## COURSE STRUCTURE

#### I Year - I Semester

| SI. | Course | Name of the Course / Laboratory                        | No.o | No.of |     |         |
|-----|--------|--|------|-------|-----|---------|
| No. | Code   |  | L    | Т     | P   | Credits |
| 1   | EG3501 | Functional English                                     | 3    |       | -   | 3       |
| 2   | MA3501 | Linear Algebra and Calculus                            | 3    | 1     | -   | 4       |
| 3   | PH3501 | Engineering Physics                                    | 3    |       | - = | 3       |
| 4   | CT3501 | Problem Solving Using C *                              | 3    | -     | 2   | 4       |
| 5   | ME3503 | Engineering Graphics *                                 | 2    | 1-11  | 4   | 4       |
| 6   | EG3502 | Functional English Lab                                 | 1    | -     | 2   | 1       |
| 7   | PH3503 | Engineering Physics Lab                                | -    | -     | 2   | 1       |
|     |        | Total  | 14   | 1     | 10  | 20      |
| 8   | EN3501 | Environmental Studies<br>(Mandatory Non-Credit Course) | 2    | -     | -   | -       |

<sup>\*</sup> Integrated Course with Theory and Laboratory

# I Year - II Semester

| SI. | Course<br>Code | Name of the Course / Laboratory                     | No.of Periods<br>per week |   |     | No.of   |
|-----|----------------|---|---------------------------|---|-----|---------|
| No. |                |   | L                         | T | P   | Credits |
| 1   | EG3503         | Professional Communication                          | 2                         | - | -   | 2       |
| 2   | MA3505         | Integral Transforms and Vector Calculus             | 3                         | 1 | -   | 4       |
| 3   | CH3501         | Engineering Chemistry                               | 3                         | 4 | 1-1 | 3       |
| 4   | CE3501         | Applied Mechanics                                   | 3                         | 1 | -   | 4       |
| 5   | UH3501         | Universal Human Values 2:                           | 2                         | 1 | 1.5 | 3       |
|     |                | Understanding Harmony                               |                           |   |     |         |
| 6   | EG3504         | Professional Communication Lab                      | -                         | - | 4   | 2       |
| 7   | CH3502         | Engineering Chemistry Lab                           | -                         | - | 2   | 1       |
| 8   | CE3502         | Applied Mechanics Lab & Building Trade Practice     |                           | w | 2   | 1       |
|     |                | Total   | 13                        | 3 | 8   | 20      |
| 9   | BA3501         | Constitution of India (Mandatory Non-Credit Course) | 2                         | - | 120 | 9       |

L : Lecture

T: Tutorial

P : Practical

Civil Engineering

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Gudlavalleru - 521 356, Krishna District. A.P.

| SI. | Course<br>Code | Name of the Course / Laboratory                              | No.of Periods<br>per week |   |   | No.of  |
|-----|----------------|--|---------------------------|---|---|--------|
| No. |                |  | L                         | T | P | Credit |
| 1   | CE3503         | Building Materials and Building Construction                 | 2                         | 2 | - | 2      |
| 2   | ME3507         | Elements of Mechanical and Electrical Engineering            | 2                         | 1 | - | 3      |
| 3   | CE3504         | Mechanics of Solids  | 3                         | 1 | - | 4      |
| 4   | CE3505         | Fluid Mechanics  | 2                         | 1 | - | 3      |
| 5   | CE3506         | Surveying  | 2                         | 1 | - | 3      |
| 6   | CE3507         | Engineering Geology & Geo-Spatial Applications *             | 2                         | - | 2 | 3      |
| 7   | CE3508         | Mechanics of Solids Lab                                      | -                         | - | 2 | 1      |
| 8   | CE3509         | Survey Field Work  | -                         | - | 2 | 1      |
| 9   | SD3501         | Logic Building and Basic Coding Principles                   | -                         | - | 2 | 1      |
|     |                | Total  | 13                        | 4 | 8 | 21     |
| 10  | SG3501         | Sports and Games / Cultural<br>(Mandatory Non-Credit Course) | -                         | - | 2 | -      |

<sup>\*</sup> Integrated Course with Theory and Laboratory

### II Year - II Semester

| Sl. | Course | Name of the Course / Laboratory  | No.of Periods<br>per week |      |     | No.of   |
|-----|--------|--|---------------------------|------|-----|---------|
| No. | Code   |  | L                         | T    | P   | Credits |
| 1   | MA3513 | Numerical & Statistical Methods  | 2                         | 1    | -   | 3       |
| 2   | CE3510 | Structural Analysis  | 3                         | 1    | -   | 4       |
| 3   | CE3511 | Hydraulics & Hydraulic Machines  | 2                         | 1    | -   | 3       |
| 4   | CE3512 | Concrete Technology  | 3                         | 12.  | 1 - | 3       |
| 5   | CT3508 | Python Programming *   | 2                         | -    | 2   | 3       |
| 6   |        | Open Elective - I  | 3                         |      | -   | 3       |
| 7   | CE3515 | Fluid Mechanics & Hydraulic Machines Lab                               | -                         | -    | 2   | 1       |
| 8   | CE3516 | Concrete Technology Lab  | -                         | 1 48 | 2   | 1       |
| 9   | SD3503 | Programming for Corporate  | -                         | -    | 2   | 1       |
|     |        | Total  | 15                        | 3    | 8   | 22      |
| 10  | NS3501 | NSS / Fine Arts / Yoga / Self Defense<br>(Mandatory Non-Credit Course) | 14                        | -    | 2   | •       |

<sup>\*</sup> Integrated Course with Theory and Laboratory

P : Practical T: Tutorial L : Lecture

Civil Engineering

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|    | Course<br>Code | Name of the Course /<br>Laboratory  | Department<br>Offering the<br>Subject | V 11 12 1 |   |   | No.of<br>Credits |
|----|----------------|---|---------------------------------------|---|---|---|------------------|
|    |                |   |                                       | L   | Т | Р | 3333337          |
| 1  | CE3513         | Elements of Civil Engineering (other than CE)                             | CE                                    | 3   | - | - | 3                |
| 2  | CE3514         | Environment Laws and<br>Policies (other than CE)                          | CE                                    | 3   | - | - | 3                |
| 3  | EE3513         | Electrical Materials (other than EEE)                                     | EEE                                   | 3   | - | - | 3                |
| 4  | EE3514         | Control Systems Engineering (other than EEE&ECE)                          | EEE                                   | 3   | - | - | 3                |
| 5  | ME3517         | Automotive Engineering (other than ME)                                    | ME                                    | 3   | - | - | 3                |
| 6  | ME3518         | Elements of Mechanical Transmission (other than ME)                       | ME                                    | 3   | - | - | 3                |
| 7  | EC3520         | Introduction to Embedded Systems (other than ECE/IoT)                     | ECE                                   | 3   | - | - | 3                |
| 8  | EC3521         | Fundamentals of Communication Systems (other than ECE/IoT)                | ECE                                   | 3   | - | - | 3                |
| 9  | CS3503         | Information Retreival Systems<br>(Other than CSE, CSE(Al&ML), &<br>Al&DS) | CSE                                   | 3   | - | - | 3                |
| 10 | CT3522         | Computer Graphics (Other than CSE, IT, CSE(AI&ML) & AI&DS)                | CSE                                   | 3   | - | - | 3                |
| 11 | IT3504         | System Software (Other than IT)   | IT                                    | 3   | - | - | 3                |
| 12 | IT3505         | Free & Open Source Software (Other than IT)                               | IT                                    | 3   | * | - | 3                |
| 13 | MA3516         | Fuzzy Mathematics   | BS&H                                  | 3   | - | - | 3                |

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| SI. | Course<br>Code | Name of the Course / Laboratory                     | No.e | No.of |       |         |
|-----|----------------|---|------|-------|-------|---------|
| No. |                |   | L    | T     | P     | Credits |
| 1   | EG3501         | Functional English                                  | 3    | -     | -     | 3       |
| 2   | MA3501         | Linear Algebra and Calculus                         | 3    | 1     | -     | 4       |
| 3   | CH3503         | Applied Chemistry                                   | 3    | -     | ( - ) | 3       |
| 4   | CT3501         | Problem Solving Using C *                           | 3    | -     | 2     | 4       |
| 5   | UH3501         | Universal Human Values 2:<br>Understanding Harmony  | 2    | 1     | - =   | 3       |
| 6   | CH3504         | Applied Chemistry Lab                               | -    | -     | 2     | 1       |
| 7   | EG3502         | Functional English Lab                              | (H)  | -     | 2     | 1       |
|     |                | Total   | 14   | 2     | 6     | 19      |
| 8   | BA3501         | Constitution of India (Mandatory Non-Credit Course) | 2    | -     | -     | -       |

<sup>\*</sup> Integrated Course with Theory and Laboratory

### I Year - II Semester

| SI. | Course<br>Code | Name of the Course / Laboratory                        | No.of Periods<br>per week |   |    | No.of   |
|-----|----------------|--|---------------------------|---|----|---------|
| No. |                |  | L                         | T | P  | Credits |
| 1   | EG3503         | Professional Communication                             | 2                         | - | -  | 2       |
| 2   | MA3505         | Integral Transforms and Vector Calculus                | 3                         | 1 | -  | 4       |
| 3   | PH3504         | Solid State Physics                                    | 3                         | - | -  | 3       |
| 4   | EE3504         | Circuit Theory - I                                     | 2                         | 1 | -  | 3       |
| 5   | MA3506         | Discrete Mathematics                                   | 2                         | 1 | 7  | 3       |
| 6   | ME3501         | Engineering Drawing                                    | 1                         | - | 4  | 3       |
| 7   | EG3504         | Professional Communication Lab                         | +                         | - | 4  | 2       |
| 8   | PH3505         | Solid State Physics Lab                                | -                         |   | 2  | 1       |
|     |                | Total  | 13                        | 3 | 10 | 21      |
| 9   | EN3501         | Environmental Studies<br>(Mandatory Non-Credit Course) | 2                         | - | -  | -       |

L : Lecture

T: Tutorial

P: Practical

**Electrical and Electronics Engineering** 

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| Sl.<br>No. | Course<br>Code | Name of the Course / Laboratory  | No.of Periods  per week  L   T   P |     | ek  | No.of<br>Credits |
|------------|----------------|--|------------------------------------|-----|-----|------------------|
| 1          | CT3508         | Python Programming *   | 2                                  | -   | 2   | 3                |
| 2          | EE3508         | Circuit Theory - II  | 2                                  | 1   | -   | 3                |
| 3          | EE3509         | Control Systems  | 2                                  | 1   | -   | 3                |
| 4          | EE3510         | DC Machines and Transformers   | 2                                  | 1   | -   | 3                |
| 5          | EC3504         | Electronic Devices and Circuits  | 2                                  | 1   | -   | 3                |
| 6          | EC3505         | Digital Circuits   | 3                                  | -   | - × | 3                |
| 7          | EC3506         | Electronic Devices and Circuits Lab                                    |                                    | :#0 | 2   | 1                |
| 8          | EC3507         | Digital Circuits Lab   | -                                  | 2   | 2   | 1                |
| 9          | SD3501         | Logic Building and Basic Coding Principles                             | •                                  | -   | 2   | 1                |
|            |                | Total  | 13                                 | 4   | 8   | 21               |
| 10         | NS3501         | NSS / Fine Arts / Yoga / Self Defense<br>(Mandatory Non-Credit Course) | -                                  | -   | 2   | (*)              |

<sup>\*</sup> Integrated Course with Theory and Laboratory

### II Year - II Semester

| SI. | Course<br>Code | Name of the Course / Laboratory                              |         | of Per<br>er wee | No.of |         |
|-----|----------------|--|---------|------------------|-------|---------|
| No. |                |  | L       | T                | P     | Credits |
| 1   | MA3514         | Numerical Methods with Computer Applications*                | 2       | -                | 2     | 3       |
| 2   | EE3511         | Induction & Synchronous Machines                             | 2       | 1                | (200  | 3       |
| 3   | EE3512         | Power generation Systems                                     | 3       | 1                | -     | 4       |
| 4   | EC3510         | Signals and Systems  | 2       | 1                | -     | 3       |
| 5   |                | Open Elective - I  | 3       | 14               | -     | 3       |
| 6   | EE3515         | DC Machines and Transofrmers Lab                             | -       | -                | 2     | 1       |
| 7   | EE3516         | Electrical Circuits Lab                                      | -       | -                | 2     | 1       |
| 8   | EE3517         | Simulation of Electrical Engineering Systems                 | 8       | -                | 4     | 2       |
| 9   | SD3503         | Programming for Corporate                                    | -       |                  | 2     | 1       |
|     |                | Total  | 12      | 3                | 12    | 21      |
| 10  | SG3501         | Sports and Games / Cultural<br>(Mandatory Non-Credit Course) | <u></u> | -                | 2     | -       |

<sup>\*</sup> Integrated Course with Theory and Laboratory

L : Lecture

T: Tutorial

P : Practical

**Electrical and Electronics Engineering** 

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| SI. | Course<br>Code | ourse Name of the Course /  | Department<br>Offering the<br>Subject |   |   |       | No.of<br>Credits |
|-----|----------------|---|---------------------------------------|---|---|-------|------------------|
|     | 5.51.535       |   |                                       | L | Т | Р     |                  |
| 1   | CE3513         | Elements of Civil Engineering (other than CE)                             | CE                                    | 3 | - | -     | 3                |
| 2   | CE3514         | Environment Laws and Policies (other than CE)                             | CE                                    | 3 | - | -     | 3                |
| 3   | EE3513         | Electrical Materials (other than EEE)                                     | EEE                                   | 3 | - | -     | 3                |
| 4   | EE3514         | Control Systems Engineering (other than EEE&ECE)                          | EEE                                   | 3 | - | •     | 3                |
| 5   | ME3517         | Automotive Engineering (other than ME)                                    | ME                                    | 3 |   | -     | 3                |
| 6   | ME3518         | Elements of Mechanical<br>Transmission (other than ME)                    | ME                                    | 3 | 2 | 125   | 3                |
| 7   | EC3520         | Introduction to Embedded Systems (other than ECE/IoT)                     | ECE                                   | 3 | • | -     | 3                |
| 8   | EC3521         | Fundamentals of Communication Systems (other than ECE/IoT)                | ECE                                   | 3 | - | -     | 3                |
| 9   | CS3503         | Information Retreival Systems<br>(Other than CSE, CSE(Al&ML), &<br>Al&DS) | CSE                                   | 3 | • | •     | 3                |
| 10  | CT3522         | Computer Graphics (Other than CSE, IT, CSE(AI&ML) & AI&DS)                | CSE                                   | 3 | - | 31773 | 3                |
| 11  | IT3504         | System Software (Other than IT)   | IT                                    | 3 | - | -     | 3                |
| 12  | IT3505         | Free & Open Source Software (Other than IT)                               | IT                                    | 3 | - | -     | 3                |
| 13  | MA3516         | Fuzzy Mathematics   | BS&H                                  | 3 | - | -     | 3                |

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| SI. | Course | Name of the Course / Laboratory                        | No.o | No.of |    |        |
|-----|--------|--|------|-------|----|--------|
| No. | Code   |  | L    | T     | P  | Credit |
| 1   | EG3501 | Functional English                                     | 3    | -     | -  | 3      |
| 2   | MA3501 | Linear Algebra and Calculus                            | 3    | 1     | -  | 4      |
| 3   | PH3502 | Physics for Engineers                                  | 3    | -     | -  | 3      |
| 4   | CT3501 | Problem Solving Using C *                              | 3    | .+.   | 2  | 4      |
| 5   | ME3503 | Engineering Graphics *                                 | 2    |       | 4  | 4      |
| 6   | EG3502 | Functional English Lab                                 | -    |       | 2  | 1      |
| 7   | PH3503 | Engineering Physics Lab                                | -    | -     | 2  | 1      |
|     |        | Total  | 14   | 1     | 10 | 20     |
| 8   | EN3501 | Environmental Studies<br>(Mandatory Non-Credit Course) | 2    | -     | -  | 1+1    |

<sup>\*</sup> Integrated Course with Theory and Laboratory

### I Vear - II Semester

| SI. | Course Name of the Course / Laboratory |  | of Per<br>er we |                | No.of |         |
|-----|--|--|-----------------|----------------|-------|---------|
| No. | Code                                   |  | L               | T              | P     | Credits |
| 1   | EG3503                                 | Professional Communication                             | 2               | -              | -     | 2       |
| 2   | MA3505                                 | Integral Transforms and Vector Calculus                | 3               | 1              | -     | 4       |
| 3   | CH3504                                 | Chemistry for Engineers                                | 3               |                | -     | 3       |
| 4   | ME3504                                 | Engineering Mechanics                                  | 3               | 1              | -     | 4       |
| 5   | UH3501                                 | Universal Human Values 2:<br>Understanding Harmony     | 2               | 1              | -     | 3       |
| 6   | EG3504                                 | Professional Communication Lab                         | -               | -              | 4     | 2       |
| 7   | ME3505                                 | Engineering Workshop                                   | -               | ( <del>-</del> | 2     | 1       |
| 8   | ME3506                                 | Engineering Mechanics Lab and<br>Fuel & Lubricants Lab | -               | -              | 2     | 1       |
|     |  | Total  | 13              | 3              | 8     | 20      |
| 9   | BA3501                                 | Constitution of India (Mandatory Non-Credit Course)    | 2               | -              | -     | -       |

Mechanical Engineering

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| Sl. | Course | Name of the Course / Laboratory                              | No.of Periods<br>per week |   |   | No.of   |
|-----|--------|--|---------------------------|---|---|---------|
| No. | Code   |  | L                         | T | P | Credits |
| 1   | CT3508 | Python Programming *   | 2                         | _ | 2 | 3       |
| 2   | EE3505 | Elements of Electrical and Electronics Engineering           | 3                         | - | - | 3       |
| 3   | ME3508 | Engineering Thermodynamics                                   | 2                         | 1 | - | 3       |
| 4   | ME3509 | Kinematics of Machines                                       | 2                         | 1 | - | 3       |
| 5   | ME3510 | Mechanics of Solids  | 2                         | 1 | - | 3       |
| 6   | ME3511 | Materials Engineering  | 3                         | 1 | - | 3       |
| 7   | EE3506 | Electrical & Electronics Engineering Lab                     | -                         | - | 2 | 1       |
| 8   | ME3512 | Mechanics of Solids Lab and Materials Lab                    | -                         | - | 2 | 1       |
| 9   | SD3501 | Logic Building and Basic Coding Principles                   | -                         | - | 2 | 1       |
|     |        | Total  | 14                        | 3 | 8 | 21      |
| 10  | SG3501 | Sports and Games / Cultural<br>(Mandatory Non-Credit Course) | -                         | - | 2 | -       |

<sup>\*</sup> Integrated Course with Theory and Laboratory

|     | Course | Name of the Course / Laboratory  | No.of Periods<br>per week |     |     | No.of   |
|-----|--------|--|---------------------------|-----|-----|---------|
| No. | Code   |  | L                         | T   | P   | Credits |
| 1   | MA3513 | Numerical & Statistical Methods  | 2                         | 1   | -   | 3       |
| 2   | ME3513 | Manufacturing Science  | 3                         | -   |     | 3       |
| 3   | ME3514 | Applied Thermodynamics   | 2                         | 1   | -   | 3       |
| 4   | ME3515 | Dynamics of Machines   | 2                         | 1   | *   | 3       |
| 5   | ME3516 | Fluid Mechanics & Hydraulic Machines                                   | 2                         | 1   | -   | 3       |
| 6   |        | Open Elective - I  | 3                         | -   | - 2 | 3       |
| 7   | ME3519 | Thermal Engineering Lab  | -                         | 41  | 2   | 1       |
| 8   | MA3515 | Numerical & Statistical Methods Lab                                    |                           | *   | 2   | 1       |
| 9   | ME3520 | Manufacturing Processes Lab & Machine Dynamics Lab                     | -                         | -   | 2   | 1       |
| 10  | SD3503 | Programming for Corporate  | -                         | 1=0 | 2   | 1       |
|     |        | Total  | 14                        | 4   | 8   | 22      |
| 11  | NS3501 | NSS / Fine Arts / Yoga / Self Defense<br>(Mandatory Non-Credit Course) | -                         | (5) | 2   | 888     |

<sup>\*</sup> Integrated Course with Theory and Laboratory

L: Lecture

T: Tutorial

P : Practical

Mechanical Engineering

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Gudlavalleru - 521 356, Krishna District, A.P.

|     | Course<br>Code |   | Department<br>Offering the | P | erio | - Table 1 | No.of<br>Credits |
|-----|----------------|---|----------------------------|---|------|-----------|------------------|
| No. | Code           | Laboratory  | Subject                    | L | er w | Р         | Credits          |
| 1   | CE3513         | Elements of Civil Engineering (other than CE)                             | CE                         | 3 | -    | -         | 3                |
| 2   | CE3514         | Environment Laws and<br>Policies (other than CE)                          | CE                         | 3 | -    | -         | 3                |
| 3   | EE3513         | Electrical Materials (other than EEE)                                     | EEE                        | 3 | *    | -         | 3                |
| 4   | EE3514         | Control Systems Engineering(other than EEE&ECE)                           | EEE                        | 3 | *    | -         | 3                |
| 5   | ME3517         | Automotive Engineering (other than ME)                                    | ME                         | 3 | #    | -         | 3                |
| 6   | ME3518         | Elements of Mechanical Transmission (other than ME)                       | ME                         | 3 | -    | *         | 3                |
| 7   | EC3520         | Introduction to Embedded Systems (other than ECE/IoT)                     | ECE                        | 3 | -    | -         | 3                |
| 8   | EC3521         | Fundamentals of Communication Systems (other than ECE/IoT)                | (Table 1)                  | 3 | ~    | -0        | 3                |
| 9   | CS3503         | Information Retreival Systems<br>(Other than CSE, CSE(AI&ML), &<br>AI&DS) | CSE                        | 3 | -    | (40)      | 3                |
| 10  | CT3522         | Computer Graphics (Other than CSE, IT, CSE(AI&ML) & AI&DS)                | CSE                        | 3 | -    | -         | 3                |
| 11  | IT3504         | System Software (Other than IT)   | IT                         | 3 | -    | -         | 3                |
| 12  | IT3505         | Free & Open Source Software (Other than IT)                               | IT                         | 3 | *    |           | 3                |
| 13  | MA3516         | Fuzzy Mathematics   | BS&H                       | 3 | -    | 1.00      | 3                |

