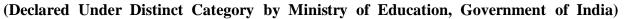


(Deemed University)





NAAC Accredited with A++ Grade

Department of Chemical Engineering

Semester-Wise General Scheme Structure & Important Guidelines for Flexible Curriculum

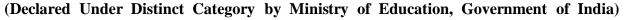
(Batch admitted in Academic Session 2024-25 onwards)

Abbreviations Used

| | Lecture |
|-----------|---|
| | Tutorial |
| P | Practical |
| HSMC | Humanities and Social Sciences including Management Courses |
| BSC | Basic Science Courses |
| ESC | Engineering Science Courses |
| DC | Departmental Core |
| DE | Departmental Elective |
| SPC | Specialization Courses |
| OC. | Open Category |
| DLC | Departmental Laboratory Courses |
| MOOC | Massive Open Online Course |
| MWS | Mandatory Workshop |
| SP | Semester Proficiency |
| SIP | Skill Internship Program |
| SLP | Self-learning Presentation |
| PDC | Professional Development Component |
| PBL | Project Based Learning |
| PC | Professional Certification |
| MAC | Mandatory Audit Course |
| NEC | Novel Engaging Course |



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Department of Chemical Engineering Scheme of Evaluation

B. Tech. I Semester (Chemical Engineering) (for batch admitted in academic session 2024-25)

| | | | | | Ma | aximum Ma | rks Allotte | ed . | | | Con | tact H | ours | | | | |
|--------|----------------|------------------|--|--------------------------|---------------------------|---------------------|-----------------------|----------------------------|---------------------|----------------|----------------|------------|---------|------------------|------------------------|-------------|-------------------------------|
| | | | | | Theory | Block | | Practica | l Block | | . · · · p | er wee | k | | | Mode | |
| S. No. | Course Code | Category Code | Course Name | Cont | inuous Evalu | ation | Major | Continuous Evaluation | | Total Marks | | | | Total Credits | Mode of Learning | Of Major | Duration of Major Exam. |
| | | | | Minor Evaluation I | Minor Evaluation II | Quiz/ Assignment | - Major Evaluation | Lab Work & Sessional | Major Evaluation | | . L | . T | P | | . Dear may | Exam. | |
| 1. | 17241101 | DC | Chemical Process Calculations | 20 | 20 | 30 | 30 | - | - | 100 | . 3 | | | 3 | Face to Face | PP | 2 Hrs |
| 2. | 17241102 | ESC | Computer Programming | 20 | 20 | 30 | 30 | - | - | 100 | 2 | | | 2 | Face to Face | MCQ | 2 Hrs |
| 3. | 17241103 | DC | Fluid Mechanics | 20 | 20 | 30 | 30 | - | - | 100 | 2 | 1-11- | · · · | 3 | Face to Face | PP | 2 Hrs |
| 4. | 17241104 | DC | Mechanical Operations | 20 | 20 | 30 | 30 | - | - | 100 | 2 . | 1. | 1.2. | 3 | Face to Face | MCQ | 2 Hrs |
| 5. | 17241105 | ESC | Basic Electrical & Electronics Engineering | 20 | 20 | 30 | 30 | - | - | 100 | 2 | | . '- '- | 2 | Face to Face | MCQ | 2 Hrs |
| 6. | 17241106 | DLC | Computer Programming Lab | - | - | - | - | 70 | 30 | 100 | -] -] - | 1 | 2 | 1 | Experimental | AO | |
| 7. | 17241107 | DLC | Electrical & Electronics Engineering Lab | - | - | - | - | 70 | 30 | 100 | . · . · . | | 2 | 1 | Experimental | AO | |
| 8. | 17241108 | SP | Semester Proficiency ^{\$} | - | - | - | - | 50 | - | 50 | : | | 2 | 1 | Face to Face | SO | |
| 9. | 17241109 | PBL | Micro Project-I# | - | - | - | - | 70 | 30 | 100 | - : - : - | | 2 | 1 | Experiential | SO | |
| 10. | 17241110 | ESC | Engineering Chemistry Lab ^{\$\$} | - | - | - | - | 70 | 30 | 100 | - - | | 2 | 1 | Experimental | AO | - |
| 11. | NECXXXXX | NEC | Novel Engaging Course (Activity Based Learning) | - | - | - | - | 50 | - | 50 | 1 - 1 | 1. | · | 1 | Interactive | SO | |
| | | | Total | 100 | 100 | 150 | 150 | 380 | 120 | 1000 | 11 | 03 | 10 | 19 | - | - | - |
| 12. | 17241111 | MAC | Universal Human Values & Professional Ethics (UHVPE) | 20 | 20 | 30 | 30 | - | - | 100 | 2 | | | GRADE | Blended | MCQ | 1.5 Hrs |
| 13. | 17241112 | MWS | Mandatory Workshop on Indian Constitution and T | raditional Kno | wledge at Dep | artment Level | (Duration: 7 | wo Days) | | | | | | GRADE | Interactive | MCQ | · · · · · · · · · |

Induction programme of three weeks (MC): Physical activity, Creative Arts, Universal Human Values, Literary, Proficiency Modules, Lectures by Eminent People, Visits to local Areas, Familiarization to Dept./Branch & Innovations.

DLC

Skill Internship Program (Soft Skill): Minimum 45 hours duration: To be credited in II Semester.

MCQ: Multiple Choice Question AO: Assignment + Oral PP: Pen Paper SO: Submission + Oral OB: Open Book

^{*}Micro Project-I will be presented and evaluated through an interdisciplinary project evaluation committee.

| 0 | | 0 | 3 | 3, | 0 | 0 | 0 | | 1 | 1 | 0 | . 0 | 0 | 1 1 | | |
|-----------------|--------|------|------------|-------------|--------------|--------|------------|-------------|--------|--------------|--------|-------------|----------|--------|--------|---------------|
| | | | | Mode of Lea | arning | | | | | | N | Iode of Exa | mination | | | |
| The | eory | Pr | roficiency | NEC | | Lab | | | | T | neory | | NEC | 1 | Lab | Total Credits |
| Face to Face | Online | e Fa | ce to Face | Interactive | Blende | ed Exp | periential | Experimenta | l PP | AO | MCQ | OB | so | so | AO | Total Credits |
| | | | 1 | 1 | . | | . 1 | 3 | | . | 7 | | 1 | 2 | 3 | 19 |
| 68.42% | | | 5.26% | 5.26% | | 5 | 5.26% | 15.79% | 31.58% | | 21.05% | | 5.26% | 15.79% | 15.79% | Credits % |

NEC

SP

SIP

SLP

PDC

PBL

MAC

MWS

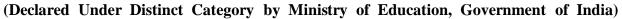
HSMC

Semester Proficiency—includes the weightage towards ability/ skill/ competency/knowledge level/expertise attained etc. in the semester courses.

^{**}This course will be distributed in the I Year Group wise among the programmes where ever required.



