A.D.M. COLLEGE FOR WOMEN

(Autonomous)

Affiliated to Bharathidasan University

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

NAGAPATTINAM 611 001.

PG DEPARTMENT OF COMPUTER SCIENCE

Programme: B.Sc., Computer Science

PO No.	Programme Outcomes *Upon completion of the B.Sc., Degree Programme, the graduate will be able to*
PO 1:	Apply algorithmic, mathematical and scientific reasoning to a variety of computational problems
PO 2:	Analyze impacts of computing on individuals organization and society.
PO 3:	Recognize the need for and ability to engage in continuing professional development.
PO 4:	To be exposed to technical, analytical and creative ideas.
PO 5:	Make the students to recognize the social and ethical responsibilities of a professional working in the various disciplines

PSO No.	Programme Specific Outcomes *Upon completion of these courses the student would be able*
PSO 1:	To acquire knowledge with fundamentals of computer science to solve complex problems related to the field of Computer science
PSO 2:	Ability to identify, formulate and analyze complex problems related to computer science and reaching a substantiated conclusions using mathematics and its applications
PSO 3:	Ability to understand professional & ethical responsibility in the field of Computer Science.
PSO 4:	Understand the impact of the Computer professionals in societal and environmental contexts.
PSO 5:	Capability to use appropriate software for analysis of data and relevant information from various sources for easy access and evaluation in variety of learning situation.

Course Title	MAJOR CORE 1: C PROGRAMMING		
Code	**BXA**		
CO No.	**Course Outcomes**	**PSOs Addressed**	**Cognitive Level**
CO-1	Understand the basic terminology of algorithm, flowchart and gain awareness used in computer programming.	PSO1,PSO2	U
CO-2	Design programs involving the various concepts like decision structures, loops, functions of C language.	PSO 2	An
CO-3	Demonstrate the single, multi-dimensional arrays, String functions and user defined functions.	PSO 2	U
CO-4	Compare the structure and union of C and apply it to construct array of structures and structure function.	PSO 5	An
CO-5	Understand the dynamics of memory by the use of pointers and pointers with functions.	PSO 1	Ap

Course Title	MAJOR CORE 4: OBJECT ORIENTED PROGRAMMING USING C++		
Code	**BXD**		
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	MAJOR CORE 8 – JAVA PROGRAMMING		
Code	**BXH**		
CO No.	**Course Outcomes**	**PSOs Addressed**	**Cognitive Level**
CO-1	Upon successful completion, students will have the knowledge and skills to	PSO 1	C
CO-2	Read and understand Java-based software code of medium-to-high complexity.	PSO 2	Ap
CO-3	Use standard and third party Java's API's when writing applications.	PSO 2	Ap
CO-4	Understand the basic principles of creating Java applications with graphical user interface (GUI).	PSO 3	An
CO-5	Create rich user-interface applications using modern API's such as JAVAFX.	PSO 4	U

Course Title	MAJOR CORE 6 – DATA STRUCTURES AND ALGORITHMS		
Code	**BXF**		
CO No.	**Course Outcomes**	**PSOs Addressed**	**Cognitive Level**
CO-1	Learn the fundamental Concepts of Data Structures and understand the working principles of Linked List, Stack, Queue and Trees.	PSO 1	C
CO-2	Determine the applications of Linked List, Stack, Queue and Trees.	PSO 4	Ap
CO-3	Grasp various operations and searching methods applied using Binary Tree.	PSO 2	An
CO-4	Demonstrate understanding of various sorting algorithms, including insertion sort, selection sort, merge sort, heap sort and quick sort.	PSO 3	An
CO-5	Comprehend various Algorithm Design Strategies.	PSO 4	An

Course Title	MAJOR CORE 10: COMPUTER ORGANIZATION AND ARCHITECTURE		
Code	**BXJ**		
CO No.	**Course Outcomes**	**PSOs Addressed**	**Cognitive Level**
CO-1	Conceptualize the basics of organizational and architectural issues of a digital computer.	PSO 3	R, U
CO-2	Analyze processor performance improvement using instruction level parallelism.	PSO 1	R
CO-3	Articulate design issues in the development of processor or other components that satisfy design requirements and objectives.	PSO 5	Ap
CO-4	Learn various methods and techniques of memory organization.	PSO 2	Ap
CO-5	Learn the function of each element of a memory hierarchy.	PSO 1	Ap

