SRI RAMAKRISHNA MISSION VIDYALAYA COLLEGE OF ARTS AND SCIENCE

Self Study Extra Credit Elective Course

Programme : B.Sc. /B.A. / B.Com. / B.Com.(CA) Subject Code: 18UEXT012

Course Title : **SSECEC- XII Computer in Mathematics**

Credits:2

Course objectives

1. Computers acts as a catalyst to implement ideas and concepts of mathematics.
2. Contributions of Indian Mathematicians and others to Computer Science
3. Apply mathematical foundations to computer Science.
4. Use, Implement and compare ideas and concepts of mathematics
5. Aanalyze the complexity and computability of algorithmic solutions

Course Outcome

1. Contribution of Indian Mathematicians and others in the field of computer science.
2. Apply mathematical foundations to the discipline of computer science
3. Understand the theoretical and practical significance of working of computers and its application to important real-world problem domains
4. Determine the correctness and efficiency of the design of a software system
5. Students will be able to transfer knowledge of concepts to a variety of practical applications.

Unit I

Indian mathematicians contributions to computer science

Aryabhatta, Bramhagupta, Bhasakara I, Bhaskara II, Madhava, Srinivasa Ramanujam, P.C. Mahalanobis, C.R. Rao, D. R. Kaprekar, Harish Chandra, Satyendranath Bose, Rajeev Motwani, Sundar Pitchai, Satyanadella, Manindra Agarwal

Unit II

Non Indian mathematicians contributions to computer science

Wilhelm Leibniz, Leonardo Fibonacci Bigollo, John von Neumann, Bernhard Riemann, Carl Friedrich Gauss, Alan Turing, Euler, Euclid, Tony Hoare, Judea Pearl, Ted Codd, Charles Babbage, Edsger Dijkstra, Barry Boehm, Sally Floyd, Robin Milner, Adi Shamir, Don Knuth
Larry Pages, Bill Gates, Paul Allen, Bill Atikson,

Unit III

Timeline of computing

Predictions and Concepts, Hardware systems, Operating Systems, Programming Languages.

Unit IV

Basic programming Language C++

Operators, Data types, Variables, Arrays, Pointers and Files

Unit V

Solving Mathematical problems using C++

Largest Prime factor, Largest Product in Series, Special Pythagorean Triplet, Summation of Primes, Product of Primes, any number expressed as sum of two primes, Longest Collatz Sequence, Highly divisible triangular number, Amicable numbers, Quadratic primes.

Reference

1. www.eculideanproject.org
2. "Object Oriented Programming in C++" Robert Lafore, 4th Edition, SAMS publication
3. Mathematician Contribution to Computer Science from Wikipedia

For Guidance:

Course providing Department	MCA
Course teacher	Dr. R. Sridhar