CANARA COLLEGE

Managed by Canara High School Association, Mangaluru
Reaccredited by NAAC and Affiliated to Mangalore University
Mahatma Gandhi Road, Kodialbail, Mangaluru – 575 003, D. K. District, Karnataka

BACHELOR OF COMPUTER APPLICATIONS (B.C.A.)

[PEOs, POs, PSOs, COs & GAs]

CREDIT BASED SEMESTER SYSTEM (CBSS)

(2012-13 Batch onwards)

BACHELOR OF COMPUTER APPLICATIONS (B.C.A.)

Motto :
"Continuous learning with practical experience"

Vision :
"To be a department of excellence in IT education striving to produce globally competent and socially responsive citizens with IT knowledge in IT industry."

Mission :
"To create an environment to educate, engage and empower the aspirants for IT industry as life-long learners through hands-on learning by mentoring and transforming them as worthy software experts and successful programmers, system analyst, administrators in the ever challenging IT world."

Programme Educational Objectives (PEOs) :

PEO 1	Graduates will have a solid foundation to pursue professional careers and take up higher learning programmes such as MCA or M.Sc. in Information System or B.Ed. etc.
PEO 2	Graduates with skill of self-employment will be able to initiate and build upon start-up companies in Web designing, Graphics, Java or software for IOT devices etc.
PEO 3	They can also opt for joining top level IT industries with high confidence level.
PEO 4	They can be the good computer programmer and design projects for any organizations in systematic manner.

Programme Outcomes (POs) :
Students of B.C.A. degree Programme at the time of graduation will be able to :

PO 1	Gain adequate knowledge of IT education.
PO 2	Acquire professional skills in Linux Operating system, Android, Python etc.
PO 3	Route their own business in designing Web sites, Graphics, Java or software for IOT devices etc.
PO 4	Pursue their higher education in IT.

Graduate Attributes (GAs) :

GA 1	Academic Excellence
GA 2	Professional Efficiency
GA 3	Technical Proficiency
GA 3	Effective Communication Skills
GA 4	Leadership and Team work
GA 5	Life-Long Learning
GA 6	Creativity and Innovation
GA 7	Social Engagement

COURSE OUTCOMES (COs)

FIRST SEMESTER

Course	Details
Code	BCAENL 103
Title	**General Proficiency and Communicative English**
Programme	Bachelor of Computer Applications (B.C.A.)
Year / Semester	First / First
Type	Group-I : Paper-I
Total Credits	02
Total Contact Hours	48
Contact Hours per Week	04
Examination Duration	03 Hours
Max. Marks	CIA : 20 End Semester Exam : 80 Total : 100
Total Modules	5 Lessons+ 5 Poems + 4 Grammar Items
Pedagogy	Lectures with interactive sessions, Use of PPT Presentations
Evaluation Method	Viva-Voce, Assignment, Two Internal Assessment Exam, One End Semester Exam

Learning Objectives :

- To enable the learner to communicate in real-life situations effectively and appropriately.
- To use English effectively throughout the curriculum for study purposes.
- To develop interest in and appreciation of Literatur**e.**
- To develop and integrate the use of the four language skills i.e., reading, listening, speaking and writing.

Expected Learning Outcomes :

Upon the completion of this course, the students will be able to :

CO 1 : Learn reading with comprehension which help the learners to acquire new vocabulary and content.

CO 2 : Read with correct pronunciation, stress, intonation, pause and articulation of voice.

CO 3 : Analyze the various elements of poetry, such as diction, tone, form, genre, imagery, figures of speech, symbolism, and theme.

CO 4 : Critically examine the value and standard of the poem.

CO 5 : Acquire and improve their skills in the four literacy methods: writing, talking, reading and listening.

CO 6 : Increase their awareness of the correct use in writing and speaking of English grammar.

Course	Details
Code	BCAKAL 103
Title	Kannada
Programme	Bachelor of Computer Applications (B.C.A.)
Year / Semester	First / First
Type	Group-I : Paper-I
Total Credits	02
Total Contact Hours	48
Contact Hours per Week	04
Examination Duration	03 Hours
Max. Marks	CIA : 20 End Semester Exam : 80 Total : 100
Total Modules	04 Units
Pedagogy	Lecture with Interactive Sessions, discussions, Debate
Evaluation Method	Viva-Voce, Assignments, Two Internal Exams, One End Semester Exam

Learning Objectives :

ಹಳೆಗನ್ನಡ, ನಡುಗನ್ನಡ, ದಲಿತ ಸಾಹಿತ್ಯ, ದಾಸ ಸಾಹಿತ್ಯ, ಕಥಾ ಸಾಹಿತ್ಯ, ಪರಿಸರ ಉಳಿವು, ಕ್ರಿಯಾತ್ಮಕ ಕನ್ನಡ ಇತ್ಯಾದಿ ವಿಚಾರಗಳಿಗೆ ಸಂಬಂಧಿಸಿದ ಪಠ್ಯಗಳ ಮೂಲಕ ವಿದ್ಯಾರ್ಥಿಗಳ ಜ್ಞಾನವನ್ನು ವಿಸ್ತರಿಸುವುದು.

Expected Learning Outcomes :

ಪಠ್ಯವನ್ನುಪೂರ್ಣಗೊಳಿಸಿದ ಬಳಿಕವಿದ್ಯಾರ್ಥಿಗಳು :

CO 1 : ಪುರಾಣ ಕಥೆಗಳ ಮೂಲಕ ಸತ್ಯ, ತ್ಯಾಗ ಮುಂತಾದ ಮೌಲ್ಯಗಳನ್ನು ಅರಿತುಕೊಳ್ಳುತ್ತಾರೆ.

CO 2 : ಜೀವನದ ನಶ್ವರತೆ, ಬದುಕುವ ಕಲೆಯನ್ನು ತಿಳಿದುಕೊಳ್ಳುತ್ತಾರೆ.

CO 3 : ರಾಜ್ಯ ಸರ್ಕಾರದ ಇಲಾಖೆಗಳಲ್ಲಿ ಉದ್ಯೋಗವನ್ನು ಪಡೆದುಕೊಳ್ಳುವ ನಿಟ್ಟಿನಲ್ಲಿ ತಯಾರಿ ನಡೆಸಲು ಮಾಹಿತಿಯನ್ನುಪಡೆಯುತ್ತಾರೆ.

CO 4 : ಸಾಹಿತ್ಯದ ವಿವಿಧ ಪ್ರಕಾರಗಳನ್ನು ಪರಿಚಯಿಸಿಕೊಳ್ಳುತ್ತಾರೆ.

CO5 : ಹಿರಿಯ ತಲೆಮಾರಿನವರ ಜೀವನರೀತಿಯ ಪರಿಚಯವನ್ನು ಮಾಡಿಕೊಳ್ಳುತ್ತಾರೆ.