Course Title	MAJOR CORE 11– OPERATING SYSTEMS		
Code	**BXK**		
CO No.	**Course Outcomes**	**PSOs Addressed**	**Cognitive Level**
CO-1	Understand the basic concept of Computer System and Operating System Structure	PSO 2	R,U
CO-2	Gain Knowledge of the fundamental aspects of process and processor managements with deadlocks and CPU scheduling	PSO 2,6	R,U
CO-3	Introduce memory and virtual memory techniques	PSO 2	U
CO-4	Understand files, directories and its accessing methods and its structures	PSO 3	Ap
CO-5	Ability to know mass storage devices and its scheduling and Understand the security on the operating system and protection mechanisms.	PSO 4	U

Course Title	MAJOR CORE 12 – DATABASE SYSTEMS		
Code	**BXL**		
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 and apply PL/SQL procedural interfaces statement on relational tables as per requirements.	PSO 4	An

Course Title	MAJOR ELECTIVE 1 – ASP.NET		
Code	**BXE3**		
CO No.	**Course Outcomes**	**PSOs Addressed**	**Cognitive Level**
CO-1	Understand the fundamental concepts of .NET frame work	PSO 1	R, U
CO-2	Discuss the use of various web controls and rich controls	PSO 1 & PSO 2	R
CO-3	Infer State Management techniques in asp.net WebPages.	PSO 2	U
CO-4	Discuss and extend data list and data grid controls	PSO 2	U
CO-5	Demonstrate the database connectivity in ASP.NET and Comprehend the need for XML in performance tuning	PSO 1 & PSO 2	An

Course Title	MAJOR CORE 14 – MICROPROCESSOR AND ASSEMBLY LANGUAGES		
Code	**BXM**		
CO No.	**Course Outcomes**	**PSOs Addressed**	**Cognitive Level**
CO-1	Understand the taxonomy of microprocessors and knowledge of contemporary microprocessors.	PSO 1	R, U
CO-2	Describe the architecture, bus structure and memory organization of 8085 as well as higher order microprocessors.	PSO 2	U
CO-3	Explore techniques for interfacing I/O devices to the microprocessor 8085 including several specific standard I/O devices such as 8251 and 8255.	PSO 2	U
CO-4	Demonstrate programming using the various addressing modes and instruction set of 8085 microprocessor.	PSO 3	U
CO-5	Design structured, well commented , understandable assembly language programs to provide solutions to real world control problems.	PSO 4	An

Course Title	MAJOR ELECTIVE 2 – DATA COMMUNICATION NETWORK		
Code	**BXE4**		
CO No.	**Course Outcomes**	**PSOs Addressed**	**Cognitive Level**
CO-1	Learn the basic concepts of Data Communication and different layers	PSO 4	R, U
CO-2	Describe the working strategies of Wireless LAN and Wireless MAN	PSO 2	R
CO-3	Differentiate the various protocols used in communication	PSO 3	Ap
CO-4	Differentiate the IPv4 and IPv6 Addresses	PSO 3	R
CO-5	Familiarizes the basics of GSM and CDMA	PSO 1	R

Course Title	MAJOR ELECTIVE 3 – COMPUTER GRAPHICS		
Code	**BXE5**		
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 5	E, U
CO-2	Discuss various algorithms for scan conversion and filling of basic objects and their comparative analysis.	PSO 2	U
CO-3	Use of geometric transformations on graphics objects and their application in composite form.	PSO 2	U
CO-4	Extract scene with different clipping methods and its transformation to graphics display device.	PSO 1	An
CO-5	Explore projections and visible surface detection techniques for display of 3D scene on 2D screen.	PSO 5	An

