

SEMESTER WISE COURSE STRUCTURE & EVALUATION SCHEME
B. TECH. BIOCHEMICAL ENGINEERING

SEMESTER I

| Sr. No. | Course Type | Subject Code | Course Title | Credits (LTP) | Sessional Marks | | | | ESE | Total |
|---------------------|-----------------|--------------|---|---------------|-----------------|----|-----|-------|-----|-------|
| | | | | | MSE | TA | Lab | Total | | |
| 1. | BSC | BCY 101 | Engineering Chemistry | 4 (3-0-2) | 15 | 20 | 15 | 50 | 50 | 100 |
| 2. | BSC | BMA 101 | Mathematics I | 4 (3-1-0) | 30 | 20 | - | 50 | 50 | 100 |
| 3. | ESC | EET 101 | Electronics & Instrumentation Engineering | 3 (3-0-0) | 30 | 20 | - | 50 | 50 | 100 |
| 4. | ESC | ECE 101 | Engineering Graphics | 3 (0-0-6) | 30 | 20 | - | 50 | 50 | 100 |
| 5. | ESC | ECS 101 | Computer Concepts & Programming | 4 (3-0-2) | 15 | 20 | 15 | 50 | 50 | 100 |
| 6. | ESC | EWS 101 | Workshop Practice | 2 (0-0-4) | - | 20 | 30 | 50 | 50 | 100 |
| 7. | MC (Non-credit) | ECE 103 | Environment & Ecology | 2 (2-0-0) | 30 | 20 | - | 50 | 50 | 100 |
| Total Credit | | | | | 20 | | | | | |

SEMESTER II

| Sr. No. | Course Type | Subject Code | Course Title | Credits (LTP) | Sessional Marks | | | | ESE | Total |
|---------------------|-------------|--------------|--------------------------------|---------------|-----------------|----|-----|-------|-----|-------|
| | | | | | MSE | TA | Lab | Total | | |
| 1. | BSC | BPH 102 | Physics | 4 (3-0-2) | 15 | 20 | 15 | 50 | 50 | 100 |
| 2. | BSC | BMA 102 | Mathematics II | 4 (3-1-0) | 30 | 20 | - | 50 | 50 | 100 |
| 3. | ESC | EEE 102 | Electrical Engineering | 4 (3-0-2) | 15 | 20 | 15 | 50 | 50 | 100 |
| 4. | ESC | EME 102 | Engineering Mechanics | 3 (3-0-0) | 30 | 20 | - | 50 | 50 | 100 |
| 5. | HSMC | HHS 102 | English Language & Composition | 2 (2-0-0) | 30 | 20 | - | 50 | 50 | 100 |
| 6. | HSMC | HHS 104 | Professional Communication | 3 (2-0-2) | 15 | 20 | 15 | 50 | 50 | 100 |
| Total Credit | | | | | 20 | | | | | |

SEMESTER III

| Sr. No. | Course Type | Subject Code | Course Title | Credits | Sessional Marks | | | | ESE | Total |
|---------------------|-----------------|--------------|--|-----------|-----------------|----|-----|-------|-----|-------|
| | | | | | MS E | TA | Lab | Total | | |
| 1. | BSC | BMA 201 | Mathematics III | 4 (3-1-0) | 30 | 20 | - | 50 | 50 | 100 |
| 2. | ESC | TCH 201 | Materials & Energy Balance | 4 (3-1-0) | 30 | 20 | - | 50 | 50 | 100 |
| 3. | PCC | TCH 211 | Fluid Mechanics and Mechanical Operation | 5 (3-1-3) | 15 | 20 | 15 | 50 | 50 | 100 |
| 4. | PCC | TBE 201 | Microbiology | 6 (3-1-6) | 15 | 20 | 15 | 50 | 50 | 100 |
| 5. | HSMC | HHS 203 | Organisational Behaviour | 3 (3-0-0) | 30 | 20 | - | 50 | 50 | 100 |
| 6. | MC (Non-credit) | ECS 201 | Cyber Security | 2 (2-0-0) | 30 | 20 | | 50 | 50 | 100 |
| Total Credit | | | | | 22 | | | | | |

SEMESTER IV

| Sr. No. | Course Type | Subject Code | Course Title | Credits | Sessional Marks | | | | ESE | Total |
|---------------------|-----------------|--------------|-------------------------------------|-----------|-----------------|----|-----|-------|-----|-------|
| | | | | | MSE | TA | Lab | Total | | |
| 1. | BSC | BCY 202 | Modern Analytical Techniques | 4 (3-0-2) | 15 | 20 | 15 | 50 | 50 | 100 |
| 2. | BSC | BMA 202 | Computer Oriented Numerical Methods | 4 (3-0-2) | 15 | 20 | 15 | 50 | 50 | 100 |
| 3. | ESC | TCH 212 | Heat Transfer Operations | 3 (3-0-0) | 30 | 20 | - | 50 | 50 | 100 |
| 4. | PCC | TCH 214 | Chemical Engineering Thermodynamics | 3 (3-0-0) | 30 | 20 | - | 50 | 50 | 100 |
| 5. | PCC | TBE-202 | Biochemistry | 5 (3-1-3) | 15 | 20 | 15 | 50 | 50 | 100 |
| 6. | HSMC | HHS 202 | Engg Economics & Management | 3 (3-0-0) | 30 | 20 | - | 50 | 50 | 100 |
| 7. | MC (Non-credit) | HHS 206 | Indian Constitution | 2 (2-0-0) | 30 | 20 | - | 50 | 50 | 100 |
| Total Credit | | | | | 22 | | | | | |

SEMESTER V

| Sr. No. | Course Type | Subject Code | Course Title | Credits | Sessional Marks | | | | ESE | Total |
|---------------------|------------------|--------------|---|-----------|-----------------|----|-----|-------|-----|-------|
| | | | | | MSE | TA | Lab | Total | | |
| 1. | PCC | TCH 315 | Mass Transfer Operations | 4 (3-1-0) | 30 | 20 | - | 50 | 50 | 100 |
| 2. | PCC | TCH 317 | Chemical Reaction Engineering | 4 (3-1-0) | 30 | 20 | - | 50 | 50 | 100 |
| 3. | PCC | TBE 301 | Molecular Biology & Genetic Engineering | 3 (3-0-0) | 30 | 20 | - | 50 | 50 | 100 |
| 4. | PCC | TBE 303 | Bioprocess Engineering | 5 (3-0-6) | 15 | 20 | 15 | 50 | 50 | 100 |
| 5. | OEC (Mechanical) | EME 325 | Energy Conversion Systems and Devices | 3 (3-0-0) | 30 | 20 | - | 50 | 50 | 100 |
| 6. | OEC (Humanities) | HHS 341 | Entrepreneurship Development | 3 (3-0-0) | 30 | 20 | - | 50 | 50 | 100 |
| Total Credit | | | | | 22 | | | | | |

SEMESTER VI

| Sr. No. | Course Type | Subject Code | Course Title | Credits | Sessional Marks | | | | ESE | Total |
|---------------------|-------------|--------------|-----------------------------------|-----------|-----------------|----|-----|-------|-----|-------|
| | | | | | MSE | TA | Lab | Total | | |
| 1. | PCC | TCH 316 | Instrumentation & Process Control | 5 (3-1-3) | 15 | 20 | 15 | 50 | 50 | 100 |
| 2. | PCC | TBE- 302 | Down Stream Processing | 4 (3-1-0) | 30 | 20 | - | 50 | 50 | 100 |
| 3. | PCC | TBE- 304 | Fermentation Technology | 5 (3-0-6) | 15 | 20 | 15 | 50 | 50 | 100 |
| 4. | PCC | TBE-306 | Environmental Biotechnology | 5 (3-0-6) | 15 | 20 | 15 | 50 | 50 | 100 |
| 5. | OEC (Maths) | BMA-342 | Operation Research | 3 (3-0-0) | 30 | 20 | - | 50 | 50 | 100 |
| Total Credit | | | | | 22 | | | | | |

SEMESTER VII

| Sr. No. | Course Type | Course Title | Subject Code | Credits (LTP) | Sessional Marks | | | | ESE | Total | |
|---------------------|---------------------|--------------|---------------------------------|---------------|-----------------|----|-----|-------|-----|-------|--|
| | | | | | MSE | TA | Lab | Total | | | |
| 1. | PCC | TBE 401 | Enzyme Engineering & Technology | 4 (3-0-3) | 15 | 20 | 15 | 50 | 50 | 100 | |
| 2. | PEC | PEC-I | PEC-I | 3 (3-0-0) | 30 | 20 | - | 50 | 50 | 100 | |
| 3. | PEC | PEC-II | PEC-II | 2 (2-0-0) | 30 | 20 | - | 50 | 50 | 100 | |
| 4. | PEC | PEC-III | PEC-III | 2 (2-0-0) | 30 | 20 | - | 50 | 50 | 100 | |
| 5. | OEC | OEC-I | OEC-I | 3 (3-0-0) | 30 | 20 | - | 50 | 50 | 100 | |
| 6. | Industrial Training | TBE 461 | Industrial Training | 2 (0-0-4) | - | 50 | - | 50 | 50 | 100 | |
| 7. | Seminar | TBE 471 | Seminar | 2 (0-0-4) | - | 50 | - | 50 | 50 | 100 | |
| 8. | Project | TBE 497 | Project | 4 (0-0-8) | - | 50 | - | 50 | 50 | 100 | |
| Total Credit | | | | | 22 | | | | | | |

VIII-SEMESTER

| Sr. No. | Course Type | Subject Code | Course Title | Credits | Sessional Marks | | | | ESE | Total | |
|---------------------|-------------|--------------|--------------|-------------|-----------------|----|-----|-------|-----|-------|--|
| | | | | | MSE | TA | Lab | Total | | | |
| 1. | PEC | PEC-IV | PEC-IV | 3 (2-1-0) | 30 | 20 | - | 50 | 50 | 100 | |
| 2. | PEC | PEC-V | PEC-V | 3 (3-0-0) | 30 | 20 | - | 50 | 50 | 100 | |
| 3. | PEC | PEC-VI | PEC-VI | 3 (3-0-0) | 30 | 20 | - | 50 | 50 | 100 | |
| 4. | OEC | OEC-II | OEC-II | 3 (2-1-0) | 30 | 20 | - | 50 | 50 | 100 | |
| 5. | Project | TBE 498 | Project | 10 (0-0-20) | - | 50 | - | 50 | 50 | 100 | |
| Total Credit | | | | | 22 | | | | | | |

Total Programme Credits : 172

TBE 497 Project will have Internal Evaluation while TBE 498 Project will have External Evaluation.

