



ESTD. 2001

## PRATHYUSHA ENGINEERING COLLEGE

DEPARTMENT OF BIOTECHNOLOGY

LIST OF COURSES

(ACADEMIC YEAR 2017-18)

| <b>SEMESTER-1</b>  |                |                    |   |           |          |           |           |
|--------------------|----------------|--------------------|---|-----------|----------|-----------|-----------|
| <b>SEMESTER</b>    | <b>SL. No.</b> | <b>COURSE CODE</b> | <b>COURSE TITLE</b>                               | <b>L</b>  | <b>T</b> | <b>P</b>  | <b>C</b>  |
| I                  | 1              | HS8151             | Communicative English                             | 4         | 0        | 0         | 4         |
| I                  | 2              | MA8151             | Engineering Mathematics – I                       | 4         | 0        | 0         | 4         |
| I                  | 3              | PH8151             | Engineering Physics                               | 3         | 0        | 0         | 3         |
| I                  | 4              | CY8151             | Engineering Chemistry                             | 3         | 0        | 0         | 3         |
| I                  | 5              | GE8151             | Problem Solving and Python Programming            | 3         | 0        | 0         | 3         |
| I                  | 6              | GE8152             | Engineering Graphics                              | 2         | 0        | 4         | 4         |
| <b>PRACTICALS</b>  |                |                    |   |           |          |           |           |
| I                  | 7              | GE8161             | Problem Solving and Python Programming Laboratory | 0         | 0        | 4         | 2         |
| I                  | 8              | BS8161             | Physics and Chemistry Laboratory                  | 0         | 0        | 4         | 2         |
| <b>TOTAL</b>       |                |                    |   | <b>19</b> | <b>0</b> | <b>12</b> | <b>25</b> |
| <b>SEMESTER-II</b> |                |                    |   |           |          |           |           |
| <b>SEMESTER</b>    | <b>SL. No.</b> | <b>COURSE CODE</b> | <b>COURSE TITLE</b>                               | <b>L</b>  | <b>T</b> | <b>P</b>  | <b>C</b>  |
| II                 | 1              | HS8251             | Technical English                                 | 4         | 0        | 0         | 4         |
| II                 | 2              | MA8251             | Engineering Mathematics – II                      | 4         | 0        | 0         | 4         |
| II                 | 3              | PH8254             | Physics of Materials                              | 3         | 0        | 0         | 3         |
| II                 | 4              | BE8252             | Basic Civil and Mechanical Engineering            | 4         | 0        | 0         | 4         |
| II                 | 5              | BT8291             | Microbiology                                      | 3         | 0        | 0         | 3         |

|                   |   |        |                                  |           |          |          |           |
|-------------------|---|--------|----------------------------------|-----------|----------|----------|-----------|
| II                | 6 | BT8251 | Biochemistry                     | 3         | 0        | 0        | 3         |
| <b>PRACTICALS</b> |   |        |                                  |           |          |          |           |
| II                | 7 | GE8261 | Engineering Practices Laboratory | 0         | 0        | 4        | 2         |
| II                | 8 | BT8261 | Biochemistry Laboratory          | 0         | 0        | 4        | 2         |
| <b>TOTAL</b>      |   |        |                                  | <b>21</b> | <b>0</b> | <b>8</b> | <b>25</b> |

### SEMESTER-III

| SEMESTER          | SL. No. | COURSE CODE | COURSE TITLE                                  | L         | T        | P        | C         |
|-------------------|---------|-------------|---|-----------|----------|----------|-----------|
| III               | 1       | MA6351      | Transforms and Partial Differential Equations | 3         | 1        | 0        | 4         |
| III               | 2       | BT6301      | Stoichiometry and Fluid Mechanics             | 3         | 0        | 0        | 3         |
| III               | 3       | BT6302      | Bioorganic Chemistry                          | 3         | 0        | 0        | 3         |
| III               | 4       | BT6303      | Cell Biology                                  | 3         | 1        | 0        | 4         |
| III               | 5       | BT6304      | Basic Industrial Biotechnology                | 3         | 0        | 0        | 3         |
| III               | 6       | GE6351      | Environmental Science and Engineering         | 3         | 0        | 0        | 3         |
| <b>PRACTICALS</b> |         |             |   |           |          |          |           |
| III               | 7       | BT6311      | Cell Biology Laboratory                       | 0         | 0        | 4        | 2         |
| III               | 8       | BT6312      | Bioorganic Chemistry Laboratory               | 0         | 0        | 4        | 2         |
| <b>TOTAL</b>      |         |             |   | <b>18</b> | <b>2</b> | <b>8</b> | <b>24</b> |

### SEMESTER-IV

| SEMESTER          | SL. No. | COURSE CODE | COURSE TITLE                                | L         | T        | P        | C         |
|-------------------|---------|-------------|---|-----------|----------|----------|-----------|
| IV                | 1       | MA6468      | Probability and Statistics                  | 3         | 1        | 0        | 4         |
| IV                | 2       | BT6401      | Analytical Methods and Instrumentation      | 3         | 0        | 0        | 3         |
| IV                | 3       | BT6402      | Applied Thermodynamics for Biotechnologists | 3         | 0        | 0        | 3         |
| IV                | 4       | BT6403      | Heat Transfer Operations                    | 3         | 1        | 0        | 4         |
| IV                | 5       | BT6404      | Enzyme Technology and Biotransformation     | 3         | 0        | 0        | 3         |
| IV                | 6       | BT6405      | Bioprocess Principles                       | 3         | 0        | 0        | 3         |
| <b>PRACTICALS</b> |         |             |   |           |          |          |           |
| IV                | 7       | BT6411      | Chemical Engineering Laboratory             | 0         | 0        | 4        | 2         |
| IV                | 8       | BT6412      | Instrumental Methods of Analysis Laboratory | 0         | 0        | 4        | 2         |
| <b>TOTAL</b>      |         |             |   | <b>18</b> | <b>2</b> | <b>8</b> | <b>24</b> |

