



A.D.M. COLLEGE FOR WOMEN

(Autonomous)

Affiliated to Bharathidasan University

(Nationally Accredited with "A" Grade by NAAC – 3rd Cycle)

NAGAPATTINAM 611 001.

DEPARTMENT OF COMPUTER SCIENCE

Programme: B.C.A

| PO No. | Programme Outcomes <i>Upon completion of the BCA Programme, the graduate will be able to</i> |
|--------|--|
| PO 1: | Academic Excellence: Academic excellence through effective delivery of course contents. Goal-Oriented and Life-Long Education: Setting short term, medium, and long term goals and achieving them in a global competitive perspective. |
| PO 2: | Social Consciousness : Develop committed and socially responsible individuals and help them take up active and positive roles in society |
| PO 3: | Technical Knowledge: To find, utilize and create content using information technologies and the internet. |
| PO 4: | Entrepreneurial Development: They would develop business acumen, analytical skills, financial literacy necessary to appreciate the dynamic nature of commerce and industry |
| PO 5: | Research and practical knowledge: Using research knowledge and aptitude acquired in the course of study for solving problems and face modern day challenges. Project Work and Viva: To help them develop the ability to participate in academic discussions. |

| PSO No. | Programme Specific Outcomes <i>Upon completion of these courses the student would</i> |
|---------|---|
| PSO 1: | Acquire skill and information not only about computer and information technology but also in organization and management. Prepare student for roles pertaining to computer applications and IT industry |
| PSO 2: | Develop programming skills, networking skills, learn applications, packages, programming languages and modern techniques of IT |
| PSO 3: | Learn programming language such as Java, C++, HTML, SQL, Dotnet, etc... Prepare the learners to get placed in reputed organisations |
| PSO 4: | Provide information about various computer applications and latest development in IT and communication system |
| PSO 5: | Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change. |

| Course Title | | MAJOR CORE 1 – C PROGRAMMING | |
|--------------|--|------------------------------|-----------------|
| Code | | KUA | |
| CO No. | Course Outcomes | PSOs Addressed | Cognitive Level |
| CO-1 | Understand the basic terminology of algorithm, flowchart and gain awareness used in computer programming. | PSO 1 | U,R |
| CO-2 | Design programs involving the various concepts like decision structures, loops, functions of C language. | PSO 4 | Ap |
| CO-3 | Demonstrate the single, multi-dimensional arrays, String functions and user defined functions. | PSO 2 | U,An |
| CO-4 | Compare the structure and union of C and apply it to construct array of structures and structure function. | PSO 3 | An |
| CO-5 | Understand the dynamics of memory by the use of pointers and pointers with functions | PSO 4 | U,An |

| Course Title | | MAJOR CORE 4: OBJECT ORIENTED PROGRAMMING USING C++ | |
|--------------|---|---|-----------------|
| Code | | KUD | |
| CO No. | Course Outcomes | PSOs Addressed | Cognitive Level |
| CO-1 | Learn the basic concepts in Object-Oriented programming | PSO 2 | U |
| CO-2 | Develop programming skills by applying Object-Oriented programming | PSO 2 | An |
| CO-3 | Discuss the function overloading and Member Functions | PSO 2 | An |
| CO-4 | Understand the concepts of Constructors and Inheritance | PSO 5, PSO1 | An |
| CO-5 | An Ability to incorporate Exception Handling in Object-Oriented programs and analyze File Input/Output Streams. | PSO 1. PSO 3 | C |

| Course Title | | 1 ALLIED COURSE II – ELEMENTS OF ACCOUNTING | | |
|--------------|--|---|-----------------|--|
| Code | | KUA2 | | |
| CO No. | Course Outcomes | PSOs Addressed | Cognitive Level | |
| CO-1 | Preparing financial statements in accordance with appropriate standards. | PSO 1 | C | |
| CO-2 | Prepare ledger accounts using double entry bookkeeping and record journal entries accordingly. | PSO 2 | Ap | |
| CO-3 | Interpreting the business implications of financial statement information | PSO 2 | Ap | |
| CO-4 | Communicating complex ideas in writing and through oral presentations and Working effectively in diverse team settings | PSO 3 | An | |
| CO-5 | Effectively coordinating and motivating a group to achieve its best output | PSO 4 | U | |