(Deemed University)





NAAC Accredited with A++ Grade

Department of Chemical Engineering Scheme of Evaluation

B. Tech. II Semester (Chemical Engineering) (for batch admitted in academic session 2024-25)

| | | | | | M | laximum M | Iarks Allott | ed | | | | ntact H | | | | | |
|--------|----------------|------------------|--|--------------------------|---------------------------|---------------------|---------------------|----------------------------|---------------------|----------------|-----------|----------------------|---------------------|------------------|--------------|-------------|---|
| | | | | | Theor | y Block | | Practica | l Block | | I | er wee | ek | | Mode | Mode | Duration |
| S. No. | Course Code | Category Code | Course Name | Con | tinuous Evalua | ation | Matan | Continuous Evaluation | Maian | Total Marks | | | | Total Credits | of | Of Major | of Major |
| | | | | Minor Evaluation I | Minor Evaluation II | Quiz/ Assignment | Major Evaluation | Lab Work & Sessional | Major Evaluation | | L | T | P | | Learning | Exam. | Exam. |
| 1. | 17241201 | DC | Organic Process Technology | 20 | 20 | 30 | 30 | - | - | 100 | 3 | | | 3 | Face to Face | MCQ | 2 Hrs |
| 2. | 17241202 | DC | Chemical Engineering Thermodynamics | 20 | 20 | 30 | 30 | - | - | 100 | 2 | 1. | | 3 | Face to Face | MCQ | 2 Hrs |
| 3. | 17241203 | DC | Heat Transfer Operations | 20 | 20 | 30 | 30 | - | - | 100 | 2 | 1. | | 3 | Face to Face | MCQ | 2 Hrs |
| 4. | 17241204 | DC | Mass Transfer Operations - I | 20 | 20 | 30 | 30 | - | - | 100 | 2 | . 1. | | 3 | Face to Face | PP | 2 Hrs |
| 5. | 17241205 | BSC | Matrices, Differential Equations & Vector Calculus | 20 | 20 | 30 | 30 | - | - | 100 | 3 | · · · | | 3 | Face to Face | PP | 2 Hrs |
| 6. | 17241206 | DLC | Fluid Flow & Mechanical Operations Lab | - | - | - | - | 70 | 30 | 100 | | · - · · · | 2 | 1 | Experimental | AO | : : : : : : : : |
| 7. | 17241207 | DLC | Problem Solving through Python Programming | - | - | - | - | 70 | 30 | 100 | | | 2 | 1 | Experimental | AO | |
| 8. | 17241208 | SP | Semester Proficiency ^{\$} | - | - | - | - | 50 | - | 50 | | | 2 | 1 | Face to Face | SO | |
| 9. | 17241209 | PBL | Micro Project-II# | - | - | - | - | 70 | 30 | 100 | · · | | 2 | 1 | Experiential | SO | : - : - : - : - : - : - : - : - : - : - |
| 10. | 17241210 | ESC | Engineering Physics Lab ^{\$\$} | - | - | - | - | 70 | 30 | 100 | · [-] | | 2 | 1 | Experimental | AO | |
| 11. | 17241211 | HSMC | Language Lab | - | - | - | - | 70 | 30 | 100 | | · · · - · | 2 | 1 | Blended | AO | |
| 12. | NECXXXXX | NEC | Novel Engaging Course (Activity Based Learning) | - | - | - | - | 50 | - | 50 | : | 1 | | 1 | Interactive | SO | - : - - - : - : - |
| 13. | SIP1XXXX | SIP | Skill Internship Program (Soft Skill) | - | - | - | - | 60 | - | 60 | - [- [| : | | 2** | Experiential | SO | |
| | | | Total | 100 | 100 | 150 | 150 | 510 | 150 | 1160 | 12 | 04 | 12 | 24 | - | - | - |
| 14. | 17241212 | MAC | Sustainability & Environmental Science | 20 | 20 | 30 | 30 | - | - | 100 | 2 | - 1 - 1 - | - - - :- | GRADE | Blended | MCQ | 1.5 Hrs |
| 15. | 17241213 | MWS | Mandatory Workshop on Indian Knowledge System | at Departme | ent Level (Dur | ation: Two D | ays) | | | | - [- [- | | - [- [-] | GRADE | Interactive | MCQ | |

 $Summer\ Semester\ of\ six-eight\ weeks\ duration\ will\ be\ conducted\ for\ makeup\ of\ I\ \&\ II\ semester\ examination.$

Semester Proficiency—includes the weightage towards ability/ skill/ competency/knowledge level/expertise attained etc. in the semester courses MCQ: Multiple Choice Question AO: Assignment + Oral PP: Pen Paper SO: Submission + Oral OB: Open Book

^{*}Micro Project-II will be presented and evaluated through an interdisciplinary project evaluation committee.

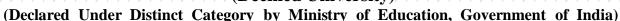
| | | HSMC | BSC | ESC | DC | DE S | PC OC | DLC | NEC | SP | SIP | SLP | PDC | PBL | MAC | MWS | |
|-----|-----|--------|--------------|--------------|-------------|---------|--------------|--------------|-----|----|-------|--------------|----------|--------|--------|-----|---------------|
| ÷ | | 1 | - 1 - | 1 1 1 | 4 | 0 |) 0 | 2 | 1. | -1 | 1. | 0 | 0 | 1 | 1 | 1 : | |
| . 1 | | | | | Mode of Lea | rning | | | | | N | Iode of Exan | nination | | | | |
| | | Theory |] | Proficiency | NEC | | Lab | | | Т | heory | | NEC | | Lab | | Total Credits |
| | Fac | e to | Online F | Face to Face | Interactive | Blended | Experiential | Experimental | PP | AO | мсо | ОВ | so | so | AO | | Total Credits |
| | Fa | ice | mine 1 | acc to Facc | Interactive | Dichaca | Experiential | Experimental | 11 | AU | MCQ | ОВ | 50 | 50 | AO | | |
| | | 5 | T-1.1.1.1.1. | | 1 | 1 | | | 6 | | 9 | | | 4 | 4 | | 24 |
| | 62. | 5% | • | 4.17% | 4.17% | 4.17% | 12.5% | 12.5% | 50% | | 37.5% | | 4.17% | 29.17% | 29.17% | ó | Credits % |

^{\$5} This course will be distributed in the I Year Group wise among the programmes where ever required.

^{**} These credits will be transferred from Soft Skill Internship (Soft Skill).



