

## Department of Chemical Engineering: B.Tech Curriculum

### Semester 1

|                   | L  | T | E | P | O  | C         | Cat |
|-------------------|----|---|---|---|----|-----------|-----|
| Math. 1           | 3  | 1 | 0 | 0 | 6  | 10        | S   |
| Physics. 1        | 3  | 1 | 0 | 0 | 6  | 10        | S   |
| Chemistry 1       | 3  | 1 | 0 | 0 | 6  | 10        | S   |
| Thermodynamics    | 3  | 1 | 0 | 0 | 6  | 10        | E   |
| Physics Lab.1     | 0  | 0 | 0 | 3 | 1  | 4         | S   |
| Chemistry Lab     | 0  | 0 | 0 | 3 | 0  | 3         | S   |
| Ecology and Env't | 2  | 0 | 0 | 0 | 0  | 0         |     |
| Life Skills       | 0  | 0 | 0 | 0 | 3  | 0         |     |
| NSS/NSO/NCC       | 0  | 0 | 0 | 0 | 2  | 0         |     |
| <b>Total</b>      | 14 | 4 | 0 | 6 | 30 | <b>47</b> |     |

### Winter

|          | L | T | E | P | O | C | Cat |
|----------|---|---|---|---|---|---|-----|
| Workshop | 0 | 0 | 0 | 3 | 0 | 3 | E   |

### Semester 2

|                                  | L  | T | E | P | O  | C         | Cat |
|----------------------------------|----|---|---|---|----|-----------|-----|
| Math. 2                          | 3  | 1 | 0 | 0 | 6  | 10        | S   |
| Physics. 2                       | 3  | 1 | 0 | 0 | 6  | 10        | S   |
| Computational Engineering        | 3  | 0 | 0 | 3 | 6  | 12        | E   |
| Principles & Calculations in ChE | 3  | 1 | 0 | 0 | 6  | 10        | P   |
| Engineering Mechanics            | 3  | 1 | 0 | 0 | 6  | 10        | E   |
| <b>Total</b>                     | 15 | 4 | 0 | 3 | 30 | <b>52</b> |     |

### Summer

|          | L | T | E | P | O | C | Cat |
|----------|---|---|---|---|---|---|-----|
| Workshop | 0 | 0 | 0 | 3 | 0 | 3 | E   |

### Semester 3

|                               | L  | T | E | P | O  | C         | Cat |
|-------------------------------|----|---|---|---|----|-----------|-----|
| Math Elective                 | 3  | 0 | 0 | 0 | 6  | 9         | S   |
| Chemical Engg. Thermodynamics | 3  | 1 | 0 | 0 | 6  | 10        | P   |
| Continuum Mechanics & TP      | 3  | 1 | 0 | 0 | 6  | 10        | P   |
| Computational Techniques      | 3  | 1 | 0 | 3 | 8  | 15        | P   |
| Humanities 1                  | 3  | 0 | 0 | 0 | 6  | 9         | H   |
| <b>Total</b>                  | 15 | 3 | 0 | 3 | 32 | <b>53</b> |     |

### Semester 4

|                                      | L | T | E | P | O | C  | Cat |
|--------------------------------------|---|---|---|---|---|----|-----|
| Mom Transfer & Mechanical Operations | 3 | 1 | 0 | 0 | 6 | 10 | P   |
| Fundamentals of Heat & Mass Tr       | 3 | 1 | 0 | 0 | 6 | 10 | P   |

|                    |    |   |   |   |    |           |   |
|--------------------|----|---|---|---|----|-----------|---|
| Thermodynamics Lab | 0  | 0 | 0 | 3 | 2  | 5         | P |
| Chemistry Elective | 3  | 0 | 0 | 0 | 6  | 9         | S |
| Basics of EE       | 3  | 1 | 0 | 0 | 6  | 10        | E |
| Humanities 2       | 3  | 0 | 0 | 0 | 6  | 9         | H |
| <b>Total</b>       | 15 | 3 | 0 | 3 | 32 | <b>53</b> |   |

### Semester 5

|                               | L  | T | E | P | O  | C         | Cat |
|-------------------------------|----|---|---|---|----|-----------|-----|
| Applications of Mass Transfer | 3  | 1 | 0 | 0 | 6  | 10        | P   |
| CRE                           | 3  | 1 | 0 | 0 | 6  | 10        | P   |
| Mom Transfer & MOLab          | 0  | 0 | 0 | 3 | 2  | 5         | P   |
| Heat and Mass Transfer Lab    | 0  | 0 | 0 | 3 | 2  | 5         | P   |
| Dept Elective 1               | 3  | 0 | 0 | 0 | 6  | 9         | P   |
| Life Sciences                 | 3  | 0 | 0 | 0 | 6  | 9         | S   |
| <b>Total</b>                  | 12 | 2 | 0 | 6 | 28 | <b>48</b> |     |

### Semester 6

|                                     | L  | T | E | P | O  | C         | Cat |
|-------------------------------------|----|---|---|---|----|-----------|-----|
| Materials Science                   | 3  | 1 | 0 | 0 | 6  | 10        | P   |
| Process Control                     | 3  | 1 | 0 | 0 | 6  | 10        | P   |
| Dept Elective 2                     | 3  | 0 | 0 | 0 | 6  | 9         | P   |
| Dept Elective 3                     | 3  | 0 | 0 | 0 | 6  | 9         | P   |
| <i>Heat and Mass Transfer Lab 2</i> | 0  | 0 | 0 | 3 | 2  | 5         | P   |
| CRE Lab                             | 0  | 0 | 0 | 3 | 2  | 5         | P   |
| <b>Total</b>                        | 12 | 2 | 0 | 6 | 28 | <b>48</b> |     |

### Semester 7

|                                     | L  | T | E | P | O  | C         | Cat |
|-------------------------------------|----|---|---|---|----|-----------|-----|
| Plant, Process & Product Design     | 3  | 1 | 0 | 0 | 6  | 10        | P   |
| Chemical Technology                 | 3  | 1 | 0 | 0 | 6  | 10        | P   |
| Plant, Process & Product Design Lab | 0  | 0 | 0 | 3 | 2  | 5         | P   |
| Humanities 3                        | 3  | 0 | 0 | 0 | 6  | 9         | H   |
| Dept Elective 4                     | 3  | 0 | 0 | 0 | 6  | 9         | P   |
| <b>Total</b>                        | 12 | 2 | 0 | 3 | 26 | <b>43</b> |     |

### Semester 8

|                     | L | T | E | P | O | C | Cat |
|---------------------|---|---|---|---|---|---|-----|
| Dept Elective 5     | 3 | 0 | 0 | 0 | 6 | 9 | P   |
| Professional Ethics | 2 | 0 | 0 | 0 | 0 | 0 |     |
| <b>Total</b>        | 5 | 0 | 0 | 0 | 6 | 9 |     |

**Note:** Indicated credits are for core programme including departmental electives (5). In addition, 72 credits of free electives (17%) have to be taken from any department including Chemical Engineering in V semester (1), VI semester (2), VII semester (2) and VIII semester (3). The number in the parenthesis indicates suggested number of electives.

**B.Tech (honours):** B.Tech project worth 13 credits in VII semester + 14 credits in VIII semester over and above the regular B.Tech requirement.