**BE Course Scheme (Chemical Engineering)**

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| --- | --- | --- |
| **Course Code** | **Name of Subject** | **Credit Hours** |
| **Theory** | **Lab** | **Total** |
| **1st Semester** |
| HUM-102 | Islamic Studies/ Ethics | 2 | 0 | 2 |
| HUM-103 | Functional English | 3 | 0 | 3 |
| BS-104 | Calculus | 3 | 0 | 3 |
| BS-103 | Applied Physics | 3 | 1 | 4 |
| CE-111 | Chemical Process Principles-I | 3 | 0 | 3 |
| CE-151 | Computer and Computation | 2 | 1 | 3 |
|  | Total | 16 | 2 | 18 |
| **2nd Semester** |
| BS-106 | Industrial Chemistry | 2 | 1 | 3 |
| HUM-101 | Pakistan Studies | 2 | 0 | 2 |
| HUM-105 | Logic and Critical Thinking | 2 | 0 | 2 |
| CE-112 | Chemical Engineering Thermodynamics-I | 3 | 0 | 3 |
| CE-113 | Particulate Technology | 3 | 1 | 4 |
| CE-141 | Engineering Drawing and Graphics | 2 | 1 | 3 |
| CE-142 | Workshop Practice | 0 | 1 | 1 |
|  | Total | 14 | 4 | 18 |
| **3rd Semester** |
| BS-202 | Differential Equations | 3 | 0 | 3 |
| CE-214 | Fluid Mechanics | 3 | 1 | 4 |
| CE-215 | Chemical Process Principles-II | 3 | 0 | 3 |
| CE-243 | Electrical Technology & Electronics | 2 | 0 | 2 |
| CE-244 | Engineering Materials | 2 | 0 | 2 |
| CE-251 | Computational Methods for Chemical Engineers | 2 | 1 | 3 |
| CE-252 | Computer Aided Engineering Drawing | 0 | 1 | 1 |
|  | Total | 15 | 3 | 18 |
| **4th Semester** |
| BS-203 | Complex Variables and Transforms | 3 | 0 | 3 |
| HUM-204 | Technical Report Writing Skills | 3 | 0 | 3 |
| CE-216 | Heat Transfer | 3 | 1 | 4 |
| CE-217 | Mass Transfer | 3 | 1 | 4 |
| CE-221 | Chemical Engineering Thermodynamics-II | 3 | 1 | 4 |
|  | Total | 15 | 3 | 18 |
| **5th Semester** |
| BS-301 | Probability and Statistics | 3 | 0 | 3 |
| CE-318 | Chemical Process Technology | 3 | 0 | 3 |
| CE-322 | Separation Processes | 3 | 1 | 4 |
| CE-323 | Fuels and Energy | 3 | 1 | 4 |
| CE-353 | Computational Fluid Dynamics (CFD) | 2 | 1 | 3 |
|  | Total | 14 | 3 | 17 |
| **6th Semester** |
| BS-302 | Numerical Analysis | 2 | 1 | 3 |
| CE-324 | Chemical Reaction Engineering | 3 | 1 | 4 |
| CE-325 | Chemical Product Design | 3 | 1 | 4 |
| CE-326 | Transport Phenomena | 3 | 0 | 3 |
| CE-327 | Chemical Process Equipment Design | 3 | 0 | 3 |
|  | Total | 14 | 3 | 17 |
| **7th Semester** |
| HUM-406 | Engineering Economics | 2 | 0 | 2 |
| CE-428 | Instrumentation and Process Control | 3 | 1 | 4 |
| CE-431 | Biochemical Engineering | 2 | 0 | 2 |
| CE-454 | Chemical Process Design & Simulation | 2 | 1 | 3 |
| CE-461 | Entrepreneurship | 2 | 0 | 2 |
| CE-499 | Final Year Design Project-I | 0 | 3 | 3 |
|  | Total | 11 | 5 | 16 |
| **8th Semester** |
| CE-433 | Environmental Engineering | 3 | 0 | 3 |
| CE-434 | Chemical Engineering Process Safety | 2 | 0 | 2 |
| CE-435 | Petroleum Refinery Engineering | 2 | 0 | 2 |
| CE-432 | Petrochemical Engineering | 2 | 0 | 2 |
| CE-462 | Production & Operations Management | 2 | 0 | 2 |
| CE-499 | Final Year Design Project-II | 0 | 3 | 3 |
|  | Total | 11 | 3 | 14 |
|  | **Grand Total** | **110** | **25** | **135** |