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NAAC Accredited with A++ Grade

Department of Chemical Engineering Scheme of Evaluation

B. Tech. III Semester (Chemical Engineering) (for batch admitted in academic session 2024-25)

| | | | | | Iaximum N | Iarks Allot | ted | | | Con | tact H | ours | | | | |
|----------------|--|--|---|---------------------------|---------------------|---|---|--|---|---|-------------|----------------------|------------------|--|--|--|
| | | | | Theor | y Block | | Practica | al Block | | р | er wee | k | | Mode | Mode | Duration |
| Course Code | Category Code | Course Name | Con | tinuous Eval | uation | Majan | Continuous Evaluation | Majar | Total Marks | | | | Total Credits | of Learning | Oi Major | Duration of Major Exam. |
| | | | Minor Evaluation I | Minor Evaluation II | Quiz/ Assignment | Evaluation | Lab Work & Sessional | Evaluation Evaluation | | . L | T | . P | | | Exam. | |
| 17242101 | BSC | Complex Analysis & Integral Transforms | 20 | 20 | 30 | 30 | - | - | 100 | 3 | | | 3 | Face to Face | PP | 2 Hrs |
| 17242102 | DC DC | Data Structures | 20 | 20 | 30 | 30 | - | - | 100 | . 2 . | . 1. | 1.4 | 3 | Face to Face | MCQ | 2 Hrs |
| 17242103 | DC | Chemical Reaction Engineering – I | 20 | 20 | 30 | 30 | - | - | 100 | 2 | 1 | | 3 | Face to Face | MCQ | 2 Hrs |
| 17242104 | DC | Mechanical Design of Process Equipment | 20 | 20 | 30 | 30 | - | - | 100 | 2 | 1 | : + : + : | 3 | Face to Face | OB | 2 Hrs |
| 17242105 | DC . | Inorganic Process Technology | 20 | 20 | 30 | 30 | - | - | 100 | . 2 . | . 1. | · · | 3 | Face to Face | MCQ | 2-Hrs |
| 17242106 | DLC | Heat Transfer Operations Lab | - | - | - | - | 70 | 30 | 100 | 1-1-1 | | 2 | 1 | Experimental | AO | |
| 17242107 | DLC | Chemical Synthesis Lab | - | - | - | - | 70 | 30 | 100 | - 2- 1- | | 2 | 1 | Experimental | AO | |
| 17242108 | SP | Semester Proficiency ⁸ | - | - | - | - | 50 | - | 50 | : - <u>-</u> -: | 1.5 | 2 | 1 | Face to Face | SO | |
| 17242109 | PBL | Macro Project-I# | - | - | - | - | 70 | 30 | 100 | : : : : | | 2 | 1 | Experiential | SO | |
| 17242110 | SLP | Self-learning/Presentation ^{SSS} (SWAYAM/NPTEL/MOOC) | - | - | - | - | 40 | - | 40 | : : | | 2 | 1 | Mentoring | SO | |
| NECXXXXX | NEC | Novel Engaging Course (Activity Based Learning) | - | • | - | - | 50 | 1 | 50 | | 1 | | 1 | Interactive | SO | |
| | | Total | 100 | 100 | 150 | 150 | 350 | 90 | 940 | 11 | 05 | 10 | 21 | - | • | - |
| 17242111 | MAC | Cyber Security | 20 | 20 | 30 | 30 | - | - | 100 | 2 | 1 | - [- | GRADE | Blended | MCQ | 1.5 Hrs |
| 17242112 | MWS | Mandatory Workshop on Internet of Things(IoT) at | Department | Level (Duration | on: Two Days) | | | | | | | | GRADE | Interactive | MCQ | - |
| | 17242101 17242102 17242103 17242104 17242105 17242106 17242107 17242108 17242109 17242110 NECXXXXX | Code Code 17242101 BSC 17242102 DC 17242103 DC 17242104 DC 17242105 DC 17242106 DLC 17242107 DLC 17242108 SP 17242109 PBL 17242110 SLP NECXXXXX NEC | Code Complex Analysis & Integral Transforms I7242102 DC Data Structures Chemical Reaction Engineering – I Process Equipment I7242105 DC Inorganic Process Technology I7242106 DLC Heat Transfer Operations Lab Chemical Synthesis Lab SP Semester Proficiency I7242108 SP Semester Proficiency I7242109 PBL Macro Project-I# SLP Self-learning/Presentation SS (SWAYAM/NPTEL/MOOC) NECXXXXX NEC Novel Engaging Course (Activity Based Learning) Total I7242111 MAC Cyber Security | Code | Course Code | Course Code Category Code Course Name Theory Block Course Name Continuous Evaluation Minor Evaluation In In Minor Evaluation In | Course Code Category Code Course Name Theory Block Course Name Continuous Evaluation Minor Evaluation II Minor Evaluation III Major Evaluation III 17242101 BSC Complex Analysis & Integral Transforms 20 20 30 30 17242102 DC Data Structures 20 20 30 30 17242103 DC Chemical Reaction Engineering – I 20 20 30 30 17242104 DC Mechanical Design of Process Equipment 20 20 30 30 17242105 DC Inorganic Process Technology 20 20 30 30 17242106 DLC Heat Transfer Operations Lab - - - - 17242107 DLC Chemical Synthesis Lab - - - - 17242108 SP Semester Proficiency ⁵ - - - - 17242100 PBL Macro Project-I* - - - </td <td>Course Code Category Code Course Name Continuous Evaluation Minor Evaluation III Minor Evaluation Minor Evaluation III Major Evaluation Major Evaluation<</td> <td>Course Code Lategory Code Course Name Continuous Evaluation Null or Paraditation Papulation In Section 1 or Papulation Null or P</td> <td>Course Code Category Code Course Name Continuous Evaluation Fealuation In Universal Parameter Section 1 Theory Evaluation In Universal Parameter Section 1 Theory Evaluation In Universal Parameter Section 1 Major Evaluation In Universal Parameter</td> <td> Course Code</td> <td> Course Code</td> <td> Course Code</td> <td>Course Course Course</td> <td>Course Code Category Code Category Code Course Code Course Code Theory Code Continuous Evaluation Sequence Continuous Evaluatio</td> <td>Course Course Course Name Image: Course Name <th< td=""></th<></td> | Course Code Category Code Course Name Continuous Evaluation Minor Evaluation III Minor Evaluation Minor Evaluation III Major Evaluation Major Evaluation< | Course Code Lategory Code Course Name Continuous Evaluation Null or Paraditation Papulation In Section 1 or Papulation Null or P | Course Code Category Code Course Name Continuous Evaluation Fealuation In Universal Parameter Section 1 Theory Evaluation In Universal Parameter Section 1 Theory Evaluation In Universal Parameter Section 1 Major Evaluation In Universal Parameter | Course Code | Course Code | Course Code | Course | Course Code Category Code Category Code Course Code Course Code Theory Code Continuous Evaluation Sequence Continuous Evaluatio | Course Course Course Name Image: Course Name <th< td=""></th<> |

Skill Internship Program(Institute Level) (Qualifier): Minimum 30 hours duration: To be credited in IV Semester

Semester Proficiency—includes the weightage towards ability/ skill/ competency/knowledge level/expertise attained etc. in the semester courses MCO: Multiple Choice Question AO: Assignment + Oral PP: Pen Paper SO: Submission + Oral OB: Open Book

*Macro Project-I will be presented and evaluated through an interdisciplinary project evaluation committee.