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| SI. | Course<br>Code | Name of the Course / Laboratory                     |    | of Per<br>er we | No.of |         |
|-----|----------------|---|----|-----------------|-------|---------|
| No. |                |   | L  | T               | P     | Credits |
| 1   | EG3501         | Functional English                                  | 3  | -               | -     | 3       |
| 2   | MA350          | Linear Algebra and Calculus                         | 3  | 1               | -     | 4       |
| 3   | CH3503         | Applied Chemistry                                   | 3  | -               | 27    | 3       |
| 4   | CT3501         | Problem Solving Using C *                           | 3  | 251             | 2     | 4       |
| 5   | UH3501         | Universal Human Values 2:                           | 2  | 1               | -     | 3       |
|     |                | Understanding Harmony                               |    |                 |       |         |
| 6   | EC3503         | Electronic Workshop                                 | -  | -               | 4     | 2       |
| 7   | EG3502         | Functional English Lab                              | -  | -               | 2     | 1       |
| 8   | CH3504         | Applied Chemistry Lab                               | _  | 2               | 2     | 1       |
|     |                | Total   | 14 | 2               | 10    | 21      |
| 9   | BA3501         | Constitution of India (Mandatory Non-Credit Course) | 2  | -               | -     | -       |

# \* Integrated Course with Theory and Laboratory

### I Year - II Semester

| SI. | Course | Name of the Course / Laboratory                        | 100000 | of Per<br>er wee | No.of |         |
|-----|--------|--|--------|------------------|-------|---------|
| No. | Code   |  | L      | T                | P     | Credits |
| 1   | EG3503 | Professional Communication                             | 2      | -                | 120   | 2       |
| 2   | MA3505 | Integral Transforms and Vector Calculus                | 3      | 1                | -     | 4       |
| 3   | EE3502 | Linear Electrical Networks                             | 3      | -                | -     | 3       |
| 4   | PH3504 | Solid State Physics                                    | 3      | 2                | -     | 3       |
| 5   | ME3501 | Engineering Drawing                                    | 1      | -                | 4     | 3       |
| 6   | EG3504 | Professional Communication Lab                         | (#2)   | -                | 4     | 2       |
| 7   | PH3506 | Solid State Physics Lab                                |        | 2                | 4     | 2       |
|     |        | Total  | 12     | 1                | 12    | 19      |
| 8   | EN3501 | Environmental Studies<br>(Mandatory Non-Credit Course) | 2      | -                | -     | -       |

L : Lecture

T: Tutorial

P : Practical

Electronics and Communication Engineering

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| SI. | Course<br>Code | Name of the Course / Laboratory  | No.of Periods<br>per week |   |   | No.of   |
|-----|----------------|--|---------------------------|---|---|---------|
| No. |                |  | L                         | T | P | Credits |
| 1   | EC3508         | Probability Theory and Stochastic Processes                            | 3                         |   | - | 3       |
| 2   | EC3509         | Semiconductor Devices and Circuits                                     | 3                         | + | - | 3       |
| 3   | EC3510         | Signals and Systems  | 2                         | 1 | - | 3       |
| 4   | EC3511         | Electromagnetic Field Theory   | 3                         | 2 | - | 3       |
| 5   | EC3512         | Digital Circuit Design   | 2                         | 1 | - | 3       |
| 6   | MA3508         | Numerical Methods and Complex Analysis                                 | 2                         | 1 | - | 3       |
| 7   | EC3513         | Semiconductor Devices and Circuits Lab                                 | (=.)                      | , | 2 | 1       |
| 8   | EE3507         | Linear Electrical Networks Lab   | -                         | - | 2 | 1       |
| 9   | SD3502         | Logic Building and Algorithmic Programming                             | -                         | - | 2 | 1       |
|     |                | Total  | 15                        | 3 | 6 | 21      |
| 10  | NS3501         | NSS / Fine Arts / Yoga / Self Defense<br>(Mandatory Non-Credit Course) | -                         | ř | 2 | -       |

<sup>\*</sup> Integrated Course with Theory and Laboratory

### II Year - II Semester

| SI. | Course | Name of the Course / Laboratory                              | No.o          | No.of |    |         |
|-----|--------|--|---------------|-------|----|---------|
| No. | Code   |  | L             | T     | P  | Credits |
| 1   | EC3516 | Transmission Lines and Waveguides                            | 3             | -     | -  | 3       |
| 2   | EC3517 | Analog Circuits  | 3             | -     | -  | 3       |
| 3   | EC3518 | Analog and Digital Communications                            | 3             | -1    | -  | 4       |
| 4   | EC3519 | VLSI Design  | 3             | -     | -, | 3       |
| 5   | CT3509 | Data Structures*   | 2             | - 27  | 2  | 3       |
| 6   |        | Open Elective - I  | 3             | -     | -  | 3       |
| 7   | EC3522 | Analog Circuits Lab  | 72.           | -     | 2  | 1       |
| 8   | EC3523 | Digital Circuits Design Lab                                  | 0-1           | -     | 2  | 1       |
| 9   | SD3503 | Programming for Corporate                                    | -             | -     | 2  | 1       |
| Т   |        | Total  | 17            | 1     | 8  | 22      |
| 10  | SG3501 | Sports and Games / Cultural<br>(Mandatory Non-Credit Course) | () <b>=</b> ( | 37.2  | 2  | 17.1    |

<sup>\*</sup> Integrated Course with Theory and Laboratory

L : Lecture

T: Tutorial

P : Practical

**Electronics and Communication Engineering** 

PRINCIPAL

Seshadri Rao Gudlavalleru Engineering College Seshadh Rao Knowledge Village Gudlavalleru - 521 356, Krishna District. A.P.

|    |                |   | Department              | No. | of           |   |                  |
|----|----------------|---|-------------------------|-----|--------------|---|------------------|
|    | Course<br>Code | Name of the Course /<br>Laboratory  | Offering the<br>Subject | -   | erio<br>er w |   | No.of<br>Credits |
| ٠. | Oode           | Laboratory  | Guajoot                 | L   | Т            | Р | O TOURIE         |
| 1  | CE3513         | Elements of Civil Engineering (other than CE)                             | CE                      | 3   | -            | - | 3                |
| 2  | CE3514         | Environment Laws and Policies (other than CE)                             | CE                      | 3   | -            | - | 3                |
| 3  | EE3513         | Electrical Materials (other than EEE)                                     | EEE                     | 3   | +            | - | 3                |
| 4  | EE3514         | Control Systems Engineering (other than EEE&ECE)                          | EEE                     | 3   | -            | • | 3                |
| 5  | ME3517         | Automotive Engineering (other than ME)                                    | ME                      | 3   | -            | - | 3                |
| 6  | ME3518         | Elements of Mechanical<br>Transmission (other than ME)                    | ME                      | 3   | -            | - | 3                |
| 7  | EC3520         | Introduction to Embedded Systems (other than ECE/IoT)                     | ECE                     | 3   | -            | - | 3                |
| 8  | EC3521         | Fundamentals of<br>Communication Systems<br>(other than ECE/IoT)          | ECE                     | 3   | -            |   | 3                |
| 9  | CS3503         | Information Retreival Systems<br>(Other than CSE, CSE(Al&ML), &<br>Al&DS) | CSE                     | 3   | -            | - | 3                |
| 10 | CT3522         | Computer Graphics (Other than CSE, IT, CSE(AI&ML) & AI&DS)                | CSE                     | 3   | •            | - | 3                |
| 11 | IT3504         | System Software (Other than IT)   | IT                      | 3   | -            | - | 3                |
| 12 | IT3505         | Free & Open Source Software (Other than IT)                               | IT                      | 3   | -            | - | 3                |
| 13 | MA3516         | Fuzzy Mathematics   | BS&H                    | 3   | -            | - | 3                |

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Seshadri Rao Knowledge Village
Gudlavalleru - 521 356, Krishna District, A.P.

| SI. | Course | Name of the Course / Laboratory                     | No.of Periods<br>per week |   |   | No.of   |
|-----|--------|---|---------------------------|---|---|---------|
| No. | Code   |   | L                         | T | P | Credits |
| 1   | EG3501 | Functional English                                  | 3                         | - | - | 3       |
| 2   | MA350  | Linear Algebra and Calculus                         | 3                         | 1 | - | 4       |
| 3   | PH3509 | Applied Physics                                     | 3                         | - | - | 3       |
| 4   | CT3502 | Programming for Problem Solving                     | 3                         | - | - | 3       |
| 5   | UH3501 | Universal Human Values 2:<br>Understanding Harmony  | 2                         | 1 | - | 3       |
| 6   | EG3502 | Functional English Lab                              | -                         | - | 2 | 1       |
| 7   | PH3510 | Applied Physics Lab                                 | -                         | - | 2 | 1       |
| 8   | CT3503 | C Programming Lab                                   | -                         | - | 4 | 2       |
|     |        | Total   | 14                        | 2 | 8 | 20      |
| 9   | BA3501 | Constitution of India (Mandatory Non-Credit Course) | 2                         | - | - | -       |

## I Year - II Semester

| SI. | Course<br>Code | Name of the Course / Laboratory                        |    | of Per<br>er we | No.of |         |
|-----|----------------|--|----|-----------------|-------|---------|
| No. |                |  | L  | T               | P     | Credits |
| 1   | EG3503         | Professional Communication                             | 2  | -               | -     | 2       |
| 2   | MA3505         | Integral Transforms and Vector Calculus                | 3  | 1               | 1-1   | 4       |
| 3   | EC3502         | Basic Electronic Devices                               | 2  | -               | -     | 2       |
| 4   | CT3504         | Python Programming                                     | 3  | -2              | -     | 3       |
| 5   | CT3505         | Data Structures  | 3  | .*.             | 77.0  | 3       |
| 6   | EG3504         | Professional Communication Lab                         | -  | -               | 4     | 2       |
| 7   | CT3506         | Python Programming Lab                                 | =  | -               | 4     | 2       |
| 8   | CT3507         | Data Structures Lab                                    | -  | -               | 4     | 2       |
|     |                | Total  | 13 | 1               | 12    | 20      |
| 9   | EN3501         | Environmental Studies<br>(Mandatory Non-Credit Course) | 2  | 1.00            | -     | S(#)    |

L : Lecture

T: Tutorial

P: Practical

Computer Science and Engineering

PRINCIPAL

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| SI. | Course | Name of the Course / Laboratory                              | No.of Periods<br>per week |   |    | No.of   |
|-----|--------|--|---------------------------|---|----|---------|
| No. | Code   |  | L                         | T | P  | Credits |
| 1   | BA3502 | Managerial Economics and Financial Analysis                  | 3                         | - | -  | 3       |
| 2   | MA3509 | Probability and Statistics                                   | 2                         | 1 | -  | 3       |
| 3   | CT3510 | Digital Logic Design   | 2                         | 1 | -  | 3       |
| 4   | CT3511 | Object Oriented Programming through Java                     | 3                         | - | -  | 3       |
| 5   | CT3512 | Database Management Systems                                  | 3                         | - | -  | 3       |
| 6   | MA3510 | Probability and Statistics Using R Lab                       | -                         | - | 2  | 1       |
| 7   | CT3514 | Java Programming Lab   | 2                         | - | 4  | 2       |
| 8   | CT3515 | Database Management Systems Lab                              | -                         | - | 4  | 2       |
| 9   | SD3502 | Logic Building and Algorithmic Programming                   | -                         | - | 2  | 1       |
|     |        | Total  | 13                        | 2 | 12 | 21      |
| 10  | SG3501 | Sports and Games / Cultural<br>(Mandatory Non-Credit Course) | -                         | - | 2  | -       |

<sup>\*</sup> Integrated Course with Theory and Laboratory

# II Vear - II Semester

| Sl. | Course | Name of the Course / Laboratory  | No.of Periods<br>per week |    |       | No.of   |
|-----|--------|--|---------------------------|----|-------|---------|
| No. | Code   |  | L                         | T  | P     | Credits |
| 1   | MA3511 | Discrete Mathematical Structures                                       | 2                         | 1  | -     | 3       |
| 2   | CT3518 | Computer Organization  | 3                         | -  | i — ; | 3       |
| 3   | CS3501 | Design and Analysis of Algorithms                                      | 3                         | -  | -     | 3       |
| 4   | CT3519 | Operating Systems  | 3                         | 7. | -     | 3       |
| 5   | CS3502 | Software Engineering *   | 3                         | -  | 2     | 4       |
| 6   |        | Open Elective - I  | 3                         | +  | -     | 3       |
| 7   | CT3523 | Operating Systems Lab  | -                         | -  | 2     | 1       |
| 8   | CT3524 | Game Programming   | 1                         | -  | 2     | 2       |
| 9   | SD3503 | Programming for Corporate  | -                         | -  | 2     | 1       |
|     |        | Total  | 18                        | 1  | 8     | 23      |
| 10  | NS3501 | NSS / Fine Arts / Yoga / Self Defense<br>(Mandatory Non-Credit Course) | -                         | -  | 2     | -       |

<sup>\*</sup> Integrated Course with Theory and Laboratory

T: Tutorial L : Lecture

P : Practical

Computer Science and Engineering

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Seshadri Risc Knowledge Village
Gudlavalleru English Kristina District A.R.

|     |        |   | Department              |   |              |   |                  |
|-----|--------|---|-------------------------|---|--------------|---|------------------|
|     | Course | Name of the Course /<br>Laboratory  | Offering the<br>Subject |   | erio<br>er w |   | No.of<br>Credits |
| 10. | Ocac   | Laboratory  | Gubjeet                 | L | Т            | P | Orcano           |
| 1   | CE3513 | Elements of Civil Engineering (other than CE)                             | CE                      | 3 | -            | - | 3                |
| 2   | CE3514 | Environment Laws and Policies (other than CE)                             | CE                      | 3 | -            | - | 3                |
| 3   | EE3513 | Electrical Materials (other than EEE)                                     | EEE                     | 3 | 9            | - | 3                |
| 4   | EE3514 | Control Systems Engineering (other than EEE&ECE)                          | EEE                     | 3 | -            | - | 3                |
| 5   | ME3517 | Automotive Engineering (other than ME)                                    | ME                      | 3 | -            | - | 3                |
| 6   | ME3518 | Elements of Mechanical Transmission (other than ME)                       | ME                      | 3 | -            | - | 3                |
| 7   | EC3520 | Introduction to Embedded Systems (other than ECE/IoT)                     | ECE                     | 3 | -            | - | 3                |
| 8   | EC3521 | Fundamentals of Communication Systems (other than ECE/IoT)                | ECE                     | 3 | 17%          |   | 3                |
| 9   | CS3503 | Information Retreival Systems<br>(Other than CSE, CSE(Al&ML), &<br>Al&DS) | CSE                     | 3 | -            | - | 3                |
| 10  | CT3522 | Computer Graphics (Other than CSE, IT, CSE(AI&ML) & AI&DS)                | CSE                     | 3 | -            | - | 3                |
| 11  | IT3504 | System Software (Other than IT)   | IT                      | 3 | -            | - | 3                |
| 12  | IT3505 | Free & Open Source Software (Other than IT)                               | IT                      | 3 | -            | - | 3                |
| 13  | MA3516 | Fuzzy Mathematics   | BS&H                    | 3 | -            | - | 3                |

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Gudlavalle 21 356, Krishna District, A.P.

| SI. | Course<br>Code | Name of the Course / Laboratory                        | No.e | No.of |   |         |
|-----|----------------|--|------|-------|---|---------|
| No. |                |  | L    | T     | P | Credits |
| 1   | EG3501         | Functional English                                     | 3    | -     |   | 3       |
| 2   | MA350          | Linear Algebra and Calculus                            | 3    | 1     | - | 4       |
| 3   | CH3506         | Applied Chemistry                                      | 3    | -     | - | 3       |
| 4   | EC3501         | Elements of Electronics Engineering                    | 3    | 72    | - | 3       |
| 5   | CT3502         | Programming for Problem Solving                        | 3    | -     | - | 3       |
| 6   | EG3502         | Functional English Lab                                 | -    | -     | 2 | 1       |
| 7   | CH3507         | Applied Chemistry Lab                                  | (=)  | -     | 2 | 1       |
| 8   | CT3503         | C Programming Lab                                      | -    | 2     | 4 | 2       |
|     |                | Total  | 15   | 1     | 8 | 20      |
| 9   | EN3501         | Environmental Studies<br>(Mandatory Non-Credit Course) | 2    | -     | - | -       |

### I Year - II Semester

| SI. | Course | Name of the Course / Laboratory                     | No.of Periods<br>per week |    |    | No.of   |
|-----|--------|---|---------------------------|----|----|---------|
| No. | Code   |   | L                         | T  | P  | Credits |
| 1   | EG3503 | Professional Communication                          | 2                         |    | -  | 2       |
| 2   | MA3505 | Integral Transforms and Vector Calculus             | 3                         | 1  | -  | 4       |
| 3   | PH3509 | Applied Physics                                     | 3                         | *  | -  | 3       |
| 4   | CT3505 | Data Structures                                     | 3                         | -  | -  | 3       |
| 5   | UH3501 | Universal Human Values 2:                           | 2                         | 1  | -  | 3       |
|     |        | Understanding Harmony                               |                           |    |    |         |
| 6   | EG3504 | Professional Communication Lab                      |                           | -  | 4  | 2       |
| 7   | PH3510 | Applied Physics Lab                                 | 100                       | 5. | 2  | 1       |
| 8   | CT3507 | Data Structures Lab                                 | -                         | 2  | 4  | 2       |
|     |        | Total   | 13                        | 2  | 10 | 20      |
| 9   | BA3501 | Constitution of India (Mandatory Non-Credit Course) | 2                         | -  | -  | -       |

L : Lecture

T: Tutorial

P : Practical

Information Technology

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Gudlavalleru Engineering College
Seshadri Rao Knowledge Village
Gudlavalleru - 521 356, Krishna District. A.P.

| SI. | Course<br>Code | Name of the Course / Laboratory  | No.of Periods<br>per week |     |     | No.of   |
|-----|----------------|--|---------------------------|-----|-----|---------|
| No. |                |  | L                         | T   | P   | Credits |
| 1   | MA3511         | Discrete Mathematical Structures                                       | 2                         | I   | -   | 3       |
| 2   | BA3502         | Managerial Economics and Financial Analysis                            | 3                         | -   | -   | 3       |
| 3   | CT3510         | Digital Logic Design   | 2                         | 1   | -   | 3       |
| 4   | CT3511         | Object Oriented Programming through JAVA                               | 3                         | 5   | -   | 3       |
| 5   | CT3513         | Formal Languages and Automata Theory                                   | 2                         | 1   | :-: | 3       |
| 6   | CT3514         | JAVA Programming Lab   | -                         | - 4 | 4   | 2       |
| 7   | IT3501         | R Programming Lab  | -                         | *   | 2   | 1       |
| 8   | IT3502         | Linux Programming Lab  |                           | -   | 2   | 1       |
| 9   | SD3502         | Logic Building and Algorithmic Programming                             | 1,00                      | -   | 2   | 1       |
|     |                | Total  | 12                        | 3   | 10  | 20      |
| 10  | NS3501         | NSS / Fine Arts / Yoga / Self Defense<br>(Mandatory Non-Credit Course) | -                         | *   | 2   | 2       |

<sup>\*</sup> Integrated Course with Theory and Laboratory

#### II Year - II Semester

| Sl. | Course | Name of the Course / Laboratory                              | No.e | No.of |    |         |
|-----|--------|--|------|-------|----|---------|
| No. | Code   |  | L    | T     | P  | Credits |
| 1   | MA3509 | Probability and Statistics                                   | 2    | 1     | -  | 3       |
| 2   | CT3512 | Database Management Systems                                  | 3    | -     | -  | 3       |
| 3   | CT3518 | Computer Organization  | 3    | -     | -  | 3       |
| 4   | IT3503 | Python Programming   | 3    | 1-    |    | 3       |
| 5   |        | Open Elective - I  | 3    | 7     | -  | 3       |
| 6   | CT3515 | Database Management Systems Lab                              | -    | -     | 4  | 2       |
| 7   | IT3506 | Python Programming Lab                                       | -    | -     | 4  | 2       |
| 8   | CT3525 | Mobile Application Development                               | -    | -     | 4  | 2       |
| 9   | SD3503 | Programming for Corporate                                    |      | -     | 2  | 1       |
| П   | 1      | Total  | 14   | 1     | 14 | 22      |
| 10  | SG3501 | Sports and Games / Cultural<br>(Mandatory Non-Credit Course) | 1+1  | -     | 2  |         |

: Lecture

T: Tutorial

P : Practical

Information Technology



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Gudlavalleru - 521 356, Krishna District. A.P.

|    | Course<br>Code | Name of the Course /<br>Laboratory  | Department<br>Offering the<br>Subject |   |     |     | No.of<br>Credits |
|----|----------------|---|---------------------------------------|---|-----|-----|------------------|
|    |                |   |                                       | Ĺ | Т   | Р   |                  |
| 1  | CE3513         | Elements of Civil Engineering (other than CE)                             | CE                                    | 3 | -   | 12) | 3                |
| 2  | CE3514         | Environment Laws and Policies (other than CE)                             | CE                                    | 3 | -   | 120 | 3                |
| 3  | EE3513         | Electrical Materials (other than EEE)                                     | EEE                                   | 3 | -   | -   | 3                |
| 4  | EE3514         | Control Systems Engineering (other than EEE&ECE)                          | EEE                                   | 3 |     |     | 3                |
| 5  | ME3517         | Automotive Engineering (other than ME)                                    | ME                                    | 3 | -   | -   | 3                |
| 6  | ME3518         | Elements of Mechanical Transmission (other than ME)                       | ME                                    | 3 | -   | -   | 3                |
| 7  | EC3520         | Introduction to Embedded Systems (other than ECE/IoT)                     | ECE                                   | 3 | -   | -   | 3                |
| 8  | EC3521         | Fundamentals of Communication Systems (other than ECE/IoT)                | ECE                                   | 3 | 7.  | -   | 3                |
| 9  | CS3503         | Information Retreival Systems<br>(Other than CSE, CSE(Al&ML), &<br>Al&DS) | CSE                                   | 3 | .70 | -   | 3                |
| 10 | CT3522         | Computer Graphics (Other than CSE, IT, CSE(AI&ML) & AI&DS)                | CSE                                   | 3 | =   |     | 3                |
| 11 | IT3504         | System Software (Other than IT)   | IT                                    | 3 | -   | -   | 3                |
| 12 | IT3505         | Free & Open Source Software (Other than IT)                               | IT                                    | 3 | -   | -   | 3                |
| 13 | MA3516         | Fuzzy Mathematics   | BS&H                                  | 3 | -   | -   | 3                |

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# **COURSE STRUCTURE**

#### I Year - I Semester

| SI. | Course<br>Code | Name of the Course / Laboratory                    | No.of Periods<br>per week |        |   | No.of   |
|-----|----------------|--|---------------------------|--------|---|---------|
| No. |                | ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,            | L                         | Т      | Р | Credits |
| 1   | EG3501         | Functional English                                 | 3                         | -      | - | 3       |
| 2   | MA3502         | Descriptive Statistics                             | 2                         | 1      | 2 | 3       |
| 3   | MA3504         | Engineering Calculus                               | 2                         | 1      | - | 3       |
| 4   | CT3502         | Programming for Problem Solving                    | 3                         | -      | 9 | 3       |
| 5   | UH3501         | Universal Human Values 2:<br>Understanding Harmony | 2                         | 1      | - | 3       |
| 6   | EG3502         | Functional English Lab                             | -                         | -      | 2 | 1       |
| 7   | MA3503         | Statistics Using R Lab                             | -                         |        | 2 | 1       |
| 8   | CT3503         | C Programming Lab                                  | (e.                       |        | 4 | 2       |
|     |                | Total  | 12                        | 3      | 8 | 19      |
| 9   | BA3501         | Constitution of India (Mandatory Non-Credit Course | 2                         | 1 - 13 | - | -       |

