTP:0:0:3	**Credits : 02**
Type of course : Practical Assignments	**Total Contact Hours : 20**
Continuous Internal Evaluation : 60 Marks	**SEE : 40 Marks**
Program: BSC-IT (GOOGLE APPS)	

Pre-requisites: Basic knowledge of Ecommerce tools and technologies and Digital Marketing

Course Objectives:

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

Course Content:

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:

1.Students will be learning about digital marketing.
2. Students will be learning about getting traffic on social sites.

Course Title: SYSTEM ANALYSIS & DESIGNING FUNDAMENTALS	**Course Code : CA 116**
Semester : 1	**Core / Elective : Core**
Teaching Scheme in Hrs (L:T:P) : 3:1:0:4	**Credits : 3**
Type of course : Lecture + Assignments	**Total Contact Hours : 35**
Continuous Internal Evaluation : 40 Marks	**SEE : 60 Marks**
Program: : BSC-IT (GOOGLE APPS)	

Prerequisites: Basics of System.

Course Objectives: The major objective of this course that :

1.Students will be learning about system concept .

2. Students will be learning about initial investigation.

3. Students will be learning about structured analysis

4. Students will be learning about documentation for the new system

5. Students will be learning about system security.

Course Content:

Topic and Contents	Hours
UNIT-1: SYSTEM CONCEPT	**07**
Definition, Characteristics, Elements of system, Physical and abstract system, open and closed system, man-made information systems. System Development Life Cycle: Various phases of system development, Considerations for system planning and control for system success. System Planning.	
UNITS-2: INITIAL INVESTIGATION	**07**
Determining user's requirements and analysis, fact finding process and techniques. Feasibility study: Determination of feasibility study, Technical, Operational & Economic Feasibilities, System performance constraints, and identification of system objectives, feasibility report. Cost/Benefit Analysis of the new/proposed system	
UNITS-3: STRUCTURED ANALYSIS	**07**

Tools of System Analysis Structured Design: Tools of System Design with I/O and Form Design	
UNIT-4: DOCUMENTATION FOR THE NEW SYSTEM	**07**
User Manual, system development manual, programming manual, programming specifications, operator manual. System testing & quality: System testing and quality assurance, steps in system implementation and software maintenance.	
UNIT 5: SYSTEM SECURITY	**07**
Data Security, Disaster/ recovery and ethics in system development, threat and risk analysis. Hardware and software procurement – In-house purchase v/s hiring and lease	
TOTAL	**35**

Reference:

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

Course outcomes:

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

1.Students will be learning about system concept with various elements of system.
2. Students will be learning about initial investigation.
3. Students will be learning about structured analysis
4. Students will be learning about documentation for the new system
5. 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	Evidence collected	Contributing to course outcomes
		Mid Term Test		**Two tests**	**20**	**Midterm Answer books**	**1 to 8**
		Weekly Test		**Two Weekly Test**	**10**	**Weekly Test Copies**	**7 to 9**

		Graded Assignments		Two Assignments	10	Log of record	1 to 6
				Total	40		
	ESE	End Sem Evaluation		End of the course	60	Answer scripts	1 to 9
	Student feedback			Middle of the course		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: SYSTEM ANALYSIS & DESIGNING LAB	**Course Code : CA 160**
Semester : 1	**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**
Programmes: : BSC-IT (GOOGLE APPS)	

Prerequisites: Basics of System

Course Objectives: The major objective of this course that student should understand the programs about the system analysis.

S.No.	Name of Experiments	Hours
1	Discuss and Assign a Project Name for the overall study.	2 hours weekly
2	Define the functioning of the project which you want to achieve by the completion of project.	2 hours weekly
3	Plan the overall sequence to perform all the task and time limit of each module.	2 hours weekly
4	. Discuss the tool to draw different types of diagram throughout the analysis & design.	2 hours weekly
5	Plan for design, Structured Design, IPO chart, Input/Output Form design	2 hours weekly
6	Submit the SRS for the overall project	2 hours weekly
7	How to model your System using Object.	2 hours weekly
8	What are the testing techniques and how and which is applicable to	2 hours weekly
9	Navigation of forms and flow of the system.	2 hours weekly
10	How to model your System using Object.	2 hours weekly

Course outcomes:

On successful completion of the course, the student will be able to learn programs about the system analysis and requirements.

Course: Environmental Studies	Course Code : ES 101
Semester: 1	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
Program: **BSC-IT (GOOGLE APPS)**	

Prerequisites: Basics of environmental science

Course Objectives: The major objective of this course that student should understand :

1. about the basic components of environment.
2. about the natural resources.

3. about the ecosystems.
4. about the biological diversity.
5. about the environment pollution.

Course Content:

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 various needs. Human population growth & its impacts on 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, 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, 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:

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

Course outcomes:

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

1. Learn about the basic components of environment.
2. Learn about the natural resources including forest resources , energy resources etc.
3. Learn about the ecosystems including food chains , food webs etc.
4. Learn about the biological diversity including global , national and local biodiversity.
5. Learn about the environment pollution including air, water , soil , noise pollution.

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
		Mid Term Test		Two tests	20	Midterm Answer books	1 to 8
		Weekly Test		Two Weekly Test	10	Weekly Test Copies	7 to 9
				Two Assignments	10	Log of record	1 to 6
				Total	**40**		
	ESE	End Sem Evaluation		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: Elementary Mathematics	Course Code : MA 103
Semester: 1	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
Program : **BSC-IT (GOOGLE APPS)**	

Prerequisites: Basics of Mathematics.

Course Objectives: The major objective of this course that student should understand

1. about the set theory.
2. about the limits & continuity.
3. about the concepts of differentiation.
4. about the concepts of integration.
5. about the concepts of matrix and determinants.

Course Content:

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, adjoint of a matrix, rank of a matrix, solution of linear system of equations.	
TOTAL	**35**

Reference:

1. Elementary mathematics by Shanti Narayan: Integral Calculus, S.Chand & Co.

2. Sharma, Gokhroo, Saini: Elements of matrices and Determinants, Jaipur Publishing House

3. Schum Series: Discrete mathematics, Tata Mcgraw Hill

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
		Mid Term Test		Two tests	20	Midterm Answer books	1 to 8
		Weekly Test		Two Weekly Test	10	Weekly Test Copies	7 to 9
				Two Assignments	10	Log of record	1 to 6
				Total	**40**		
	ESE	End Sem Evaluation		End of the course	60	Answer scripts at BTE	1 to 9
	Student feedback			Middle of the course		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: Human Values & Ethics	Course Code : HS 101
Semester : **I**	Core / Elective : **Core**
Teaching Scheme in Hrs (L:T:P) : 1**:0:0:1**	Credits : **1 Credits**
Type of course : **Lecture + Assignments**	Total Contact Hours : **12**
Programmes: **BSC-IT (GOOGLE APPS)**	

Pre-requisites:

Should have basic interest to know the importance of values in daily life and business ethics.

Course Objectives:

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

Course Content:

Topic and Contents	Hours	Marks
UNIT-1	6	20
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 challenged and gender.		
UNIT-2	06	20
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:

1. Gaur RR, Sangal R & Bagaria GP. 2011. A *Foundation Course in Human Values and Professional Ethics.* Excel Books.
2. Mathur SS. 2010. *Education for Values, Environment and Human Rights.* RSA International.

3. Sharma RA. 2011. *Human Values and Education -Axiology, Inculcation and Research.* R. Lall Book Depot.
4. Sharma RP & Sharma M. 2011. *Value Education and Professional Ethics.* Kanishka Publishers.
5. 5.Srivastava S. 2011. *Human Values and Professional Ethics.* S K Kataria & Sons.
6. Srivastava S. 2011. *Environmental Science*. S K Kataria & Sons.
7. 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:

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

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**
		Mid Term Test		Two tests	20	Midterm Answer books	1 to 8
		Weekly Test		Two Weekly Test	10	Weekly Test Copies	7 to 9
				Two Assignments	10	Log of record	1 to 6
				Total	**40**		
	ESE	End Sem Evaluation		End of the course	60	Answer scripts	1 to 9
	Student feedback			Middle of the course		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

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DEPARTMENT OF COMPUTER APPLICATIONS

Teaching and Examination Scheme for Bachelor of Computer Science

(Information Technology)

3 Year Course

EFFECTIVE FROM ACADEMIC SESSION 2017-18

Year: I **Semester: II**

S. No.		Course Code	Course Name	Credits LTPC	Exam Hrs.	Weightage (in%)	
						CE	ESE
1		CA 178	Advance Java	3003	3	40	60
2		CA 110	Fundamental of Operating System	3003	3	40	60
3		CA 180	Advance Java Lab	0032	2	60	40
4		CA 274	Numerical Analysis	3104	3	40	60
		CA 265	Numerical Analysis Lab	0032	2	60	40
5		PE205	Industrial Project I	0032	2	60	40
6		CA261	Colloquium lab	0031	2	60	40
7		EM 112	Employability Skills – I	0201	3	40	60
8		BM 517	Accounting and Financial Management	3003	3	40	60
9		DE 102	Proficiency in Co-curricular Activities- II	2002	-	100	-
10		FD 104	Foundation Course I	1.5			
11							
12		CA221	Cyber Law and IT Security	3003	3	40	60
13							
14		CA 111	Web Development	3003	3	40	60
			Total	27.5			

Course Name: Programming in Java	Course Code : CA 178
Semester: II	Core / Elective : **Core**
Teaching Scheme in Hrs (L:T:P) : 3**:1:0:4**	Credits :3**Credits**
Type of course : **Lecture**	Total Contact Hours : **35**
Continuous Internal Evaluation : **40 Marks**	SEE : **60 Marks**
Programmes: **BSC-IT (GOOGLE APPS)**	

Pre-requisites:

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

Course Objectives: The aim of this course is to impart Java programming concepts to students.

Course Content:

Topic and Contents	Hours
UNIT-1 Introduction to Java	07
Enterprise, J2EE Architecture, API JDBC,API J2EE fundamentals, J2EE multi-tier architecture, Web Applications in J2EE,Apache Tomcat5.0 Server Configuration and important file. Http protocol with client and server model	
UNITS-2: Servlets fundamentals	07
architecture, life cycle of a servlet, method of Servlet life cycle, initialization, javax.servlet and javax.servlet.http package and method of this package, servlets and HTML, Handling HTTP requests and Responses, retrieving data in servlet using GET and POST methods,	
UNITS-3:	07
JDBC, JDBC servlet, inter servlet communication, different packages of JSP and servlets. Servlet sessions management technique using cookies,URLRewritting, Hidden Form ,HttpSession methods, JDBC connection pool, servlet security	
UNIT-4 JSP fundamentals	07

architecture,JSP Life Cycle, Difference between JSP and Servlet, JSP elements(JSP Expression,JSPScriptlet ,JSP Directivies,JSP Declaration) standard actions, (setProperities,getProperties, getParameter,setParameter,useBean,param), Implicit objects, JSP errors, JSP with JDBC connection.	
UNIT 5: J2ME	07
introduction, building MID lets, creating a user interface, event handling with commands, tickers, screens, textbox, lists and forms.	
TOTAL	**35**

Reference:

Programming in java by E.Balagurusamy.