Course Title	SKILL BASED ELECTIVE 3: ASP.Net LAB		
Code	**BXS3Y**		
CO No.	**Course Outcomes**	**PSOs Addressed**	**Cognitive Level**
CO-1	Design forms using various web controls	PSO 1	R, U
CO-2	Apply rich controls and validation controls to the web page	PSO 5	R, A
CO-3	Illustrate cookies, session and application state in a web page	PSO 1	U
CO-4	Create and manipulate the data in the database using ADO.NET.	PSO 1	R, A
CO-5	Create a template using data list and data grid and Build an application using XML	PSO 3	A

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Programme: M.Sc. Computer Science

PO No.	*Programme Outcomes* *Upon completion of the M.Sc. Degree Programme, the graduate will be ableto*
PO-1	Attain a sound understanding of the general principles of Computer Science.
PO-2	Obtain exposure to innovative, research-based topics within computing
PO-3	Acquire leadership qualities, and good communication, teamwork, social, and professional skills.
PO-4	Understand the impact of computer science solutions in a global and societal context
PO-5	Apply knowledge of computing to produce effective designs and solutions for specific problems

PSO No.	*Programme Specific Outcomes* *Upon completion of these courses the studentwould*
PSO - 1	Acquire academic excellence with an aptitude for higher studies and research.
PSO – 2	Attain knowledge to develop and apply new computer technologies.
PSO – 3	Contribute to the local society and the global community related to Computer Science.
PSO – 4	Identify, formulate, and solve computer science problems.
PSO – 5	Practice high standard of professional ethics.

Course Title	MAJOR CORE 1: WEB TECHNOLOGIES		
Code	**MXA**		
CO No.	**Course Outcomes**	**PSOs Addressed**	**Cognitive Level**
CO-1	To know the history of the internet and related internet concepts that are vital in understanding web development.	PSO 1	R, U
CO-2	To discuss the insights of internet programming and implement complete application over the web.	PSO 2	R
CO-3	To demonstrate the important HTML tags for designing static pages and separate design from content using Cascading Style sheet.	PSO 2,4	U, An
CO-4	Utilize the concepts of JavaScript and Java	PSO 2,4	An, Ap
CO-5	Use web application development software tools i.e. Ajax, PHP and XML etc. and identify the environments currently available on the market to design web sites.	PSO 3,4	An , Ap

Course Title	MAJOR CORE 2: DESIGN AND ANALYSIS OF ALGORITHMS		
Code	**MXB**		
CO No.	**Course Outcomes**	**PSOs Addressed**	**Cognitive Level**
CO-1	Able to analyze different scenarios for running time of algorithms using asymptotic notations and Design using Recursion.	PSO 2	R, U
CO-2	Able to apply divide and conquer strategy for design of various algorithms	PSO 1	U,A
CO-3	Able to develop algorithms for well known problems using greedy methods.	PSO 1	U
CO-4	Able to understand the concept of backtracking for traversal and search algorithms.	PSO 4	U,A
CO-5	Able to describe and apply dynamic-programming approach for designing graph and matrix based algorithms.	PSO 5	An

Course Title	MAJOR CORE 3 – ADVANCED COMPUTER ARCHITECTURE		
Code	**MXE**		
CO No.	**Course Outcomes**	**PSOs Addressed**	**Cognitive Level**
CO-1	To be able to describe the design issues relating to the architectural options.	PSO 1	R, U
CO-2	To be able to describe the challenges faced in the implementation of these high performance system.	PSO 4	R
CO-3	To be able to identify, assess contemporary practical examples and con temporary application areas.	PSO 2	C
CO-4	Evaluate performance of different architectures with respect to various parameters	PSO 4	C
CO-5	Analyze performance of different ILP techniques and Identify cache and memory related issues in multi-processors.	PSO 1	An

Course Title	MAJOR CORE 4 : MODERN OPERATING SYSTEMS		
Code	**MXG**		
CO No.	**Course Outcomes**	**PSOs Addressed**	**Cognitive Level**
CO-1	To understand the main components of an OS & their functions.	PSO 1	E, U
CO-2	To study the process management and scheduling.	PSO 5	U
CO-3	To understand various issues in Inter Process Communication (IPC) and the role of OS in IPC.	PSO 1	U
CO-4	To understand the concepts and implementation Memory management policies and virtual memory.	PSO 1	An
CO-5	To study the need for special purpose operating system with the advent of new emerging technologies.	PSO 3	An

