



**B.TECH – CIVIL ENGINEERING  
Course Structure R-20**

**SEMESTER I**

| S.No.         | Class | Course Code | Name of the Subject                                      | L | T | P | C            |
|---------------|-------|-------------|--|---|---|---|--------------|
| 1             | BS    | CBSM8       | Linear Algebra, Calculus & Partial Differential Equation | 3 | 0 | 0 | 3            |
| 2             | HS    | CHSE1       | English  | 2 | 0 | 0 | 2            |
| 3             | BS    | CBSP3       | Engineering Physics                                      | 3 | 1 | 0 | 4            |
| 4             | ES    | CESBE2      | Basic Electrical Engineering                             | 3 | 0 | 0 | 3            |
| 5             | ES    | CESEG1      | Engineering Graphics                                     | 1 | 0 | 4 | 3            |
| 6             | HS    | CHSE2       | English Language & Communication Skills Lab              | 0 | 0 | 2 | 1            |
| 7             | BS    | CBSP4       | Engineering Physics Lab                                  | 0 | 0 | 3 | 1.5          |
| 8             | ES    | CESBE3      | Basic Electrical Engineering Lab                         | 0 | 0 | 2 | 1            |
| 9             | MC    | MC001       | Sports   | 0 | 0 | 0 | Satisfactory |
| Total Credits |       |             |  |   |   |   | 18.5         |

**Mandatory Course: SPORTS**

The students need to participate in any physical activity such as sports, marathon, conducted by any college or any organization, students should produce participation certificate for clearing this course.

**SEMESTER II**

| S.No.         | Class | Course Code | Name of the Subject                              | L | T | P | C            |
|---------------|-------|-------------|--|---|---|---|--------------|
| 1             | BS    | CBSM1       | Ordinary Differential Equation & Vector Calculus | 3 | 0 | 0 | 3            |
| 2             | BS    | CBSC1       | Material Chemistry                               | 3 | 1 | 0 | 4            |
| 3             | ES    | CESCP1      | C Programming for problem solving                | 3 | 0 | 0 | 3            |
| 4             | ES    | CESEM1      | Engineering Mechanics                            | 3 | 1 | 0 | 4            |
| 5             | BS    | CBSC2       | Material Chemistry Lab                           | 0 | 0 | 3 | 1.5          |
| 6             | ES    | CESCP2      | C Programming for problem solving Lab            | 0 | 0 | 3 | 1.5          |
| 7             | ES    | CESBW1      | Basic Workshop                                   | 0 | 0 | 3 | 1.5          |
| 8             | ES    | CESIC1      | Introduction to CAD Lab                          | 0 | 0 | 2 | 1            |
| 9             | MC    | MC002       | Yoga   | 0 | 0 | 0 | Satisfactory |
| Total Credits |       |             |  |   |   |   | 19.5         |

**Mandatory Course: YOGA**

The student should undergo yoga meditation course offered by any organization or conducted by any college. Student should produce the completion certificate for clearing this course.

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## B.TECH – CIVIL ENGINEERING

### Course Structure R-20

### SEMESTER III

| S.No.                | Class | Course Code | Name of the Subject                         | L         | T        | P        | C            |
|----------------------|-------|-------------|---|-----------|----------|----------|--------------|
| 1                    | BS    | CBSM9       | Numerical Methods                           | 3         | 0        | 0        | 3            |
| 2                    | PC    | C13PC1      | Building Materials, Construction & Planning | 3         | 0        | 0        | 3            |
| 3                    | PC    | C13PC2      | Surveying & Geomatics                       | 3         | 0        | 0        | 3            |
| 4                    | PC    | C13PC3      | Strength of Materials - I                   | 3         | 0        | 0        | 3            |
| 5                    | PC    | C13PC4      | Fluid Mechanics                             | 3         | 0        | 0        | 3            |
| 6                    | ES    | CESCA1      | Computer Aided Drawing Lab                  | 0         | 0        | 2        | 1            |
| 7                    | PC    | C13PC5      | Surveying Lab - I                           | 0         | 0        | 3        | 1.5          |
| 8                    | PC    | C13PC6      | Strength of Materials Lab                   | 0         | 0        | 4        | 2            |
| 9                    | MC    | MC003       | Cultural Activity                           | 0         | 0        | 0        | Satisfactory |
| <b>Total Credits</b> |       |             |   | <b>15</b> | <b>0</b> | <b>9</b> | <b>19.5</b>  |

#### Mandatory Course: Cultural Activity


The student should participate in culture activity (Music/Dance/Singing/etc.) conducted by the College, student should produce the participation certificate for clearing this course.

### SEMESTER IV

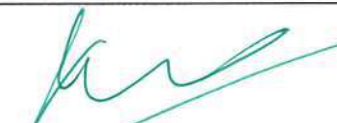
| S.No.                | Class | Course Code | Name of the Subject                           | L         | T        | P        | C            |
|----------------------|-------|-------------|---|-----------|----------|----------|--------------|
| 1                    | BS    | CBSM3       | Probability & Statistics                      | 3         | 0        | 0        | 3            |
| 2                    | PC    | C14PC1      | Engineering Geology                           | 3         | 0        | 0        | 3            |
| 3                    | PC    | C14PC2      | Strength of Materials - II                    | 3         | 0        | 0        | 3            |
| 4                    | PC    | C14PC3      | Hydraulics & Hydraulic Machinery              | 3         | 0        | 0        | 3            |
| 5                    | PC    | C14PC4      | Structural Analysis - I                       | 3         | 0        | 0        | 3            |
| 6                    | PC    | C14PC5      | Concrete Technology                           | 3         | 0        | 0        | 3            |
| 7                    | PC    | C14PC6      | Surveying Lab - II                            | 0         | 0        | 3        | 1.5          |
| 8                    | PC    | C14PC7      | Engineering Geology Lab                       | 0         | 0        | 3        | 1.5          |
| 9                    | PC    | C14PC8      | Highway Engineering & Concrete Technology Lab | 0         | 0        | 3        | 1.5          |
| 10                   | MC    | MC004       | Video with Social Messages                    | 0         | 0        | 0        | Satisfactory |
| <b>Total Credits</b> |       |             |   | <b>18</b> | <b>0</b> | <b>9</b> | <b>22.5</b>  |

#### Mandatory Course: Video with Social Messages

Student should make video with social messages. This has to be uploaded in the youtube.com, by maintaining the terms and conditions of youtube.com. Student should produce youtube.com link with screen shot for clearing this mandatory course.

  
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**B.TECH - CIVIL ENGINEERING**

**Course Structure R-18**

**B. Tech - V Semester**

| Sl. No        | Class | Course Code | Name of the Subject   | L  | T | P | C    |
|---------------|-------|-------------|---|----|---|---|------|
| 1             | PC    | B15PC1      | Structural Analysis-II  | 3  | 1 | 0 | 3    |
| 2             | PC    | B15PC2      | Design of Reinforced Cement Concrete Structures   | 3  | 1 | 0 | 3    |
| 3             | PC    | B15PC3      | Transportation Engineering  | 3  | 1 | 0 | 3    |
| 4             | PE    | B15PE4*     | <b>Professional Elective-I</b><br>1) Concrete Technology<br>2) Construction Equipment & Materials<br>3) Ground Improvement Techniques | 3  | 1 | 0 | 3    |
| 5             | HS    | B15HS5      | Fundamentals of management  | 3  | 1 | 0 | 3    |
| 6             | PC    | B15PC6      | Highway Engineering & Concrete Technology Lab   | 0  | 0 | 3 | 1.5  |
| 7             | PC    | B15PC7      | Soil Mechanics Lab  | 0  | 0 | 3 | 1.5  |
| 9             | HS    | BE23        | Advanced Communication Skills Lab   | 0  | 0 | 3 | 1.5  |
| Total Credits |       |             |   | 15 | 5 | 9 | 19.5 |

**B. Tech - VI Semester**

| Sl. No        | Classes | Course Code | Name of the Subject  | L  | T | P | C    |
|---------------|---------|-------------|--|----|---|---|------|
| 1             | PC      | B16PC1      | Environmental Engineering  | 3  | 1 | 0 | 3    |
| 2             | PC      | B16PC2      | Foundation Engineering   | 3  | 1 | 0 | 3    |
| 3             | PC      | B16PC3      | Design of Steel Structures   | 3  | 1 | 0 | 3    |
| 4             | PC      | B16PC4      | Hydrology & Water Resource Engineering   | 3  | 1 | 0 | 3    |
| 5             | PE      | B16PE5*     | <b>Professional Elective -II</b><br>1) Prestressed Concrete<br>2) Advanced Structural Design<br>3) Structural Analysis by Matrix Methods | 3  | 1 | 0 | 3    |
| 6             | OE      | B16OE6      | Open Elective-1  | 3  | 1 | 0 | 3    |
| 7             | PC      | B16PC7      | Environmental Engineering Lab  | 0  | 0 | 3 | 1.5  |
| 8             | PC      | B16PC8      | Hydraulic Machinery Lab  | 0  | 0 | 3 | 1.5  |
| 9             | ES      | B16ES9      | Computer Aided Civil Engineering Drawing   | 0  | 0 | 3 | 1.5  |
| Total Credits |         |             |  | 18 | 6 | 9 | 22.5 |

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**B. Tech. VII Semester**

| S. No         | Class | Course Code | Name of the Subject   | L   | T | P | C    |
|---------------|-------|-------------|---|-----|---|---|------|
| 1             | PC    | B17PC1      | Estimation & Costing  | 3   | 1 | 0 | 3    |
| 2             | PE    | B17PE2      | <b>Professional Elective –III</b><br>1) Water Resources Engineering -II<br>2) Pipe line Engineering<br>3) Ground Water Development and Management | 3   | 1 | 0 | 3    |
| 3             | PE    | B17PE3      | <b>Professional Elective-IV</b><br>1) Air and Noise Pollution<br>2) Environmental Impact Assessment<br>3) Solid and Hazardous waste Management    | 3   | 1 | 0 | 3    |
| 4             | PE    | B17PE4      | Remote Sensing & Geographic Information System  | 1.5 | 1 | 0 | 1.5  |
| 5             | OE    | B17OE5      | Open elective-II  | 3   | 1 | 0 | 3    |
| 6             | PW    | B17PW6      | Project Stage –I  | 0   | 0 | 7 | 4    |
| Total Credits |       |             |   |     |   |   | 17.5 |

**B. Tech - VIII Semester**

| S. No         | Class | Course Code | Name of the Subject   | L | T | P  | C  |
|---------------|-------|-------------|---|---|---|----|----|
| 1             | PE    | B18PE1      | <b>Professional Elective - V</b><br>1) Traffic Engineering & Management<br>2) Railway Engineering<br>3) Pavement Design<br>Construction & Maintenance | 3 | 1 | 0  | 3  |
| 2             | PE    | B18PE2      | <b>Professional Elective-VI</b><br>1) Construction Project Planning & management<br>2) Bridge Engineering<br>3) Rehabilitation and Retrofitting       | 3 | 1 | 0  | 3  |
| 3             | OE    | B18OE3      | Open elective-III   | 3 | 1 | 0  | 3  |
| 4             | PW    | B18PW4      | Comprehensive Viva Voce   | 0 | 0 | 3  | 3  |
| 5             | PW    | B18PW5      | Project Stage -II   | 0 | 0 | 16 | 8  |
| Total Credits |       |             |   |   |   |    | 20 |

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**B.TECH – ELECTRICAL & ELECTRONICS ENGINEERING  
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**SEMESTER I**

| S.No.         | Class | Course Code | Name of the Subject                         | L | T | P | C            |
|---------------|-------|-------------|---|---|---|---|--------------|
| 1             | BS    | CBSM7       | Linear Algebra & Applied Calculus           | 3 | 1 | 0 | 4            |
| 2             | HS    | CHSE1       | English                                     | 2 | 0 | 0 | 2            |
| 3             | BS    | CBSC3       | Engineering Chemistry                       | 3 | 1 | 0 | 4            |
| 4             | ES    | CESBE2      | Basic Electrical Engineering                | 3 | 0 | 0 | 3            |
| 5             | HS    | CHSE2       | English Language & Communication Skills Lab | 0 | 0 | 2 | 1            |
| 6             | BS    | CBSC4       | Engineering Chemistry Lab                   | 0 | 0 | 3 | 1.5          |
| 7             | ES    | CESBE3      | Basic Electrical Engineering Lab            | 0 | 0 | 2 | 1            |
| 8             | ES    | CESBW1      | Basic Workshop                              | 0 | 0 | 3 | 1.5          |
| 9             | MC    | MC001       | Sports                                      | 0 | 0 | 0 | Satisfactory |
| Total Credits |       |             |   |   |   |   | 18           |

**Mandatory Course: SPORTS**


The students need to participate in any physical activity such as sports, marathon, conducted by any college or any organization, students should produce participation certificate for clearing this course.