\$55 Compulsory registration for one online course using SWAYAM/NPTEL/ MOOC, evaluation through attendance and presentation.

| HSMC | BSC | ESC | DC | DE | SPC | OC | DLC | NEC | SP | SIP | SLP | PDC | PBL | MAC | MWS |
|------|-----|-----|----|----|-----|----|-----|-----|----|-----|-----|-----|-----|-----|-----|
| | 1 | 0 | 4 | 0 | 0 | 0 | | 1 | 1 | 0 | 1 | 0 | 1 | 1 | 1 |

| | | | | Mode | of Learning | | | | | | | Mode of Examina | tion | | | T-4-1 |
|---|--------------|---|--------------|-------------|---------------|---------------------------------------|--------------|--------------|--------|----|--------|-----------------|-------|--------|-------|------------------|
| | Theo | ory | Proficiency | NEC | Self Learning | | Lab | | | | Theory | | NEC | La | ab | Total Credits |
| | Face to Face | Online | Face to Face | Interactive | Mentoring | Blended | Experiential | Experimental | PP | AO | MCQ | OB | SO | SO | AO | Credits |
| - | 15 | · · · · · · · · | 1 | 1 | 1 | | 1 | 2 | 3 | | 9 - | 3 | 1 | 3 | 2 | 21 |
| | 71.43% | · . · . · . · . · . · . · . · . · . · . | 4.76% | 4.76% | 4.76% | · . · . · . · . · . · . · . · . · . · | 4.76% | 9.52% | 14.29% | | 42.86% | 14.29% | 4.76% | 14.29% | 9.52% | Credits % |



(Deemed University)





NAAC Accredited with A++ Grade

Department of Chemical Engineering Scheme of Evaluation

B. Tech. IV Semester (Chemical Engineering) (for batch admitted in academic session 2024-25)

| | | | | | M | laximum M | arks Allot | ted | | | Con | tact H | ours | | | | |
|--------|----------------|------------------|---|--------------------------|---------------------------|---------------------|------------|--------------------------|------------|----------------|----------------------|----------|------|------------------|--------------|-------|----------------------------|
| | | | | | Theory | Block | | Practical | Block | | p | er we | ek | | Mode | Mode | Duration |
| S. No. | Course Code | Category Code | Course Name | Cont | inuous Evalu | ıation | - Major | Continuous Evaluation | - Major | Total Marks | | | | Total Credits | of | Major | of Major Exam. |
| | | | | Minor Evaluation I | Minor Evaluation II | Quiz/ Assignment | Evaluation | Lab Work & Sessional | Evaluation | | L | T | P | | | Exam. | |
| 1. | 17242201 | DC. | Mass Transfer Operations - II | 20 | 20 | 30 | 30 | - | - | 100 | 2. | 1. | 133 | . 3 | Face to Face | PP | 2 Hrs |
| 2. | 17242202 | DC DC | Instrumentation & Process Control | 20 | 20 | 30 | 30 | - | - | 100 | 2 | 1 | 1.5 | 3 | Face to Face | MCQ | 2 Hrs |
| 3. | 17242203 | DC | Chemical Reaction Engineering - II | 20 | 20 | 30 | 30 | - | - | 100 | 2 | 1 | 11: | 3 | Face to Face | MCQ | 2 Hrs |
| 4. | 17242204 | DC | Computational Methods in Chemical Engineering | 20 | 20 | 30 | 30 | - | - | 100 | 2 | 1 | 1.7 | 3 | Face to Face | PP | 2 Hrs |
| 5. | 17242205 | DC | Process Engineering & Costing | 20 | 20 | 30 | 30 | - | - | 100 | 3 | | 1 | 3 | Face to Face | MCQ | 2 Hrs |
| 6. | 17242206 | DLC | Mass Transfer Operations Lab | - | ı | - | - | 70 | 30 | 100 | | 1 | 2 | 1 | Experimental | AO | |
| 7. | 17242207 | DLC | Process Control Lab | - | - | - | - | 70 | 30 | 100 | | 1 | 2 | 1 | Experimental | AO | |
| 8. | 17242208 | DLC | Reaction Engineering Lab | - | - | - | - | 70 | 30 | 100 | | - | 2 | 1 | Experimental | AO | |
| 9. | 17242209 | SP | Semester Proficiency ^{\$} | - | 1 | - | - | 50 | - | 50 | | | 2 | 1 | Face to Face | SO | |
| 10. | 17242210 | PBL | Macro Project-II [#] | - | - | - | - | 70 | 30 | 100 | 1 - 1 - 1 | | 2 | 1 | Experiential | SO | - 1 - 1 - 1 - 1 |
| 11. | 17242211 | PC | Professional Certification | - | - | - | - | 50 | - | 50 | . [- [. | 1.34 | 2 | 1 | Blended | SO | 0.03-0.00 |
| 12. | NECXXXXX | NEC | Novel Engaging Course (Activity Based Learning) | - | 1 | - | - | 50 | - | 50 | | . 1 | 1. | 1 | Interactive | SO | |
| 13. | SIP3XXXX | SIP | Skill Internship Program | - | - | - | - | 60 | - | 60 | | | 1.2. | 2** | Experiential | SO | |
| | | | Total | 100 | 100 | 150 | 150 | 490 | 120 | 1110 | 11 | 05 | 12 | 24 | - | - | - |
| 14. | 17242212 | MAC | Project Management, Economics & Financing | 20 | 20 | 30 | 30 | - | - | 100 | 2 | | 1.4 | GRADE | Blended | MCQ | 1.5 Hrs |
| 15. | 17242213 | MWS | Mandatory Workshop on Computer Vision at Depart | tment Level | (Duration: Tw | o Days) | | | | | | | | GRADE | Interactive | MCQ | |
| 16. | 17242214 | MWS | Mandatory Workshop on Life Skills at Department | | | | | <u> </u> | | | | <u> </u> | | GRADE | Interactive | MCQ | |

Summer Semester of six-eight weeks duration will be conducted for makeup of previous semester examinations.

Additional Course for Honours or Minor Degree: Permitted to opt for maximum two additional courses for the award of Honours or Minor Degree

MCQ: Multiple Choice Question AO: Assignment + Oral

PP: Pen Paper **SO:** Submission + Oral

OB: Open Book

^{**} These credits will be transferred from Skill Internship Project.

| | PC | | BSC | ESC | DC | DE | SPC | oc | DLC | NEC | SP | S. | IP | SLP | PDC | PBL | MAC | MWS | |
|-----|--------|-----------|-----------------|----------|-----------|------------|--------------|-------|-------------|------|-----|--------|-------------------|-----------|---------|------|--------|-------------|-----|
| | 1 | | .0 | . 0 | 5, | 0 | 0 | 0 | | 1 | 1 1 | | 1 | 0 | 0 | 1 | 1 | 2 | |
| | | | | | Mode of L | earning | | | | | | | Mode o | of Examin | ation | | | | |
| | Theory | | Proficiency | y NE(| Cer | tification | | Lab | | | 1 | Theory | | NE(| C | Lab | | Total Credi | ita |
| | e to o | Online | Face to Face | Interact | ive B | lended | | | Experimenta | ı PP | AO | MCQ | ОВ | so | so | | AO | Total Credi | its |
| 1 | 5 | • • • • • | 1 | . 1 | | 1 | . | 3 | | 6 | | 9 | · · · · · · · · · | 1 | 4 | | 4 | 24 | |
| 62. | 5% | | 4.17% | 4.17% | . 4 | 1.17% | | 12.5% | 12.5% | 50% | | 37.5% | • | 4.17 | % 16.67 | 7% 2 | 29.17% | Credits % | 0 |

Semester Proficiency—includes the weightage towards ability/ skill/ competency/knowledge level/expertise attained etc. in the semester courses

^{*}Macro Project-II will be presented and evaluated through an interdisciplinary project evaluation committee.



