

Course Structure: B.Tech. (Chemical Engineering)
Valid for students admitted from year 2023 onwards

Semester 3:

| S.No. | Course Catag | Course No. | Course title | Contact Periods | | | Credits | Marks | | | Total |
|-------|--------------|------------|--|-----------------|---|---|---------|-------------|---------|---------|-------|
| | | | | L | T | P | | Course-Work | Mid-Sem | End-Sem | |
| 1 | PC | CHC2012 | Basic Principles of Chemical Engineering | 3 | 1 | - | 4 | 15 | 25 | 60 | 100 |
| 2 | PC | CHC2032 | Fluid Mechanics | 3 | 1 | - | 4 | 15 | 25 | 60 | 100 |
| 3 | PC | CHC2042 | Fluid Particle Operations | 3 | 1 | - | 4 | 15 | 25 | 60 | 100 |
| 4 | PC | CHC2052 | Chemical Engineering Thermodynamics | 3 | 1 | 0 | 4 | 15 | 25 | 60 | 100 |
| 5 | PC | CHC2062 | Heat Transfer Operations | 3 | 1 | 0 | 4 | 15 | 25 | 60 | 100 |
| 6 | PC | CHC2072 | Numerical Methods in Chemical Engg. | 3 | 1 | 0 | 4 | 15 | 25 | 60 | 100 |
| 7 | PC | CHC2902 | Computer Applications Lab | | | 3 | 1.5 | 60 | -- | 40 | 100 |

TOTAL CREDITS: 25.5

Semester 4:

| S.No. | Course Catag | Course No. | Course title | Contact Periods | | | Credits | Marks | | | Total |
|-------|--------------|------------|-------------------------------|-----------------|---|---|---------|-------------|---------|---------|-------|
| | | | | L | T | P | | Course-Work | Mid-Sem | End-Sem | |
| 1 | BS | ACS2022 | Engineering Chemistry | 3 | 0 | 0 | 3 | 15 | 25 | 60 | 100 |
| 2 | PC | CHC2002 | Process Instrumentation | 3 | 0 | 0 | 3 | 15 | 25 | 60 | 100 |
| 3 | PC | CHC2022 | Chemical Reaction Engineering | 3 | 1 | 0 | 4 | 15 | 25 | 60 | 100 |
| 4 | PC | CHC2082 | Mass Transfer Operations | 3 | 1 | 0 | 4 | 15 | 25 | 60 | 100 |
| 5 | PC | CHC2092 | Equilibrium Stage Processes | 3 | 1 | 0 | 4 | 15 | 25 | 60 | 100 |
| 6 | PC | CHC2922 | Fluid Mechanics Lab | - | | 3 | 1.5 | 60 | -- | 40 | 100 |
| 7 | PC | CHC2932 | Mechanical Operations Lab | - | | 3 | 1.5 | 60 | -- | 40 | 100 |
| 8 | PC | CHC2942 | Heat Transfer lab | 0 | 0 | 3 | 1.5 | 60 | | 40 | 100 |

TOTAL CREDITS: 22.5

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Semester 5:

| S.No. | Course Catag | Course No. | Course title | Contact Periods | | | Credits | Marks | | | Total |
|-------|--------------|------------|-------------------------------------|-----------------|---|---|---------|-------------|---------|---------|-------|
| | | | | L | T | P | | Course-Work | Mid-Sem | End-Sem | |
| 1 | ESA | ACA3112 | Engineering Materials | 3 | 0 | 0 | 3 | 15 | 25 | 60 | 100 |
| 2 | BS | AMS3412 | Advanced Engineering Mathematics | 3 | 0 | 0 | 3 | 15 | 25 | 60 | 100 |
| 3 | ESA | CHA3012 | Biology for Engineers | 3 | 0 | 0 | 3 | 15 | 25 | 60 | 100 |
| 4 | PC | CHC3122 | Process Equipment Design | 3 | 0 | 0 | 3 | 15 | 25 | 60 | 100 |
| 5 | PC | CHC3912 | Computer Programming Lab | 0 | 0 | 3 | 1.5 | 60 | | 40 | 100 |
| 6 | PC | CHC3952 | Reaction Engg. & Thermodynamics Lab | | | 3 | 1.5 | 60 | | 40 | 100 |
| 7 | PC | CHC3962 | Mass Transfer Lab | 0 | 0 | 3 | 1.5 | 60 | | 40 | 100 |
| 8 | PSI | CHP3812 | Seminar and Report Writing | 0 | 2 | 0 | 2 | 100 | | | 100 |
| 9 | HM | MEH3452 | Engineering Economy & Management | 3 | 0 | 0 | 3 | 15 | 25 | 60 | 100 |