**SEMESTER II**


| S.No.         | Class | Course Code | Name of the Subject   | L | T | P | C            |
|---------------|-------|-------------|---|---|---|---|--------------|
| 1             | BS    | CBSM11      | Ordinary Differential Equations, Transforms & Vector Calculus | 3 | 1 | 0 | 4            |
| 2             | BS    | CBSP1       | Applied Physics   | 3 | 1 | 0 | 4            |
| 3             | ES    | CESEG1      | Engineering Graphics  | 1 | 0 | 4 | 3            |
| 4             | ES    | CESSD1      | Semi-Conductor Devices & Circuits                             | 3 | 0 | 0 | 3            |
| 5             | ES    | CESCP1      | C Programming for Problem Solving                             | 3 | 0 | 0 | 3            |
| 6             | BS    | CBSP2       | Applied Physics Lab   | 0 | 0 | 3 | 1.5          |
| 7             | ES    | CESCP2      | C Programming for Problem Solving Lab                         | 0 | 0 | 3 | 1.5          |
| 8             | MC    | MC002       | Yoga  | 0 | 0 | 0 | Satisfactory |
| Total Credits |       |             |   |   |   |   | 20           |

**Mandatory Course: YOGA**

The student should undergo yoga meditation course offered by any organization or conducted by any college. Student should produce the completion certificate for clearing this course.

  
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**B.TECH – ELECTRICAL & ELECTRONICS ENGINEERING  
Course Structure R-20**
**SEMESTER III**

| S.No.         | Class | Course Code | Name of the Subject                                 | L | T | P | C            |
|---------------|-------|-------------|---|---|---|---|--------------|
| 1             | BS    | CBSM12      | Probability, Numerical Methods and Complex Analysis | 3 | 1 | 0 | 4            |
| 2             | PC    | C23PC1      | Electrical Circuit Analysis                         | 3 | 1 | 0 | 4            |
| 3             | PC    | C23PC2      | Analog Electronics                                  | 3 | 0 | 0 | 3            |
| 4             | PC    | C23PC3      | Electrical Machines-I                               | 3 | 1 | 0 | 4            |
| 5             | PC    | C23PC4      | Electro Magnetic Fields                             | 3 | 0 | 0 | 3            |
| 6             | PC    | C23PC5      | Analog Electronics Lab                              | 0 | 0 | 2 | 1            |
| 7             | PC    | C23PC6      | Electrical Machines Lab-I                           | 0 | 0 | 2 | 1            |
| 8             | PC    | C23PC7      | Electrical Circuit Analysis Lab                     | 0 | 0 | 2 | 1            |
| 9             | MC    | MC003       | Cultural Activity                                   | 0 | 0 | 0 | Satisfactory |
| Total Credits |       |             |   |   |   |   | 21           |

**Mandatory Course: Cultural Activity**

The student should participate in culture activity (Music/Dance/Singing/etc.) conducted by the College, student should produce the participation certificate for clearing this course.

**SEMESTER IV**

| S.No.         | Class | Course Code | Name of the Subject         | L | T | P | C            |
|---------------|-------|-------------|-----------------------------|---|---|---|--------------|
| 1             | ES    | CESEM1      | Engineering Mechanics       | 3 | 1 | 0 | 4            |
| 2             | PC    | C24PC1      | Digital Electronics         | 3 | 0 | 0 | 3            |
| 3             | PC    | C24PC2      | Electrical Machines-II      | 3 | 1 | 0 | 4            |
| 4             | PC    | C24PC3      | Control Systems             | 3 | 1 | 0 | 4            |
| 5             | PC    | C24PC4      | Power System-I              | 3 | 0 | 0 | 3            |
| 6             | PC    | C24PC5      | Digital Electronics Lab     | 0 | 0 | 2 | 1            |
| 7             | PC    | C24PC6      | Electrical Machines Lab –II | 0 | 0 | 2 | 1            |
| 8             | PC    | C24PC7      | Control Systems Lab         | 0 | 0 | 2 | 1            |
| 9             | MC    | MC004       | Videos with Social Messages | 0 | 0 | 0 | Satisfactory |
| Total Credits |       |             |                             |   |   |   | 21           |


**Mandatory Course: Video with Social Messages**

Student should make video with social messages. This has to be uploaded in the youtube.com, by maintaining the terms and conditions of youtube.com. Student should produce youtube.com link with screen shot for clearing this mandatory course.

  
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**B.TECH - ELECTRICAL AND ELECTRONICS ENGINEERING**


**Course Structure R-18**

**Semester V**

| S. No         | Class | Course Code | Name of the Subject   | L | T | P | C           |
|---------------|-------|-------------|---|---|---|---|-------------|
| 1             | PC    | B25PC1      | Power Systems-I   | 3 | 0 | 0 | 3           |
| 2             | PC    | B25PC2      | Power Electronics   | 3 | 0 | 0 | 3           |
| 3             | PC    | B45PC3      | Microprocessors and Micro Controllers   | 3 | 0 | 0 | 3           |
| 4             | PE    | B25PE4      | Professional Elective-I<br>1. Electrical Machine Design<br>2. Power System Dynamics and Control<br>3. Digital Signal Processing | 3 | 0 | 0 | 3           |
| 5             | OE    | B25OE5      | Open Elective – I   | 3 | 0 | 0 | 3           |
| 6             | PC    | B25PC6      | Power Electronics Lab   | 0 | 0 | 3 | 1.5         |
| 7             | PC    | B45PC7      | Microprocessor and Micro Controllers Lab  | 0 | 0 | 3 | 1.5         |
| 8             | BE    | BE23        | Advanced Communication skills Lab   | 0 | 0 | 3 | 1.5         |
| Total Credits |       |             |   |   |   |   | <b>19.5</b> |

**Semester VI**

| S. No         | Class | Course Code | Name of the Subject  | L | T | P | C           |
|---------------|-------|-------------|--|---|---|---|-------------|
| 1             | PC    | B26PC1      | Power Systems-II   | 3 | 0 | 0 | 3           |
| 2             | PC    | B26PC2      | Electrical Measurements and Instrumentation  | 3 | 0 | 0 | 3           |
| 3             | PC    | B26PC3      | Power System Analysis  | 3 | 0 | 0 | 3           |
| 4             | PC    | B26PC4      | Signals and Systems  | 3 | 0 | 0 | 3           |
| 5             | PE    | B26PE5      | Professional Elective-II<br>1. Electrical Energy Conservation and Auditing<br>2. Computer Architecture<br>3. Line-Commutated and Active Rectifiers | 3 | 0 | 0 | 3           |
| 6             | OE    | B26OE6      | Open Elective – II   | 3 | 0 | 0 | 3           |
| 7             | PC    | B26PC7      | Electrical systems simulation Lab  | 0 | 0 | 3 | 1.5         |
| 8             | PC    | B26PC8      | Electrical Measurements and Instrumentation Lab  | 0 | 0 | 3 | 1.5         |
| 9             | PC    | B26PC9      | Electrical Workshop  | 0 | 0 | 3 | 1.5         |
| Total Credits |       |             |  |   |   |   | <b>22.5</b> |

  
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**Semester VII**

| S. No         | Class | Course Code | Name of the Subject  | L | T | P | C    |
|---------------|-------|-------------|--|---|---|---|------|
| 1             | PC    | B27PC1      | Power System Operation and Control   | 3 | 0 | 0 | 3    |
| 2             | PE    | B27PE2X     | Professional Elective-III<br>1.Wind and Solar Energy Systems<br>2.Hybrid Electrical Vehicles<br>3.Flexible AC Transmission Systems | 3 | 0 | 0 | 3    |
| 3             | PC    | B27PC3      | Power System Protection  | 3 | 0 | 0 | 3    |
| 4             | OE    | B27OE4      | Open Elective – III  | 3 | 0 | 0 | 3    |
| 5             | PC    | B27PC5      | Power systems Lab  | 0 | 0 | 3 | 1.5  |
| 6             | PW    | B27PW6      | Project Stage-I  | 0 | 0 | 8 | 4    |
| Total Credits |       |             |  |   |   |   | 17.5 |

**Semester VIII**

| S. No         | Class | Course Code | Name of the Subject  | L | T | P  | C  |
|---------------|-------|-------------|--|---|---|----|----|
| 1             | PE    | B28PE1X     | Professional Elective-IV<br>1.HVDC Transmission Systems<br>2.Computational Electromagnetics<br>3.Electromagnetic Waves                         | 3 | 0 | 0  | 3  |
| 2             | PE    | B28PE2X     | Professional Elective-V<br>1.Industrial Electrical Systems<br>2.Modern Control Theory<br>3.Electrical Drives                                   | 3 | 0 | 0  | 3  |
| 3             | PE    | B28PE3X     | Professional Elective-VI<br>1.Utilization of Electrical Energy<br>2.High Voltage Engineering<br>3.Computer Aided Design of Electrical Machines | 3 | 0 | 0  | 3  |
| 4             | PW    | B28PW4      | Project Stage-II   | 0 | 0 | 16 | 8  |
| 5             | CT    | B28CT5      | Comprehensive Test   | 0 | 0 | 0  | 3  |
| Total Credits |       |             |  |   |   |    | 20 |

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**B.TECH – MECHANICAL ENGINEERING  
Course Structure R-20**

**SEMESTER I**

| S.No.         | Class | Course Code | Name of the Subject                   | L | T | P | C            |
|---------------|-------|-------------|---------------------------------------|---|---|---|--------------|
| 1             | BS    | CBSM7       | Linear Algebra & Applied Calculus     | 3 | 1 | 0 | 4            |
| 2             | BS    | CBSP3       | Engineering Physics                   | 3 | 1 | 0 | 4            |
| 3             | ES    | CESCP1      | C Programming for Problem Solving     | 3 | 0 | 0 | 3            |
| 4             | ES    | CESEG1      | Engineering Graphics                  | 1 | 0 | 4 | 3            |
| 5             | BS    | CBSP4       | Engineering Physics Lab               | 0 | 0 | 3 | 1.5          |
| 6             | ES    | CESCP2      | C Programming for Problem Solving Lab | 0 | 0 | 3 | 1.5          |
| 7             | ES    | CESFL       | Fuels & Lubricants Lab                | 0 | 0 | 4 | 2            |
| 8             | MC    | MC001       | Sports                                | 0 | 0 | 0 | Satisfactory |
| Total Credits |       |             |                                       |   |   |   | 19           |

**Mandatory Course: SPORTS**

The Students need to participate in any physical activity such as sports, marathon, conducted by any college or any organization, students should produce participation certificate for clearing this course.

