



## Semester - 1

|      |                                                |           |           |          |          | Internal Marks |    |     | External Marks |    | Passing Marks<br>(Theory + CE) | Passing Marks<br>(Practical) | Total Marks |
|------|------------------------------------------------|-----------|-----------|----------|----------|----------------|----|-----|----------------|----|--------------------------------|------------------------------|-------------|
| Code | Subject                                        | Credit    | Lect      | Lab      | Tut      | T              | P  | CE  | T              | P  | Int. + Ext.                    | Int. + Ext.                  |             |
|      | Environmental Science                          | 0         | 1         | 0        | 0        | -              | -  | 50  | -              | -  | 20                             | -                            | 50          |
|      | Open Source Software                           | 2         | 1         | 2        | 0        | 20             | 20 | 20  | 60             | 30 | 40                             | 25                           | 150         |
|      | Computational Thinking for Structured Design-1 | 4         | 3         | 2        | -        | 20             | 20 | 20  | 60             | 30 | 40                             | 25                           | 150         |
|      | Mathematics-I                                  | 4         | 4         | -        | -        | 20             | -  | 20  | 60             | -  | 40                             | -                            | 100         |
|      | Communication Skills                           | 2         | -         | -        | 2        | -              | -  | 100 | -              | -  | 40                             | -                            | 100         |
|      | First Year Elective-1 (Compulsory Subjects :1) | 4         | 3         | 2        | 0        | 20             | 20 | 20  | 60             | 30 | 40                             | 25                           | 150         |
|      | <b>Total</b>                                   | <b>16</b> | <b>12</b> | <b>6</b> | <b>2</b> |                |    |     |                |    |                                |                              | <b>700</b>  |

## Semester - 1 First Year Elective-1

|      |                                        |        |      |     |     | Internal Marks |    |    | External Marks |    | Passing Marks<br>(Theory + CE) | Passing Marks<br>(Practical) | Total Marks |
|------|----------------------------------------|--------|------|-----|-----|----------------|----|----|----------------|----|--------------------------------|------------------------------|-------------|
| Code | Subject                                | Credit | Lect | Lab | Tut | T              | P  | CE | T              | P  | Int. + Ext.                    | Int. + Ext.                  |             |
|      | Electrical and Electronics Engineering | 4      | 3    | 2   | 0   | 20             | 20 | 20 | 60             | 30 | 40                             | 25                           | 150         |
|      | Engineering Physics-II                 | 4      | 3    | 2   | 0   | 20             | 20 | 20 | 60             | 30 | 40                             | 25                           | 150         |

**Lect** - Lecture, **Tut** - Tutorial, **Lab** - Lab, **T** - Theory, **P** - Practical, **CE** - CE, **T** - Theory, **P** - Practical  
**Theory Passing % : 40 Practical Passing % : 50**



**Semester - 2**

|      |                                                        |           |           |          |          | Internal Marks |    |     | External Marks |    | Passing Marks<br>(Theory + CE) | Passing Marks<br>(Practical) | Total Marks |
|------|--------------------------------------------------------|-----------|-----------|----------|----------|----------------|----|-----|----------------|----|--------------------------------|------------------------------|-------------|
| Code | Subject                                                | Credit    | Lect      | Lab      | Tut      | T              | P  | CE  | T              | P  | Int. + Ext.                    | Int. + Ext.                  |             |
|      | Computational Thinking for Structured Design-2         | 4         | 3         | 2        | -        | 20             | 20 | 20  | 60             | 30 | 40                             | 25                           | 150         |
|      | Design Thinking                                        | 3         | 2         | 2        | -        | 20             | 20 | 20  | 60             | 30 | 40                             | 25                           | 150         |
|      | Global Certifications - Fundamentals (Azure, AWS, GCP) | 2         | 2         | -        | -        | 20             | -  | 20  | 60             | -  | 40                             | -                            | 100         |
|      | ICT workshop                                           | 1         | 0         | 2        | 0        | -              | 20 | -   | -              | 30 | -                              | 25                           | 50          |
|      | Mathematics-II                                         | 4         | 4         | -        | -        | 20             | -  | 20  | 60             | -  | 40                             | -                            | 100         |
|      | Advanced Communication & Technical Writing             | 2         | -         | -        | 2        | -              | -  | 100 | -              | -  | 40                             | -                            | 100         |
|      | First Year Elective-2 (Compulsory Subjects :1)         | 4         | 3         | 2        | 0        | 20             | 20 | 20  | 60             | 30 | 40                             | 25                           | 150         |
|      | <b>Total</b>                                           | <b>20</b> | <b>14</b> | <b>8</b> | <b>2</b> |                |    |     |                |    |                                |                              | <b>800</b>  |