## I Year - II Semester

| SI. | Course<br>Code | Name of the Course / Laboratory                        | No.o | No.of |      |         |
|-----|----------------|--|------|-------|------|---------|
| No. |                |  | L    | Т     | Р    | Credits |
| 1   | EG3503         | Professional Communication                             | 2    | *     | in . | 2       |
| 2   | MA3505         | Integral Transforms and Vector Calculus                | 3    | 1     | -    | 4       |
| 3   | MA3507         | Linear Algebra   | 2    | 1     | 3    | 3       |
| 4   | CT3504         | Python Programming                                     | 3    |       | -    | 3       |
| 5   | CT3505         | Data Structures  | 3    | -     | 4    | 3       |
| 6   | EG3504         | Professional Communication Lab                         | -    | -     | 4    | 2       |
| 7   | CT3506         | Python Programming Lab                                 | 2:   | -     | 4    | 2       |
| 8   | CT3507         | Data Structures Lab                                    | -    |       | 4    | 2       |
|     |                | Total  | 13   | 2     | 12   | 21      |
| 9   | EN3501         | Environmental Studies<br>(Mandatory Non-Credit Course) | 2    |       |      |         |

T : Tutorial

P : Practical

Artificial Intelligence and Data Science

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Seshadri Rao Knowledge Village
Gudlavallerus 521 356, Krishna District, A.P.

|    |                |   | Department              | No. | of           |      |                  |
|----|----------------|---|-------------------------|-----|--------------|------|------------------|
|    | Course<br>Code | Name of the Course /<br>Laboratory  | Offering the<br>Subject |     | erio<br>er w |      | No.of<br>Credits |
|    | 0000           | and or actory   |                         | L   | Т            | Р    |                  |
| 1  | CE3513         | Elements of Civil Engineering (other than CE)                             | CE                      | 3   | -            | -    | 3                |
| 2  | CE3514         | Environment Laws and Policies (other than CE)                             | CE                      | 3   | 4            | (40) | 3                |
| 3  | EE3513         | Electrical Materials (other than EEE)                                     | EEE                     | 3   | -            |      | 3                |
| 4  | EE3514         | Control Systems Engineering (other than EEE&ECE)                          | EEE                     | 3   | -            | -    | 3                |
| 5  | ME3517         | Automotive Engineering (other than ME)                                    | ME                      | 3   | -            | -    | 3                |
| 6  | ME3518         | Elements of Mechanical Transmission (other than ME)                       | ME                      | 3   |              | -    | 3                |
| 7  | EC3520         | Introduction to Embedded Systems (other than ECE/IoT)                     | ECE                     | 3   | -            | -    | 3                |
| 8  | EC3521         | Fundamentals of<br>Communication Systems<br>(other than ECE/IoT)          | ECE                     | 3   |              | -    | 3                |
| 9  | CS3503         | Information Retreival Systems<br>(Other than CSE, CSE(Al&ML), &<br>Al&DS) | CSE                     | 3   | -            | -    | 3                |
| 10 | CT3522         | Computer Graphics (Other than CSE, IT, CSE(AI&ML) & AI&DS)                | CSE                     | 3   | -            | -    | 3                |
| 11 | IT3504         | System Software (Other than IT)   | IT                      | 3   | -            | -    | 3                |
| 12 | IT3505         | Free & Open Source Software (Other than IT)                               | IT                      | 3   | -            | -    | 3                |
| 13 | MA3516         | Fuzzy Mathematics   | BS&H                    | 3   | -            | -    | 3                |

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Seshadri Rao Knowledge Village
Gudlavalleru - 521 356, Krishna District, A.P.

| SI. | Course<br>Code | Name of the Course / Laboratory                           | No.of Periods<br>per week |     |          | No.of   |
|-----|----------------|---|---------------------------|-----|----------|---------|
| No. |                |   | L                         | Т   | P        | Credits |
| 1   | BA3502         | Managerial Economics and Financial Analysis               | 3                         | 100 | 7        | 3       |
| 2   | MA3512         | Advanced Statistics                                       | 3                         | -   | <u> </u> | 3       |
| 3   | CT3510         | Digital Logic Design                                      | 2                         | 1   | -        | 3       |
| 4   | CT3511         | Object Oriented Programming through Java                  | 3                         | -   | -        | 3       |
| 5   | CT3512         | Database Management Systems                               | 3                         | 140 | =        | 3       |
| 6   | CT3513         | Formal Languages and Automata Theory                      | 2                         | 1   | 18       | 3       |
| 7   | CT3514         | Java Programming Lab                                      | -                         | -   | 4        | 2       |
| 8   | CT3515         | Database Management Systems Lab                           | -                         | 190 | 4        | 2       |
| 9   | SD3502         | Logic Building and Algorithmic Programming                | 7,                        | -   | 2        | 1       |
|     |                | Total   | 16                        | 2   | 10       | 23      |
| 10  | SG3501         | Sports and Games / Cultural (Mandatory Non-Credit Course) | B                         | 2   | 2        | -       |

<sup>\*</sup> Integrated Course with Theory and Laboratory

## II Year - II Semester

| SI. | Course | Name of the Course / Laboratory  | No.c | No.of        |     |         |
|-----|--------|--|------|--------------|-----|---------|
| No. | Code   | ,  | L    | Т            | Р   | Credits |
| 1   | MA3511 | Discrete Mathematical Structures                                       | 2    | 1            | -   | 3       |
| 2   | CT3518 | Computer Organization  | 3    | -            | -   | 3       |
| 3   | CT3520 | Compiler Design  | 2    | 1            | - 4 | 3       |
| 4   | CT3521 | Artificial Intelligence  | 3    | -            | -   | 3       |
| 5   | CS3502 | Software Engineering *   | 3    | -            | 2   | 4       |
| 6   |        | Open Elective - I  | 3    | 127          | -   | 3       |
| 7   | AD3501 | Artifical Intelligence Lab   | 5    |              | 2   | 1       |
| 8   | CT3524 | Game Programming   | 1    | -            | 2   | 2       |
| 9   | SD3503 | Programming for Corporate  | -    | ) <b>-</b> ) | 2   | 1       |
|     |        | Total  | 17   | 2            | 8   | 23      |
| 10  | NS3501 | NSS / Fine Arts / Yoga / Self Defense<br>(Mandatory Non-Credit Course) | 7    | •            | 2   | -       |

<sup>\*</sup> Integrated Course with Theory and Laboratory

L : Lecture

T : Tutorial

P : Practical

Artificial Intelligence and Data Science

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# **COURSE STRUCTURE**

## I Year - I Semester

| SI. | Course<br>Code | Name of the Course / Laboratory                        | No.c | No.of |      |         |
|-----|----------------|--|------|-------|------|---------|
| No. |                |  | L    | Т     | P    | Credits |
| 1   | EG3501         | Functional English                                     | 3    | -     | -    | 3       |
| 2   | MA3501         | Linear Algebra and Calculus                            | 3    | 1     | S.#3 | 4       |
| 3   | PH3507         | Applied Physics  | 3    | -     |      | 3       |
| 4   | EE3501         | Basic Electrical Engineering                           | 3    | -     |      | 3       |
| 5   | CT3501         | Problem Solving Using C *                              | 3    | 2     | 2    | 4       |
| 6   | EG3502         | Functional English Lab                                 | -    |       | 2    | 1       |
| 7   | PH3508         | Engineering Physics Lab                                | 940  | -     | 2    | 1       |
|     |                | Total  | 15   | 1     | 6    | 19      |
| 8   | EN3501         | Environmental Studies<br>(Mandatory Non-Credit Course) | 2    | -     | -    |         |

<sup>\*</sup> Integrated Course with Theory and Laboratory

#### I Year - II Semester

| SI. | Course<br>Code | Name of the Course / Laboratory                    | No.of Periods<br>per week |      |    | No.of   |
|-----|----------------|--|---------------------------|------|----|---------|
| No. |                |  | L                         | Т    | Р  | Credits |
| 1   | EG503          | Professional Communication                         | 2                         | -    | 7  | 2       |
| 2   | MA3505         | Integral Transforms and Vector Calculus            | 3                         | 1    | -  | 4       |
| 3   | IN3501         | Introduction to Internet of Things                 | 3                         | - 12 | 2  | 3       |
| 4   | ME3502         | Computer Aided Engineering Drawing*                | 1                         | -    | 4  | 3       |
| 5   | UH3501         | Universal Human Values 2:<br>Understanding Harmony | 2                         | 1    | -  | 3       |
| 6   | EG3504         | Professional Communication Lab                     | 0-0                       | (=)  | 4  | 2       |
| 7   | IN3502         | Electronic Workshop for IoT                        | -                         | -    | 4  | 2       |
| 8   | EE3503         | Basic Electrical Engineering Lab                   | (2,00)                    | 150  | 4  | 2       |
|     |                | Total  | 11                        | 2    | 16 | 21      |
| 9   | BA3501         | Constitution of India (Mandatory Non-Credit Course | 2                         | -    | -  | -       |

<sup>\*</sup> Integrated Course with Theory and Laboratory

L : Lecture

T: Tutorial

P : Practical

Internet of Things

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| SI. | Course<br>Code | Name of the Course / Laboratory  | CATALON OF | iods<br>ek | No.of |         |
|-----|----------------|--|------------|------------|-------|---------|
| No. |                | ,  | L          | Т          | Р     | Credits |
| 1   | IN3503         | Analog Devices and Circuits  | 3          | ,          | 2     | 3       |
| 2   | IN3504         | Principles of Communication Systems                                    | 3          |            | -     | 3       |
| 3   | MA3509         | Probability and Statistics   | 2          | 1          | _     | 3       |
| 4   | EC3514         | Electronic Instrumentation and Measurement Principles                  | 3          | -          | -     | 3       |
| 5   | IN3505         | Transducers and Signal Conditioning                                    | 3          | -          | -     | 3       |
| 6   | CT3509         | Data Structures*   | 2          | =          | 2     | 3       |
| 7   | IN3506         | Analog Devices and Ciruits Lab   | -          | 1.7        | 2     | 1       |
| 8   | EC3515         | Analog and Digital Communications Lab                                  | -          | 2          | 2     | 1       |
| 9   | SD3502         | Logic Building and Algorithmic Programming                             | -          | -          | 2     | 1       |
|     |                | Total  | 16         | 1          | 8     | 21      |
| 10  | NS3501         | NSS / Fine Arts / Yoga / Self Defense<br>(Mandatory Non-Credit Course) | (2)        | -          | 2     |         |

<sup>\*</sup> Integrated Course with Theory and Laboratory

### II Year - II Semester

| SI. | Course<br>Code | Name of the Course / Laboratory                           | No.of Periods<br>per week |   |     | No.of   |
|-----|----------------|---|---------------------------|---|-----|---------|
| No. |                | ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,                   | L                         | Т | Р   | Credits |
| 1   | IN3507         | Signal Analysis and Processing                            | 2                         | 1 |     | 3       |
| 2   | CT3516         | Object Oriented Programming through JAVA*                 | 2                         | - | 2   | 3       |
| 3   | EC3512         | Digital Circuits Design                                   | 2                         | 1 | -   | 3       |
| 4   | IN3508         | Computer Organization and Architecture                    | 3                         |   | _ = | 3       |
| 5   | MA3508         | Numerical Methods and Complex Analysis                    | 2                         | 1 | -   | 3       |
| 6   |                | Open Elective - I   | 3                         | 7 | -   | 3       |
| 7   | EC3523         | Digital Circuits Design Lab                               | -                         |   | 2   | 1       |
| 8   | IN3509         | Signal Analysis and Processing Lab                        | -                         | - | 2   | 1       |
| 9   | CT3517         | Python Programming  | -                         | 2 | 4   | 2       |
| 10  | SD3503         | Programming for Corporate                                 | -                         |   | 2   | 1       |
|     | y              | Total   | 14                        | 3 | 12  | 23      |
| 10  | SG3501         | Sports and Games / Cultural (Mandatory Non-Credit Course) | -                         | - | 2   | -       |

<sup>\*</sup> Integrated Course with Theory and Laboratory

L : Lecture

T : Tutorial

P : Practical

Internet of Things

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| 7.7 | Course<br>Code | ourse Name of the Course /  | Department<br>Offering the<br>Subject |   |     |     | No.of<br>Credits |
|-----|----------------|---|---------------------------------------|---|-----|-----|------------------|
|     |                |   |                                       | Ĺ | Т   | Р   |                  |
| 1   | CE3513         | Elements of Civil Engineering (other than CE)                             | CE                                    | 3 | -   | •   | 3                |
| 2   | CE3514         | Environment Laws and Policies (other than CE)                             | CE                                    | 3 | -   | S-1 | 3                |
| 3   | EE3513         | Electrical Materials (other than EEE)                                     | EEE                                   | 3 | 2   | -   | 3                |
| 4   | EE3514         | Control Systems Engineering (other than EEE&ECE)                          | EEE                                   | 3 | 1   | -   | 3                |
| 5   | ME3517         | Automotive Engineering (other than ME)                                    | ME                                    | 3 | -   | 200 | 3                |
| 6   | ME3518         | Elements of Mechanical<br>Transmission (other than ME)                    | ME                                    | 3 | -   | 121 | 3                |
| 7   | EC3520         | Introduction to Embedded<br>Systems (other than ECE/IoT)                  | ECE                                   | 3 | -   | -   | 3                |
| 8   | EC3521         | Fundamentals of<br>Communication Systems<br>(other than ECE/IoT)          | ECE                                   | 3 |     | -   | 3                |
| 9   | CS3503         | Information Retreival Systems<br>(Other than CSE, CSE(Al&ML), &<br>Al&DS) | CSE                                   | 3 | -   | -   | 3                |
| 10  | CT3522         | Computer Graphics (Other than CSE, IT, CSE(AI&ML) & AI&DS)                | CSE                                   | 3 | -   | -   | 3                |
| 11  | IT3504         | System Software (Other than IT)   | IT                                    | 3 | 2   | -   | 3                |
| 12  | IT3505         | Free & Open Source Software (Other than IT)                               | IT                                    | 3 | 121 | -   | 3                |
| 13  | MA3516         | Fuzzy Mathematics   | BS&H                                  | 3 | -   | -   | 3                |



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# **COURSE STRUCTURE**

#### I Year - I Semester

| SI. | Course<br>Code Name of the C | Name of the Course / Laboratory                    | No.c | No.of |   |         |
|-----|------------------------------|--|------|-------|---|---------|
| No. |                              |  | L    | Т     | Р | Credits |
| 1   | EG3501                       | Functional English                                 | 3    | -     | - | 3       |
| 2   | MA3502                       | Descriptive Statistics                             | 2    | 1     | 2 | 3       |
| 3   | MA3504                       | Engineering Calculus                               | 2    | 1     | - | 3       |
| 4   | CT3502                       | Programming for Problem Solving                    | 3    | 565   | 9 | 3       |
| 5   | UH3501                       | Universal Human Values 2:<br>Understanding Harmony | 2    | 1     | 2 | 3       |
| 6   | EG3502                       | Functional English Lab                             | 2    | -     | 2 | 1       |
| 7   | MA3503                       | Statistics Using R Lab                             | -    | 153   | 2 | 1       |
| 8   | CT3503                       | C Programming Lab                                  | +    | -     | 4 | 2       |
|     |                              | Total  | 12   | 3     | 8 | 19      |
| 9   | BA3501                       | Constitution of India (Mandatory Non-Credit Course | 2    | -     | - | -       |

# I Year - II Semester

| SI. | Course | Name of the Course / Laboratory                        | No.c | No.of             |      |         |
|-----|--------|--|------|-------------------|------|---------|
| No. | Code   |  | L    | Т                 | P    | Credits |
| 1   | EG3503 | Professional Communication                             | 2    | -                 | 17.0 | 2       |
| 2   | MA3505 | Integral Transforms and Vector Calculus                | 3    | 1                 | -    | 4       |
| 3   | MA3507 | Linear Algebra   | 2    | 1                 | -    | 3       |
| 4   | CT3504 | Python Programming                                     | 3    | -                 | (*)  | 3       |
| 5   | CT3505 | Data Structures  | 3    | -                 | -    | 3       |
| 6   | EG3504 | Professional Communication Lab                         | -    | -                 | 4    | 2       |
| 7   | CT3506 | Python Programming Lab                                 | -    | -                 | 4    | 2       |
| 8   | CT3507 | Data Structures Lab                                    | -    |                   | 4    | 2       |
|     |        | Total  | 13   | 2                 | 12   | 21      |
| 9   | EN3501 | Environmental Studies<br>(Mandatory Non-Credit Course) | 2    | 8. <del>7</del> 8 | 3.7  | 1.713   |

T : Tutorial

P : Practical

Artificial Intelligence and Machine Learning

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| SI. | Course<br>Code | Name of the Course / Laboratory                           | 575 TO TO TO | f Per |    | No.of   |
|-----|----------------|---|--------------|-------|----|---------|
| No. |                |   | L            | Т     | P  | Credits |
| 1   | BA3502         | Managerial Economics and Financial Analysis               | 3            | -     | -  | 3       |
| 2   | MA3512         | Advanced Statistics                                       | 3            | -50   | =  | 3       |
| 3   | CT3510         | Digital Logic Design                                      | 3            | -     | 14 | 3       |
| 4   | CT3511         | Object Oriented Programming through Java                  | 3            | -     | 17 | 3       |
| 5   | CT3512         | Database Management Systems                               | 2            | 1     | -  | 3       |
| 6   | CT3513         | Formal Languages and Automata Theory                      | 2            | 1     | -  | 3       |
| 7   | CT3514         | Java Programming Lab                                      | -            | -     | 4  | 2       |
| 8   | CT3515         | Database Management Systems Lab                           | -            | 927   | 4  | 2       |
| 9   | SD3502         | Logic Building and Algorithmic Programming                | *            |       | 2  | 1       |
|     |                | Total   | 16           | 2     | 10 | 23      |
| 10  | SG3501         | Sports and Games / Cultural (Mandatory Non-Credit Course) | -            | -     | 2  | 120     |

<sup>\*</sup> Integrated Course with Theory and Laboratory

# II Year - II Semester

| SI. | Course<br>Code | Name of the Course / Laboratory  |    | iods<br>ek | No.of |         |
|-----|----------------|--|----|------------|-------|---------|
| No. |                |  | L  | Т          | Р     | Credits |
| 1   | MA3511         | Discrete Mathematical Structures                                       | 2  | 1          | 2     | 3       |
| 2   | CT3518         | Computer Organization  | 3  |            | =     | 3       |
| 3   | CT3520         | Compiler Design  | 2  | 1          | -     | 3       |
| 4   | CT3521         | Artificial Intelligence  | 3  | -          |       | 3       |
| 5   | CS3502         | Software Engineering *   | 3  | -          | 2     | 4       |
| 6   |                | Open Elective - I  | 3  | -          | 12    | 3       |
| 7   | AD3501         | Artifical Intelligence Lab   | -  | -          | 2     | 1       |
| 8   | CT3524         | Game Programming   | 1  |            | 2     | 2       |
| 9   | SD3503         | Programming for Corporate  | 2: | 3-3        | 2     | 1       |
|     |                | Total  | 17 | 2          | 8     | 23      |
| 10  | NS3501         | NSS / Fine Arts / Yoga / Self Defense<br>(Mandatory Non-Credit Course) | =  |            | 2     |         |

<sup>\*</sup> Integrated Course with Theory and Laboratory

L : Lecture

T : Tutorial

P : Practical

Artificial Intelligence and Machine Learning



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| 7.00 | Course<br>Code | urse Name of the Course /  | Department<br>Offering the<br>Subject | P | erio | No.of<br>Credits |   |
|------|----------------|--|---------------------------------------|---|------|------------------|---|
|      | Constant to    | 13. Acceptable (19. Acceptable |                                       | L | Т    | Р                |   |
| 1    | CE3513         | Elements of Civil Engineering (other than CE)  | CE                                    | 3 | -    | -                | 3 |
| 2    | CE3514         | Environment Laws and Policies (other than CE)  | CE                                    | 3 | 4    | -                | 3 |
| 3    | EE3513         | Electrical Materials (other than EEE)  | EEE                                   | 3 | -    | -                | 3 |
| 4    | EE3514         | Control Systems Engineering (other than EEE&ECE)   | EEE                                   | 3 | -    | -                | 3 |
| 5    | ME3517         | Automotive Engineering (other than ME)   | ME                                    | 3 | -    | -                | 3 |
| 6    | ME3518         | Elements of Mechanical<br>Transmission (other than ME)   | ME                                    | 3 | -    | -                | 3 |
| 7    | EC3520         | Introduction to Embedded Systems (other than ECE/IoT)  | ECE                                   | 3 | -    | -                | 3 |
| 8    | EC3521         | Fundamentals of<br>Communication Systems<br>(other than ECE/IoT)   | ECE                                   | 3 | 5    |                  | 3 |
| 9    | CS3503         | Information Retreival Systems<br>(Other than CSE, CSE(Al&ML), &<br>Al&DS)  | CSE                                   | 3 |      | -                | 3 |
| 10   | CT3522         | Computer Graphics (Other than CSE, IT, CSE(AI&ML) & AI&DS)   | CSE                                   | 3 | -    | 2-2              | 3 |
| 11   | IT3504         | System Software (Other than IT)  | IT                                    | 3 | =    | -                | 3 |
| 12   | IT3505         | Free & Open Source Software (Other than IT)  | IT                                    | 3 | -    | -                | 3 |
| 13   | MA3516         | Fuzzy Mathematics  | BS&H                                  | 3 | -    | -                | 3 |

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| SI.  |        | Name of the Course / Laboratory  | No.of Periods |            |             | No.of<br>Credits |
|------|--------|--|---------------|------------|-------------|------------------|
| 110. | Coue   |  | L             | T          | P           | Credits          |
| 1    | CE2522 | Theory of Structures   | 3             | 1          | -           | 3                |
| 2    | CE2523 | Geotechnical Engineering   | 2             | 1          | -           | 2                |
| 3    | CE2524 | Hydrology and Water Resources Engineering  | 4             | -          | -           | 3                |
| 4    | CE2525 | Water and Waste Water Engineering  | 3             | 1          | -           | 3                |
| 5    |        | Professional Elective - I  | 4             | -          | -           | 3                |
| 6    |        | Open Elective-II (see list of Open Electives)  | 4             | -          | -           | 3                |
| 7    | CE2532 | Geotechnical Engineering Lab   | -             | -          | 4           | 2                |
| 8    | CE2533 | Water and Waste Water Engineering Lab  | 2             | -          | 4           | 2                |
|      |        | Total  | 20            | 3          | 8           | 21               |
| 9    |        | Optional Elective - III  i) Infrastructure Development  ii) Basics of Power Plant Engineering  iii) Object Oriented Programming through JAVA | 24.0          | 3          | -           | 3                |
| 10   |        | Optional Elective - IV (MOOCs) Students shall opt from the list of MOOCs given by  | -<br>by the   | -<br>Depar | -<br>tment) | 2                |