**SEMESTER II**

| S.No.        | Class | Course Code | Name of the Subject                         | L | T | P | C            |
|--------------|-------|-------------|---|---|---|---|--------------|
| 1            | BS    | CBSM16      | Differential Equations & Vector Calculus    | 3 | 1 | 0 | 4            |
| 2            | BS    | CBSC3       | Engineering Chemistry                       | 3 | 1 | 0 | 4            |
| 3            | ES    | CESEM1      | Engineering Mechanics                       | 3 | 1 | 0 | 4            |
| 4            | HS    | CHSE1       | English                                     | 2 | 0 | 0 | 2            |
| 5            | ES    | CESEW2      | Engineering Workshop                        | 1 | 0 | 3 | 2.5          |
| 6            | BS    | CBSC4       | Engineering Chemistry Lab                   | 0 | 0 | 3 | 1.5          |
| 7            | HS    | CHSE2       | English Language & Communication Skills Lab | 0 | 0 | 2 | 1            |
| 8            | MC    | MC002       | Yoga  | 0 | 0 | 0 | Satisfactory |
| Total Credit |       |             |   |   |   |   | 19           |

**Mandatory Course: YOGA**

The student should undergo yoga meditation course offered by any organization or conducted by any college. Student should produce the completion certificate for clearing this course.

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**B.TECH – MECHANICAL ENGINEERING  
Course Structure R-20**

**SEMESTER III**

| S.No.         | Class | Course Code | Name of the Subject                              | L | T | P | C            |
|---------------|-------|-------------|--|---|---|---|--------------|
| 1             | BS    | CBSM10      | Probability & Statistics and Complex Variables   | 3 | 1 | 0 | 4            |
| 2             | ES    | CESBE2      | Basic Electrical Engineering                     | 3 | 0 | 0 | 3            |
| 3             | ES    | CESBE1      | Basic Electronics                                | 3 | 0 | 0 | 3            |
| 4             | PC    | C33PC1      | Thermodynamics                                   | 3 | 0 | 0 | 3            |
| 5             | PC    | C33PC2      | Metallurgy and Material Science                  | 3 | 0 | 0 | 3            |
| 6             | PC    | C33PC3      | Mechanics of Solids                              | 3 | 0 | 0 | 3            |
| 7             | ES    | CESEE2      | Basic Electrical and Electronics Engineering lab | 0 | 0 | 2 | 1            |
| 8             | PC    | C33PC4      | Mechanics of Solids & MMS Lab                    | 0 | 0 | 2 | 1            |
| 9             | MC    | MC003       | Cultural Activity                                | 0 | 0 | 0 | Satisfactory |
| Total Credits |       |             |  |   |   |   | 21           |

**Mandatory Course: CulturalActivity**

The student should participate in culture activity (Music/Dance/Singing/etc.) conducted by the College, student should produce the participation certificate for clearing this course.

**SEMESTER IV**

| S.No.         | Class | Course Code | Name of the Subject                        | L | T | P | C            |
|---------------|-------|-------------|--|---|---|---|--------------|
| 1             | HS    | CHSM1       | Business Economics and Financial Analysis  | 3 | 0 | 0 | 3            |
| 2             | PC    | C34PC1      | Fluid Mechanics and Hydraulic Machines     | 3 | 1 | 0 | 4            |
| 3             | PC    | C34PC2      | Kinematics of Machinery                    | 3 | 0 | 0 | 3            |
| 4             | PC    | C34PC4      | Manufacturing Process                      | 3 | 0 | 0 | 3            |
| 5             | PC    | C34PC5      | Machine Drawing                            | 1 | 0 | 4 | 3            |
| 6             | PC    | C34PC6      | Thermal Engineering - I                    | 3 | 0 | 0 | 3            |
| 7             | PC    | C34PC7      | Fluid Mechanics and Hydraulic Machines Lab | 0 | 0 | 2 | 1            |
| 8             | PC    | C34PC8      | Manufacturing Process Lab                  | 0 | 0 | 2 | 1            |
| 9             | MC    | MC004       | Video with Social Messages                 | 0 | 0 | 0 | Satisfactory |
| Total Credits |       |             |  |   |   |   | 21           |

**Mandatory Course: Video with Social Messages**

Student should make video with social messages. This has to be uploaded in the youtube.com, by maintaining the terms and conditions of youtube.com. Student should produce youtube.com link with screen shot for clearing this mandatory course.

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**B.TECH – MECHANICAL ENGINEERING  
Course Structure R-18**

**SEMESTER V**

| S.No.         | Class | Course Code | Name of the Subject  | L | T | P | C    |
|---------------|-------|-------------|--|---|---|---|------|
| 1             | PC    | B35PC1      | Design of Machine members-I  | 3 | 1 | 0 | 3    |
| 2             | PC    | B35PC2      | Thermal Engineering-I  | 3 | 1 | 0 | 3    |
| 3             | PC    | B35PC3      | Machine tools  | 3 | 1 | 0 | 3    |
| 4             | PC    | B35PC4      | Automobile Engineering   | 3 | 1 | 0 | 3    |
| 5             | HS    | B35HS5      | Fundamentals of Management   | 3 | 1 | 0 | 3    |
| 6             | PE    | B35PE6      | Professional Elective-II<br>1.Finite Element Methods<br>2.Engineering Metrology<br>3.I.C. Engines and Gas Turbines Methods | 3 | 1 | 0 | 3    |
| 7             | PC    | B35PC7      | Thermal engineering Lab  | 0 | 0 | 3 | 1.5  |
| 8             | PC    | B35PC8      | Machine tools lab  | 0 | 0 | 3 | 1.5  |
| 9             | PC    | B35PC9      | Engineering Metrology Lab.   | 0 | 0 | 3 | 1.5  |
| 10            | MC    | B35MC10     | *Professional Ethics and Group discussion  | 3 | 0 | 0 | 0    |
| Total Credits |       |             |  |   |   |   | 22.5 |

\* MC--Mandatory course, Satisfactory/Unsatisfactory

**SEMESTER VI**

| S.No.         | Class | Course Code | Name of the Subject  | L | T | P | C    |
|---------------|-------|-------------|--|---|---|---|------|
| 1             | PE    | B36PE1      | Professional Elective-III<br>1.Fundamentals of Engineering Materials<br>2.Thermal Engineering-2<br>3.Power Plant Engineering             | 3 | 1 | 0 | 3    |
| 2             | PC    | B36PC2      | Design of machine members –II  | 4 | 1 | 0 | 4    |
| 3             | PC    | B36PC3      | Heat Transfer  | 3 | 1 | 0 | 3    |
| 4             | OE    | B36OE4      | Open Elective –II<br>1.World Class Manufacturing<br>2.Science and Technology of Nano Materials<br>3. Nuclear Power generation and supply | 2 | 1 | 0 | 2    |
| 5             | OE    | B36OE5      | Open Elective-III<br>1.SOLAR ENERGY APPLIANCES<br>2. Rural Technology and Community development<br>3. Theory of Combustion and Emission  | 3 | 1 | 0 | 3    |
| 6             | PC    | B36PC6      | Heat transfer Lab  | 0 | 0 | 3 | 1.5  |
| 7             | PC    | B36PC7      | Production drawing Practices and Instrumentation Lab   | 0 | 0 | 3 | 1.5  |
| 8             | HS    | BE23        | Advanced Communications skill lab  | 0 | 0 | 3 | 1.5  |
| Total Credits |       |             |  |   |   |   | 19.5 |

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**B.TECH – MECHANICAL ENGINEERING  
Course Structure R-18**

**SEMESTER VII**

| S.No.         | Class | Course Code | Name of the Subject   | L | T | P | C    |
|---------------|-------|-------------|---|---|---|---|------|
| 1             | PC    | B37PC1      | Refrigeration and Air Conditioning  | 3 | 1 | 0 | 3    |
| 2             | PC    | B37PC2      | Operations Research   | 3 | 1 | 0 | 3    |
| 3             | PC    | B37PC3      | CAD/CAM   | 3 | 1 | 0 | 3    |
| 4             | PE    | B37PE4✗     | Professional Elective-IV<br>1. Instrumentation and Control systems<br>2. Welding Technology<br>3. Industrial Management | 3 | 1 | 0 | 3    |
| 5             | PE    | B37PE5✗     | Professional Elective-V<br>1. Un-Conventional Machining Processes<br>2. Robotics<br>3. Nano Technology                  | 3 | 1 | 0 | 3    |
| 6             | PC    | B37PC6      | CAD/CAM lab   | 0 | 0 | 3 | 1.5  |
| 7             | PW    | B37PW7      | Registration of project and completion of part of the project along with seminar.                                       | 0 | 0 | 4 | 3    |
| Total Credits |       |             |   |   |   |   | 19.5 |

**SEMESTER VIII**

| S.No.         | Class | Course Code | Name of the Subject   | L | T | P  | C    |
|---------------|-------|-------------|---|---|---|----|------|
| 1             | PC    | B38PC1      | Production Planning and Control   | 3 | 1 | 0  | 3    |
| 2             | PE    | B38PE2✗     | Professional Elective-VI<br>1. Renewable energy sources<br>2. Jet propulsion and Rocket Engineering.<br>3. Composite Materials<br>4. Total Quality Management | 3 | 1 | 0  | 3    |
| 3             | PW    | B38PW3      | Project Work – B & Final Seminar  | 0 | 0 | 18 | 10.5 |
| 4             | PW    | B38CV4      | Comprehensive Viva/MCQ Testing  | 1 | 1 | 1  | 1.5  |
| Total Credits |       |             |   |   |   |    | 18   |

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## B.TECH – ELECTRONICS & COMMUNICATION ENGINEERING Course Structure R-20

### SEMESTER I

| S.No.         | Class | Course Code | Name of the Subject                                       | L | T | P | C            |
|---------------|-------|-------------|---|---|---|---|--------------|
| 1             | BS    | CBSM13      | Linear Algebra Calculus & Ordinary Differential Equations | 3 | 1 | 0 | 4            |
| 2             | BS    | CBSP1       | Applied Physics   | 3 | 1 | 0 | 4            |
| 3             | ES    | CESED1      | Electronic Devices  | 2 | 0 | 0 | 2            |
| 4             | ES    | CESCP1      | C Programming for Problem Solving                         | 3 | 0 | 0 | 3            |
| 5             | BS    | CBSP2       | Applied Physics Lab                                       | 0 | 0 | 3 | 1.5          |
| 6             | ES    | CESED2      | Electronic Devices Lab                                    | 0 | 0 | 2 | 1.0          |
| 7             | ES    | CESCP2      | C Programming for Problem Solving Lab                     | 0 | 0 | 3 | 1.5          |
| 8             | ES    | CESIT1      | IT Workshop   | 0 | 0 | 3 | 1.5          |
| 9             | MC    | MC001       | Sports  | 0 | 0 | 0 | Satisfactory |
| Total Credits |       |             |   |   |   |   | 18.5         |

#### Mandatory Course: SPORTS

The Students need to participate in any physical activity such as sports, marathon, conducted by any college or any organization, students should produce participation certificate for clearing this course.