**Semester - 2 First Year Elective-2**

|      |                                        |        |      |     |     | Internal Marks |    |    | External Marks |    | Passing Marks<br>(Theory + CE) | Passing Marks<br>(Practical) | Total Marks |
|------|----------------------------------------|--------|------|-----|-----|----------------|----|----|----------------|----|--------------------------------|------------------------------|-------------|
| Code | Subject                                | Credit | Lect | Lab | Tut | T              | P  | CE | T              | P  | Int. + Ext.                    | Int. + Ext.                  |             |
|      | Electrical and Electronics Engineering | 4      | 3    | 2   | 0   | 20             | 20 | 20 | 60             | 30 | 40                             | 25                           | 150         |
|      | Engineering Physics-II                 | 4      | 3    | 2   | 0   | 20             | 20 | 20 | 60             | 30 | 40                             | 25                           | 150         |

**Lect** - Lecture, **Tut** - Tutorial, **Lab** - Lab, **T** - Theory, **P** - Practical, **CE** - CE, **T** - Theory, **P** - Practical  
**Theory Passing % : 40 Practical Passing % : 50**



### Semester - 3

**Lect** - Lecture, **Tut** - Tutorial, **Lab** - Lab, **T** - Theory, **P** - Practical, **CE** - CE, **T** - Theory, **P** - Practical  
**Theory Passing % : 40 Practical Passing % : 50**

|      |                                                     |        |      |     |     | Internal Marks |    |     | External Marks |    | Theory Passing % : 40 | Practical Passing % : 50 | Total Marks |
|------|-----------------------------------------------------|--------|------|-----|-----|----------------|----|-----|----------------|----|-----------------------|--------------------------|-------------|
| Code | Subject                                             | Credit | Lect | Lab | Tut | T              | P  | CE  | T              | P  | Int. + Ext.           | Int. + Ext.              |             |
|      | Design of Data Structures                           | 3      | 3    | 0   | 0   | 20             | -  | 20  | 60             | -  | 40                    | -                        | 100         |
|      | Design of Data Structures Laboratory                | 2      | 0    | 4   | 0   | -              | 20 | -   | -              | 30 | -                     | 25                       | 50          |
|      | Database Management System                          | 3      | 3    | 0   | 0   | 20             | -  | 20  | 60             | -  | 40                    | -                        | 100         |
|      | Database Management System Laboratory               | 1      | 0    | 2   | 0   | -              | 20 | -   | -              | 30 | -                     | 25                       | 50          |
|      | Object Oriented Programming with JAVA               | 2      | 2    | 0   | 0   | 20             | -  | 20  | 60             | -  | 40                    | -                        | 100         |
|      | Object Oriented Programming with JAVA Laboratory    | 1      | 0    | 2   | 0   | -              | 20 | -   | -              | 30 | -                     | 25                       | 50          |
|      | Computer Organization and Microprocessor            | 3      | 3    | 0   | 0   | 20             | -  | 20  | 60             | -  | 40                    | -                        | 100         |
|      | Computer Organization and Microprocessor Laboratory | 1      | 0    | 2   | 0   | -              | 20 | -   | -              | 30 | -                     | 25                       | 50          |
|      | Discrete Mathematics                                | 4      | 4    | 0   | 0   | 20             | -  | 20  | 60             | -  | 40                    | -                        | 100         |
|      | Professional Communication Skills                   | 2      | 0    | 0   | 2   | -              | -  | 100 | -              | -  | 40                    | -                        | 100         |
|      | Total                                               | 22     | 15   | 10  | 2   |                |    |     |                |    |                       |                          | 800         |