Course	Details
Code	BCAHDL 104
Title	**Hindi**
Programme	Bachelor of Computer Applications (B.C.A.)
Year / Semester	First / First
Type	Group-I : Paper-I
Total Credits	02
Total Contact Hours	48
Contact Hours per Week	04
Examination Duration	03 Hours
Max. Marks	CIA : 20 End Semester Exam : 80 Total : 100
Total Modules	04
Pedagogy	Lectures with interactive sessions, use of PPT Presentations, Audio-visual classes, debates, enacting drama
Evaluation Method	Viva-Voce, Assignments, Two Internal Exams, One end term Semester Exam

Learning Objectives :

- To give comprehensive understanding of prescribed stories and grammar syllabus and the authors views on stories.
- To enable the students learn the official language - Hindi.

Expected Learning Outcomes :

Upon the completion of this course, the students will be able to :

CO 1 : Acquire the knowledge of various forms of Hindi literature.

CO 2 : Understand the need of moral values.

CO 3 : Inculcate the required ethics.

CO 4 : Understand the grammar required for creative writing in Hindi.

CO 5 : Gain insights on the emerging trends in Hindi literature.

Course	Details
Code	BCASKL103
Title	**Sanskrit**
Programme	Bachelor of Computer Applications (B.C.A.)
Year / Semester	First / First
Type	Group-I : Paper-I
Total Credits	02
Total Contact Hours	48
Contact Hours per Week	04
Examination Duration	03 Hours
Max. Marks	CIA : 20 End Semester Exam : 80 Total : 100
Total Modules	04
Pedagogy	Lectures with interactive sessions, Use of PPT Presentations, Role Plays, Quiz, Group Discussions, Debates, Seminars and Presentations
Evaluation Method	Viva-Voce, Assignment, Two Internal Assessment Exam, One End Semester Exam

Learning Objectives :

- To improve the knowledge of Sanskrit literature and culture amongst the students and enable them succeed in life.
- To motivate students to spread the essence of Devabhasha Sanskrit.
- To make the students appreciate the immortal works of our ancient seers and poets.
- To make the students learn good moral values and become good citizens to promote a healthy society.

Expected Learning Outcomes :

Upon the completion of this course, the students will be able to :

CO 1 : Understand the fundamental concepts, principles and functions of Sanskrit language.

CO 2 : Understand the Literature both Vedic and Classical literature)

CO 3 : Understand the Grammar aspects viz., Kriyapada, Vibhakthi, Prayoga etc.

CO 4 : Communicate in Sanskrit language..

CO 5 : Understand ancient Indian sciences like Yoga, Ayurveda, and Prose etc.

Course	Details
Code	BCACAC 103
Title	**Fundamentals of Information Technology**
Programme	Bachelor of Computer Applications (B.C.A.)
Year / Semester	First / First
Type	Group-II
Total Credits	02
Total Contact Hours	48
Contact Hours per Week	04
Examination Duration	03 Hours
Max. Marks	CIA : 20 End Semester Exam : 80 Total : 100
Total Modules	04
Pedagogy	Lectures with interactive sessions and practicals, Group Discussions Assignments, Seminars and Presentations
Evaluation Method	Viva-Voce, Assignment, Student Seminars, Group Discussions, Two Internal Assessment Exam, One End Semester Exam

Learning Objectives :

To impart the knowledge about the evolution of computers, classification, various peripherals of computers , types of softwares etc.

Expected Learning Outcomes :

Upon the completion of this course, the students will be able to :

CO 1 : Identify various devices and their working principles.

CO 2 : Use various features of word document.

CO 3 : Create power point presentation with variety of animation and transition.

CO 4 : Manipulate spreadsheet viz., how to use the formula easily, designing the graph, filtering.

CO 5 : Design database , insert records and querying in various ways.

Course	Details
Code	BCACAC 104
Title	**Programming in C**
Programme	Bachelor of Computer Applications (B.C.A.)
Year / Semester	First / First
Type	Group-II
Total Credits	02
Total Contact Hours	48
Contact Hours per Week	04
Examination Duration	03 Hours
Max. Marks	CIA :20 End Semester Exam : 80 Total : 100
Total Modules	04
Pedagogy	Lectures with interactive sessions and practicals, Group Discussions, Seminars and Presentations, solving the code snippets.
Evaluation Method	Viva-Voce, Practical Assignment, Seminars, Group Discussions, Internal Assessment Exam, One End Semester Exam.

Learning Objectives :

- To develop skills in solving problems.
- To obtain knowledge about the structure of the programming language C.
- To develop the logical thinking and program writing skill.

Expected Outcomes :

Upon the completion of this course, the students will be able to :

CO 1 : Understand the basic procedure of algorithm and flowchart which are basic concepts a programmer need to know.

CO 2 : Know about decision making and looping concepts.

CO 3 : Know the meaning and advantages of using arrays.

CO 4 : Apply programming knowledge to create solutions to challenging problems, including specifying, designing, implementing and validating solutions for new problems.

CO 5 : Design structures and file related programs.

Course	Details
Code	BCACAC 105
Title	**Computer Organization**
Programme	Bachelor of Computer Applications (B.C.A.)
Year / Semester	First / First
Type	Group-II
Total Credits	02
Total Contact Hours	48
Contact Hours per Week	04
Examination Duration	03 Hours
Max. Marks	CIA : 20 End Semester Exam : 80 Total : 100
Total Modules	04
Pedagogy	Lectures with interactive sessions and practical, Group Discussions, Debates, Seminars and Presentations, solving the code snippets.
Evaluation Method	Viva-Voce, Practical Assignment, Seminars, Group Discussions, Internal Assessment Exam, One End Semester Exam.

Learning Objectives :

- To introduce the number system and Boolean algebra.
- To enable the students to understand the design components of a digital subsystem that required for realizing the various components such as Register, Counter etc.

Expected Learning Outcomes :

Upon the completion of this course, the students will be able to :

CO 1: Solve the problems in various number systems.

CO 2: Simplify the Boolean expressions by applying various postulates and theorems.

CO 3: Design and verify the truth table of Components of Computer System like logical gates using Universal gates.

CO 4: Design combinational circuits such as adders, comparator, multiplexer, decoder, subtract or etc.

CO 5: Design the sequential circuit such as registers and various counters.

Course	Details
Code	BCACAC 106
Title	**FIT Lab**
Programme	Bachelor of Computer Applications (B.C.A.)
Year / Semester	First / First
Type	Group-II
Total Credits	02
Total Contact Hours	72
Contact Hours per Week	06
Examination Duration	03 Hours
Max. Marks	CIA : 20 End Semester Exam : 80 Total : 100
Total Modules	16
Pedagogy	Lectures with interactive sessions , practical sessions, continuous practical assessment
Evaluation Method	Viva-Voce, Group Discussions, Record Marks, Three Internal Assessment Exam in Practicals, One End Semester Exam.

