**Proposed Syllabus Structure for B. Tech. Course**

| **Semester – I** | | | | | | | | | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **No** | **Subjects** | | **Credits** | **Hrs/Week** | | | | **Marks for various Exams** | | | | | | | | |
| **L** | | **T** | **P** | **C. A.** | **M.S. – I** | | | **M.S. – II** | **E. S.** | | **Total** | |
|  | Physical Chemistry-I | | 3 | 2 | | 1 | 0 | 20 | 20 | | | 20 | 40 | | 100 | |
|  | Organic Chemistry | | 4 | 3 | | 1 | 0 | 30 | 30 | | | 30 | 60 | | 150 | |
|  | Applied Mathematics-I | | 4 | 2 | | 2 | 0 | 30 | 30 | | | 30 | 60 | | 150 | |
|  | Applied Physics-I | | 3 | 2 | | 1 | 0 | 20 | 20 | | | 20 | 40 | | 100 | |
|  | Physical and Analytical Chemistry Lab | | 2 | 0 | | 0 | 4 | 25 |  | | |  | 25 | | 50 | |
|  | Engineering Graphics | | 4 | 0 | | 0 | 6 | 50 |  | | |  | 50 | | 100 | |
|  | Communication Skills | | 2 | 0 | | 0 | 4 | 50 |  | | |  |  | | 50 | |
|  | TOTAL: | | 22 | 9 | | 5 | 14 |  |  | | |  |  | | 700 | |
| **SEMESTER – II** | | | | | | | | | | | | | | | | |
| **No.** | **Subjects** | | **Credits** | | **Hrs/week** | | | **Marks for various Exams** | | | | | | | | |
| **L** | **T** | **P** | **C. A.** | **M.S. – I** | **M.S. – II** | | | | **E. S.** | | **Total** | |
|  | Physical Chemistry-II | | 3 | | 2 | 1 | 0 | 20 | 20 | 20 | | | | 40 | | 100 | |
|  | Analytical Chemistry | | 3 | | 2 | 1 | 0 | 20 | 20 | 20 | | | | 40 | | 100 | |
| CET | Process Calculations | | 4 | | 2 | 2 | 0 | 30 | 30 | 30 | | | | 60 | | 150 | |
|  | Applied Mathematics-II | | 4 | | 2 | 2 | 0 | 30 | 30 | 30 | | | | 60 | | 150 | |
|  | Applied Physics-II | | 4 | | 3 | 1 | 0 | 30 | 30 | 30 | | | | 60 | | 150 | |
|  | Physics Laboratory | | 2 | | 0 | 0 | 3 | 25 |  |  | | | | 25 | | 50 | |
|  | Organic Chemistry Laboratory | | 2 | | 0 | 0 | 3 | 25 |  |  | | | | 25 | | 50 | |
|  | Engineering Graphics – I | | 4 | | 0 | 0 | 6 | 50 |  |  | | | | 50 | | 100 | |
|  | Total | | 26 | | 11 | 7 | 12 |  |  |  | | | |  | | 850 | |
| **SEMESTER – III** | | | | | | | | | | | | | | | | |
| **No.** | **Subjects** | | **Credits** | | **Hrs /week** | | | **Marks for various Exams** | | | | | | | | |
| **L** | **T** | **P** | **C. A.** | **M.S. – I** | **M.S. – II** | | | | **E. S.** | | **Total** | |
|  | Special Subject I | |  | |  |  |  |  |  |  | | | |  | |  | |
|  | Special Subject II | |  | |  |  |  |  |  |  | | | |  | |  | |
|  | Biology / Chemistry / Physics Course | |  | |  |  |  |  |  |  | | | |  | |  | |
|  | Biology / Chemistry / Physics Course | |  | |  |  |  |  |  |  | | | |  | |  | |
|  | Biology / Chemistry / Physics Course | |  | |  |  |  |  |  |  | | | |  | |  | |
|  | Special Subject Laboratory I | |  | |  |  |  |  |  |  | | | |  | |  | |
|  | Special Subject Laboratory II | |  | |  |  |  |  |  |  | | | |  | |  | |
|  | Total | |  | |  |  |  |  |  |  | | | |  | |  | |
| **SEMESTER – IV** | | | | | | | | | | | | | | | | |
| **No.** | | **Subjects** | **Credits** | | **Hrs/week** | | | **Marks for various Exams** | | | | | | | | |
| **L** | **T** | **P** | **C. A.** | **M.S. – I** | | **M.S. – II** | | **E. S.** | | | **Total** |
|  | | Engg. Mechanics & Strength of Materials | 3 | | 2 | 1 |  |  |  | |  | |  | | | 100 |
|  | | Biology / Chemistry / Physics Course |  | |  |  |  |  |  | |  | |  | | |  |
| CET 1105 | | Transport Phenomena | 4 | | 3 | 1 | 0 | 30 | 30 | | 30 | | 60 | | | 150 |
|  | | Electrical Engg and Electronics | 3 | | 2 | 1 | 0 | 20 | 20 | | 20 | | 40 | | | 100 |
|  | | Special Subject III |  | |  |  |  |  |  | |  | |  | | |  |