Department of Bio-Chemical Engineering
(to be offered in VII & VIII Semester)

Programme Elective-I

| S. No. | Course Code | Course Name | Credits |
|--------|-------------|-------------------------------------|-----------|
| 1 | TBE 403 | Bioreactor Design | 3 (3-0-0) |
| 2 | TBE 405 | Bioprocess Modelling and Simulation | 3 (3-0-0) |

Programme Elective-II

| | | | |
|---|---------|--------------------------|-----------|
| 1 | TBE 407 | Plant Cell Biotechnology | 2 (2-0-0) |
| 2 | TBE 409 | Bioreaction Engineering | 2 (2-0-0) |

Programme Elective-III

| | | | |
|---|---------|--------------------|-----------|
| 1 | TBE 411 | Novel Bioproducts | 2 (2-0-0) |
| 2 | TBE 413 | Food Biotechnology | 2 (2-0-0) |

Programme Elective-IV

| | | | |
|---|---------|-------------------------------|-----------|
| 1 | TCH 422 | Process Modeling & Simulation | 3 (2-1-0) |
| 2 | TCH 424 | Process Equipment Design | 3 (2-1-0) |

Programme Elective-V

| | | | |
|---|---------|--|-----------|
| 1 | TBE 402 | IPR & Biosafety Regulation | 3 (3-0-0) |
| 2 | TBE 404 | Instrumentation And Control Bioprocesses | 3 (3-0-0) |

Programme Elective-VI

| | | | |
|---|---------|-----------------------------------|-----------|
| 1 | TBE 406 | Bioprocess Equipment Design | 3 (3-0-0) |
| 2 | TBE 408 | Biomaterial Science & Engineering | 3 (3-0-0) |

**SEMESTER WISE COURSE STRUCTURE & EVALUATION SCHEME
B. TECH. OIL TECHNOLOGY**

SEMESTER I

| Sr. No. | Course Type | Subject Code | Course Title | Credits (LTP) | Sessional Marks | | | | ESE | Total |
|---------------------|-----------------|--------------|---|---------------|-----------------|----|-----|-------|-----|-------|
| | | | | | MSE | TA | Lab | Total | | |
| 1. | BSC | BCY 101 | Engineering Chemistry | 4 (3-0-2) | 15 | 20 | 15 | 50 | 50 | 100 |
| 2. | BSC | BMA 101 | Mathematics I | 4 (3-1-0) | 30 | 20 | - | 50 | 50 | 100 |
| 3. | ESC | EET 101 | Electronics & Instrumentation Engineering | 3 (3-0-0) | 30 | 20 | - | 50 | 50 | 100 |
| 4. | ESC | ECE 101 | Engineering Graphics | 3 (0-0-6) | 30 | 20 | - | 50 | 50 | 100 |
| 5. | ESC | ECS 101 | Computer Concepts & Programming | 4 (3-0-2) | 15 | 20 | 15 | 50 | 50 | 100 |
| 6. | ESC | EWS 101 | Workshop Practice | 2 (0-0-4) | - | 20 | 30 | 50 | 50 | 100 |
| 7. | MC (Non-credit) | ECE 103 | Environment & Ecology | 2 (2-0-0) | 30 | 20 | - | 50 | 50 | 100 |
| Total Credit | | | | | 20 | | | | | |

SEMESTER II

| Sr. No. | Course Type | Subject Code | Course Title | Credits (LTP) | Sessional Marks | | | | ESE | Total |
|---------------------|-------------|--------------|--------------------------------|---------------|-----------------|----|-----|-------|-----|-------|
| | | | | | MSE | TA | Lab | Total | | |
| 1. | BSC | BPH 102 | Physics | 4 (3-0-2) | 15 | 20 | 15 | 50 | 50 | 100 |
| 2. | BSC | BMA 102 | Mathematics II | 4 (3-1-0) | 30 | 20 | - | 50 | 50 | 100 |
| 3. | ESC | EEE 102 | Electrical Engineering | 4 (3-0-2) | 15 | 20 | 15 | 50 | 50 | 100 |
| 4. | ESC | EME 102 | Engineering Mechanics | 3 (3-0-0) | 30 | 20 | - | 50 | 50 | 100 |
| 5. | HSMC | HHS 102 | English Language & Composition | 2 (2-0-0) | 30 | 20 | - | 50 | 50 | 100 |
| 6. | HSMC | HHS 104 | Professional Communication | 3 (2-0-2) | 15 | 20 | 15 | 50 | 50 | 100 |
| Total Credit | | | | | 20 | | | | | |

SEMESTER III

| Sr. No. | Course Type | Subject Code | Course Title | Credits | Sessional Marks | | | | ESE | Total |
|---------------------|-----------------|--------------|--|-----------|-----------------|----|-----|-------|-----|-------|
| | | | | | MSE | TA | Lab | Total | | |
| 1. | BSC | BMA 201 | Mathematics III | 4 (3-1-0) | 30 | 20 | - | 50 | 50 | 100 |
| 2. | ESC | TCH 201 | Materials & Energy Balance | 4 (3-1-0) | 30 | 20 | - | 50 | 50 | 100 |
| 3. | PCC | TCH 211 | Fluid Mechanics and Mechanical Operation | 5 (3-1-3) | 15 | 20 | 15 | 50 | 50 | 100 |
| 4. | PCC | TOT 201 | Chemistry of Oils & Allied Products | 6 (3-1-6) | 15 | 20 | 15 | 50 | 50 | 100 |
| 5. | HSMC | HHS 203 | Organisational Behaviour | 3 (3-0-0) | 30 | 20 | - | 50 | 50 | 100 |
| 6. | MC (Non-credit) | ECS 205 | Cyber Security | 2 (2-0-0) | 30 | 20 | - | 50 | 50 | 100 |
| Total Credit | | | | | 22 | | | | | |

SEMESTER IV

| Sr. No. | Course Type | Subject Code | Course Title | Credits | Sessional Marks | | | | ESE | Total |
|---------------------|-----------------|--------------|--|-----------|-----------------|----|-----|-------|-----|-------|
| | | | | | MSE | TA | Lab | Total | | |
| 1. | BSC | BCY 202 | Modern Analytical Techniques | 4 (3-0-2) | 15 | 20 | 15 | 50 | 50 | 100 |
| 2. | BSC | BMA 202 | Computer Oriented Numerical Methods | 4 (3-0-3) | 15 | 20 | 15 | 50 | 50 | 100 |
| 3. | ESC | TCH 212 | Heat Transfer Operations | 3 (3-0-0) | 30 | 20 | - | 50 | 50 | 100 |
| 4. | PCC | TCH 214 | Chemical Engineering Thermodynamics | 3 (3-0-0) | 30 | 20 | - | 50 | 50 | 100 |
| 5. | PCC | TOT 202 | Sources, Composition, Characterization of Oils, Fats & Waxes | 5 (3-1-3) | 15 | 20 | 15 | 50 | 50 | 100 |
| 6. | HSMC | HHS 202 | Engg Economics & Management | 3 (3-0-0) | 30 | 20 | - | 50 | 50 | 100 |
| 7. | MC (Non-credit) | HHS 206 | Indian Constitution | 2 (2-0-0) | 30 | 20 | - | 50 | 50 | 100 |
| Total Credit | | | | | 22 | | | | | |

SEMESTER V

| Sr. No. | Course Type | Subject Code | Course Title | Credits | Sessional Marks | | | | ESE | Total |
|---------------------|------------------|--------------|---|-----------|-----------------|----|-----|-------|-----|-------|
| | | | | | MSE | TA | Lab | Total | | |
| 1. | PCC | TCH 315 | Mass Transfer Operations | 4 (3-1-0) | 30 | 20 | - | 50 | 50 | 100 |
| 2. | PCC | TCH 317 | Chemical Reaction Engineering | 4 (3-1-0) | 30 | 20 | - | 50 | 50 | 100 |
| 3. | PCC | TOT 301 | Expression & Extraction Techniques of Oil Bearing Materials | 3 (3-0-0) | 30 | 20 | - | 50 | 50 | 100 |
| 4. | PCC | TOT 303 | Technology of Soaps & Fat Splitting | 5 (3-0-6) | 15 | 20 | 15 | 50 | 50 | 100 |
| 5. | OEC (Mechanical) | EME 325 | Energy Conversion Systems and Devices | 3 (3-0-0) | 30 | 20 | - | 50 | 50 | 100 |
| 6. | OEC (Humanities) | HHS 341 | Entrepreneurship Development | 3 (3-0-0) | 30 | 20 | - | 50 | 50 | 100 |
| Total Credit | | | | 22 | | | | | | |

