

**BVM Engineering College (An Autonomous Institution)**  
**Electronics & Communication Engineering Department**  
**B. Tech.(Electronics & Communication Engineering)**

**Semester 1**

| Sr. No.      | Course Code             | Name of Course                                | L         | T         | P         | H         | C         |
|--------------|-------------------------|-----------------------------------------------|-----------|-----------|-----------|-----------|-----------|
| 1            | <a href="#">BS111*</a>  | <a href="#">Advanced Calculus</a>             | 3         | 1         | 0         | 4         | 4         |
| 2            | <a href="#">BS104</a>   | <a href="#">Semiconductor Physics</a>         | 3         | 0         | 2         | 5         | 4         |
| 3            | <a href="#">ES102</a>   | <a href="#">Electronics Workshop</a>          | 0         | 0         | 2         | 2         | 1         |
| 4            | <a href="#">ES101</a>   | <a href="#">Basic Electronics</a>             | 3         | 0         | 2         | 5         | 4         |
| 5            | <a href="#">HS101</a>   | <a href="#">English</a>                       | 2         | 0         | 2         | 4         | 3         |
| 6            | <a href="#">HS112\$</a> | <a href="#">Environmental Science#</a>        | 2         | 0         | 0         | 2         | 0         |
| 7            | <a href="#">HS103</a>   | <a href="#">Introduction to EC Department</a> | 0         | 0         | 2         | 2         | 1         |
| <b>Total</b> |                         |                                               | <b>13</b> | <b>01</b> | <b>10</b> | <b>24</b> | <b>17</b> |

\*For Students admitted in AY 2018-19, [BS101](#) (LTP:3,2,0)

\$ For Students admitted in AY 2018-19, [HS102](#) (LTP:2,2,0)

# Non-Credit Mandatory course

**Semester 2**

| Sr. No.      | Course Code            | Name of Course                                      | L         | T         | P         | H         | C         |
|--------------|------------------------|-----------------------------------------------------|-----------|-----------|-----------|-----------|-----------|
| 1            | <a href="#">BS112#</a> | <a href="#">Linear Algebra and Fourier Series</a>   | 3         | 1         | 0         | 4         | 4         |
| 2            | <a href="#">ES103</a>  | <a href="#">Basic Electrical Engineering</a>        | 3         | 0         | 2         | 5         | 4         |
| 3            | <a href="#">ES105</a>  | <a href="#">Programming for Problem Solving</a>     | 3         | 0         | 2         | 5         | 4         |
| 4            | <a href="#">ES109</a>  | <a href="#">Engineering Graphics &amp; Design</a>   | 2         | 0         | 4         | 6         | 4         |
| 5            | <a href="#">ES112</a>  | <a href="#">Basics of Manufacturing Practices</a>   | 0         | 0         | 2         | 2         | 1         |
| 6            | <a href="#">ES117</a>  | <a href="#">Introduction to Digital Electronics</a> | 1         | 0         | 2         | 3         | 2         |
| <b>Total</b> |                        |                                                     | <b>12</b> | <b>01</b> | <b>12</b> | <b>25</b> | <b>19</b> |

# For Students admitted in AY 2018-19, [BS102](#) (LTP:3,2,0)

### Semester 3

| Sr. No.      | Course Code           | Name of Course                                                 | L         | T        | P         | H         | C         |
|--------------|-----------------------|----------------------------------------------------------------|-----------|----------|-----------|-----------|-----------|
| 1            | <a href="#">2BS01</a> | <a href="#">Ordinary Differential Equations and Statistics</a> | 3         | 1        | 0         | 4         | 4         |
| 2            | <a href="#">2EC01</a> | <a href="#">Network Theory</a>                                 | 3         | 1        | 0         | 4         | 4         |
| 3            | <a href="#">2EC02</a> | <a href="#">Electronic Devices and Circuits</a>                | 3         | 0        | 0         | 3         | 3         |
| 4            | <a href="#">2EC03</a> | <a href="#">Electronic Devices and Circuits Laboratory</a>     | 0         | 0        | 2         | 2         | 1         |
| 5            | <a href="#">2EC04</a> | <a href="#">Digital System Design</a>                          | 3         | 0        | 0         | 3         | 3         |
| 6            | <a href="#">2EC05</a> | <a href="#">Digital System Design Laboratory</a>               | 0         | 0        | 2         | 2         | 1         |
| 7            | <a href="#">2EC06</a> | <a href="#">Object Oriented Programming</a>                    | 3         | 0        | 0         | 3         | 3         |
| 8            | <a href="#">2EC07</a> | <a href="#">Object Oriented Programming Laboratory</a>         | 0         | 0        | 2         | 2         | 1         |
| 9            | <a href="#">2EC08</a> | <a href="#">Simulation and Design Tools</a>                    | 0         | 0        | 2         | 2         | 1         |
| 10           | <a href="#">2HS01</a> | <a href="#">Professional Soft Skills</a>                       | 1         | 0        | 2         | 3         | 2         |
| <b>Total</b> |                       |                                                                | <b>16</b> | <b>2</b> | <b>10</b> | <b>28</b> | <b>23</b> |