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 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
		Mid Term Test		Two tests	20	Midterm Answer books	1 to 8
		Weekly Test		Two Weekly Test	10	Weekly Test Copies	7 to 9
				Two Assignments	10	Log of record	1 to 6
				Total	**40**		

	ESE	End Sem Evaluation		End of the course	60	Answer scripts	1 to 9
	Student feedback			Middle of the course		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: Fundamental of Operating System	Course Code : CA 110
Semester: 2	Core / Elective : Core
Teaching Scheme in Hrs (L:T:P) : 3:1:0:4	Credits : 3
Type of course : Lecture + Assignments	Total Contact Hours : 35
Continuous Internal Evaluation : 40 Marks	SEE : 60 Marks
Programmes: **BSC-IT (GOOGLE APPS)**	

Prerequisites: Basics of Operating System

Course Objectives: The major objective of this course that

1.Students will be learning about types of operating system

2. Students will be learning about process management.
3. Students will be learning about process synchronization.
4. Students will be learning about storage management.
5. Students will be learning about protection and security goals.

Course Content:

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:

1.Students will be learning about types of operating system with its system calls , virtual machines etc.
2.Students will be learning about process management with its CPU Scheduling criteria etc.
3. Students will be learning about process synchronization.
4. Students will be learning about storage management.
5. 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
		Mid Term Test		Two tests	20	Midterm Answer books	1 to 8
		Weekly Test		Two Weekly Test	10	Weekly Test Copies	7 to 9
				Two Assignments	10	Log of record	1 to 6
				Total	**40**		
	ESE	End Sem Evaluation		End of the course	60	Answer scripts	1 to 9
	Student feedback			Middle of the course		Feedback forms	1 to 4, delivery

SMENT						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: Java Lab	Course Code :CA 180
Semester: **II**	Core / Elective : Core
Teaching Scheme in Hrs (L:T:P) : 0:0**:3:2**	Credits : **2 Credits**
Type of course : **PRACTICAL LAB**	Total Contact Hours : **20**
Continuous Internal Evaluation : **60 Marks**	SEE : **40 Marks**
Programmes: **BSC-IT (GOOGLE APPS)**	

Pre-requisites:

Knowledge of OOPs concepts

Course Objectives: The major objective of this course that student should understand to learn the concept of object oriented technology.

Course Content:

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 Concept of Function Overriding.	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 to implement the calculator.	2 hours weekly
10	WAP for Sending e-mail 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: Numerical Analysis	**Course Code : CA 274**
Semester : 1I	**Core / Elective : Core**
Teaching Scheme in Hrs (L:T:P) : 3:1:0:4	**Credits : 3**
Type of course : Lecture + Assignments	**Total Contact Hours : 35**
Continuous Internal Evaluation : 40 Marks	**SEE : 60 Marks**
Programmes: : BSC-IT (GOOGLE APPS)	

Pre-requisites: Student should have the basic knowledge of the Mathematics.

Course Objectives:

To provide the student with numerical methods of solving the non-linear equations, interpolation, differentiation, and integration. - To improve the student's skills in numerical methods by using the numerical analysis software and computer facilities.

Course Content:

Topic and Contents	Hours	Marks
UNIT-1	**07**	**20**
Numerical solutions of non-linear equations: Bisection method, Newton-Raphson method, secant method,		
UNITS-2:	**07**	**20**
Finite difference: Newton 's forward and backward formulas.		
UNITS-3: Interpolation and Polynomial Approximation	**07**	**20**
LagrangePolynomial Divided Differences Hermite Interpolation		
UNIT-4:	**07**	**20**
Trapezoidal rule, etc., Gaussian quadrature and Euler-Maclaurin formula		

UNIT 5:	**07**	**20**
Direct methods for solving linear systems, Euler's, Taylor, Runge-Kutta,		
TOTAL	**35**	**100**

Reference:

Numerical Analysis by R. Burden, and J. D. Faires, PWS-Kent Publishers, 1993.

Course outcomes: On completion of this course student will :

1.Be aware of the use of numerical methods in modern scientific computing,
2. Be familiar with finite precision computation,
3. Be familiar with numerical solutions of nonlinear equations in a single variable,
4. Be familiar with numerical interpolation and approximation of functions,
5. Be familiar with numerical integration and differentiation
6. Be familiar with numerical solution of ordinary differential equations
7. Be familiar with calculation and interpretation of errors in numerical methods,

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
		Mid Term Test		Two tests	20	Midterm Answer books	1 to 8
		Weekly Test		Two Weekly Test	10	Weekly Test Copies	7 to 9
				Two Assignments	10	Log of record	1 to 6
				Total	40		
	ESE	End Sem Evaluation		End of the course	60	Answer scripts	1 to 9
	Student feedback			Middle of the course		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: Numerical Analysis Lab	**Course Code : CA 265**
Semester : 1I	**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 : 40 Marks	**SEE : 60 Marks**
Programmes: : BSC-IT (GOOGLE APPS)	

Pre-requisites: Student should have the basic knowledge of the Mathematics.

Course Objectives:

To provide the student with numerical methods of solving the non-linear equations, interpolation, differentiation, and integration. - To improve the student's skills in numerical methods by using the numerical analysis software and computer facilities.

Course Content:

S.No	Name of Experiments	Hours
1	To deduce error involved in polynomial equation.	2 hours weekly
2	To Find out the root of the Algebraic and Transcendental	2 hours weekly

3	To Find out the root of the Algebraic and Transcendental	2 hours weekly
4	To Find out the root of the Algebraic and Transcendental	2 hours weekly
5	To implement Numerical Integration using Trapezoidal rule.	2 hours weekly
6	To implement Numerical Integration using Simpson 1/3 rule.	2 hours weekly
7	To implement Numerical Integration Simpson 3/8 rule.	2 hours weekly
8	To implement Newton‟s Forward Interpolation formula.	2 hours weekly
9	To implement Newton‟s Backward Interpolation formula	2 hours weekly
10	To implement Newton‟s Forward Interpolation formula.	2 hours weekly

Reference:

Numerical Analysis by R. Burden, and J. D. Faires, PWS-Kent Publishers, 1993.

Course outcomes: On completion of this course student will :

1.Be aware of the use of numerical methods in modern scientific computing,
2. Be familiar with finite precision computation,
3. Be familiar with numerical solutions of nonlinear equations in a single variable,
4. Be familiar with numerical interpolation and approximation of functions,
5. Be familiar with numerical integration and differentiation
6. Be familiar with numerical solution of ordinary differential equations
7. Be familiar with calculation and interpretation of errors in numerical methods,

Course Title:	**Industrial project-I**	Course Code	: PE 205
	Semester: **II**	Core / Elective	: **Core**
Teaching Scheme in Hrs (L:T:P)	: 0**:0:3:2**	Credits	: 2 **Credits**
Type of course	: Experiment	Total Contact Hours	: 2**0**
Continuous Internal Evaluation	: **60 Marks**	SEE	: 40 **Marks**
Programmes: **BSC-IT (GOOGLE APPS)**			

Pre-requisites:

1.Basics in software development phases.

Course Objectives: The major objective of this course that student should understand The student will develop a software application

Course Content:

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

Course outcomes:

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

1.The student will develop a software application

Course Title: **Colloquium lab**		Course Code	: **CA 261**
Semester	: 2	Core / Elective	: Core
Teaching Scheme in Hrs (L:T:P)	: 0:0:3:2	Credits	: 1
Type of course	: Lecture + Assignments	Total Contact Hours	: 20
Continuous Internal Evaluation	: 60 Marks	SEE	: 40 Marks
Programmes: **BSC-IT (GOOGLE APPS)**			

Pre-requisites:

Confidence, knowledge, willing to learn

Course Objectives:

1.Group discussion about various topics will make technical growth of student.

2. Group discussion will increase confidence level of student.

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

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

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

Course Name: EMPLOYABILITY SKILLS – I	Course Code : EM 112
Semester: 2	Core / Elective : Core
Teaching Scheme in Hrs (L:T:P) : 0:2:0:1	Credits : 1
Type of course : Lecture + Assignments	Total Contact Hours : 35
Continuous Internal Evaluation : 40 Marks	SEE : 60 Marks
Programmes: **BSC-IT (GOOGLE APPS)**	

Prerequisites: Basics of Employability Skills

Course Objectives:

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

Course Content:

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 can make student more employable.

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
		Mid Term Test		Two tests	20	Midterm Answer books	1 to 8
		Weekly Test		Two Weekly Test	10	Weekly Test Copies	7 to 9
				Two Assignments	10	Log of record	1 to 6
				Total	**40**		
	ESE	End Sem Evaluation		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: ACCOUNTING AND FINANCIAL MANAGEMENT	Course Code : BM 517
Semester: 2	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
Programmes: **BSC-IT (GOOGLE APPS)**	

Prerequisites: Basics of Accounting

Course Objectives:

1.Learning the basic concept of accounting .
2 Learning the basic of accounting ratios.
3 Analysing the basic gross profit ratio.
4 Learning the basics of cost accounting.
5.Learning the basics of marginal costing.

Course Content:

Topic and Contents	Hours
UNIT-1: DEFINING ACCOUNTING	07
Definition of Accounting and its advantages & limitations, Scope of accounting, Branches of Accounting – Financial Accounting – Cost Accounting – Management Accounting, users of Accounting information, Methods of Accounting, Double Entry Accounting System, Types of Accounts and Rules for Debit and Credit. Cash and Credit Transaction, Cash discount and Trade discount. Preparation of Journal, Ledger and Trial Balance. Final Accounts and Accounting Ratios, Preparation of Final Accounts (Sole Proprietorship only), Preparation of Trading A/c, Profit & Loss A/c and Balance Sheet covering simple adjustments	
UNITS-2: ACCOUNTING RATIOS	07
Accounting Ratios: Meaning, Advantages and Limitations of Accounting ratios Computation of following ratios only	
UNITS-3: GROSS PROFIT RATIO	07
Gross Profit Ratio, Net Profit Ratio, Stock Turnover Ratio, Operating Ratio, Current Ratio, Liquid Ratio, Debtors Ratio, Creditors Ratio, Return on Capital Employed, Earning Per Share, Return on shareholders fund.	
UNIT-4: COST ACCOUNTING	07
Cost Accounting: Meaning and definition of Cost Accounting – its Advantages & Limitations Budgetary Control, Definitions – Advantages – Limitations, Procedure for setting up Budgetary Control, Different types of budgets, Advantages and limitations of Cash Budget and preparation of Cash Budget.	
UNIT 5: MARGINAL COSTING	07
Meaning-Advantages- Limitations, Break Even Point, Margin of Safety, Profit Volume Ratio, Application of Marginal Costing including simple problems on make or buy and product mix..	
TOTAL	**35**

Reference:

1. Accounting by Steven M. Bragg

Course outcomes:

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

1.Will Learn the important concept of accounting .

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
		Mid Term Test		Two tests	20	Midterm Answer books	1 to 8
		Weekly Test		Two Weekly Test	10	Weekly Test Copies	7 to 9
				Two Assignments	10	Log of record	1 to 6
				Total	**40**		
	ESE	End Sem Evaluation		End of the course	60	Answer scripts at BTE	1 to 9
	Student feedback			Middle of the course		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: Cyber law & IT Security	**Course Code : CA 221**
Semester : II	**Core / Elective : Elective**
Teaching Scheme in Hrs (L:T:P) : 3:0:0:3	**Credits : 3 Credits**
Type of course : Lecture + Assignments	**Total Contact Hours : 35**
Continuous Internal Evaluation : 40 Marks	**SEE : 60 Marks**
Programmes: : BSC-IT (GOOGLE APPS)	

Pre-requisites: Student should have Knowledge of internet.