### SEMESTER II

| S.No.         | Class | Course Code | Name of the Subject                         | L | T | P | C            |
|---------------|-------|-------------|---|---|---|---|--------------|
| 1             | BS    | CBSM14      | Transforms Theory                           | 3 | 1 | 0 | 4            |
| 2             | BS    | CBSC5       | Applied Chemistry                           | 3 | 1 | 0 | 4            |
| 3             | HS    | CHSE1       | English                                     | 2 | 0 | 0 | 2            |
| 4             | ES    | CESBE2      | Basic Electrical Engineering                | 3 | 0 | 0 | 3            |
| 5             | ES    | CESEG1      | Engineering Graphics                        | 1 | 0 | 4 | 3            |
| 6             | BS    | CBSC6       | Applied Chemistry Lab                       | 0 | 0 | 3 | 1.5          |
| 7             | HS    | CHSE2       | English Language & Communication Skills Lab | 0 | 0 | 2 | 1            |
| 8             | ES    | CESBE3      | Basic Electrical Engineering Lab            | 0 | 0 | 2 | 1            |
| 9             | MC    | MC002       | Yoga  | 0 | 0 | 0 | Satisfactory |
| Total Credits |       |             |   |   |   |   | 19.5         |

#### Mandatory Course: YOGA

The student should undergo yoga meditation course offered by any organization or conducted by any college. Student should produce the completion certificate for clearing this course.

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## B.TECH – ELECTRONICS & COMMUNICATION ENGINEERING

### Course Structure R-20

#### SEMESTER III

| S.No.         | Class | Course Code | Name of the Subject                  | L | T | P | C            |
|---------------|-------|-------------|--------------------------------------|---|---|---|--------------|
| 1             | BS    | CBSM15      | Complex Analysis and Vector Calculus | 3 | 1 | 0 | 4            |
| 2             | ES    | CESDL1      | Digital Logic Design                 | 3 | 0 | 0 | 3            |
| 3             | PC    | C43PC1      | Electronic Circuit Analysis          | 3 | 0 | 0 | 3            |
| 4             | PC    | C43PC2      | Signals and Systems                  | 3 | 0 | 0 | 3            |
| 5             | PC    | C43PC3      | Network Analysis                     | 3 | 0 | 0 | 3            |
| 6             | ES    | CESDL2      | Digital Logic Design Lab             | 0 | 0 | 2 | 1            |
| 7             | PC    | C43PC4      | Electronic Circuit Design Lab        | 0 | 0 | 3 | 1.5          |
| 8             | PC    | C43PC5      | Electronic Circuit Simulation Lab    | 0 | 0 | 2 | 1            |
| 9             | PC    | C43PC6      | Basic Simulation Lab                 | 0 | 0 | 3 | 1.5          |
| 10            | MC    | MC003       | Cultural Activity                    | 0 | 0 | 0 | Satisfactory |
| Total Credits |       |             |                                      |   |   |   | 21           |

#### **Mandatory Course: Cultural Activity**

The student should participate in culture activity (Music/Dance/Singing/etc.) conducted by the College, student should produce the participation certificate for clearing this course.

#### SEMESTER IV

| S.No.         | Class | Course Code | Name of the Subject                           | L | T | P | C            |
|---------------|-------|-------------|---|---|---|---|--------------|
| 1             | PC    | C44PC1      | Probability Theory and Stochastic Processes   | 3 | 0 | 0 | 3            |
| 2             | PC    | C44PC2      | Analog Communications                         | 3 | 0 | 0 | 3            |
| 3             | PC    | C44PC3      | Pulse and Digital Circuits                    | 3 | 0 | 0 | 3            |
| 4             | PC    | C44PC4      | Linear IC Applications                        | 3 | 0 | 0 | 3            |
| 5             | PC    | C44PC5      | Electromagnetic Theory and Transmission Lines | 3 | 0 | 0 | 3            |
| 7             | HS    | CHSE3       | Advanced English Communication Skills Lab     | 0 | 1 | 2 | 2            |
| 6             | PC    | C44PC6      | Analog Communications Lab                     | 0 | 0 | 3 | 1.5          |
| 8             | PC    | C44PC7      | Pulse and Digital Circuits Lab                | 0 | 0 | 3 | 1.5          |
| 9             | PC    | C44PC8      | Linear IC Applications Lab                    | 0 | 0 | 2 | 1            |
| 10            | MC    | MC004       | Video with Social Messages                    | 0 | 0 | 0 | Satisfactory |
| Total Credits |       |             |   |   |   |   | 21           |

#### **Mandatory Course: Video with Social Messages**

Student should make video with social messages. This has to be uploaded in the youtube.com, by maintaining the terms and conditions of youtube.com. Student should produce youtube.com link with screen shot for clearing this mandatory course.

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**B.TECH – ELECTRONICS & COMMUNICATION ENGINEERING  
Course Structure R-18**

**SEMESTER V**

| S.No.         | Class | Course Code | Name of the Subject                           | L | T | P | C   |
|---------------|-------|-------------|---|---|---|---|-----|
| 1             | PC    | B45PC1      | Electromagnetic Theory And Transmission Lines | 3 | 1 | 0 | 3   |
| 2             | PC    | B45PC2      | VLSI Design                                   | 4 | 1 | 0 | 4   |
| 3             | PC    | B45PC3      | Digital Signal Processing                     | 4 | 1 | 0 | 4   |
| 4             | PC    | B45PC4      | Digital Communications                        | 3 | 1 | 0 | 3   |
| 5             | OE    | B45OE5      | Open Elective – I                             | 3 | 1 | 0 | 3   |
| 6             | PC    | B45PC6      | VLSI & ECAD Lab – I                           | 0 | 0 | 3 | 1.5 |
| 7             | PC    | B45PC7      | Digital Communications Lab                    | 0 | 0 | 3 | 1.5 |
| 8             | PC    | B45PC8      | Digital Signal Processing Lab                 | 0 | 0 | 2 | 1.0 |
| Total Credits |       |             |   |   |   |   | 21  |


**SEMESTER VI**

| S.No.         | Class | Course Code | Name of the Subject   | L | T | P | C   |
|---------------|-------|-------------|---|---|---|---|-----|
| 1             | PC    | B46PC1      | Antennas and Wave Propagation   | 3 | 1 | 0 | 3   |
| 2             | PC    | B46PC2      | Microprocessors and Microcontrollers  | 4 | 1 | 0 | 4   |
| 3             | PE    | B46PE3X     | Program Elective – I<br>1. Cellular and Mobile Communications<br>2. MEMS<br>3. Information Theory and Coding                            | 4 | 1 | 0 | 4   |
| 4             | PE    | B46PE4X     | Program Elective – II<br>1. Wireless Communications and Networks<br>2. Image Processing and Pattern Recognition<br>3. Power Electronics | 3 | 1 | 0 | 3   |
| 5             | OE    | B46OE5      | Open Elective – II  | 3 | 1 | 0 | 3   |
| 6             | PC    | B46PC6      | VLSI & ECAD Lab – II  | 0 | 0 | 2 | 1   |
| 7             | PC    | B46PC7      | Microprocessors and Microcontrollers Lab  | 0 | 0 | 3 | 1.5 |
| 8             | HS    | B46HS8      | Advanced English Communication Skills Lab   | 0 | 0 | 3 | 1.5 |
| Total Credits |       |             |   |   |   |   | 21  |

  
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## B.TECH – ELECTRONICS & COMMUNICATION ENGINEERING

### Course Structure R-18

#### SEMESTER VII

| S.No.         | Class | Course Code | Name of the Subject                       | L | T | P  | C    |
|---------------|-------|-------------|---|---|---|----|------|
| 1             | PC    | B47PC1      | Microwave Engineering                     | 3 | 1 | 0  | 3    |
| 2             | OE    | B47OE2      | OE-3                                      | 3 | 0 | 0  | 3    |
| 3             | HS    | B47HS3      | Professional Ethics                       | 2 | 0 | 0  | 1    |
| 4             | HS    | B47HS4      | Business Economics and Financial Analysis | 2 | 0 | 0  | 2    |
| 5             | PC    | B47PC5      | Microwave Engineering Lab                 | 0 | 0 | 3  | 1.5  |
| 6             | PC    | B47PC6      | Advanced Technologies Lab                 | 0 | 0 | 2  | 1    |
| 7             | PW    | B47PC7      | Project Stage – I                         | 0 | 0 | 22 | 9    |
| Total Credits |       |             |   |   |   |    | 20.5 |

#### SEMESTER VIII

| S.No.         | Class | Course Code | Name of the Subject   | L | T | P  | C    |
|---------------|-------|-------------|---|---|---|----|------|
| 1             | PE    | B48PE1X     | Professional Elective-III<br>1. Adhoc Wireless Sensors Networks<br>2. Biomedical Electronics<br>3. Optimization Techniques    | 4 | 0 | 0  | 4    |
| 2             | PE    | B48PE2X     | Professional Elective-IV<br>1. Satellite Communications<br>2. Design of Fault Tolerant Systems<br>3. Speech Signal Processing | 4 | 0 | 0  | 4    |
| 3             | PE    | B48PE3X     | Professional Elective-V<br>1. Embedded Systems<br>2. Radar Systems<br>3. Database Management Systems                          | 3 | 0 | 0  | 3    |
| 4             | PW    | B48EC4      | Project Stage – II  | 0 | 0 | 18 | 6    |
| Total Credits |       |             |   |   |   |    | 20.5 |

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**B.TECH – COMPUTER SCIENCE & ENGINEERING  
Course Structure R-20**
**SEMESTER I**

| S.No.         | Class | Course Code | Name of the Subject                         | L | T | P | C            |
|---------------|-------|-------------|---|---|---|---|--------------|
| 1             | BS    | CBSM2       | Linear Algebra & Graph Theory               | 3 | 0 | 0 | 3            |
| 2             | HS    | CHSE1       | English                                     | 2 | 0 | 0 | 2            |
| 3             | BS    | CBSC7       | Chemistry                                   | 3 | 1 | 0 | 4            |
| 4             | ES    | CESEG1      | Engineering Graphics                        | 1 | 0 | 4 | 3            |
| 5             | ES    | CESCP1      | C Programming for Problem Solving           | 2 | 1 | 0 | 3            |
| 6             | HS    | CHSE2       | English Language & Communication Skills Lab | 0 | 0 | 2 | 1            |
| 7             | BS    | CBSC8       | Chemistry Lab                               | 0 | 0 | 3 | 1.5          |
| 8             | ES    | CESCP2      | C Programming for Problem Solving Lab       | 0 | 0 | 3 | 1.5          |
| 9             | MC    | MC001       | Sports                                      | 0 | 0 | 0 | Satisfactory |
| Total Credits |       |             |   |   |   |   | 19           |

**Mandatory Course: SPORTS**

The Students need to participate in any physical activity such as sports, marathon, conducted by any college or any organization, students should produce participation certificate for clearing this course.