### Semester 4

| Sr. No.      | Course Code           | Name of Course                                                     | L         | T        | P         | H         | C         |
|--------------|-----------------------|--------------------------------------------------------------------|-----------|----------|-----------|-----------|-----------|
| 1            | <a href="#">2HS02</a> | <a href="#">Economics and Management</a>                           | 3         | 0        | 0         | 3         | 3         |
| 2            | <a href="#">2EC09</a> | <a href="#">Signals and Systems</a>                                | 3         | 0        | 0         | 3         | 3         |
| 3            | <a href="#">2EC10</a> | <a href="#">Signals and Systems Laboratory</a>                     | 0         | 0        | 2         | 2         | 1         |
| 4            | <a href="#">2EC11</a> | <a href="#">Control Systems</a>                                    | 3         | 0        | 0         | 3         | 3         |
| 5            | <a href="#">2EC12</a> | <a href="#">Control Systems Laboratory</a>                         | 0         | 0        | 2         | 2         | 1         |
| 6            | <a href="#">2EC13</a> | <a href="#">Analog Communication</a>                               | 3         | 0        | 0         | 3         | 3         |
| 7            | <a href="#">2EC14</a> | <a href="#">Analog Communication Laboratory</a>                    | 0         | 0        | 2         | 2         | 1         |
| 8            | <a href="#">2EC15</a> | <a href="#">Microprocessor and Computer Architecture</a>           | 3         | 0        | 0         | 3         | 3         |
| 9            | <a href="#">2EC16</a> | <a href="#">Microprocessor and Interfacing Laboratory</a>          | 0         | 0        | 2         | 2         | 1         |
| 10           | <a href="#">2EC17</a> | <a href="#">Electronic Measurements and Instruments</a>            | 3         | 0        | 0         | 3         | 3         |
| 11           | <a href="#">2EC18</a> | <a href="#">Electronic Measurements and Instruments Laboratory</a> | 0         | 0        | 2         | 2         | 1         |
| 12           | <a href="#">2EC31</a> | <a href="#">Mini Project</a>                                       | 0         | 0        | 2         | 2         | 1         |
| <b>Total</b> |                       |                                                                    | <b>18</b> | <b>0</b> | <b>12</b> | <b>30</b> | <b>24</b> |
|              | <a href="#">ECIS1</a> | <a href="#">Internship – I (Two Weeks)#</a>                        | -         | -        | -         | -         | 0         |

