

## MCA CURRICULUM R-2026

### SEMESTER I

| Subject Code                       | Course Title                                     | Category | L | T | P | C |
|------------------------------------|--------------------------------------------------|----------|---|---|---|---|
| <b>Theory</b>                      |                                                  |          |   |   |   |   |
| 126CAT01                           | Mathematical Foundations of Computer Science     | FC       | 3 | 1 | 0 | 4 |
| 126CAT02                           | Advanced Data Structures and Algorithms          | PCC      | 3 | 0 | 0 | 3 |
| 126CAT03                           | Research Methodology and IPR                     | RMC      | 2 | 0 | 0 | 2 |
| 126CAI01                           | Data Science with Python Programming             | PCC      | 3 | 0 | 2 | 4 |
| 126CAI02                           | Database Management Systems                      | PCC      | 3 | 0 | 2 | 4 |
| 126CAE--                           | Choice – 1 (Professional Elective Courses - I)   | PEC      | 3 | 0 | 0 | 3 |
| <b>Audit - I Course (Optional)</b> |                                                  |          |   |   |   |   |
| 126CAE--                           | Choice – 2 (Audit Courses – I)                   | AC       | 2 | 0 | 0 | 0 |
| <b>Practical</b>                   |                                                  |          |   |   |   |   |
| 126CAP01                           | Advanced Data Structures and Algorithms Lab      | PCC      | 0 | 0 | 4 | 2 |
| 126CAP02                           | Mini Project - I                                 | ECC      | 0 | 0 | 2 | 1 |
| 126CAL--                           | Choice – 3 (Professional Elective Lab Courses-I) | PEC      | 0 | 0 | 4 | 2 |

| Subject Code                                 | Course Title                         | Category | L | T | P | C |
|----------------------------------------------|--------------------------------------|----------|---|---|---|---|
| <b>Professional Elective - I Courses</b>     |                                      |          |   |   |   |   |
| 126CAE01                                     | Object Oriented Software Engineering | PEC      | 3 | 0 | 0 | 3 |
| 126CAE02                                     | Computer Networks                    | PEC      | 3 | 0 | 0 | 3 |
| 126CAE03                                     | Operating System Concepts            | PEC      | 3 | 0 | 0 | 3 |
| 126CAE04                                     | Cyber Security                       | PEC      | 3 | 0 | 0 | 3 |
| 126CAE05                                     | Artificial Intelligence              | PEC      | 3 | 0 | 0 | 3 |
| <b>Professional Elective Lab – I Courses</b> |                                      |          |   |   |   |   |
| 126CAL01                                     | Operating Systems Concepts Lab       | PEC      | 0 | 0 | 4 | 2 |
| 126CAL02                                     | Network Programming Lab              | PEC      | 0 | 0 | 4 | 2 |
| 126CAL03                                     | Software Testing Lab                 | PEC      | 0 | 0 | 4 | 2 |
| 126CAL04                                     | Cyber Security Lab                   | PEC      | 0 | 0 | 4 | 2 |
| 126CAL05                                     | Artificial Intelligence Lab          | PEC      | 0 | 0 | 4 | 2 |

## SEMESTER II

| Subject Code                        | Course Title                                  | Category | L | T | P | C |
|-------------------------------------|-----------------------------------------------|----------|---|---|---|---|
| <b>Theory</b>                       |                                               |          |   |   |   |   |
| 226CAT01                            | Applied Statistics for Data Analysis          | FC       | 3 | 1 | 0 | 4 |
| 226CAT02                            | Big Data Analytics                            | PCC      | 3 | 0 | 0 | 3 |
| 226CAI01                            | Advanced Java Programming                     | PCC      | 3 | 1 | 0 | 4 |
| 226CAI02                            | Full Stack Web Development                    | PCC      | 3 | 1 | 0 | 4 |
| 226CAE--                            | Choice – 4 (Professional Elective Courses-II) | PEC      | 3 | 0 | 0 | 3 |
| <b>Audit - II Course (Optional)</b> |                                               |          |   |   |   |   |
| 226CAE--                            | Choice – 5 (Audit Courses – II)               | AC       | 2 | 0 | 0 | 0 |
| <b>Practical</b>                    |                                               |          |   |   |   |   |
| 226CAP01                            | Big Data Analytics Lab                        | PCC      | 0 | 0 | 4 | 2 |
| 226CAP02                            | Mini Project - II                             | ECC      | 0 | 0 | 2 | 1 |
| 226CAP03                            | Executive Communication Lab                   | ECC      | 0 | 0 | 2 | 1 |
| 226CAL--                            | Choice – 6 (Professional Elective Courses-II) | PEC      | 0 | 0 | 4 | 2 |