SEMESTER VI

| Sr. No. | Course Type | Subject Code | Course Title | Credits | Sessional Marks | | | | ESE | Total |
|---------------------|-------------|--------------|---|-----------|-----------------|----|-----|-------|-----|-------|
| | | | | | MSE | TA | Lab | Total | | |
| 1. | PCC | TCH 316 | Instrumentation & Process Control | 5 (3-1-3) | 15 | 20 | 15 | 50 | 50 | 100 |
| 2. | PCC | TOT 302 | Refining of Oils | 4 (3-1-0) | 30 | 20 | - | 50 | 50 | 100 |
| 3. | PCC | TOT 304 | Quality Assurance of Oils & Allied Products | 5 (3-0-6) | 15 | 20 | 15 | 50 | 50 | 100 |
| 4. | PCC | TOT 306 | Essential Oils & Cosmetics | 5 (3-0-6) | 15 | 20 | 15 | 50 | 50 | 100 |
| 5. | OEC (Maths) | BMA 342 | Operation Research | 3 (3-0-0) | 30 | 20 | - | 50 | 50 | 100 |
| Total Credit | | | | 22 | | | | | | |

SEMESTER VII

| Sr. No. | Course Type | Subject Code | Course Title | Credits (LTP) | Sessional Marks | | | | ESE | Total |
|---------------------|---------------------|--------------|--------------------------------------|---------------|-----------------|----|-----|-------|-----|-------|
| | | | | | MSE | TA | Lab | Total | | |
| 1. | PCC | TOT-401 | Hydrogenation & Modification of Oils | 4 (3-0-3) | 15 | 20 | 15 | 50 | 50 | 100 |
| 2. | PEC | PEC-I | PEC-I | 3 (3-0-0) | 30 | 20 | - | 50 | 50 | 100 |
| 3. | PEC | PEC-II | PEC-II | 2 (2-0-0) | 30 | 20 | - | 50 | 50 | 100 |
| 4. | PEC | PEC-III | PEC-III | 2 (2-0-0) | 30 | 20 | - | 50 | 50 | 100 |
| 5. | OEC | OEC-I | OEC-I | 3 (3-0-0) | 30 | 20 | - | 50 | 50 | 100 |
| 6. | Industrial Training | TOT-461 | Industrial Training | 2 (0-0-4) | - | 50 | - | 50 | 50 | 100 |
| 7. | Seminar | TOT-471 | Seminar | 2 (0-0-4) | - | 50 | - | 50 | 50 | 100 |
| 8. | Project | TOT-497 | Project | 4 (0-0-8) | - | 50 | - | 50 | 50 | 100 |
| Total Credit | | | | 22 | | | | | | |

SEMESTER VIII

| Sr. No. | Course Type | Subject Code | Course Title | Credits | Sessional Marks | | | | ESE | Total |
|---------------------|-------------|--------------|--------------|-------------|-----------------|----|-----|-------|-----|-------|
| | | | | | MSE | TA | Lab | Total | | |
| 1. | PEC | PEC-IV | PEC-IV | 3 (2-1-0) | 30 | 20 | - | 50 | 50 | 100 |
| 2. | PEC | PEC-V | PEC-V | 3 (3-0-0) | 30 | 20 | - | 50 | 50 | 100 |
| 3. | PEC | PEC-VI | PEC-VI | 3 (3-0-0) | 30 | 20 | - | 50 | 50 | 100 |
| 4. | OEC | OEC-II | OEC-II | 3 (2-1-0) | 30 | 20 | - | 50 | 50 | 100 |
| 5. | Project | TOT 498 | Project | 10 (0-0-20) | - | 50 | - | 50 | 50 | 100 |
| Total Credit | | | | 22 | | | | | | |

Total Programme Credits : 172

TOT 497 Project will have Internal Evaluation while TOT 498 Project will have External Evaluation.

Department of Oil Technology
(to be offered in VII & VIII Semester)

Programme Elective-I

| S. No. | Course Code | Course Name | Credits |
|---------------|--------------------|--|----------------|
| 1 | TOT 403 | Technology of Surfactants & Synthetic Detergents | 3 (3-0-0) |

Programme Elective-II

| | | | |
|---|---------|--|-----------|
| 1 | TOT 405 | Advance Oil Chemistry & Oleo Chemicals | 2 (2-0-0) |
|---|---------|--|-----------|

Programme Elective-III

| | | | |
|---|---------|---|-----------|
| 1 | TOT 407 | Commerce & process economics, Food safety & environmental aspects of Oil Industry | 2 (2-0-0) |
|---|---------|---|-----------|

Programme Elective-IV

| | | | |
|---|---------|-------------------------------|-----------|
| 1 | TCH 422 | Process Modeling & Simulation | 3 (2-1-0) |
| 2 | TCH 424 | Process Equipment Design | 3 (2-1-0) |

Programme Elective-V

| | | | |
|---|---------|--|-----------|
| 1 | TOT 402 | Bio Technology of Oil seeds & Oils | 3 (3-0-0) |
| 2 | TOT 404 | Packaging of Oils, Fats & Allied Industries* | 3 (3-0-0) |

Programme Elective-VI

| | | | |
|---|---------|---|-----------|
| 1 | TOT 406 | Environmental Aspects of Oils & Allied Industries | 3 (3-0-0) |
| 2 | TOT 408 | Petroleum Products & Petrochemicals | 3 (3-0-0) |
| 3 | TOT 410 | Fuel & Green Lubricant | 3 (3-0-0) |

SEMESTER WISE COURSE STRUCTURE & EVALUATION SCHEME
B. TECH. PAINT TECHNOLOGY

SEMESTER I

| Sr. No. | Course Type | Subject Code | Course Title | Credits (LTP) | Sessional Marks | | | | ESE | Total |
|---------------------|-----------------|--------------|--------------------------------|---------------|-----------------|----|-----|-------|-----|-------|
| | | | | | MSE | TA | Lab | Total | | |
| 1. | BSC | BCY 101 | Engineering Chemistry | 4 (3-0-2) | 15 | 20 | 15 | 50 | 50 | 100 |
| 2. | BSC | BMA 101 | Mathematics I | 4 (3-1-0) | 30 | 20 | - | 50 | 50 | 100 |
| 3. | ESC | EET 101 | Electronics Engineering | 3 (3-0-0) | 30 | 20 | - | 50 | 50 | 100 |
| 4. | ESC | ECE 101 | Engineering Graphics | 3 (0-0-6) | 30 | 20 | - | 50 | 50 | 100 |
| 5. | ESC | ECS 101 | Computer Concept & Programming | 4 (3-0-2) | 15 | 20 | 15 | 50 | 50 | 100 |
| 6. | ESC | EWS 101 | Workshop Practice | 2 (0-0-4) | - | 20 | 30 | 50 | 50 | 100 |
| 7. | MC (Non-credit) | ECE 103 | Environment & Ecology | 2 (2-0-0) | 30 | 20 | - | 50 | 50 | 100 |
| Total Credit | | | | | 20 | | | | | |

SEMESTER II

| Sr. No. | Course Type | Subject Code | Course Title | Credits (LTP) | Sessional Marks | | | | ESE | Total |
|---------------------|-------------|--------------|--------------------------------|---------------|-----------------|----|-----|-------|-----|-------|
| | | | | | MSE | TA | Lab | Total | | |
| 1. | BSC | BPH 102 | Physics | 4 (3-0-2) | 15 | 20 | 15 | 50 | 50 | 100 |
| 2. | BSC | BMA 102 | Mathematics II | 4 (3-1-0) | 30 | 20 | - | 50 | 50 | 100 |
| 3. | ESC | EEE 102 | Electrical Engineering | 4 (3-0-2) | 15 | 20 | 15 | 50 | 50 | 100 |
| 4. | ESC | EME 102 | Engineering Mechanics | 3 (3-0-0) | 30 | 20 | - | 50 | 50 | 100 |
| 5. | HSMC | HHS 102 | English Language & Composition | 2 (2-0-0) | 30 | 20 | - | 50 | 50 | 100 |
| 6. | HSMC | HHS 104 | Professional Communication | 3 (2-0-2) | 15 | 20 | 15 | 50 | 50 | 100 |
| Total Credit | | | | | 20 | | | | | |

SEMESTER III

| Sr. No. | Course Type | Subject Code | Course Title | Credits | Sessional Marks | | | | ESE | Total |
|---------------------|-----------------|--------------|---|-----------|-----------------|----|-----|-------|-----|-------|
| | | | | | MSE | TA | Lab | Total | | |
| 1. | BSC | BMA 201 | Mathematics III | 4 (3-1-0) | 30 | 20 | - | 50 | 50 | 100 |
| 2. | ESC | TCH 201 | Materials & Energy Balance | 4 (3-1-0) | 30 | 20 | - | 50 | 50 | 100 |
| 3. | PCC | TCH 211 | Fluid Mechanics & Mechanical Operations | 5 (3-1-3) | 15 | 20 | 15 | 50 | 50 | 100 |
| 4. | PCC | TPT 201 | Introduction to Surface Coatings and their Components | 6 (3-1-6) | 15 | 20 | 15 | 50 | 50 | 100 |
| 5. | HSMC | HHS 203 | Organizational Behaviour | 3 (3-0-0) | 30 | 20 | - | 50 | 50 | 100 |
| 6. | MC (Non-credit) | ECS 205 | Cyber Security | 2 (2-0-0) | 30 | 20 | - | 50 | 50 | 100 |
| Total Credit | | | | | 22 | | | | | |

