

# Curriculum Structure

MCA Department

## 1<sup>st</sup> Semester

### Theory:

| Sl. No. | Code                       | Course Title   | Hours per week |   |   | Total Contact Hours | Credits |
|---------|----------------------------|--|----------------|---|---|---------------------|---------|
|         |                            |  | L              | T | P |                     |         |
| 1       | MCAN-101                   | Programming Concept with Python  | 3              | 1 | - | 4                   | 4       |
| 2       | MCAN-102                   | Relational Database Management System  | 3              | 1 | - | 4                   | 4       |
| 3       | MCAN-103                   | Computer Organization and Architecture   | 3              | 1 | - | 4                   | 4       |
| 4       | MCAN-104                   | Discrete Mathematics   | 3              | 1 | - | 4                   | 4       |
| 5       | MCAN-E105 A/ B/ C/ D/ E/ F | A. Environment and Ecology<br>B. Management Accounting<br>C. Constitution of India<br>D. Stress Management through Yoga<br>E. Ethics in Business Profession<br>F. Managerial Economics | 3              | - | - | 3                   | 3       |
|         |                            | TOTAL  |                |   |   | 19                  | 19      |

### Practical:

| Sl. No. | Code     | Course Title                               | Hours per week |   |   | Total Contact Hours | Credits |
|---------|----------|--|----------------|---|---|---------------------|---------|
|         |          |  | L              | T | P |                     |         |
| 1       | MCAN-190 | Soft Skill and Interpersonal Communication | -              | - | 4 | 4                   | 2       |
| 2       | MCAN-191 | Python Programming Lab                     | -              | - | 4 | 4                   | 2       |
| 3       | MCAN-192 | Relational Database Management System Lab  | -              | - | 4 | 4                   | 2       |
|         |          | TOTAL                                      |                |   |   | 12                  | 6       |

**BRIDGE COURSE** [Only for Students who have passed Bachelor of Science, Bachelor of Commerce or Bachelor of Arts with mathematics at 10+2 or at the graduation level]: A minimum 8-week Online Course on Fundamentals of 'Computer Science' or 'Computer Application' or 'Information Technology' or so

## 2<sup>nd</sup> Semester

### Theory:

| Sl. No. | Code                       | Course Title   | Hours per week |   |   | Total Contact Hours | Credits |
|---------|----------------------------|--|----------------|---|---|---------------------|---------|
|         |                            |  | L              | T | P |                     |         |
| 1       | MCAN-201                   | Data Structure with Python   | 3              | 1 | - | 4                   | 4       |
| 2       | MCAN-202                   | Operating System   | 3              | 1 | - | 4                   | 4       |
| 3       | MCAN-203                   | Object Oriented Programming with JAVA  | 3              | 1 | - | 4                   | 4       |
| 4       | MCAN-204                   | Networking   | 3              | 1 | - | 4                   | 4       |
| 5       | MCAN-E205 A/ B/ C/ D/ E/ F | A. Numerical and Statistical Analysis<br>B. Computer Graphics<br>C. Probability and Statistics<br>D. Introduction to Cyber Security<br>E. Introduction to IoT<br>F. Automata Theory and Computational Complexity | 3              | - | - | 3                   | 3       |
|         |                            | TOTAL  |                |   |   | 19                  | 19      |

### Practical:

| Sl. No. | Code     | Course Title                               | Hours per week |   |   | Total Contact Hours | Credits |
|---------|----------|--|----------------|---|---|---------------------|---------|
|         |          |  | L              | T | P |                     |         |
| 1       | MCAN-291 | Data Structure Lab with Python             | -              | - | 4 | 4                   | 2       |
| 2       | MCAN-292 | Operating System Lab (Unix)                | -              | - | 4 | 4                   | 2       |
| 3       | MCAN-293 | Object Oriented Programming Lab using Java | -              | - | 4 | 4                   | 2       |
|         |          | TOTAL                                      |                |   |   | 12                  | 6       |

**BRIDGE COURSE** [Only for Students who have passed Bachelor of Science, Bachelor of Commerce or Bachelor of Arts with mathematics at 10+2 or at the graduation level]: A minimum 8-week Online Course on Fundamentals of 'Software Engineering' or 'Systems Analysis and Design' or 'Business Systems Applications' or so

### 3<sup>rd</sup> Semester

#### Theory:

| Sl. No. | Code                                | Course Title  | Hours per week |   |   | Total Contact Hours | Credits |
|---------|-------------------------------------|---|----------------|---|---|---------------------|---------|
|         |                                     |   | L              | T | P |                     |         |
| 1       | MCAN-301                            | Software Engineering using UML  | 3              | 1 | - | 4                   | 4       |
| 2       | MCAN-302                            | Artificial Intelligence   | 3              | 1 | - | 4                   | 4       |
| 3       | MCAN-303                            | Design and Analysis of Algorithm  | 3              | 1 | - | 4                   | 4       |
|         | MCAN-E304<br>A/ B/ C/ D/<br>E/ F    | A. Image Processing<br>B. Web Enabled Java Programming<br>C. Cloud Computing<br>D. Web Technology using PHP<br>E. Android Application Development<br>F. Basic Data Science  | 3              | - | - | 3                   | 3       |
|         | MCAN-E305<br>A/ B/ C/ D/<br>E/ F/ G | A. Information Retrieval<br>B. Data Warehousing and Data Mining<br>C. Introduction to Big Data Analytics<br>D. Graph Theory<br>E. Operation Research and Optimization Techniques<br>F. Pattern Recognition<br>G. Machine Learning | 3              | - | - | 3                   | 3       |
|         |                                     | TOTAL   |                |   |   | 18                  | 18      |

#### Practical/ Sessional:

| Sl. No. | Code                       | Course Title                | Hours per week |   |   | Total Contact Hours | Credits |
|---------|----------------------------|-----------------------------|----------------|---|---|---------------------|---------|
|         |                            |                             | L              | T | P |                     |         |
| 1       | MCAN-E394<br>(A/B/C/D/E/F) | Elective III Lab            | -              | - | 4 | 4                   | 2       |
| 1       | MCAN-381                   | Minor Project and Viva-voce | -              | - | 8 | 8                   | 5       |
|         |                            | TOTAL                       |                |   |   | 12                  | 7       |

## 4<sup>th</sup> Semester

### Theory:

| Sl. No. | Code       | Course Title   | Hours per week |   |   | Total Contact Hours | Credits |
|---------|------------|--|----------------|---|---|---------------------|---------|
|         |            |  | L              | T | P |                     |         |
| 1       | MCAN-OE401 | Open Elective of 12-Weeks from the NPTEL/ SWAYAM Platform. | -              | - | - | -                   | 3       |
|         |            | TOTAL  |                |   |   |                     | 3       |

### Sessional:

| Sl. No. | Code     | Course Title                | Hours per week |   |    | Total Contact Hours | Credits |
|---------|----------|-----------------------------|----------------|---|----|---------------------|---------|
|         |          |                             | L              | T | P  |                     |         |
| 1       | MCAN-481 | Compressive Viva-voce       | -              | - | -  | -                   | 2       |
| 2       | MCAN-482 | Major Project and Viva-voce | -              | - | 28 | 28                  | 20      |
|         |          | TOTAL                       |                |   |    | 28                  | 24      |