- **Course Objectives:** This course enables students to understand web page site planning, management and maintenance. The course explains the concepts of Cyber Crimes against Individuals, Institution and State ,Hacking ,Digital Forgery

Course Content:

Topic and Contents	Hours
Unit I: Introduction	**7**
Computers and its Impact in Society ,Overview of Computer and Web Technology, Need for Cyber Law , Cyber Jurisprudence at International and Indian Level	
Unit II	**7**
Cyber Law - International Perspectives ,UN & International Telecommunication Union (ITU) Initiatives ,Council of Europe - Budapest Convention on Cybercrime, Asia-Pacific Economic Cooperation (APEC), Organization for Economic Co-operation and Development (OECD), World Bank,Commonwealth of Nations	
Unit III	**7**
Constitutional & Human Rights Issues in Cyberspace,Freedom of Speech and Expression in Cyberspace,Right to Access Cyberspace – Access to	

Internet,Right to Privacy,right to Data Protection	
Unit IV	**7**
Cyber Crimes & Legal Framework , Cyber Crimes against Individuals, Institution and State , Hacking , Digital Forgery , Cyber Stalking/Harassment , Cyber Pornography , Identity Theft & Fraud , Cyber terrorism , Cyber Defamation , Different offences under IT Act, 2000	
Unit V	**7**
Cyber Defamation , Different Types of Civil Wrongs under the IT Act, 2000 Intellectual Property Issues in Cyber Space	
Total	**35**

Course outcomes:

On successful completion of this course student will be able to know about cyber security,cyber law.he will make his/her career in the area of cyber 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	Evidence collected	Contributing to course outcomes
		Mid Term Test		Two tests	20	Midterm Answer books	1 to 8
		Weekly Test		Two Weekly Test	10	Weekly Test Copies	7 to 9
				Two Assignments	10	Log of record	1 to 6
				Total	**40**		
	ESE	End Sem Evaluation		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: Web development	Course Code : CA 111
Semester: **II**	Core / Elective : **Elective**
Teaching Scheme in Hrs (L:T:P) : 3**:0:0**	Credits : **3 Credits**
Type of course : **Lecture + Assignments**	Total Contact Hours : **35**
Continuous Internal Evaluation : **40 Marks**	SEE : **60 Marks**
Programme: **BSC-IT (GOOGLE APPS)**	

Prerequisites: 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 Content:

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:	7
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	
TOTAL	**35**

Reference:

1. Complete reference HTML.
2. JavaScript Bible
3. HTML, DHTML, JavaScript, Perl & CGI Ivan Bayross
4. VBScript Programmer's reference wrox Press
5. VBScript in Nutshell
6. Internet Technology at work Hofstetter fred
7. Beginning XML Wrox Press
8. XML how to program Deitel & Deitel.
9. Programming the World Wide Web Robert W. Sebesta

Course outcomes:

- Understand, analyze and apply the role languages like HTML, CSS, XML, JavaScript and protocols in the workings of web and web applications.
- Understand about network and security programming using Java and know about the application of dynamic page functionality in web pages using CGI, Servlets, JSP, ASP.
- Create and communicate between client and server using Java and create a good, effective and dynamic website.

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
		Mid Term Test		Two tests	20	Midterm Answer books	1 to 8
		Weekly Test		Two Weekly Test	10	Weekly Test Copies	7 to 9
				Two Assignments	10	Log of record	1 to 6
				Total	**40**		
	ESE	End Sem Evaluation		End of the course	60	Answer scripts	1 to 9
	Student feedback			Middle of the course		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

SURESH GYAN VIHAR UNIVERSITY

Accredited by NAAC with 'A' Grade

Learning Center Of Excellence With Google

DEPARTMENT OF COMPUTER APPLICATIONS

Teaching and Examination Scheme for Bachelor of Science

(Information technogy)

3 Year Course

EFFECTIVE FROM ACADEMIC SESSION 2017-18

Year: II **Semester: III**

S. No.		Course Code	Course Name	Credits LTPC	Exam Hrs.	Weightage (in%)	
						CE	ESE
1		CA 271	Introduction to Android	3003	3	40	60
2		CA 213	Database Management System	3003	3	40	60
3		CA 281	Android Lab	0032	2	60	40
4		CA 257	Industrial Project Oriented DBMS Lab	0032	3	60	40
6		PE 308	Industrial Project II	0032	2	60	40
7		EC 359	Digital Electronics	3003	3	40	60
8		EC 358	Digital Electronics Lab	0021	3	60	40
9		CA 283	Angular JS Lab	0021	2	60	40
10		CA 273	Angular JS	3103	3	40	60
11		CA 211	Computer Organization & Architecture	3104	3	40	60
12		EM 201	Employability Skills – II	0201	3	40	60
		CA 212	Introduction to information System	3003	3	40	60
13		SM 302	Pratical Training Seminar I	0032	2	60	40
14		DE 201	Proficiency in Co-curricular Activities – III	2002	-	100	-
		FD104	Foundation Course II	1.5			
			Total	25.5			

Course Title: **Introduction To Android**		Course Code	: **CA 271**
Semester: III		Core / Elective	: **Core**
Teaching Scheme in Hrs (L:T:P)	: 3**:0:0:3**	Credits	: **3Credits**
Type of course	: **Lecture**	Total Contact Hours	: 35
Continuous Internal Evaluation	: **40 Marks**	SEE	: **60 Marks**
Programmes: **BSC-IT (GOOGLE APPS)**			

Prerequisites: Student should have basic knowledge of java and mysql database.

Course Objectives:

To equipped student with latest domain specific Technical knowledge and make him employable.

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
4	**Fragments** What is Fragment? Creating a Fragment Fragment Lifecycle 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:

Reference Books:

1) **"Professional Android 4 Application Development" by Reto Meier**
2) **"Hello, Android Introducing Google's Mobile Development Platform" by Ed Burnette**

Course outcomes:

On successful completion of the course, the studentposses latest domain specific Technical knowledge and make him employable.

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
		Mid Term Test		Two tests	20	Midterm Answer books	1 to 8
		Weekly Test		Two Weekly Test	10	Weekly Test Copies	7 to 9
				Two Assignments	10	Log of record	1 to 6
				Total	**40**		
	ESE	End Sem Evaluation		End of the course	60	Answer scripts	1 to 9
	Student feedback			Middle of the course		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

ourse Title: **DataBase Management System**		Course Code	: CA 213
Semester: 3		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
Programmes: **BSC-IT (GOOGLE APPS)**			

Prerequisites: Student should have basic knowledge about data,information,operating system.

Course Objectives:

To Learn about basic structure of dbms,data model,databases,sql database.

Course Content:

Topic and Contents	Hours
UNIT-1: OVERVIEW OF DBMS	07
Overview of DBMS, Basic DBMS terminology, data base system v/s file system, data independence. Architecture of a DBMS	
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: DATA MODELING	07
Data modeling using the Entity Relationship Model: ER model concepts, notation for ER diagram, mapping constraints, keys, Concepts of Super Key, candidate key, primary key, Generalization, aggregation, reduction of an ER diagrams to tables, extended ER model, relationships of higher degree	
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 data types 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:

1. Database Management Systems by Raghu Ramakrishnan

2.Fundamentals of Database Management Systems by Mark L. Gillenson

Course outcomes:

On successful completion of the course, the student will be able to learn about basic structure of dbms,data model,databases,sql database.

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
		Mid Term Test		Two tests	20	Midterm Answer books	1 to 8
		Weekly Test		Two Weekly Test	10	Weekly Test Copies	7 to 9
				Two Assignments	10	Log of record	1 to 6
				Total	**40**		

	ESE	End Sem Evaluation		End of the course	60	Answer scripts	1 to 9
	Student feedback			Middle of the course		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: **Android Lab**		Course Code	: **CA 281**
Semester : III		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	: 20
Continuous Internal Evaluation	: **40 Marks**	SEE	: **60 Marks**
Programmes: **BSC-IT (GOOGLE APPS)**			

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:

Reference Books:

1) **"Professional Android 4 Application Development" by Reto Meier**
2) **"Hello, Android Introducing Google's Mobile Development Platform" by Ed Burnette**

Course outcomes: *On successful completion of the course, the studentposses* latest domain specific Technical knowledge and make him employable.

Course Title: **INDUSTRIAL PROJECT ORIENTED DBMS LAB**		Course Code	: CA 257
Semester : 3		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	SEE	: 40 Marks
Programmes: **BSC-IT (GOOGLE APPS)**			

Prerequisites: Student should have basic knowledge about data,information,operating system.

Course Objectives:

To Learn about basic structure of dbms,data model,databases,sql database.

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:

In depth learning of dbms concepts through development of project.

Course Title: DIGITAL ELECTRONICS		**Course Code**	**: EC359**
Semester	**: 3**	**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**
Programmes: : BSC-IT (GOOGLE APPS)			

Pre-requisites: Student should have knowledge of Mathematics.

Course Objectives:

The student will learn the basics of digital electronics, number system,logic gates,flip flop,maps etc.

Course Content:

Topic and Contents	Hours	Marks
UNIT-1: BINARY SYSTEMS AND LOGIC CIRCUITS	**07**	**20**
The Advantage of Binary, Number Systems, The Use of Binary in Digital Systems, Logic		
UNITS-2: BOOLEAN ALGEBRA AND MAPPING METHODS	**07**	**20**
Boolean Algebra, Karnaugh Maps, Variable Entered Maps, Realizing Logic Function with Gates, Combinational Design Examples.		

UNITS-3: LOGIC FUNCTION REALIZATION WITH MSI CIRCUITS	**08**	**20**
Combinational Logic with Multiplexers and Decoders, Standard Logic Functions with MSI Circuits, Design Problem Using MSI Circuits.		
UNIT-4: FLIP FLOPS, COUNTERS AND REGISTERS	**07**	**20**
Flip Flops and its Applications		
UNIT 5: INTRODUCTION TO STATE MACHINES:	**07**	**20**
The Need for State Machines, The State Machine, Basic Concepts in State Machine Analysis.		
TOTAL	**36**	**100**

Reference:

1.Digital Electronics : An Introduction To Theory And Practice by William Gothmann H

Course outcomes:

On successful completion of the course, the student will be able to learn the basics of digital electronics, number system,logic gates,flip flop,maps etc.

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
		Mid Term Test		**Two tests**	**20**	**Midterm Answer books**	**1 to 8**
		Weekly Test		**Two Weekly Test**	**10**	**Weekly Test Copies**	**7 to 9**

		Graded Assignments		Two Assignments	10	Log of record	1 to 6
				Total	25		
	ESE	End Sem Evaluation		End of the course	60	Answer scripts at BTE	1 to 9
	Student feedback			Middle of the course		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: DIGITAL ELECTRONICS LAB		**Course Code**	**: EC358**
Semester	**: 3**	**Core / Elective**	**: Core**
Teaching Scheme in Hrs (L:T:P)	**: 0:0:2:1**	**Credits**	**: 1**
Type of course	**: Experiment**	**Total Contact Hours**	**: 20**
Continuous Internal Evaluation	**: 60 Marks**	**SEE**	**: 40 Marks**
Programmes: : BSC-IT (GOOGLE APPS)			

Pre-requisites: Student should have knowledge of Mathematics.