SEMESTER IV

| Sr. No. | Course Type | Subject Code | Course Title | Credits | Sessional Marks | | | | ESE | Total |
|---------------------|-----------------|--------------|--|-----------|-----------------|----|-----|-------|-----|-------|
| | | | | | MSE | TA | Lab | Total | | |
| 1. | BSC | BCY 202 | Modern Analytical Techniques | 4 (3-0-2) | 15 | 20 | 15 | 50 | 50 | 100 |
| 2. | BSC | BMA 202 | Computer Oriented Numerical Methods | 4 (3-0-2) | 15 | 20 | 15 | 50 | 50 | 100 |
| 3. | ESC | TCH 212 | Heat Transfer Operations | 3 (3-0-0) | 30 | 20 | - | 50 | 50 | 100 |
| 4. | PCC | TCH 214 | Chemical Engineering Thermodynamics | 3 (3-0-0) | 30 | 20 | - | 50 | 50 | 100 |
| 5. | PCC | TPT 202 | Technology of Inorganic Pigments and Extenders | 5 (3-1-3) | 15 | 20 | 15 | 50 | 50 | 100 |
| 6. | HSMC | HHS 202 | Engg Economics & Management | 3 (3-0-0) | 30 | 20 | - | 50 | 50 | 100 |
| 7. | MC (Non-credit) | HHS 206 | Indian Constitution | 2 (2-0-0) | 30 | 20 | | 50 | 50 | 100 |
| Total Credit | | | | | 22 | | | | | |

SEMESTER V

| Sr. No. | Course Type | Subject Code | Course Title | Credits | Sessional Marks | | | | ESE | Total |
|---------------------|------------------|--------------|---|-----------|-----------------|----|-----|-------|-----|-------|
| | | | | | MSE | TA | Lab | Total | | |
| 1. | PCC | TCH 315 | Mass Transfer Operations | 4 (3-1-0) | 30 | 20 | - | 50 | 50 | 100 |
| 2. | PCC | TCH 317 | Chemical Reaction Engineering | 4 (3-1-0) | 30 | 20 | - | 50 | 50 | 100 |
| 3. | PCC | TPT 301 | Technology of Natural Resins, Alkyds and Polyesters | 3 (3-0-0) | 30 | 20 | - | 50 | 50 | 100 |
| 4. | PCC | TPT 303 | Technology of Synthetic Resins and Polymers | 5 (3-0-6) | 15 | 20 | 15 | 50 | 50 | 100 |
| 5. | OEC (Mechanical) | EME 325 | Energy Conversion Systems and Devices | 3 (3-0-0) | 30 | 20 | - | 50 | 50 | 100 |
| 6. | OEC (Humanities) | HHS 341 | Entrepreneurship Development | 3 (3-0-0) | 30 | 20 | - | 50 | 50 | 100 |
| Total Credit | | | | 22 | | | | | | |

SEMESTER VI

| Sr. No. | Course Type | Subject Code | Course Title | Credits | Sessional Marks | | | | ESE | Total |
|---------------------|-------------|--------------|---|-----------|-----------------|----|-----|-------|-----|-------|
| | | | | | MSE | TA | Lab | Total | | |
| 1. | PCC | TCH 316 | Instrumentation & Process Control | 5 (3-1-3) | 15 | 20 | 15 | 50 | 50 | 100 |
| 2. | PCC | TPT 302 | Technology of Organic, Functional and Effect Pigments | 4 (3-1-0) | 30 | 20 | - | 50 | 50 | 100 |
| 3. | PCC | TPT 304 | Characterization, Analysis and Evaluation of Coatings | 5 (3-0-6) | 15 | 20 | 15 | 50 | 50 | 100 |
| 4. | PCC | TPT 306 | Technology of Formulation and Manufacture of Coatings | 5 (3-0-6) | 15 | 20 | 15 | 50 | 50 | 100 |
| 5. | OEC (Maths) | BMA 342 | Operations Research | 3 (3-0-0) | 30 | 20 | - | 50 | 50 | 100 |
| Total Credit | | | | 22 | | | | | | |

SEMESTER VII

| Sr. No. | Course Type | Subject Code | Course Title | Credits (LTP) | Sessional Marks | | | | ESE | Total | |
|---------------------|---------------------|--------------|--|---------------|-----------------|----|-----|-------|-----|-------|--|
| | | | | | MSE | TA | Lab | Total | | | |
| 1. | PCC | TPT 401 | Technology of Surface Preparation, Treatments and Coating Applications | 4 (3-0-3) | 15 | 20 | 15 | 50 | 50 | 100 | |
| 2. | PEC | PEC-I | PEC-I | 3 (3-0-0) | 30 | 20 | - | 50 | 50 | 100 | |
| 3. | PEC | PEC-II | PEC-II | 2 (2-0-0) | 30 | 20 | - | 50 | 50 | 100 | |
| 4. | PEC | PEC-III | PEC-III | 2 (2-0-0) | 30 | 20 | - | 50 | 50 | 100 | |
| 5. | OEC | OEC-I | OEC-I | 3 (3-0-0) | 30 | 20 | - | 50 | 50 | 100 | |
| 6. | Industrial Training | TPT 461 | Industrial Training | 2 (0-0-4) | - | 50 | - | 50 | 50 | 100 | |
| 7. | Seminar | TPT 471 | Seminar | 2 (0-0-4) | - | 25 | - | 25 | 25 | 50 | |
| 8. | Project | TPT 497 | Project | 4 (0-0-8) | - | 50 | - | 50 | 50 | 100 | |
| Total Credit | | | | | 22 | | | | | | |

SEMESTER VIII

| Sr. No. | Course Type | Subject Code | Course Title | Credits | Sessional Marks | | | | ESE | Total | |
|---------------------|-------------|--------------|--------------|-------------|-----------------|----|-----|-------|-----|-------|--|
| | | | | | MSE | TA | Lab | Total | | | |
| 1. | PEC | PEC-IV | PEC-IV | 3 (2-1-0) | 30 | 20 | - | 50 | 50 | 100 | |
| 2. | PEC | PEC-V | PEC-V | 3 (3-0-0) | 30 | 20 | - | 50 | 50 | 100 | |
| 3. | PEC | PEC-VI | PEC-VI | 3 (3-0-0) | 30 | 20 | - | 50 | 50 | 100 | |
| 4. | OEC | OEC-II | OEC-II | 3 (2-1-0) | 30 | 20 | - | 50 | 50 | 100 | |
| 5. | Project | TPT 498 | Project | 10 (0-0-20) | - | 50 | - | 50 | - | 100 | |
| Total Credit | | | | | 22 | | | | | | |

Total Programme Credits : 172

TPT 497 Project will have Internal Evaluation while TPT 498 Project will have External Evaluation.

Department of Paint Technology
(to be offered in VII & VIII Semester)

Programme Elective-I

| S. No. | Course Code | Course Name | Credits |
|---------------|--------------------|--|----------------|
| 1 | TPT 403 | Technology of Printing Inks | 3 (3-0-0) |
| 2 | TPT 405 | Technology of Industrial and Automotive Coatings | 3 (3-0-0) |

Programme Elective-II

| | | | |
|---|---------|---|-----------|
| 1 | TPT 407 | Technology of Industrial and Specialty Coatings | 2 (2-0-0) |
| 2 | TPT 409 | Technology of Paint Additives | 2 (2-0-0) |

Programme Elective-III

| | | | |
|---|---------|---|-----------|
| 1 | TPT 411 | Technology of Architectural and Eco-friendly Coatings | 2 (2-0-0) |
| 2 | TPT 413 | Instrumentation in Coating Industry | 2 (2-0-0) |

Programme Elective-IV

| | | | |
|---|---------|-------------------------------|-----------|
| 1 | TCH 422 | Process Modeling & Simulation | 3 (2-1-0) |
| 2 | TCH 424 | Process Equipment Design | 3 (2-1-0) |

Programme Elective-V

| | | | |
|---|---------|--|-----------|
| 1 | TPT 402 | Technology Of Packaging And Waste Management | 3 (3-0-0) |
| 2 | TPT 404 | High Polymeric Engineering | 3 (3-0-0) |

Programme Elective-VI

| | | | |
|---|---------|------------------------------------|-----------|
| 1 | TPT 406 | Corrosion Control Technology | 3 (3-0-0) |
| 2 | TPT 408 | Nanotechnology in Surface Coatings | 3 (3-0-0) |

SEMESTER WISE COURSE STRUCTURE & EVALUATION SCHEME
B. TECH. PLASTIC TECHNOLOGY

SEMESTER I

| Sr. No. | Course Type | Subject Code | Course Title | Credits (LTP) | Sessional Marks | | | | ESE | Total Mark |
|---------------------|-----------------|--------------|---|---------------|-----------------|----|-----|-------|-----|------------|
| | | | | | MSE | TA | Lab | Total | | |
| 1. | BSC | BCY 101 | Engineering Chemistry | 4 (3-0-2) | 15 | - | 20 | 15 | 50 | 50 |
| 2. | BSC | BMA 101 | Mathematics I | 4 (3-1-0) | 30 | - | 20 | - | 50 | 50 |
| 3. | ESC | EET 101 | Electronics & Instrumentation Engineering | 3 (3-0-0) | 30 | - | 20 | - | 50 | 50 |
| 4. | ESC | ECE 101 | Engineering Graphics | 3 (0-0-6) | 30 | - | 20 | - | 50 | 50 |
| 5. | ESC | ECS 101 | Computer Concepts & Programming | 4 (3-0-2) | 15 | - | 20 | 15 | 50 | 50 |
| 6. | ESC | EWS 101 | Workshop Practice | 2 (0-0-4) | - | - | 20 | 30 | 50 | 50 |
| 7. | MC (Non-credit) | ECE 103 | Environment & Ecology | 2 (2-0-0) | 30 | - | 20 | - | 50 | 50 |
| Total Credit | | | | | 20 | | | | | |