## Semester - 4

|      |                                                              |        |      |     |     | Internal Marks |    |     | External Marks |    | Passing Marks<br>(Theory + CE) | Passing Marks<br>(Practical) | Total Marks |
|------|--------------------------------------------------------------|--------|------|-----|-----|----------------|----|-----|----------------|----|--------------------------------|------------------------------|-------------|
| Code | Subject                                                      | Credit | Lect | Lab | Tut | T              | P  | CE  | T              | P  | Int. + Ext.                    | Int. + Ext.                  |             |
|      | Operating System                                             | 3      | 3    | 0   | 0   | 20             | -  | 20  | 60             | -  | 40                             | -                            | 100         |
|      | Operating System Laboratory                                  | 1      | 0    | 2   | 0   | -              | 20 | -   | -              | 30 | -                              | 25                           | 50          |
|      | Software Engineering                                         | 3      | 3    | 0   | 0   | 20             | -  | 20  | 60             | -  | 40                             | -                            | 100         |
|      | Software Engineering Laboratory                              | 1      | 0    | 2   | 0   | -              | 20 | -   | -              | 30 | -                              | 25                           | 50          |
|      | Computer Network                                             | 3      | 3    | 0   | 0   | 20             | -  | 20  | 60             | -  | 40                             | -                            | 100         |
|      | Computer Network Laboratory                                  | 1      | 0    | 2   | 0   | -              | 20 | -   | -              | 30 | -                              | 25                           | 50          |
|      | Programming in Python with Full Stack Development            | 3      | 3    | 0   | 0   | 20             | -  | 20  | 60             | -  | 40                             | -                            | 100         |
|      | Programming in Python with Full Stack Development Laboratory | 1      | 0    | 2   | 0   | -              | 20 | -   | -              | 30 | -                              | 25                           | 50          |
|      | Probability, Statistics and Numerical Methods                | 4      | 4    | 0   | 0   | 20             | -  | 20  | 60             | -  | 40                             | -                            | 100         |
|      | Professional Grooming and Personality Development            | 1      | 0    | 0   | 1   | -              | -  | 100 | -              | -  | 40                             | -                            | 100         |
|      | Competitive Coding                                           | 2      | 0    | 4   | 0   | -              | 20 | -   | -              | 30 | -                              | 25                           | 50          |
|      | Total                                                        | 23     | 16   | 12  | 1   |                |    |     |                |    |                                |                              | 850         |



**Semester -5**

|      |                                                  |           |           |          |          | Internal Marks |    |     | External Marks |    | Passing Marks<br>(Theory + CE) | Passing Marks<br>(Practical) | Total Marks |
|------|--------------------------------------------------|-----------|-----------|----------|----------|----------------|----|-----|----------------|----|--------------------------------|------------------------------|-------------|
| Code | Subject                                          | Credit    | Lect      | Lab      | Tut      | T              | P  | CE  | T              | P  | Int. + Ext.                    | Int. + Ext.                  |             |
|      | Design and Analysis of Algorithms                | 3         | 3         | 0        | 0        | 20             | -  | 20  | 60             | -  | 40                             | -                            | 100         |
|      | Design and Analysis of Algorithms Laboratory     | 2         | 0         | 4        | 0        | -              | 20 | -   | -              | 30 | -                              | 25                           | 50          |
|      | Theory of Computation                            | 3         | 3         | 0        | 0        | 20             | -  | 20  | 60             | -  | 40                             | -                            | 100         |
|      | Data visualization and Data Analytics            | 3         | 3         | 0        | 0        | 20             | -  | 20  | 60             | -  | 40                             | -                            | 100         |
|      | Data visualization and Data Analytics Laboratory | 1         | 0         | 2        | 0        | -              | 20 | -   | -              | 30 | -                              | 25                           | 50          |
|      | Enterprise Programming                           | 2         | 2         | 0        | 0        | 20             | -  | 20  | 60             | -  | 40                             | -                            | 100         |
|      | Enterprise Programming Laboratory                | 1         | 0         | 2        | 0        | -              | 20 | -   | -              | 30 | -                              | 25                           | 50          |
|      | Professionalism & Corporate Ethics               | 1         | 0         | 0        | 1        | -              | -  | 100 | -              | -  | 40                             | -                            | 100         |
|      | Quant, and Reasoning                             | 3         | 3         | 0        | 0        | 20             | -  | 20  | 60             | -  | 40                             | -                            | 100         |
|      | Open Elective 01 (Compulsory Subjects :1)        | 2         | 2         | 0        | 0        | 20             | -  | 20  | 60             | -  | 40                             | -                            | 100         |
|      | <b>Total</b>                                     | <b>21</b> | <b>16</b> | <b>8</b> | <b>1</b> |                |    |     |                |    |                                |                              | <b>850</b>  |