### III Year - II Semester

| Course<br>Code             | Name of the Course / Laboratory  |   | of Per<br>er we   | No.of                           |  |
|----------------------------|--|---|---|---------------------------------|--|
|                            |  | L   | T   | P                               | Credits  |
| CE2536                     | Foundation Engineering   | 3   | -   | -                               | 2  |
| CE2537                     | Highway Engineering  | 4   | *   |                                 | 3  |
| CE2538                     | Design of RC Structures  | 3   | 1   | -                               | 3  |
|                            | Professional Elective - II   | 4   | -   | -                               | 3  |
|                            | Open Eletive-III (see list of Open Electives)  | 4   | -   | -                               | 3  |
| CE2545                     | Structural Engineering Lab   | -   | -   | 4                               | 2  |
| CE2546                     | Highway Engineering Lab  | *   | -   | 4                               | 2  |
| CE2547                     | Mini Project / Survey Camp   | 4   | -   | 4                               | 2  |
|                            | Total  | 18  | 1   | 12                              | 20   |
| CE2548<br>CE2549<br>CT2513 | Optional Elective - V i) Smart Buildings and Automation ii) Building Information Modeling iii) Database Management Systems | 4.  | *   |                                 | 3  |
| CE2550                     | Optional Elective - VI (MOOCs)   | -   | -   | -                               | 2  |
|                            | Ce2536<br>CE2537<br>CE2538<br>CE2538<br>CE2545<br>CE2546<br>CE2547<br>CE2547<br>CE2548<br>CE2549<br>CT2513                 | Code  Name of the Course / Laboratory  CE2536 Foundation Engineering CE2537 Highway Engineering CE2538 Design of RC Structures  Professional Elective - II  Open Eletive-III (see list of Open Electives) CE2545 Structural Engineering Lab CE2546 Highway Engineering Lab CE2547 Mini Project / Survey Camp  Total  Optional Elective - V i) Smart Buildings and Automation CE2549 ii) Building Information Modeling CT2513 iii) Database Management Systems CE2550 Optional Elective - VI (MOOCs) | Code  Name of the Course / Laboratory  L CE2536 Foundation Engineering 3 CE2537 Highway Engineering 4 CE2538 Design of RC Structures 3 Professional Elective - II 4 Open Eletive-III (see list of Open Electives) 4 CE2545 Structural Engineering Lab - CE2546 Highway Engineering Lab - CE2547 Mini Project / Survey Camp -  Total 18 Optional Elective - V i) Smart Buildings and Automation CE2549 ii) Building Information Modeling CT2513 iii) Database Management Systems CE2550 Optional Elective - VI (MOOCs) - | Name of the Course / Laboratory | Name of the Course / Laboratory         per week           L         T         P           CE2536         Foundation Engineering         3         -         -           CE2537         Highway Engineering         4         -         -           CE2538         Design of RC Structures         3         1         -           Professional Elective - II         4         -         -           Open Eletive-III (see list of Open Electives)         4         -         -           CE2545         Structural Engineering Lab         -         -         4           CE2546         Highway Engineering Lab         -         -         4           CE2547         Mini Project / Survey Camp         -         -         4           Total         18         1         12           Optional Elective - V           i) Smart Buildings and Automation Modeling         iii) Building Information Modeling         -         -         -           CE2549         iii) Database Management Systems         -         -         - |

\*Integrated Course with Theory and Laboratory

L: Lecture T: Tutorial P: Practical

Civil Engineering

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| SI.<br>No. | Course<br>Code             | Name of the Course / Laboratory  |             | o.of Periods<br>per week |             | No.of<br>Credits |
|------------|----------------------------|--|-------------|--------------------------|-------------|------------------|
| 1          | CE2551                     | Project Management and Finance   | 4           | -                        | -           | 3                |
| 2          | CE2552                     | Estimation, Costing and Valuation  | 3           | 1                        | 1,40        | 3                |
| 3          | CE2553                     | Design of Steel Structures   | 3           | 1                        | -           | 3                |
| 4          |                            | Professional Elective - III  | 4           | -                        | -           | 3                |
| 5          |                            | Professional Elective - IV   | 4           | -                        | -           | 3                |
| 6          |                            | Open Elective-IV(see list of Open Electives)   | 4           | -                        | -           | 3                |
| 7          | CE2564                     | Computer Applications in Civil Engineering Lab   | -<          | -                        | 4           | 2                |
| 8          | CE2565                     | Internship / Industrial Training / Practical Training  | -           | -                        | -           | 2                |
|            |                            | Total  | 22          | - 2                      | 4           | 22               |
| 9          | CE2566<br>MA2515<br>BA2504 | Optional Elective - VII  i) Project Scheduling and Contracts  ii) Optimization Techniques  iii) Entrepreneurship |             | -                        |             | 3                |
| 10         | CE2567                     | Optional Elective - VIII (MOOCs) Students shall opt from the list of MOOCs given by                              | -<br>by the | -<br>Depar               | -<br>lment) | 2                |

| Sl. | Course | Name of the Course / Laboratory | No.of Periods<br>per week |   |    | No.of   |
|-----|--------|---------------------------------|---------------------------|---|----|---------|
| No. | Code   |                                 | L                         | T | P  | Credits |
| 1   |        | Professional Elective - V       | 4                         | - | -  | 3       |
| 2   |        | Professional Elective - VI      | 4                         | _ | -  | 3       |
| 3   | CE2576 | Project                         | -                         | - | 20 | 10      |
|     |        | Total                           | 8                         | - | 20 | 16      |

P : Practical L : Lecture T: Tutorial

Civil Engineering

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Open Elective - I

| SI. |        | Title of the Subject   | Department<br>Offering the | No.of Periods<br>per week |   |    | No.of       |
|-----|--------|--|----------------------------|---------------------------|---|----|-------------|
| No. |        | 1 COCCOSC A See an Order transfer a political coccos           | Subject                    | L                         | T | P  | Credits     |
| 1   | CE2515 | Elements of Civil Engineering<br>(Other than CE)               | CE                         | 4                         | 1 | -  | 3           |
| 2   | CE2516 | Building Services  | CE                         | 4                         | - | -  | 3           |
| 3   |        | Electrical Materials   | EEE                        | 4                         | - | -  | 3 3 3       |
| 4   | EE2516 | Control Systems Engineering<br>(Other than EEE & ECE)          | EEE                        | 4                         | * | -  |             |
| 5   | ME2520 | Elements of Manufacturing Processes (Other than ME)            | ME                         | 4                         | - | -  | 3           |
| 6   | ME2521 | Automotive Engineering<br>(Other than ME)                      | ME                         | 4                         | - | -  | 3           |
| 7   | EC2531 | Introduction to MPMC<br>(Other than ECE/EEE/CSE/IT)            | ECE                        | 4                         | - | 20 | 3           |
| 8   | EC2532 | Fundamentals of Communications (Other than ECE)                | ECE                        | 4                         | 8 | -  | 3           |
| 9   | CT2514 | Computer Graphics (Other than IT)                              | CSE                        | 4                         | - |    | 3           |
| 10  |        | Object Oriented Programming through Java (other than CSE & IT) | CSE                        | 4                         | - | -  | 10000       |
| 11  | CT2515 | Systems Software   | IT                         | 4                         | - | -  | 3           |
| 12  |        | Web Programming(Other than CSE & IT)                           | IT                         | 4                         | - | -  | 3           |
|     |        | Mathematical Cryptography(Other than CSE)                      | BS&H                       | 4                         | 2 | -  | 3<br>3<br>3 |
|     |        | Semiconductor Physics (Other than ECE)                         | BS&H                       | 4                         |   | -  | 3           |

| SI. |        | Title of the Subject                                | Department<br>Offering the | No.of Periods<br>per week |   |       | No.of       |
|-----|--------|---|----------------------------|---------------------------|---|-------|-------------|
| No. |        |   | Subject                    | L                         | T | P     | Credits     |
| 1   | CE2530 | Geoinformatics (other than CE)                      | CE                         | 4                         | - | 1,000 | 3           |
| 2   | CE2531 | Environmental Sanitation                            | CE                         | 4                         | - | -     | 3           |
| 3   | EE2523 | Modeling & Simulation of Engineering Systems        | EEE                        | 4                         | - | -     |             |
| 4   | EE2524 | Power Systems Engineering (Other than EEE)          | EEE                        | 4                         | - | -     | 3           |
| 5   | ME2532 | Elements of Mechanical Transmission (Other than ME) | ME                         | 4                         | - | -     | 3           |
| 6   | ME2533 | Material Handling Equipment                         | ME                         | 4                         | - | -     | 3<br>3<br>3 |
| 7   | EC2543 | Automotive Electronics                              | ECE                        | 4                         | - |       | 3           |
| 8   | EC2544 | Introduction to MEMS (other than ECE)               | ECE                        | 4                         | - | •     | 3           |
| 9   | CS2508 | Data Science  | CSE                        | 4                         | - | -     | 3           |
| 10  | CT2524 | Virtual and Augmented Reality<br>(other than IT)    | CSE                        | 4                         | - | -     |             |
| 11  | IT2505 | Open Source Software                                | IT                         | 4                         | ~ | -     | 3           |
| 12  | IT2506 | Cyber Laws  | IT                         | 4                         | - | -     |             |
| 13  | MA2517 | Quality, Reliability and Operations Research        | BS&H                       | 4                         | - | -     | 3           |

L : Lecture

T: Tutorial

P : Practical

Civil Engineering

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| SI. |        | Title of the Subject                              | Department<br>Offering the | No.of Periods<br>per week |     |     | No.of       |
|-----|--------|---|----------------------------|---------------------------|-----|-----|-------------|
| No. |        |   | Subject                    | L                         | Т   | P   | Credits     |
| 1   | CE2543 | Hydrology (Other than CE)                         | CE                         | 4                         | -   |     | 3           |
| 2   | CE2544 | Planning for Sustainable Development              | CE                         | 4                         | ×   | -   | 3           |
| 3   |        | Electrical and Hybrid Vehicles                    | EEE                        | 4                         | -7  | -   | 3           |
| 4   | EE2532 | Power Plant Instrumentation                       | EEE                        | 4                         | -   | -   | 3<br>3<br>3 |
| 5   | ME2541 | Material Science (Other than ME)                  | ME                         | 4                         | *   |     | 3           |
| 6   |        | Renewable Energy Sources<br>(Other than ME)       | ME                         | 4                         | 340 | -   | 3           |
| 7   | EC2523 | Assistive Technologies (Other than ECE)           | ECE                        | 4                         | -   | -   | 3           |
| 8   | EC2507 | Bio-Medical Engineering<br>(Other than EEE & ECE) | ECE                        | 4                         | -   | -   | 3           |
| 9   | CS2512 | Node and Angular JS                               | CSE                        | 4                         | -   | -   | 3           |
| 10  |        | Cyber Security                                    | CSE                        | 4                         | -   | (=) | 3           |
| 11  | CT2529 | Scripting Languages (Other than CSE)              | IT                         | 4                         |     | -   | 3           |
| 12  | CT2531 | Software Project Management (Other than CSE)      | IT                         | 4                         | -   | -   | 3           |
| 13  | MA2518 | Elements of Stochastic Processes                  | BS&H                       | 4                         | 7.  | -   | 3           |
| 14  | EG2505 | Academic Communication                            | ENGLISH                    | 4                         | -   | -   | 3           |

# Open Elective - IV

| SI. |        | Title of the Subject                             | Department<br>Offering the |   | No.of Period<br>per week |     | No.of   |  |
|-----|--------|--|----------------------------|---|--------------------------|-----|---------|--|
| No. |        |  | Subject                    | L | Т                        | P   | Credits |  |
| 1   | CE2562 | Disaster Management (Other than CE)              | CE                         | 4 | =                        |     | 3       |  |
| 2   | CE2563 | Repair and Retrofitting Techniques               | CE                         | 4 |                          | -   | 3       |  |
| 3   | EE2542 | Modern Optimization Techniques                   | EEE                        | 4 | -                        | -   | 3 3 3   |  |
| 4   | EE2543 | Electrical Power Utilization (Other than EEE)    | EEE                        | 4 | 825                      | -   |         |  |
| 5   | ME2553 | Green Engineering                                | ME                         | 4 | -                        | -   | 3       |  |
| 6   | ME2554 | Non Destructive Evaluation (Other than ME)       | ME                         | 4 | -                        | -   |         |  |
| 7   | EC2563 | Cyber Physical Systems                           | ECE                        | 4 | -                        | 100 | 3       |  |
| 8   | EC2508 | Signals and Systems<br>(Other than EEE & ECE)    | ECE                        | 4 | -                        | -   |         |  |
| 9   | CS2521 | Digital Forensics                                | CSE                        | 4 | -                        | -   | 3       |  |
| 10  | CS2522 | Business Intelligence & Decision Support Systems | CSE                        | 4 | -                        | -   | 3       |  |
| 11  | IT2521 | Adhoc and Sensor Networks                        | IT                         | 4 |                          | 0   | 3 3 3   |  |
| 12  | CT2537 | Information Retrieval Systems (Other than CSE)   | IT                         | 4 | -                        | -   |         |  |
| 13  | MA2514 | Fuzzy Logic (Other than EEE, ME & CSE)           | BS&H                       | 4 | -                        | -   | 3       |  |

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# **Professional Electives**

| SI.<br>No. | Course<br>Code   | Name of the Course / Laboratory   | Name of the Course / Laboratory |   | Name of the Course / Laboratory | p | of Per<br>er we<br>T |  | No.of<br>Credits |  |
|------------|------------------|---|---------------------------------|---|---------------------------------|---|----------------------|--|------------------|--|
|            | CE2527<br>CE2528 | Professional Elective - I i) Advanced Strength of Materials ii) GIS and GPS iii) Green Buildings iv) Construction Management  | 4                               | - | -                               | 3 |                      |  |                  |  |
|            | CE2540<br>CE2541 | Professional Elective - II  i) Advanced Structural Analysis  ii) Environmental Pollution and Its Control  iii) Ground Water Development and Management  iv) Ground Improvement Techniques   | 4                               |   | -                               | 3 |                      |  |                  |  |
|            | CE2555<br>CE2556 | Professional Elective - III  i) Pre-stressed Concrete  ii) Advanced Foundation Engineering  iii) Traffic Engineering  iv) Industrial Wastewater Management                                  | 4                               | Œ | -                               | 3 |                      |  |                  |  |
|            | CE2559<br>CE2560 | Professional Elective - IV  i) Advanced Design of RC Structures  ii) Hydraulic Structures  iii) Geosynthetics  iv) Disaster Preparedness and Planning                                       | 4                               | - | -                               | 3 |                      |  |                  |  |
|            | CE2569<br>CE2570 | Professional Elective - V i) Earthquake Resistant Design of Structures ii) Logistics Infrastructure Engineering iii) Finite Element Methods iv) Design and Drawing of Irrigation Structures | 4                               | - | -                               | 3 |                      |  |                  |  |
|            | CE2573<br>CE2574 | Professional Elective - VI i) Pre-Engineered Buildings ii) Urban Transportation Planning iii) Soil Dynamics and Machine Foundations iv) Environmental Impact Assessment                     | 4                               | - | -                               | 3 |                      |  |                  |  |

| L : Lecture    | T: Tutorial | P : Practical |    |
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Gudlavalleru - Jan 1955, Krishna District A.P.

| SI.<br>No. | Course<br>Code              | Name of the Course / Laboratory  |             | of Per<br>er we | No.of<br>Credits |    |
|------------|-----------------------------|--|-------------|-----------------|------------------|----|
| 1          | EE2520                      | Electrical Measurements & Instrumentation  | L<br>4      | _               | P -              | 3  |
| 2          | EC2508                      | Signals and Systems  | 3           | 1               | -                | 3  |
| 3          | 3 EE2521 Power Systems - II |  |             |                 | -                | 3  |
| 4          | 4 Professional Elective - I |  |             |                 | -                | 3  |
| 5          |                             | Open Elective-II (see list of Open Electives)  | 4           |                 | -                | 3  |
| 6          | EE2525                      | Control Systems Lab  | -           | -               | 4                | 2  |
| 7          | EE2526                      | Electrical Machines- II Lab  | -           | -               | 4                | 2  |
| 8          | EE2527                      | Mini Project   | -           | -               | 4                | 2  |
|            |                             | Total  | 18          | 2               | 12               | 21 |
| 9          | CT2507                      | Optional Elective - III  i) Mechatronics ii) Object Oriented Programming Through Java iii) Control System Design | 1           |                 | -                | 3  |
| 10         | EE2529                      | Optional Elective - IV (MOOCs) Students shall opt from the list of MOOCs given l                                 | -<br>by the | -<br>Depar      | -<br>rtment)     | 2  |

# III Year - II Semester

| SI. | Course   | Name of the Course / Laboratory   | No.of Periods<br>per week |            |        | No.of   |
|-----|--|---|---------------------------|------------|--------|---------|
| No. | Code   | 1711/1411/14175-1514A15-AD5-AD5-AD5-AD5-AD5-AD5-AD5-AD5-AD5-AD  | L                         | Т          | P      | Credits |
| 1   | EE2530   | Power Electronics   | 3                         | 1          | -      | 3       |
| 2   | MA251  | Probability and Fuzzy Mathematics   | 3                         | 1          | -      | 3       |
| 3   | 3 EC2510 Microprocessors, Microcontrollers and Its Applications ** |   |                           |            | 2      | 3       |
| 4   |  |   |                           |            | -      | 3       |
| 5   |  | Open Elective-III(see list of Open Electives)   | 4                         |            | -      | 3       |
| 6   | EE2533   | Electrical Systems Simulation Lab   | 50                        | -          | 4      | 2       |
| 7   |  | Electrical Measurements & Instrumentation Lab   |                           | -          | 4      | 2       |
| 8   |  | icroprocessors, Microcontrollers and Its Applications Lab   | -                         | -          | 4      | 2       |
|     |  | Total   | 17                        | 3          | 12     | 21      |
| 9   | EC2516   | Optional Elective - V i) Data Base Management Systems ii) Nano Electronics iii) Solar and Wind Energy Systems | -                         | -          | -      | 3       |
| 10  | EE2536   | Optional Elective - VI (MOOCs) Students shall opt from the list of MOOCs given to                             | -<br>by the               | -<br>Depar | tment) | 2       |

| * | Project | Based | Theory | Course |
|---|---------|-------|--------|--------|
|   |         |       |        |        |

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### IV Vear - I Semester

| Sl.<br>No. | Course<br>Code                                 | Name of the Course / Laboratory   |             | of Per<br>er we<br>T |        | No.of<br>Credits |
|------------|--|---|-------------|----------------------|--------|------------------|
| 1          | EE2537   | Power System Analysis   | 3           | 1                    | -      | 3                |
| 2          |  | Professional Elective - III   | 3           | 1                    | -      | 3                |
| 3          | Professional Elective - IV                     |   |             |                      | -      | 3                |
| 4          | 4 Open Elective-IV(see list of Open Electives) |   |             |                      | -      | 3                |
| 5          | MA2512   | 2   | 1           | -                    | 2      |                  |
| 6          | EE2544   | Power Electronics Lab   | 2           | 2                    | 4      | 2                |
| 7          | EE2545   | Power Systems Lab   | -           | -                    | 4      | 2                |
| 8          | EE2546   | nternship / Industrial Training / Practical Training  | #1          | -                    | 4      | 2                |
|            |  | Total   | 15          | 4                    | 12     | 20               |
| 9          | CS2502   | i) Analog and Digital Communication ii) Introduction to Python Programming iii) Integration of Renewable Energy Sources | *           | -                    | -      | 3                |
| 10         |  | Optional Elective - VIII (MOOCs) Students shall opt from the list of MOOCs given by                                     | -<br>by the | -<br>Depar           | tment) | 2                |

## IV Year - II Semester

|     | Course | Name of the Course / Laboratory | No.of Periods |   |     | No.of<br>Credits |  |
|-----|--------|---------------------------------|---------------|---|-----|------------------|--|
| No. | Code   |                                 | L             | T | P   | Cicuits          |  |
| 1   |        | Professional Elective - V       | 3             | I | 120 | 3                |  |
| 2   |        | Professional Elective - VI      | 3             | 1 | -   | 3                |  |
| 3   | EE2557 | Project                         | -             | - | 20  | 10               |  |
|     |        | Total                           | 6             | 2 | 20  | 16               |  |

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Open Elective - I

| SI. |        | Title of the Subject  | Department<br>Offering the | No.of Periods<br>per week |   |   | No.of   |
|-----|--------|---|----------------------------|---------------------------|---|---|---------|
| No. |        |   | Subject                    | L                         | T | P | Credits |
| 1   | CE2515 | Elements of Civil Engineering<br>(Other than CE)                  | CE                         | 4                         | - | - | 3       |
| 2   |        | Building Services   | CE                         | 4                         | - | - | 3       |
| 3   |        | Electrical Materials  | EEE                        | 4                         | - | - | 3 3 3   |
| 4   | EE2516 | Control Systems Engineering<br>(Other than EEE & ECE)             | EEE                        | 4                         | - | - | 3       |
| 5   | ME2520 | Elements of Manufacturing Processes<br>(Other than ME)            | ME                         | 4                         |   | - | 3       |
| 6   |        | Automotive Engineering<br>(Other than ME)                         | ME                         | 4                         | * | - | 3       |
| 7   |        | Introduction to MPMC<br>(Other than ECE/EEE/CSE/IT)               | ECE                        | 4                         | - | - | 3       |
| 8   | EC2532 | Fundamentals of Communications<br>(Other than ECE)                | ECE                        | 4                         | 7 | - | 3       |
| 9   | CT2514 | Computer Graphics (Other than IT)                                 | CSE                        | 4                         |   | - | 3       |
| 10  |        | Object Oriented Programming through Java<br>(other than CSE & IT) | CSE                        | 4                         | - | - | 3       |
| 11  | CT2515 | Systems Software  | IT                         | 4                         | - | - | 3       |
| 12  |        | Web Programming(Other than CSE & IT)                              | IT                         | 4                         |   | - | 3       |
| 13  |        | Mathematical Cryptography(Other than CSE)                         | BS&H                       | 4                         | 2 | - | 3 3 3   |
| 14  |        | Semiconductor Physics (Other than ECE)                            | BS&H                       | 4                         | - | - | 3       |

| Sl. |        | Title of the Subject                                | Department<br>Offering the | No.of Periods<br>per week |   |   | No.of   |
|-----|--------|---|----------------------------|---------------------------|---|---|---------|
| No. |        |   | Subject                    | L                         | T | P | Credits |
| 1   | CE2530 | Geoinformatics (other than CE)                      | CE                         | 4                         | - | - | 3       |
| 2   | CE2531 | Environmental Sanitation                            | CE                         | 4                         | - | - | 3       |
| 3   | EE2523 | Modeling & Simulation of Engineering Systems        | EEE                        | 4                         | - | - | 3       |
| 4   | EE2524 | Power Systems Engineering (Other than EEE)          | EEE                        | 4                         | - | - | 3       |
| 5   | ME2532 | Elements of Mechanical Transmission (Other than ME) | ME                         | 4                         | - | * | 3       |
| 6   | ME2533 | Material Handling Equipment                         | ME                         | 4                         | - | - | 3       |
| 7   | EC2543 | Automotive Electronics                              | ECE                        | 4                         | - | - | 3       |
| 8   | EC2544 | Introduction to MEMS (other than ECE)               | ECE                        | 4                         | 3 | • | 3       |
| 9   | CS2508 | Data Science  | CSE                        | 4                         | - | - | 3       |
| 10  | CT2524 | Virtual and Augmented Reality<br>(other than IT)    | CSE                        | 4                         | - | • | 3       |
| 11  | IT2505 | Open Source Software                                | IT                         | 4                         | - | - | 3       |
| 12  | IT2506 | Cyber Laws  | IT                         | 4                         | * | - | 3       |
| 13  | MA2517 | Quality, Reliability and Operations Research        | BS&H                       | 4                         | - | - | 3       |