Course Title	MAJOR ELECTIVE 1: ARTIFICIAL INTELLIGENCE		
Code	**MXE1**		
CO No.	**Course Outcomes**	**PSOs Addressed**	**Cognitive Level**
CO-1	Understand the core concepts related to vulnerabilities and their causes.	PSO 1	R, U
CO-2	Understand ethics behind hacking and vulnerability disclosure .	PSO 1 & PSO 2	R
CO-3	Appreciate the impact of hacking.	PSO 2	U, An
CO-4	Exploit the vulnerabilities related to computer system and networks using state of the art tools and technologies.	PSO 2	An, Ap
CO-5	Able to know about the concept of Penetration Testing and apply skills for different types of test.	PSO 1 & PSO 2	An , Ap

Course Title	MAJOR CORE 7: DATA MINING AND DATA WAREHOUSING		
Code	**MXG**		
CO No.	**Course Outcomes**	**PSOs Addressed**	**Cognitive Level**
CO-1	To introduce the concept of data Mining as an important tool for enterprise data management and as a cutting edge technology for building competitive advantage.	PSO 1	R, U
CO-2	To enable students to effectively identify sources of data and process it for data mining.	PSO 2	An
CO-3	To impart knowledge of tools used for data mining.	PSO 3	U, An
CO-4	To provide knowledge on how to gather and analyze large sets of data to gain useful business understanding.	PSO 4	C, U
CO-5	To make students well versed in all data mining algorithms, methods of evaluation.	PSO 3,4	An

Course Title	MAJOR CORE 8: VIRTUALISATION AND CLOUD COMPUTING		
Code	**MXH**		
CO No.	**Course Outcomes**	**PSOs Addressed**	**Cognitive Level**
CO-1	Posses knowledge on Cloud Computing and its architecture	PSO 1	R, U
CO-2	Acquire knowledge on Virtualization techniques	PSO 2	R
CO-3	Understand cloud infrastructure services	PSO 2	U, An
CO-4	Identify the parallel and distributed programming paradigms	PSO 4	R
CO-5	Handle various cloud computing tools and learn the Cloud security and security challenges	PSO 3,4	An , Ap

Course Title	MAJOR ELECTIVE 2: ETHICAL HACKING		
Code	**MXE2**		
CO No.	**Course Outcomes**	**PSOs Addressed**	**Cognitive Level**
CO-1	Understand the core concepts related to vulnerabilities and their causes.	PSO 1	R, U
CO-2	Understand ethics behind hacking and vulnerability disclosure .	PSO 2	R
CO-3	Appreciate the impact of hacking.	PSO 2	U, An
CO-4	Exploit the vulnerabilities related to computer system and networks using state of the art tools and technologies.	PSO 4	R
CO-5	Able to know about the concept of Penetration Testing and apply skills for different types of test.	PSO 3,4	An , Ap

Course Title	MAJOR ELECTIVE 3: COMPILER DESIGN		
Code	**MXE3**		
CO No.	**Course Outcomes**	**PSOs Addressed**	**Cognitive Level**
CO-1	Able to identify and understand different phases and passes of compiler and their functioning.	PSO 1	U
CO-2	Able to understand the concept of syntax analysis and to solve the problems of predictive parsing.	PSO 3	U,AN
CO-3	Able to to differentiate between top down and bottom up parsing and understand syntax directed translation techniques.	PSO 1	U
CO-4	Able to apply code optimization and code generation techniques.	PSO 4	AP
CO-5	To learn & use the new tools and technologies used for designing a compiler.	PSO 1	U,AP

Course Title	MAJOR CORE 11 – DATA SCIENCE USING PYTHON		
Code	**MXK**		
CO No.	**Course Outcomes**	**PSOs Addressed**	**Cognitive Level**
CO-1	Understanding the basic concepts of Python	PSO 1	R, U
CO-2	Preparing and pre-processing data	PSO 2	An
CO-3	Visualizing the results of analytics effectively	PSO 2	An
CO-4	Basic understanding of NumPy and Pandas	PSO 3	U
CO-5	Ability to use conditional loops and list by python and learn the Visualization through Matplotlib	PSO 4	An