**Semester – 5 - Open Elective 01**

|      |                                    |        |      |     |     | Internal Marks |   |    | External Marks |   | Passing Marks<br>(Theory + CE) | Passing Marks<br>(Practical) | Total Marks |
|------|------------------------------------|--------|------|-----|-----|----------------|---|----|----------------|---|--------------------------------|------------------------------|-------------|
| Code | Subject                            | Credit | Lect | Lab | Tut | T              | P | CE | T              | P | Int. + Ext.                    | Int. + Ext.                  |             |
|      | Basic Aircraft Science             | 2      | 2    | 0   | 0   | 20             | - | 20 | 60             | - | 40                             | -                            | 100         |
|      | Disaster Preparedness and Planning | 2      | 2    | 0   | 0   | 20             | - | 20 | 60             | - | 40                             | -                            | 100         |



|  |                                           |   |   |   |   |    |   |    |    |   |    |   |     |
|--|-------------------------------------------|---|---|---|---|----|---|----|----|---|----|---|-----|
|  | Cyber Security                            | 2 | 2 | 0 | 0 | 20 | - | 20 | 60 | - | 40 | - | 100 |
|  | Azure Fundamentals                        | 2 | 2 | 0 | 0 | 20 | - | 20 | 60 | - | 40 | - | 100 |
|  | Fundamentals of Communication Engineering | 2 | 2 | 0 | 0 | 20 | - | 20 | 60 | - | 40 | - | 100 |
|  | Internet of Things                        | 2 | 2 | 0 | 0 | 20 | - | 20 | 60 | - | 40 | - | 100 |

## Semester -6

|      |                                     |        |      |     |     | Internal Marks |     |    | External Marks |     | Passing Marks<br>(Theory + CE) | Passing Marks<br>(Practical) | Total Marks |
|------|-------------------------------------|--------|------|-----|-----|----------------|-----|----|----------------|-----|--------------------------------|------------------------------|-------------|
| Code | Subject                             | Credit | Lect | Lab | Tut | T              | P   | CE | T              | P   | Int. + Ext.                    | Int. + Ext.                  |             |
|      | Project – 1                         | 3      | 0    | 6   | 0   | -              | 100 | -  | -              | 100 | -                              | 100                          | 200         |
|      | Big Data Analytics                  | 3      | 3    | 0   | 0   | 20             | -   | 20 | 60             | -   | 40                             | -                            | 100         |
|      | Big Data Analytics Laboratory       | 1      | 0    | 2   | 0   | -              | 20  | -  | -              | 30  | -                              | 25                           | 50          |
|      | Compiler Design                     | 3      | 3    | 0   | 0   | 20             | -   | 20 | 60             | -   | 40                             | -                            | 100         |
|      | Compiler Design Laboratory          | 1      | 0    | 2   | 0   | -              | 20  | -  | -              | 30  | -                              | 25                           | 50          |
|      | Cloud Computing                     | 3      | 3    | 0   | 0   | 20             | -   | 20 | 60             | -   | 40                             | -                            | 100         |
|      | Cloud Computing Laboratory          | 1      | 0    | 2   | 0   | -              | 20  | -  | -              | 30  | -                              | 25                           | 50          |
|      | PEC 01 (Compulsory Subjects :1)     | 3      | 3    | 0   | 0   | 20             | -   | 20 | 60             | -   | 40                             | -                            | 100         |
|      | PEC 01-LAB (Compulsory Subjects :1) | 1      | 0    | 2   | 0   | -              | 20  | -  | -              | 30  | -                              | 25                           | 50          |
|      | PEC 02 (Compulsory Subjects :1)     | 3      | 3    | 0   | 0   | 20             | -   | 20 | 60             | -   | 40                             | -                            | 100         |
|      | PEC 02-LAB (Compulsory Subjects :1) | 1      | 0    | 2   | 0   | -              | 20  | -  | -              | 30  | -                              | 25                           | 50          |
|      | Employability Skills                | 1      | 0    | 0   | 1   | 20             | -   | 20 | 60             | -   | 40                             | -                            | 100         |
|      | Total                               | 24     | 15   | 16  | 1   |                |     |    |                |     |                                |                              | 1050        |