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| SI. |        | Title of the Subject                              | Department<br>Offering the | No.of Periods<br>per week |   |      | No.of   |
|-----|--------|---|----------------------------|---------------------------|---|------|---------|
| No. |        |   | Subject                    | L                         | T | P    | Credits |
| 1   | CE2543 | Hydrology (Other than CE)                         | CE                         | 4                         | - | -    | 3       |
| 2   | CE2544 | Planning for Sustainable Development              | CE                         | 4                         |   | (10) | 3       |
| 3   | EE2531 | Electrical and Hybrid Vehicles                    | EEE                        | 4                         |   | -    | 3       |
| 4   | EE2532 | Power Plant Instrumentation                       | EEE                        | 4                         | - | -    | 3       |
| 5   | ME2541 | Material Science (Other than ME)                  | ME                         | 4                         |   | -    | 3 3 3   |
| 6   | ME2542 | Renewable Energy Sources<br>(Other than ME)       | ME                         | 4                         | - | -    | 3       |
| 7   | EC2523 | Assistive Technologies (Other than ECE)           | ECE                        | 4                         | - | -    | 3       |
| 8   | EC2507 | Bio-Medical Engineering<br>(Other than EEE & ECE) | ECE                        | 4                         | - | -    | 3       |
| 9   | CS2512 | Node and Angular JS                               | CSE                        | 4                         | - | -    | 3       |
| 10  | CS2513 | Cyber Security                                    | CSE                        | 4                         | - | -    | 3 3 3   |
| 11  | CT2529 | Scripting Languages (Other than CSE)              | IT                         | 4                         | - | -    | 3       |
| 12  | CT2531 | Software Project Management (Other than CSE)      | IT                         | 4                         | - | -    | 3       |
|     |        | Elements of Stochastic Processes                  | BS&H                       | 4                         |   | -    | 3       |
| 14  | EG2505 | Academic Communication                            | ENGLISH                    | 4                         | - | -    | 3       |

# Open Elective - IV

| SI. |        | Title of the Subject                              | Department<br>Offering the | No.of Periods<br>per week |     |     | No.of   |
|-----|--------|---|----------------------------|---------------------------|-----|-----|---------|
| No. |        |   | Subject                    | L                         | T   | P   | Credits |
| 1   | CE2562 | Disaster Management (Other than CE)               | CE                         | 4                         | 15/ | •   | 3       |
| 2   | CE2563 | Repair and Retrofitting Techniques                | CE                         | 4                         | -   | -   | 3       |
| 3   | EE2542 | Modern Optimization Techniques                    | EEE                        | 4                         | -   | -   | 3 3 3   |
| 4   | EE2543 | Electrical Power Utilization (Other than EEE)     | EEE                        | 4                         | (#) | =   | 3       |
| 5   | ME2553 | Green Engineering                                 | ME                         | 4                         | *   | -   | 3       |
| 6   | ME2554 | Non Destructive Evaluation (Other than ME)        | ME                         | 4                         | -   | -   | 3       |
| 7   | EC2563 | Cyber Physical Systems                            | ECE                        | 4                         | -   | -   | 3       |
| 8   | EC2508 | Signals and Systems<br>(Other than EEE & ECE)     | ECE                        | 4                         | -   | -   | 3       |
| 9   | CS2521 | Digital Forensics                                 | CSE                        | 4                         | 387 | -   | 3       |
| 10  | CS2522 | Business Intelligence & Decision Support Systems  | CSE                        | 4                         |     | -   | 3       |
| 11  | IT2521 | Adhoc and Sensor Networks                         | IT                         | 4                         | -   | -   | 3 3 3   |
| 12  | CT2537 | Information Retrieval Systems<br>(Other than CSE) | IT                         | 4                         | -   | (4) | 3       |
| 13  | MA2514 | Fuzzy Logic (Other than EEE, ME & CSE)            | BS&H                       | 4                         | *   | -   | 3       |

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# **Professional Electives**

| SI.<br>No. | Course<br>Code                       | Name of the Course / Laboratory   | No.of Periods  per week L   T   P |                       |   | No.of<br>Credits |  |
|------------|--------------------------------------|---|-----------------------------------|-----------------------|---|------------------|--|
|            |                                      | Professional Elective - I  i) Switch Gear and Protection  ii) Computer Networks  iii) Pulse and Integrated Circuits  iv) Data Structures                  | 4                                 | -                     | - | 3                |  |
|            | EC2513                               | Professional Elective - II  i) Digital Signal Processing ii) Embedded System Design iii) Principles of VLSI Design iv) DSP Processors and Architecture    | 4                                 | 2                     | - | 3                |  |
|            | EC2517<br>EE2538                     | Professional Elective - III i) Big Data Analytics ii) CMOS Digital IC Design iii) Power Semiconductor Drives iv) Flexible AC Transmission Systems         | 3                                 | 1                     |   | 3                |  |
|            | EC2518                               | Professional Elective - IV  i) Cyber Security  ii) Digital Image Processing  iii) Power System Operation & Control  iv) High Voltage Engineering          | 3                                 | 1                     | - | 3                |  |
|            | EE2549<br>EE2550<br>EE2551<br>EE2552 | ,   | -<br>3<br>4<br>3                  | -<br>1<br>-<br>1<br>1 |   | 3                |  |
|            | EE2555                               | Professional Elective - VI i) Special Electrical Machines ii) Digital Control Systems iii) Utilization of Electrical Energy iv) HVDC Transmission Systems | 3                                 | 1                     | - | 3                |  |

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III Year - I Semester

| SI. | Course<br>Code | Name of the Course / Laboratory  | No.of Periods<br>per week |            |            | No.of   |
|-----|----------------|--|---------------------------|------------|------------|---------|
| No. |                | 1897   | L                         | T          | P          | Credits |
| 1   | MA2509         | Numerical and Statistical Methods  | 3                         | -1         | -          | 3       |
| 2   | ME2527         | Metal Cutting and Machine Tools  | 4                         |            | -          | 3       |
| 3   | ME2528         | Turbo Machinery  | 3                         | 1          | -          | 3       |
| 4   |                | Professional Elective - I  | 4                         | -          | 2          | 3       |
| 5   |                | Open Elective-II (see list of Open Electives)  | 4                         | -          | -          | 3       |
| 6   | ME2534         | Fluid Mechanics and Turbo Machinery Lab  |                           | -          | 4          | 2       |
| 7   | ME2535         | Machine Tools Lab  | -                         | -          | 4          | 2       |
| 8   | ME2536         | Computer Aided Machine Drawing Lab   | -                         | -          | 4          | 2       |
|     |                | Total  | 18                        | 2          | 12         | 21      |
|     | EE2503         | Optional Elective - III i) Computer Graphics ii) Fuzzy Logic Systems iii) Micro Processors and Interfacing |                           | 0          |            | 3       |
|     |                | Optional Elective - IV (MOOCs) Students shall opt from the list of MOOCs given by                          | -<br>ov the               | -<br>Depar | -<br>ment) | 2       |

## III Year - II Semester

|     | Course<br>Code | Name of the Course / Laboratory   | - Bouleville | of Per<br>er we |    | No.of<br>Credits |
|-----|----------------|---|--------------|-----------------|----|------------------|
| No. |                |   | L            | Т               | P  |                  |
| 1   | BA2503         | Engineering Economics and Accountancy   | 4            | -               | -  | 3                |
| 2   | ME2538         | Metrology and Instrumentation   | 3            | 1               | -  | 3                |
| 3   | ME2539         | Design of Machine Members   | 3            | 1               | -  | 3                |
| 4   | ME2540         | Heat Transfer   | 3            | 1               | -  | 3                |
| 5   |                | Professional Elective - II  | 4            |                 | -  | 3                |
| 6   |                | Open Elective-III(see list of Open Electives)   | 4            | *               | -  | 3                |
| 7   | ME2546         | Heat Transfer Lab   | -            | -               | 4  | 2                |
| 8   | ME2547         | Metrology and Instrumentation Lab   | -            | -               | 4  | 2                |
| 9   | ME2548         | Computer Aided Engineering Analysis Lab   | -            | -               | 2  | 1                |
|     |                | Total   | 21           | 3               | 10 | 23               |
| 10  | CT2507         | Optional Elective - V i) Object Oriented Programming through Java ii) Mechatronics Embedded System Design | in .         |                 | -  | 3                |
| 11  | ME2550         | Optional Elective - VI (MOOCs) Students shall opt from the list of MOOCs given by                         | - the        | -<br>Denar      | -  | 2                |

L: Lecture

T: Tutorial

P : Practical

Mechanical Engineering

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## IV Year - I Semester

| SI. | Course<br>Code | Name of the Course / Laboratory   |             | of Per<br>er we | No.of       |         |
|-----|----------------|---|-------------|-----------------|-------------|---------|
| NO. |                |   | L           | T               | P           | Credits |
| 1   | ME2551         | Industrial Engineering and Management   | 3           | 1               | -           | 3       |
| 2   | ME2552         | CAD / CAM   | 3           | 1               | -           | 3       |
| 3   |                | Professional Elective - III   | 4           | -               | -           | 3       |
| 4   |                | Professional Elective - IV  | 4           | -               | -           | 3       |
| 5   |                | Open Elective-IV(see list of Open Electives)  | 4           | -               | -           | 3       |
| 6   | ME2562         | Simulation Lab  | -           | -               | 4           | 2       |
| 7   | ME2563         | Mini Project  | -           | -               | 4           | 2       |
| 8   | ME2564         | Internship / Industrial Training / Practical Training   | -           | -               | -           | 2       |
|     |                | Total   | 18          | 2               | 8           | 21      |
| 9   | CT2512         | Optional Elective - VII  i) Big Data Analytics  ii) Computer Organization and Architecutre  iii) Cryogenics | 3.00        | 1               | -           | 3       |
| 10  | ME2566         | Optional Elective - VIII (MOOCs) Students shall opt from the list of MOOCs given by                         | -<br>by the | -<br>Depar      | -<br>tment) | 2       |

## IV Year - II Semester

| SI. | Course | Name of the Course / Laboratory  | No.of Periods<br>per week |   |    | No.of   |
|-----|--------|--|---------------------------|---|----|---------|
| No. | Code   | The Control of Control of the Contro | L                         | T | P  | Credits |
| 1   |        | Professional Elective - V  | 4                         | - | -  | 3       |
| 2   |        | Professional Elective - VI   | 4                         | - | -  | 3       |
| 3   | ME2575 | Project  | -                         | - | 20 | 10      |
|     |        | Total  | 8                         | - | 20 | 16      |

L: Lecture T: Tutorial P: Practical

Mechanical Engineering

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Open Elective - I

| SI. |        | Title of the Subject  | Department<br>Offering the | No.of Periods<br>per week |                |      | No.of   |
|-----|--------|---|----------------------------|---------------------------|----------------|------|---------|
| No. |        |   | Subject                    | L                         | Т              | P    | Credits |
| 1   |        | Elements of Civil Engineering<br>(Other than CE)                  | CE                         | 4                         | - 15           | 0.73 | 3       |
| 2   | CE2516 | Building Services   | CE                         | 4                         | 10 <b>#</b> 11 |      | 3       |
| 3   | EE2515 | Electrical Materials  | EEE                        | 4                         | -              | 892  | 3 3 3   |
| 4   | EE2516 | Control Systems Engineering<br>(Other than EEE & ECE)             | EEE                        | 4                         | ٠              | -    | 3       |
| 5   | ME2520 | Elements of Manufacturing Processes (Other than ME)               | ME                         | 4                         |                | 17   | 3       |
| 6   | ME2521 | Automotive Engineering (Other than ME)                            | ME                         | 4                         | : 8#8          | -    | 3       |
| 7   | EC2531 | Introduction to MPMC<br>(Other than ECE/EEE/CSE/IT)               | ECE                        | 4                         | -              | -    | 3       |
| 8   |        | Fundamentals of Communications (Other than ECE)                   | ECE                        | 4                         | -              | -    | 3       |
| 9   | CT2514 | Computer Graphics (Other than IT)                                 | CSE                        | 4                         | 77.0           | -    | 3       |
| 10  | CT2507 | Object Oriented Programming through Java<br>(other than CSE & IT) | CSE                        | 4                         | -              | -    | 3       |
| 11  | CT2515 | Systems Software  | IT                         | 4                         |                | -    | 3       |
| 12  | IT2502 | Web Programming(Other than CSE & IT)                              | IT                         | 4                         |                | -    | 3       |
| 13  | MA2516 | Mathematical Cryptography(Other than CSE)                         | BS&H                       | 4                         | -              | _    | 3 3 3   |
| 14  | PH2508 | Semiconductor Physics (Other than ECE)                            | BS&H                       | 4                         | -              | -    | 3       |

Open Elective - II

| SI. |        | Title of the Subject                                | Department<br>Offering the | No.of Periods<br>per week |     |   | No.of   |
|-----|--------|---|----------------------------|---------------------------|-----|---|---------|
| No. |        |   | Subject                    | L                         | Т   | P | Credits |
| 1   | CE2530 | Geoinformatics (other than CE)                      | CE                         | 4                         | 187 | - | 3       |
| 2   | CE2531 | Environmental Sanitation                            | CE                         | 4                         | -   | - | 3       |
| 3   | EE2523 | Modeling & Simulation of Engineering Systems        | EEE                        | 4                         | -   | - | 3 3 3   |
| 4   | EE2524 | Power Systems Engineering<br>(Other than EEE)       | EEE                        | 4                         | -   |   | 3       |
| 5   | ME2532 | Elements of Mechanical Transmission (Other than ME) | ME                         | 4                         | -   | - | 3       |
| 6   | ME2533 | Material Handling Equipment                         | ME                         | 4                         | -   | - | 3       |
| 7   | EC2543 | Automotive Electronics                              | ECE                        | 4                         |     | - | 3       |
| 8   | EC2544 | Introduction to MEMS<br>(other than ECE)            | ECE                        | 4                         | 7   | - | 3       |
| 9   | CS2508 | Data Science  | CSE                        | 4                         | -   | - | 3       |
| 10  | CT2524 | Virtual and Augmented Reality<br>(other than IT)    | CSE                        | 4                         | -   | - | 3       |
| 11  | IT2505 | Open Source Software                                | IT                         | 4                         | -   | - | 3       |
| 12  | IT2506 | Cyber Laws  | IT                         | 4                         | -   | - | 3       |
| 13  | MA2517 | Quality, Reliability and Operations Research        | BS&H                       | 4                         | -   | - | 3       |

L: Lecture

T: Tutorial

P: Practical

Mechanical Engineering

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Open Elective - III

| SI. |        | Title of the Subject                              | Department<br>Offering the |   | of Peri | No.of |         |
|-----|--------|---|----------------------------|---|---------|-------|---------|
| No. |        |   | Subject                    | L | Т       | P     | Credits |
| 1   | CE2543 | Hydrology (Other than CE)                         | CE                         | 4 | -       |       | 3       |
| 2   | CE2544 | Planning for Sustainable Development              | CE                         | 4 |         | -     | 3       |
| 3   | EE2531 | Electrical and Hybrid Vehicles                    | EEE                        | 4 |         |       | 3       |
| 4   | EE2532 | Power Plant Instrumentation                       | EEE                        | 4 |         | -     | 3       |
| 5   | ME2541 | Material Science (Other than ME)                  | ME                         | 4 |         | -     | 3 3 3 3 |
| 6   | ME2542 | Renewable Energy Sources (Other than ME)          | ME                         | 4 | •       |       | 3       |
| 7   | EC2523 | Assistive Technologies (Other than ECE)           | ECE                        | 4 | -       | 1724  | 3       |
| 8   | EC2507 | Bio-Medical Engineering<br>(Other than EEE & ECE) | ECE                        | 4 |         | -     | 3       |
| 9   | CS2512 | Node and Angular JS                               | CSE                        | 4 | -       | -     | 3       |
| 10  | CS2513 | Cyber Security                                    | CSE                        | 4 | -       | -     | 3 3     |
| 11  | CT2529 | Scripting Languages<br>(Other than CSE)           | IT                         | 4 | (#1)    | -     | 3       |
| 12  | CT2531 | Software Project Management (Other than CSE)      | IT                         | 4 | -       | -     | 3       |
|     | MA2518 |   | BS&H                       | 4 | *       | -     | 3       |
| 14  | EG2505 | Academic Communication                            | ENGLISH                    | 4 | -       | -     | 3       |

# Open Elective - IV

| SI. |        | Title of the Subject                              | Department<br>Offering the | No.of Periods<br>per week |   |   | No.of   |
|-----|--------|---|----------------------------|---------------------------|---|---|---------|
| No. |        | **-   | Subject                    | L                         | T | P | Credits |
| 1   | CE2562 | Disaster Management<br>(Other than CE)            | CE                         | 4                         | - | - | 3       |
| 2   | CE2563 | Repair and Retrofitting Techniques                | CE                         | 4                         | - | - | 3       |
| 3   | EE2542 | Modern Optimization Techniques                    | EEE                        | 4                         | - | - | 3 3 3   |
| 4   | EE2543 | Electrical Power Utilization (Other than EEE)     | EEE                        | 4                         |   | - |         |
| 5   | ME2553 | Green Engineering                                 | ME                         | 4                         | - | - | 3       |
|     |        | Non Destructive Evaluation (Other than ME)        | ME                         | 4                         | - | - | 3       |
| 7   | EC2563 | Cyber Physical Systems                            | ECE                        | 4                         | - | - | 3       |
|     | EC2508 | Signals and Systems (Other than EEE & ECE)        | ECE                        | 4                         | - | - | 3       |
| 9   | CS2521 | Digital Forensics                                 | CSE                        | 4                         | - | - | 3       |
| 10  | CS2522 | Business Intelligence & Decision Support Systems  | CSE                        | 4                         | - | - | 3       |
| 11  | IT2521 | Adhoc and Sensor Networks                         | IT                         | 4                         | - | - | 3       |
| 12  | CT2537 | Information Retrieval Systems<br>(Other than CSE) | IT                         | 4                         | - |   | 3       |
| 13  | MA2514 | Fuzzy Logic (Other than EEE, ME & CSE)            | BS&H                       | 4                         | ~ | - | 3       |

L : Lecture

T: Tutorial

P : Practical

Mechanical Engineering

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## **Professional Electives**

| SI.<br>No. | Course<br>Code   | Name of the Course / Laboratory   |   | No.of Periods  per week  L   T   P |    |   |
|------------|------------------|---|---|------------------------------------|----|---|
|            | ME2530<br>ME2531 | Professional Elective - I i) Non Conventional Sources of Energy ii) Mechancial Vibrations iii) Mechancis of Composite Materials iv) Data Structures           | 4 | -                                  | -  | 3 |
|            | ME2544<br>ME2545 | Professional Elective - II i) Principles of Finite Element Method ii) Robotics iii) Automobile Engineering iv) Database Management Systems                    | 4 | :#1                                | -  | 3 |
|            | ME2555<br>ME2556 | Professional Elective - III i) Optimization Techniques ii) Refrigeration and Air Conditioning iii) Unconventional Machining Process iv) Tribology             | 4 | -                                  | -  | 3 |
|            | ME2559<br>ME2560 | Professional Elective - IV i) Total Quality Management ii) Computational Fluid Dynamics iii) Condition Monitoring iv) Design of Transmission Elements         | 4 | (4)                                | -  | 3 |
|            | ME2568<br>ME2569 | Professional Elective - V  i) Design for Manufacturing and Assembly ii) Production Planning and Control iii) Power Plant Engineering iv) Theory of Elasticity | 4 | 9                                  | -8 | 3 |
|            | ME2572<br>ME2573 | Professional Elective - VI  i) Rapid Prototyping  ii) Gas Dynamics and Jet Propulsion  iii) Automation in Manufacturing  iv) Non Destructive Techniques       | 4 |                                    | -  | 3 |

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#### III Year - I Semester

| SI. |        | Name of the Course / Laboratory   | No.of Periods<br>per week |            |             | No.of   |
|-----|--------|---|---------------------------|------------|-------------|---------|
| No. |        |   | L                         | T          | P           | Credits |
| 1   | EC2536 | Linear Integrated Circuits Applications   | 3                         | 1          | -           | 3       |
| 2   | EC2537 | Digital Communications  | 3                         | -          | -           | 2       |
| 3   | EC2538 | Antennas and Wave Propagation   | 4                         | -          | -           | 3       |
| 4   | EC2539 | Principles of VLSI Design   | 3                         | -          | -           | 2       |
| 5   |        | Professional Elective - I   | 4                         |            | -           | 3       |
| 6   |        | Open Elective-II (see list of Open Electives)   | 4                         | ш.         | -           | 3       |
| 7   | EC2545 | Linear Integrated Circuits Applications Lab   | -                         | -          | 4           | 2       |
| 8   | EC2546 | Analog and Digital Communications Lab   | -                         | -          | 4           | 2       |
|     |        | Total   | 21                        | 1          | 8           | 20      |
| 9   | ME2549 | Optional Elective - III  i) Data Warehousing and Data Mining ii) Mechatronics iii) Introduction to MEMS |                           | :+:        | -           | 3       |
| 10  | EC2547 | Optional Elective - IV (MOOCs) Students shall opt from the list of MOOCs given by                       | y the                     | -<br>Depar | -<br>tment) | 2       |