### SEMESTER V

| SEMESTER | SL. No. | COURSE CODE | COURSE TITLE | L | T | P | C |
|----------|---------|-------------|--------------|---|---|---|---|
|----------|---------|-------------|--------------|---|---|---|---|

|   |   |        |   |   |   |   |   |
|---|---|--------|---|---|---|---|---|
| V | 1 | BT6501 | Protein Structure Function and Proteomics | 3 | 1 | 0 | 4 |
| V | 2 | BT6502 | Bioprocess Engineering                    | 3 | 0 | 0 | 3 |
| V | 3 | BT6503 | Mass Transfer Operation                   | 3 | 0 | 0 | 3 |
| V | 4 | BT6504 | Molecular Biology                         | 3 | 0 | 0 | 3 |
| V | 5 | BT6003 | Principles of Food Processing             | 3 | 0 | 0 | 3 |
| V | 6 | BT6006 | Biopharmaceutical Technology              | 3 | 0 | 0 | 3 |

**PRACTICALS**

|              |   |        |                       |           |          |          |           |
|--------------|---|--------|-----------------------|-----------|----------|----------|-----------|
| V            | 7 | BT6511 | Bioprocess Lab – I    | 0         | 0        | 4        | 2         |
| V            | 8 | BT6512 | Molecular Biology Lab | 0         | 0        | 4        | 2         |
| <b>TOTAL</b> |   |        |                       | <b>18</b> | <b>1</b> | <b>8</b> | <b>23</b> |

**SEMESTER VI**

|    |   |        |   |   |   |   |   |
|----|---|--------|---|---|---|---|---|
| VI | 1 | BT6601 | Total Quality Management for Biotechnologists | 3 | 0 | 0 | 3 |
| VI | 2 | BT6602 | Immunology                                    | 3 | 0 | 0 | 3 |
| VI | 3 | BT6603 | Genetic Engineering and Genomics              | 3 | 1 | 0 | 4 |
| VI | 4 | BT6604 | Chemical Reaction Engineering                 | 3 | 0 | 0 | 3 |
| VI | 5 | BT6007 | Animal Biotechnology                          | 3 | 0 | 0 | 3 |
| VI | 6 | BT6010 | Plant Biotechnology                           | 3 | 0 | 0 | 3 |

**PRACTICALS**

| SEMESTER     | SL. No. | COURSE CODE | COURSE TITLE                   | L         | T        | P         | C         |
|--------------|---------|-------------|--------------------------------|-----------|----------|-----------|-----------|
| VI           | 7       | BT6611      | Genetic Engineering Laboratory | 0         | 0        | 4         | 2         |
| VI           | 8       | BT6612      | Bioprocess Lab – II            | 0         | 0        | 4         | 2         |
|              |         | GE6562      | Employability Skills           | 0         | 0        | 2         | 1         |
| <b>TOTAL</b> |         |             |                                | <b>18</b> | <b>1</b> | <b>10</b> | <b>24</b> |

**SEMESTER VII**

| SEMESTER | SL. No. | COURSE CODE | COURSE TITLE                                       | L | T | P | C |
|----------|---------|-------------|--|---|---|---|---|
| VII      | 1       | BT6701      | Bioinformatics and Computational Biology           | 3 | 0 | 0 | 3 |
| VII      | 2       | BT6702      | Downstream processing                              | 3 | 0 | 0 | 3 |
| VII      | 3       | BT6703      | Creativity, Innovation and New Product Development | 3 | 0 | 0 | 3 |
| VII      | 4       | BT6014      | Bio Industrial Entrepreneurship                    | 3 | 0 | 0 | 3 |
| VII      | 5       | BT6017      | Tissue Engineering                                 | 3 | 0 | 0 | 3 |

**PRACTICALS**

|     |   |        |                           |   |   |   |   |
|-----|---|--------|---------------------------|---|---|---|---|
| VII | 6 | BT6711 | Downstream processing Lab | 0 | 0 | 4 | 2 |
| VII | 7 | BT6712 | Immunology Lab            | 0 | 0 | 4 | 2 |
|     | 8 | BT6713 | Bioinformatics Lab        | 0 | 0 | 4 | 2 |

|                      |   |        |               |           |          |           |           |
|----------------------|---|--------|---------------|-----------|----------|-----------|-----------|
|                      |   |        | <b>TOTAL</b>  | <b>15</b> | <b>0</b> | <b>12</b> | <b>21</b> |
| <b>SEMESTER VIII</b> |   |        |               |           |          |           |           |
| VIII                 | 1 | BT6811 | Project Work* | 0         | 0        | 12        | 6         |
|                      |   |        | <b>TOTAL</b>  | <b>0</b>  | <b>0</b> | <b>12</b> | <b>6</b>  |

**TOTAL CREDITS : 172**

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