MAR ATHANASIUS COLLEGE OF ENGINEERING

KOTHAMANGALAM

DEPARTMENT OF COMPUTER APPLICATIONS

LIST OF COURSE OUTCOMES

2016 SCHEME

SEMESTER	SUBJECT CODE	SUBJECT NAME	CO NO:	CO DESCRIPTION
S1	RLMCA101	Problem solving and computer programming	1	Ability to solve problems systematically and to implement the solution in C language. Develop programming skills.
			2	Able to understand the basic terminology used in computer programming. Able to write, compile and debug programs in C language.
			3	Able to use different data types in a computer program
			4	Able to use different data structures and create/update basic data files.
			5	Use development environment features including make processors, editors, debuggers, compilers, linkers, and libraries.
			6	Develop the knowledge of how to learn a programming language, which will help learning other comp.language in the cariculam.
S1	RLMCA103	Discrete Mathematics	1	Mastery of the mathematical foundations and scientific foundations of computer science
			2	Ability to envision analyze design and implement maintainable practicable software solutions within realistic constraints to advanced computer science problems.
			3	Able to solve counting problems with the help of mathematical formulas.
			4	Find solutions with help of mathematical formulas to increase efficiency.
			5	Able to model and solve real world problems using graph theory.

			6	Mathematical thinking and able to apply them in problem solving.
S1	RLMCA105	Applied Probability and Statistics	1	Techniques in Statistics can be used in many areas of Computer Science such as machine learning, data mining, simulation, image processing, computer vision, computer graphics, software testing algorithms etc.
			2	Probability theory helps to solve problems and make optimal decisions in uncertain conditions, select stochastic models, compute probabilities, forecasts and evaluate performance of computer systems and networks.
			3	Knowledge in probability distributions can be used in decision making and estimation problems, constructs computer algorithms for generating observations from various distributions
			4	Demonstrate a depth of knowledge in topics critical to analyzing and solving computer science problems such as programming and software design, systems components and design.
			5	Knowledge in sampling and sampling distributions are used in research areas in data mining, image processing, machine learning etc.
			6	Testing of hypothesis is very useful in continued studies and professional research.
S1	RLMCA107	Principles of Management	1	Would be able to understand management as a process
			2	Would be able to critically analyse and evaluate management theories and practices
			3	Would be able to plan and make decisions for organisations
			4	Would be able to do staffing and related HRD functions
			5	Would aware about quality standards
			6	Would be able to understand the marketing basics

S1	RLMCA109	Digital Fundamentals	1	The hexadecimal number system has received special attention as it will be of considerable help to students in computers and microprocessors.
			2	Students will be able to design simple logic circuits.
			3	On completion of these course ,students can design combinational and sequential logic circuits
			4	Students will get through the knowledge of digital electronics
			5	An ability to understand the function of various hardware components and their building blocks.
			6	They will get an overall idea about single board computers like Arduino, &Raspberry Pi
S2	RLMCA102	Object Oriented Programming	1	Map real world entities to program
			2	To solve the problems in less time using Java features.
			3	Avoid name collision and provide security.
			4	To develop quality software which can be used by any type of users.
			5	To read and write values using different streams.
			6	To pass message between client and server.
S2	RLMCA104	Data Structures	1	Basic ability to analyze algorithms and to determine algorithm correctness and time efficiency class.
			2	Analyze worst-case running times of algorithms using asymptotic analysis
			3	Understand basic data structures such as arrays, linked lists, stacks and queues.
			4	Apply Algorithm for solving problems like sorting, searching, insertion and deletion of data
			5	The students will be able to solve applications using appropriate data structures
			6	Master different algorithm design techniques (brute-force, divide & conquer, greedy, etc.)