SEMESTER II

| Sr. No. | Course Type | Subject Code | Course Title | Credits (LTP) | Sessional Marks | | | | ESE | Total Mark |
|---------------------|-------------|--------------|--------------------------------|---------------|-----------------|----|-----|-------|-----|------------|
| | | | | | MSE | TA | Lab | Total | | |
| 1. | BSC | BPH 102 | Physics | 4 (3-0-2) | 15 | 20 | 15 | 50 | 50 | 100 |
| 2. | BSC | BMA 102 | Mathematics II | 4 (3-1-0) | 30 | 20 | - | 50 | 50 | 100 |
| 3. | ESC | EEE 102 | Electrical Engineering | 4 (3-0-2) | 15 | 20 | 15 | 50 | 50 | 100 |
| 4. | ESC | EME 102 | Engineering Mechanics | 3 (3-0-0) | 30 | 20 | - | 50 | 50 | 100 |
| 5. | HSMC | HHS 102 | English Language & Composition | 2 (2-0-0) | 30 | 20 | - | 50 | 50 | 100 |
| 6. | HSMC | HHS 104 | Professional Communication | 3 (3-0-2) | 15 | 20 | 15 | 50 | 50 | 100 |
| Total Credit | | | | | 20 | | | | | |

SEMESTER III

| Sr. No. | Course Type | Subject Code | Course Title | Credits | Sessional Marks | | | | ESE | Total Mark |
|---------------------|-----------------|--------------|--|-----------|-----------------|----|-----|-------|-----|------------|
| | | | | | MSE | TA | Lab | Total | | |
| 1. | BSC | BMA 201 | Mathematics III | 4 (3-1-0) | 30 | 20 | - | 50 | 50 | 100 |
| 2. | ESC | TCH 201 | Materials & Energy Balance | 4 (3-1-0) | 30 | 20 | - | 50 | 50 | 100 |
| 3. | PCC | TCH 211 | Fluid Mechanics and Mechanical Operation | 5 (3-1-3) | 15 | 20 | 15 | 50 | 50 | 100 |
| 4. | PCC | TPL 201 | Polymer Chemistry | 6 (3-1-6) | 15 | 20 | 15 | 50 | 50 | 100 |
| 5. | HSMC | HHS 203 | Organisational Behaviour | 3 (3-0-0) | 30 | 20 | - | 50 | 50 | 100 |
| 6. | MC (Non-credit) | ECS 205 | Cyber Security | 2 (2-0-0) | 30 | 20 | | 50 | 50 | 100 |
| Total Credit | | | | 22 | | | | | | |

SEMESTER IV

| Sr. No. | Course Type | Subject Code | Course Title | Credits | Sessional Marks | | | | ESE | Total Mark |
|---------------------|-----------------|--------------|-------------------------------------|-----------|-----------------|----|-----|-------|-----|------------|
| | | | | | MSE | TA | Lab | Total | | |
| 1. | BSC | BCY 202 | Modern Analytical Techniques | 4 (3-0-2) | 15 | 20 | 15 | 50 | 50 | 100 |
| 2. | BSC | BMA 202 | Computer Oriented Numerical Methods | 4 (3-0-3) | 15 | 20 | 15 | 50 | 50 | 100 |
| 3. | ESC | TCH 212 | Heat Transfer Operations | 3 (3-0-0) | 30 | 20 | - | 50 | 50 | 100 |
| 4. | PCC | TCH 214 | Chemical Engineering Thermodynamics | 3 (3-0-0) | 30 | 20 | - | 50 | 50 | 100 |
| 5. | PCC | TPL 202 | Polymerization Engineering I | 5 (3-1-3) | 15 | 20 | 15 | 50 | 50 | 100 |
| 6. | HSMC | HHS 202 | Engg Economics & Management | 3 (3-0-0) | 30 | 20 | - | 50 | 50 | 100 |
| 7. | MC (Non-credit) | HHS 206 | Indian Constitution | 2 (2-0-0) | 30 | 20 | - | 50 | 50 | 100 |
| Total Credit | | | | 22 | | | | | | |

SEMESTER V

| Sr. No. | Course Type | Subject Code | Course Title | Credits | Sessional Marks | | | | ESE | Total Mark |
|---------------------|------------------|--------------|---------------------------------------|-----------|-----------------|----|-----|-------|-----|------------|
| | | | | | MSE | TA | Lab | Total | | |
| 1. | PCC | TCH 315 | Mass Transfer Operations | 4 (3-1-0) | 30 | 20 | - | 50 | 50 | 100 |
| 2. | PCC | TCH 317 | Chemical Reaction Engineering | 4 (3-1-0) | 30 | 20 | - | 50 | 50 | 100 |
| 3. | PCC | TPL 301 | Polymer Processing I | 3 (3-0-0) | 30 | 20 | - | 50 | 50 | 100 |
| 4. | PCC | TPL 303 | Rheology & Testing of Polymers | 5 (3-0-6) | 15 | 20 | 15 | 50 | 50 | 100 |
| 5. | OEC (Mechanical) | EME 325 | Energy Conversion Systems and Devices | 3 (3-0-0) | 30 | 20 | - | 50 | 50 | 100 |
| 6. | OEC (Humanities) | HHS 341 | Entrepreneurship Development | 3 (3-0-0) | 30 | 20 | - | 50 | 50 | 100 |
| Total Credit | | | | 22 | | | | | | |

SEMESTER VI

| Sr. No. | Course Type | Subject Code | Course Title | Credits | Sessional Marks | | | | ESE | Total Mark |
|---------------------|-------------|--------------|-----------------------------------|-----------|-----------------|----|-----|-------|-----|------------|
| | | | | | MSE | TA | Lab | Total | | |
| 1. | PCC | TCH 316 | Instrumentation & Process Control | 5 (3-1-3) | 15 | 20 | 15 | 50 | 50 | 100 |
| 2. | PCC | TPL 302 | Structure & Property of Polymer | 4 (3-1-0) | 30 | 20 | - | 50 | 50 | 100 |
| 3. | PCC | TPL 304 | Polymer Processing II | 5 (3-0-6) | 15 | 20 | 15 | 50 | 50 | 100 |
| 4. | PCC | TPL 306 | Polymerization Engineering II | 5 (3-0-6) | 15 | 20 | 15 | 50 | 50 | 100 |
| 5. | OEC (Maths) | BMA 342 | Operation Research | 3 (3-0-0) | 30 | 20 | - | 50 | 50 | 100 |
| Total Credit | | | | 22 | | | | | | |

SEMESTER VII

| Sr. No. | Course Type | Subject Code | Course Title | Credits (LTP) | Sessional Marks | | | | ESE | Total | |
|---------------------|---------------------|--------------|----------------------------|---------------|-----------------|----|-----|-------|-----|-------|--|
| | | | | | MSE | TA | Lab | Total | | | |
| 1. | PCC | TPL 401 | Advanced Polymer Materials | 4 (3-0-3) | 15 | 20 | 15 | 50 | 50 | 100 | |
| 2. | PEC | PEC-I | PEC-I | 3 (3-0-0) | 30 | 20 | - | 50 | 50 | 100 | |
| 3. | PEC | PEC-II | PEC-II | 2 (2-0-0) | 30 | 20 | - | 50 | 50 | 100 | |
| 4. | PEC | PEC-III | PEC-III | 2 (2-0-0) | 30 | 20 | - | 50 | 50 | 100 | |
| 5. | OEC | OEC-I | OEC-I | 3 (3-0-0) | 30 | 20 | - | 50 | 50 | 100 | |
| 6. | Industrial Training | TPL 461 | Industrial Training | 2 (0-0-4) | - | 50 | - | 50 | 50 | 100 | |
| 7. | Seminar | TPL 471 | Seminar | 2 (0-0-4) | - | 50 | - | 50 | 50 | 100 | |
| 8. | Project | TPL 497 | Project | 4 (0-0-8) | - | 50 | - | 50 | 50 | 100 | |
| Total Credit | | | | | 22 | | | | | | |

SEMESTER VIII

| Sr. No. | Course Type | Subject Code | Course Title | Credits | Sessional Marks | | | | ESE | Total | |
|---------------------|-------------|--------------|--------------|-------------|-----------------|----|-----|-------|-----|-------|--|
| | | | | | MSE | TA | Lab | Total | | | |
| 1. | PEC | PEC-IV | PEC-IV | 3 (2-1-0) | 30 | 20 | - | 50 | 50 | 100 | |
| 2. | PEC | PEC-V | PEC-V | 3 (3-0-0) | 30 | 20 | - | 50 | 50 | 100 | |
| 3. | PEC | PEC-VI | PEC-VI | 3 (3-0-0) | 30 | 20 | - | 50 | 50 | 100 | |
| 4. | OEC | OEC-II | OEC-II | 3 (2-1-0) | 30 | 20 | - | 50 | 50 | 100 | |
| 5. | Project | TPL 498 | Project | 10 (0-0-20) | - | 50 | - | 50 | 50 | 100 | |
| Total Credit | | | | | 22 | | | | | | |

Total Programme Credits :172

TPL 497 Project will have Internal Evaluation while TPL 498 Project will have External Evaluation.