| Course Title | | CORE COURSE VI JAVA PROGRAMMING | | |
|--------------|--|------------------------------------|-----------------|--|
| Code | | KUF | | |
| CO No. | Course Outcomes | PSOs Addressed | Cognitive Level | |
| CO-1 | Read and understand Java-based software code of medium-to-high complexity. | PSO 4 | U | |
| CO-2 | Use standard and third party Java's API's when writing applications. | PSO 2 | A | |
| CO-3 | Understand the basic principles of creating Java applications with graphical user interface (GUI). | PSO 5 | U | |
| CO-4 | Understand the basic approaches to the design of software applications. | PSO 2 | A | |
| CO-5 | Read and make elementary modifications to Java programs that solve real-world problems. | PSO 3 | R, U | |

| Course Title | | CORE COURSE VIII DATABASE SYSTEMS | |
|--------------|--|--------------------------------------|-----------------|
| Code | | KUH | |
| CO No. | Course Outcomes | PSOs Addressed | Cognitive Level |
| CO-1 | Emphasize the need, role, importance and uses of databases in application development | PSO 1 | R, U |
| CO-2 | Design E-R modeling for a given situation and provide the foundation for development of relational database structure. | PSO 2 | U |
| CO-3 | Identify the advantages of the database approach over the file based data storage system. | PSO 2 | U |
| CO-4 | Distinguish between different models of file organizing, storing and using of data. | PSO 3 | U |
| CO-5 | Understand the relational model and relational algebra operations. | PSO 4 | An |

| Course Title | | SKILL BASED ELECTIVE I R PROGRAMMING LAB | |
|--------------|--|---|-----------------|
| Code | | KUS1Y | |
| CO No. | Course Outcomes | PSOs Addressed | Cognitive Level |
| CO-1 | Understand the fundamental syntax of R through demonstrations and writing R code | PSO 1 | R, U |
| CO-2 | Apply concepts such as data types, iteration, control structures, functions, and boolean operators using R | PSO 1 & PSO 2 | R |
| CO-3 | Able to import a variety of data formats into R using R Studio | PSO 2 | U |
| CO-4 | Explore data-sets to perform appropriate statistical tests using R | PSO 2 | U |
| CO-5 | Acquire skills to generate charts and graphs visualization using R | PSO 1 & PSO 2 | An |

| CourseTitle | | CORE COURSE X COMPUTER NETWORKS | | |
|-------------|---|------------------------------------|-----------------|--|
| Code | | KUI | | |
| CO No. | Course Outcomes | PSOs Addressed | Cognitive Level | |
| CO-1 | Work with internet concepts | PSO 5 | E, U | |
| CO-2 | Be familiar with the functionality of each layer of OSI and TCP/IP reference model. | PSO 2 | U | |
| CO-3 | Build up a clear concern on the networking technologies | PSO 2 | U | |
| CO-4 | Understand the data communication system, components and the purpose of layered architecture. | PSO 1 | An | |
| CO-5 | Understand the services of data link layer and protocols | PSO 5 | An | |

| Course Title | | CORE COURSE XI PYTHON PROGRAMMING | | |
|--------------|---|--------------------------------------|-----------------|--|
| Code | | KUK | | |
| CO No. | Course Outcomes | PSOs Addressed | Cognitive Level | |
| CO-1 | Describe the basic built-in functions and syntax of Python programming. | PSO 1 | R, U | |
| CO-2 | Explain the mapping and file concept. | PSO 5 | R, A | |
| CO-3 | Explain the object oriented programming concept. | PSO 1 | U | |
| CO-4 | Illustrate the concepts of decision making and construct statements. | PSO 1 | R, A | |
| CO-5 | Illustrate the usage of database and regular expression | PSO 3 | A | |

| Course Title | | MAJOR BASED ELECTIVE I MOBILE COMPUTING | |
|--------------|--|--|-----------------|
| Code | | KUE3 | |
| CO No. | Course Outcomes | PSOs Addressed | Cognitive Level |
| CO-1 | To explore Mobile security issues. | PSO 4 | U |
| CO-2 | To integrate multimedia, camera and Location based services in Android Application | PSO 2 | A |
| CO-3 | To be familiarized with Intent, Broadcast receivers and Internet services. | PSO 5 | U |
| CO-4 | To learn activity creation and Android UI designing. | PSO 2 | A |
| CO-5 | To understand IP and TCP layers of Mobile Communication. | PSO 3 | R, U |