Course Objectives:

The student will learn the basics of digital electronics, number system,logic gates,flip flop,maps etc.

S.No.	Name of Experiments	Hours
1	Introduction to Digital Electronics lab- nomenclature of digital	

	ICS,1 specifications, study of the data sheet, concept of vcc and ground,verification of the truth tables of logic gates using TTL ICS. 3-6	
2	Implementation of the given Boolean function using logic gates in both sop and pos forms.	
3	Verification of state tables of RS, JK, T and D flip-flops using 3 NAND & nor gates.	
4	Implementation and verification of decoder/de-multiplexer and 4 encoder using logic gates.	
5	Design and verify the 4-bit asynchronous counter. 25-	
6	Design and verify the 4-bit synchronous counter.	
7	Implementation of 4-bit parallel adder using 7483 IC.	
8	Implementation of 4x1 multiplexer using logic gates	
9	10 To design and verify operation of half subtractor.	
	To design & verify the operation of magnitude	

Reference:

1.Digital Electronics : An Introduction To Theory And Practice by William Gothmann H

Course outcomes:

On successful completion of the course, the student will be able to learn the basics of digital electronics, number system,logic gates,flip flop,maps etc.

Course Title: **Industrial project-II**		Course Code	: PE 308
Semester	: **III**	Core / Elective	: **Core**
Teaching Scheme in Hrs (L:T:P)	: 0**:0:3:2**	Credits	: 2 **Credits**
Type of course	: Experiment	Total Contact Hours	: 20
Continuous Internal Evaluation	: **60 Marks**	SEE	: 40 **Marks**
Programmes: **BSC-IT (GOOGLE APPS)**			

Pre-requisites:

Basics knowledge of software and its phase development.

Course Objectives:

Student have to develop Software application with the help of software industry.

Course Content:

Topic and Contents	Hours	Marks
	2 hrs. weekly	
Software application development with the help of software industry.		

Course outcomes:

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

1) *Develop industry academia relationship,which will provide help him to make himself employable.*

Course Title: **Angular JS**		Course Code	: CA 273
Semester: **3**		Core / Elective	: **Elective**
Teaching Scheme in Hrs (L:T:P)	: 3**:1:0:3**	Credits	: **3 Credits**
Type of course	: **Lecture + Assignments**	Total Contact Hours	: **35**
Continuous Internal Evaluation	: **40 Marks**	SEE	: **60 Marks**
Program: BSC-IT (GOOGLE APPS)			

Prerequisites: Student should have basic Knowledge about JavaScript,Html,CSS.

Course Objectives:

The objective of this course is to empower students to create web applications in a more effective manner and as per the latest need of the industry.

Course Content:

Unit	Topic and Contents	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	7
5	**Directives -** Simple directives, Using templates, Working with controllers, Transclusion, Directive scope and isolate 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	7
	Total	35

Reference:

1. Pro AngularJS By: Adam Freeman .

Course outcomes:

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

1. Learn about the basic components of Java script
2. Learn about the angular js
3. Learn about the lightweight website design.

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
		Mid Term		Two tests	20	Midterm	1 to 8

T ASSMENT	CIE	Test				Answer books	
		Weekly Test		Two Weekly Test	10	Weekly Test Copies	7 to 9
				Two Assignments	10	Log of record	1 to 6
				Total	**40**		
	ESE	End Sem Evaluation		End of the course	60	Answer scripts	1 to 9
	Student feedback			Middle of the course		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: **Angular JS Lab**		Course Code	: **CA 283**
Semester: III		Core / Elective	: **Elective**
Teaching Scheme in Hrs (L:T:P)	: 0**:0:2:1**	Credits	: **1Credits**
Type of course	: **Practical Assignments**	Total Contact Hours	: 20
Continuous Internal Evaluation	: **40 Marks**	SEE	: **60 Marks**
Programmes: **BSC-IT (GOOGLE APPS)**			

Prerequisites: Student should have basic Knowledge about JavaScript,Html,CSS.

Course Objectives:

The objective of this course is to empower students to create web applications in a more effective manner and as per the latest need of the industry.

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

Reference:

Reference Books: 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 develop website designing with the help of angular js.

urse Name:COMPUTER ORGANIZATION & ARCHITECTURE		Course Code	: CA 211
Semester: 3		Core / Elective	: Elective
Teaching Scheme in Hrs (L:T:P)	: 3:1:0:4	Credits	: 3
Type of course	: Lecture + Assignments	Total Contact Hours	: 35
Continuous Internal Evaluation	: 40 Marks	SEE	: 60 Marks
Programmes: **BSC-IT (GOOGLE APPS)**			

Prerequisites: Student should know the functioning of computer system.

Course Objectives:

1.To impart complete knowledge about computer components,designing and complete internal functionality of computer system.

Course Content:

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 multiplier Booth'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:

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

Course outcomes:

On successful completion of the course, the student will be able to to learned complete knowledge about computer components,designing and complete internal functionality of computer system.

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
		Mid Term Test		Two tests	20	Midterm Answer books	1 to 8
		Weekly Test		Two Weekly Test	10	Weekly Test Copies	7 to 9
				Two Assignments	10	Log of record	1 to 6

				Total	**40**		
	ESE	End Sem Evaluation		End of the course	60	Answer scripts	1 to 9
	Student feedback			Middle of the course		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: **EMPLOYABILITY SKILLS – II**	Course Code : **EM 201**
Semester: 3	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
Programmes: **BSC-IT (GOOGLE APPS)**	

Pre-requisites: Employability skills -I

Course Objectives: To Learn the basics of mindfulness, basics of DBT life skills, basics of interpersonal effectiveness,Will learn the basics of disorders,Will learn the basics of dialectic.

Course Content:

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:

1.Employability skills by David W.G. Hind

Course outcomes:

1) Learn the basics of mindfulness, basics of DBT life skills, basics of interpersonal effectiveness,Will learn the basics of disorders,Will learn the basics of dialectic to make him employable.

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
		Mid Term Test		Two tests	20	Midterm Answer books	1 to 8
		Weekly Test		Two Weekly Test	10	Weekly Test Copies	7 to 9
				Two Assignments	10	Log of record	1 to 6
				Total	**40**		

	ESE	End Sem Evaluation		End of the course	60	Answer scripts	1 to 9
	Student feedback			Middle of the course		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: Introduction of information system	**Course Code : CA 212**
Semester : III	**Core / Elective : Core**
Teaching Scheme in Hrs (L:T:P) : 0:2:0:1	**Credits : 3Credits**
Type of course : Lecture	**Total Contact Hours : 36**
Continuous Internal Evaluation : 40 Marks	**SEE : 60 Marks**
Programmes: : BSC-IT (GOOGLE APPS)	

Prerequisites: Student should be aware about the information system,Software development life cycle,System Requirements.

Course Objectives:

The objective of this course is to provide knowledge of information system and knowledge system.

Units	Course Contents	Total Contact Hrs.
1	Information Systems and the Environment: Overview and Perspectives, The Information Technology Revolution and Industrial Ecology, The Information Revolution and Sustainability: Mutually Reinforcing Dimensions of the Human Future	7
2	Intellectual Property Rights in Data, Information Systems within the Firm, Improving Environmental Knowledge Sharing, Using Environmental Knowledge Systems	7

3	Environmental Information Management Systems , Environmental Knowledge-Sharing in Manufacturing, Modular Design for Recyclability: Implementation and Knowledge Dissemination	8
4	Environmental Information in Supply-Chain Design and Coordination, Simulation Models for Information Sharing and Collaboration	8
5	Opportunities for Collaboration and New Technologies, Knowledge Networking for Global Sustainability: New Modes of Cyberpartnering	8
	Total	38

Reference Books:

1. Information Systems and the Environment, The National Academic Press

Course outcomes: On successful completion of this course student will be able to learn about information system,Software development life cycle,System Requirements.

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
		Mid Term Test		Two tests	20	Midterm Answer books	1 to 8
		Weekly Test		Two Weekly Test	10	Weekly Test Copies	7 to 9
				Two Assignments	10	Log of record	1 to 6
				Total	**40**		
	ESE	End Sem Evaluation		End of the course	60	Answer scripts	1 to 9
	Student feedback			Middle of the course		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: **PRACTICAL TRAINING SEMINAR I**	Course Code : **SM 302**
Semester : 3	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	SEE : 40 Marks
Programmes: **BSC-IT (GOOGLE APPS)**	

Prerequisites: 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 demostration of his project in front of experts.

Course Content:

Units	List of Experiments	Total Contact Hrs. 10
1	Preparation / demostration 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.

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

Learning Center Of Excellence With Google

DEPARTMENT OF COMPUTER APPLICATIONS

Teaching and Examination Scheme for Bachelor Of Computer Science(Information Technology)

3 Year Course

EFFECTIVE FROM ACADEMIC SESSION 2017-18

Year: II **Semester: IV**

S. No.		Course Code	Course Name	Credits	Exam Hrs.	Weightage (in%)	
						CE	ESE
1		CA 208	Data Structure & Algorithm	3003	3	40	60
2		CA 216	Software Engineering Fundamentals	3003	3	40	60
3		CA 286	Android Project Lab	0032	2	60	40
4		CA 256	Data Structure Algorithm Lab	0032	2	60	40
5		PE 204	Project Stage-I	0032	2	60	40
6		CA 264	LINUX Lab	0032	2	60	40
8		CA 224	Data Warehousing & Mining Concepts	3104	3	40	60
9		CA 220	Big Data Analysis	3104	3	40	60
11		CA 228	Open Source Technologies	3104	3	40	60
12		CA 113	Programming Logic & Techniques	3104	3	40	60
15		EM 202	Employability Skills – III	3001	3	40	60
16		CA 270	Management of Information System	3003	3	40	60
		CA 272	Computational Mathematics	3003	3	40	60
17		DE 202	Proficiency in Co-curricular Activities – IV	2002	-	100	-
			Total	27			

Course Title: DATA STRUCTURE AND ALGORITHM		Course Code	: CA 208
Semester: **IV**		Core / Elective	: **Core**
Teaching Scheme in Hrs (L:T:P)	: 3**:0:0:3**	Credits	: **3 Credits**
Type of course	: **Lecture + Assignments**	Total Contact Hours	: **35**
Continuous Internal Evaluation	: **40 Marks**	SEE	: **60 Marks**

Programme: **BSC-IT (GOOGLE APPS)**

Pre-requisites:

Student should have Basic knowledge of C programming language.

Course Objectives:

1.Apply the concept of some C algorithm.
2.Apply the C language code for illustration.
3.Analyse the algorithm.

Course Content:

Topic and Contents	Hours
UNIT-1 : INTRODUCTION	7
The concept of data structure, Abstract data type, Concept of list & array Introduction to stack, Stack as an abstract data type, primitive operation on stack, Stacks application: Infix, postfix, Prefix and Recursion, Multiple Stack.	
UNITS-2 : QUEUES	07
Introduction to queues, Primitive Operations on the Queues, Queue as an abstract data type, Circular queue, Dequeue, Priority queue, Applications of queue	
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 : TREES	7
TREES - Basic Terminology, Binary Trees, Tree Representations using Array & Linked List, Basic operation on Binary tree, Traversal of binary trees:- Inorder, Preorder & postorder, Application of Binary tree, Threaded binary tree, B-tree & Height balanced tree, Binary tree representation of trees	
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:

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

Course outcomes:

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

1.Will find the analysis of algorithms using C implementation

2.Will able to Determine complexity of various types of algorithms.