# Non-Credit Mandatory course

## Semester 5

| Sr. No.                       | Course Code           | Name of Course                                                          | L         | T        | P        | H         | C         |
|-------------------------------|-----------------------|-------------------------------------------------------------------------|-----------|----------|----------|-----------|-----------|
| 1                             | <a href="#">3HS01</a> | <a href="#">Ethics and Constitution of India#</a>                       | 2         | 0        | 0        | 2         | 0         |
| 2                             | <a href="#">3EC01</a> | <a href="#">Electromagnetics Theory</a>                                 | 3         | 0        | 0        | 3         | 3         |
| 3                             | <a href="#">3EC02</a> | <a href="#">Microcontroller and Applications</a>                        | 3         | 0        | 0        | 3         | 3         |
| 4                             | <a href="#">3EC03</a> | <a href="#">Microcontroller and Applications Laboratory</a>             | 0         | 0        | 2        | 2         | 1         |
| 5                             | <a href="#">3EC04</a> | <a href="#">CMOS Digital Integrated Circuits</a>                        | 3         | 0        | 0        | 3         | 3         |
| 6                             | <a href="#">3EC05</a> | <a href="#">CMOS Digital Integrated Circuits Laboratory</a>             | 0         | 0        | 2        | 2         | 1         |
| 7                             |                       | Programme Elective - I                                                  | 3         | 0        | 2        | 5         | 4         |
| 8                             |                       | Open Elective - I                                                       | 3         | 0        | 0        | 3         | 3         |
| <b>Total</b>                  |                       |                                                                         | <b>17</b> | <b>0</b> | <b>6</b> | <b>23</b> | <b>18</b> |
| # Non-Credit Mandatory course |                       |                                                                         |           |          |          |           |           |
| <b>Program Elective - I</b>   |                       |                                                                         |           |          |          |           |           |
| 1                             | <a href="#">3EC41</a> | <a href="#">Power Electronics</a>                                       | 3         | 0        | 2        | 5         | 4         |
| 2                             | <a href="#">3EC42</a> | <a href="#">Digital Design Using HDL</a>                                | 3         | 0        | 2        | 5         | 4         |
| 3                             | <a href="#">3EC43</a> | <a href="#">Industrial Automation</a>                                   | 3         | 0        | 2        | 5         | 4         |
| <b>Open Elective - I</b>      |                       |                                                                         |           |          |          |           |           |
| 1.                            | <a href="#">3CE81</a> | <a href="#">Environment And Health</a>                                  | 3         | 0        | 0        | 3         | 3         |
| 2.                            | <a href="#">3CE83</a> | <a href="#">Earth System and Geo-environment</a>                        | 3         | 0        | 0        | 3         | 3         |
| 3.                            | <a href="#">3SE81</a> | <a href="#">Disaster Management and Mitigation</a>                      | 3         | 0        | 0        | 3         | 3         |
| 4.                            | <a href="#">3CP81</a> | <a href="#">Fundamentals of Computer Networks and Security</a>          | 3         | 0        | 0        | 3         | 3         |
| 5.                            | <a href="#">3CP82</a> | <a href="#">Fundamentals of Operating Systems</a>                       | 3         | 0        | 0        | 3         | 3         |
| 6.                            | <a href="#">3IT81</a> | <a href="#">Cyber security</a>                                          | 3         | 0        | 0        | 3         | 3         |
| 7.                            | <a href="#">3IT82</a> | <a href="#">Internet Technology</a>                                     | 3         | 0        | 0        | 3         | 3         |
| 8.                            | <a href="#">3IT83</a> | <a href="#">Software Project Management</a>                             | 3         | 0        | 0        | 3         | 3         |
| 9.                            | <a href="#">3IT84</a> | <a href="#">Enterprise Resource Planning</a>                            | 3         | 0        | 0        | 3         | 3         |
| 10.                           | <a href="#">3EE81</a> | <a href="#">Energy Audit &amp; Conservation</a>                         | 3         | 0        | 0        | 3         | 3         |
| 11.                           | <a href="#">3EE83</a> | <a href="#">Installation and Commissioning of Electrical Equipments</a> | 3         | 0        | 0        | 3         | 3         |
| 12.                           | <a href="#">3ME81</a> | <a href="#">Industrial Engineering and Quality Assurance</a>            | 3         | 0        | 0        | 3         | 3         |
| 13.                           | <a href="#">3ME82</a> | <a href="#">Project Management</a>                                      | 3         | 0        | 0        | 3         | 3         |
| 14.                           | <a href="#">3PE81</a> | <a href="#">Principles Of Supply Chain Management</a>                   | 3         | 0        | 0        | 3         | 3         |

|     |                       |                                               |   |   |   |   |   |
|-----|-----------------------|-----------------------------------------------|---|---|---|---|---|
| 15. | <a href="#">3PE82</a> | <a href="#">Industrial Internet Of Things</a> | 3 | 0 | 0 | 3 | 3 |
|-----|-----------------------|-----------------------------------------------|---|---|---|---|---|

### Semester 6

| Sr. No.      | Course Code           | Name of Course                                           | L         | T        | P         | H         | C         |
|--------------|-----------------------|----------------------------------------------------------|-----------|----------|-----------|-----------|-----------|
| 1            | <a href="#">3EC06</a> | <a href="#">Digital Communication</a>                    | 3         | 0        | 0         | 3         | 3         |
| 2            | <a href="#">3EC07</a> | <a href="#">Digital Communication Laboratory</a>         | 0         | 0        | 2         | 2         | 1         |
| 3            | <a href="#">3EC08</a> | <a href="#">Antennas and Wave Propagation</a>            | 3         | 0        | 0         | 3         | 3         |
| 4            | <a href="#">3EC09</a> | <a href="#">Antennas and Wave Propagation Laboratory</a> | 0         | 0        | 2         | 2         | 1         |
| 5            | <a href="#">3EC10</a> | <a href="#">Advance Microcontroller</a>                  | 2         | 0        | 0         | 2         | 2         |
| 6            | <a href="#">3EC11</a> | <a href="#">Advance Microcontroller Laboratory</a>       | 0         | 0        | 2         | 2         | 1         |
| 7            | <a href="#">3EC12</a> | <a href="#">Digital Signal Processing</a>                | 3         | 0        | 0         | 3         | 3         |
| 8            | <a href="#">3EC13</a> | <a href="#">Digital Signal Processing Laboratory</a>     | 0         | 0        | 2         | 2         | 1         |
| 9            | <a href="#">3EC14</a> | <a href="#">Scripting Languages</a>                      | 0         | 0        | 2         | 2         | 1         |
| 10           |                       | Programme Elective – II                                  | 3         | 0        | 0         | 3         | 3         |
| 11           |                       | Open Elective – II                                       | 3         | 0        | 2         | 5         | 4         |
| <b>Total</b> |                       |                                                          | <b>17</b> | <b>0</b> | <b>12</b> | <b>29</b> | <b>23</b> |