Learning Objectives :

- To learn MS Office Applications.
- To learn document creation in MS Word, MS Excel, MS PowerPoint and MS Access.

Expected Learning Outcomes :

Upon the completion of this course, the students will be able to :

CO 1: Create a word document with in various formats including images and columns.

CO 2: Mailing letter to multiple addresses.

CO 3: Create a spreadsheet with formulae, charts, filtering etc.

CO 4: Prepare a presentation using Power point.

CO5: Design Database and accessing it according to the user request.

Course	Details
Code	BCACAC 107
Title	**C Programming Lab**
Programme	Bachelor of Computer Applications (B.C.A.)
Year / Semester	First / First
Type	Group-II
Total Credits	02
Total Contact Hours	72
Contact Hours per Week	06
Examination Duration	03 Hours
Max. Marks	CIA : 20 End Semester Exam : 80 Total : 100
Total Modules	16
Pedagogy	Lectures with interactive sessions , practical sessions, continuous practical assessment
Evaluation Method	Viva-Voce, Three Internal Assessment Exam in Practicals, One End Semester Exam, Group Discussions, Record Marks.

Learning Objectives :

To learn the programming logic for problems with decision making, looping, arrays, structures and files.

Expected Learning Outcomes :

Upon the completion of this course, the students will be able to write programs with :

CO 1 : Simple logic involving if, switch, for and while loops.

CO 2 : Single and two dimensional arrays.

CO 3 : User defined and recursive functions.

CO 4 : Pointer concepts.

CO 5 : Structures and files.

Course	Details
Code	BCACIF 102
Title	**Constitution of India**
Programme	Bachelor of Computer Applications (B.C.A.)
Year / Semester	First / First
Type	Group-III : Compulsory Foundation Course
Total Credits	02
Total Contact Hours	64 Hours
Contact Hours per Week	4 Hours
Examination Duration	3 Hours
Max. Marks	CIA : 20 End Semester Exam : 80 Total : 100
Total Modules	08
Pedagogy	Lectures with interactive sessions, Debate, Group Discussions, Exposure on Institutions created by Constitution.
Evaluation Method	Assignment, Vive-Voce, Two Internal Assessment Exam, One End Semester Exam.

Learning Objectives :

To enable the students to :

- Acquire a complete and detailed understanding on Constitution of India.
- Elicit the knowledge on Constitutional issues and concerns.

Expected Learning Outcomes :

Upon the completion of this course, the students will be able to :

CO 1 : Understand the principle and structure of the Constitution of India.

CO 2 : Generate Awareness on Fundamental Rights and Fundamental Duties.

CO 3 : Enrich the knowledge on Constitutional Functionaries of the state.

CO 4 : Understand the organization and Structure of Central / State Government.

CO 5 : Develop insight on Role of Judiciary in India.

SECOND SEMESTER

Course	Details
Code	BCAENL 153
Title	**General Proficiency and Communicative English**
Programme	Bachelor of Computer Applications (B.C.A.)
Year / Semester	First / Second
Type	Group-I : Paper-II
Total Credits	02
Total Contact Hours	48
Contact Hours per Week	04
Examination Duration	03 Hours
Max. Marks	CIA : 20 End Semester Exam : 80 Total : 100
Total Modules	5 Lessons+ 5 Poems + 4 Grammar Items
Pedagogy	Lectures with interactive sessions, Use of PPT Presentations,
Evaluation Method	Viva-Voce, Assignment, Two Internal Assessment Exam, One End Semester Exam

Learning Objectives:

- To enable the learner to communicate in real-life situations effectively and appropriately.
- To use English effectively throughout the curriculum for study purposes.
- To develop interest in and appreciation of Literature.
- To develop and integrate the use of the four language skills i.e., reading, listening, speaking and writing.

Expected Outcomes :

Upon the completion of this course, the students will be able to :

CO 1 : Learn reading with comprehension which help the learners to acquire new vocabulary and content

CO 2 : Read with correct pronunciation, stress, intonation, pause and articulation of voice.

CO 3 : Analyze the various elements of poetry, such as diction, tone, form, genre, imagery, figures of speech, symbolism, and theme.

CO 4 : Critically examine the value and standard of the poem.

CO 5 : Acquire and improve their skills in the four literacy methods: writing, talking, reading and listening.

CO 6 : Increase their awareness of the correct use in writing and speaking of English grammar.

Course	Details
Code	BCAKAL 153
Title	**Kannada**
Programme	Bachelor of Computer Applications (B.C.A.)
Year / Semester	First / Second
Type	Group-I : Paper-I
Total Credits	02
Total Contact Hours	48
Contact Hours per Week	04
Examination Duration	03 Hours
Max. Marks	CIA : 20 End Semester Exam : 80 Total : 100
Total Modules	4 Units
Pedagogy	Lecture with interactive Sessions, Discussions, Debate, Enacting Drama
Evaluation Method	Viva-Voce, Assignments, Two Internal Exams, One end term Semester Exam

Learning Objectives :

ಜನಪದ, ಮುಕ್ತಕ, ಹಳೆಗನ್ನಡ ಮಹಿಳಾಪರ ಕಾಳಜಿ, ಸಂಸ್ಕೃತಿ, ರಾಜಕೀಯ, ಮಹನೀಯರ ಜೀವನಚರಿತ್ರೆ ಮುಂತಾದ ವಿಚಾರಗಳಿಗೆ ಸಂಬಂಧಿಸಿದ ಪಠ್ಯಗಳ ಮೂಲಕ ವಿದ್ಯಾರ್ಥಿಗಳ ಜ್ಞಾನವನ್ನು ವಿಸ್ತರಿಸುವುದು.

Expected Learning Outcomes :

ಪಠ್ಯವನ್ನು ಪೂರ್ಣಗೊಸಿದ ಬಳಿಕವಿದ್ಯಾರ್ಥಿಗಳು :

CO 1 : ಕನ್ನಡ ಭಾಷೆ ನೆಲ–ಜಲ ಸಂಸ್ಕೃತಿಯ ಅರಿವನ್ನುಪಡೆಯುತ್ತಾರೆ.

CO 2 : ನಾಟಕ ಪ್ರಕಾರದ ಮೂಲಕ ಪೌರಾಣಿಕ ಜೀವನದ ಬಗ್ಗೆ ಮಾಹಿತಿಯನ್ನುಗಳಿಸುತ್ತಾರೆ.

CO 3 : ಜನಪದ ಮಹಾಕಾವ್ಯದ ಸೊಗಸನ್ನು ’ಅರ್ಥೈಸಿಕೊಳ್ಳುತ್ತಾರೆ.

CO 4 : ಕವಿಗಳ, ಸಾಹಿತಿಗಳ ಬದುಕು ಹಾಗೂ ಸಾಹಿತ್ಯಗಳನ್ನು ಪರಿಚಯಿಸಿಕೊಳ್ಳುತ್ತಾರೆ.