**SEMESTER II**

| S.No.         | Class | Course Code | Name of the Subject                               | L | T | P | C            |
|---------------|-------|-------------|---|---|---|---|--------------|
| 1             | BS    | CBSM1       | Ordinary Differential Equations & Vector Calculus | 3 | 0 | 0 | 3            |
| 2             | BS    | CBSP1       | Applied Physics                                   | 3 | 1 | 0 | 4            |
| 3             | ES    | CESSD1      | Semi-Conductor Devices & Circuits                 | 3 | 0 | 0 | 3            |
| 4             | ES    | CESBE2      | Basic Electrical Engineering                      | 3 | 0 | 0 | 3            |
| 5             | BS    | CBSP2       | Applied Physics Lab                               | 0 | 0 | 3 | 1.5          |
| 6             | ES    | CESSD2      | Semi-Conductor Devices & Circuits Lab             | 0 | 0 | 3 | 1.5          |
| 7             | ES    | CESBE4      | Basic Electrical & Simulation Lab                 | 0 | 0 | 3 | 1.5          |
| 8             | ES    | CESIT1      | IT Workshop                                       | 0 | 0 | 3 | 1.5          |
| 9             | MC    | MC002       | Yoga  | 0 | 0 | 0 | Satisfactory |
| Total Credits |       |             |   |   |   |   | 19           |

**Mandatory Course: YOGA**

The student should undergo yoga meditation course offered by any organization or conducted by any college. Student should produce the completion certificate for clearing this course.

  
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**B.TECH – COMPUTER SCIENCE & ENGINEERING  
Course Structure R-20**

**SEMESTER III**

| S.No.         | Class | Course Code | Name of the Subject                          | L | T | P | C            |
|---------------|-------|-------------|--|---|---|---|--------------|
| 1             | HS    | CHSM1       | Business Economics and Financial Analysis    | 3 | 0 | 0 | 3            |
| 2             | BS    | CBSM4       | Mathematical Foundations of Computer Science | 3 | 0 | 0 | 3            |
| 3             | ES    | CESLC1      | Logic Circuits Design                        | 3 | 0 | 0 | 3            |
| 4             | PC    | C53PC1      | Database Management Systems                  | 3 | 0 | 0 | 3            |
| 5             | PC    | C53PC2      | Data Structures                              | 3 | 0 | 0 | 3            |
| 6             | PC    | C53PC3      | Operating Systems                            | 3 | 0 | 0 | 3            |
| 7             | ES    | CESLC2      | Logic Circuits Design Lab                    | 0 | 0 | 2 | 1            |
| 8             | PC    | C53PC4      | Database Management Systems Lab              | 0 | 0 | 2 | 1            |
| 9             | PC    | C53PC5      | Data Structures Lab                          | 0 | 0 | 2 | 1            |
| 10            | MC    | MC003       | Cultural Activity                            | 0 | 0 | 0 | Satisfactory |
| Total Credits |       |             |  |   |   |   | 21           |

**Mandatory Course: Cultural Activity**

The student should participate in culture activity (Music/Dance/Singing/etc.) conducted by the College, student should produce the participation certificate for clearing this course.

**SEMESTER IV**

| S.No.         | Class | Course Code | Name of the Subject                          | L | T | P | C            |
|---------------|-------|-------------|--|---|---|---|--------------|
| 1             | BS    | CBSM3       | Probability & Statistics                     | 3 | 0 | 0 | 3            |
| 2             | PC    | C54PC1      | Computer Organization & Architecture         | 3 | 0 | 0 | 3            |
| 3             | PC    | C54PC2      | Software Engineering                         | 3 | 0 | 0 | 3            |
| 4             | PC    | C54PC3      | Design and Analysis of Algorithms            | 3 | 0 | 0 | 3            |
| 5             | PC    | C54PC4      | Formal Languages & Automata Theory           | 3 | 0 | 0 | 3            |
| 6             | PC    | C54PC5      | Object Oriented Programming through Java     | 3 | 0 | 0 | 3            |
| 7             | PC    | C54PC6      | Object Oriented Programming through Java Lab | 0 | 0 | 2 | 1            |
| 8             | PC    | C54PC7      | Computer Organization & Architecture Lab     | 0 | 0 | 2 | 1            |
| 9             | PC    | C54PC8      | Design and Analysis of Algorithms Lab        | 0 | 0 | 2 | 1            |
| 10            | MC    | MC004       | Video with Social Messages                   | 0 | 0 | 0 | Satisfactory |
| Total Credits |       |             |  |   |   |   | 21           |

**Mandatory Course: Video with Social Messages**

Student should make video with social messages. This has to be uploaded in the youtube.com, by maintaining the terms and conditions of youtube.com. Student should produce youtube.com link with screen shot for clearing this mandatory course.

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**B.TECH – COMPUTER SCIENCE & ENGINEERING  
Course Structure R-18**

**SEMESTER V**

| S.No.         | Class | Course Code | Name of the Subject               | L | T | P | C   |
|---------------|-------|-------------|-----------------------------------|---|---|---|-----|
| 1             | HS    | BHSFM       | Fundamentals of Management        | 3 | 0 | 0 | 3   |
| 2             | PC    | B55PC2      | Operating Systems                 | 3 | 0 | 0 | 3   |
| 3             | PC    | B55PC3      | Computer Networks                 | 3 | 0 | 0 | 3   |
| 4             | PC    | B55PC4      | Theory of Computation             | 3 | 0 | 0 | 3   |
| 5             | PC    | B55PC5      | Design and Analysis of Algorithms | 3 | 0 | 0 | 3   |
| 6             | PC    | B55PC6      | Web Technologies                  | 3 | 0 | 0 | 1.5 |
| 7             | PC    | B55PC7      | Operating Systems Lab             | 0 | 0 | 3 | 1.5 |
| 8             | PC    | B55PC8      | Computer Networks Lab             | 0 | 0 | 3 | 1.5 |
| 9             | PC    | B55PC9      | Web Technologies Lab              | 0 | 0 | 3 | 1.5 |
| 10            | MC    | B55MC1      | Mandatory Course                  | 0 | 3 | 0 | 0   |
| Total Credits |       |             |                                   |   |   |   | 21  |

**SEMESTER VI**

| S.No.         | Class | Course Code | Name of the Subject  | L | T | P | C  |
|---------------|-------|-------------|--|---|---|---|----|
| 1             | PE    | B56PE1      | 1.Information Security<br>2.Introduction to Analytics<br>3.Distributed Systems | 3 | 0 | 0 | 3  |
| 2             | OE    | B56OE2      | OPEN ELECTIVE  | 3 | 0 | 0 | 3  |
| 3             | PC    | B56PC3      | Compiler Design  | 3 | 0 | 0 | 3  |
| 4             | PC    | B56PC4      | R Programming  | 2 | 0 | 0 | 2  |
| 5             | PC    | B56PC5      | Data Warehousing and Data Mining   | 3 | 0 | 0 | 3  |
| 6             | PC    | B56PC6      | Object Oriented Analysis and Design  | 3 | 0 | 0 | 3  |
| 7             | PC    | B56PC7      | R Programming Lab  | 0 | 0 | 2 | 1  |
| 8             | PC    | B56PC8      | Data Warehousing and Data Mining Lab   | 0 | 0 | 2 | 1  |
| 9             | PC    | B56PC9      | Object Oriented Analysis and Design Lab  | 0 | 0 | 2 | 1  |
| 10            | PC    | B56PC10     | Language Processor Lab   | 0 | 0 | 2 | 1  |
| 11            | MC    | B56MC       | Mandatory Course   | 0 | 3 | 0 | 0  |
| Total Credits |       |             |  |   |   |   | 21 |

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**B.TECH – COMPUTER SCIENCE & ENGINEERING  
Course Structure R-18**

**SEMESTER VII**

| S.No.         | Class | Course Code | Name of the Subject  | L | T | P | C    |
|---------------|-------|-------------|--|---|---|---|------|
| 1             | PE    | B57PE1X     | 1.Big Data Analytics<br>2.Network Security<br>3.Mobile Computing   | 3 | 1 | 0 | 3    |
| 2             | PE    | B57PE2X     | 1.Cloud Computing<br>2.Web Services<br>3.Computer Graphics         | 3 | 1 | 0 | 3    |
| 3             | PE    | B57PE4X     | 1.Machine Learning<br>2.Computer Forensics<br>3.Internet of Things | 3 | 1 | 0 | 3    |
| 4             | OE    | B57OE5      | OPEN ELECTIVE  | 3 | 1 | 0 | 3    |
| 5             | PC    | B57PC6      | Technologies Lab   | 0 | 0 | 3 | 1.5  |
| 6             | PW    | B57CV7      | Comprehensive Test   | 0 | 0 | 6 | 3    |
| 7             | PW    | B58PW1      | Project Part – A   | 0 | 0 | 8 | 4    |
| Total Credits |       |             |  |   |   |   | 20.5 |

**SEMESTER VIII**

| S.No.         | Class | Course Code | Name of the Subject   | L | T | P  | C  |
|---------------|-------|-------------|---|---|---|----|----|
| 1             |       | B58PE1X     | 1.Predictive Analytics<br>2.Design Patterns<br>3.Adhoc Wireless Networks            | 3 | 1 | 0  | 3  |
| 2             |       | B58PE2X     | 1.Software Testing Methodologies<br>2.Operation Research<br>3.Storage Area Networks | 3 | 1 | 0  | 3  |
| 3             |       | B58OE3      | OPEN ELECTIVE   | 3 | 1 | 0  | 3  |
| 4             |       | B58PW4      | Project Work Part – B   | 0 | 0 | 16 | 8  |
| Total Credits |       |             |   |   |   |    | 17 |

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**B.TECH – COMPUTER SCIENCE & ENGINEERING  
(ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING)  
Course Structure R-20**

**SEMESTER I**

| S.No.         | Class | Course Code | Name of the Subject                         | L | T | P | C            |
|---------------|-------|-------------|---|---|---|---|--------------|
| 1             | BS    | CBSM2       | Linear Algebra & Graph Theory               | 3 | 0 | 0 | 3            |
| 2             | HS    | CHSE1       | English                                     | 2 | 0 | 0 | 2            |
| 3             | BS    | CBSC7       | Chemistry                                   | 3 | 1 | 0 | 4            |
| 4             | ES    | CESEG1      | Engineering Graphics                        | 1 | 0 | 4 | 3            |
| 5             | ES    | CESCP1      | C Programming for Problem Solving           | 2 | 1 | 0 | 3            |
| 6             | HS    | CHSE2       | English Language & Communication Skills Lab | 0 | 0 | 2 | 1            |
| 7             | BS    | CBSC8       | Chemistry Lab                               | 0 | 0 | 3 | 1.5          |
| 8             | ES    | CESCP2      | C Programming for Problem Solving Lab       | 0 | 0 | 3 | 1.5          |
| 9             | MC    | MC001       | Sports                                      | 0 | 0 | 0 | Satisfactory |
| Total Credits |       |             |   |   |   |   | 19           |

**Mandatory Course: SPORTS**

The students need to participate in any physical activity such as sports, marathon, conducted by any college or any organization, students should produce participation certificate for clearing this course.