(Deemed University)





NAAC Accredited with A++ Grade

Department of Chemical Engineering Scheme of Evaluation

B. Tech. V Semester (Chemical Engineering)

(for batch admitted in academic session 2024-25

| | | | | | | M | laximum N | Aarks Allot | ted | | | | Contact I | Iours | | | | |
|--------|----------------|------------------|-----------------------------------|--------------------------|---------------------------|---------------------|--------------|--------------------------|-------------|---------------|------------|----------------|------------|-----------|------------------|----------------|-------------|---|
| | | | | | Theory | Block | | Practical | Block | MO | OCs | | per we | ek | | Mode | Mode | Duration |
| S. No. | Course Code | Category Code | Course Name | Conti | nuous Eval | uation | Major | Continuous Evaluation | Major | | | Total Marks | | | Total Credits | of Learning | Of Major | of Major |
| | | | | Minor Evaluation I | Minor Evaluation II | Quiz/ Assignment | Evaluation | Lab Work & Sessional | Evaluation | Assignment | Exam | | L | P | - | | Exam. | |
| 1. | 17243101 | DC | Process Modeling & Simulation | 20 | 20 | 30 | 30 | - | - | - | - | 100 | 2 -1 | - : - : - | 3 | Face to Face | MCQ | 2 Hrs |
| 2. | 17243102 | DC | Process Equipment Design | 20 | 20 | 30 | 30 | - | - | - | - | 100 | 2 1 | | 3 | Face to Face | OB | 2 Hrs |
| 3. | 17243103 | DC | Data Science | 20 | 20 | 30 | 30 | - | - | - | 1 | 100 | 2 1 | | 3 | Face to Face | MCQ | 2Hrs |
| 4. | 172431XX | DE | Departmental Elective* (DE-1) | - | - | - | - | - | - | 25 | 75 | 100 | 3 | | 3 | Online | MCQ | 3 Hrs |
| 5. | 172431XX | SPC | Specialization Course (SPC-1) | 20 | 20 | 30 | 30 | - | - | - | 1 | 100 | 2 1 | | 3 | Face to Face | PP | 2 Hrs |
| 6. | 17243104 | DLC | Modeling & Simulation Lab | - | - | - | - | 70 | 30 | - | - | 100 | | 2 | 1 | Experimental | AO | |
| 7. | 17243105 | DLC | Data Science Lab | - | - | - | - | 70 | 30 | - | - | 100 | | 2 | 1 | Experimental | AO | - : - : - : - : - : - : - : - : - : - : |
| 8. | 17243106 | SP | Semester Proficiency [§] | - | - | - | - | 50 | - | - | - | 50 | | 2 | 1 | Face to Face | SO | |
| 9. | 17243107 | PBL | Cornerstone Project | - | - | - | - | 70 | 30 | - | ı | 100 | 10.50 | 4 | 2 | Experiential | SO | - [- [- [- [- [- [- [- [- [- [|
| | | Т | otal | 80 | 80 | 120 | 120 | 260 | 90 | 25 | 75 | 850 | 11 04 | 10 | 20 | - | - | - |
| 10. | 17243108 | MAC | Supply Chain Management | 20 | 20 | 30 | 30 | - | - | | | 100 | 2 - | : | GRADE | Blended | MCQ | 1.5 Hrs |
| 11. | 17243109 | MWS | Mandatory Workshop on Blocke | hainat Depai | rtment Level | (Duration: T | Γwo Days) | | | | | | | | GRADE | Interactive | MCQ | |
| | | | Additional Course for Ho | nours or M | inor Degree | e: Permitted | d to opt for | maximum tw | o additiona | al courses fo | r the awar | d of Hor | nours or N | linor l | Degree | | | |

Semester Proficiency—includes the weightage towards ability/ skill/ competency/knowledge level/expertise attained etc. in the semester courses

MCQ: Multiple Choice Question AO: Assignment + Oral

PP: Pen Paper **SO:** Submission + Oral

OB: Open Book

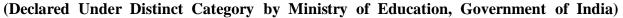
* Course run through SWAYAM/NPTEL/ MOOC Learning Based Platform

| HSMC | BSC | ESC | DC | DE | SPC | OC | DLC | NEC | SP | SIP | SLP | PDC | PBL | MAC | MWS |
|-------|-----|-----|----|----|-----|----|-----|-----|----|-----|-----|-------|-----|-----|-----|
| 0 | 0 | 0 | 3 | 1 | 1 | 0 | 2 | 0 | 1 | 0 | 0 | 0 - 0 | 1 | 1 | 1 |

| | | Mode o | of Learning | | | | | Mode of I | Examination | | | |
|-----------------|---------------------------------------|--------------|-------------|--------------|--------------|-----|---------------------------------------|-----------|-------------|-----|-----|---------------|
| Theo | ory | Proficiency | | Lab | | | Theor | ·y | | I | Lab | Total Credits |
| Face to Face | Online | Face to Face | Blended | Experiential | Experimental | PP | AO | MCQ | ОВ | so | AO | Total Credits |
| 15 | · · · · · · · · · · · · · · · · · · · | 1 | | 2 | 2 | 3 | · · · · · · · · · · · · · · · · · · · | 9 | 3 | 3 | 2 | 20 |
| 75% | | 5% | | 10% | 10% | 15% | · · · · · · · · · · · · · · · · · · · | 45% | 15% | 15% | 10% | Credits % |



(Deemed University)