# III Year - II Semester

| SI. | Course<br>Code             | Name of the Course / Laboratory   | No.of Periods<br>per week |        |        | No.of   |
|-----|----------------------------|---|---------------------------|--------|--------|---------|
| No. |                            |   | L                         | Т      | P      | Credits |
| 1   | EC2511                     | Digital Signal Processing   | 4                         | -      | -      | 3       |
| 2   | EE2512                     | Control Systems   | 3                         | 1      | -      | 3       |
| 3   | EC2510                     | Microprocessors, Microcontrollers and Applications**  | 3                         |        | 1      | 3       |
| 4   | EC2548                     | Microwave and Optical Communications  | 3                         | -      | -      | 2       |
| 5   |                            | Professional Elective - II  | 4                         | -      | -      | 3       |
| 6   |                            | Open Eletive-III (see list of Open Electives)   | 4                         |        | -      | 3       |
| 7   | EC2515                     | Microprocessor and Microcontroller Interfacing Lab  | -                         | >      | 4      | 2       |
| 8   | EC2552                     | Digital Signal Processing Lab   | -                         |        | 4      | 2       |
| 9   | EC2553                     | VLSI Lab  | -                         | -      | 4      | 2       |
|     |                            | Total   | 21                        | 1      | 13     | 23      |
| 10  | CT2534<br>EC2554<br>CT2533 | Optional Elective - V i) Big Data Analytics ii) Cognitive Radio Networks iii) Cryptography and Network Security | ħ                         | -      | +      | 3       |
| 10  | EC2555                     | Optional Elective - VI (MOOCs)  | -                         | -      | -      | 2       |
|     |                            | Students shall opt from the list of MOOCs given b   | y the                     | Depart | lment) |         |

\* Project Based Theory Course

L : Lecture

T : Tutorial

P : Practical

**Electronics and Communication Engineering** 



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# IV Year - I Semester

| SI.<br>No. | Course<br>Code             | Name of the Course / Laboratory   | ARCHEUE | of Per<br>er we<br>T | enoniana.   | No.of<br>Credits |
|------------|----------------------------|---|---------|----------------------|-------------|------------------|
| 1          | EC2517                     | CMOS Digital IC Design  | 4       | -                    | 2           | 3                |
| 2          | EC2512                     | Embedded System Design  | 3       | -                    | -           | 2                |
| 3          | EC2556                     | Electronic Measurements and Instrumentation   | 3       |                      | -           | 2                |
| 4          |                            | Professional Elective - III   | 4       | 1(#)                 | -           | 3                |
| 5          |                            | Professional Elective - IV  | 4       | -                    | -           | 3                |
| 6          |                            | Open Elective-IV(see list of Open Electives)  | 4       | -                    | -           | 3                |
| 7          | EC2564                     | Microwave and Optical Communications Lab  | -       |                      | 4           | 2                |
| 8          | EC2565                     | Mini Project on Smart Applications  |         |                      | 4           | 2                |
| 9          | EC2566                     | Internship / Industrial Training / Practical Training   | -       | ( <b>-</b> (         | -           | 2                |
|            |                            | Total   | 22      | -                    | 8           | 22               |
|            | EE2554<br>CT2521<br>EC2567 | Optional Elective - VII  i) Digital Control Systems  ii) Artificial Intelligence  iii) Transform Techniques | 321     |                      | -           | 3                |
| 10         | EC2568                     | Optional Elective - VIII (MOOCs) Students shall opt from the list of MOOCs given by                         | y the   | -<br>Depar           | -<br>tment) | 2                |

# IV Year - II Semester

|     | Course<br>Code | Name of the Course / Laboratory | No. | No.of |    |         |
|-----|----------------|---------------------------------|-----|-------|----|---------|
| No. |                |                                 | L   | Т     | P  | Credits |
| 1   |                | Professional Elective - V       | 4   | -     | -  | 3       |
| 2   |                | Professional Elective - VI      | 4   | -     | -  | 3       |
| 3   | EC2577         | Project                         | -   | -     | 20 | 10      |
|     |                | Total                           | 8   | -     | 20 | 16      |

L : Lecture

T: Tutorial

P : Practical

**Electronics and Communication Engineering** 

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Open Elective - I

| SI. |        | Title of the Subject  | Department<br>Offering the | No.of Periods<br>per week |     |      | No.of   |
|-----|--------|---|----------------------------|---------------------------|-----|------|---------|
| No. |        |   | Subject                    | L                         | Т   | P    | Credits |
| 1   |        | Elements of Civil Engineering<br>(Other than CE)                  | CE                         | 4                         | -   | (H)  | 3       |
| 2   | CE2516 | Building Services   | CE                         | 4                         |     | 70   | 3       |
| 3   | EE2515 | Electrical Materials  | EEE                        | 4                         | -   | -    | 3 3 3   |
| 4   |        | Control Systems Engineering<br>(Other than EEE & ECE)             | EEE                        | 4                         | -   | -    | 3       |
| 5   |        | Elements of Manufacturing Processes (Other than ME)               | ME                         | 4                         | -   | -    | 3       |
| 6   | ME2521 | Automotive Engineering<br>(Other than ME)                         | ME                         | 4                         | 2   | 7/27 | 3       |
| 7   |        | Introduction to MPMC<br>(Other than ECE/EEE/CSE/IT)               | ECE                        | 4                         | -   | -    | 3       |
| 8   |        | Fundamentals of Communications (Other than ECE)                   | ECE                        | 4                         | -   | -    | 3       |
| 9   | CT2514 | Computer Graphics (Other than IT)                                 | CSE                        | 4                         | 140 | S=1  | 3       |
| 10  | CT2507 | Object Oriented Programming through Java<br>(other than CSE & IT) | CSE                        | 4                         | -   | -    | 3       |
| 11  | CT2515 | Systems Software  | IT                         | 4                         | -   | -    | 3       |
| 12  | IT2502 | Web Programming(Other than CSE & IT)                              | IT                         | 4                         | -   | -    | 3       |
| 13  | MA2516 | Mathematical Cryptography(Other than CSE)                         | BS&H                       | 4                         | -   |      | 3 3 3   |
| 14  | PH2508 | Semiconductor Physics (Other than ECE)                            | BS&H                       | 4                         |     | -    | 3       |

Open Elective - II

| SI. |        | Title of the Subject                                | Department<br>Offering the |   | of Per<br>r weel |   | No.of   |
|-----|--------|---|----------------------------|---|------------------|---|---------|
| No. |        |   | Subject                    | L | T                | P | Credits |
| 1   | CE2530 | Geoinformatics (other than CE)                      | CE                         | 4 | -                | - | 3       |
| 2   | CE2531 | Environmental Sanitation                            | CE                         | 4 | -                |   | 3       |
| 3   | EE2523 | Modeling & Simulation of Engineering Systems        | EEE                        | 4 | -                | - | 3       |
| 4   | EE2524 | Power Systems Engineering (Other than EEE)          | EEE                        | 4 | -                | - | 3       |
| 5   | ME2532 | Elements of Mechanical Transmission (Other than ME) | ME                         | 4 | 2                | - | 3       |
| 6   | ME2533 | Material Handling Equipment                         | ME                         | 4 | 2                | _ | 3       |
| 7   | EC2543 | Automotive Electronics                              | ECE                        | 4 | -                | - | 3       |
| 8   | EC2544 | Introduction to MEMS (other than ECE)               | ECE                        | 4 | -                |   | 3       |
| 9   | CS2508 | Data Science  | CSE                        | 4 | -                | - | 3       |
| 10  | CT2524 | Virtual and Augmented Reality<br>(other than IT)    | CSE                        | 4 | -                | - | 3       |
| 11  | IT2505 | Open Source Software                                | IT                         | 4 | -                | - | 3       |
| 12  | IT2506 | Cyber Laws  | IT                         | 4 | 2                | ~ | 3 3 3   |
| 13  | MA2517 | Quality, Reliability and Operations Research        | BS&H                       | 4 | -                | - | 3       |

L: Lecture

T: Tutorial

P : Practical

**Electronics and Communication Engineering** 

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# Open Elective - III

| SI. |        | Title of the Subject                              | Department<br>Offering the |   | of Peri |     | No.of   |
|-----|--------|---|----------------------------|---|---------|-----|---------|
| No. |        |   | Subject                    | L | T       | P   | Credits |
| 1   | CE2543 | Hydrology (Other than CE)                         | CE                         | 4 | *       | (#0 | 3       |
| 2   | CE2544 | Planning for Sustainable Development              | CE                         | 4 | -       | -   | 3       |
| 3   | EE2531 | Electrical and Hybrid Vehicles                    | EEE                        | 4 | *       | -   | 3       |
| 4   | EE2532 | Power Plant Instrumentation                       | EEE                        | 4 | 2       | -   | 3       |
| 5   | ME2541 | Material Science (Other than ME)                  | ME                         | 4 | -       | 48  | 3 3 3 3 |
| 6   | ME2542 |   | ME                         | 4 | -       | -   | 3       |
| 7   | EC2523 | Assistive Technologies (Other than ECE)           | ECE                        | 4 | 3.0     | -   | 3       |
| 8   | EC2507 | Bio-Medical Engineering<br>(Other than EEE & ECE) | ECE                        | 4 | -       | -   | 3       |
| 9   | CS2512 | Node and Angular JS                               | CSE                        | 4 | -       |     | 3       |
| 10  | CS2513 | Cyber Security                                    | CSE                        | 4 | -       | _   | 3       |
| 11  | CT2529 | Scripting Languages<br>(Other than CSE)           | IT                         | 4 | -       | *   | 3       |
| 12  | CT2531 | Software Project Management (Other than CSE)      | IT                         | 4 | -       |     | 3       |
|     | MA2518 |   | BS&H                       | 4 | ж.      | -   | 3       |
| 14  | EG2505 | Academic Communication                            | ENGLISH                    | 4 | -       | -   | 3       |

# Open Elective - IV

| SI. |        | Title of the Subject                              | Department<br>Offering the |   | of Per<br>r weel |   | No.of   |
|-----|--------|---|----------------------------|---|------------------|---|---------|
| No. |        |   | Subject                    | L | Т                | P | Credits |
| 1   | CE2562 | Disaster Management (Other than CE)               | CE                         | 4 | *                | - | 3       |
| 2   | CE2563 | Repair and Retrofitting Techniques                | CE                         | 4 |                  | - | 3       |
| 3   | EE2542 | Modern Optimization Techniques                    | EEE                        | 4 |                  | - | 3 3 3   |
| 4   | EE2543 | Electrical Power Utilization (Other than EEE)     | EEE                        | 4 | -                | - |         |
| 5   | ME2553 | Green Engineering                                 | ME                         | 4 | -                | - | 3       |
|     |        | Non Destructive Evaluation (Other than ME)        | ME                         | 4 |                  | - |         |
| 7   | EC2563 | Cyber Physical Systems                            | ECE                        | 4 | -                | - | 3       |
| 8   | EC2508 | Signals and Systems<br>(Other than EEE & ECE)     | ECE                        | 4 | •                | - | 3       |
| 9   | CS2521 | Digital Forensics                                 | CSE                        | 4 | -                | - | 3       |
| 10  | CS2522 | Business Intelligence & Decision Support Systems  | CSE                        | 4 | 7.               | - | 3 3 3   |
| 11  | IT2521 | Adhoc and Sensor Networks                         | IT                         | 4 |                  | - | 3       |
| 12  | CT2537 | Information Retrieval Systems<br>(Other than CSE) | IT                         | 4 | 75               | - | 3       |
| 13  | MA2514 | Fuzzy Logic (Other than EEE, ME & CSE)            | BS&H                       | 4 | -                | - | 3       |

L : Lecture

T: Tutorial

P : Practical

**Electronics and Communication Engineering** 

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## **Professional Electives**

| SI.<br>No. | Course<br>Code   | Name of the Course / Laboratory   |   | of Per<br>er we<br>T |   | No.of<br>Credits |  |
|------------|------------------|---|---|----------------------|---|------------------|--|
|            | EC2541<br>EC2542 | Professional Elective - I i) CAD for VLSI ii) Computer Organization iii) Computer and Communication Networks iv) Biomedical Engineering                       | 4 | -                    | - | 3                |  |
|            | EC2516<br>EC2550 | Professional Elective - II  i) Analog IC Design  ii) Nano Electronics  iii) Smart Antennas  iv) Coding Theory   | 4 | -                    |   | 3                |  |
|            | EC2558<br>EC2559 | Professional Elective - III i) Mixed Signal IC Design ii) Cellular and Mobile Communications iii) Digital TV Engineering iv) DSP Processors and Architectures | 4 | -                    | - | 3                |  |
|            | EC2561<br>EC2562 | Professional Elective - IV i) System on Chip Design ii) Wireless Sensor Networks iii) Satellite Communication iv) Digital Image Processing                    | 4 |                      |   | 3                |  |
|            | EC2570<br>EC2571 | Professional Elective - V  i) Low Power VLSI Circuits  ii) Real Time Operating Systems  iii) Speech Processing  iv) Adaptive Signal Processing                | 4 | -                    | - | 3                |  |
|            | EC2574<br>EC2575 | Professional Elective - VI i) ASIC Design ii) Embedded C iii) RADAR Engineering iv) Multi Rate Signal Processing  | 4 |                      |   | 3                |  |

P: Practical

Electronics and Communication Engineering

T: Tutorial

L : Lecture

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#### III Year - I Semester

| SI.  | Course<br>Code             | Name of the Course / Laboratory  | No.of Periods<br>per week |            |          | No.of   |
|------|----------------------------|--|---------------------------|------------|----------|---------|
| 140. |                            |  | L                         | T          | P        | Credits |
| 1    | CT2517                     | Software Engineering   | 3                         | 1          | -        | 3       |
| 2    | CT2518                     | Compiler Design  | 3                         | 1          | -        | 3       |
| 3    | CT2519                     | Computer Networks  | 3                         | 1          | -        | 3       |
| 4    | CT2520                     | Web Technologies   | 4                         | -          | -        | 3       |
| 5    |                            | Professional Elective - I  | 4                         | -          | -        | 3       |
| 6    |                            | Open Elective-II (see list of Open Electives)  | 4                         | -          | -        | 3       |
| 7    | CS2509                     | Computer Networks and Compiler Design Lab  | -                         |            | 4        | 2       |
| 8    | CT2525                     | Web Technologies Lab   | -                         |            | 4        | 2       |
|      |                            | Total  | 21                        | 3          | 8        | 22      |
|      | CT2526<br>EC2511<br>EE2512 | Optional Elective - III i) Human Computer Interaction ii) Digital Signal Processing iii) Control Systems | *                         | -          | -        | 3       |
| 10   | CS2510                     | Optional Elective - IV (MOOCs) Students shall opt from the list of MOOCs given by                        | -<br>y the                | -<br>Depar | - tment) | 2       |

## III Year - II Semester

|     | Course<br>Code             | Name of the Course / Laboratory   |       | of Per<br>er we | No.of |         |
|-----|----------------------------|---|-------|-----------------|-------|---------|
| No. |                            |   | L     | T               | P     | Credits |
| 1   | CT2527                     | Design and Analysis of Algorithms   | 3     | 1               |       | 3       |
| 2   | CT2528                     | Data Warehousing and Data Maining   | 4     | -               | -     | 3       |
| 3   | CS2511                     | UML and Design Patterns *   | 3     | -               | 2     | 3       |
| 5   |                            | Professional Elective - II  (OR)  Any other Elective Depending on Industry Needs              | 4     | -               | -     | 3       |
| 6   |                            | Open Elective-III(see list of Open Electives)   | 4     | -               | -     | 3       |
| 7   | CS2514                     | Data Mining Lab   | -     | -               | 4     | 2       |
| 8   | CS2515                     |   | -     | 2               | 4     | 2       |
|     |                            | Total   | 18    | 1               | 10    | 19      |
|     | CS2516<br>EC2512<br>EE2554 | Optional Elective - V i) Graph Theory ii) Embedded System Design iii) Digital Control Systems | 2.    | 1               |       | 3       |
| 10  | CS2517                     | Optional Elective - VI (MOOCs)  | -     | 2               | -     | 2       |
|     |                            | Students shall opt from the list of MOOCs given by  | v the | Depart          | ment) |         |

\*Integrated Course with Theory and Laboratory

L : Lecture T: Tutorial P : Practical

Computer Science and Engineering

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## IV Year - I Semester

| SI.<br>No. | Course<br>Code | Name of the Course / Laboratory   |         | of Per<br>er we<br>T |             | No.of<br>Credits |
|------------|----------------|---|---------|----------------------|-------------|------------------|
| 1          | CT2533         | Cyptography and Network Secuirty  | 4       | -                    | -           | 3                |
| 2          | CT2534         | Big Data Analytics  | 4       | (4)                  | -           | 3                |
| 3          |                | Professional Elective - III   | 4       | -                    | -           | 3                |
| 4          |                | Professional Elective - IV  | 4       | -                    | -           | 3                |
| 5          |                | Open Elective-IV(see list of Open Electives)  | 4       | -                    | -           | 3                |
| 6          | CT2538         | Big Data Analytics Lab  |         | -                    | 4           | 2                |
| 7          | CS2523         | Cryptography and Network Security Lab   | 141     | -                    | 4           | 2                |
| 8          | CS2524         | Internship / Industrial Training / Practical Training                               | 150     | -                    | -           | 2                |
|            |                | Total   | 20      | -                    | 8           | 21               |
| 9          | CT2515         | Optional Elective - VII  i) Network Programming i) Systems Software iii) Robotics   |         | •                    |             | 3                |
| 10         | CS2526         | Optional Elective - VIII (MOOCs) Students shall opt from the list of MOOCs given by | - y the | -<br>Depart          | -<br>tment) | 2                |

# IV Year - II Semester

| SI.<br>No. | Course<br>Code | Name of the Course / Laboratory | p | No.of Periods  per week  L   T   P |    | No.of<br>Credits |
|------------|----------------|---------------------------------|---|------------------------------------|----|------------------|
| 1          |                | Professional Elective - V       | 4 | -                                  | -  | 3                |
| 2          |                | Professional Elective - VI      | 4 | -                                  | -  | 3                |
| 3          | CS2531         | Project                         | - | ×                                  | 20 | 10               |
|            |                | Total                           | 8 | -                                  | 20 | 16               |

L: Lecture

T: Tutorial

P: Practical

Computer Science and Engineering

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Open Elective - I

| SI. |        | Title of the Subject  | Department<br>Offering the | No.of Periods<br>per week |      |     | No.of   |
|-----|--------|---|----------------------------|---------------------------|------|-----|---------|
| No. |        |   | Subject                    | L                         | T    | P   | Credits |
| 1   | CE2515 | Elements of Civil Engineering<br>(Other than CE)                  | CE                         | 4                         | -    | -   | 3       |
| 2   | CE2516 | Building Services   | CE                         | 4                         | -    | 2   | 3       |
| 3   |        | Electrical Materials  | EEE                        | 4                         |      | -   | 3 3 3   |
| 4   |        | Control Systems Engineering<br>(Other than EEE & ECE)             | EEE                        | 4                         |      | -   |         |
| 5   | ME2520 | Elements of Manufacturing Processes<br>(Other than ME)            | ME                         | 4                         | -    | -   | 3       |
| 6   | ME2521 | Automotive Engineering (Other than ME)                            | ME                         | 4                         | ٠    | -   | 3       |
| 7   | EC2531 | Introduction to MPMC<br>(Other than ECE/EEE/CSE/IT)               | ECE                        | 4                         | :=:  | -   | 3       |
| 8   | EC2532 | Fundamentals of Communications<br>(Other than ECE)                | ECE                        | 4                         | -    | -   | 3       |
| 9   | CT2514 | Computer Graphics (Other than IT)                                 | CSE                        | 4                         | -    | 72  | 3       |
| 10  | CT2507 | Object Oriented Programming through Java<br>(other than CSE & IT) | CSE                        | 4                         |      | 1.5 | 3       |
| 11  | CT2515 | Systems Software  | IT                         | 4                         | (4)  | -   | 3       |
| 12  |        | Web Programming(Other than CSE & IT)                              | IT                         | 4                         |      | 12  | 3       |
| 13  | MA2516 | Mathematical Cryptography(Other than CSE)                         | BS&H                       | 4                         | - 20 | -   | 3 3 3   |
| 14  | PH2508 | Semiconductor Physics (Other than ECE)                            | BS&H                       | 4                         | -    | -   | 3       |

Open Elective - II

| SI. |        | Title of the Subject                                | Department<br>Offering the |   | of Per<br>r weel |    | No.of   |
|-----|--------|---|----------------------------|---|------------------|----|---------|
| No. |        |   | Subject                    | L | Т                | P  | Credits |
| 1   | CE2530 | Geoinformatics (other than CE)                      | CE                         | 4 | -                | 12 | 3       |
| 2   | CE2531 | Environmental Sanitation                            | CE                         | 4 | -                | -  | 3       |
| 3   | EE2523 | Modeling & Simulation of Engineering Systems        | EEE                        | 4 |                  | -  | 3 3 3   |
| 4   | EE2524 | Power Systems Engineering (Other than EEE)          | EEE                        | 4 | -                | -  | 3       |
| 5   | ME2532 | Elements of Mechanical Transmission (Other than ME) | ME                         | 4 | -                | -  | 3       |
| 6   | ME2533 | Material Handling Equipment                         | ME                         | 4 | -                | -  | 3       |
| 7   | EC2543 | Automotive Electronics                              | ECE                        | 4 | -                | -  | 3       |
| 8   | EC2544 | Introduction to MEMS<br>(other than ECE)            | ECE                        | 4 | -                | -  | - 8     |
| 9   | CS2508 | Data Science  | CSE                        | 4 | -                | -  | 3       |
| 10  | CT2524 | Virtual and Augmented Reality<br>(other than IT)    | CSE                        | 4 | 7                | -  | 3       |
| 11  | IT2505 | Open Source Software                                | IT                         | 4 |                  | -  | 3       |
| 12  | IT2506 | Cyber Laws  | lT                         | 4 | -                | -  | 3       |
| 13  | MA2517 | Quality, Reliability and Operations Research        | BS&H                       | 4 | -                | _  | 3       |

T : Tutorial

P : Practical

Computer Science and Engineering



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Open Elective - III

| SI. |        | Title of the Subject                              | Department<br>Offering the |   | of Peri |   | No.of            |  |
|-----|--------|---|----------------------------|---|---------|---|------------------|--|
| No. |        | 3120  | Subject                    | L | T       | P | Credits          |  |
| 1   | CE2543 | Hydrology (Other than CE)                         | CE                         | 4 | -       | - | 3                |  |
| 2   | CE2544 | Planning for Sustainable Development              | CE                         | 4 | -       |   | 3                |  |
| 3   | EE2531 | Electrical and Hybrid Vehicles                    | EEE                        | 4 | 2.00    | - | 3                |  |
| 4   | EE2532 | Power Plant Instrumentation                       | EEE                        | 4 |         | _ | 3                |  |
| 5   | ME2541 | Material Science (Other than ME)                  | ME                         | 4 | 343     | - | 3<br>3<br>3<br>3 |  |
| 6   | ME2542 | Renewable Energy Sources (Other than ME)          | ME                         | 4 | -       | - | 3                |  |
| 7   | EC2523 | Assistive Technologies (Other than ECE)           | ECE                        | 4 | -       | - | 3                |  |
| 8   | EC2507 | Bio-Medical Engineering<br>(Other than EEE & ECE) | ECE                        | 4 | -       | - | 3                |  |
| 9   | CS2512 | Node and Angular JS                               | CSE                        | 4 |         |   | 3                |  |
| 10  | CS2513 | Cyber Security                                    | CSE                        | 4 | 2.0     | - | 3 3 3            |  |
| 11  | CT2529 | Scripting Languages (Other than CSE)              | IT                         | 4 | -       | - | 3                |  |
| 12  | CT2531 | Software Project Management (Other than CSE)      | IT                         | 4 | -       | - | 3                |  |
|     |        | Elements of Stochastic Processes                  | BS&H                       | 4 |         | - | 3                |  |
| 14  | EG2505 | Academic Communication                            | ENGLISH                    | 4 |         | - | 3                |  |