### Program Elective - II

|   |                       |                                                            |   |   |   |   |   |
|---|-----------------------|------------------------------------------------------------|---|---|---|---|---|
| 1 | <a href="#">3EC44</a> | <a href="#">Introduction to Real Time Operating System</a> | 3 | 0 | 0 | 3 | 3 |
| 2 | <a href="#">3EC45</a> | <a href="#">Optical Fiber Communication</a>                | 3 | 0 | 0 | 3 | 3 |
| 3 | <a href="#">3EC46</a> | <a href="#">Satellite Communication</a>                    | 3 | 0 | 0 | 3 | 3 |

### Open Elective - II

|     |                       |                                                          |   |   |   |   |   |
|-----|-----------------------|----------------------------------------------------------|---|---|---|---|---|
| 1.  | <a href="#">3CE82</a> | <a href="#">Geo-Informatics</a>                          | 3 | 0 | 2 | 5 | 4 |
| 2.  | <a href="#">3SE82</a> | <a href="#">Advanced Strength of Materials</a>           | 3 | 0 | 2 | 5 | 4 |
| 3.  | <a href="#">3SE83</a> | <a href="#">Basic Concepts of Structural Behaviour</a>   | 3 | 0 | 2 | 5 | 4 |
| 4.  | <a href="#">3CP85</a> | <a href="#">Object Oriented Concepts and Programming</a> | 3 | 0 | 2 | 5 | 4 |
| 5.  | <a href="#">3CP84</a> | <a href="#">Information Technology Essentials</a>        | 3 | 0 | 2 | 5 | 4 |
| 6.  | <a href="#">3CP83</a> | <a href="#">Programming with Python</a>                  | 3 | 0 | 2 | 5 | 4 |
| 7.  | <a href="#">3IT85</a> | <a href="#">Web Application and Development</a>          | 3 | 0 | 2 | 5 | 4 |
| 8.  | <a href="#">3IT86</a> | <a href="#">Java Programing</a>                          | 3 | 0 | 2 | 5 | 4 |
| 9.  | <a href="#">3IT87</a> | <a href="#">Object Oriented Programming with C++</a>     | 3 | 0 | 2 | 5 | 4 |
| 10. | <a href="#">3IT88</a> | <a href="#">Mobile Application Development</a>           | 3 | 0 | 2 | 5 | 4 |
| 11. | <a href="#">3EE82</a> | <a href="#">Renewable Energy Technology</a>              | 3 | 0 | 2 | 5 | 4 |
| 12. | <a href="#">3EE84</a> | <a href="#">Industrial Automation</a>                    | 3 | 0 | 2 | 5 | 4 |

|     |                       |                                                    |   |   |   |   |   |
|-----|-----------------------|----------------------------------------------------|---|---|---|---|---|
| 13. | <a href="#">3ME83</a> | <a href="#">Renewable Energy Sources</a>           | 3 | 0 | 2 | 5 | 4 |
| 14. | <a href="#">3ME84</a> | <a href="#">Energy Conservation and Management</a> | 3 | 0 | 2 | 5 | 4 |
| 15. | <a href="#">3PE83</a> | <a href="#">Managing Projects</a>                  | 3 | 0 | 2 | 5 | 4 |
| 16. | <a href="#">3PE84</a> | <a href="#">Additive Manufacturing</a>             | 3 | 0 | 2 | 5 | 4 |

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|                       |                                              |   |   |   |   |   |
|-----------------------|----------------------------------------------|---|---|---|---|---|
| <a href="#">ECIS2</a> | <a href="#">Internship – II</a> (Two Weeks)# | - | - | - | - | 0 |
|-----------------------|----------------------------------------------|---|---|---|---|---|

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# Non-Credit Mandatory course