### SEMESTER III

| Subject Code                 | Course Title                                      | Category | L | T | P | C |
|------------------------------|---------------------------------------------------|----------|---|---|---|---|
| <b>Theory</b>                |                                                   |          |   |   |   |   |
| 326CAT01                     | Generative AI with Prompt Engineering             | PCC      | 3 | 0 | 0 | 3 |
| 326CAT02                     | Media Processing                                  | PCC      | 3 | 0 | 0 | 3 |
| 326CAI01                     | Smart Device Programming                          | PCC      | 3 | 1 | 0 | 4 |
| 326CAI02                     | VIBE Coding                                       | PCC      | 3 | 1 | 0 | 4 |
| 326CAE--                     | Choice – 7 (Professional Elective Courses - III)  | PEC      | 3 | 0 | 0 | 3 |
| 326CAO--                     | Choice – 8 (Open Elective Courses)                | OEC      | 3 | 0 | 0 | 3 |
| <b>IKS Course (Optional)</b> |                                                   |          |   |   |   |   |
| 324CAE--                     | Choice – 9 (IKS Courses)                          | IKS      | 2 | 0 | 0 | 0 |
| <b>Practical</b>             |                                                   |          |   |   |   |   |
| 326CAP01                     | Media Processing Lab                              | PCC      | 0 | 0 | 4 | 2 |
| 326CAP02                     | Mini Project - III                                | ECC      | 0 | 0 | 2 | 1 |
| 326CAP03                     | Internship                                        | ECC      | 0 | 0 | 2 | 1 |
| 326CAL--                     | Choice – 10 (Professional Elective Courses - III) | PEC      | 0 | 0 | 4 | 2 |

### SEMESTER IV

| Subject Code | Course Title | Category | L | T | P  | C  |
|--------------|--------------|----------|---|---|----|----|
| Project      |              |          |   |   |    |    |
| 426CAP01     | Project Work | ECC      | 0 | 0 | 24 | 12 |

**BRIDGE COURSES**  
(For the Students admitted under Non-Computer background)

**Table – I**

| Subject Code         | Course Title                                       | Category | L | T | P | C |
|----------------------|----------------------------------------------------|----------|---|---|---|---|
| <b>Semester - I</b>  |                                                    |          |   |   |   |   |
| 126CAB01             | Fundamentals of Computing and Programming - I      | BC       | 2 | 0 | 0 | 0 |
| 126CBP01             | Fundamentals of Computing and Programming Lab – I  | BC       | 0 | 0 | 2 | 0 |
| <b>Semester - II</b> |                                                    |          |   |   |   |   |
| 226CAB01             | Fundamentals of Computing and Programming - II     | BC       | 2 | 0 | 0 | 0 |
| 226CBP01             | Fundamentals of Computing and Programming Lab – II | BC       | 0 | 0 | 2 | 0 |

**AUDIT COURSES (Optional)**

**Table – I**

| Subject Code              | Course Title                | Category | L | T | P | C |
|---------------------------|-----------------------------|----------|---|---|---|---|
| <b>Audit – I Courses</b>  |                             |          |   |   |   |   |
| 126CAE01                  | Constitution of India       | AC       | 2 | 0 | 0 | 0 |
| 126CAE02                  | Disaster Management         | AC       | 2 | 0 | 0 | 0 |
| <b>Audit – II Courses</b> |                             |          |   |   |   |   |
| 226CAE03                  | Waste to Energy             | AC       | 2 | 0 | 0 | 0 |
| 226CAE04                  | Fundamentals Law and Ethics | AC       | 2 | 0 | 0 | 0 |

**IKS COURSES (Optional)**

**Table – I**

| Subject Code       | Course Title            | Category | L | T | P | C |
|--------------------|-------------------------|----------|---|---|---|---|
| <b>IKS Courses</b> |                         |          |   |   |   |   |
| 326CAE05           | Physical Fitness        | IKSC     | 2 | 0 | 0 | 0 |
| 326CAE06           | Foundations of Ayurveda | IKSC     | 2 | 0 | 0 | 0 |

### EXTRA CREDIT COURSES (Optional)

- Students may opt for **one Computer Science course** from **SWAYAM–NPTEL / COURSE ERA** (approved by BoS and Apex Committee).
- Applicable during **2nd and 3rd semesters** only.
- **Credits earned** will be considered **over and above** the regular curriculum.
- Maximum: **3 credits per semester**.
- Only **one course per semester** is allowed.

### Total Credit Summary

| S.No.                | Category | Credits per Semester |                 |                 |           | Total Credits   |
|----------------------|----------|----------------------|-----------------|-----------------|-----------|-----------------|
|                      |          | I                    | II              | III             | IV        |                 |
| 1.                   | FC       | 04                   | 04              | 00              | 00        | 08              |
| 2.                   | PCC      | 13                   | 13              | 16              | 00        | 42              |
| 3.                   | RMC      | 02                   | 00              | 00              | 00        | 02              |
| 4.                   | PEC      | 05                   | 05              | 05              | 00        | 15              |
| 5.                   | EEC      | 01                   | 03              | 02              | 12        | 18              |
| 6.                   | OEC      | 00                   | 00              | 03              | 00        | 03              |
| 7.                   | ECC      | 00                   | 0-3             | 0-3             | 00        | 0-6             |
| 8.                   | AC       | 00                   | 00              | 00              | 00        | 00              |
| 9.                   | IKSC     | 00                   | 00              | 00              | 00        | 00              |
| 10.                  | BC       | 00                   | 00              | 00              | 00        | 00              |
| <b>Total Credits</b> |          | <b>25</b>            | <b>25 (0-3)</b> | <b>26 (0-3)</b> | <b>12</b> | <b>88 (0-6)</b> |

- FC     Foundation Courses
- PCC   Professional Core Courses
- RMC   Research Methodology Courses
- PEC   Professional Elective Courses
- EEC   Employability Enhancement Courses
- OEC   Open Elective Courses
- ECC   Extra Credit Courses
- AC     Audit Courses
- IKSC   IKS Courses
- BC     Bridge Courses (Only for Non-Computer Students)