

**MANIPAL UNIVERSITY JAIPUR**  
**Department of Civil Engineering**  
**B Tech (Civil Engineering)**  
**Batch – 2020-2024**

| Year                                 | THIRD SEMESTER   |  |    |   |   |   | FOURTH SEMESTER        |                                      |    |   |           |    |
|--------------------------------------|------------------|--|----|---|---|---|------------------------|--------------------------------------|----|---|-----------|----|
|                                      | Sub. Code        | Subject Name                                 | L  | T | P | C   | Sub. Code              | Subject Name                         | L  | T | P         | C  |
| II                                   | BB0025           | Value, Ethics and Governance                 | 2  | 0 | 0 | 2   | EO2001                 | Economics                            | 3  | 0 | 0         | 3  |
|                                      | MA2104           | Engineering Mathematics – III                | 2  | 1 | 0 | 3   | MA2207                 | Engineering Mathematics – IV         | 2  | 1 | 0         | 3  |
|                                      | CV2101           | Fluid Mechanics                              | 3  | 1 | 0 | 4   | CV2201                 | Engineering Geology                  | 3  | 0 | 0         | 3  |
|                                      | CV2102           | Building Materials & Construction Technology | 3  | 1 | 0 | 4   | CV2202                 | Water Supply Engineering             | 3  | 1 | 0         | 4  |
|                                      | CV2103           | Surveying                                    | 3  | 1 | 0 | 4   | CV2203                 | Analysis of Indeterminate Structures | 3  | 1 | 0         | 4  |
|                                      | CV2104           | Structural Analysis                          | 3  | 1 | 0 | 4   | *****                  | Open Elective – I                    | 3  | 0 | 0         | 3  |
|                                      | CV2130           | Material Testing Lab                         | 0  | 0 | 2 | 1   | CV2230                 | Geology Lab                          | 0  | 0 | 2         | 1  |
|                                      | CV2131           | Surveying Practice                           | 0  | 0 | 3 | 1   | CV2231                 | Fluid Mechanics Lab                  | 0  | 0 | 2         | 1  |
|                                      |                  |  |    |   |   |   | CV2232                 | Building Drawing and Design          | 1  | 0 | 3         | 2  |
|                                      |                  |  | 16 | 5 | 5 | <b>23</b>                                       |                        | 18                                   | 3  | 7 | <b>24</b> |    |
| Total Contact Hours (L + T + P)      |                  |  | 26 |   |   | Total Contact Hours (L + T + P) + OE            |                        |                                      | 28 |   |           |    |
| III                                  | FIFTH SEMESTER   |  |    |   |   |   | SIXTH SEMESTER         |                                      |    |   |           |    |
|                                      | BB0026           | Organisation and Management                  | 3  | 0 | 0 | 3   | CV3201                 | Applied Geotechnical Engineering     | 3  | 1 | 0         | 4  |
|                                      | CV3101           | Geotechnical Engineering                     | 3  | 1 | 0 | 4   | CV3202                 | Design of Steel Structures           | 3  | 1 | 0         | 4  |
|                                      | CV3102           | Highway Engineering                          | 3  | 1 | 0 | 4   | CV3204                 | Water Resources Engineering          | 3  | 0 | 0         | 3  |
|                                      | CV3103           | Design of Reinforced Concrete Structures     | 3  | 1 | 0 | 4   | CV32XX                 | Program Elective – I                 | 3  | 0 | 0         | 3  |
|                                      | CV3104           | Waste Water Management                       | 3  | 1 | 0 | 4   | CV32XX                 | Program Elective – II                | 3  | 0 | 0         | 3  |
|                                      | *** ****         | Open Elective – II                           | 3  | 0 | 0 | 3   | *** ****               | Open Elective – III                  | 3  | 0 | 0         | 3  |
|                                      | CV3130           | Geotechnical Engineering Lab                 | 0  | 0 | 2 | 1   | CV3230                 | Computer Aided Design Lab            | 0  | 0 | 2         | 1  |
|                                      | CV3131           | Environmental Engineering Lab                | 0  | 0 | 2 | 1   | CV3231                 | Highway Engineering Lab              | 0  | 0 | 2         | 1  |
|                                      |                  |  |    |   |   |   | CV3233                 | Estimation and Costing Practice      | 0  | 0 | 3         | 1  |
|                                      |                  |  |    |   |   | CV3270  | Project Based Learning | 0                                    | 0  | 2 | 1         |    |
|                                      |                  |  | 18 | 4 | 4 | <b>24</b>                                       |                        | 17                                   | 3  | 9 | <b>24</b> |    |
| Total Contact Hours (L + T + P) + OE |                  |  | 26 |   |   | Total Contact Hours (L + T + P) + OE            |                        |                                      | 29 |   |           |    |
| IV                                   | SEVENTH SEMESTER |  |    |   |   |   | EIGHTH SEMESTER        |                                      |    |   |           |    |
|                                      | CV41XX           | Program Elective – III                       | 2  | 1 | 0 | 3   | CV4270                 | Major Project                        | 0  | 0 | 0         | 12 |
|                                      | CV41XX           | Program Elective – IV                        | 2  | 1 | 0 | 3   |                        |                                      |    |   |           |    |
|                                      | CV41XX           | Program Elective – V                         | 2  | 1 | 0 | 3   |                        |                                      |    |   |           |    |
|                                      | CV41XX           | Program Elective – VI                        | 2  | 1 | 0 | 3   |                        |                                      |    |   |           |    |
|                                      | CV41XX           | Program Elective – VII                       | 2  | 1 | 0 | 3   |                        |                                      |    |   |           |    |
|                                      | CV4170           | Minor Project                                | 0  | 0 | 3 | 1   |                        |                                      |    |   |           |    |
|                                      | CV4171           | Industrial Training                          | 0  | 0 | 0 | 1   |                        |                                      |    |   |           |    |
|                                      | CV4172           | Survey Camp                                  | 0  | 0 | 3 | 1   |                        |                                      |    |   |           |    |
|                                      |                  |  | 10 | 5 | 6 | <b>18</b>                                       |                        |                                      |    |   | <b>12</b> |    |
| Total Contact Hours (L + T + P)      |                  |  | 21 |   |   | <b>Total Credit= 169 (Including First Year)</b> |                        |                                      |    |   |           |    |