## Open Elective - IV

| SI. |        | Title of the Subject                              | Department<br>Offering the |   | of Per<br>r weel |               | No.of   |
|-----|--------|---|----------------------------|---|------------------|---------------|---------|
| No. |        | 20  | Subject                    | L | Т                | P             | Credits |
| 1   | CE2562 | Disaster Management<br>(Other than CE)            | CE                         | 4 | -                | -             | 3       |
| 2   | CE2563 | Repair and Retrofitting Techniques                | CE                         | 4 | 2                | -             | 3       |
| 3   | EE2542 | Modern Optimization Techniques                    | EEE                        | 4 | -                | (40)          | 3 3 3   |
| 4   | EE2543 | Electrical Power Utilization (Other than EEE)     | EEE                        | 4 | -                | -             | 3       |
| 5   | ME2553 | Green Engineering                                 | ME                         | 4 | 4                | -             | 3       |
|     |        | Non Destructive Evaluation<br>(Other than ME)     | ME                         | 4 | -                | . <del></del> | 3       |
| 7   | EC2563 | Cyber Physical Systems                            | ECE                        | 4 | -                | -             | 3       |
| 8   | EC2508 | Signals and Systems (Other than EEE & ECE)        | ECE                        | 4 |                  | -             | 3       |
| 9   | CS2521 | Digital Forensics                                 | CSE                        | 4 | -                | -             | 3       |
| 10  | CS2522 | Business Intelligence & Decision Support Systems  | CSE                        | 4 | -                | -             | 3 3 3   |
| 11  | IT2521 | Adhoc and Sensor Networks                         | IT                         | 4 | -                | -             | 3       |
| 12  | CT2537 | Information Retrieval Systems<br>(Other than CSE) | IT                         | 4 | -                |               | 3       |
| 13  | MA2514 | Fuzzy Logic (Other than EEE, ME & CSE)            | BS&H                       | 4 | 1                | -             | 3       |

L : Lecture

T: Tutorial

P: Practical

Computer Science and Engineering

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## **Professional Electives**

| SI. | Course<br>Code   | Name of the Course / Laboratory  | 1.1.0.0 | of Pei<br>er we |   | No.of<br>Credits |  |
|-----|------------------|--|---------|-----------------|---|------------------|--|
| No. |                  |  | L       | T               | P | Credits          |  |
|     | CT2522<br>CT2523 | Professional Elective - I i) C#.NET ii) Advanced Data Structures iii) Software Testing Methodologies   | 4       |                 | - | 3                |  |
|     | CS2507           | iv) Principles of Programming Languages  |         |                 |   |                  |  |
|     | CT2529           | Professional Elective - II i) Artificial Intelligence ii) Scripting Languages iii) Microprocessors and Interfacing iv) Software Project Management | 4       | -               | - | 3                |  |
|     | CT2535<br>CS2519 | Professional Elective - III i) Machine Learning ii) Internet of Things iii) NoSQL Databases iv) Software Requirements Engineering and Estimation   | 4       | -               | - | 3                |  |
|     | CT2530<br>CT2537 | Professional Elective - IV  i) Mobile Computing  ii) Image Processing  iii) Information Retrieval Systems  iv) Optimization Techniques             | 4       |                 |   | 3                |  |
|     | CT2540<br>CT2532 | Professional Elective - V  i) Web Mining  ii) Cloud Computing  iii) Agile Software Development Process  iv) Blockchain Technologies                | 4       | -               | - | 3                |  |
|     |                  | Professional Elective - VI   | 4       | _               | - | 3                |  |
|     | CT2539<br>CS2529 | i) Distributed Systems ii) Social Networks iii) Web Services iv) Deep Learning   |         |                 |   |                  |  |

L: Lecture T: Tutorial I

Computer Science and Engineering

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III Year - I Semester

| SI. | Course<br>Code             | Name of the Course / Laboratory   | No.of Periods<br>per week |       |   | No.of   |
|-----|----------------------------|---|---------------------------|-------|---|---------|
| No. |                            |   | L                         | T     | P | Credits |
| 1   | CT2517                     | Software Engineering  | 3                         | 1     | - | 3       |
| 2   | CT2518                     | Compiler Design   | 3                         | 1     | - | 3       |
| 3   | CT2510                     | Operating Systems   | 3                         | 1     | - | 3       |
| 4   | CT2520                     | Web Technologies  | 4                         |       | - | 3       |
| 5   |                            | Professional Elective - I   | 4                         |       | - | 3       |
| 6   |                            | Open Elective-II (see list of Open Electives)   | 4                         |       | - | 3       |
| 7   | IT2507                     | Operating Systems and Compiler Design Lab   | -                         | -     | 4 | 2       |
| 8   | CT2525                     | Web Technologies Lab  | /4/                       | - Car | 4 | 2       |
|     |                            | Total   | 21                        | 3     | 8 | 22      |
| 9   | IT2508<br>EC2522<br>CE2549 | Optional Elective - III i) Object Oriented Programming through C++ ii) Data Communication iii) Building Information Modelling |                           |       | 1 | 3       |
| 10  | IT2509                     | Optional Elective - IV (MOOCs) Students shall opt from the list of MOOCs given by   | -                         | -     | - | 2       |

## III Year - II Semester

|     | Course                     | Name of the Course / Laboratory   | No.of Periods<br>per week |            |             | No.of   |
|-----|----------------------------|---|---------------------------|------------|-------------|---------|
| No. | Code                       |   | L                         | T          | P           | Credits |
| 1   | CT2527                     | Design and Analysis of Algorithms   | 3                         | 1          | -           | 3       |
| 2   | CT2528                     | Data Warehousing and Data Maining   | 4                         | -          | -           | 3       |
| 3   | IT2510                     | Object Oriented Analysis and Design *   | 4                         | -          | 2           | 4       |
| 4   | CT2519                     | Computer Nerworks   | 3                         | 1          | -           | 3       |
| 5   |                            | Professional Elective - II  | 4                         | -          | -           | 3       |
| 6   |                            | Open Elective-III(see list of Open Electives)   | 4                         | -          | -           | 3       |
| 7   | IT2513                     | Computer Networks and Data Mining Lab   | -                         | -          | 4           | 2       |
|     |                            | Total   | 22                        | 2          | 6           | 21      |
|     | IT2514<br>IT2515<br>ME2544 | Optional Elective - V i) Secure Web Technologies ii) Management Information Systems iii) Robotics | -                         | -          | -           | 3       |
| 9   | IT2516                     | Optional Elective - VI (MOOCs) Students shall opt from the list of MOOCs given by                 | -<br>ry the               | -<br>Depar | -<br>tment) | 2       |

\*Integrated Course with Theory and Laboratory

L: Lecture

T: Tutorial

P : Practical

Information Technology

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#### IV Year - I Semester

| SI.<br>No. | Course<br>Code | Name of the Course / Laboratory   | Description. | of Per<br>er we<br>T | Allowania (A | No.of<br>Credits |
|------------|----------------|---|--------------|----------------------|--------------|------------------|
| 1          | BA2502         | Managerial Economics and Financial Analysis   | 3            | -                    | -            | 2                |
| 2          | CT2534         | Big Data Analytics  | 4            | -                    | -            | 3                |
| 3          |                | Professional Elective - III   | 4            | 2                    | -            | 3                |
| 4          |                | Professional Elective - IV  | 4            | -                    | -            | 3                |
| 5          |                | Open Elective-IV (see list of Open Electives)   | 4            | -                    | -            | 3                |
| 6          | CT2538         | Big Data Analytics Lab  |              | -                    | 4            | 2                |
| 7          | IT2522         | Mini Project  | -            | -                    | 4            | 2                |
| 8          | IT2523         | Internship / Industrial Training / Practical Training   |              | *                    | -            | 2                |
|            |                | <ul> <li>Γ2522 Mini Project</li> <li>Γ2523 Internship / Industrial Training / Practical Train</li> <li>Total</li> </ul> |              |                      | 8            | 20               |
| 9          | EC2523         | Optional Elective - VII  i) Social Networks  ii) Assistive Technologies  iii) Renewable Energy Sources                  |              | r                    | -            | 3                |
| 10         | IT2524         | Optional Elective - VIII (MOOCs) Students shall opt from the list of MOOCs given by                                     | -<br>by the  | -<br>Depar           | -<br>tment)  | 2                |

## IV Year - II Semester

| SI. | Course | Name of the Course / Laboratory | No.of Periods<br>per week |   |    | No.of   |  |
|-----|--------|---------------------------------|---------------------------|---|----|---------|--|
| No. | Code   |                                 | L                         | T | P  | Credits |  |
| 1   |        | Professional Elective - V       | 4                         | - | -  | 3       |  |
| 2   |        | Professional Elective - VI      | 4                         | - | -  | 3       |  |
| 3   | IT2529 | Project                         | -                         | - | 20 | 10      |  |
|     |        | Total                           | 8                         | - | 20 | 16      |  |

P : Practical L : Lecture T: Tutorial

Information Technology

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# Open Elective - I

| SI. | Course | Title of the Subject  | Department Offering the | 21330 | of Per | No.of |         |
|-----|--------|---|-------------------------|-------|--------|-------|---------|
| No. | Code   | - 55  | Subject                 | L     | Т      | P     | Credits |
| 1   |        | Elements of Civil Engineering<br>(Other than CE)                  | CE                      | 4     | -      | -     | 3       |
| 2   | CE2516 | Building Services   | CE                      | 4     | -      | -     | 3       |
| 3   | EE2515 | Electrical Materials  | EEE                     | 4     | -      |       | 3       |
| 4   |        | Control Systems Engineering<br>(Other than EEE & ECE)             | EEE                     | 4     | -      | -     | 3 3 3   |
| 5   |        | Elements of Manufacturing Processes (Other than ME)               | ME                      | 4     | *      | -     | 3       |
| 6   | ME2521 | Automotive Engineering (Other than ME)                            | ME                      | 4     | -      | -     | 3       |
| 7   |        | Introduction to MPMC<br>(Other than ECE/EEE/CSE/IT)               | ECE                     | 4     | -      | -     | 3       |
| 8   |        | Fundamentals of Communications (Other than ECE)                   | ECE                     | 4     | -      | -     | 3       |
| 9   | CT2514 | Computer Graphics (Other than IT)                                 | CSE                     | 4     | 2      | -     | 3       |
| 10  | CT2507 | Object Oriented Programming through Java<br>(other than CSE & IT) | CSE                     | 4     | -      | -     | 3       |
| 11  | CT2515 | Systems Software  | IT                      | 4     | -      | -     | 3       |
| 12  |        | Web Programming(Other than CSE & IT)                              | IT                      | 4     | -      | -     | 3       |
| 13  | MA2516 | Mathematical Cryptography(Other than CSE)                         | BS&H                    | 4     | -      | -     | 3 3 3   |
| 14  | PH2508 | Semiconductor Physics (Other than ECE)                            | BS&H                    | 4     | -      | 2     | 3       |

Open Elective - II

| SI. |        | Title of the Subject                                | Department<br>Offering the |   | of Per<br>r weel |   | No.of   |
|-----|--------|---|----------------------------|---|------------------|---|---------|
| No. |        |   | Subject                    | L | Т                | P | Credits |
| 1   | CE2530 | Geoinformatics (other than CE)                      | CE                         | 4 | -                | - | 3       |
| 2   | CE2531 | Environmental Sanitation                            | CE                         | 4 | 2                | 2 | 3       |
| 3   | EE2523 | Modeling & Simulation of Engineering Systems        | EEE                        | 4 | *                | - | 3       |
| 4   | EE2524 | Power Systems Engineering (Other than EEE)          | EEE                        | 4 | 7.               | - | 3       |
| 5   | ME2532 | Elements of Mechanical Transmission (Other than ME) | ME                         | 4 | -                | - | 3       |
| 6   | ME2533 | Material Handling Equipment                         | ME                         | 4 | -                | - | 3       |
| 7   | EC2543 | Automotive Electronics                              | ECE                        | 4 | -                | - | 3 3     |
| 8   | EC2544 | Introduction to MEMS (other than ECE)               | ECE                        | 4 | 2                | - |         |
| 9   | CS2508 | Data Science  | CSE                        | 4 | -                | = | 3       |
| 10  | CT2524 | Virtual and Augmented Reality<br>(other than IT)    | CSE                        | 4 |                  | - | 3       |
| 11  | IT2505 | Open Source Software                                | IT                         | 4 | -                | - | 3       |
| 12  | IT2506 | Cyber Laws  | IT                         | 4 | -                | - | 3       |
| 13  | MA2517 | Quality, Reliability and Operations Research        | BS&H                       | 4 | -                | - | 3       |

L : Lecture

T: Tutorial

P : Practical

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## Open Elective - III

| SI. |        | Title of the Subject                              | Department<br>Offering the | 0.0000000 | of Per         |   | No.of     |  |
|-----|--------|---|----------------------------|-----------|----------------|---|-----------|--|
| No. |        |   | Subject                    | L         | Т              | P | Credits   |  |
| 1   | CE2543 | Hydrology (Other than CE)                         | CE                         | 4         | -              | - | 3         |  |
| 2   | CE2544 | Planning for Sustainable Development              | CE                         | 4         | -              | - | 3         |  |
| 3   | EE2531 | Electrical and Hybrid Vehicles                    | EEE                        | 4         |                | - | 3 3 3 3 3 |  |
| 4   | EE2532 | Power Plant Instrumentation                       | EEE                        | 4         | (4)            | - | 3         |  |
| 5   | ME2541 | Material Science (Other than ME)                  | ME                         | 4         | (4)            | - | 3         |  |
| 6   | ME2542 | Renewable Energy Sources (Other than ME)          | ME                         | 4         | -              | - | 1.50      |  |
| 7   | EC2523 | Assistive Technologies (Other than ECE)           | ECE                        | 4         | 14             | - | 3         |  |
| 8   | EC2507 | Bio-Medical Engineering<br>(Other than EEE & ECE) | ECE                        | 4         | () <b>-</b> () | - | 3         |  |
| 9   | CS2512 | Node and Angular JS                               | CSE                        | 4         | -              | - | 3         |  |
| 10  | CS2513 | Cyber Security                                    | CSE                        | 4         |                | _ | 3 3 3     |  |
| 11  | CT2529 | Scripting Languages (Other than CSE)              | IT                         | 4         | 273            | * |           |  |
| 12  | CT2531 | Software Project Management (Other than CSE)      | IT                         | 4         | 2              | - | 3         |  |
|     |        | Elements of Stochastic Processes                  | BS&H                       | 4         |                | - | 3         |  |
| 14  | EG2505 | Academic Communication                            | ENGLISH                    | 4         | -              | 2 | 3         |  |

# Open Elective - IV

| SI. |        | Title of the Subject                             | Department<br>Offering the | E-11/2-C | of Per<br>r weel | DE GENERAL | No.of       |
|-----|--------|--|----------------------------|----------|------------------|------------|-------------|
| No. |        | 97%  | Subject                    | L        | Т                | P          | Credits     |
| 1   | CE2562 | Disaster Management<br>(Other than CE)           | CE                         | 4        | 2.50             | -          | 3           |
| 2   | CE2563 | Repair and Retrofitting Techniques               | CE                         | 4        | -                | -          | 3           |
| 3   | EE2542 | Modern Optimization Techniques                   | EEE                        | 4        |                  | -          | 3 3 3       |
| 4   | EE2543 | Electrical Power Utilization (Other than EEE)    | EEE                        | 4        | -                | -          | 2500        |
| 5   | ME2553 | Green Engineering                                | ME                         | 4        |                  | -          | 3           |
| 6   | ME2554 | Non Destructive Evaluation (Other than ME)       | ME                         | 4        | •                | -          | -000        |
| 7   | EC2563 | Cyber Physical Systems                           | ECE                        | 4        | *                | -          | 3           |
| 8   | EC2508 | Signals and Systems (Other than EEE & ECE)       | ECE                        | 4        | -                | -          | 3           |
| 9   | CS2521 | Digital Forensics                                | CSE                        | 4        |                  | -          | 3           |
| 10  | CS2522 | Business Intelligence & Decision Support Systems | CSE                        | 4        |                  | -          | 3           |
| 11  | IT2521 | Adhoc and Sensor Networks                        | IT                         | 4        | -                | -          | 3<br>3<br>3 |
| 12  | CT2537 | Information Retrieval Systems (Other than CSE)   | IT                         | 4        | •                | -          |             |
| 13  | MA2514 | Fuzzy Logic (Other than EEE, ME & CSE)           | BS&H                       | 4        | -                | -          | 3           |

L : Lecture

T: Tutorial

P: Practical

Information Technology

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# **Professional Electives**

| Sl.<br>No. | Course<br>Code                       | Name of the Course / Laboratory   |   |    | riods<br>ek<br>P | No.of<br>Credits |  |
|------------|--------------------------------------|---|---|----|------------------|------------------|--|
|            | CT2514                               | Professional Elective - I i) Artificial Intelligence ii) Embedded System Design iii) Computer Graphics iv) Advanced Data Structures   | 4 | -  | -                | 3                |  |
|            | 1T2511<br>1T2512<br>CT2530<br>CT2532 | Professional Elective - II i) Soft Computing Techniques ii) Real Time Systems iii) Image Processing iv) Agile Software Development Process                                    | 4 | -  | 1                | 3                |  |
|            | IT2517<br>IT2518<br>CT2526<br>CT2523 | Professional Elective - III  i) Machine Learning and Pattern Recognition ii) Distributed Operating Systems iii) Human Computer Interaction iv) Software Testing Methodologies | 4 | -  | -                | 3                |  |
|            | IT2519<br>CT2536<br>IT2520<br>CT2533 | Professional Elective - IV  i) Business Intelligence ii) Mobile Computing iii) Multimedia Tools iv) Cryptography and Network Security   | 4 |    |                  | 3                |  |
|            | IT2525<br>IT2526<br>CT2524<br>IT2527 | Professional Elective - V i) Steganography and Biometrics ii) Parallel Computing iii) Virtual and Augmented Reality iv) E-Commerce  | 4 | -  | -                | 3                |  |
|            |                                      | Professional Elective - VI  i) Internet of Things  ii) Cloud Computing  iii) Blockchain Technologies  iv) Design Patterns   | 4 | /4 |                  | 3                |  |

Information Technology

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## I Semester

| SI. | Course | Course Name of the Course / Laboratory   | No.of Periods<br>per week |   |    | No.of<br>Credits |
|-----|--------|--|---------------------------|---|----|------------------|
| No. | Code   | With Country C | L                         | T | P  | Credits          |
| 1   | CE3901 | Advanced Structural Analysis **  | 3                         | - | -  | 3                |
| 2   | CE3902 | Theory of Elasticity   | 3                         | - | -  | 3                |
| 3   |        | Professional Elective - I  | 3                         | - | 17 | 3                |
| 4   |        | Professional Elective - II   | 3                         | - | -  | 3                |
| 5   | BA3901 | Research Methodology & IPR   | 3                         | - | -  | 3                |
| 6   | CE3908 | Advanced Structural Engineering Lab  | S#1                       | - | 4  | 2                |
| 7   | CE3909 | Advanced Concrete Technology Lab   | -                         | - | 4  | 2                |
|     |        | Total  | 15                        | - | 8  | 19               |
| 8   | BA3902 | Constitution of India (Audit Course)   | 2                         |   | -  |                  |

## II Semester

| Sl. | Course | Name of the Course / Laboratory                     | No.of Periods<br>per week |     |    | No.of   |
|-----|--------|---|---------------------------|-----|----|---------|
| No. | Code   |   | L                         | T   | P  | Credits |
| 1   | CE3910 | Finite Element Methods in Structural Engineering ** | 3                         | -   | -  | 3       |
| 2   | CE3911 | Structural Dynamics                                 | 3                         | -   | -  | 3       |
| 3   |        | Professional Elective - III                         | 3                         | -   | -  | 3       |
| 4   |        | Professional Elective - IV                          | 3                         | - 2 | -  | 3       |
| 5   | CE3918 | Computer Applications in Structural Engineering Lab | -                         | -   | 4  | 2       |
| 6   | CE3919 | Structural Design Lab                               |                           |     | 4  | 2       |
| 7   | CE3920 | Mini Project with Seminar                           |                           | -   | 6  | 3       |
|     |        | Total   | 12                        | -   | 14 | 19      |
| 8   | EG3901 | English for Research Paper Writing (Audit Course)   | 2                         | _   | 2  | -       |

## III Semester

| SI. | Course | Name of the Course / Laboratory | No.of Periods<br>per week |   | No.of |         |
|-----|--------|---------------------------------|---------------------------|---|-------|---------|
| No. | Code   |                                 | L                         | T | P     | Credits |
| 1   |        | Professional Elective - V       | 3                         | - | -     | 3       |
| 2   |        | Open Elective                   | 3                         | - | -     | 3       |
| 3   |        | Dissertation Phase - I          | -                         | - | 20    | 10      |
|     |        | Total                           | 6                         | _ | 20    | 16      |

\*\* Project Based Course

L: Lecture T: Tutorial P: Practical

M.Tech - Structural Engineering (CE) - R20

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#### **IV Semester**

| Sl.<br>No. | Course | Name of the Course / Laboratory | 100000 | of Per<br>er we | 1  | No.of   |
|------------|--------|---------------------------------|--------|-----------------|----|---------|
| No.        | Code   | •                               | L      | Т               | P  | Credits |
| 1          |        | Dissertation Phase - II         | -      | -               | 32 | 16      |
|            |        | Total                           | -      | 2               | 32 | 16      |

#### **Professional Electives:**

#### Professional Elective - I

| MA3901 C | omputational | Methods in | Structural | Engineering |
|----------|--------------|------------|------------|-------------|
|----------|--------------|------------|------------|-------------|

CE3903 Advanced R.C. Design

CE3904 Experimental Stress Analysis

#### Professional Elective - II

| CE3905 Theory of | Plates and | Shells |
|------------------|------------|--------|
|------------------|------------|--------|

CE3906 Advancements in Concrete Technology

CE3907 Design of Pre-stressed Concrete Structures

#### Professional Elective - III

| CE3912 | Advanced | Design o | f Steel | Structures |
|--------|----------|----------|---------|------------|
| CL3712 | Auvanceu | DOSIEH O | I DICCI | Suuctuics  |

Stability of Structures CE3913

CE3914 Design of High-rise Structures

#### Professional Elective - IV

| CE3915   | Dagian | of Deidon   | Structures |
|----------|--------|-------------|------------|
| ( F 191) | Design | OI DIRECTOR | SHREHRES   |