Department of Plastic Technology
(to be offered in VII & VIII Semester)

Programme Elective-I

| S. No. | Course Code | Course Name | Credits |
|---------------|--------------------|--------------------------------|----------------|
| 1 | TPL 403 | Plastic Product & Mould Design | 3 (3-0-0) |
| 2 | TPL 405 | Polymer Product Technology | 3 (3-0-0) |

Programme Elective-II

| | | | |
|---|---------|--------------------------|-----------|
| 1 | TPL 407 | Technology of Elastomers | 2 (2-0-0) |
| 2 | TPL 409 | Technology of Fibers | 2 (2-0-0) |

Programme Elective-III

| | | | |
|---|---------|-------------------------|-----------|
| 1 | TPL 411 | Polymer Composite | 2 (2-0-0) |
| 2 | TPL 413 | Polymer Blends & Alloys | 2 (2-0-0) |

Programme Elective-IV

| | | | |
|---|---------|-------------------------------|-----------|
| 1 | TCH 422 | Process Modeling & Simulation | 3 (2-1-0) |
| 2 | TCH 424 | Process Equipment Design | 3 (2-1-0) |

Programme Elective-V

| | | | |
|---|---------|--------------------------------------|-----------|
| 1 | TPL 402 | Plastic Packaging & waste Management | 3 (3-0-0) |
| 2 | TPL 404 | Polymer Coating Technology | 3 (3-0-0) |

Programme Elective-VI

| | | | |
|---|---------|-----------------------------|-----------|
| 1 | TPL 406 | Polymeric Adhesives & Foams | 3 (3-0-0) |
| 2 | TPL 408 | Polymer Nanocomposites | 3 (3-0-0) |

SEMESTER WISE COURSE STRUCTURE & EVALUATION SCHEME
B. TECH. LEATHER TECHNOLOGY

SEMESTER I

| Sr. No. | Course Type | Subject Code | Course Title | Credits (LTP) | Sessional Marks | | | | ESE | Total |
|---------------------|-----------------|--------------|---|---------------|-----------------|----|-----|-------|-----|-------|
| | | | | | MSE | TA | Lab | Total | | |
| 1. | BSC | BCY 101 | Engineering Chemistry | 4 (3-0-2) | 15 | 20 | 15 | 50 | 50 | 100 |
| 2. | BSC | BMA 101 | Mathematics I | 4 (3-1-0) | 30 | 20 | - | 50 | 50 | 100 |
| 3. | ESC | EET 101 | Electronics & Instrumentation Engineering | 3 (3-0-0) | 30 | 20 | - | 50 | 50 | 100 |
| 4. | ESC | ECE 101 | Engineering Graphics | 3 (0-0-6) | 30 | 20 | - | 50 | 50 | 100 |
| 5. | ESC | ECS 101 | Computer Concept & Programming | 4 (3-0-2) | 15 | 20 | 15 | 50 | 50 | 100 |
| 6. | ESC | EWS 101 | Workshop Practice | 2 (0-0-4) | - | 20 | 30 | 50 | 50 | 100 |
| 7. | MC (Non-credit) | ECE 103 | Environment & Ecology | 2 (2-0-0) | 30 | 20 | - | 50 | 50 | 100 |
| Total Credit | | | | | 20 | | | | | |

SEMESTER II

| Sr. No. | Course Type | Subject Code | Course Title | Credits (LTP) | Sessional Marks | | | | ESE | Total |
|---------------------|-------------|--------------|--------------------------------|---------------|-----------------|----|-----|-------|-----|-------|
| | | | | | MSE | TA | Lab | Total | | |
| 1. | BSC | BPH 102 | Physics | 4 (3-0-2) | 15 | 20 | 15 | 50 | 50 | 100 |
| 2. | BSC | BMA 102 | Mathematics II | 4 (3-1-0) | 30 | 20 | - | 50 | 50 | 100 |
| 3. | ESC | EEE 102 | Electrical Engineering | 4 (3-0-2) | 15 | 20 | 15 | 50 | 50 | 100 |
| 4. | ESC | EME 102 | Engineering Mechanics | 3 (3-0-0) | 30 | 20 | - | 50 | 50 | 100 |
| 5. | HSMC | HHS 102 | English Language & Composition | 2 (2-0-0) | 30 | 20 | - | 50 | 50 | 100 |
| 6. | HSMC | HHS 104 | Professional Communication | 3 (2-0-2) | 15 | 20 | 15 | 50 | 50 | 100 |
| Total Credit | | | | | 20 | | | | | |

SEMESTER III

| Sr. No. | Course Type | Subject Code | Course Title | Credits | Sessional Marks | | | | ESE | Total |
|---------------------|-----------------|--------------|--|-----------|-----------------|----|-----|-------|-----|-------|
| | | | | | MSE | TA | Lab | Total | | |
| 1. | BSC | BMA 201 | Mathematics III | 4 (3-1-0) | 30 | 20 | - | 50 | 50 | 100 |
| 2. | ESC | TCH 201 | Materials & Energy Balance | 4 (3-1-0) | 30 | 20 | - | 50 | 50 | 100 |
| 3. | PCC | TCH 211 | Fluid Mechanics and Mechanical operation | 5 (3-1-3) | 15 | 20 | 15 | 50 | 50 | 100 |
| 4. | PCC | TLT 201 | Leather Microscopy and Bacteriology | 6 (3-1-6) | 15 | 20 | 15 | 50 | 50 | 100 |
| 5. | HSMC | HHS 203 | Organisational Behavior | 3 (3-0-0) | 30 | 20 | - | 50 | 50 | 100 |
| 6. | MC (Non-credit) | ECS 205 | Cyber Security | 2 (2-0-0) | 30 | 20 | - | 50 | 50 | 100 |
| Total Credit | | | | | 22 | | | | | |

SEMESTER IV

| Sr. No. | Course Type | Subject Code | Course Title | Credits | Sessional Marks | | | | ESE | Total |
|---------------------|-----------------|--------------|-------------------------------------|-----------|-----------------|----|-----|-------|-----|-------|
| | | | | | MSE | TA | Lab | Total | | |
| 1. | BSC | BCY 202 | Modern Analytical Techniques | 4 (3-0-2) | 15 | 20 | 15 | 50 | 50 | 100 |
| 2. | BSC | BMA 202 | Computer Oriented Numerical Methods | 4 (3-0-3) | 15 | 20 | 15 | 50 | 50 | 100 |
| 3. | ESC | TCH 212 | Heat Transfer Operation | 3 (3-0-0) | 30 | 20 | - | 50 | 50 | 100 |
| 4. | ESC | TCH 214 | Chemical Engineering Thermodynamics | 3 (3-0-0) | 30 | 20 | - | 50 | 50 | 100 |
| 5. | PCC | TLT 202 | Skin Protein and Pre-Tannages | 5 (3-1-3) | 15 | 20 | 15 | 50 | 50 | 100 |
| 6. | HSMC | HHS 202 | Engg Economics & Management | 3 (3-0-0) | 30 | 20 | - | 50 | 50 | 100 |
| 7. | MC (Non-credit) | HHS 206 | Indian Constitution | 2 (2-0-0) | 30 | 20 | | 50 | 50 | 100 |
| Total Credit | | | | | 22 | | | | | |

SEMESTER V

| Sr. No. | Course Type | Subject Code | Course Title | Credits | Sessional Marks | | | | ESE | Total |
|---------------------|------------------|--------------|--|-----------|-----------------|----|-----|-------|-----|-------|
| | | | | | MSE | TA | Lab | Total | | |
| 1. | PCC | TCH 315 | Mass Transfer Operation | 4 (3-1-0) | 30 | 20 | - | 50 | 50 | 100 |
| 2. | PCC | TCH 317 | Chemical Reaction Engineering | 4 (3-1-0) | 30 | 20 | - | 50 | 50 | 100 |
| 3. | PCC | TLT 301 | Inorganic Tannages | 3 (3-0-0) | 30 | 20 | - | 50 | 50 | 100 |
| 4. | PCC | TLT 303 | Analysis of Materials of Leather Manufacture | 5 (3-0-6) | 15 | 20 | 15 | 50 | 50 | 100 |
| 5. | OEC (Mechanical) | EME 325 | Energy Conversion Systems and Devices | 3 (3-0-0) | 30 | 20 | - | 50 | 50 | 100 |
| 6. | OEC (Humanities) | HHS 341 | Entrepreneurship Development | 3 (3-0-0) | 30 | 20 | - | 50 | 50 | 100 |
| Total Credit | | | | 22 | | | | | | |

SEMESTER VI

| Sr. No. | Course Type | Subject Code | Course Title | Credits | Sessional Marks | | | | ESE | Total |
|---------------------|-------------|--------------|--------------------------------------|-----------|-----------------|----|-----|-------|-----|-------|
| | | | | | MSE | TA | Lab | Total | | |
| 1. | PCC | TCH 316 | Instrumentation & Process Control | 5 (3-1-3) | 15 | 20 | 15 | 50 | 50 | 100 |
| 2. | PCC | TLT 302 | Post Tanning and Finishing Operation | 4 (3-1-0) | 30 | 20 | - | 50 | 50 | 100 |
| 3. | PCC | TLT 304 | Processing of Leather-I | 5 (3-0-6) | 15 | 20 | 15 | 50 | 50 | 100 |
| 4. | PCC | TLT 306 | Leather Analysis and Quality Control | 5 (3-0-6) | 15 | 20 | 15 | 50 | 50 | 100 |
| 5. | OEC (Maths) | BMA342 | Operation Research | 3 (3-0-0) | 30 | 20 | - | 50 | 50 | 100 |
| Total Credit | | | | 22 | | | | | | |