| Minor Specializations   | Other Programme Electives  | Open Electives  |
|---|--|---|
| <p><b>I. Structural Engineering</b></p> <ol style="list-style-type: none"> <li>1. CV3240 Finite Element Analysis</li> <li>2. CV3241 Advanced Design of Reinforced Concrete Structures</li> <li>3. CV4140 Earthquake Resistant Design of Structures</li> <li>4. CV4141 Design of Pre-stressed Concrete Structures</li> </ol> <p><b>II. Environmental Engineering</b></p> <ol style="list-style-type: none"> <li>1. CV3242 Environmental Impact Assessment</li> <li>2. CV3243 Air Pollution and Control</li> <li>3. CV4142 Solid and Hazardous Waste Management</li> <li>4. CV4143 Industrial Wastewater Treatment</li> </ol> | <ol style="list-style-type: none"> <li>1. CV3244 Remote Sensing and GIS</li> <li>2. CV3245 Hydraulics and Hydraulic Machines</li> <li>3. CV3246 Sanitation Technology</li> <li>4. CV3248 Railways and Airport Engineering</li> <li>5. CV4144 Repair and Rehabilitation of Structures</li> <li>6. CV4145 Advanced Concrete Technology</li> <li>7. CV4146 Estimation Costing and Valuation</li> <li>8. CV4147 Contract Management and Arbitration</li> <li>9. CV4148 Construction Project Management</li> <li>10. CV4149 Ground Improvement Techniques</li> <li>11. CV4150 Rock Mechanics and Underground Excavation</li> <li>12. CV4151 Urban Transportation Planning</li> <li>13. CV4152 Traffic Systems and Engineering</li> <li>14. CV4153 Hydrological Analysis</li> <li>15. CV4154 Water Resources Planning and Management</li> <li>16. CV4155 Bridge Engineering</li> </ol> | <ol style="list-style-type: none"> <li>1. CV2080 Environmental Impact Assessment</li> <li>2. CV2081 Contract Management</li> <li>3. CV2082 Building Planning</li> <li>4. CV3080 Geographical Information System</li> <li>5. CV3081 Environmental Management</li> <li>6. CV3082 Advanced Fluid Mechanics</li> <li>7. CV3083 Solid Waste Management</li> <li>8. CV3084 Rural Water Supply and Sanitation</li> </ol> |