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
		Mid Term Test		Two tests	20	Midterm Answer books	1 to 8
		Weekly Test		Two Weekly Test	10	Weekly Test Copies	7 to 9
				Two Assignments	10	Log of record	1 to 6
				Total	**40**		
	ESE	End Sem Evaluation		End of the course	60	Answer scripts	1 to 9
	Student feedback			Middle of the course		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: **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 **Credits**
Type of course	: **Lecture + Assignments**	Total Contact Hours	: **35**
Continuous Internal Evaluation	: **40 Marks**	SEE	: **60 Marks**
Programme: **BSC-IT (GOOGLE APPS)**			

Pre-requisites:

Basics in software and its various merits and demerits.

Course Objectives:

1. Apply the concept of software development life cycle.
2. Apply the software testing.

Course Content:

Topic and Contents	Hours
UNIT-1: INTRODUCTION	7
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 PROJECT MANAGEMENT	07
Software Project Management: Project Management Process, Feasibility Study, Software Project Planning, Project Execution, Monitoring and Control, Project Termination Analysis, SCM, Process Management Process, CMM, Risk Management Process, Software Project Planning, Scheduling a Software Project.	
UNITS-3: REQUIREMENT ENGINEERING	07
Requirement Engineering: Introduction to Requirement Engineering, Functional Requirements, Non-Functional Requirements, Domain Requirements, Requirement Engineering Process, Software Requirements Specification (SRS)	
UNIT-4: STRUCTURED ANALYSIS & DESIGN	7

Data Modeling,Data Objects, Attributes And Relationships,Cardinality And Modality, Entity-Relationship Diagram, Functional Modeling, Data Flow Diagram, Logical And Physical DFDs, Leveling Of DFDs, Control Flow Diagram, Behavioral Modeling, Data Dictionary, Structured English, Decision Trees, Decision Table, Software Design Model, Conceptual and Technical Designs, Characteristics of a Good Design, Design Principles, Design Guidelines, Decomposition and Modularity	
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:

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

Course outcomes:

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

1. Find the analysis of various software models.
2. Find the various testing methods.

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
		Mid Term Test		Two tests	20	Midterm Answer books	1 to 8
		Weekly Test		Two Weekly Test	10	Weekly Test Copies	7 to 9
				Two Assignments	10	Log of record	1 to 6
				Total	**40**		
	ESE	End Sem Evaluation		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

ırse Name: Android Project Lab	Course Code : **CA 286**
Semester: 4th	Core / Elective : **CORE**
Teaching Scheme in Hrs (L:T:P) : 0**:0:3:2**	Credits : **2Credits**
Type of course :practical assignments	Total Contact Hours : 20
Continuous Internal Evaluation : **60 Marks**	SEE : 4**0 Marks**
Programmes **BSC-IT (GOOGLE APPS)**	

Pre-requisites:

Student should have basic knowledge of Java and Android studio.

Course Objectives:

In-depth knowledge about Android application and development.

S.No.	List of Experiments	Total Contact Hrs
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

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 **Credits**
Type of course	:Experiment	Total Contact Hours	: **20**
Continuous Internal Evaluation	: **60 Marks**	SEE	: 40 **Marks**
Programmes: **BSC-IT (GOOGLE APPS)**			

Pre-requisites: Basics of c++ and DSA

Course Objectives:

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

Course Content:

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 **Credits**
Type of course	: Experiment	Total Contact Hours	: 20
Continuous Internal Evaluation	: **60 Marks**	SEE	: 40 **Marks**
Programmes: **BSC-IT (GOOGLE APPS)**			

Pre-requisites:

1.Basic knowledge of software development and its various phases.

Course Objectives:

Student should develop a software application.

Course Content:

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 Title: **LINUX LAB**		Course Code	: CA 264
Semester: **IV**		Core / Elective	: **Core**
Teaching Scheme in Hrs (L:T:P)	: 0**:0:3:2**	Credits	: 2 **Credits**
Type of course	: Practical Experiment	Total Contact Hours	: **20**
Continuous Internal Evaluation	: **60 Marks**	SEE	: 40 **Marks**
Program: BSC-IT (GOOGLE APPS)			

Pre-requisites:

1.Basics of Linux commands.

Course Objectives:

The objective of this course to impart commands related of Linux operating systems.

Course Content:

S.No.	List of Experiments	Total Contact Hrs
1	Introduction to LINUX Operating System.	2 hours weekly
2	Installation of LINUX Operating System (Redhat-5).	2 hours weekly

3	Study of general purpose utilities commands.	2 hours weekly
4	Study of user & session management commands.	2 hours weekly
5	Study of file system navigation commands, text processing tools, communication commands.	2 hours weekly
6	Study of VI editor.	2 hours weekly
7	Study of Shell Script.	2 hours weekly
8	Execute C & C++ programs in Linux.	2 hours weekly
9	Installation using RPM/YUM server.	2 hours weekly
10	Backup using TAR command.	2 hours weekly

Course outcomes:

On successful completion of the course, the student will be able to learn the important commands of Linux operating systems.

Course Title: **DATA WAREHOUSING & MINING CONCEPTS**		Course Code	: CA 224
Semester : **IV**		Core / Elective	: **Elective**
Teaching Scheme in Hrs (L:T:P)	: 3**:1:0:4**	Credits	: **4 Credits**
Type of course	: **Lecture + Assignments**	Total Contact Hours	: **35**
Continuous Internal Evaluation	: **40 Marks**	SEE	: **60 Marks**
Programmes: **BSC-IT (GOOGLE APPS)**			

Pre-requisites:

Basics in DBMS concepts..

Course Objectives:

1.Apply the concept of DBMS.
2.Apply the various data warehouse and mining concepts.

Course Content:

Topic and Contents	Hours
UNIT-1: INTRODUCTION	7
Overview, Motivation (for Data Mining) ,Data Mining-Definition & Functionalities, Data Processing, Form of Data Preprocessing, Data Cleaning: Missing Values, Noisy Data,(Binning, Clustering, Regression, Computer and Human inspection), Inconsistent Data, Data Integration and Transformation. Data Reduction:-Data Cube Aggregation, Dimensionality reduction, Data Compression, Numerosity Reduction, Clustering, Discretization and Concept hierarchy generation.	

UNITS-2: CONCEPT DESCRIPTION	07
Concept Description: Definition, Data Generalization, Analytical Characterization, Analysis of attribute relevance, Mining Class comparisons, Statistical measures in large Databases.	
UNITS-3: MEASURING CENTRAL TENDENCY	07
Measuring Central Tendency, Measuring Dispersion of Data, Graph Displays of Basic Statistical class Description, Mining Association Rules in Large Databases, Association rule mining, mining Single-Dimensional Boolean Association rules from Transactional Databases.	
UNIT-4: DATA WAREHOUSING	7
Data Warehousing: Overview, Definition, Delivery Process, Difference between Database System and Data Warehouse, Multidimensional Data Model, Data Cubes, Stars, Snowflakes, Fact Constellations, Concept hierarchy, Process Architecture, 3 Tier Architecture, Data Marting.	
UNIT 5: OLAP FUNCTIONS	07
Aggregation, Historical information, Query Facility, OLAP function and Tools. OLAP Servers, ROLAP, MOLAP, HOLAP, Data Mining interface, Security, Backup and Recovery, Tuning Data Warehouse, Testing Data Warehouse.	
TOTAL	**35**

Reference:

1.Alex berson,Stephen j.smith"data warehousing,data mining and olap" McGraw hill edition 2001

2.W.H Inmon" Building the data warehouse 3rd edition wiley 2003

Course outcomes:

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

1.Will able to find the concept of data warehousing and mining.

2.Will able to find the merits/demerits of data warehouse.

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
		Mid Term Test		Two tests	20	Midterm Answer books	1 to 8

CT ASSMENT		Weekly Test		Two Weekly Test	10	Weekly Test Copies	7 to 9
				Two Assignments	10	Log of record	1 to 6
				Total	**40**		
	ESE	End Sem Evaluation		End of the course	60	Answer scripts	1 to 9
	Student feedback			Middle of the course		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: **Big Data Analysis**	Course Code : CA 220
Semester: **IV**	Core / Elective : **Elective**
Teaching Scheme in Hrs (L:T:P) : 3**:1:0:4**	Credits : 4 **Credits**
Type of course : **Lecture + Assignments**	Total Contact Hours : **35**
Continuous Internal Evaluation : **40 Marks**	SEE : **60 Marks**
Programmes: **BSC-IT (GOOGLE APPS)**	

Pre-requisites:

1.Basics knowledge of subject

Course Objectives:

To deliver basics of Hadoop , Map-reduce, Pig Latin (the coding language)

● The basics of Analytics – Concepts , Data preparation – merging, managing missing numbers sampling , Data visualisation, Basic statistics

● Lots of practise to ensure that we are very comfortable handling an Analytics project on Big Data

Course Content:

Topic and Contents	Hours
UNIT I – INTRODUCTION TO BIG DATA	7
Introduction – distributed file system – Big Data and its importance, Four Vs, Drivers for Big data,Big data analytics, Big data applications. Algorithms using mapreduce, Matrix-Vector Multiplication by Map Reduce.	
UNIT II – INTRODUCTION HADOOP	07
Big Data – Apache Hadoop Hadoop EcoSystem – Moving Data in and out of Hadoop – Understanding inputs and outputs of MapReduce - Data Serialization.	
UNIT- III HADOOP ARCHITECTURE	07
Hadoop Architecture, Hadoop Storage: HDFS, Common Hadoop Shell commands , Anatomy of File Write and Read., NameNode, Secondary NameNode, and DataNode, Hadoop MapReduce paradigm, Map and Reduce tasks, Job, Task trackers - Cluster Setup – SSH & Hadoop Configuration – HDFS Administering –Monitoring & Maintenance.	
UNIT-IV HADOOP ECOSYSTEM AND YARN	7
Hadoop ecosystem components - Schedulers - Fair and Capacity, Hadoop 2.0 New Features NameNode High Availability, HDFS Federation, MRv2, YARN, Running MRv1 in YARN	
UNIT-V HIVE AND HIVEQL, HBASE	07
Hive Architecture and Installation, Comparison with Traditional Database, HiveQL– Querying Data - Sorting And Aggregating, MapReduce Scripts, Joins and Subqueries, HBase concepts Advanced Usage, Schema Design, Advance Indexing - PIG, Zookeeper - how it helps in monitoring a cluster, HBase uses Zookeeper and how to Build Applications with Zookeeper	
TOTAL	**35**

Reference:

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

Course outcomes:

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

At the end of the course, students will possess the skills necessary for utilizing tools (including deploying them on Hadoop/MapReduce) to handle a variety of big data analytics, and to be able to apply the analytics techniques on a variety of applications.