SEMESTER VII

| Sr. No. | Course Type | Subject Code | Course Title | Credits (LTP) | Sessional Marks | | | | ESE | Total | |
|---------------------|---------------------|--------------|--------------------------|---------------|-----------------|----|-----|-------|-----|-------|--|
| | | | | | MSE | TA | Lab | Total | | | |
| 1. | PCC | TLT 401 | Processing of Leather-II | 4 (3-0-3) | 15 | 20 | 15 | 50 | 50 | 100 | |
| 2. | PEC | PEC-I | PEC-I | 3 (3-0-0) | 30 | 20 | - | 50 | 50 | 100 | |
| 3. | PEC | PEC-II | PEC-II | 2 (2-0-0) | 30 | 20 | - | 50 | 50 | 100 | |
| 4. | PEC | PEC-III | PEC-III | 2 (2-0-0) | 30 | 20 | - | 50 | 50 | 100 | |
| 5. | OEC | OEC-I | OEC-I | 3 (3-0-0) | 30 | 20 | - | 50 | 50 | 100 | |
| 6. | Industrial Training | TLT 461 | Industrial Training | 2 (0-0-4) | - | 50 | - | 50 | 50 | 100 | |
| 7. | Seminar | TLT 471 | Seminar | 2 (0-0-4) | - | 50 | - | 50 | 50 | 100 | |
| 8. | Project | TLT 497 | Project | 4 (0-0-8) | - | 50 | - | 50 | 50 | 100 | |
| Total Credit | | | | | 22 | | | | | | |

SEMESTER VIII

| Sr. No. | Course Type | Subject Code | Course Title | Credits | Sessional Marks | | | | ESE | Total | |
|---------------------|-------------|--------------|--------------|-------------|-----------------|----|-----|-------|-----|-------|--|
| | | | | | MSE | TA | Lab | Total | | | |
| 1. | PEC | PEC-IV | PEC-IV | 3 (2-1-0) | 30 | 20 | - | 50 | 50 | 100 | |
| 2. | PEC | PEC-V | PEC-V | 3 (3-0-0) | 30 | 20 | - | 50 | 50 | 100 | |
| 3. | PEC | PEC-VI | PEC-VI | 3 (3-0-0) | 30 | 20 | - | 50 | 50 | 100 | |
| 4. | OEC | OEC-II | OEC-II | 3 (2-1-0) | 30 | 20 | - | 50 | 50 | 100 | |
| 5. | Project | TLT 498 | Project | 10 (0-0-20) | - | 50 | - | 50 | 50 | 100 | |
| Total Credit | | | | | 22 | | | | | | |

Total Programme Credits :172

TLT 497 Project will have Internal Evaluation while TLT 498 Project will have External Evaluation.

Department of Leather Technology
(to be offered in VII & VIII Semester)

Programme Elective-I

| S. No. | Course Code | Course Name | Credits |
|---------------|--------------------|--------------------------------|----------------|
| 1 | TLT 403 | Leather Auxialaries Technology | 3 (3-0-0) |
| 2 | TLT 405 | Leather biotechnology | 3 (3-0-0) |

Programme Elective-II

| | | | |
|---|---------|--------------------------------|-----------|
| 1 | TLT 407 | Organic Tannages | 2 (2-0-0) |
| 2 | TLT 409 | Animal and Tannery by Products | 2 (2-0-0) |

Programme Elective-III

| | | | |
|---|---------|-----------------------------------|-----------|
| 1 | TLT 411 | Footwear Technology | 2 (2-0-0) |
| 2 | TLT 413 | Footwear materials and Components | 2 (2-0-0) |

Programme Elective-IV

| | | | |
|---|---------|-------------------------------|-----------|
| 1 | TCH 422 | Process Modeling & Simulation | 3 (2-1-0) |
| 2 | TCH 424 | Process Equipment Design | 3 (2-1-0) |

Programme Elective-V

| | | | |
|---|---------|-----------------------------|-----------|
| 1 | TLT 402 | Tannery Effluent Treatment | 3 (3-0-0) |
| 2 | TLT 404 | Leather Products Technology | 3 (3-0-0) |

Programme Elective-VI

| | | | |
|---|---------|---------------------------------------|-----------|
| 1 | TLT 406 | Leather Trades Engineering | 3 (3-0-0) |
| 2 | TLT 408 | Computer Aided Leather Product Design | 3 (3-0-0) |

SEMESTER WISE COURSE STRUCTURE & EVALUATION SCHEME
B. TECH. FOOD TECHNOLOGY

SEMESTER I

| Sr. No. | Course Type | Subject Code | Course Title | Credits (LTP) | Sessional Marks | | | | ESE | Total |
|---------------------|-----------------|--------------|---|---------------|-----------------|----|-----|-------|-----|-------|
| | | | | | MSE | TA | Lab | Total | | |
| 1. | BSC | BCY 101 | Engineering Chemistry | 4 (3-0-2) | 15 | 20 | 15 | 50 | 50 | 100 |
| 2. | BSC | BMA 101 | Mathematics I | 4 (3-1-0) | 30 | 20 | - | 50 | 50 | 100 |
| 3. | ESC | EET 101 | Electronics & Instrumentation Engineering | 3 (3-0-0) | 30 | 20 | - | 50 | 50 | 100 |
| 4. | ESC | ECE 101 | Engineering Graphics | 3 (0-0-6) | 30 | 20 | - | 50 | 50 | 100 |
| 5. | ESC | ECS 101 | Computer Concepts & Programming | 4 (3-0-2) | 15 | 20 | 15 | 50 | 50 | 100 |
| 6. | ESC | EWS 101 | Workshop Practice | 2 (0-0-4) | - | 20 | 30 | 50 | 50 | 100 |
| 7. | MC (Non-credit) | ECE 103 | Environment & Ecology | 2 (2-0-0) | 30 | 20 | - | 50 | 50 | 100 |
| Total Credit | | | | | 20 | | | | | |

SEMESTER II

| Sr. No. | Course Type | Subject Code | Course Title | Credits (LTP) | Sessional Marks | | | | ESE | Total |
|---------------------|-------------|--------------|--------------------------------|---------------|-----------------|----|-----|-------|-----|-------|
| | | | | | MSE | TA | Lab | Total | | |
| 1. | BSC | BPH 102 | Physics | 4 (3-0-2) | 15 | 20 | 15 | 50 | 50 | 100 |
| 2. | BSC | BMA 102 | Mathematics II | 4 (3-1-0) | 30 | 20 | - | 50 | 50 | 100 |
| 3. | ESC | EEE 102 | Electrical Engineering | 4 (3-0-2) | 15 | 20 | 15 | 50 | 50 | 100 |
| 4. | ESC | EME 102 | Engineering Mechanics | 3 (3-0-0) | 30 | 20 | - | 50 | 50 | 100 |
| 5. | HSMC | HHS 102 | English Language & Composition | 2 (2-0-0) | 30 | 20 | - | 50 | 50 | 100 |
| 6. | HSMC | HHS 104 | Professional Communication | 3 (2-0-2) | 15 | 20 | 15 | 50 | 50 | 100 |
| Total Credit | | | | | 20 | | | | | |

SEMESTER III

| Sr. No. | Course Type | Subject Code | Course Title | Credits | Sessional Marks | | | | ESE | Total |
|---------------------|-----------------|--------------|--|-----------|-----------------|----|-----|-------|-----|-------|
| | | | | | MSE | TA | Lab | Total | | |
| 1. | BSC | BMA 201 | Mathematics III | 4 (3-1-0) | 30 | 20 | - | 50 | 50 | 100 |
| 2. | ESC | TCH 201 | Materials & Energy Balance | 4 (3-1-0) | 30 | 20 | - | 50 | 50 | 100 |
| 3. | PCC | TCH 211 | Fluid Mechanics & Mechanical Operation | 5 (3-1-3) | 15 | 20 | 15 | 50 | 50 | 100 |
| 4. | PCC | TFT 201 | Introduction to Food Technology | 6 (3-1-6) | 15 | 20 | 15 | 50 | 50 | 100 |
| 5. | HSMC | HHS 203 | Organisational Behaviour | 3 (3-0-0) | 30 | 20 | - | 50 | 50 | 100 |
| 6. | MC (Non-credit) | ECS 205 | Cyber Security | 2 (2-0-0) | 30 | 20 | - | 50 | 50 | 100 |
| Total Credit | | | | | 22 | | | | | |

SEMESTER IV

| Sr. No. | Course Type | Subject Code | Course Title | Credits | Sessional Marks | | | | ESE | Total |
|---------------------|-----------------|--------------|-------------------------------------|-----------|-----------------|----|-----|-------|-----|-------|
| | | | | | MSE | TA | Lab | Total | | |
| 1. | BSC | BCY 202 | Modern Analytical Techniques | 4 (3-0-2) | 15 | 20 | 15 | 50 | 50 | 100 |
| 2. | BSC | BMA 202 | Computer Oriented Numerical Methods | 4 (3-0-3) | 15 | 20 | 15 | 50 | 50 | 100 |
| 3. | ESC | TCH 212 | Heat Transfer Operations | 3 (3-0-0) | 30 | 20 | - | 50 | 50 | 100 |
| 4. | ESC | TCH 214 | Chemical Engineering Thermodynamics | 3 (3-0-0) | 30 | 20 | - | 50 | 50 | 100 |
| 5. | PCC | TFT 202 | Food Microbiology | 5 (3-1-3) | 15 | 20 | 15 | 50 | 50 | 100 |
| 6. | HSMC | HHS 202 | Engg Economics & Management | 3 (3-0-0) | 30 | 20 | - | 50 | 50 | 100 |
| 7. | MC (Non-credit) | HHS 206 | Indian Constitution | 2 (2-0-0) | 30 | 20 | | 50 | 50 | 100 |
| Total Credit | | | | | 22 | | | | | |