**Semester – 6 PEC 01**

|      |                         |        |      |     |     | Internal Marks |   |    | External Marks |   | Passing Marks<br>(Theory + CE) | Passing Marks<br>(Practical) | Total Marks |
|------|-------------------------|--------|------|-----|-----|----------------|---|----|----------------|---|--------------------------------|------------------------------|-------------|
| Code | Subject                 | Credit | Lect | Lab | Tut | T              | P | CE | T              | P | Int. + Ext.                    | Int. + Ext.                  |             |
|      | Artificial Intelligence | 3      | 3    | 0   | 0   | 20             | - | 20 | 60             | - | 40                             | -                            | 100         |
|      | Cyber Security          | 3      | 3    | 0   | 0   | 20             | - | 20 | 60             | - | 40                             | -                            | 100         |
|      | Data Science            | 3      | 3    | 0   | 0   | 20             | - | 20 | 60             | - | 40                             | -                            | 100         |

**Semester 6 PEC 01 LAB**

|      |                                    |        |      |     |     | Internal Marks |    |    | External Marks |    | Passing Marks<br>(Theory + CE) | Passing Marks<br>(Practical) | Total Marks |
|------|------------------------------------|--------|------|-----|-----|----------------|----|----|----------------|----|--------------------------------|------------------------------|-------------|
| Code | Subject                            | Credit | Lect | Lab | Tut | T              | P  | CE | T              | P  | Int. + Ext.                    | Int. + Ext.                  |             |
|      | Artificial Intelligence Laboratory | 1      | 0    | 2   | 0   | -              | 20 | -  | -              | 30 | -                              | 25                           | 50          |
|      | Cyber Security Laboratory          | 1      | 0    | 2   | 0   | -              | 20 | -  | -              | 30 | -                              | 25                           | 50          |
|      | Data Science Laboratory            | 1      | 0    | 2   | 0   | -              | 20 | -  | -              | 30 | -                              | 25                           | 50          |

**Semester – 6 PEC 02**

|      |         |        |      |     |     | Internal Marks |   |    | External Marks |   | Passing Marks<br>(Theory + CE) | Passing Marks<br>(Practical) | Total Marks |
|------|---------|--------|------|-----|-----|----------------|---|----|----------------|---|--------------------------------|------------------------------|-------------|
| Code | Subject | Credit | Lect | Lab | Tut | T              | P | CE | T              | P | Int. + Ext.                    | Int. + Ext.                  |             |



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**Subject Teaching & Examination Scheme**

Engg & Tech - BTech - CSE - BDA - 2023 - 24

|  |                                |   |   |   |   |    |   |    |    |   |    |   |     |
|--|--------------------------------|---|---|---|---|----|---|----|----|---|----|---|-----|
|  | Mobile Application Development | 3 | 3 | 0 | 0 | 20 | - | 20 | 60 | - | 40 | - | 100 |
|  | MEA(R)N Stack Web Development  | 3 | 3 | 0 | 0 | 20 | - | 20 | 60 | - | 40 | - | 100 |
|  | Devops                         | 3 | 3 | 0 | 0 | 20 | - | 20 | 60 | - | 40 | - | 100 |

**Semester 6 PEC 02 LAB**

|      |                                           |        |      |     |     | Internal Marks |    |    | External Marks |    | Passing Marks<br>(Theory + CE) | Passing Marks<br>(Practical) | Total Marks |
|------|-------------------------------------------|--------|------|-----|-----|----------------|----|----|----------------|----|--------------------------------|------------------------------|-------------|
| Code | Subject                                   | Credit | Lect | Lab | Tut | T              | P  | CE | T              | P  | Int. + Ext.                    | Int. + Ext.                  |             |
|      | Mobile Application Development Laboratory | 1      | 0    | 2   | 0   | -              | 20 | -  | -              | 30 | -                              | 25                           | 50          |
|      | MEA(R)N Stack Web Development Laboratory  | 1      | 0    | 2   | 0   | -              | 20 | -  | -              | 30 | -                              | 25                           | 50          |
|      | Devops Laboratory                         | 1      | 0    | 2   | 0   | -              | 20 | -  | -              | 30 | -                              | 25                           | 50          |