Course Title	MAJOR CORE 12 – DISTRIBUTED TECHNOLOGIES		
Code	**MXM**		
CO No.	**Course Outcomes**	**PSOs Addressed**	**Cognitive Level**
CO-1	Student will be able to use the features of Dot Net Framework along with the features of C#.	PSO 1	R, U
CO-2	Build well-formed XML Document and implement Web Service using Java.	PSO 2	An
CO-3	Students will identify the core concepts of distributed systems: the way in which several machines orchestrate to correctly solve problems in an efficient, reliable and scalable way.	PSO 2	An
CO-4	Students will examine how existing systems have applied the concepts of distributed systems in designing large systems.	PSO 3	U
CO-5	Students will additionally apply these concepts to develop sample systems.	PSO 4	An

Course Title	MAJOR ELECTIVE 4: BIGDATA ANALYTICS		
Code	**MXE4**		
CO No.	**Course Outcomes**	**PSOs Addressed**	**Cognitive Level**
CO-1	To provide an overview of an exciting growing field of Big Data analytics.	PSO 1, PSO2	R,U
CO-2	To discuss the challenges traditional data mining algorithms face when analyzing Big Data.	PSO 2, PSO 4	U,AN
CO-3	To introduce the tools required to manage and analyze big data like Hadoop, NoSql MapReduce..	PSO 1, PSO2	R,U
CO-4	To teach the fundamental techniques and principles in achieving big data analytics with scalability and streaming capability.	PSO 2, PSO 4	U,AN
CO-5	To introduce to the students several types of big data like social media, web graphs and data streams	PSO 1, PSO2	R,U

Course Title	MAJOR ELECTIVE 5: INTERNET OF THINGS		
Code	**MXE5**		
CO No.	**Course Outcomes**	**PSOs Addressed**	**Cognitive Level**
CO-1	Understand the Architectural Overview of IoT.	PSO 1, PSO2	R,U
CO-2	Realize the concepts of IoT using Wireless Technologies.	PSO 2, PSO 4	U,AN
CO-3	Understand the various IoT Protocols.	PSO 1, PSO2	R,U
CO-4	Impart the knowledge on the devices of IoT.	PSO 1, PSO 2	R,U
CO-5	Comprehend the idea of M2M and learn the IoT security in various domains.	PSO 1, PSO2	R,U

Course Title	MAJOR CORE 13: DISTRIBUTED TECHNOLOGIES LAB		
Code	**MXNY**		
CO No.	**Course Outcomes**	**PSOs Addressed**	**Cognitive Level**
CO-1	Use the features of Dot Net Framework along with the features of C#.	PSO 2	U,AP
CO-2	Create user interactive web pages using ASP.Net.	PSO 2	U,AP
CO-3	Build well-formed XML Document and implement Web Service using Java.	PSO 2	U,AP
CO-4	Students will examine how existing systems have applied the concepts of distributed systems in designing large systems, and will additionally apply these concepts to develop sample systems.	PSO 3	U,AP
CO-5	Performing Database operations for various web applications.	PSO 1	U,AP

Course Title	MAJOR CORE 14: DATA MINING LAB		
Code	**MXJY**		
CO No.	**Course Outcomes**	**PSOs Addressed**	**Cognitive Level**
CO-1	Perform exploratory analysis of the data to be used for mining.	PSO 2	U,AP
CO-2	Implement the appropriate data mining methods like classification, clustering or Frequent Pattern mining on large data sets.	PSO 2,6	U,AP
CO-3	Define and apply metrics to measure the performance of various data mining algorithms.	PSO 2	U,AP
CO-4	Develop skills and apply data mining tools for solving practical problems	PSO 3	U,Ap
CO-5	Advance relevant programming skills and gain experience and develop research skills by reading the data mining literature.	PSO 4	U,AP