CO 5 : ಮನೋವೈಜ್ಞಾನಿಕ ವಿಚಾರ, ಜೀವನ ಮೌಲ್ಯಗಳ ಜ್ಞಾನವನ್ನು ಪಡೆಯುತ್ತಾರೆ.

Course	Details
Code	BCAHDL 154
Title	**Hindi**
Programme	Bachelor of Computer Applications (B.C.A.)
Year / Semester	First / Second
Type	Group-I : Paper-II
Total Credits	02
Total Contact Hours	48
Contact Hours per Week	04
Examination Duration	03 Hours
Max. Marks	CIA : 20 End Semester Exam : 80 Total : 100
Total Modules	04
Pedagogy	Lectures with interactive sessions, Discussions, Audio Visual classes
Evaluation Method	Assignment, Viva-Voce, Two Internal Assessment Exam, One End Semester Exam

Learning Objectives :

- To enable the students learn the Poems prescribed by giving the views of poet's thoughts.
- To make students inculcate the reality of the society.

Expected Learning Outcomes :

Upon the completion of this course, the students will be able to :

CO 1 : Acquire the knowledge of ancient poets and their views of life.

CO 2 : Understand the views of spiritual values.

CO 3 : Understand the fantasy in the existing Hindi literature.

CO 4 : Understand the official language - Hindi.

CO 5 : Understand the reality of the social life in the world.

Course	Details
Code	BCASKL 153
Title	**Sanskrit**
Program	Bachelor of Computer Applications (B.C.A.)
Year / Semester	First / Second
Type	Group-I : Paper-II
Total Credits	02
Total Contact Hours	48
Contact Hours per Week	04
Examination Duration	03 Hours
Max. Marks	CIA : 20 End Semester Exam : 80 Total : 100
Total Modules	04
Pedagogy	Lectures with interactive sessions, Use of PPT Presentations, Role Plays, Quiz, Group Discussions, Debates, Seminars and Presentations
Evaluation Method	Assignment, Viva-Voce, Two Internal Assessment Exam, One End Semester Exam

Learning Objectives :

- To improve the knowledge of Sanskrit literature and culture amongst the students and enable them succeed in life.
- To motivate students to spread the essence of Devabhasha Sanskrit.
- To make the students appreciate the immortal works of our ancient seers and poets.
- To make the students learn good moral values and become good citizens to promote a healthy society.

Expected Learning Outcomes :

Upon the completion of this course, the students will be able to :

CO 1 : Understand fundamental concepts, principles and functions of Sanskrit language.

CO 2 : Understand both Vedic and Classical literature.

CO 3 : Understand the Grammar aspects viz., Karaka, Samasa, Prayoga etc.

CO 4 : Communicate in Sanskrit language.

CO 5 : Understand ancient Indian sciences like Bhagavadgeetha, Poems, etc.

Course	Details
Code	BCACAC 203
Title	**Basics of Networking**
Program	Bachelor of Computer Applications (B.C.A.)
Year / Semester	First / Second
Type	Group-II
Total Credits	02
Total Contact Hours	48
Contact Hours per Week	04
Examination Duration	03 Hours
Max. Marks	CIA : 20 End Semester Exam : 80 Total : 100
Total Modules	04
Pedagogy	Lectures with interactive sessions, Group Discussions, Seminars and Presentations.
Evaluation Method	Viva-Voce, Seminars, Practical Assignment, Two Internal Assessment Exams, One End Semester Exam.

Learning Objectives :

To learn about constructing networks, its communication standards, various topologies, components, protocols and networking addressing.

Expected Learning Outcomes :

Upon the completion of this course, the students will be able to :

CO 1 : Understand Network Topologies and LAN Components.

CO 2 : Understand LAN Protocols and Network Addressing.

CO 3 : Understand WAN hardware and protocols.

CO 4 : Understand Network Operating Systems.

Course	Details
Code	BCACAC 204
Title	**Object Oriented Programming Using C++**
Program	Bachelor of Computer Applications (B.C.A.)
Year / Semester	First / Second
Type	Group-II
Total Credits	02
Total Contact Hours	48
Contact Hours per Week	04
Examination Duration	03 Hours
Max. Marks	CIA : 20 End Semester Exam : 80 Total : 100
Total Modules	04
Pedagogy	Lectures with interactive sessions, Group Discussions, Seminars and Presentations.
Evaluation Method	Seminars, Practical Assignment, Viva-Voce, Internal Assessment Exams, One End Semester Exam.

Learning Objectives:

To learn the concept of Object Oriented Programming and Create Software applications using OOPs Concept in C++.

Expected Learning Outcomes :

Upon the completion of this course, the students will be able to :

CO 1 : Realize the various operators statements used in C++.

CO 2 : Create class and objects with constructors, destructors, friend functions etc.

CO 3 : Know the concepts such as Operator overloading, inheritance, containership etc.

CO 4 : Apply the major object-oriented concepts to implement object oriented programs in C++.

CO 5 : Learn any other OOP language such as Java, C# easily.

Course	Details
Code	BCACAC 205
Title	**Database Concepts and Oracle**
Program	Bachelor of Computer Applications (B.C.A.)
Year / Semester	First / Second
Type	Group-II
Total Credits	02
Total Contact Hours	48
Contact Hours per Week	04
Examination Duration	03 Hours
Max. Marks	CIA : 20 End Semester Exam : 80 Total : 100
Total Modules	04
Pedagogy	Lectures with interactive sessions, Group Discussions, Seminars and Presentations.
Evaluation Method	Practical Assignment, Seminars, Viva-Voce, Internal Assessment Exams, One End Semester Exam,

Learning Objectives :

- To provide knowledge about RDBMS Concepts, SQL Concepts and PL / SQL Programming and database normalization .
- To learn theory involved in data models and query Languages.

Expected Learning Outcomes :

Upon the completion of this course, the students will be able to :

CO 1: Describe data models and schemas in DBMS.

CO 2 : Understand the features of database management systems and Relational database.

CO 3 : Demonstrate the relational data model and use of SQL.

CO 4 : Know the functional dependencies and use of SQL solutions to a broad range of query and data update problems.

CO 5: Apply the concepts such as procedures, triggers, cursors and packages in a PL / SQL program.

Course	Details
Code	BCACAC 206
Title	**C++ Programming LAB**
Programme	Bachelor of Computer Applications (B.C.A.)
Year / Semester	First / Second
Total Credits	02
Total Contact Hours	72
Contact Hours per Week	06
Examination Duration	03 Hours
Max. Marks	CIA : 20 End Semester Exam : 80 Total : 100
Total Modules	12
Pedagogy	Lectures with interactive sessions, Practical sessions.
Evaluation Method	Viva-Voce, Three Internal Assessment Exam in Practicals, One End Semester Exam, Group Discussions, Continuous Practical Assessment, Record Marks.