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
		Mid Term Test		Two tests	20	Midterm Answer books	1 to 8
		Weekly Test		Two Weekly Test	10	Weekly Test Copies	7 to 9
				Two Assignments	10	Log of record	1 to 6
				Total	**40**		
	ESE	End Sem Evaluation		End of the course	60	Answer scripts	1 to 9
	Student feedback			Middle of the course		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: Open Source Technology	**Course Code : CA 228**
Semester: IV	**Core / Elective : Core**
Teaching Scheme in Hrs (L:T:P) : 3:1:0:4	**Credits : 4 Credits**

Type of course	**: Lecture + Assignments**	**Total Contact Hours**	**: 35**
Continuous Internal Evaluation	**: 40 Marks**	**SEE**	**: 60 Marks**
Programmes: BSC-IT (GOOGLE APPS)			

Pre-requisites:

1.Basics of operating system**.**

Course Objectives:

The objective of this course is to develop a clear sense to student about recent technologies i.e. Open source Tools and technologies.

Course Content:

Topic and Contents	Hours
UNIT-1:	7
Introduction : Open Source, Free Software, Free Software vs. Open Source software, Public Domain Software, FOSS does not mean no cost. History : OBSD, The Free Software Foundation and the GNU Project.	
UNITS-2	07
Open Source History, Initiatives, Principle and methodologies. Philosophy : Software Freedom, Open Source Development Model Licences and Patents: What Is A License, Important FOSS Licenses (Apache,BSD,GPL, LGPL), copyrights and copylefted, Patents Economics of FOSS : Zero Marginal Cost, Income-generation opportunities, Problems with traditional commercial software, Internationalization.	
UNITS-3	07
Case Studies : Apache, BSD, Linux, Mozilla (Firefox), Wikipedia, Joomla, GCC, Open Office.	
UNIT-4:	07
Starting and Maintaining an Open Source Project, Open Source Hardware, Open Source Design, Open source Teaching. and Open source media.	
UNIT 5:	07
Open source vs. closed source Open source government, Open source ethics. Social and Financial impacts of open source technology, Shared software, Shared source	
TOTAL	**35**

Reference:

1. Redhat Linux 6.0 Administration Wiley
2. Linux Shell scripting Cookbook: Sarath Lakshman PACKT
3. Linux Lab - Open source Technology :Ambavade -Dreamtech
4. Beginning Android Development Wrox Press

Course outcomes:

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

Ability to install and run open-source operating systems. Ability to gather information about Free and Open Source Software projects from software releases and from sites on the internet. Ability to build and modify one or more Free and Open Source Software packages.

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
		Mid Term Test		Two tests	20	Midterm Answer books	1 to 8
		Weekly Test		Two Weekly Test	10	Weekly Test Copies	7 to 9
				Two Assignments	10	Log of record	1 to 6
				Total	**40**		
	ESE	End Sem Evaluation		End of the course	60	Answer scripts	1 to 9
	Student feedback			Middle of the course		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

urse Name: Programming Logic & Techniques		Course Code	: **CA 113**
Semester: 4		Core / Elective	: Elective
Teaching Scheme in Hrs (L:T:P)	: 3:1:0:4	Credits	: 4
Type of course	: Lecture + Assignments	Total Contact Hours	: 35
Continuous Internal Evaluation	: 40 Marks	SEE	: 60 Marks
Programmes: **BSC-IT (GOOGLE APPS)**			

Prerequisites: Basics of programming

Course Objectives:

1. Learning the basic concepts of programming

Course Content:

Topic and Contents	Hours
UNIT-1: **OVERVIEW**	07
An Overview of Computers and Logic, Structure, Modules, Hierarchy Charts, and Documentation, Writing a Complete Program	
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:

1. Principles of programming language by BPB Publications

Course outcomes:

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

1.Will Learn the basic concepts of programming..

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
		Mid Term Test		Two tests	20	Midterm Answer books	1 to 8
		Weekly Test		Two Weekly Test	10	Weekly Test Copies	7 to 9
				Two Assignments	10	Log of record	1 to 6
				Total	**40**		
	ESE	End Sem Evaluation		End of the course	60	Answer scripts	1 to 9
	Student feedback			Middle of the course		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: **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 **Credits**
Type of course : **Lecture + Assignments**	Total Contact Hours : **35**

Continuous Internal Evaluation : **40 Marks**	SEE : **60 Marks**
Programmes: **BSC-IT (GOOGLE APPS)**	

Pre-requisites:

1. Analytical thinking.

Course Objectives:

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

Course Content:

Topic and Contents	Hours
UNIT-1: INTRODUCTION	7
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	7
Seating Arrangement, Character Puzzles, Direction Sense Test	
UNIT 5: CLASSIFICATION	07
Classification, Data Sufficiency, Arithmetic Reasoning, Verification of Truth	
TOTAL	**35**

Reference:

1.Reasoning' by R.S. Aggarwal

Course outcomes:

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

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

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
		Mid Term Test		Two tests	20	Midterm Answer books	1 to 8

T ASSME NT		Weekly Test		Two Weekly Test	10	Weekly Test Copies	7 to 9
				Two Assignments	10	Log of record	1 to 6
				Total	**40**		
	ESE	End Sem Evaluation		End of the course	60	Answer scripts	1 to 9
	Student feedback			Middle of the course		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: MANAGEMENT OF INFORMATION SYSTEM		**Course Code**	**: CA 270**
Semester	**: 4**	**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**
Programmes: : BSC-IT (GOOGLE APPS)			

Pre-requisites:

Student should have basic knowledge of SDLC , data ,information.

Course Objectives:

Student will learn about the management information system, application of management information system.

Course Content:

Topic and Contents	Hours
UNIT-1: INTRODUCTION	**07**
Introduction, MIS concept, Definition, role & Impact of MIS, Process of management, organization structure & behavior.	
UNITS-2: BASIC OF MANAGEMENT INFORMATION SYSTEM	**07**
Basic of Management Information System Decision Making, Information concepts, System concepts & control Types of system handling system complexity System development model	
UNITS-3: DEVELOPMENT OF MANAGEMENT INFORMATION SYSTEM	**07**
Development of Management Information System Requirement and implementation of MIS, Choice of information Technology for Management Information System.	
UNIT-4: APPLICATION OF MANAGEMENT INFORMATION SYSTEM	**07**
Application of Management Information system Application in manufacturing sector using for personal management, financial management, Production Management, Material Management, Marketing Management Application in Service Sector.	
UNIT 5: ERP	**07**
Enterprise Resource Planning (ERP), EMS, ERP, Benefits implementation, EMS & MIS. Case Studies.	
TOTAL	**35**

Reference:

1. Analysis of financial management by Albrecht.

Course outcomes:

On successful completion of the course, student will learn about the management information system, application of management information system.

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	Max Marks	Evidence collected	Contributing to course outcomes

				course)			
		Mid Term Test		Two tests	20	Midterm Answer books	1 to 8
		Weekly Test		Two Weekly Test	10	Weekly Test Copies	7 to 9
				Two Assignments	10	Log of record	1 to 6
				Total	40		
	ESE	End Sem Evaluation		End of the course	60	Answer scripts	1 to 9
	Student feedback			Middle of the course		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: Computational Mathematics	**Course Code : CA 272**
Semester : 1V	**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**
Programmes: : BSC-IT (GOOGLE APPS)	

Pre-requisites: Student should have basic knowledge of mathematics.

Course Objectives:

1. Students should gain an appreciation for the role of computers in mathematics, science and engineering as a complement to analytical and experimental approaches.

2. Students should have a basic knowledge of numerical approximation techniques, know how, why, and when these techniques can be expected to work, and have ability to program simple numerical algorithms in MATLAB or other programming environments.

Course Content:

Topic and Contents	Hours
UNIT-1:	**07**
Introduction to Computational Mathematics, review of Taylor series, numerical error (floating-point representation, computer arithmetic, round-off errors, and loss of significance in numerical computations)	
UNITS-2:	**07**
. Solving Systems of Linear Equations 6 • direct methods (LU factorization) • basic iterative methods (Jacobi, Gauss-Seidel)	
UNITS-3:	**07**
Interpolation polynomial interpolation	
UNIT-4:	**07**
bisection method • Newton's method • secant method • introduction to the solution of systems of nonlinear equations - Newton's method for systems	
UNIT 5:	**07**
Least Squares Problems 5 • Motivation and applications • Least squares fitting with polynomials	
TOTAL	**35**

Reference:Mathematics by Robert E. White

Course outcomes: On successful completion of this course student will able to Solve nonlinear equations using various numerical methods such as bisection method, Newton's method, secant method and fixed point iteration method and implement using a computer.

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	Max Marks	Evidence collected	Contributing to course

				in the course)			outcomes
		Mid Term Test		Two tests	20	Midterm Answer books	1 to 8
		Weekly Test		Two Weekly Test	10	Weekly Test Copies	7 to 9
				Two Assignments	10	Log of record	1 to 6
				Total	40		
	ESE	End Sem Evaluation		End of the course	60	Answer scripts	1 to 9
	Student feedback			Middle of the course		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

Learning Center Of Excellence With Google
DEPARTMENT OF COMPUTER APPLICATIONS
Teaching and Examination Scheme for Bachelor Of Computer Science(Information Technology)
3 Year Course
EFFECTIVE FROM ACADEMIC SESSION 2017-18

Year: III **Semester: V**

S. No.	Course Code	Course Name	Credits LTPC	Exam Hrs.	Weightage (in%)	
					CE	ESE
		Practical & Sessional:				
1	**PT 304**	**Industrial Training**	**18**	**3**	**120**	**80**
		Total	**18**			

Course code: Industrial Training	Course Code : PT 304

Semester: V	Core / Elective : Core
Teaching Scheme in Hrs (L:T:P) : **18**	Credits : **18**
Type of course : Experiment	Total Contact Hours : **18 hrs / Week**
Continuous Internal Evaluation : 80 Marks	SEE : 120 Marks
Programmes: **BSC-IT (GOOGLE APPS)**	

Prerequisites: Domain Specific Knowledge.

Course Objectives:

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

Course Content:

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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DEPARTMENT OF COMPUTER APPLICATIONS
Teaching and Examination Scheme for Bachelor of Computer Science(Information Science
3 Year Course
EFFECTIVE FROM ACADEMIC SESSION 2017-18

Year: III **Semester: VI**

S. No.		Course Code	Course Name	Credits LTPC	Exam Hrs.	Weightage (in%)	
						CE	ESE
1		CA 307	Advance Android Development	3003	3	40	60
2		CA 316	Programming in PYTHON	3003	3	40	60
3		CA 306	Advance Android Development Lab	0021	2	60	40
5		PE 307	Project Stage-II	0032	3	60	40
6		CA 354	PYTHON Lab	0021	2	60	40
7		CA 308	ERP Systems	3003	3	40	60
8		CA 317	Software Quality Assurance	3104	4	40	60
9		CA 309	ASP.NET with C#	3003	3	40	60
10		CA355	ASP.NET Lab	0021	2	60	40
11		CA 311	Computer Networks	3003	3	40	60
		CA 312	Introduction to IOS	3003	3	40	60
12		CA 305	Networking lab	0021	2	60	40
13		EM 301	Employability Skills – IV	3001	3	40	60
		SM 304	Project Training Seminar-II	0032	3	60	40
14		DE 301	Proficiency in Co-curricular Activities – VI	2002	-	100	
15		CA 313	Intellectual Property & Rights	3003	3	40	60
16		BM 606	Foreign Language (French)	3003	3	40	60
17							-
			Total	28			

Course Title: **Advance Android Development**		Course Code	: CA 307
Semester: VI		Core / Elective	:Core
Teaching Scheme in Hrs (L:T:P)	: 3**:0:0:3**	Credits	: **3 Credits**
Type of course	: **Lecture + Assignments**	Total Contact Hours	: **35**
Continuous Internal Evaluation	: **40 Marks**	SEE	: **60 Marks**
Programmes: **BSC-IT (GOOGLE APPS)**			

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 and Contents	Hours
1	**Concept of Adv. Android:** Introduction to adv. Android, activity and intents, testing and debugging backwards compatibility, support library.	7
2	**User Interface:** User interaction with intuitive navigation, delightful user experience, testing your UI.	7
3	**Background Task:**connection to the internet, notification and background tasks, triggering scheduling and optimizing background tasks	7
4	**Data saving retrieving loading:** storing data in your APP, storing data using SQLite, sharing data: content resolvers and content provider, loading data using loaders.	7
5	**Polish & publish :** permission and libraries, security best practices, widgets, publishing your app.	7
	TOTAL	**35**

Reference:

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

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.