**SEMESTER II**

| S.No.         | Class | Course Code | Name of the Subject                               | L | T | P | C            |
|---------------|-------|-------------|---|---|---|---|--------------|
| 1             | BS    | CBSM1       | Ordinary Differential Equations & Vector Calculus | 3 | 0 | 0 | 3            |
| 2             | BS    | CBSP1       | Applied Physics                                   | 3 | 1 | 0 | 4            |
| 3             | ES    | CESBE2      | Basic Electrical Engineering                      | 3 | 0 | 0 | 3            |
| 4             | ES    | CESSD1      | Semi-Conductor Devices & Circuits                 | 3 | 0 | 0 | 3            |
| 5             | BS    | CBSP2       | Applied Physics Lab                               | 0 | 0 | 3 | 1.5          |
| 6             | ES    | CESSD2      | Semi-Conductor Devices & Circuits Lab             | 0 | 0 | 3 | 1.5          |
| 7             | ES    | CESBE4      | Basic Electrical & Simulation Lab                 | 0 | 0 | 3 | 1.5          |
| 8             | ES    | CESIT1      | IT Workshop                                       | 0 | 0 | 3 | 1.5          |
| 9             | MC    | MC002       | Yoga  | 0 | 0 | 0 | Satisfactory |
| Total Credits |       |             |   |   |   |   | 19           |

**Mandatory Course: YOGA**

The student should undergo yoga meditation course offered by any organization or conducted by any college. Student should produce the completion certificate for clearing this course.

  
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**B.TECH – COMPUTER SCIENCE & ENGINEERING  
(ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING)  
Course Structure R-20**

**SEMESTER III**

| S.No.         | Class | Course Code | Name of the Subject                       | L | T | P | C            |
|---------------|-------|-------------|---|---|---|---|--------------|
| 1             | HS    | CHSM1       | Business Economics and Financial Analysis | 3 | 0 | 0 | 3            |
| 2             | BS    | CBSM5       | Statistical Methods                       | 3 | 0 | 0 | 3            |
| 3             | ES    | CESLC1      | Logic Circuits Design                     | 3 | 0 | 0 | 3            |
| 4             | PC    | C73PC1      | Database Management Systems               | 3 | 0 | 0 | 3            |
| 5             | PC    | C73PC2      | Data Structures                           | 3 | 0 | 0 | 3            |
| 6             | PC    | C73PC3      | Operating Systems                         | 3 | 0 | 0 | 3            |
| 7             | ES    | CESLC2      | Logic Circuits Design Lab                 | 0 | 0 | 2 | 1            |
| 8             | PC    | C73PC4      | Database Management Systems Lab           | 0 | 0 | 2 | 1            |
| 9             | PC    | C73PC5      | Data Structures Lab                       | 0 | 0 | 2 | 1            |
| 10            | MC    | MC003       | Cultural Activity                         | 0 | 0 | 0 | Satisfactory |
| Total Credits |       |             |   |   |   |   | 21           |

**Mandatory Course: Cultural Activity**

The student should participate in culture activity (Music/Dance/Singing/etc.) conducted by the College, student should produce the participation certificate for clearing this course.

**SEMESTER IV**

| S.No.         | Class | Course Code | Name of the Subject                           | L | T | P | C            |
|---------------|-------|-------------|---|---|---|---|--------------|
| 1             | BS    | CBSM6       | Probability & Algebra                         | 3 | 0 | 0 | 3            |
| 2             | PC    | C74PC1      | Introduction to Computer Vision               | 3 | 0 | 0 | 3            |
| 3             | PC    | C74PC2      | Software Engineering                          | 3 | 0 | 0 | 3            |
| 4             | PC    | C74PC3      | Design and Analysis of Algorithms             | 3 | 0 | 0 | 3            |
| 5             | PC    | C74PC4      | Formal Language & Automata Theory             | 3 | 0 | 0 | 3            |
| 6             | PC    | C74PC5      | R Programming                                 | 3 | 0 | 0 | 3            |
| 7             | PC    | C74PC6      | Scripting Languages Lab (Ruby, Perl, PHP, JS) | 1 | 0 | 2 | 2            |
| 8             | PC    | C74PC7      | R Programming Lab                             | 0 | 0 | 2 | 1            |
| 9             | MC    | MC004       | Video with Social Messages                    | 0 | 0 | 0 | Satisfactory |
| Total Credits |       |             |   |   |   |   | 21           |

**Mandatory Course: Video with Social Messages**

Student should make video with social messages. This has to be uploaded in the youtube.com, by maintaining the terms and conditions of youtube.com. Student should produce youtube.com link with screen shot for clearing this mandatory course.

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## B.TECH – COMPUTER SCIENCE & ENGINEERING (DATA SCIENCE)

### Course Structure R-20

#### SEMESTER I

| S.No.         | Class | Course Code | Name of the Subject                         | L | T | P | C            |
|---------------|-------|-------------|---|---|---|---|--------------|
| 1             | BS    | CBSM2       | Linear Algebra & Graph Theory               | 3 | 0 | 0 | 3            |
| 2             | HS    | CHSE1       | English                                     | 2 | 0 | 0 | 2            |
| 3             | BS    | CBSC7       | Chemistry                                   | 3 | 1 | 0 | 4            |
| 4             | ES    | CESEG1      | Engineering Graphics                        | 1 | 0 | 4 | 3            |
| 5             | ES    | CESCP1      | C Programming for Problem Solving           | 2 | 1 | 0 | 3            |
| 6             | ES    | CESCP2      | C Programming for Problem Solving Lab       | 0 | 0 | 3 | 1.5          |
| 7             | HS    | CHSE2       | English Language & Communication Skills Lab | 0 | 0 | 2 | 1            |
| 8             | BS    | CBSC8       | Chemistry Lab                               | 0 | 0 | 3 | 1.5          |
| 9             | MC    | MC001       | Sports                                      | 0 | 0 | 0 | Satisfactory |
| Total credits |       |             |   |   |   |   | 19           |

#### Mandatory Course: SPORTS

The students need to participate in any physical activity such as sports, marathon, conducted by any college or any organization, students should produce participation certificate for clearing this course.

#### SEMESTER II

| S.No.         | Class | Course Code | Name of the Subject                               | L | T | P | C            |
|---------------|-------|-------------|---|---|---|---|--------------|
| 1             | BS    | CBSM1       | Ordinary Differential Equations & Vector Calculus | 3 | 0 | 0 | 3            |
| 2             | BS    | CBSP1       | Applied Physics                                   | 3 | 1 | 0 | 4            |
| 3             | ES    | CESSD1      | Semi-Conductor Devices & Circuits                 | 3 | 0 | 0 | 3            |
| 4             | ES    | CESBE2      | Basic Electrical Engineering                      | 3 | 0 | 0 | 3            |
| 5             | BS    | CBSP2       | Applied Physics Lab                               | 0 | 0 | 3 | 1.5          |
| 6             | ES    | CESSD2      | Semi-Conductor Devices & Circuits Lab             | 0 | 0 | 3 | 1.5          |
| 7             | ES    | CESBE4      | Basic Electrical & Simulation Lab                 | 0 | 0 | 3 | 1.5          |
| 8             | ES    | CESIT1      | IT Workshop                                       | 0 | 0 | 3 | 1.5          |
| 9             | MC    | MC002       | Yoga  | 0 | 0 | 0 | Satisfactory |
| Total credits |       |             |   |   |   |   | 19           |

#### Mandatory Course: YOGA

The student should undergo yoga meditation course offered by any organization or conducted by any college. Student should produce the completion certificate for clearing this course.

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**B.TECH – COMPUTER SCIENCE & ENGINEERING (DATA SCIENCE)  
Course Structure R-20**

**SEMESTER III**

| S.No.         | Class | Course Code | Name of the Subject  | L | T | P | C            |
|---------------|-------|-------------|--|---|---|---|--------------|
| 1             | BS    | CBSM5       | Statistical Methods  | 3 | 0 | 0 | 3            |
| 2             | ES    | CESOP1      | Introduction to Object-Oriented Programming & Data Structures using Java     | 3 | 0 | 0 | 3            |
| 3             | PC    | C83PC1      | Database Management Systems  | 3 | 0 | 0 | 3            |
| 4             | PC    | C83PC2      | Operating Systems  | 3 | 0 | 0 | 3            |
| 5             | PC    | C83PC3      | R Programming  | 3 | 0 | 0 | 3            |
| 6             | PC    | C83PC4      | Formal Language & Automata Theory  | 3 | 0 | 0 | 3            |
| 7             | ES    | CESOP2      | Introduction to Object-Oriented Programming & Data Structures using Java Lab | 0 | 0 | 2 | 1            |
| 8             | PC    | C83PC5      | Database Management Systems Lab  | 0 | 0 | 2 | 1            |
| 9             | PC    | C83PC6      | R Programming Lab  | 0 | 0 | 2 | 1            |
| 10            | MC    | MC003       | Cultural Activity  | 0 | 0 | 0 | Satisfactory |
| Total Credits |       |             |  |   |   |   | 21           |

**Mandatory Course: Cultural Activity**

The student should participate in culture activity (Music/Dance/Singing/etc.) conducted by the College, student should produce the participation certificate for clearing this course.

**SEMESTER IV**

| S.No.         | Class | Course Code | Name of the Subject                | L | T | P | C            |
|---------------|-------|-------------|------------------------------------|---|---|---|--------------|
| 1             | BS    | CBSM6       | Probability & Algebra              | 3 | 0 | 0 | 3            |
| 2             | PC    | C84PC1      | Data Warehousing & Data Mining     | 3 | 0 | 0 | 3            |
| 3             | PC    | C84PC2      | Information Security               | 3 | 0 | 0 | 3            |
| 4             | PC    | C84PC3      | Design and Analysis of Algorithms  | 3 | 0 | 0 | 3            |
| 5             | PC    | C84PC4      | Data Visualization                 | 3 | 0 | 0 | 3            |
| 6             | PC    | C84PC5      | Python Programming                 | 3 | 0 | 0 | 3            |
| 7             | PC    | C84PC6      | Data Warehousing & Data Mining Lab | 0 | 0 | 2 | 1            |
| 8             | PC    | C84PC7      | Data Visualization Lab             | 0 | 0 | 2 | 1            |
| 9             | PC    | C84PC8      | Python Programming Lab             | 0 | 0 | 2 | 1            |
| 10            | MC    | MC004       | Video with Social Messages         | 0 | 0 | 0 | Satisfactory |
| Total Credits |       |             |                                    |   |   |   | 21           |

**Mandatory Course: Video with Social Messages**

Student should make video with social messages. This has to be uploaded in the youtube.com, by maintaining the terms and conditions of youtube.com. Student should produce youtube.com link with screen shot for clearing this mandatory course.

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**B.TECH – INFORMATION TECHNOLOGY  
Course Structure R-20**

**SEMESTER I**

| S.No.         | Class | Course Code | Name of the Subject                         | L | T | P | C            |
|---------------|-------|-------------|---|---|---|---|--------------|
| 1             | BS    | CBSM2       | Linear Algebra & Graph Theory               | 3 | 0 | 0 | 3            |
| 2             | HS    | CHSE1       | English                                     | 2 | 0 | 0 | 2            |
| 3             | BS    | CBSC7       | Chemistry                                   | 3 | 1 | 0 | 4            |
| 4             | ES    | CESEG1      | Engineering Graphics                        | 1 | 0 | 4 | 3            |
| 5             | ES    | CESCP1      | C Programming for Problem Solving           | 3 | 0 | 0 | 3            |
| 6             | HS    | CHSE2       | English Language & Communication Skills Lab | 0 | 0 | 2 | 1            |
| 7             | BS    | CBSC8       | Chemistry Lab                               | 0 | 0 | 3 | 1.5          |
| 8             | ES    | CESCP2      | C Programming for Problem Solving Lab       | 0 | 0 | 3 | 1.5          |
| 9             | MC    | MC001       | Sports                                      | 0 | 0 | 0 | Satisfactory |
| Total Credits |       |             |   |   |   |   | 19           |

**Mandatory Course: SPORTS**

The students need to participate in any physical activity such as sports, marathon, conducted by any college or any organization, students should produce participation certificate for clearing this course.