Learning Objectives :

- To create classes and objects with constructors, destructors, friend functions etc.
- To implement the concepts such as Operator overloading, inheritance, containership, etc.

Expected Learning Outcomes :

Upon the completion of this course, the students will be able to :

CO 1 : Create programs with classes and objects.

CO 2 : use member functions and friend functions.

CO 3 : Write programs for real world problems.

CO 4 : Illustrate operator overloading concepts.

CO 5 : Write programs applying various types of inheritance.

Course	Details
Code	BCACAC 207
Title	**Oracle Lab**
Program	Bachelor of Computer Applications (B.C.A.)
Year / Semester	First / Second
Type	Group-II
Total Credits	02
Total Contact Hours	72
Contact Hours per Week	06
Examination Duration	03 Hours
Max. Marks	CIA : 20 End Semester Exam : 80 Total : 100
Total Modules	04
Pedagogy	Lectures with interactive sessions, Group Discussions, Seminars and Presentations.
Evaluation Method	Practical Assignment, Seminars, Viva-Voce, Internal Assessment Exams, One End Semester Exam.

Learning Objectives :

- To provide knowledge about RDBMS Concepts, SQL Concepts and PL/SQL Programming and database normalization.
- To implement different types of data models and query Languages.

Expected Learning Outcomes :

Upon the completion of this course, the students will be able to :

CO 1: Describe data models and schemas in DBMS.

CO 2: Understand the features of database management systems and Relational database.

CO 3: Demonstrate the relational data model and use of SQL.

CO 4: Know the functional dependencies and use of SQL solutions to a broad range of query and data update problems.

CO 5: Apply the concepts such as procedures, triggers, cursors and packages in a PL/SQL program.

Course	Details
Code	BCAHGE 152
Title	**Human Rights, Gender Equity and Environment Studies**
Programme	Bachelor of Computer Applications (B.C.A.)
Year / Semester	First / Second
Type	Group-III : Compulsory Foundation Course
Total Credits	02
Total Contact Hours	64
Contact Hours per Week	04
Examination Duration	03 Hours
Max. Marks	CIA : 20 End Semester Exam : 80 Total : 100
Total Modules	08
Pedagogy	Lectures with interactive sessions, Debate, Group Discussions, Interaction with Human Rights Activists, Environmentalists.
Evaluation Method	Assignment, Viva-Voce, Two Internal Assessment Exam, One End Semester Exam

Learning Objectives :

To enable the students to :

- Acquire awareness on issues and concerns pertaining to Human Rights.
- Enhance citizenship sensitivity and initiatives.
- To understand the basic concepts of Gender Equity.
- To generate awareness on gender related issues and violence.
- To enrich the knowledge on environmental studies.
- To create awareness on Environmental Pollution, Resource Conservation and Management.

Expected Learning Outcomes :

Upon the completion of this course, the students will be able to :

CO 1 : Enrich the knowledge on Human Rights and Human Values.

CO 2 : Promote and protect Human Rights in India.

CO 3 : Generate awareness on Gender Inequity, Gender Discrimination, Gender Violence.

CO 4 : Gain knowledge on measures adopted and implemented for Gender Equity.

CO 5 : Enrich the knowledge on Environment, Environmental Pollution, Legislative measures, etc.

THIRD SEMESTER

Course	Details
Code	BCACAC 301
Title	**Basic Mathematics**
Programme	Bachelor of Computer Applications (B.C.A.)
Year / Semester	Second / Third
Type	Group-II
Total Credits	02
Total Contact Hours	48
Contact Hours per Week	04
Examination Duration	03 Hours
Max. Marks	CIA : 20 End Semester Exam : 80 Total : 100
Total Modules	04
Pedagogy	Lectures with interactive sessions Chalk and Talk method, Seminars and Presentations.
Evaluation Method	Viva-Voce, Assignments, Seminars, Two Internal Assessment Exam, One End Semester Exam.

Learning Objectives :

To learn foundation of Mathematics like Algebra, Trigonometry, Calculus, Set Theory, Logical Statements, Relations and Matrix Algebra.

Expected Learning Outcomes :

Upon the completion of this course, the students will be able to :

CO 1 : Understand the foundations of mathematics viz., Logarithms, Permutations, combination, analytical geometry etc.

CO 2 : Know the use of Trigonometry and Matrix in computer application.

CO 3 : Perform computations in mathematics.

CO 4 : Develop problem-solving skills required for Computer Applications.

Course	Details
Code	BCACAC 302
Title	**Microprocessor**
Programme	Bachelor of Computer Applications (B.C.A.)
Year / Semester	Second / Third
Type	Group-II
Total Credits	02
Total Contact Hours	48
Contact Hours per Week	04
Examination Duration	03 Hours
Max. Marks	CIA : 20 End Semester Exam : 80 Total : 100
Total Modules	04
Pedagogy	Lectures with interactive sessions, Group Discussions, Debates, Seminars and Presentations.
Evaluation Method	Viva-Voce, Assignments, Seminars, Internal Assessment Exams, One End Semester Exam.

Learning Objectives :

To learn architecture of 8086 microprocessor, various addressing modes, instruction sets and creating the procedures.

Expected Learning Outcomes :

Upon the completion of this course, the students will be able to :

CO 1 : Understand the various registers available in 8086 microprocessor.

CO 2 : Know the purpose of various addressing modes such as data movement, program memory, and stack memory addressing modes.

CO 3 : Perform computations using various instruction sets such as data transfer, ALU, branching, looping etc.

CO 4 : Writing the procedures using above mentioned registers and instructions.

Course	Details
Code	BCACAC 303
Title	**Data Structures**
Programme	Bachelor of Computer Applications (B.C.A.)
Year / Semester	Second / Third
Type	Group-II
Total Credits	02
Total Contact Hours	48
Contact Hours per Week	04
Examination Duration	03 Hours
Max. Marks	CIA :20 End Semester Exam : 80 Total : 100
Total Modules	04
Pedagogy	Lectures with interactive sessions and practicals, Group Discussions, Seminars and Presentations, solving the code snippets.
Evaluation Method	Practical assignment, Seminars, Group Discussions, Viva-Voce, Internal Assessment Exam, One End Semester Exam,

Learning Objectives :

To learn about -

- Choosing the appropriate data structure and algorithm design method for a specified application.
- Systematic way of solving problems and various methods of organizing large amounts of data.

Expected Outcomes :

Upon the completion of this course, the students will be able to :

CO 1 : Demonstrate various methods of organizing large amounts of data.

CO 2 : Choose the appropriate data structure to solve a programming problem.

CO 3 : Apply various sorting and searching techniques.

CO 4 : Understand the operations can be performed with stacks, queues, trees, linked lists and graphs.

CO 5 : Implement these data structures using C language.

CO 6 : Analyze the graphs and their applications.