Method	What		To whom	When/where (Frequency in the course)	Max Marks	Evidence collected	Contributing to course outcomes
		Mid Term Test		Two tests	20	Midterm Answer books	1 to 8

ASSESS MENT		Weekly Test		Two Weekly Test	10	Weekly Test Copies	7 to 9
				Two Assignments	10	Log of record	1 to 6
				Total	**40**		
	ESE	End Sem Evaluation		End of the course	60	Answer scripts	1 to 9
	Student feedback			Middle of the course		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: **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 Credits**
Type of course	: **Lecture + Assignments**	Total Contact Hours	: **35**
Continuous Internal Evaluation	: **40 Marks**	SEE	: **60 Marks**
Program: **BSC-IT (GOOGLE APPS)**			

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	7
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 datatypes, files, functions, and error handling	
UNITS-2: COMPONENTS OF PYTHON	07
Working with Data. A detailed tour of how to represent and work with data in Python. Covers tuples, lists, dictionaries, and sets. Students will also learn how to effectively use Python's very powerful list processing primitives such as list comprehensions. Finally, this section covers critical aspects of Python's underlying object model including variables, reference counting, copying, and type checking	
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	7
Modules and Libraries. How to organize programs into modules and details on using modules as a tool for creating extensible programs. Concludes with a tour of some of the most commonly used library modules including those related to system administration, text processing, subprocesses, XML parsing, binary data handling, and databases. Also includes information on how to install third-party library modules	
UNIT 5: CLASSES AND OBJECTS	07
Classes and Objects. An introduction to object-oriented programming in Python. Describes how to create new objects, overload operators, and utilize Python special methods. Also covers basic principles of object oriented programming including inheritance and composition. Inside the Python Object System. A detailed look at how objects are implemented in Python. Major topics include object representation, attribute binding, inheritance, memory management, and special properties of classes including properties, slots, and private the dialogues.	
TOTAL	**35**

Reference:

1.1. Learning Python, 5th Edition By marl lut’z.

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
		Mid Term Test		Two tests	20	Midterm Answer books	1 to 8
		Weekly Test		Two Weekly Test	10	Weekly Test Copies	7 to 9
				Two Assignments	10	Log of record	1 to 6
				Total	**40**		
	ESE	End Sem Evaluation		End of the course	60	Answer scripts	1 to 9
	Student feedback			Middle of the course		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: **Advance Android Development Lab**		Course Code	: CA 306
Semester: VI		Core / Elective	:Core
Teaching Scheme in Hrs (L:T:P)	: 0**:0:2:1**	Credits	: **1 Credits**
Type of course	: **Practical Assignments**	Total Contact Hours	: **20**
Continuous Internal Evaluation	: **60 Marks**	SEE	: **40 Marks**

Program: **BSC-IT (GOOGLE APPS)**

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:

S.No.	Experiments	Hours
1	Create activity and debug the app.	2 hours weekly
2	Create user input sections and screen navigation.	2 hours weekly
3	Testing user interface.	2 hours weekly
4	Handling background task.	2 hours weekly
5	Connection to internet.	2 hours weekly
6	Handle Multiple tasks, notification pop up, Broadcast Receiver.	2 hours weekly
7	Overview about SQLite database and its using in android.	2 hours weekly
8	Storing data using SQLite and sorting data.	2 hours weekly
9	Sharing data and loading data using loader.	2 hours weekly
10	Testing the app and Publish.	2 hours weekly

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 Title: **PROJECT STAGE-II**		Course Code	: PE 307
Semester: **VI**		Core / Elective	: **Core**
Teaching Scheme in Hrs (L:T:P)	: 0**:0:3:2**	Credits	: 2 **Credits**
Type of course	: Experiment	Total Contact Hours	: 20
Continuous Internal Evaluation	: **60 Marks**	SEE	: 40 **Marks**
Programmes: **BSC-IT (GOOGLE APPS)**			

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 Title: **PYTHON LAB**		Course Code	: CA 354
Semester: **VI**		Core / Elective	: **Core**
Teaching Scheme in Hrs (L:T:P)	: 0**:0:2:1**	Credits	: 1 **Credits**
Type of course	: Experiments	Total Contact Hours	: **20**
Continuous Internal Evaluation	: **60 Marks**	SEE	: 40 **Marks**
Programmes: **BSC-IT (GOOGLE APPS)**			

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 inorder, preorder, postorder traversal using recursion using python.	2 hours weekly
5	Write a program for finding the Depth First Search of a graph, and Breadth FirstSearchofagraphusing 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 Title: **ERP System**		Course Code	: **CA 308**
Semester	: VI	Core / Elective	:Core
Teaching Scheme in Hrs (L:T:P)	: 3**:0:0:3**	Credits	: **3 Credits**
Type of course	: **Lecture + Assignments**	Total Contact Hours	: **35**
Continuous Internal Evaluation	: **40 Marks**	SEE	: **60 Marks**
Programmes: **: BSC-IT (GOOGLE APPS)**			

Pre-requisites:

Student should have basic knowledge of data, information and system.

Course Objectives:

student able to understand of the fundamental concepts of ERP systems, their architecture, and working on different modules in ERP. Students will also able to develop and design the modules used in ERP systems, and can customize the existing modules of ERP systems.

Course Content:

Topic and Contents	Hours
UNIT-1	7

Enterprise wide information system, Custom built and packaged approaches, Needs and Evolution of ERP Systems, Common myths and evolving realities, ERP and Related Technologies, Business Process Reengineering.	
UNITS-2	07
ERP Benefits, classification, Present global and Indian market scenario,milestones and pitfalls, Forecast, Market players and profiles, Evaluation criterion for ERP product, ERP Life Cycle.	
UNITS-3	08
Analytical Hierarchy Processes (AHP), Various ERP modules and applications, Vendor selection criteria for successful ERP solution.	
UNIT 4	7
ERP implementation strategies, Success and failure factors for implementation, Hidden costs, ERP success inhibitors and accelerators, Management concern for ERP success, Useful guidelines for ERP Implementations.	
UNIT 5	07
Technologies in ERP Systems and Extended ERP, Case Studies Development and Analysis of ERP Implementations in focusing the various issues discussed in above units Learning and Emerging Issues. Concept of E-Governance : Concept, E-Governance frame work, area of application like public sector, service industry.	
TOTAL	**35**

Reference:

Erp ,by Annuzzi (Author)

ERP book by **Dr. P. C. Shejwalkar**

Course outcomes:

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

Understand the basic concepts and technologies used in the field of management information systems; • Have the knowledge of the different types of management information systems;

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
		Mid Term Test		Two tests	20	Midterm Answer books	1 to 8

		Weekly Test		Two Weekly Test	10	Weekly Test Copies	7 to 9
				Two Assignments	10	Log of record	1 to 6
				Total	**40**		
	ESE	End Sem Evaluation		End of the course	60	Answer scripts	1 to 9
	Student feedback			Middle of the course		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: **SOFTWARE QUALITY ASSURANCE**		Course Code	: CA 317
Semester: VI		Core / Elective	: **Elective**
Teaching Scheme in Hrs (L:T:P)	: 3**:1:0:4**	Credits	: **3 Credits**
Type of course	: **Lecture + Assignments**	Total Contact Hours	: **35**
Continuous Internal Evaluation	: **40 Marks**	SEE	: **60 Marks**
Programmes: **BSC-IT (GOOGLE APPS)**			

Pre-requisites:

Student should have basics knowledge of SDLC and quality parameters.

Course Objectives: impart the knowledge of software models and various quality assurance techniques including testing ,verification and validation.

Course Content:

Topic and Contents	Hours

UNIT-1: INTRODUCTION	7
Quality Assurance Activities: Types of Quality Assurance Activities	
UNITS-2: TESTING FUNDAMENTALS	07
Verification and Validation, Testing, Testing Fundamentals	
UNITS-3: PRINCIPLES OF TESTING	07
Strategic Issues in Testing, Test Plan, Testing Principles	
UNIT-4: TESTING STRATEGIES	7
General Testing Strategies, Code Testing, Specification Testing	
UNIT 5: TESTING PROCESS	07
Black Box Testing, White Box Testing, Testing Process	
TOTAL	**35**

Reference:

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

Course outcomes:

On successful completion of the course, the student will be able to deploy software metrices and software quality assurance.

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**
		Mid Term Test		Two tests	20	Midterm Answer books	1 to 8
		Weekly Test		Two Weekly Test	10	Weekly Test Copies	7 to 9
				Two Assignments	10	Log of record	1 to 6
				Total	**40**		

	ESE	End Sem Evaluation		End of the course	60	Answer scripts	1 to 9
	Student feedback			Middle of the course		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: **ASP.NET WITH C#**		Course Code	: CA 309
Semester: VI		Core / Elective	: Elective
Teaching Scheme in Hrs (L:T:P)	: 3**:0:0:3**	Credits	: 3 **Credits**
Type of course	: **Lecture + Assignments**	Total Contact Hours	: **35**
Continuous Internal Evaluation	: **40 Marks**	SEE	: **60 Marks**
Programmes: **BSC-IT (GOOGLE APPS)**			

Pre-requisites:

Student should have basics in Visual Basic/C/ C++ programming language.

Course Objectives: To impart the concept of various Visual Basic/C/C++ algorithms,C/C++ language code for illustration and Analyse the algorithm.

Course Content:

Topic and Contents	Hours
UNIT-1: ASP.NET BASICS	7
Understanding the .Net framework – principal, feature, design, gole, Benefits of .Net framework, Event Logging, Performance Counter, Tracing, CTS, CLS, CLR, .Net class library, GIT, Type of GIT, Assemblies - version, culture,strong name, Type of Assemblies, Metadata, Manifest, MSIL, Managed and Unmanaged code, Memory Management, Garbage Collection,	

Security, Reflection, WPF, WCF, Window Card Space, GAC, CASPOL, REGEN, ILASM, ILDASM. DLL HELL Problem, Page life cycle.	
UNITS-2: INTRODUCTION ADO.NET	07
Ado.Net Basics, Ado.Net object model, Ado.Net class for OLE DB data source, SQL Server, DataSet, Data View, Data Reader, Data Adapter, Data Table, Data Column, Data Row, Difference between Ado and Ado.Net, Communication with OLEDB data source using Ado.Net.	
UNITS-3: UNDERSTANDING CACHING	07
Overview, Introduction to Caching, Client dedicated server, Reverse proxy, Absolute expiration and Relative expiration, Http Cache Policy, HttpCacheability, Output Cache, Http Cache Vary By Params,Http Cache VaryByHeaders, Caching Page Output, Data caching, Page Fragment Caching, Page Output caching.	
UNIT-4: STATE MANAGEMENT	7
Client state management- Viewstate, Hidden field, Cookies, QueryString, Server state management- Application state, Session state, Advantage and Disadvantage of database support.	
UNIT 5: WEB SERVICES AND XML	07
Introduction to xml, Advantage of xml, xml Element, Naming Rules, Attributes, Introduction to web service, web service Infrastructure, SOAP, UDDI, WSDL.	
TOTAL	**35**

Reference:

1.Beginning ASP.NET 3.5 in C# 2008: From Novice to Professional, Second Edition by Matthew MacDonald
2.ASP .NET Programming with C# & SQL Server (The Web Technologies) by Don Gosselin
3.Developing Web Applications with ASP.NET and C# by Hank Meyne and Scott Davis

Course outcomes:

On successful completion of the course, the student will be able to do analysis of ASP.NET implementation and determine complexity of various types of algorithms.