S2	RLMCA106	Operating System	1	High level understand what is OS and role it plays.
			2	Understand the general architecture of computers.
			3	Concurrent execution problems and solutions
			4	Understand the implementation of process, resource control, physical and virtual memory Scheduling I/O files.
			5	Master issues related with file system interface and implementation and disk management.
			6	To design and implement operating system.
S2	RLMCA108	Operations Research	1	Acquire skills to formulate and solve decision making problems in a wide range of conditions .
			2	Able to find an economic interpretation of any decision making problems by generating primal dual problems and solve using different methods.
			3	Many decision making problems such as travelling salesman can be converted to transportation and assignment problems and can be solved accordingly
			4	Game theory makes possible the analysis of the decision making process of interdependent subjects by explaining and predicting how individuals behave in a specific strategic situation.
			5	To develop the modelling and mathematical skills to analytically determine computer systems and communication network performance.
			6	Provides motivation and sets directions by emphasizing potential applications of simulation methods such as modelling techniques of real world problems and various optimization techniques for solving these models
S2	RLMCA112		1	To gather information about various hardware components of a computer

		Computer Organization and Architectures	2	The execution of instructions internally
			3	How the components helps the execution of instructions
			4	The I/O operations
			5	The various types of primary memories used in computers
			6	The other memories used in computers
S3	RLMCA201	Computer Networks	1	Understands the relevance of standardization in network communications and internet technologies
			2	Learns how application communicates especially file sharing and programming sockets using Java
			3	Understands LAN architecture, connecting devices, protocols and techniques to improve efficiency
			4	Interpret IP addresses, subnet masking, classful and classless addressing
			5	Understands routing protocols, congestion control mechanisms
			6	Learns technologies like Wi-Fi, Bluetooth and perform network analysis using Wireshark and/or Snort
S3	RLMCA203	Software Engineering	1	Learn the theory and foundations of software engineering.
			2	Learn the different process models and choose the best model for their project
			3	Be able to construct requirement models
			4	Be able to Understand the different development practices and its advantages
			5	Be able to create test cases and implement different testing strategies
			6	Understand the environment and work culture in a software organization
S3	RLMCA205	Database Management systems	1	Understand the fundamentals of relational ,object oriented and distributed database system including data models, database

				architectures and database manipulations.
			2	Develop sophisticated queries to extract information from large data sets.
			3	Develop physical design for a database from its logical design.
			4	Programming PL/SQL including stored procedures ,functions and error packages.
			5	Recognize and use contemporary logical design methods and tools for databases.
			6	Understand the theories and techniques in developing database applications and be able to demonstrate the ability to build databases
S3	RLMCA207	Design and analysis of algorithms	1	Given a problem, the student will be able to design algorithms, analyse it and produce an estimate of its time and space requirements.
			2	Describe the divide-and-conquer paradigm and explain when an algorithmic design situation calls for it. Recite algorithms that employ this paradigm. Synthesize divide-and-conquer algorithms. Derive and solve recurrences describing the performance of divide-and-conquer algorithms.
			3	Describe the greedy paradigm and explain when an algorithmic design situation calls for it. Recite algorithms that employ this paradigm. Synthesize greedy algorithms, and analyze them
			4	Describe the dynamic-programming paradigm and explain when an algorithmic design situation calls for it. Recite algorithms that employ this paradigm. Synthesize dynamic-programming algorithms, and analyze them.

			5	Explain the major graph algorithms and their analyses. Employ graphs to model engineering problems, when appropriate. Synthesize new graph algorithms and algorithms that employ graph computations as key components, and analyze them.
			6	Can define the classes P and NP and explain the significance of NP-completeness
S3	RLMCA209	web Programming	1	Acquire knowledge about functionalities of world wide web.
			2	Explore markup languages features and create interactive web pages using them.
			3	Learn and design Client side validation using scripting languages.
			4	Acquire knowledge about Open source JavaScript libraries.
			5	Be able to design front end web page and connect to the back end databases.
			6	Be able to do Client-side & Server-side scripting.
S4	RLMCA202	Application development and Maintenance	1	Able to work in a continuous integration environment.
			2	To get knowledge about configuration management and version control.
			3	To get knowledgeabout building applications in industry.
			4	Understand to follow coding best practices, and to follow the same in academic projects.
			5	To understand various perspectives of Application Development and Maintenance.
			6	To get knowledge about the deploying and releasing applications at industry level.
S4	RLMCA204	Bigdata Technologies	1	Be able to work with Bigdata platform.
			2	Looks at the technologies for big data anlytics
			3	Learn the technologies i.e the tools /algorithms that are available for a variety of analytics.