Course	Details
Code	BCACA 304
Title	**Operating Systems**
Programme	Bachelor of Computer Applications (B.C.A.)
Year / Semester	Second / Third
Type	Group-II
Total Credits	02
Total Contact Hours	48
Contact Hours per Week	04
Examination Duration	03 Hours
Max. Marks	CIA : 20 End Semester Exam : 80 Total : 100
Total Modules	04
Pedagogy	Lectures with interactive sessions, Group Discussions, Assignments, Seminars and Presentations.
Evaluation Method	Group Discussion, Seminars, Viva-Voce, Internal Assessment Exams, One End Semester Exam.

Learning Objectives :

To learn -

- The purpose, role, structure, functions and application of operating systems.
- The Services provided by the operating systems.
- Linux file system and commands

Expected Outcomes :

Upon the completion of this course, the students will be able to :

CO 1 : Analyse the structure of OS.

CO 2 : Understand the basic architectural components involved in designing OS

CO 3 : Analyse the various resource management techniques.

CO 4 : Conceptualize the components involved in designing a contemporary OS.

CO 5 : Apply the basic commands of Linux Operating system.

Course	Details
Code	BCACAC 306
Title	**8086 MP Programming Lab**
Programme	Bachelor of Computer Applications (B.C.A.)
Year / Semester	Second / Third
Type	Group-II
Total Credits	02
Total Contact Hours	72
Contact Hours per Week	06
Examination Duration	03 Hours
Max. Marks	CIA : 20 End Semester Exam : 80 Total : 100
Total Modules	18
Pedagogy	Lectures with interactive sessions and practicals, Group Discussions, Seminars and Presentations, work out problems, Mini projects.
Evaluation Method	Seminars, Group Discussions, Viva-Voce, Internal Assessment Exams, One End Semester Exam.

Learning Objectives :

To learn 8086 instructions sets and codes practically.

Expected Learning Outcomes :

Upon the completion of this course, the students will be able to :

CO 1 : Use of computer registers and its instructions.

CO 2 : Execution of interrupts.

CO 3 : Solve string related problems

CO 4 : Know the use of procedures.

Course	Details
Code	BCACAC 234
Title	**Operating System And Data Structure Lab**
Programme	Bachelor of Computer Applications (B.C.A.)
Year / Semester	Second / Third
Type	Group-II
Total Credits	02
Total Contact Hours	72
Contact Hours per Week	06
Examination Duration	03 Hours
Max. Marks	CIA : 20 End Semester Exam : 80 Total : 100
Total Modules	18
Pedagogy	Lectures with interactive sessions, Practical Sessions.
Evaluation Method	Viva-Voce, Three Internal Assessment Exam in Practicals, One End Semester Exam, Record Marks, Continuous Practical Assessment

Learning Objectives :

To learn -

- Various Linux OS commands and Shell scripts
- The applications of various data structures in technologies.

Expected Outcomes :

Upon the completion of this course, the students will be able to :

CO 1 : Create and remove folders and files, copy and rename files, searching a pattern in a file.

CO 2 : Grant and remove privileges to the users for the files, creating groups.

CO 3 : Execute simple file oriented shell scripts.

CO 4 : Sort and search the objects using various techniques.

CO 5 : Use queue, stack, and linked list with various basic operations.

CO 6 : Acquainted with various operations on binary tree.

FOURTH SEMESTER

Course	Details
Code	BCACAC 401
Title	**Computer Graphics And Multimedia**
Programme	Bachelor of Computer Applications (B.C.A.)
Year / Semester	Second / Fourth
Type	Group-II
Total Credits	02
Total Contact Hours	48
Contact Hours per Week	04
Examination Duration	03 Hours
Max. Marks	CIA : 20 End Semester Exam : 80 Total : 100
Total Modules	04
Pedagogy	Lectures with interactive sessions, Group Discussions, Debates, Seminars and Presentations.
Evaluation Method	Assignments, Seminars, Viva-Voce, Internal Assessment Exams, One End Semester Exam.

Learning Objectives :

To learn about various technologies in computer graphics, animation and virtual reality system.

Expected Learning Outcomes :

Upon the completion of this course, the students will be able to :

CO 1 : Draw primitive graphical shapes using existing built in functions.

CO 2 : Apply various algorithms to draw lines, circles and ellipses.

CO 3 : Implement basic transformation such as translation, scaling and rotation using matrices.

CO 4 : Perform Point clipping, line and polygon clipping.

CO 5 : Know applications of Virtual reality system.

Course	Details
Code	BCACAC 402
Title	**Visual Basic .Net Programming**
Programme	Bachelor of Computer Applications (B.C.A.)
Year / Semester	Second / Fourth
Type	Group-II
Total Credits	02
Total Contact Hours	48
Contact Hours per Week	04
Examination Duration	03 Hours
Max. Marks	CIA : 20 End Semester Exam : 80 Total : 100
Total Modules	04
Pedagogy	Lectures with interactive sessions and practical, Group Discussions, Seminars and Presentations, Small projects.
Evaluation Method	Seminars, Viva-Voce, Internal Assessment Exam, One End Semester Exam.

Learning Objectives :

To learn about open networks, various layers, routing the datagrams and various protocols used.

Expected Learning Outcomes :

Upon the completion of this course, the students will be able to :

CO 1 : Understand layering system in open networks

CO 2 : Identify IP addresses and MAC addresses.

CO 3 : Know the various protocols in message passing

CO 4 : Learn how the data will be transferred between the networks.

Course	Details
Code	BCACAC 404
Title	**E-Commerce**
Programme	Bachelor of Computer Applications (B.C.A.)
Year / Semester	Second / Fourth
Type	Group-II
Total Credits	02
Total Contact Hours	48
Contact Hours per Week	04
Examination Duration	03 Hours
Max. Marks	CIA : 20 End Semester Exam : 80 Total : 100
Total Modules	04
Pedagogy	Lectures with interactive sessions and practical, Group Discussions, Seminars and Presentations.
Evaluation Method	Seminars, Viva-Voce, Internal Assessment Exam, One End Semester Exam.

Learning Objectives :

To learn -

- Concepts and principles E-commerce.
- Modern technologies used to simplify business and banking processes through e- commerce.
- Provision of E-commerce services, infrastructure, frameworks of web based and mobile systems for E-Commerce applications.

Expected Outcomes :

Upon the completion of this course, the students will be able to:

CO 1 : Understand the principles and practice of Electronic Commerce.

CO 2 : Realize the components, functions and roles of the Electronic Commerce environment.

CO 3 : Know about the E-Commerce payment systems.

CO 4 : Practice the E-Commerce applications with secured transactions.