**SEMESTER II**

| S.No.         | Class | Course Code | Name of the Subject                               | L | T | P | C            |
|---------------|-------|-------------|---|---|---|---|--------------|
| 1             | BS    | CBSM1       | Ordinary Differential Equations & Vector Calculus | 3 | 0 | 0 | 3            |
| 2             | BS    | CBSP1       | Applied Physics                                   | 3 | 1 | 0 | 4            |
| 3             | ES    | CESBE2      | Basic Electrical Engineering                      | 3 | 0 | 0 | 3            |
| 4             | ES    | CESSD1      | Semi-Conductor Devices & Circuits                 | 3 | 0 | 0 | 3            |
| 5             | BS    | CBSP2       | Applied Physics Lab                               | 0 | 0 | 3 | 1.5          |
| 6             | ES    | CESBE4      | Basic Electrical & Simulation Lab                 | 0 | 0 | 3 | 1.5          |
| 7             | ES    | CESSD2      | Semi-Conductor Devices & Circuits Lab             | 0 | 0 | 3 | 1.5          |
| 8             | ES    | CESIT1      | IT Workshop                                       | 0 | 0 | 3 | 1.5          |
| 9             | MC    | MC002       | Yoga  | 0 | 0 | 0 | Satisfactory |
| Total Credits |       |             |   |   |   |   | 19           |

**Mandatory Course: YOGA**

The student should undergo yoga meditation course offered by any organization or conducted by any college. Student should produce the completion certificate for clearing this course.

  
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**B.TECH – INFORMATION TECHNOLOGY  
Course Structure R-20**

**SEMESTER III**

| S.No.         | Class | Course Code | Name of the Subject                         | L | T | P | C            |
|---------------|-------|-------------|---|---|---|---|--------------|
| 1             | HS    | CHSM1       | Business Economics and Financial Analysis   | 3 | 0 | 0 | 3            |
| 2             | BS    | CBSM4       | Mathematical Foundation of Computer Science | 3 | 0 | 0 | 3            |
| 3             | ES    | CESDS1      | Data Structures                             | 3 | 0 | 0 | 3            |
| 4             | PC    | C63PC1      | Digital Logic Design                        | 3 | 0 | 0 | 3            |
| 5             | PC    | C63PC2      | Operating Systems                           | 3 | 0 | 0 | 3            |
| 6             | PC    | C63PC3      | Linux Programming                           | 3 | 0 | 0 | 3            |
| 7             | ES    | CESDS2      | Data Structures Lab                         | 0 | 0 | 2 | 1            |
| 8             | PC    | C63PC4      | Linux/Operating Systems Lab                 | 0 | 0 | 4 | 2            |
| 9             | MC    | MC003       | Cultural Activity                           | 0 | 0 | 0 | Satisfactory |
| Total Credits |       |             |   |   |   |   | 21           |

**Mandatory Course: Cultural Activity**

The student should participate in culture activity (Music/Dance/Singing/etc.) conducted by the College, student should produce the participation certificate for clearing this course.

**SEMESTER IV**

| S.No.         | Class | Course Code | Name of the Subject                  | L | T | P | C            |
|---------------|-------|-------------|--------------------------------------|---|---|---|--------------|
| 1             | BS    | CBSM3       | Probability & Statistics             | 3 | 0 | 0 | 3            |
| 2             | PC    | C64PC1      | Computer Organization                | 3 | 0 | 0 | 3            |
| 3             | PC    | C64PC2      | Database Management Systems          | 3 | 0 | 0 | 3            |
| 4             | PC    | C64PC3      | Java Programming                     | 3 | 0 | 0 | 3            |
| 5             | PC    | C64PC4      | Design and Analysis of Algorithms    | 3 | 0 | 0 | 3            |
| 6             | PC    | C64PC5      | Formal Languages and Automata Theory | 3 | 0 | 0 | 3            |
| 7             | PC    | C64PC6      | Java Programming Lab                 | 0 | 0 | 3 | 1.5          |
| 8             | PC    | C64PC7      | Database Management Systems Lab      | 0 | 0 | 3 | 1.5          |
| 9             | MC    | MC004       | Video with Social Messages           | 0 | 0 | 0 | Satisfactory |
| Total Credits |       |             |                                      |   |   |   | 21           |

**Mandatory Course: Video with Social Messages**

Student should make video with social messages. This has to be uploaded in the youtube.com, by maintaining the terms and conditions of youtube.com. Student should produce youtube.com link with screen shot for clearing this mandatory course.

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**B.TECH – INFORMATION TECHNOLOGY  
Course Structure R-18**

**SEMESTER V**

| S.No.         | Class | Course Code | Name of the Subject                         | L | T | P | C   |
|---------------|-------|-------------|---|---|---|---|-----|
| 1             | PC    | B65PC1      | Operating Systems                           | 3 | 0 | 0 | 3   |
| 2             | PC    | B65PC2      | Computer Networks                           | 3 | 0 | 0 | 3   |
| 3             | PC    | B65PC3      | Data Warehousing & Data Mining              | 3 | 0 | 0 | 3   |
| 4             | PC    | B65PC4      | Design and Analysis of Algorithms           | 3 | 0 | 0 | 3   |
| 5             | HS    | BHSFM       | Fundamentals Of Management                  | 3 | 0 | 0 | 3   |
| 6             | PC    | B65PC6      | Linux Programming                           | 3 | 0 | 0 | 3   |
| 7             | PC    | B65PC7      | Operating Systems and Computer Networks lab | 0 | 0 | 3 | 1.5 |
| 8             | PC    | B65PC8      | Linux Programming Lab                       | 0 | 0 | 3 | 1.5 |
| 9             | MC    | B65MC1      | *Professional Ethics                        | 0 | 3 | 0 | 0   |
| Total Credits |       |             |   |   |   |   | 21  |

**SEMESTER VI**

| S.No.         | Class | Course Code | Name of the Subject  | L | T | P | C   |
|---------------|-------|-------------|--|---|---|---|-----|
| 1             | PC    | B66PC1      | Web Technologies   | 3 | 0 | 0 | 3   |
| 2             | PC    | B66PC2      | Object Oriented Analysis & Design  | 3 | 0 | 0 | 3   |
| 3             | PC    | B66PC3      | Compiler Design  | 3 | 0 | 0 | 3   |
| 4             | PE    | B66PE4X     | 1. Software Testing Methodologies<br>2. Software Project Management<br>3. Software Metrics and Quality Assurance | 3 | 0 | 0 | 3   |
| 5             | OE    | B66OE5      | O.E – I  | 3 | 0 | 0 | 3   |
| 6             | OE    | B66OE6      | O.E – II   | 3 | 0 | 0 | 3   |
| 7             | PC    | B66PC7      | Web Technologies Lab   | 0 | 0 | 3 | 1.5 |
| 8             | PC    | B66PC8      | Case Tools Lab   | 0 | 0 | 3 | 1.5 |
| 9             | MC    | B66MC2      | *Environmental Science   | 0 | 3 | 0 | 0   |
| Total Credits |       |             |  |   |   |   | 21  |

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**B.TECH – INFORMATION TECHNOLOGY  
Course Structure R-18**

**SEMESTER VII**

| S.No.         | Class | Course Code | Name of the Subject  | L | T | P | C    |
|---------------|-------|-------------|--|---|---|---|------|
| 1             | PE    | B67PE1X     | 1.Machine Learning<br>2.Internet of Things<br>3.Artificial Intelligence            | 3 | 0 | 0 | 3    |
| 2             | PE    | B67PE2X     | 1.Mobile Computing<br>2.Mobile Application development<br>3 Design Patterns        | 3 | 0 | 0 | 3    |
| 3             | PE    | B67PE3X     | 1.Information Security<br>2.Information Retrieval System<br>3. Distributed Systems | 3 | 0 | 0 | 3    |
| 4             | OE    | B67OE4      | OE-III   | 3 | 0 | 0 | 3    |
| 5             | HS    | BE23        | Advanced Communication Skills Lab  | 0 | 0 | 3 | 1.5  |
| 6             | PE    | B67PE6      | 1.Network Security<br>2.Neural Networks<br>3. Wireless Sensor Networks             | 3 | 0 | 0 | 3    |
| 7             | PW    | B67PW7      | Project Work Part-A  | 0 | 0 | 8 | 4    |
| Total Credits |       |             |  |   |   |   | 20.5 |

**SEMESTER VIII**

| S.No.         | Class | Course Code | Name of the Subject   | L | T | P  | C  |
|---------------|-------|-------------|---|---|---|----|----|
| 1             | OE    | B68OE1      | Open Elective-II  | 3 | 0 | 0  | 3  |
| 2             | PE    | B68PE2X     | 1.Big Data Analytics<br>2.SemanticWeb & Social Networks<br>3.Distributed Data Bases | 3 | 0 | 0  | 3  |
| 3             | PW    | B68CV3      | Comprehensive Viva  | 0 | 0 | 6  | 3  |
| 4             | PW    | B68PW4      | Project Work Part – B   | 0 | 0 | 16 | 8  |
| Total Credits |       |             |   |   |   |    | 17 |

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**M.TECH (POWER ELECTRONICS)  
Course Structure R-21**
**I Year-I Semester**

| S. No                | Course Code | Name of the Subject   | L | T | P | C         |
|----------------------|-------------|---|---|---|---|-----------|
| 1                    | C121PC1     | Power Electronic Converters   | 3 | 0 | 0 | 3         |
| 2                    | C121PC2     | Machine Modeling and Analysis   | 3 | 0 | 0 | 3         |
| 3                    | C121PE3     | 1. Power Electronics for Renewable Energy Systems<br>2. Smart Grid Technologies<br>3. Dynamics of Electrical Machines<br>4. Modern Control Theory                     | 3 | 0 | 0 | 3         |
| 4                    | C121PE4     | 1. Power Semiconductor Devices and Modelling<br>2. Reactive Power Compensation and Management<br>3. High Frequency Magnetic Components<br>4. Hybrid Electric Vehicles | 3 | 0 | 0 | 3         |
| 5                    | C121RM5     | Research Methodology and IPR  | 2 | 0 | 0 | 2         |
| 6                    | C121PC6     | Machine Modeling and Analysis Lab   | 0 | 0 | 4 | 2         |
| 7                    | C121PC7     | Power Electronic Converters Lab   | 0 | 0 | 4 | 2         |
| 8                    | Audit-I     | Audit I   | 2 | 0 | 0 | 0         |
| <b>Total Credits</b> |             |   |   |   |   | <b>18</b> |