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### Semester 7

| Sr. No.      | Course Code           | Name of Course                                             | L         | T        | P         | H         | C         |
|--------------|-----------------------|------------------------------------------------------------|-----------|----------|-----------|-----------|-----------|
| 1            | <a href="#">4EC01</a> | <a href="#">Computer Networks</a>                          | 3         | 0        | 0         | 3         | 3         |
| 2            | <a href="#">4EC02</a> | <a href="#">Computer Networks Laboratory</a>               | 0         | 0        | 2         | 2         | 1         |
| 3            | <a href="#">4EC03</a> | <a href="#">Wireless Communication</a>                     | 3         | 0        | 0         | 3         | 3         |
| 4            | <a href="#">4EC04</a> | <a href="#">Wireless Communication Laboratory</a>          | 0         | 0        | 2         | 2         | 1         |
| 5            | <a href="#">4EC05</a> | <a href="#">Embedded System Design with IOT</a>            | 3         | 0        | 0         | 3         | 3         |
| 6            | <a href="#">4EC06</a> | <a href="#">Embedded System Design with IOT Laboratory</a> | 0         | 0        | 2         | 2         | 1         |
| 7            | <a href="#">4EC07</a> | <a href="#">Electronic Product Design</a>                  | 0         | 0        | 2         | 2         | 1         |
| 8            | <a href="#">4EC08</a> | <a href="#">Guided Research</a>                            | 0         | 0        | 4         | 4         | 2         |
| 9            |                       | Programme Elective – III                                   | 3         | 0        | 2         | 5         | 4         |
| <b>Total</b> |                       |                                                            | <b>12</b> | <b>0</b> | <b>14</b> | <b>26</b> | <b>19</b> |

### Program Elective - III

|   |                       |                                              |   |   |   |   |   |
|---|-----------------------|----------------------------------------------|---|---|---|---|---|
| 1 | <a href="#">4EC41</a> | <a href="#">Digital Image Processing</a>     | 3 | 0 | 2 | 5 | 4 |
| 2 | <a href="#">4EC42</a> | <a href="#">Bio Medical Instrumentation</a>  | 3 | 0 | 2 | 5 | 4 |
| 3 | <a href="#">4EC43</a> | <a href="#">RF and Microwave Engineering</a> | 3 | 0 | 2 | 5 | 4 |

### Semester 8 [Scheme A]

| Sr. No.      | Course Code           | Name of Course          | L        | T        | P         | H         | C         |
|--------------|-----------------------|-------------------------|----------|----------|-----------|-----------|-----------|
| 1            | <a href="#">4EC31</a> | <a href="#">Project</a> | 0        | 0        | 18        | 18        | 9         |
| 2            |                       | Programme Elective – IV | 3        | 0        | 2         | 5         | 4         |
| 3            |                       | Programme Elective – V  | 1        | 0        | 2         | 3         | 2         |
| <b>Total</b> |                       |                         | <b>4</b> | <b>0</b> | <b>22</b> | <b>26</b> | <b>15</b> |

**Program Elective - IV**

|   |                       |                                               |   |   |   |   |   |
|---|-----------------------|-----------------------------------------------|---|---|---|---|---|
| 1 | <a href="#">4EC44</a> | <a href="#">Radar &amp; Navigational Aids</a> | 3 | 0 | 2 | 5 | 4 |
| 2 | <a href="#">4EC45</a> | <a href="#">Machine Learning</a>              | 3 | 0 | 2 | 5 | 4 |
| 3 | <a href="#">4EC46</a> | <a href="#">Advance Communication Systems</a> | 3 | 0 | 2 | 5 | 4 |

**Program Elective - V**

|   |                       |                                                |   |   |   |   |   |
|---|-----------------------|------------------------------------------------|---|---|---|---|---|
| 1 | <a href="#">4EC47</a> | <a href="#">Virtual Instrumentation</a>        | 1 | 0 | 2 | 3 | 2 |
| 2 | <a href="#">4EC48</a> | <a href="#">Device Driver Development</a>      | 1 | 0 | 2 | 3 | 2 |
| 3 | <a href="#">4EC49</a> | <a href="#">Mobile Application Development</a> | 1 | 0 | 2 | 3 | 2 |

**OR**

**Semester 8 [Scheme B]**

| <b>Sr. No.</b>                    | <b>Course Code</b>    | <b>Name of Course</b>            | <b>L</b>   | <b>T</b> | <b>P</b>  | <b>H</b>   | <b>C</b>   |
|-----------------------------------|-----------------------|----------------------------------|------------|----------|-----------|------------|------------|
| 1                                 | <a href="#">4EC32</a> | <a href="#">Industry Project</a> | 0          | 0        | 30        | 30         | 15         |
| <b>Total Credits Distribution</b> |                       |                                  | <b>109</b> | <b>4</b> | <b>98</b> | <b>211</b> | <b>158</b> |