NAAC Accredited with A++ Grade

Department of Chemical Engineering Scheme of Evaluation

B. Tech. VI Semester (Chemical Engineering)

for batch admitted in academic session 2024-25

| | | | | | Ma | aximum M | larks Allotte | ed | | | | Coı | ıtact I | Hours | | | | |
|----------------|--|---|-------------------------------------|---------------------------|---|---------------|--------------------------|-------------|-------------|-------------|----------------|-------------|---|---|---|--|--|---|
| | | | | Theory | Block | | Practical | Block | MO | OCs | | I | er we | ek | | | Mode | |
| Course Code | Category Code | Course Name | Cont | inuous Evalu | ation | M-: | Continuous Evaluation | M-: | | | Total Marks | | | | Total Credits | of | Of Major | Duration of Major Exam, |
| | | | Minor Evaluation I | Minor Evaluation II | Quiz/ Assignment | Evaluation | Lab Work & Sessional | | Assignment | Exam | | L | Т | P | | Learning | Exam. | Exam. |
| 17243201 | DC | Transport Phenomena | 20 | 20 | 30 | 30 | - | - | - | - | 100 | 2 | 1 -1 | - : - : - | 3 | Face to Face | MCQ | 2 Hrs |
| 17243202 | DC | Artificial Intelligence & Machine Learning | 20 | 20 | 30 | 30 | - | - | - | - | 100 | 2 | 1 | | 3 | Face to Face | MCQ | 2Hrs |
| 172432XX | DE | Departmental Elective* (DE-2) | - | - | - | - | - | - | 25 | 75 | 100 | 3 | 1 | - 1 - 1 - | 3 | Online | MCQ | 3 Hrs |
| 172432XX | OC | Open Category Course (OC-1) | 20 | 20 | 30 | 30 | - | - | - | - | 100 | 2 | 1 | 11.5 | 3 | Face to Face | PP | 2 Hrs |
| 172432XX | SPC | Specialization Course (SPC-2) | 20 | 20 | 30 | 30 | - | - | - | - | 100 | 3 | - 1- 1 | : : | 3 | Face to Face | PP | 2 Hrs |
| 17243203 | DLC | Process Computation & Calculations Lab | - | - | - | - | 70 | 30 | - | - | 100 | | - :- :- | 2 | 1 | Experimental | AO | |
| 17243204 | DLC | Artificial Intelligence & Machine Learning Lab | 1 | - | - | - | 70 | 30 | - | - | 100 | | | 2 | 1 | Experimental | AO | |
| 17243205 | SP | Semester Proficiency ^{\$} | - | - | - | - | 50 | - | - | - | 50 | 1.15 | 1.4 | 2 | 1 | Face to Face | SO | |
| 17243206 | PBL | Capstone Project | 1 | - | - | - | 70 | 30 | - | - | 100 | 1.4 | 13 | 4 | 2 | Experiential | SO | : . : . . : . : . : . |
| | Т | otal | 80 | 80 | 120 | 120 | 260 | 90 | 25 | 75 | 850 | 12 | 03 | 10 | 20 | - | - | - |
| 17243207 | MAC | Disaster Management | 20 | 20 | 30 | 30 | - | - | - | - | 100 | 2 | | | GRADE | Blended | MCQ | 1.5 Hrs |
| 17243208 | MWS | Mandatory Workshop on Intellec | tual Propert | y Rights at De | partment Le | vel (Duration | n: Two Days) | | | | | | | | GRADE | Interactive | MCQ | |
| | 17243201 17243202 172432XX 172432XX 172432XX 17243203 17243204 17243205 17243206 | Code Code 17243201 DC 17243202 DC 172432XX DE 172432XX OC 172432XX SPC 17243203 DLC 17243204 DLC 17243205 SP 17243206 PBL T 17243207 MAC | 17243201 DC Transport Phenomena | Code | Course Code Category Code Course Name Continuous Evaluation Evaluation II 17243201 DC Transport Phenomena 20 20 17243202 DC Artificial Intelligence & Machine Learning 20 20 172432XX DE Departmental Elective* (DE-2) - - 172432XX OC Open Category Course (OC-1) 20 20 172432XX SPC Specialization Course (SPC-2) 20 20 17243203 DLC Process Computation & Calculations Lab - - 17243204 DLC Artificial Intelligence & Machine Learning Lab - - 17243205 SP Semester Proficiency - - 17243206 PBL Capstone Project - - Total 80 80 17243207 MAC Disaster Management 20 20 | Course Code | Course Code | Course Code | Course Code | Course Code | Course Code | Course Code | Course Code Category Code Course Name Course Name Continuous Evaluation Minor Evaluation Minor Evaluation Minor Evaluation Major Evaluation Major Evaluation Major Evaluation Major Evaluation Major Evaluation Major Evaluation Lab Work & Sessional Continuous Evaluation Continuous Continuous Continuous Evaluation Continuous Continuous | Course Code Category Code Course Name Continuous Evaluation Minor Evaluation | Course Code Category Code Course Name Continuous Evaluation Minor Evaluation Major Evaluation | Course Code Category Course Name Continuous Evaluation Continuous Evaluation Minor Evaluation Mi | Course Category Code Category Code Course Name C | $ \begin{array}{ c c c c c c c c c c c c c c c c c c c$ |

Skill Enhancement Program/Research Internship/On Job Training for Four weeks duration

Summer Semester of six-eight weeks duration will be conducted for makeup of previous semester examination.

Additional Course for Honours or Minor Degree: Permitted to opt for maximum two additional courses for the award of Honours or Minor Degree

Semester Proficiency—includes the weightage towards ability/ skill/ competency/knowledge level/expertise attained etc. in the semester courses

MCQ: Multiple Choice Question AO: Assignment + Oral

PP: Pen Paper **SO:** Submission + Oral

OB: Open Book

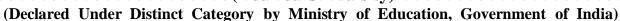
* Course run through SWAYAM/NPTEL/ MOOC Learning Based Platform.

| - [| HSMC | BSC | ESC | DC | DE | SPC | OC | DLC | NEC | SP | SIP | SLP | PDC | PBL | MAC | MWS |
|-----|------|-----|-----|----|----|-----|----|-----|-----|----|-----|-----|-----|-----|-----|-----|
| | 0 | | 0 | 2 | 1 | 1 | 1 | 2 | 0 | 1 | 0 | | 0 | 1 | 1 | 1 |

| | | Mode | of Learning | | | | | Mode of E | xamination | | | |
|-----------------|--------|--------------|--------------|--------------|--------------|-----|--------------|-----------|--------------|-----|-----|---------------|
| The | ory | Proficiency | | Lab | | | Theor | у | | I | ab | Total Credits |
| Face to Face | Online | Face to Face | Blended | Experiential | Experimental | PP | AO | MCQ | OB | so | AO | Total Credits |
| 12 | 3 - 3 | 1 | . | 2 | 2 | 6 | - | 6 | . | 3 | 2 | 20 |
| 60% | 15% | 5% | | 10% | 10% | 30% | . | 30% | | 15% | 10% | Credits % |



(Deemed University)





NAAC Accredited with A++ Grade

Department of Chemical Engineering Scheme of Evaluation

B. Tech. VII Semester (Chemical Engineering)

(for batch admitted in academic session 2024-25

| | | | | | | Ma | aximum Ma | rks Allotted | | | | | Con | tact H | ours | | | | |
|-------|----------------|------------------|--|--------------------------|---------------------------|---------------------|--------------|--------------------------|--------------|---------------|---------|----------------|----------|--------|-------|------------------|------------------------|-------------|-------------------------------|
| | | | -1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1 | | Theory | Block | | Practical | Block | MO(| OCs | 1 - 1 - 1 - 1 | p | er wee | k . | | | Mode | |
| S. No | Course Code | Category Code | Course Name | Cont | inuous Evalu | ation | Major | Continuous Evaluation | Major | | | Total Marks | | | | Total Credits | Mode of Learning | Of Major | Duration of Major Exam. |
| | | | | Minor Evaluation I | Minor Evaluation II | Quiz/ Assignment | Evaluation | Lab Work & Sessional | Evaluation | Assignment | Exam | | . L. | T | P | | | Exam. | L'Adin. |
| 1. | 172441XX | DE | Departmental Elective # (DE-3) | 20 | 20 | 30 | 30 | - | - | - | - | 100 | 3 | | | 3 | Blended | PP | 2 Hrs |
| 2. | 172441XX | DE | Departmental Elective* (DE-4) | - | - | - | - | - | - | 25 | 75 | 100 | 3 | | | 3 | Online | MCQ | 3 Hrs |
| 3. | 172441XX | OC | Open Category Course (OC-2) | - | - | - | - | - | - | 25 | 75 | 100 | 2 | 1 | | 3 | Online | MCQ | 3 Hrs |
| 4. | 172441XX | SPC | Specialization Course # (SPC-3) | 20 | 20 | 30 | 30 | - | - | - | - | 100 | 2 | . 1. | | 3 | Blended | MCQ | 2Hrs |
| 5. | 17244101 | SEP | Skill Enhancement Program/Research Internship/ On Job Training | - | - | - | - | - | 50 | - | - | 50 | | | 2 | 1 | Experiential | SO | |
| 6. | 17244102 | DLC | Creative Problem Solving | - | - | - | - | - | 50 | - | - | 100 | | 1.1. | 2 | 1 | Experiential | SO | |
| | | | Total | 60 | 60 | 90 | 90 | - | 100 | 25 | 75 | 550 | 10 | 02 | 04 | 14 | - | - | - |
| | | | Additional Course for Ho | nours or Mi | nor Degree: | Permitted t | o opt for ma | ximum two ac | dditional co | ourses for th | e award | of Hono | urs o | r Min | or De | gree | | | |