## Semester – 7

|      |                                     |        |      |     |     | Internal Marks |     |    | External Marks |     | Passing Marks<br>(Theory + CE) | Passing Marks<br>(Practical) | Total Marks |
|------|-------------------------------------|--------|------|-----|-----|----------------|-----|----|----------------|-----|--------------------------------|------------------------------|-------------|
| Code | Subject                             | Credit | Lect | Lab | Tut | T              | P   | CE | T              | P   | Int. + Ext.                    | Int. + Ext.                  |             |
|      | Summer Internship                   | 2      | 0    | 0   | 0   | -              | 100 | -  | -              | -   | -                              | 50                           | 100         |
|      | Deep Learning with NLP              | 3      | 3    | 0   | 0   | 20             | -   | 20 | 60             | -   | 40                             | -                            | 100         |
|      | Deep Learning with NLP Laboratory   | 1      | 0    | 2   | 0   | -              | 20  | -  | -              | 30  | -                              | 25                           | 50          |
|      | Project – II                        | 6      | 0    | 12  | 0   | -              | 100 | -  | -              | 100 | -                              | 100                          | 200         |
|      | Big Data on Cloud                   | 3      | 3    | 0   | 0   | 20             | -   | 20 | 60             | -   | 40                             | -                            | 100         |
|      | Big Data on Cloud Laboratory        | 1      | 0    | 2   | 0   | -              | 20  | -  | -              | 30  | -                              | 25                           | 50          |
|      | PEC 03 (Compulsory Subjects :1)     | 3      | 3    | 0   | 0   | 20             | -   | 20 | 60             | -   | 40                             | -                            | 100         |
|      | PEC 03-LAB (Compulsory Subjects :1) | 1      | 0    | 2   | 0   | -              | 20  | -  | -              | 30  | -                              | 25                           | 50          |
|      | PEC 04 (Compulsory Subjects :1)     | 3      | 3    | 0   | 0   | 20             | -   | 20 | 60             | -   | 40                             | -                            | 100         |
|      | PEC 04-LAB (Compulsory Subjects :1) | 1      | 0    | 2   | 0   | -              | 20  | -  | -              | 30  | -                              | 25                           | 50          |
|      | Open Elective-2                     | 3      | 3    | 0   | 0   | 20             | -   | 20 | 60             | -   | 40                             | -                            | 100         |
|      | Total                               | 27     | 15   | 20  | 0   |                |     |    |                |     |                                |                              | 1000        |



**Semester – 7 PEC 03**

|      |                               |        |      |     |     | Internal Marks |   |    | External Marks |   | Passing Marks<br>(Theory + CE) | Passing Marks<br>(Practical) | Total Marks |
|------|-------------------------------|--------|------|-----|-----|----------------|---|----|----------------|---|--------------------------------|------------------------------|-------------|
| Code | Subject                       | Credit | Lect | Lab | Tut | T              | P | CE | T              | P | Int. + Ext.                    | Int. + Ext.                  |             |
|      | Augmented and Virtual Reality | 3      | 3    | 0   | 0   | 20             | - | 20 | 60             | - | 40                             | -                            | 100         |
|      | Blockchain Technologies       | 3      | 3    | 0   | 0   | 20             | - | 20 | 60             | - | 40                             | -                            | 100         |
|      | Machine Learning              | 3      | 3    | 0   | 0   | 20             | - | 20 | 60             | - | 40                             | -                            | 100         |

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**Semester 7 PEC 03 LAB**

|      |                                          |        |      |     |     | Internal Marks |    |    | External Marks |    | Passing Marks<br>(Theory + CE) | Passing Marks<br>(Practical) | Total Marks |
|------|------------------------------------------|--------|------|-----|-----|----------------|----|----|----------------|----|--------------------------------|------------------------------|-------------|
| Code | Subject                                  | Credit | Lect | Lab | Tut | T              | P  | CE | T              | P  | Int. + Ext.                    | Int. + Ext.                  |             |
|      | Augmented and Virtual Reality Laboratory | 1      | 0    | 2   | 0   | -              | 20 | -  | -              | 30 | -                              | 25                           | 50          |
|      | Blockchain Technologies Laboratory       | 1      | 0    | 2   | 0   | -              | 20 | -  | -              | 30 | -                              | 25                           | 50          |
|      | Machine Learning Laboratory              | 1      | 0    | 2   | 0   | -              | 20 | -  | -              | 30 | -                              | 25                           | 50          |