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
		Mid Term Test		Two tests	20	Midterm Answer books	1 to 8
		Weekly Test		Two Weekly Test	10	Weekly Test Copies	7 to 9

		Graded Assignments		Two Assignments	10	Log of record	1 to 6
				Total	**40**		
	ESE	End Sem Evaluation		End of the course	60	Answer scripts	1 to 9
	Student feedback			Middle of the course		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: **ASP.NET LAB (Using C#)**		Course Code	: CA 355
Semester: **VI**		Core / Elective	: **Elective**
Teaching Scheme in Hrs (L:T:P)	: 0**:0:2:1**	Credits	: 1 **Credits**
Type of course	: Experiment	Total Contact Hours	: **10**
Continuous Internal Evaluation	: **60 Marks**	SEE	: 40 **Marks**
Programmes: **BSC-IT (GOOGLE APPS)**			

Pre-requisites:

Student should have basics in Visual Basic/C/ C++ programming language.

Course Objectives: To impart the concept of various Visual Basic/C/C++ algorithms,C/C++ language code for illustration and Analyse the algorithm.

Course Content:

S.No.	Name of Experiments	Total Contact Hours

1	Introduction to Client side scripting.	2 hours weekly
2	ASP.NET page life cycle.	2 hours weekly
3	State management technique.	2 hours weekly
4	Use of advance web controls like File upload, Hyperlink, Linkbutton etc.	2 hours weekly
5	Ad-rotator control.	2 hours weekly
6	Validation controls.	2 hours weekly
7	Grid view control (showing records from Database).	2 hours weekly
8	ADO.NET application to insert, delete, update records in database.	2 hours weekly
9	Data List and Repeater control.	2 hours weekly
10	Introduction to Web services.	2 hours weekly

Course outcomes:

On successful completion of the course, the student will be able to do analysis of ASP.NET implementation and determine complexity of various types of algorithms.

Course Title: **COMPUTER NETWORKS**		Course Code	: CA 311
Semester: V**I**		Core / Elective	: **Elective**
Teaching Scheme in Hrs (L:T:P)	: 3**:0:0:3**	Credits	: **3 Credits**
Type of course	: **Lecture + Assignments**	Total Contact Hours	: **35**
Continuous Internal Evaluation	: **40 Marks**	SEE	: **60 Marks**
Programmes: **BSC-IT (GOOGLE APPS)**			

Pre-requisites:

Student should have basic knowledge of method of communication and communication devices.

Course Objectives:

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

Course Content:

Topic and Contents	Hours
UNIT-1: COMPONENTS	7

Components – Direction of Data flow – networks – Components and Categories – types of Connections – Topologies –Protocols and Standards – ISO / OSI model – Transmission Media – Coaxial Cable – Fiber Optics – Line Coding – Modems – RS232 Interfacing sequences.	
UNITS-2: ERROR – DETECTION AND CORRECTION	07
Error – detection and correction – Parity – LRC – CRC – Hamming code – low Control and Error control - stop and wait – go back-N ARQ – selective repeat ARQ- sliding window – HDLC. - LAN - Ethernet IEEE 802.3 - IEEE 802.4 - IEEE 802.5 - IEEE 802.11 – FDDI - SONET – Bridges.	
UNITS-3: INTERNETWORKS	07
Internetworks – Packet Switching and Datagram approach – IP addressing methods – Subnetting – Routing – Distance Vector Routing – Link State Routing – Routers.	
UNIT-4: DUTIES OF TRANSPORT LAYER	7
Duties of transport layer – Multiplexing – Demultiplexing – Sockets – User Datagram Protocol (UDP) – Transmission Control Protocol (TCP) – Congestion Control – Quality of services (QOS) – Integrated Services.	
UNIT 5: DNS	07
Domain Name Space (DNS) – SMTP – FTP – HTTP - WWW – Security – Cryptography.	
TOTAL	**35**

Reference:

Computer networks by A.S. Tannenbaum

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 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
		Mid Term Test		Two tests	20	Midterm Answer books	1 to 8
		Weekly Test		Two Weekly Test	10	Weekly Test Copies	7 to 9
				Two Assignments	10	Log of record	1 to 6

				Total	**40**		
	ESE	End Sem Evaluation		End of the course	60	Answer scripts	1 to 9
	Student feedback			Middle of the course		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: **NETWORKING LAB**		Course Code	: CA 305
Semester: **VI**		Core / Elective	: E**LECTIVE**
Teaching Scheme in Hrs (L:T:P)	: 0**:0:2:1**	Credits	: 1 **Credits**
Type of course	: Experiments	Total Contact Hours	: 20
Continuous Internal Evaluation	: **60 Marks**	SEE	: 40 **Marks**
Programmes **BSC-IT (GOOGLE APPS)**			

Pre-requisites:

Student should have basic knowledge of method of communication and communication devices.

Course Objectives:

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

Course Content:

S.No.	Name of Experiments	Total Contact Hours
1	PC to PC Communication.	2 hours weekly
2	Parallel Communication using 8 bit parallel cable	2 hours weekly

3	Serial communication using RS 232C	2 hours weekly
4	Ethernet LAN protocol	2 hours weekly
5	To create scenario and study the performance of CSMA/CD protocol through simulation	2 hours weekly
6	Token bus and token ring protocols.	2 hours weekly
7	To create scenario and study the performance of token bus and token ring protocols through simulation	2 hours weekly
8	Wireless LAN protocols	2 hours weekly
9	To create scenario and study the performance of network with CSMA / CA protocol and compare with CSMA/CD protocols.	2 hours weekly
10	.Transfer of files from PC to PC using Windows / Unix socket processing	2 hours weekly

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 Title: **EMPLOYABILITY SKILLS - IV**		Course Code	: EM 301
Semester: VI		Core / Elective	: **Core**
Teaching Scheme in Hrs (L:T:P)	: 3**:0:0:1**	Credits	: 1 **Credits**
Type of course	: **Lecture + Assignments**	Total Contact Hours	: **12**
Continuous Internal Evaluation	: **40 Marks**	SEE	: **60 Marks**
Programmes: **BSC-IT (GOOGLE APPS)**			

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 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**
		Mid Term Test		Two tests	20	Midterm Answer books	1 to 8
		Weekly Test		Two Weekly Test	10	Weekly Test Copies	7 to 9
				Two Assignments	10	Log of record	1 to 6
				Total	**40**		
	ESE	End Sem Evaluation		End of the course	60	Answer scripts	1 to 9
	Student feedback			Middle of the course		Feedback forms	1 to 4, delivery of the course

ASSESS MENT	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: **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 **Credits**
Type of course	: Experiments	Total Contact Hours	: 1**0**
Continuous Internal Evaluation	: **60 Marks**	SEE	: 40 **Marks**
Programmes: **BSC-IT (GOOGLE APPS)**			

Prerequisites: 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 demostration of his project in front of experts.

Course Content:

Units	List of Experiments	Total Contact Hrs. 10
1	Preparation / demostration 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 Title: **INTELLECTUAL PROPERTY &**		Course Code	: CA 313

RIGHTS			
Semester: VI		Core / Elective	:Elective
Teaching Scheme in Hrs (L:T:P)	: 3**:0:0:3**	Credits	: 3 **Credits**
Type of course	: **Lecture**	Total Contact Hours	: **35**
Continuous Internal Evaluation	: **40 Marks**	SEE	: **60 Marks**
Programmes: **BSC-IT (GOOGLE APPS)**			

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
		Mid Term Test		Two tests	20	Midterm Answer books	1 to 8

ASSESS MENT		Weekly Test		Two Weekly Test	10	Weekly Test Copies	7 to 9
				Two Assignments	10	Log of record	1 to 6
				Total	**40**		
	ESE	End Sem Evaluation		End of the course	60	Answer scripts	1 to 9
	Student feedback			Middle of the course		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: **FOREIGN LANGUAGE (FRENCH)**		Course Code	: BM 606
Semester: VI		Core / Elective	: **Elective**
Teaching Scheme in Hrs (L:T:P)	: 3**:0:0:3**	Credits	: 3 **Credits**
Type of course	: **Lecture**	Total Contact Hours	: **35**
Continuous Internal Evaluation	: **40 Marks**	SEE	: **60 Marks**
Programmes: **BSC-IT (GOOGLE APPS)**			

Pre-requisites:

student should have communication skills and interest to learn foreign languages.

Course Objectives:

skill to speak in one of the foreign language will make our student more employable.

Course Content:

Topic and Contents	Hours
UNIT-1: BASIC KNOWLEDGE OF FRENCH	07
Les alphabets , Les Accents – L'accents aigu, L'accent grave , L'accent circonflexe , Lacedilla , Lethrema , L'apostrophe , Le trait d'union , Les Jours de la semaine , Les mois de l'annee , Les saisons , Les nombres – cardinaux et ordinaux , Les couleurs ,Les nationalites , Les salutations , Les professions et les adjectives.	
UNITS-2: GRAMMER – ELEMENTARY KNOWLEDGE OF VERBS AND TENSES	07
conjugations – verbs : i, ii, iii or irregular verbs, articles defines , articles indefinis , sentences - forme affirmative , forme negative , forme interrogative les passe compose	
UNITS-3: TRANSLATION : (FRENCH TO ENGLISH)	07
Paragraph translations from French to English Book referred: Le Francais et la vie: I	
UNIT-4: TRANSLATION : (ENGLISH TO FRENCH)	07
Paragraph translations from English to French Book referred: Le Francais et la vie: I	
UNIT 5: COMPREHENSION	07
Comprehension, Answer the questions based on the text given. The paragraph should be from the prescribed book only, complete the dialogues.	
TOTAL	**35**

Reference:

1.Le Francaise et la vie : I – G.Mauger & Brueizire
2.Larousse compact Dictionary: French-English/ English-French

Course outcomes:

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

1.Will able to find the understand and speak at least one foreign language that is French,which provide more opportunity to our students.language and its writing methods.

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
		Mid Term Test		Two tests	20	Midterm Answer books	1 to 8

ASSMENT		Weekly Test		Two Weekly Test	10	Weekly Test Copies	7 to 9
				Two Assignments	10	Log of record	1 to 6
				Total	**40**		
	ESE	End Sem Evaluation		End of the course	60	Answer scripts	1 to 9
	Student feedback			Middle of the course		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