

Ramakrishna Mission Vidyamandira



Curriculum for B.Sc. Honours in Computer Science under CBCS

Programme Specific Outcome:

The curriculum and syllabus for Bachelor degrees is aimed for outcome based teaching learning process. The curriculum and syllabus have been structured in such a way so that it can satisfy the following outcomes as much as possible. Student outcomes describe what students are expected to know and be able to do through the undergraduate course. It involves the skills and knowledge that students acquire through the program. The key outcomes are stated as below:

- i. Ability to apply knowledge of computing and computational mathematics that are relevant and appropriate to the domain.
- ii. Ability to analyze a real life problem, identify and define the computing requirements, which may be appropriate to its solution.
- iii. Ability to design, implement and evaluate computer-based system, process, component, or program to meet desired needs.
- iv. Understanding of professional, ethical, legal, security, social issues and responsibilities related to the domain.
- v. Ability to analyze the local and global impact of computing on individuals, organizations, and society.
- vi. Ability to incorporate IT based solutions and services to the society.
- vii. Ability to use and apply current technical concepts and practices in the core development of solutions in the form of Information Technology.
- viii. Development of ability to assist and manages the execution of an effective project plan.

Semester I

Course Code	Course Title	Credit
CMSA CC1 T	Computer Organization	4
CMSA CC1 P	Programming in C Laboratory	2
CMSA CC2 T	Analog and Digital Electronics	4
CMSA CC2 P	Analog and Digital Electronics Laboratory	2
GE1		6
AECC1		2

Semester II

Course Code	Course Title	Credit
CMSA CC3 T	Data Structure	4
CMSA CC3 P	Data Structure Laboratory	2
CMSA CC4 T	Computational Mathematics	4
CMSA CC4 P	Numerical Analysis Laboratory	2
GE2		6
AECC2		2

Semester III

Course Code	Course Title	Credit
CMSA CC5 T	Design and Analysis of Algorithm	4
CMSA CC5 P	Design and Analysis of Algorithm Laboratory	2
CMSA CC6 T	Operating Systems and System Software	4
CMSA CC6 P	Operating System Laboratory	2
CMSA CC7 T	Database Management Systems	4
CMSA CC7 P	DBMS Laboratory	2
GE3		6
SEC1		2

Semester IV

Course Code	Course Title	Credit
CMSA CC8 T	Object Oriented Programming	4
CMSA CC8 P	Object Oriented Programming Using JAVA Laboratory	2
CMSA CC9 T	Software Engineering	4
CMSA CC9 P	Visual Programming Laboratory	2
CMSA CC10 T	Data Communication, Networking and Internet Technology	4
CMSA CC10 P	Network Programming and Web Development Laboratory	2
GE4		6
SEC2		2

Semester V

Course Code	Course Title	Credit
CMSA CC11 T	Theory of Computation	4
CMSA CC11 P	Python Programming Laboratory	2
CMSA CC12 T	Microprocessor and Microcontroller	4
CMSA CC12 P	8085 Microprocessor and Arduino Laboratory	2
*CMSA E1 T		4
**CMSA E1 P		2
*CMSA E2 T		4
**CMSA E2 P		2

Semester VI

Course Code	Course Title	Credit
CMSA CC13T	Artificial Intelligence and Soft Computing	4
CMSA CC 13P	AI and Soft Computing Laboratory	2
CMSA CC 14T	Computer Graphics	4
CMSA CC 14P	Computer Graphics Laboratory	2
*CMSA E3 T		4
**CMSA E3 P		2
CMSA E4 P	Project	6

* Electives should be chosen from available optional subjects provided by the department for the current session.

** Practical paper related to the corresponding theory paper.

List of papers for Discipline Specific Elective for 5th Semester (choose any two):

Course Code	Course Title	Credit (T + P)
CMSA SEM 5 DSE 1	Cybersecutiry (Theory) + Cybersecurity Laboratory	4+2
CMSA SEM 5 DSE 2	Compiler Design (Theory) + Compiler Design Laboratory	4+2
CMSA SEM 5 DSE 3	Operations Research (Theory) + Operations Research Laboratory	4+2

List of papers for Discipline Specific Elective for 6th Semester (choose any one):

CMSA SEM 6 DSE 4	Machine Learning (Theory) + Machine Learning Laboratory	4 + 2
CMSA SEM 5 DSE 5	Internet of Things (Theory) + Internet of Things Laboratory	4 + 2