Course	Details
Code	BCACAC 405 (E1.1)
Title	**Computer Oriented Numerical Analysis**
Programme	Bachelor of Computer Applications (B.C.A.)
Year / Semester	Second / Fourth
Type	Group-II
Total Credits	02
Total Contact Hours	48
Contact Hours per Week	04
Examination Duration	03 Hours
Max. Marks	CIA : 20 End Semester Exam : 80 Total : 100
Total Modules	04
Pedagogy	Lectures with interactive sessions, Group Discussions, Seminars and Presentations, Problem solving.
Evaluation Method	Seminars, Viva-Voce, Internal Assessment Exams, One End Semester Exam.

Learning Objectives :

To provide conceptual understanding of various numerical methods, with reference to numerical solution of non-linear equations and system of linear equations, interpolation, numerical differentiation and integration and numerical solution of ordinary differential equations.

Expected Learning Outcomes :

Upon the completion of this course, the students will be able to solve:

CO 1 : An algebraic or transcendental equation using an appropriate numerical method.

CO 2 : Differential equation using an appropriate numerical method.

CO 3 : Linear system of equations using an appropriate numerical method.

CO 4 : Apply Numerical Concepts in Coding.

Course	Details
Code	BCACAC 405 (E1.3)
Title	**System Analysis And Design**
Programme	Bachelor of Computer Applications (B.C.A.)
Year / Semester	Second / Fourth
Type	Group-II
Total Credits	02
Total Contact Hours	48
Contact Hours per Week	04
Examination Duration	03 Hours
Max. Marks	CIA : 20 End Semester Exam : 80 Total : 100
Total Modules	04
Pedagogy	Lectures with interactive sessions, Group Discussions, Seminars and Presentations, Problem solving.
Evaluation Method	Seminars, Viva-Voce, Internal Assessment Exams, One End Semester Exam.

Learning Objectives :

To study information system environment, designing various models and various design phases.

Expected Learning Outcomes :

Upon the completion of this course, the students will be able to:

CO 1 : Understand concept of system analysis.

CO 2 : Identify the role of System Analyst.

CO 3 : Manage various techniques for requirement determination and specification.

CO 4 : Design system development life cycle.

Course	Details
Code	BCACAC 406
Title	**Computer Graphics and Animation Lab**
Programme	Bachelor of Computer Applications (B.C.A.)
Year / Semester	Second / Fourth
Type	Group-II
Total Credits	02
Total Contact Hours	72
Contact Hours per Week	06
Examination Duration	03 Hours
Max. Marks	CIA : 20 End Semester Exam : 80 Total : 100
Total Modules	04
Pedagogy	Lectures with interactive sessions, Practical Sessions.
Evaluation Method	Viva-Voce, Three Internal Assessment Exam in Practicals, Practical Assignment, Record Marks, Continuous Practical Assessment, One End Semester Exam.

Learning Objectives :

To apply and learn various algorithms in computer graphics.

Expected Learning Outcomes :

Upon the completion of this course, the students will be able to implement Programs:

CO 1 : With built in functions to draw primitive graphics shapes.

CO 2 : To draw lines, circles, ellipses using algorithms.

CO 3 : For clipping operations.

CO 4 : For various transformations.

CO 5 : For any given problem using graphics methods.

Course	Details
Code	BCACAC 407
Title	**VB .Net Lab**
Programme	Bachelor of Computer Applications (B.C.A.)
Year / Semester	Second / Fourth
Type	Group-II
Total Credits	02
Total Contact Hours	72
Contact Hours per Week	06
Examination Duration	03 Hours
Max. Marks	CIA : 20 End Semester Exam : 80 Total : 100
Total Modules	16
Pedagogy	Lectures with interactive sessions, Practicals Sessions.
Evaluation Method	Viva-Voce, Three Internal Assessment Exam in Practicals, Record Marks, Continuous Practical Assessment, One End Semester Exam.

Learning Objectives :

To learn -

- Programming with graphical interface using object oriented concept.
- Designing forms.
- Database connectivity as back-end with VB interface.

Expected Learning Outcomes :

Upon the completion of this course, the students will be able to:

CO 1: Create interface including various tools available.

CO 2: Write the event driven procedures by identifying the suitable events.

CO 3: Create VB .Net forms with connectivity to the databases.

CO 4: Write console application.

CO 5: Design working interfaces for any applications.

FIFTH SEMESTER

Course	Details
Code	BCACAC 501
Title	**Software Engineering**
Programme	Bachelor of Computer Applications (B.C.A.)
Year / Semester	Third / Fifth
Type	Group-II
Total Credits	02
Total Contact Hours	48
Contact Hours per Week	04
Examination Duration	03 Hours
Max. Marks	CIA : 25 End Semester Exam : 100 Total : 125
Total Modules	04
Pedagogy	Lectures with interactive sessions, Group Discussions, Assignments, Seminars and Presentations.
Evaluation Method	Viva-Voce, Seminars, Group Discussion, Internal Assessment Exams, One End Semester Exam.

Learning Objectives :

- To prepare students for successful careers in software engineering.
- To develop skills in software development systematically.

Expected Learning Outcomes :

Upon the completion of this course, the students will be able to :

CO 1 : Understand the various software development process models..

CO 2 : Design DFD.

CO 3 : Apply function oriented design.

CO 4 : Use various testing tools.

CO 5 : Analyse and resolve information technology problems through the application of systematic approaches and diagnostic tools.

Course	Details
Code	BCACAC 502
Title	**Linux Environment**
Programme	Bachelor of Computer Applications (B.C.A.)
Year / Semester	Third / Fifth
Type	Group-II
Total Credits	02
Total Contact Hours	48
Contact Hours per Week	04
Examination Duration	03 Hours
Max. Marks	CIA : 25 End Semester Exam : 100 Total : 125
Total Modules	04
Pedagogy	Lectures with interactive sessions , Group Discussions, Assignments, Seminars and Presentations.
Evaluation Method	Seminars, Group Discussions, Viva-Voce, Internal Assessment Exams, One End Semester Exam.

Learning Objectives :

To learn Linux kernel architecture and basics of Linux administration.

Expected Outcomes :

Upon the completion of this course, the students will be able to :

CO 1 : Understand the design structure of Linux operating system.

CO 2 : Manage File system in Linux.

CO 3 : Manage I/O system.

CO 4 : Applying various commands in Linux administration.

CO 5 : Gain knowledge about using Internet applications in Linux.

Course	Details
Code	BCACAC 503
Title	**Web Development in .Net**
Programme	Bachelor of Computer Applications (B.C.A.)
Year / Semester	Third / Fifth
Type	Group-II
Total Credits	02
Total Contact Hours	48
Contact Hours per Week	04
Examination Duration	03 Hours
Max. Marks	CIA : 25 End Semester Exam : 100 Total : 125
Total Modules	04
Pedagogy	Lectures with interactive sessions and practical, Group Discussions, Practical Assignments, Seminars and Presentations.
Evaluation Method	Practical Assignment, Seminars, Viva-Voce, Internal Assessment Exams, One End Semester Exam.

