Mahavir Education Trust's
SHAH & ANCHOR KUTCHHI ENGINEERING COLLEGE
Affiliated to University of Mumbai, Approved by D.T.E. & A.I.C.T.E.| Awarded 'A' Grade by D.T.E., M.S. | Electronics Enginering Program Accreditated by N.B.A., New Delhi for 2 years w.e.f. 6th Aug.,2014 | Computer Engineering Program Re-Accreditated by N.B.A.,New Delhi for 3 yeas w.e.f. 1st July 2019 | Information Technology Program Accreditated by N.B.A.,New Delhi for 3 years w.e.f. 1st July 2019

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ISO 9001
Certified Quality System
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DEPARTMENT OF COMPUTER ENGINEERING
Semester – IV

Unique Course Number: CSC401   Course Name: Applied Mathematics-IV

Unique CO Number	Course Outcome (CO) Statement
CSC4011	*Evaluate* contour integral using Cauchy's Integral Theorem/Formula and Cauchy's Residue Theorem.
CSC4012	*Demonstrate* ability to *manipulate* matrices and *compute* Eigenvalues and Eigenvectors
CSC4013	*Apply* the theory of Eigenvalue and Eigenvectors to *recognize* the Derogatory and Non Derogatory matrix and to *Evaluate* functions of square matrix
CSC4014	*Apply* selected probability distributions to *solve* problems.
CSC4015	*Perform* Test of Hypothesis as well as *calculate* confidence interval for a population parameter for single *sample* and two *sample* cases of small and large samples.
CSC4016	*Apply* optimization techniques to solve Linear and Nonlinear Programming problems.

Unique Course Number: CSC402   Course Name: Analysis of Algorithms

Unique CO Number	Course Outcome (CO) Statement
CSC4021	Analyze the running time and space complexity of algorithms.
CSC4022	Analyze the complexity of divide and conquer strategy.
CSC4023	Analyze the complexity of greedy strategy.
CSC4024	Analyze the complexity of dynamic programming strategy.
CSC4025	Apply backtracking, branch and bound and string-matching techniques to deal with some hard problems.
CSC4026	Describe the classes P, NP, and NP-Complete and prove that a certain problem is NP-Complete.

Unique Course Number: CSC403   Course Name: Computer Organization and Architecture

Unique CO Number	Course Outcome (CO) Statement
CSC4031	Describe basic structure of the computer system.
CSC4032	Demonstrate the arithmetic algorithms for solving ALU operations & to understand concept of control unit.
CSC4033	Describe instruction level parallelism and hazards in typical processor pipelines.
CSC4034	Describe superscalar architectures, multi-core architecture and their advantages.
CSC4035	Demonstrate the memory mapping techniques.
CSC4036	Identify various types of buses, interrupts and I/O operations in a computer system.

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DEPARTMENT OF COMPUTER ENGINEERING

Unique Course Number: CSC404   Course Name: Computer Graphics

Unique CO Number	Course Outcome (CO) Statement
CSC4041	Explain the basic concepts of Computer Graphics.
CSC4042	Analyze various algorithms for scan conversion and filling of basic objects and their comparative analysis.
CSC4043	Solve geometric transformations, viewing and clipping on graphical objects.
CSC4044	Illustrate solid model representation techniques and projections.
CSC4045	Compare visible surface detection techniques.
CSC4046	Compare illumination models and surface rendering

Unique Course Number: CSC405   Course Name: Operating System

Unique CO Number	Course Outcome (CO) Statement
CSC4051	Understand role of Operating System in terms of process, memory, file and I/O management.
CSC4052	Apply and analyze the concept of a process, thread, mutual exclusion and deadlock
CSC4053	Evaluate performance of process scheduling algorithms and IPC.
CSC4054	Apply and analyze the concepts of memory management techniques.
CSC4055	Evaluate the performance of memory allocation and replacement techniques.
CSC4056	Apply and analyze different techniques of file and I/O management

Unique Course Number: CSL401   Course Name: Analysis of Algorithms Lab

Unique CO Number	Course Outcome (CO) Statement
CSL4011	Analyse the complexities of various problems in different domains.
CSL4012	Prove the correctness and analyse the running time of the basic algorithms for those classic problems in various domains.
CSL4013	Develop efficient algorithms for the new problem with suitable designing techniques.
CSL4014	Implement the algorithms using different strategies.

Unique Course Number: CSL402   Course Name: Computer Graphics Lab

Unique CO Number	Course Outcome (CO) Statement
CSL4021	Implement various output and primitive algorithms using C/ OpenGL
CSL4022	Implement various filled area primitive algorithms.
CSL4023	Implement transformation and clipping algorithms on 2D graphical objects.
CSL4024	Construct curve and fractal for natural objects of irregular shapes.
CSL4025	Demonstrate projections on 3D graphical object
CSL4026	Develop a Graphical application based on learned concept.

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DEPARTMENT OF COMPUTER ENGINEERING

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Unique Course Number: **CSL403**   **Course Name: Processor Architecture Lab**

Unique CO Number	Course Outcome (CO) Statement
CSL4031	Assemble a personal computer.
CSL4032	Simulate a circuit for performing arithmetic operations.
CSL4033	Design CPU and ALU in a virtual simulator.
CSL4034	Simulate mapping techniques of cache on virtual lab.
CSL4035	Design sequential circuit.
CSL4036	Describe multicore processor, various I/O buses, and other architectures.

Unique Course Number: **CSL404**   **Course Name: Operating System Lab**

Unique CO Number	Course Outcome (CO) Statement
CSL4041	Understand basic operating system commands.
CSL4042	Understand and explore various system calls.
CSL4043	Write shell scripts and shell commands using kernel APIs.
CSL4044	Implement and analyze different process scheduling algorithms
CSL4045	Implement and analyze different memory management algorithms
CSL4046	Evaluate different OS techniques/algorithm using simulator and comparative analysis of algorithms.

Unique Course Number: **CSL405**   **Course Name: Open Source Tech Lab**

Unique CO Number	Course Outcome (CO) Statement
CSL4051	Demonstrate basic concepts in Python and Perl.
CSL4052	Illustrate files, directories and text processing with Python.
CSL4053	Develop program for data structures using built in functions in Python.
CSL4054	Develop GUI based applications.
CSL4055	Illustrate file handling and database handling using Perl.
CSL4056	Develop program for two way communication between client and server using Python and Perl.