**Semester – 7 PEC 04**

|      |         |        |      |     |     | Internal Marks |   |    | External Marks |   | Passing Marks<br>(Theory + CE) | Passing Marks<br>(Practical) | Total Marks |
|------|---------|--------|------|-----|-----|----------------|---|----|----------------|---|--------------------------------|------------------------------|-------------|
| Code | Subject | Credit | Lect | Lab | Tut | T              | P | CE | T              | P | Int. + Ext.                    | Int. + Ext.                  |             |



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|  |                            |   |   |   |   |    |   |    |    |   |    |   |     |
|--|----------------------------|---|---|---|---|----|---|----|----|---|----|---|-----|
|  | Big Data Security          | 3 | 3 | 0 | 0 | 20 | - | 20 | 60 | - | 40 | - | 100 |
|  | Internet of Things         | 3 | 3 | 0 | 0 | 20 | - | 20 | 60 | - | 40 | - | 100 |
|  | High Performance Computing | 3 | 3 | 0 | 0 | 20 | - | 20 | 60 | - | 40 | - | 100 |

**Semester 7 PEC 04 LAB**

|      |                                       |        |      |     |     | Internal Marks |    |    | External Marks |    | Passing Marks<br>(Theory + CE) | Passing Marks<br>(Practical) | Total Marks |
|------|---------------------------------------|--------|------|-----|-----|----------------|----|----|----------------|----|--------------------------------|------------------------------|-------------|
| Code | Subject                               | Credit | Lect | Lab | Tut | T              | P  | CE | T              | P  | Int. + Ext.                    | Int. + Ext.                  |             |
|      | Big Data Security Laboratory          | 1      | 0    | 2   | 0   | -              | 20 | -  | -              | 30 | -                              | 25                           | 50          |
|      | Internet of Things Laboratory         | 1      | 0    | 2   | 0   | -              | 20 | -  | -              | 30 | -                              | 25                           | 50          |
|      | High Performance Computing Laboratory | 1      | 0    | 2   | 0   | -              | 20 | -  | -              | 30 | -                              | 25                           | 50          |

**Semester - 7 Open Elective 02**

|      |                                    |        |      |     |     | Internal Marks |   |    | External Marks |   | Passing Marks<br>(Theory + CE) | Passing Marks<br>(Practical) | Total Marks |
|------|------------------------------------|--------|------|-----|-----|----------------|---|----|----------------|---|--------------------------------|------------------------------|-------------|
| Code | Subject                            | Credit | Lect | Lab | Tut | T              | P | CE | T              | P | Int. + Ext.                    | Int. + Ext.                  |             |
|      | Remote Sensing and Geo Informatics | 3      | 3    | 0   | 0   | 20             | - | 20 | 60             | - | 40                             | -                            | 100         |
|      | Real Time Systems                  | 3      | 3    | 0   | 0   | 20             | - | 20 | 60             | - | 40                             | -                            | 100         |
|      | Cyber Physical Systems             | 3      | 3    | 0   | 0   | 20             | - | 20 | 60             | - | 40                             | -                            | 100         |
|      | Computational Number Theory        | 3      | 3    | 0   | 0   | 20             | - | 20 | 60             | - | 40                             | -                            | 100         |
|      | VLSI System Design                 | 3      | 3    | 0   | 0   | 20             | - | 20 | 60             | - | 40                             | -                            | 100         |



## Semester - 8

|      |            |        |      |     |     | Internal Marks |     |    | External Marks |     | Passing Marks<br>(Theory + CE) | Passing Marks<br>(Practical) | Total Marks |
|------|------------|--------|------|-----|-----|----------------|-----|----|----------------|-----|--------------------------------|------------------------------|-------------|
| Code | Subject    | Credit | Lect | Lab | Tut | T              | P   | CE | T              | P   | Int. + Ext.                    | Int. + Ext.                  |             |
|      | Internship | 14     | 0    | 28  | 0   | -              | 200 | -  | -              | 300 | -                              | 250                          | 500         |
|      | Total      | 14     | 0    | 28  | 0   |                |     |    |                |     |                                |                              | 500         |