CE3916 Repairs and Retrofitting of Structures

Ground Improvement Methods CE3917

## Professional Elective - V

Earthquake Resistant Design of Structures CE3921

Design of Sub-structures CE3922

CE3923 MOOCs

## **Open Electives:**

CE3924 Sustainable Development

EE3924 Energy Audit, Conservation & Management

ME3924 Rapid Prototyping

Automotive Electronics (Otther than VLSID&ES) EC4924

CS3924 Soft Computing Techniques

M. Tech - Structural Engineering (CE) - R20

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|---|---|---|---|------------|---|---|
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|   |   |   |   |            |   |   |

| SI. | Course | Name of the Course / Laboratory           | No.of Periods<br>per week |      |     | No.of   |
|-----|--------|---|---------------------------|------|-----|---------|
| No. | Code   |   | L                         | T    | P   | Credits |
| 1   | EE3901 | Electrical Machine Modeling and Analysis  | 3                         | 2    | - 2 | 3       |
| 2   | EE3902 | Analysis of Power Electronic Converters** | 3                         | -    | -   | 3       |
| 3   |        | Professional Elective - I                 | 3                         | -    | -   | 3       |
| 4   |        | Professional Elective - II                | 3                         | -    | -   | 3       |
| 5   |        | Research Methodology & IPR                | 3                         | -    | 2   | 3       |
| 6   | EE3909 | Power Electronics Simulation Laboratory   | ~                         | - 20 | 4   | 2       |
| 7   | EE3910 | Power Converters Laboratory               | -                         | •    | 4   | 2       |
|     |        | Total                                     | 15                        | -    | 8   | 19      |
| 8   | BA3902 | Constitution of India (Audit Course)      | 2                         | -    | -   |         |

## II Semester

| Sl. | Course | Name of the Course / Laboratory                   | No.of Periods<br>per week |     |    | No.of<br>Credits |
|-----|--------|---|---------------------------|-----|----|------------------|
| No. | Code   |   | L                         | T   | P  | Credits          |
| 1   | EE3911 | Switched Mode Power Conversion                    | 3                         | -   | -  | 3                |
| 2   | EE3912 | Power Electronic Control of Electrical Drives **  | 3                         | -   | -  | 3                |
| 3   |        | Professional Elective - III                       | 3                         | 2   | _  | 3                |
| 4   |        | Professional Elective - IV                        | 3                         | -   | -  | 3                |
| 5   | EE3919 | Electric Drives Simulation Laboratory             | -                         | -   | 4  | 2                |
| 6   | EE3920 | Electric Drives Laboratory                        | -                         | ÷   | 4  | 2                |
| 7   | EE3921 | Mini Project with Seminar                         | T.                        | .7. | 6  | 3                |
|     |        | Total   | 12                        | -   | 14 | 19               |
| 8   | EG3901 | English for Research Paper Writing (Audit Course) | 2                         | -   | _  | -                |

# III Semester

| SI.<br>No. | Course<br>Code | Name of the Course / Laboratory | No. | No.of |    |         |
|------------|----------------|---------------------------------|-----|-------|----|---------|
|            |                |                                 | L   | T     | P  | Credits |
| 1          |                | Professional Elective - V       | 3   | -     | -  | 3       |
| 2          |                | Open Elective                   | 3   | -     | -  | 3       |
| 3          |                | Dissertation Phase - I          | -   | -     | 20 | 10      |
|            |                | Total                           | 6   | -     | 20 | 16      |

\*\* Project Based Course

L: Lecture T: Tutorial P : Practical

M.Tech - Power Electronics and Electric Drives (EEE) - R20

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#### **IV Semester**

| SI.<br>No. | Course<br>Code | Name of the Course / Laboratory | No. | No.of |    |         |
|------------|----------------|---------------------------------|-----|-------|----|---------|
|            |                |                                 | L   | T     | P  | Credits |
| 1          |                | Dissertation Phase - II         |     |       | 32 | 16      |
|            |                | Total                           | -   | -     | 32 | 16      |

#### **Professional Electives:**

## Professional Elective - I

EE3903 Modern Control Theory

EE3904 Power Quality and Custom Power Devices EE3905

Programmable Logic Controllers and Applications

## Professional Elective - II

EE3906 Artificial Intelligence Techniques EE3907 Renewable Energy Technologies EE3908 Flexible AC Transmission Systems

## Professional Elective - III

EE3913 Control and Integration of Renewable Energy Systems

EE3914 Hybrid Electric Vehicles

EE3915 Advanced Digital Control Systems

## Professional Elective - IV

EE3916 Advanced Digital Signal Processing

EE3917 Applications of Power Converters

EE3918 Microcontrollers

## Professional Elective - V

EE3922 Digital Signal Processing Controlled Drives

EE3923 Smat Grid Technologies

EE39.... MOOCs

## **Open Electives:**

CE3924 Sustainable Development

EE3924 Energy Audit, Conservation & Management

ME3924 Rapid Prototyping

EC4924 Automotive Electronics (Otther than VLSID&ES)

CS3924 Soft Computing Techniques

M.Tech - Power Electronics and Electric Drives (EEE) - R20

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## I Semester

| SI. | Course<br>Code | Name of the Course / Laboratory        | No.o | No.of |   |         |
|-----|----------------|--|------|-------|---|---------|
| No. |                |  | L    | Т     | P | Credits |
| 1   | ME3901         | Mechanical Vibrations and Acoustics ** | 3    | -     | - | 3       |
| 2   | ME3902         | Advanced mechancis of Solids           | 3    | -     | - | 3       |
| 3   |                | Professional Elective - I              | 3    | -     | - | 3       |
| 4   |                | Professional Elective - II             | 3    | -     | - | 3       |
| 5   | BA3901         | Research Methodology & IPR             | 3    | +     | - | 3       |
| 6   | ME3909         | Machine Dynamics Lab                   | -    | Ψ.    | 4 | 2       |
| 7   | ME3910         | Advanced Material Testing Lab          | -    | -     | 4 | 2       |
|     |                | Total                                  | 15   | -     | 8 | 19      |
| 8   | BA3902         | Constitution of India (Audit Course)   | 2    | *     |   |         |

## II Semester

| SI.         | Course<br>Code | Name of the Course / Laboratory                   | No.of Periods<br>per week |   |    | No.of   |
|-------------|----------------|---|---------------------------|---|----|---------|
| No.         |                |   | L                         | T | P  | Credits |
| 1           | MA3902         | Computational Methods in Engineering              | 3                         | - | -  | 3       |
| 2           | ME3911         | Advanced Finite Element Methods **                | 3                         | - | -  | 3       |
| 3           |                | Professional Elective - III                       | 3                         | - | -  | 3       |
| 4<br>5<br>6 |                | Professional Elective - IV                        | 3                         | - | -  | 3       |
| 5           | ME3918         | Modeling and Simulation Lab                       | -                         | - | 4  | 2       |
| 6           | ME3919         | Computational Methods Lab                         | -                         | - | 4  | 2       |
| 7           | ME3920         | Mini Project with Seminar                         | ·*:                       | - | 6  | 3       |
|             |                | Total   | 12                        | 2 | 14 | 19      |
| 8           | EG3901         | English for Research Paper Writing (Audit Course) | 2                         | - | -  | -       |

## III Semester

| Sl.<br>No. | Course<br>Code | Name of the Course / Laboratory | No. | No.of |    |         |
|------------|----------------|---------------------------------|-----|-------|----|---------|
|            |                |                                 | L   | T     | P  | Credits |
| 1          |                | Professional Elective - V       | 3   | 2     | 2  | 3       |
| 2          |                | Open Elective                   | 3   | -     | -  | 3       |
| 3          | ME3926         | Dissertation Phase - I          | -   | -     | 20 | 10      |
|            |                | Total                           | 6   | -     | 20 | 16      |

\*\* Project Based Course

T: Tutorial P : Practical L: Lecture

M.Tech - Machine Design (ME) - R20

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#### IV Semester

| SI.<br>No. | Course<br>Code | Name of the Course / Laboratory | No. | No.of |    |         |
|------------|----------------|---------------------------------|-----|-------|----|---------|
|            |                |                                 | L   | Т     | P  | Credits |
| 1          | ME3927         | Dissertation Phase - II         | -   | -     | 32 | 16      |
|            |                | Total                           | -   | -     | 32 | 16      |

#### **Professional Electives:**

#### Professional Elective - I

ME3903 Analysis and Synthesis of Mechanisms

ME3904 Advanced Materials ME3905 Industrial Robotics

## Professional Elective - II

ME3906 Gear Engineering

ME3907 Advanced Optimization Techniques

ME3908 Rotor Dynamics

#### Professional Elective - III

ME3912 Design for Manufacturing and Assembly

ME3913 Mechatronics

ME3914 Vehicle Dynamics

#### Professional Elective - IV

ME3915 Signal Analysis and Condition Monitoring

ME3916 Fracture Mechanics

ME3917 Experimental Stress Analysis

## Professional Elective - V

ME3921 Tribology

ME3922 Composite Materials

ME3923 MOOCs

## **Open Electives:**

CE3924 Sustainable Development

EE3924 Energy Audit, Conservation & Management

ME3924 Rapid Prototyping

EC4924 Automotive Electronics (Otther than VLSID&ES)

CS3924 Soft Computing Techniques

M.Tech - Machine Design (ME) - R20

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#### I Semester

| Sl. | Course<br>Code | Name of the Course / Laboratory  | No. | No.of |   |         |
|-----|----------------|--|-----|-------|---|---------|
| No. |                | The second secon | L   | T     | P | Credits |
| 1   | EC4901         | CMOS VLSI Design   | 3   | -     | - | 3       |
| 2   | EC4902         | Advanced Microcontrollers *  | 3   | -     | 2 | 3       |
| 3   |                | Professional Elective - I  | 3   | -     | - | 3       |
| 4   |                | Professional Elective - II   | 3   | -     | - | 3       |
| 5   | BA3901         | Research Methodology & IPR   | 3   | ~     | - | 3       |
| 6   | EC4909         | CMOS VLSI Design Lab   | -   | 2     | 4 | 2       |
| 7   | EC4910         | Advanced Microcontrollers Lab  | -   | -     | 4 | 2       |
|     |                | Total  | 15  | -     | 8 | 19      |
| 8   | BA3902         | Constitution of India (Audit Course)   | 2   | *     | * |         |

## II Semester

| SI.         | Course<br>Code | Name of the Course / Laboratory                   | No.of Periods<br>per week |   |    | No.of   |
|-------------|----------------|---|---------------------------|---|----|---------|
| No.         |                |   | L                         | Т | P  | Credits |
| 1           | EC4911         | VLSI System Design *                              | 3                         | - | -  | 3       |
| 2           | EC4912         | Embedded System Based IoT                         | 3                         | - | -2 | 3       |
| 2           |                | Professional Elective - III                       | 3                         | - | 7) | 3       |
| 4<br>5<br>6 |                | Professional Elective - IV                        | 3                         | - | -  | 3       |
| 5           | EC4919         | VLSI System Design Lab                            |                           | - | 4  | 2       |
| 6           | EC4920         | Embedded System and IoT Lab                       | -                         | - | 4  | 2       |
| 7           | EC4921         | Mini Project with Seminar                         | -                         | - | 6  | 3       |
|             | d              | Total   | 12                        | - | 14 | 19      |
| 8           | EG3901         | English for Research Paper Writing (Audit Course) | 2                         | - | -  | -       |

## III Semester

| Sl.<br>No. | Course<br>Code | Name of the Course / Laboratory | No. | No.of |    |         |
|------------|----------------|---------------------------------|-----|-------|----|---------|
|            |                |                                 | L   | T     | P  | Credits |
| 1          |                | Professional Elective - V       | 3   | -     | -  | 3       |
| 2          |                | Open Elective                   | 3   | -     | -  | 3       |
| 3          | EC4925         | Dissertation Phase - I          | -   | -     | 20 | 10      |
|            |                | Total                           | 6   | -     | 20 | 16      |

<sup>\*</sup> Project Based Theory Course

T: Tutorial L : Lecture

P : Practical

M.Tech - VLSI Design and Embedded System (ECE) - R20

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#### **IV Semester**

|     | Course<br>Code | Name of the Course / Laboratory | No. | No.of |    |         |
|-----|----------------|---------------------------------|-----|-------|----|---------|
| No. |                |                                 | L   | Т     | P  | Credits |
| 1   | EC4925         | Dissertation Phase - II         | -   | -     | 32 | 16      |
|     |                | Total                           | -   | -     | 32 | 16      |

#### **Professional Electives:**

#### Professional Elective - I

EC4903 Testing and Testability of VLSI Circuits

EC4904 Advanced Digital Design

EC4905 Digital Signal and Image Processing

## Professional Elective - II

EC4906 VLSI Signal Proessing

EC4907 System Design with Embedded Linux

EC4908 Parallel Processing

#### Professional Elective - III

EC4913 Advances in VLSI Design

EC4914 Embedded Computer Architecture

EC4915 System on Chip Design

## Professional Elective - IV

EC4916 VLSI Interconnects

EC4917 Communication Buses and Interfaces

EC4918 Advanced Digital Signal Processing

## Professional Elective - V

EC4922 Lower Power VLSI Design

EC4923 Network Security and Crypthography

ME49... MOOCs

## **Open Electives:**

CE3924 Sustainable Development

EE3924 Energy Audit, Conservation & Management

ME3924 Rapid Prototyping

EC4924 Automotive Electronics (Otther than VLSID&ES)

CS3924 Soft Computing Techniques

M.Tech - VLSI Design and Embedded System (ECE) - R20

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# Department of Computer Science and Engineering

# R20 PG - M.Tech CSE (AI&ML)

## **Course Structure**

#### I Semester

| Sl. | Course                     | Course Code Name of the Course / Laboratory   |        | No. of hours<br>per week |   |   | Total   |
|-----|----------------------------|---|--------|--------------------------|---|---|---------|
| No. | Code                       |   |        | LT                       | Т | P | Credits |
| 1   |                            | Research Methodologies and IPR  | HSS    | 3                        | - | - | 3       |
| 2   | CS3901                     | Advanced Data Structures and Algorithm<br>Analysis  | PC     | 3                        | - | - | 3       |
| 3   | CS3902                     | Data Science  | ES     | 3                        | - | - | 3       |
| 4   | CS3903<br>CS3904<br>CS3905 | Professional Elective – I  1. Digital Image Processing  2. Ad hoc and Sensor Networks  3. Intelligent Systems | PE     | 3                        | - | - | 3       |
| 5   | CS3906<br>CS3907<br>CS3908 | Professional Elective – II  1. Internet of Things  2. Principles of Computer Security  3. Distributed Systems | PE     | 3                        | 1 | - | 3       |
| 6   | CS3909                     | Advanced Data Structures and<br>Algorithm Analysis Lab  | PC     | 1                        |   | 4 | 2       |
| 7   | CS3910                     | Data Science Lab  | ES     | -                        | - | 4 | 2       |
| 8   |                            | Constitution of India   | AC     | 2                        | - | - | -       |
|     |                            |   | Total: | 17                       |   | 8 | 19      |

## II Semester

| SI. | Course                     | Name of the Course / Laboratory   |                         |    |                | No. of hours<br>per week |         |   |
|-----|----------------------------|---|-------------------------|----|----------------|--------------------------|---------|---|
| No. | code                       | Name of the Course? Laboratory  |                         | L  | T              | P                        | Credits |   |
| 1   | CS3911                     | CS3911 N  | MEAN Stack Technologies | PC | 3              | -                        | -       | 3 |
| 2   | CS3912                     | Machine Learning  | PC                      | 3  | -              | -                        | 3       |   |
| 3   | CS3913<br>CS3914<br>CS3915 | Professional Elective – III  1. Blockchain Technology  2. Data Preparation and Analysis  3. Natural Language Processing | PE                      | 3  | ~              | -                        | 3       |   |
| 4   | CS3916<br>CS3917<br>CS3918 | Professional Elective – IV  1. Cloud Computing 2. Quantum Computing 3. Digital Forensics                                | PE                      | 3  | -              | -                        | 3       |   |
| 5   | CS3919                     | MEAN Stack Technologies Lab   | PC                      | -  | -              | 4                        | 2       |   |
| 6   | CS3920                     | Machine Learning using Python Lab   | PC                      | -  | : <del>-</del> | 4                        | 2       |   |
| 7   | CS3921                     | Mini Project with Seminar   | PROJ                    | -  | -              | 6                        | 3       |   |
| 8   |                            | English for Research Paper Writing  | AC                      | 2  | ķ. <b>-</b>    | -                        | -       |   |
|     |                            |   | Total:                  | 14 |                | 14                       | 19      |   |

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## III Semester

| Sl. | Course           | Name of the Course / Laboratory   |      | No.of hours<br>per week |    |    | No. of  |
|-----|------------------|---|------|-------------------------|----|----|---------|
| No. | Code             |   |      | L                       | Т  | P  | Credits |
| 1   | CS3922<br>CS3923 |   |      | 3                       | -0 | -  | 3       |
| 2   |                  | Open Elective- I 1. Courses Offered by Other Departments 2. MOOCs-2 (NPTEL/SWAYAM)-Any 12 Week Course on Engineering/ Management/ Mathematics offered by other than parent department | OE   | 3                       | -  | -  | 3       |
| 3   | CS3925           | Dissertation (Initiated in third Semester)  | PROJ | -                       | -  | 20 | 10      |
|     |                  | Total:  |      | 6                       | -  | 20 | 16      |

## **IV Semester**

| Sl. | Course<br>Code | Name of the Course / Laboratory                        |      | No.of hours<br>per week |   |    | No. of  |
|-----|----------------|--|------|-------------------------|---|----|---------|
| No. |                |  |      | L                       | T | P  | Credits |
| 1   | CS3926         | Dissertation (Carried out in third & fourth Semesters) | PROJ | -                       | - | 32 | 16      |
|     |                | Total:   |      | -                       |   | 32 | 16      |

| Open Elective-I | CS3924 | Soft Computing Techniques |
|-----------------|--------|---------------------------|
| Open Elective-1 | C55724 | Soft Computing reciniques |

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# **COURSE STRUCTURE**

# I Semester

| SI.<br>No. | Course | Name of the Course / Laboratory                    | No.of Periods<br>per week |     |   | No.of   |
|------------|--------|--|---------------------------|-----|---|---------|
|            | Code   |  | L                         | Т   | Р | Credits |
| 1          | BA3902 | Perspectives of Management                         | 4                         | -   | - | 4       |
| 2          | BA3903 | Managerial Economics                               | 4                         |     | - | 4       |
| 3          | BA3904 | Accounting for Managers                            | 3                         | :=5 | 1 | 4       |
| 4          | BA3905 | Business Communication & Skill Development         | 4                         | 1-0 | - | 4       |
| 5          | BA3906 | Business Environment and Legislation               | 4                         |     | - | 4       |
| 6          | BA3907 | Quantitative Analysis for Business Decisions       | 3                         | -   | 1 | 4       |
| 7          | BA3908 | Business Law                                       | 4                         | -   | - | 4       |
| 8          | BA3909 | Information Technology Lab for Business Management | -                         |     | 4 | 2       |
|            |        | Total  | 26                        | -   | 6 | 30      |

## **II Semester**

| SI.<br>No. | Course | Name of the Course / Laboratory    | No.of Periods<br>per week |   |    | No.of   |
|------------|--------|------------------------------------|---------------------------|---|----|---------|
|            | Code   |                                    | L                         | Т | P  | Credits |
| 1          | BA3910 | Financial Management               | 3                         | - | 1  | 4       |
| 2          | BA3911 | Marketing Management               | 4                         |   | 2: | 4       |
| 3          | BA3912 | Human Resource Management          | 4                         | - | 3  | 4       |
| 4          | BA3913 | Production & Operations Management | 4                         | - | 2  | 4       |
| 5          | BA3914 | Business Research Methods          | 3                         | - | 1  | 4       |
| 6          | BA3915 | International Business             | 4                         | - | -  | 4       |
| 7          | BA3916 | Organizational Behaviour           | 4                         | - | -  | 4       |
|            |        | Total                              | 26                        | - |    | 28      |

L : Lecture

T: Tutorial

P : Practical

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| SI. | Course<br>Code | Name of the Course / Laboratory        |                    | No.of Periods<br>per week |    |   | No.of   |
|-----|----------------|--|--------------------|---------------------------|----|---|---------|
| No. |                |  |                    | L                         | Т  | Р | Credits |
| 1   | BA3917         | Business Policy & Str                  | rategic Management | 4                         | -  | - | 4       |
| 2   | BA3918         | Logistics & Supply                     | Chain Management   | 4                         | -  | = | 3       |
| 3   | BA3919         | Retail Management                      |                    | 4                         | *  | - | 3       |
| 4   | BA3920         | Business Ethics & Corporate Governance |                    | 4                         | ÷. | 4 | 3       |
| 5   |                | Specialisation - I                     | Marketing subjects | 4                         | -  |   | 3       |
| 6   |                | Specialisation - II                    | common to all      | 4                         | -  | - | 3       |
| 7   |                | Specialisation - III                   | Einango (or) UD    | 4                         | -  | - | 3       |
| 8   |                | Specialisation - IV                    | Finance (or) HR    | 4                         | -  | 2 | 3       |
|     |                |  | Total              | 32                        | -  | - | 25      |

#### **IV Semester**

| SI.   | Course<br>Code | Name of the Course / Laboratory |                    | No.of Periods<br>per week |     |   | No.of   |
|-------|----------------|---------------------------------|--------------------|---------------------------|-----|---|---------|
| No.   |                |                                 |                    | L                         | Т   | Р | Credits |
| 1     | BA3927         | Entrepreneurship & f            | Project Management | 4                         | -   | - | 4       |
| 2     | BA3928         | Management of Retail Operations |                    | 4                         | 1.7 |   | 3       |
| 3     |                | Specialisation - V              | Marketing subjects | 4                         | -   | - | 3       |
| 4     |                | Specialisation - VI             | common to all      | 4                         | 100 | - | 3       |
| 5     |                | Specialisation - VII            | Finance (or) LID   | 4                         | -   | - | 3       |
| 6     |                | Specialisation - VIII           | Finance (or) HR    | 4                         | -   |   | 3       |
| 7     |                | Project Report                  |                    | -                         | -   | - | 5       |
| 8     |                | Comprehensive Viva-Voce         |                    | 120                       | -   | - | 1       |
| Total |                |                                 |                    |                           | 0   | 0 | 25      |

## Specialisations:

| III Semester                                   | IV Semester                                    |
|--|--|
| Marketing                                      | Marketing                                      |
| BA3921 Advertising & Brand Management          | BA3929 Marketing of Services                   |
| BA3922 Consumer Behaviour                      | BA3930 Sales & Distribution Management         |
| Finance  | Finance  |
| BA3923 Security Analysis & Portfolio Mgt.      | BA3931 Financial Derivatives                   |
| BA3924 International Financial Management      | BA3932 Financial Institutions and Services     |
| HR   | HR   |
| BA3925 Human Resources Analytics               | BA3933 Compensation Management                 |
| BA3926 Industrial Relations and<br>Labour Laws | BA3934 Management of Change and<br>Development |

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