**I Year-II Semester**

| S. No                | Course Code  | Name of the Subject  | L | T | P | C         |
|----------------------|--------------|--|---|---|---|-----------|
| 1                    | C122PC1      | Advanced Power Electronic Converters   | 3 | 0 | 0 | 3         |
| 2                    | C122PC2      | Electrical Drives  | 3 | 0 | 0 | 3         |
| 3                    | C122PE3      | 1. Digital Control Systems<br>2. Advanced Digital Signal Processing<br>3. SCADA Systems and Applications<br>4. PWM Converters and Applications | 3 | 0 | 0 | 3         |
| 4                    | C122PE4      | 1. Advanced Microcontroller Based Systems<br>2. Distributed Generation<br>3. Power Quality<br>4. Integration of Energy Sources                 | 3 | 0 | 0 | 3         |
| 5                    | Mini Project | Mini Project with Seminar  | 0 | 0 | 4 | 2         |
| 6                    | C122PC6      | Advanced Power Electronic Converters Lab   | 0 | 0 | 4 | 2         |
| 7                    | C122PC7      | Electrical Drives Lab  | 0 | 0 | 4 | 2         |
| 8                    | Audit-II     | Audit-II   | 2 | 0 | 0 | 0         |
| <b>Total Credits</b> |              |  |   |   |   | <b>18</b> |

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**M.TECH - POWER ELECTRONICS  
Course Structure R-19**

**II YEAR – I SEMESTER**

| S. No | Course Code   | Name of the Subject   | L  | P  | C  |
|-------|---------------|---|----|----|----|
| 1     | B223OE1       | 1. Business Analytics<br>2. Industrial Safety<br>3. Operations Research<br>4. Cost Management of Engineering Projects<br>5. Composite Materials<br>6. Energy from Waste | 3  | -- | 3  |
| 2     | B223RM2       | Research Methodology and IPR  | 2  | -- | 2  |
| 3     | Audit-II      | Audit-II  | 2  |    | 0  |
| 4     |               | Mini Project with Seminar   | -- | 6  | 3  |
| 5     | Major Project | Phase-I Dissertation  | -- | 18 | 9  |
|       |               | Total Credits   | 7  | 24 | 17 |

**II YEAR – II SEMESTER**

| S. No | Course Code   | Name of the Subject   | L   | P  | C  |
|-------|---------------|-----------------------|-----|----|----|
| 1     | Major Project | Phase-II Dissertation | --- | 32 | 16 |
|       |               | Total Credits         |     | 32 | 16 |

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**M.Tech-COMPUTER SCIENCE & ENGINEERING  
Course Structure –R21**

**I Semester**

| S.No          | Course Code | Course Title                       | L | T | P | C   |
|---------------|-------------|------------------------------------|---|---|---|-----|
| 1             | C581PC1     | Data Structures and Algorithms     | 3 | 0 | 0 | 3   |
| 2             | C581PC2     | Advanced Databases                 | 3 | 0 | 0 | 3   |
| 3             | C581PC3     | Digital Image Processing           | 3 | 0 | 0 | 3   |
| 4             | C581PE1A    | Information Security               | 3 | 0 | 0 | 3   |
| 5             | C581PE1B    | Mobile Applications and Services   |   |   |   |     |
| 6             | C581PE1C    | Big Data Analytics                 |   |   |   |     |
| 7             | C581PE1D    | Game Theory                        |   |   |   |     |
| 8             | C581PE2A    | Optimization Techniques            | 3 | 0 | 0 | 3   |
| 9             | C581PE2B    | Natural Language Processing        |   |   |   |     |
| 10            | C581PE2C    | Advanced Computer Architecture     |   |   |   |     |
| 11            | C581PE2D    | Computer Forensics                 |   |   |   |     |
| 12            | C581PC4     | Data Structures and Algorithms Lab | 0 | 0 | 3 | 1.5 |
| 13            | C581PC5     | Digital Image Processing Lab       | 0 | 0 | 3 | 1.5 |
| Total Credits |             |                                    |   |   |   | 18  |

**II Semester**

| S.NO          | Course Code | Course Title                       | L | T | P | C   |
|---------------|-------------|------------------------------------|---|---|---|-----|
| 1             | C582PC6     | Machine Learning Techniques        | 3 | 0 | 0 | 3   |
| 2             | C582PC7     | Distributed Computing              | 3 | 0 | 0 | 3   |
| 3             | C582PC8     | Wireless Sensor Networks           | 3 | 0 | 0 | 3   |
| 4             | C582PE3A    | Deep Learning with Computer Vision | 3 | 0 | 0 | 3   |
| 5             | C582PE3B    | Internet of Things                 |   |   |   |     |
| 6             | C582PE3C    | Blockchain                         |   |   |   |     |
| 7             | C582PE3D    | Cyber Security                     |   |   |   |     |
| 8             | C582PE4A    | Mobile Computing                   | 3 | 0 | 0 | 3   |
| 9             | C582PE4B    | Soft Computing                     |   |   |   |     |
| 10            | C582PE4C    | Service Oriented Computing         |   |   |   |     |
| 11            | C582PE4D    | Cloud Computing                    |   |   |   |     |
| 12            | C582PC9     | Machine Learning Techniques Lab    | 0 | 0 | 3 | 1.5 |
| 13            | C582PC10    | Wireless Sensor Networks Lab       | 0 | 0 | 3 | 1.5 |
| 14            | C583AC1     | Audit Course-I                     | 2 | 0 | 0 | 0   |
| Total Credits |             |                                    |   |   |   | 18  |

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**M.TECH - COMPUTER SCIENCE & ENGINEERING  
Course Structure - R 19**

**II YEAR - I SEMESTER**

| Course Code   | Course Title                | L  | P  | C  |
|---------------|-----------------------------|----|----|----|
| B253OE1       | Open Elective1              | 3  | -- | 3  |
| B253RM        | Research Methodology        | 2  | -- | 2  |
| B253S & MPW   | Seminar & Mini Project Work | -- | 6  | 3  |
| B253PW        | Phase-I                     | -- | 18 | 9  |
| B252AT2       | Audit Course-II             | 2  |    |    |
| Total Credits |                             |    |    | 17 |

**II YEAR – II SEMESTER**

| Course Code   | Course Title | L  | P  | C  |
|---------------|--------------|----|----|----|
| B254PW        | Phase-II     | -- | 32 | 16 |
| Total Credits |              |    |    | 16 |

**Audit Courses - I**

- 1) English for Research Paper Writing
- 2) Disaster Management
- 3) Value Education
- 4) Constitution of India

**Audit Course - II**

- 1) Pedagogical Studies
- 2) Soft Skills
- 3) Stress Management by YOGA
- 4) Personality Development through Life Enlightenment Skills

  
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**MASTER OF BUSINESS ADMINISTRATION  
COURSE STRUCTURE R-20**

**I Year I Semester**

| S.No.        | Course Code | Name of the Subject   | L | T | P | C         |
|--------------|-------------|---|---|---|---|-----------|
| 1            | C141PC1     | Management and Organizational Behavior  | 3 | 1 | 0 | 4         |
| 2            | C141PC2     | Business Economics  | 3 | 1 | 0 | 4         |
| 3            | C141PC3     | Financial Accounting & Analysis   | 3 | 1 | 0 | 4         |
| 4            | C141PC4     | Research Methodology and Statistical Analysis   | 3 | 1 | 0 | 4         |
| 5            | C141PC5     | Business Law and Environment  | 3 | 1 | 0 | 4         |
| 6            | C141OE6XX   | Open Elective-I<br>6A Business Ethics and Corporate Governance<br>6B Project Management<br>6C Technology Management<br>6D Cross Cultural Management | 3 | 0 | 0 | 3         |
| 7            | C141PC7     | Business Communication Lab.   | 0 | 0 | 4 | 2         |
| <b>TOTAL</b> |             |   |   |   |   | <b>25</b> |

**I Year II Semester**

| S.No.        | Course Code | Course Title  | L | T | P | C         |
|--------------|-------------|---|---|---|---|-----------|
| 1            | C142PC1     | Human Resource Management   | 3 | 1 | 0 | 4         |
| 2            | C142PC2     | Marketing Management  | 3 | 1 | 0 | 4         |
| 3            | C142PC3     | Financial Management  | 3 | 1 | 0 | 4         |
| 4            | C142PC4     | Quantitative Analysis for Business Decisions  | 3 | 1 | 0 | 4         |
| 5            | C142PC5     | Management Information Systems  | 3 | 1 | 0 | 4         |
| 6            | C142PC6     | Entrepreneurship  | 3 | 1 | 0 | 4         |
| 7            | C142OE7XX   | Open Elective-II<br>7A Total Quality Management<br>7B Marketing Research<br>7C International Business<br>7D Logistics & Supply Chain Management | 3 | 0 | 0 | 3         |
| 8            | C142PC8     | Statistical Data Analysis Lab   | 0 | 0 | 4 | 2         |
| <b>TOTAL</b> |             |   |   |   |   | <b>29</b> |

  
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**MASTER OF BUSINESS ADMINISTRATION (Regular)  
COURSE STRUCTURE- R 20**

**II Year I Semester**

| S.No  | CourseCode | Course Title   | L | T | P | C  |
|-------|------------|--|---|---|---|----|
| 1     | C143PC1    | Production & Operations Management   | 3 | 1 | 0 | 4  |
| 2     | C143PC2    | Innovation Management  | 3 | 1 | 0 | 4  |
| 3     | C143PC3    | Data Analytics   | 3 | 1 | 0 | 4  |
| 4     | C143PE4XX  | (MRKG/HRM/FIN/ENTP)<br>1. Digital Marketing<br>2. Performance Management Systems<br>3. Security Analysis and Portfolio Management<br>4. Startup Management       | 3 | 1 | 0 | 4  |
| 5     | C143PE5XX  | (MRKG/HRM/FIN/ENTP)<br>1. Advertising and Sales Management<br>2. Learning and Development<br>3. Financial Institutions, Markets & Services<br>4. MSME Management | 3 | 1 | 0 | 4  |
| 6     | C143PE6XX  | (MRKG/HRM/FIN/ENTP)<br>1. Consumer Behaviour<br>2. Management of Industrial Relations<br>3. Strategic Management Accounting<br>4. Family Business Management     | 3 | 1 | 0 | 4  |
| 7     | C143PC7    | Summer Internship  | 1 | 0 | 2 | 2  |
| TOTAL |            |  |   |   |   | 26 |

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**MASTER OF BUSINESS ADMINISTRATION (Regular)  
COURSE STRUCTURE- R 20**

**II Year II Semester**

| S.No. | Course Code | Course Title  | L | T | P | C  |
|-------|-------------|---|---|---|---|----|
| 1     | C144PC1     | Strategic Management  | 3 | 1 | 0 | 4  |
| 2     | C144PE2XX   | (MRKG/HRM/FIN/ENTP)<br>1. Customer Relationship Management<br>2. International Human Resource Management<br>3. International Financial Management<br>4. Entrepreneurial Finance | 3 | 1 | 0 | 4  |
| 3     | C144PE3XX   | (MRKG/HRM/FIN/ENTP)<br>1. International Marketing<br>2. Leadership and Change Management<br>3. Strategic Investment and Financing Decisions<br>4. Entrepreneurial Marketing     | 3 | 1 | 0 | 4  |
| 4     | C144PE4XX   | (MRKG/HRM/FIN/ENTP)<br>1. Services Marketing<br>2. Talent and Knowledge Management<br>3. Risk Management<br>4. Creativity Innovation and Entrepreneurship                       | 3 | 1 | 0 | 4  |
| 5     | C144PC5     | Pre-submission project Seminar  | 1 | 0 | 2 | 2  |
| 6     | C144PC6     | Main Project Viva-Voce  | 2 | 1 | 2 | 4  |
| TOTAL |             |   |   |   |   | 22 |

  
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