| Course Title | | CORE COURSE XII SOFTWARE ENGINEERING | |
|--------------|--|---|-----------------|
| Code | | KUL | |
| CO No. | Course Outcomes | PSOs Addressed | Cognitive Level |
| CO-1 | An ability to design and conduct experiments, as well as to analyze and interpret data. | PSO 2 | R, U |
| CO-2 | An ability to function on multi-disciplinary teams. | PSO 2,6 | R, An |
| CO-3 | An ability to identify, formulate, and solve engineering problems. | PSO 2 | U, A |
| CO-4 | An understanding of professional and ethical responsibility. | PSO 3 | R |
| CO-5 | Students can apply the knowledge, techniques, and skills in the development of a software product. | PSO 4 | R,An |

| Course Title | MAJOR BASED ELECTIVE I BIG DATA ANALYTICS | | |
|--------------|---|----------------|-----------------|
| Code | KUE3 | | |
| CO No. | Course Outcomes | PSOs Addressed | Cognitive Level |
| CO-1 | Demonstrate the working of row and column oriented data stores | PSO 4 | U |
| CO-2 | Describe the Hadoop architecture and File system | PSO 2 | A |
| CO-3 | Apply the MapReduce Programming model for real-world problems | PSO 5 | U |
| CO-4 | Distinguish NoSQL databases from RDBMS | PSO 2 | A |
| CO-5 | Define the big data, types of data and understand the need of bigdata analytics | PSO 3 | R, U |

| Course Title | SKILL BASED ELECTIVE II PYTHON AND BIO INFORMATICS LAB | | |
|--------------|--|----------------|-----------------|
| Code | KUS2Y | | |
| CO No. | Course Outcomes | PSOs Addressed | Cognitive Level |
| CO-1 | On completion of the Course, the learner will be able to | PSO 4 | U |
| CO-2 | Practice the Python programming language from its scratch: its syntax, idioms, patterns and styles. | PSO 2 | A |
| CO-3 | Illustrate the essentials of the Python library, and learn how to learn about other parts of the library when you need them. | PSO 5 | U |
| CO-4 | Interpret the mathematical results in physical and other forms. | PSO 2 | A |
| CO-5 | Identify, formulate and solve the Linear Differential Equations. | PSO 3 | R, U |

| Course Title | | SKILL BASED ELECTIVE II OPEN SOURCE PRODUCT LAB | |
|--------------|---|--|-----------------|
| Code | | KUS2Y | |
| CO No. | Course Outcomes | PSOs Addressed | Cognitive Level |
| CO-1 | Implement various applications using build systems | PSO 4 | U |
| CO-2 | Understand the installation of various packages in open source operating systems | PSO 2 | A |
| CO-3 | Create simple GUI applications | PSO 5 | U |
| CO-4 | Explore different open source technology like Linux, PHP & MySQL with different packages. | PSO 2 | A |
| CO-5 | Execute programs of PHP with MySQL connection | PSO 3 | R, U |

| Course Title | | SKILL BASED ELECTIVE III ANDROID LAB | |
|--------------|---|---|-----------------|
| Code | | KUS3Y | |
| CO No. | Course Outcomes | PSOs Addressed | Cognitive Level |
| CO-1 | Use Intent , Broadcast receivers and Internet services in Android App. | PSO 4 | U |
| CO-2 | Design and implement Database Application and Content providers. | PSO 2 | A |
| CO-3 | Use multimedia, camera and Location based services in Android App. | PSO 5 | U |
| CO-4 | Discuss various security issues in Android platform. | PSO 2 | A |
| CO-5 | Demonstrate their understanding of the fundamentals of Android operating system | PSO 3 | R, U |

| Course Title | | SKILL BASED ELECTIVE III MULTIMEDIA LAB | |
|--------------|--|--|-----------------|
| Code | | KUS3Y | |
| CO No. | Course Outcomes | PSOs Addressed | Cognitive Level |
| CO-1 | To learn and understand technical aspect of Multimedia System | PSO 4 | U |
| CO-2 | To Design and implement an animation for various themes. | PSO 2 | A |
| CO-3 | To Prepare multimedia advertisement. | PSO 5 | U |
| CO-4 | To Develop various Multimedia Systems applicable in real time. | PSO 2 | A |
| CO-5 | To develop multimedia application and analyze the performance of the same. | PSO 3 | R, U |