Learning Objectives :

To learn -

- The tools and technologies necessary for Web application design and development.
- Client side scripting like HTML, server side scripting likes, ASP, PHP and database interfacing.

Expected Learning Outcomes :

Upon the completion of this course, the students will be able to :

CO 1 : Understand Web Application Terminologies and Internet Tools.

CO 2 : Select and apply markup languages for processing, identifying, and presenting information in web pages.

CO 3 : Use scripting languages and web services to add interactive components to web pages.

CO 4 : Design to be reusable the software components in a variety of different environments.

CO 5 : Design and implement websites with good aesthetic sense of designing.

Course	Details
Code	BCACAC 504
Title	**Java Programming**
Programme	Bachelor of Computer Applications (B.C.A.)
Year / Semester	Third / Fifth
Type	Group-II
Total Credits	02
Total Contact Hours	48
Contact Hours per Week	04
Examination Duration	03 Hours
Max. Marks	CIA : 25 End Semester Exam : 100 Total : 125
Total Modules	04
Pedagogy	Lectures with interactive sessions, Group Discussions, Seminars and Presentations
Evaluation Method	Practical Assignment, Seminars, Viva-Voce, Internal Assessment Exams, One End Semester Exam.

Learning Objectives :

- To understand pure object-oriented programming paradigm.
- To familiarize with the fundamentals of Java features.
- To introduce console and GUI based applications using Java.
- To know the basic approaches to the design of software applications.

Expected Learning Outcomes :

Upon the completion of this course, the students will be able to :

CO 1 : Know the structure and model of the Java programming language.

CO 2 : Use the Java programming language for various programming technologies.

CO 3 : Develop software Packages , applets and threads.

CO 4 : Create programs using Swings.

CO 5 : Create Java interface with JDBC / ODBC connectivity.

Course	Details
Code	BCACAC 505
Title	**Distributed Computing**
Programme	Bachelor of Computer Applications (B.C.A.)
Year / Semester	Third / Fifth
Type	Group-II
Total Credits	02
Total Contact Hours	48
Contact Hours per Week	04
Examination Duration	03 Hours
Max. Marks	CIA :25 End Semester Exam : 100 Total : 125
Total Modules	04
Pedagogy	Lectures with interactive sessions and practical, Group Discussions, Seminars and Presentations.
Evaluation Method	Practical Assignment, Seminars, Viva-Voce, Internal Assessment Exams, One End Semester Exam.

Learning Objectives :

To learn -

- To study concurrent, Client Server distributed paradigms.
- To learn about Inter process Communication and Remote procedure calls.

Expected Learning Outcomes :

Upon the completion of this course, the students will be able to :

CO 1 : Understand Concepts of Distributed Systems.

CO 2 : Design and build application programs on distributed systems.

CO 3 : Develop, test and debug RPC based client-server programs.

CO 4 : Write sample RMI application.

CO 5 : Decide the type of server required for any application.

Course	Details
Code	BCA 506 (E2.3)
Title	**Lamp Technology**
Programme	Bachelor of Computer Applications (B.C.A.)
Year / Semester	Third / Fifth
Type	Group-II
Total Credits	02
Total Contact Hours	48
Contact Hours per Week	04
Examination Duration	03 Hours
Max. Marks	CIA : 25 End Semester Exam : 100 Total : 125
Total Modules	04
Pedagogy	Lectures with interactive sessions and practical, Group Discussions, Seminars and Presentations.
Evaluation Method	Practical Assignment, Seminars, Viva-Voce, Internal Assessment Exam, One End Semester Exam.

Learning Objectives :

To learn various components involved in LAMP technology.

Expected Learning Outcomes :

Upon the completion of this course, the students will be able to :

CO 1 : Understand Concepts Linux operating system.

CO 2 : Know more about SQL commands.

CO 3 : Learn how Apache web server works.

CO 4 : Learn PHP language.

Course	Details
Code	BCA507
Title	**Web Application Lab**
Programme	Bachelor of Computer Applications (B.C.A.)
Year / Semester	Third / Fifth
Type	Group-II
Total Credits	02
Total Contact Hours	72
Contact Hours per Week	06
Examination Duration	03 Hours
Max. Marks	CIA : 25 End Semester Exam : 100 Total : 125
Total Modules	16
Pedagogy	Lectures with interactive sessions, Practical Sessions.
Evaluation Method	Viva-Voce, Three Internal Assessment Exam in Practicals, Record Marks, Continuous Practical Assessment, One End Semester Exam.

Learning Objectives :

To learn various concepts in JAVA practically.

Expected Outcomes :

Upon the completion of this course, the students will be able to :

CO 1 : Create programs using simple OOP concept.

CO 2 : Use Thread applications.

CO 3 : Design applets.

CO 4 : Design forms using swings.

CO 5 : Prepare projects using JAVA with database connectivity.

Course	Details
Code	BCACAC 508
Title	**Java and DC Lab**
Programme	Bachelor of Computer Applications (B.C.A.)
Year / Semester	Third / Fifth
Type	Group-II
Total Credits	02
Total Contact Hours	72
Contact Hours per Week	06
Examination Duration	03 Hours
Max. Marks	CIA : 25 End Semester Exam : 100 Total : 125
Total Modules	15
Pedagogy	Lectures with interactive sessions, Practical Sessions.
Evaluation Method	Viva-Voce, Three Internal Assessment Exam in Practicals, Group Discussions, Record Marks, Continuous Practical Assessment, One End Semester Exam,

Learning Objectives :

To learn various concepts in JAVA practically.

Expected Outcomes :

Upon the completion of this course, the students will be able to :

CO 1 : Create programs using simple OOP concept.

CO 2 : Use Thread applications.

CO 3 : Design applets.

CO 4 : Design forms using swings.

CO 5 : Prepare projects using JAVA with database connectivity.

SIXTH SEMESTER

Course	Details
Code	BCACAC 601
Title	**Project Work**
Programme	Bachelor of Computer Applications (B.C.A.)
Year / Semester	Third / Sixth
Total Credits	16
Contact Hours per Week	36 Hours
Examination Duration	NA
Max. Marks	CIA : 160 End Semester Exam : 640 Total : 800
Total Modules	NA
Pedagogy	Based on System Requirement Analysis
Evaluation Method	Viva-Voce, Continuous Assessment through periodic review, Internal Assessment Exam, Final Project Report, One End Semester Exam.

Learning Objectives :

To involve the students in all the stages of the software development life cycle (SDLC) like requirements analysis, systems design, software development/coding, testing and documentation, with an overall emphasis on the development of reliable software systems.

Expected Learning Outcomes :

Upon the completion of this course, the students will be able to:

CO 1 : Plan for the project.

CO 2 : Prepare System design, Database design, Detailed design.

CO 3 : Implement the project by coding, testing.

CO4 : Prepare the mandatory documents.

CO 5 : Demonstrate their project effectively.