			4	Syllabus is designed to give depth knowledge of the bigdata frame work using Hadoop includes HDFS,YARN,and Map Rduce.
			5	To become an expert in all industry leading bigdata tools.
			6	Study the importance of machine learning on big data.
S4	RLMCA206	Mobile Computing	1	Understands various communication technologies – WLAN, BLE, NFC
			2	Understands mobile computing applications and service architecture of GSM and GPRS
			3	Learns the concept of mobileos and conduct a survey of mobile operating systems
			4	Learns development of applications in Android SDK
			5	Write Android applications using SDK, ADT, AVD, Emulators and familiarizing tools
			6	Connecting using SQLite Database
S4	RLMCA208	Introduction to machine learning	1	A good understanding of the fundamental issues and challenges of machine learning, input data, model selection etc.
			2	Develop skills for using machine learning algorithms for solving practical problems
			3	An understanding of how to use standard machine learning libraries and how to develop their own algorithms for learning.
			4	Ability to discover patterns in your data and then make predictions based on those complex patterns to answer business questions and help to solve problems
			5	Help to analyse your data and identify the trends.
			6	Evaluate the performance of a model and improve the model performance using different methods.
S4	RLMCA274	Business Intelligence and its applications	1	Know the strength and weakness of business, use tools for efficient decision making.

			2	Identify the procedure and effect of computerised decision making.
			3	Identify the role of decision support system and its components.
			4	Decision making using previous and current data.
			5	Extract data from different documents to develop new patterns.
			6	Extract necessary information from historical data
S5	RLMCA301	Webdata Mining	1	By applying data mining methods, the regularities in the Web data can be found
			2	We can cluster web pages into groups where each group may represent a particular topic.
			3	An Information Retrieval system finds a set of documents that is relevant to the query from its underlying collection.
			4	Effectively detecting the web content blocks of a web page is useful to web search because terms appearing in such blocks are more important.
			5	Web Crawlers can be used in business intelligence which is used to monitor web sites & pages of interest.
			6	Web usage mining can be appied in e-commerce & business intelligence, create personalized experiences for users by providing dynamic suggestions of products and services using recommender systems
S5	RLMCA303	Ecommerce	1	Realize new opportunities for doing business.
			2	Identifies different type of transactions
			3	How security can be ensured during e-commerce.
			4	How e-payment can be carried out with security
			5	How e-payment can be carried out and its limitations
			6	How payments can be done using digital wallets and digital cash.

S5	RLMCA305	Cryptography and cyber security	1	Build cryptosystems using various Symmetric and Asymmetric encryption techniques.
			2	Apply the concepts of different message authentication and digital signature techniques to applications for ensuring secure transactions.
			3	Apply security services to applications at Application, Transport and Network layer.
			4	Analyse the vulnerabilities in any computing system and hence be able to design a security solution.
			5	To be familiar with network security designs using available secure solutions (such as PGP, SSL, IPSec, etc).
			6	Illustrate various Public key cryptographic techniques.
S5	RLMCA369	Python Programming	1	Learns the basic language structure, data types and statements in python
			2	Learns modular python programming using lambda and recursive functions
			3	Learns working with files and implement OOP concepts like encapsulation, inheritance, polymorphism etc.
			4	Learns how to connect to database, create tables, DML operations and transaction control
			5	Learns Tkinter and python programming, Tk widgets, python web client tools and services, Django Administration
			6	Develop a micro project in machine learning using resources in scikit-learn.org
S6	RLMCA383	Human Computer Interaction	1	Critically analyse the UI's of system/devices.
			2	To review the usability of products/softwares
			3	To know the Psychological /Social characteristics of human and technical aspects of system.
			4	To design effective UI for projects/products.
			5	To apply the UI/HCI concepts in mini/main projects.

			6	To test and review the Projects/Products developed
S6	RLMCA352	Main Project	1	Learns in-depth about the principles in software engineering
			2	Gain real-time knowledge about Agile methodology and its implementation
			3	Gains sufficient knowledge in the use of system analysis tools, design tools, UI and testing
			4	Learns the various phases of developing a software
			5	Maintenance and collaboration of different versions using github
			6	Exposure to IT industry like environment