| Course Title | | CORE COURSE XIII OPERATING SYSTEMS | | |
|--------------|--|---------------------------------------|-----------------|--|
| Code | | KUM | | |
| CO No. | Course Outcomes | PSOs Addressed | Cognitive Level | |
| CO-1 | Understand the basic concept of Computer System and Operating System Structure | PSO 4 | U | |
| CO-2 | Gain Knowledge of the fundamental aspects of process and processor managements with deadlocks and CPU scheduling | PSO 2 | A | |
| CO-3 | Introduce memory and virtual memory techniques | PSO 5 | U | |
| CO-4 | Understand files, directories and its accessing methods and its structures | PSO 2 | A | |
| CO-5 | Ability to know mass storage devices and its scheduling | PSO 3 | R, U | |

| Course Title | | CORE COURSE XIV WEB TECHNOLOGY | | |
|--------------|---|-----------------------------------|-----------------|--|
| Code | | KUN | | |
| CO No. | Course Outcomes | PSOs Addressed | Cognitive Level | |
| CO-1 | Illustrate the web technology concept to create schemas and dynamic web pages. | PSO 4 | U | |
| CO-2 | Understand the concept of CSS for dynamic presentation effect in HTML and XML documents. | PSO 2 | A | |
| CO-3 | Describe the mark-up languages for processing, identifying and presenting information in web pages. | PSO 5 | U | |
| CO-4 | Apply scripting languages in HTML document to add interactive components to web pages | PSO 2 | A | |
| CO-5 | Define the knowledge about HTML document with element types, hyperlinks, images, list, tables and forms | PSO 3 | R, U | |

| Course Title | | MAJOR BASED ELECTIVE II COMPUTER GRAPHICS | | |
|--------------|---|--|-----------------|--|
| Code | | KUE4 | | |
| CO No. | Course Outcomes | PSOs Addressed | Cognitive Level | |
| CO-1 | Understand the basics of computer graphics, different graphics systems and applications of computer graphics. | PSO 4 | U | |
| CO-2 | Discuss various algorithms for scan conversion and filling of basic objects and their comparative analysis. | PSO 2 | A | |
| CO-3 | Use of geometric transformations on graphics objects and their application in composite form. | PSO 5 | U | |
| CO-4 | Extract scene with different clipping methods and its transformation to graphics display device. | PSO 2 | A | |
| CO-5 | Understands light interaction with 3D scenes | PSO 3 | R, U | |

| Course Title | | MAJOR BASED ELECTIVE II CYBER SECURITY | | |
|--------------|--|---|-----------------|--|
| Code | | KUE4 | | |
| CO No. | Course Outcomes | PSOs Addressed | Cognitive Level | |
| CO-1 | Analyze and resolve security issues in networks and computer systems to secure an IT infrastructure. | PSO 4 | U | |
| CO-2 | Design, develop, test and evaluate secure software. | PSO 2 | A | |
| CO-3 | Develop policies and procedures to manage enterprise security risks. | PSO 5 | U | |
| CO-4 | Analyze the techniques of Symmetric Key. | PSO 2 | A | |
| CO-5 | Algorithms and Public Key Algorithms. | PSO 3 | R, U | |

| Course Title | | MAJOR BASED ELECTIVE III WEB TECHNOLOGY AND BIOINFORMATICS LAB | | |
|--------------|--|--|-----------------|--|
| Code | | KUE5Y | | |
| CO No. | Course Outcomes | PSOs Addressed | Cognitive Level | |
| CO-1 | Identify the operators to learn the basic HTML commands | PSO 4 | U | |
| CO-2 | Understand the concept of Hyperlinks, Use of Cascading Style sheets. | PSO 2 | A | |
| CO-3 | Implement HTML concept in developing simple applications | PSO 5 | U | |
| CO-4 | Implementing the techniques for DNA Transcription and Mutation. | PSO 2 | A | |
| CO-5 | Analyze a web page and identify its elements and attributes | PSO 3 | R, U | |

| Course Title | | MAJOR BASED ELECTIVE III UI/UX Design and Animation Lab using Open Source Tools Lab | | |
|--------------|---|---|-----------------|--|
| Code | | KUE5Y | | |
| CO No. | Course Outcomes | PSOs Addressed | Cognitive Level | |
| CO-1 | Understand the Usability of Interactive systems. | PSO 4 | U | |
| CO-2 | Understand Guidelines and Principles | PSO 2 | A | |
| CO-3 | Be able to manage the development process and interaction styles. | PSO 5 | U | |
| CO-4 | Explain the functionality of different design related software | PSO 2 | A | |
| CO-5 | Use learned skills to solve problems of various layouts | PSO 3 | R, U | |