SEMESTER V

| Sr. No. | Course Type | Subject Code | Course Title | Credits | Sessional Marks | | | | ESE | Total |
|---------------------|------------------|--------------|---------------------------------------|-----------|-----------------|----|-----|-------|-----|-------|
| | | | | | MSE | TA | Lab | Total | | |
| 1. | PCC | TCH 315 | Mass Transfer Operations | 4 (3-1-0) | 30 | 20 | - | 50 | 50 | 100 |
| 2. | PCC | TCH 317 | Chemical Reaction Engineering | 4 (3-1-0) | 30 | 20 | - | 50 | 50 | 100 |
| 3. | PCC | TFT 301 | Food Biochemistry | 3 (3-0-0) | 30 | 20 | - | 50 | 50 | 100 |
| 4. | PCC | TFT 303 | Food Chemistry | 5 (3-0-6) | 15 | 20 | 15 | 50 | 50 | 100 |
| 5. | OEC (Mechanical) | EME 325 | Energy Conversion Systems and Devices | 3 (3-0-0) | 30 | 20 | - | 50 | 50 | 100 |
| 6. | OEC (Humanities) | HHS 341 | Entrepreneurship Development | 3 (3-0-0) | 30 | 20 | - | 50 | 50 | 100 |
| Total Credit | | | | | 22 | | | | | |

SEMESTER VI

| Sr. No. | Course Type | Subject Code | Course Title | Credits | Sessional Marks | | | | ESE | Total |
|---------------------|-------------|--------------|--|-----------|-----------------|----|-----|-------|-----|-------|
| | | | | | MSE | TA | Lab | Total | | |
| 1. | PCC | TCH 316 | Instrumentation & Process Control | 5 (3-1-3) | 15 | 20 | 15 | 50 | 50 | 100 |
| 2. | PCC | TFT 302 | Principles of Food preservation | 4 (3-1-0) | 30 | 20 | - | 50 | 50 | 100 |
| 3. | PCC | TFT 304 | Technology of Cereals, Pulses & Oilseeds | 5 (3-0-6) | 15 | 20 | 15 | 50 | 50 | 100 |
| 4. | PCC | TFT 306 | Fruits, Vegetables and Plantation Products | 5 (3-0-6) | 15 | 20 | 15 | 50 | 50 | 100 |
| 5. | OEC (Maths) | BMA 342 | Operation Research | 3 (3-0-0) | 30 | 20 | - | 50 | 50 | 100 |
| Total Credit | | | | | 22 | | | | | |

SEMESTER VII

| Sr. No. | Course Type | Subject Code | Course Title | Credits (LTP) | Sessional Marks | | | | ESE | Total | |
|---------------------|---------------------|--------------|---------------------------------|---------------|-----------------|----|-----|-------|-----|-------|--|
| | | | | | MSE | TA | Lab | Total | | | |
| 1. | PCC | TFT 401 | Food Safety and Quality Control | 4 (3-0-3) | 15 | 20 | 15 | 50 | 50 | 100 | |
| 2. | PEC | PEC-I | PEC-I | 3 (3-0-0) | 30 | 20 | - | 50 | 50 | 100 | |
| 3. | PEC | PEC-II | PEC-II | 2 (2-0-0) | 30 | 20 | - | 50 | 50 | 100 | |
| 4. | PEC | PEC-III | PEC-III | 2 (2-0-0) | 30 | 20 | - | 50 | 50 | 100 | |
| 5. | OEC | OEC-I | OEC-I | 3 (3-0-0) | 30 | 20 | - | 50 | 50 | 100 | |
| 6. | Industrial Training | TFT 461 | Industrial Training | 2 (0-0-4) | - | 50 | - | 50 | 50 | 100 | |
| 7. | Seminar | TFT 471 | Seminar | 2 (0-0-4) | - | 50 | - | 50 | 50 | 100 | |
| 8. | Project | TFT 497 | Project | 4 (0-0-8) | - | 50 | - | 50 | 50 | 100 | |
| Total Credit | | | | | 22 | | | | | | |

SEMESTER VIII

| Sr. No. | Course Type | Subject Code | Course Title | Credits | Sessional Marks | | | | ESE | Total | |
|---------------------|-------------|--------------|--------------|-------------|-----------------|----|-----|-------|-----|-------|--|
| | | | | | MSE | TA | Lab | Total | | | |
| 1. | PEC | PEC-IV | PEC-IV | 3 (2-1-0) | 30 | 20 | - | 50 | 50 | 100 | |
| 2. | PEC | PEC-V | PEC-V | 3 (3-0-0) | 30 | 20 | - | 50 | 50 | 100 | |
| 3. | PEC | PEC-VI | PEC-VI | 3 (3-0-0) | 30 | 20 | - | 50 | 50 | 100 | |
| 4. | OEC | OEC-II | OEC-II | 3 (2-1-0) | 30 | 20 | - | 50 | 50 | 100 | |
| 5. | Project | TFT 498 | Project | 10 (0-0-20) | - | 50 | - | 50 | 50 | 100 | |
| Total Credit | | | | | 22 | | | | | | |

Total Programme Credits :172

TFT 497 Project will have Internal Evaluation while TFT 498 Project will have External Evaluation.

Department of Food Technology
(to be offered in VII & VIII Semester)

Programme Elective-I

| S. No. | Course Code | Course Name | Credits |
|--------|-------------|---------------------------------------|-----------|
| 1 | TFT 403 | Traditional & Fermented Foods | 3 (3-0-0) |
| 2 | TFT 405 | Food Products and Process Development | 3 (3-0-0) |

Programme Elective-II

| | | | |
|---|---------|------------------------------------|-----------|
| 1 | TFT 407 | Food Processing Waste Management | 2 (2-0-0) |
| 2 | TFT 409 | Quality Management of Frozen Foods | 2 (2-0-0) |

Programme Elective-III

| | | | |
|---|---------|----------------------------------|-----------|
| 1 | TFT 411 | Technology of Animal Foods | 2 (2-0-0) |
| 2 | TFT 413 | Nutraceutical & Functional Foods | 2 (2-0-0) |

Programme Elective-IV

| | | | |
|---|---------|-------------------------------|-----------|
| 1 | TCH 422 | Process Modeling & Simulation | 3 (2-1-0) |
| 2 | TCH 424 | Process Equipment Design | 3 (2-1-0) |

Programme Elective-V

| | | | |
|---|---------|--|-----------|
| 1 | TFT 402 | Innovative Techniques in Food Processing | 3 (3-0-0) |
| 2 | TFT 404 | Computer Applications in Food Processing | 3 (3-0-0) |

Programme Elective-VI

| | | | |
|---|---------|---|-----------|
| 1 | TFT 406 | Food Packaging & Storage Engineering | 3 (3-0-0) |
| 2 | TFT 408 | Rheological and Sensory Analysis of Foods | 3 (3-0-0) |

**List of Open Electives offered
by Various Departments in VII & VIII Semester**

School of Engineering

| Name of Departments | OEC I | | | OEC II | | |
|--|--------------|--|----------|---------------|---|----------|
| Computer Science & Engineering (CS / IT) | OCS 433 | Machine Learning | 3(3-0-0) | OIT 444 | Human Computer Interaction | 4(3-1-0) |
| Electronics Engineering | OET 433 | Mobile Communication | 3(3-0-0) | OET 444 | Image Processing | 4(3-1-0) |
| | OET 435 | Biomedical Electronics | 3(3-0-0) | OET 446 | Fuzzy logic with Electronics Engineering applications | 4(3-1-0) |
| Electrical Engineering | OEE 433 | Non-Conventional Energy Sources | 3(3-0-0) | OEE 444 | Industrial Measurements | 4(3-1-0) |
| | OEE 435 | Power Plant Engineering | 3(3-0-0) | OEE 446 | Industrial Control Systems | 4(3-1-0) |
| Civil Engineering | OCE 433 | Environmental Pollution and Management | 3(3-0-0) | OCE 444 | Introduction to RS and GIS | 4(3-1-0) |
| | OCE 435 | Disaster Management | 3(3-0-0) | OCE 446 | Introduction to Infrastructure Engineering | 4(3-1-0) |
| Mechanical Engineering | OME 433 | Solar Energy | 3(3-0-0) | OME 444 | Alternative Energy Resources | 4(3-1-0) |
| | OME 435 | Composite Materials | 3(3-0-0) | OME 446 | Industrial Engineering & Automation | 4(3-1-0) |

School of Chemical Technology

| Name of Departments | OEC I | | | OEC II | | |
|----------------------------|--------------|--|----------|---------------|--------------------------------------|----------|
| Chemical Engineering | OCH 433 | Energy Resources and Utilization | 3(3-0-0) | OCH 446 | Air Pollution Monitoring and Control | 4(3-1-0) |
| Bio-Chemical Engineering | OBE 433 | Principal of Biochemical Engineering | 3(3-0-0) | OCH 444 | Transport Phenomenon | 3(2-1-0) |
| Oil Technology | OOT 433 | Technology of Oil, Oil Seeds & Surfactants | 3(3-0-0) | OCH 444 | Transport Phenomenon | 3(2-1-0) |
| Plastic Technology | OPL 433 | Introduction to Polymer Technology | 3(3-0-0) | OCH 444 | Transport Phenomenon | 3(2-1-0) |
| Food Technology | OFT 433 | Nutritional aspects of Natural & Processed Foods | 3(3-0-0) | OCH 444 | Transport Phenomenon | 3(2-1-0) |
| Leather Technology | OLT 433 | Introduction to Leather Technology | 3(3-0-0) | OCH 444 | Transport Phenomenon | 3(2-1-0) |
| Paint Technology | OPT 433 | Basic Paint Technology | 3(3-0-0) | OCH 444 | Transport Phenomenon | 3(2-1-0) |