TOTAL CREDITS: 21.5

Semester 6:

| S.No. | Course Catag | Course No. | Course title | Contact Periods | | | Credits | Marks | | | Total |
|-------|--------------|------------|---------------------------------------|-----------------|---|---|---------|-------------|---------|---------|-------|
| | | | | L | T | P | | Course-Work | Mid-Sem | End-Sem | |
| 1 | PC | CHC3132 | Chemical Process Industries | 3 | 1 | 0 | 4 | 15 | 25 | 60 | 100 |
| 2 | PC | CHC3162 | Energy Engineering and Management | 3 | 0 | 0 | 3 | 15 | 25 | 60 | 100 |
| 3 | PC | CHC3182 | Transport Phenomena | 3 | 1 | - | 4 | 15 | 25 | 60 | 100 |
| 4 | PC | CHC3192 | Plant Design and Economics | 3 | 1 | | 4 | 15 | 25 | 60 | 100 |
| 5 | PC | CHC3922 | CAD/Simulation Lab | 0 | 0 | 3 | 1.5 | 60 | | 40 | 100 |
| 6 | PC | CHC3972 | Chemical Engineering Design & Drawing | 0 | 0 | 2 | 1 | 15 | 25 | 60 | 100 |
| 7 | PSI | CHP3932 | Plant Design Project A | 0 | 3 | 0 | 3 | 60 | | 40 | 100 |
| 8 | DE | | Departmental Elective-1 | | | | 3 | 15 | 25 | 60 | 100 |
| 9 | DE | | Departmental Elective-2 | | | | 3 | 15 | 25 | 60 | 100 |

TOTAL CREDITS: 26.5

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Semester 7:

| S.No. | Course Catag | Course No. | Course title | Contact Periods | | | Credits | Marks | | | Total |
|-------|--------------|------------|---|-----------------|---|---|---------|-------------|---------|---------|-------|
| | | | | L | T | P | | Course-Work | Mid-Sem | End-Sem | |
| 1 | PC | CHC4112 | Industrial Pollution Control & Waste M | 3 | 0 | 0 | 3 | 15 | 25 | 60 | 100 |
| 2 | PC | CHC4122 | Process Dynamics and Control | 3 | 1 | 0 | 4 | 15 | 25 | 60 | 100 |
| 3 | PC | CHC4232 | Process Safety and Risk Analysis | 3 | 0 | 0 | 3 | 15 | 25 | 60 | 100 |
| 4 | PC | CHC4922 | Process Dynamics and Control lab | 0 | 0 | 3 | 1.5 | 15 | 25 | 60 | 100 |
| 5 | PC | CHC4932 | Technology Lab | 0 | 0 | 3 | 1.5 | 60 | | 40 | 100 |
| 6 | PSI | CHP4982 | Plant Design Project B | 0 | 3 | 0 | 3 | 60 | | 40 | 100 |
| 7 | PSI | CHP4992 | Project (Experimental/Computational) | 0 | 3 | 0 | 3 | 60 | | 40 | 100 |
| 8 | OE | | Open Elective-1 | | | | 3 | 15 | 25 | 60 | 100 |
| 9 | HM | | Elective Course under Humanities category | | | | 3 | 15 | 25 | 60 | 100 |

TOTAL CREDITS: 25

Semester 8:

| S.No. | Course Catag | Course No. | Course title | Contact Periods | | | Credits | Marks | | | Total |
|-------|--------------|------------|--------------------------------|-----------------|---|---|---------|-------------|---------|---------|-------|
| | | | | L | T | P | | Course-Work | Mid-Sem | End-Sem | |
| 1 | PC | CHC4952 | Industrial Lectures | 0 | 1 | 0 | 1 | 15 | 25 | 60 | 100 |
| 2 | PSI | CHP4802 | Industrial Training/Internship | 0 | 2 | 0 | 2 | | | 100 | 100 |
| 3 | PSI | CHP4812 | Social Internship | 0 | 2 | 0 | 1 | | | 100 | 100 |
| 4 | DE | | Departmental Elective-3 | | | | 3 | 15 | 25 | 60 | 100 |
| 5 | DE | | Departmental Elective-4 | | | | 3 | 15 | 25 | 60 | 100 |
| 6 | DE | | Departmental Elective-5 | | | | 3 | 15 | 25 | 60 | 100 |
| 7 | OE | | Open Elective-2 | | | | 3 | 15 | 25 | 60 | 100 |

TOTAL CREDITS: 16

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List of Departmental Elective (DE) Courses:

| S.No. | Crs. No. | Course title | S.No. | Crs. No. | Course title |
|-------|----------|--------------|-------|----------|--------------|
|-------|----------|--------------|-------|----------|--------------|

SUMMARY:

| Catagory Code | Category Name | II-IV Year Credits | First Year Credits | Total Credits |
|---------------|------------------------------|--------------------|--------------------|---------------|
| DC | Departmental Core | 84 | 0 | 84 |
| DE | Departmental Elective | 15 | 0 | 15 |
| BS | Basic Sciences | 6 | 19 | 25 |
| ESA | Engg. Science and Arts | 6 | 19 | 25 |
| OE | Open Elective | 6 | 0 | 6 |
| HM | Humanities | 6 | 5 | 11 |
| PSI | Project, Seminar, Internship | 14 | 0 | 14 |
| TOTAL | | 137 | 43 | 180 |