Semester Proficiency—includes the weightage towards ability/ skill/ competency/knowledge level/expertise attained etc. in the semester courses.

MCQ: Multiple Choice Question **AO:** Assignment + Oral

PP: Pen Paper **SO:** Submission + Oral

OB: Open Book

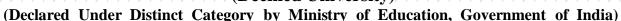
- * Course run through SWAYAM/NPTEL/ MOOC Learning Based Platform.
- # Course run through MITS MOOCs

| HSMC | BSC | ESC | DC | DE | SPC | OC | DLC | NEC | SP | SIP | SLP | PDC | PBL | MAC | MWS | |
|-------|-----|-------|----|----|-----|----|-----|-----|----|-----|-----|-----|-----|-------|-----|--|
| 0 | | 0 - 1 | 0 | 2 | 1 | 1 | 1 | 0 | 1 | | 0 | 0 | 0 | 0 - 0 | | |

| | | | | Mode of 1 | Learning | | | | Mo | de of Examir | nation | | |
|-------|--------------------------------------|--------|---------|--------------|--------------|--------------|---------------------------------------|--------|---------------------------------------|--------------|-------------------|--------|---------------|
| . [| | Theory | | SEP | | Lab | | | Theo | ry | | Lab | Total Credits |
| | Face to Face | Online | Blended | Face to Face | Blended | Experiential | Experimental | PP | AO | MCQ | OB | so | Total Credits |
| ٠. [| . · · · · . . · · · · · · | 9 6 | | . | . | 2 | | 6 | | 6 | · · · · • · · · · | 2 | 14 |
| : - [| · . · . · . · . · . · | 42.86% | 42.86% | | | 14.29% | · · · · · · · · · · · · · · · · · · · | 42.86% | · · · · · · · · · · · · · · · · · · · | 42.86% | - | 14.29% | Credits % |



(Deemed University)





NAAC Accredited with A++ Grade

Department of Chemical Engineering

Scheme of Evaluation

B. Tech. VIII Semester (Chemical Engineering)

(for batch admitted in academic session 2024-25,

| | | | | | | Theory | | imum Ma | rks Allotto | | MOO | Ca | | | itact F er we | | | | Mode | |
|---|-----|----------------|------------------|---|--------------------------|---------------------------|---------------------|------------|--------------------------|---------------------|------------|------|----------------|----|------------------|-----------------|------------------|--------------|-------|----------|
| S | No. | Course Code | Category Code | Course Name | Conti | nuous Eval | | | | | MOO | CS | Total Marks | | | | Total Credits | Mode of | Of | of Major |
| | | | | | Minor Evaluation I | Minor Evaluation II | Quiz/ Assignment | Evaluation | Continuous Evaluation | Major Evaluation | Assignment | Exam | | ·L | ·T | P | | Learning | Exam. | Exam. |
| | 1. | 172442XX | DE | Departmental Elective* (DE-5) | - | - | - | - | - | - | 25 | 75 | 100 | 3 | | - : | 3 | Online | MCQ | 3 Hrs |
| | 2. | 172442XX | ОС | Open Category Course* (OC-3) | - | - | - | - | - | - | 25 | 75 | 100 | 3 | . ; - ; . | : : <u>-</u> :: | 3 | Online | MCQ | 3 Hrs |
| | 3. | 17244201 | PBL | Industry Internship/Research Internship/ Innovation & Start-up | - | 1 | - | - | 280 | 120 | - | - 1 | 400 | | | 20 | 10 | Experiential | SO | |
| | 4. | 17244202 | PDC | Professional Development## | - | 1 | - | - | - | 50 | - | 1 | 50 | | | 4 | 2 | Interactive | SO | |
| | | | | Total | - | - | - | - | 280 | 170 | 50 | 150 | 650 | 06 | • | 24 | 18 | - | - | - |

Summer Semester of six-eight weeks duration will be conducted to complete any backlog courses.

Additional Course for Honours or Minor Degree: Permitted to opt for maximum two additional courses for the award of Honours or Minor Degree

MCQ: Multiple Choice Question AO: Assignment + Oral PP: F

PP: Pen Paper SO: Submission + Oral

OB: Open Book

^{##} Evaluation will be based on participation/laurels brought by the students to the institution in national/state level technical and other events during the complete tenure of the UG programme (participation in professional chapter activities, club activities, cultural events, sports, personality development activities, collaborative events, institute/department committees, etc.)

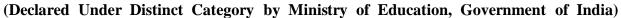
| ٠. | HSMC | BSC | ESC | DC | DE | SPC | OC | DLC | NEC | SP | SIP | SLP | PDC | PBL | MAC | MWS |
|----|------|-----|-----|----|----|-----|----|-----|-----|----|-----|-----|-----|-----|-----|-----|
| | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | | 0 | 0 | 1 | 1 | | 0 |

| | | | Mode | of Learning | | | | Mo | de of Examir | nation | | |
|-----|-----------------|--------|-----------------------------|---------------|--------------|---------------------------|--------------|-----------------------------|--------------|----------------------------------|--------|---------------|
| | The | ory | Professional Development | | Lab | | | Theor | y | | Lab | Total Credits |
| | Face to Face | Online | Interactive | Blended | Experiential | Experimental | PP | AO | MCQ | ОВ | so | |
| - " | | 6 | 2 | · · · · · · · | 10 | | | | 6 | · · · · · · | 12 | 18 |
| ٠. | 1,1,1,2,1,1,1, | 33.33% | 11.11% | 1.1.1.2 | 55.56% | 101010 2 01010 | 1.1.1.4.1.1. | nanana <mark>-</mark> anana | 33.33% | . 1 . 1 . - . 1 . 1 . | 66.67% | Credits % |

^{*}Course run through SWAYAM/NPTEL/ MOOC Learning Based Platform



(Deemed University)





NAAC Accredited with A++ Grade

Department of Chemical Engineering

Proposed List of Open Category (OC) & Departmental Elective (DE) Courses:

Open Category Courses

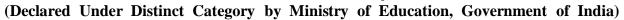
- 1. Fuels and Combustion
- 2. Industrial Safety & Hazards
- 3. Rocket Propulsion & Explosives
- 4. Energy Storage Systems

Departmental Electives

- 1. Optimization Techniques
- 2. Equilibrium Staged Operations
- 3. Multi-Component Distillation
- 4. Fluidization Engineering
- 5. Hydrogen Fuel Cells: Technology & Applications in Vehicles
- 6. Fundamentals of CFD
- 7. Fuel Cells & Flow Batteries
- 8. Electrochemical Conversion & Storage Devices
- 9. Pollution Control in Process Industries
- 10.CO₂ Capture & Utilization
- 11. Micro-Chemical Systems
- 12. Hydrogen Energy: Production, Handling, Storage & Transportation



(Deemed University)





NAAC Accredited with A++ Grade

| | | | nemicai Engineering | | | |
|--------------------|------------|----------------------------------|--|------------------|-------------------|--------|
| | | Specialization i | n Nanotechnology | | | |
| Description | | nanotechnolog characterizatio | will help in developing thorough under y, its applications, synthesis of Nan n methods. It will also impart technical to scaled systems, lab on chip tech opplications | nomater knowh | ials & ow rela | their |
| Courses a required | nd Credits | 3 courses and 9 | credits | | | |
| Course (| Category | Course ID | Course Title | Conta week | ct Hou | rs per |
| | | | | L | T | P |
| SPC-1 | (Core) | 172431XX | Nanomaterials & Thin films | 3 | - | - |
| SPC-2 | (Core) | 172432XX | Synthesis & Characterization of Nanomaterials | 3 | - | - |
| SPC-3 | Elective-1 | 172441XX | Micro & Nano Fluidics | 2 | 1 | - |
| | Elective-2 | 172441XX | Carbon Nanostructures | 2 | 1 | - |









NAAC Accredited with A++ Grade

| | | _ | armaceutical Technology | | | |
|-------------|------------------|------------------------------------|---|----------------|------------------------|-------------------|
| Description | | and ways to ad of tablets, caps | will help in developing knowledge about of minister them. It also focuses on manufacturales & liquid dosage. In addition, it covers an body, drug delivery and important ces. | re of dru | igs in these see of ac | e form tion of |
| Courses and | Credits required | 3 courses and 9 | credits | | | |
| Course | Category | Course ID | Course Title | Contac week | ct Hou | rs per |
| ana | 1 (6 | 150 101717 | | L | T | P |
| SPC- | 1 (Core) | 172431XX | Pharmaceutical Formulation Technology | 3 | - | - |
| SPC- | 2 (Core) | 172432XX | Biopharmaceutics & Pharmacokinetics | 3 | - | - |
| SPC-3 | Elective-1 | 172441XX | Drug Delivery Technology | 2 | 1 | - |
| Si C 3 | Elective-2 | 172441XX | Pharmaceutical Biotechnology | 2 | 1 | - |



(Deemed University)





NAAC Accredited with A++ Grade

| | | | Oil & Natural Gas | | | | |
|------------------|-------------|---|--|------------------------|---|---|--|
| Description | | This module will help in developing understanding & skills related to petroleum production & processing techniques. It also discusses about the natural gas reserves, its different forms and production. In addition, it imparts in depth knowledge about the Enhanced Oil Recovery methods employed to increase the crude oil production. | | | | | |
| Courses required | and Credits | 3 courses and 9 | credits | | | | |
| Course Category | | Course ID | Course Title | Contact Hours per week | | | |
| | | | | L | T | P | |
| SPC-1 (Core) | | 172431XX | Petroleum Exploration & Production Engineering | 3 | - | - | |
| SPC-2 (Core) | | 172432XX | Petroleum Processing Technology | 3 | - | - | |
| SPC-3 | Elective-1 | 172441XX | Natural Gas Engineering | 2 | 1 | - | |
| Si C 3 | Elective-2 | 172441XX | Enhanced Oil Recovery Methods | 2 | 1 | - | |



(Deemed University)





NAAC Accredited with A++ Grade

| | | Specialization i | n Material Science | | | | |
|---------------------|-------------|--|--|---|-----------------------------------|---------------|--|
| Description | | different engi characterization & polymers. In | will help in developing knowledge neering materials, their propert n methods employed. It also focus n addition, it also gives deep unders h human tissues & organs for variou | ies and ap es on mater tanding abou | oplication ial com at bioma | ons & posites | |
| Courses required | and Credits | 3 courses and 9 | O credits | | | | |
| Course Category | | Course ID | Course Title | week | Contact Hours per week | | |
| SPC-1 (Core) | | 172431XX | Engineering Materials | L 3 | T | P | |
| SPC-1 (Cole) | | 112731717 | Engineering waterials | | | | |
| SPC-2 (Core) | | 172432XX | Materials Characterization | 3 | - | - | |
| SPC-3 | Elective-1 | 172441XX | Composites & Polymers | 2 | 1 | - | |
| SPC-3 | Licetive 1 | | | | | | |



(Deemed University)





NAAC Accredited with A++ Grade

| Specialization in Cosmetic Technology | | | | | | | |
|---------------------------------------|-------------|---|--|---------------------------------|----------------------|------------------|--|
| Description | | cosmetic form enables one t cosmetics. In a | will help in familiarizing with the funda- nulation and related process engineer o understand the microbiological fac- addition, the module also focuses on pac- & assurance in the cosmetic industry. | ring as _l tors as | pects. I sociated | t also d with | |
| Courses a required | and Credits | 3 courses and 9 | 9 credits | | | | |
| Course Category | | Course ID | Course Title | Contact Hours per week | | | |
| | | | | L | T | P | |
| SPC-1 (Core) | | 172431XX | Cosmetic Formulation Science and Process Engineering | 3 | - | - | |
| SPC-2 (Core) | | 172432XX | Cosmetic Microbiology | 3 | - | - | |
| SPC-3 | Elective-1 | 172441XX | Packaging and Preservation of Cosmetics | 2 | 1 | - | |
| | Elective-2 | 172441XX | Quality Control and Assurance of Cosmetics | 2 | 1 | - | |



(Deemed University)





NAAC Accredited with A++ Grade

| | - | Specialization in | n Food Technology | | | |
|------------------|-------------|-------------------------------|--|-------------------------------|-----------|------------------|
| Description | | & preservation operations and | will help in getting fundamental knowle of food. It also gives thorough understal separation processes involved in the so emphasizes on analysis, quality con | anding one food | of the th | nermal ry. In |
| Courses required | and Credits | 3 courses and 9 | credits | | | |
| Course Category | | Course ID | Course Title | Contact Hours per week L T P | | |
| SPC- | 1 (Core) | 172431XX | Principles of Food Processing & Preservation | 3 | - | - |
| SPC-2 (Core) | | 172432XX | Thermal Operations & Separation Techniques in Food Processing | 3 | - | - |
| SPC-3 | Elective-1 | 172441XX | Food Analysis & Quality Control | 2 | 1 | - |
| | Elective-2 | 172441XX | Food Packaging Technology | 2 | 1 | _ |