|  | | Engg Mechanics and Strength of Materials Laboratory | 2 | | 0 | 0 | 4 | 25 |  | |  | | 25 | | | 50 |
|  | | Electrical Engg and Electronics Lab | 2 | | 0 | 0 | 4 | 25 |  | |  | | 25 | | | 50 |
| MAT | | Computer Applications Lab | 2 | | 0 | 0 | 3 | 25 |  | |  | | 25 | | | 50 |
|  | | Total |  | |  |  |  |  |  | |  | |  | | |  |

| **SEMESTER – V** | | | | | | | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **No.** | **Subjects** | | **Credits** | **Hrs /week** | | | **Marks for various Exams** | | | | | | | |
| **L** | **T** | **P** | **C. A.** | **M.S. – I** | **M.S. – II** | | **E. S.** | | **Total** | |
| CET 1406 | Chemical Engineering Operations | | 3 | 2 | 1 | 0 | 20 | 20 | 20 | | 40 | | 100 | |
| CET 1212 | Chemical Reaction Engineering | | 3 | 2 | 1 | 0 | 20 | 20 | 20 | | 40 | | 100 | |
|  | Special Subject IV | |  |  |  |  |  |  |  | |  | |  | |
|  | Special Subject V | |  |  |  |  |  |  |  | |  | |  | |
|  | Special Subject VI | |  |  |  |  |  |  |  | |  | |  | |
|  | Special Subject Laboratory III | |  |  |  |  |  |  |  | |  | |  | |
|  | Special Subject Laboratory IV | |  |  |  |  |  |  |  | |  | |  | |
|  | Total | |  |  |  |  |  |  |  | |  | |  | |
| **SEMESTER – VI** | | | | | | | | | | | | | | |
| **No.** | **Subjects** | **Credits** | | **Hrs/week** | | | **Marks for various Exams** | | | | | | | |
| **L** | **T** | **P** | **C. A.** | **M.S. – I** | | **M.S. – II** | | **E. S.** | | **Total** |
| CET 1713 | Instrumentation and Process Control | 3 | | 2 | 1 | 0 | 20 | 20 | | 20 | | 40 | | 100 |
|  | Special Subject VII |  | |  |  |  |  |  | |  | |  | |  |
|  | Special Subject VIII |  | |  |  |  |  |  | |  | |  | |  |
|  | Special Subject IX |  | |  |  |  |  |  | |  | |  | |  |
|  | Special Subject Elective-I |  | |  |  |  |  |  | |  | |  | |  |
|  | Special Subject Laboratory V |  | |  |  |  |  |  | |  | |  | |  |
|  | Special Subject Laboratory VI |  | |  |  |  |  |  | |  | |  | |  |
|  | Special Subject Laboratory VII |  | |  |  |  |  |  | |  | |  | |  |
|  | Total |  | |  |  |  |  |  | |  | |  | |  |
| **Internship** | | | | | | | | | | | | | | |
| * After the end of the sixth semester examination and before the start of the seventh semester, every student will have to undergo an internship. The Internship would be of 6 credits. * The internship (preferably Industrial Internship) would be assigned to the student by the Departmental Internship Coordinator, with the approval of Head of the Department. * The total duration of the internship would be for a period equivalent to 12 Calendar weeks. This period typically start from 1st May and end before 30th July every year. This means the end semester examination of T. Y. B. Tech. (Semester VI) should be completed by 25th April every year. The Semester VII (final Year B. Tech.) should commence w.e.f. 1st Aug every year. The internship may be completed in one or more organizations as described below. * The internship could be of the following forms:   (i) industrial internship in a company (within India or Abroad) involved in R&D / design / manufacturing (QA/QC/Plant Engineering/Stores and Purchase) / marketing / finance / consultancy / Technical services / Engineering / Projects, etc.  (ii) research internship in reputed Institutes (within India or Abroad) like, ICT, IITs, NITs, IISC, NCL, IICT etc.   * At the end of the internship, each student will submit a written report based on the work carried out during the Internship. The report will be countersigned by the Supervisor from Industry / Institute as the case may be. * Performance of the student will be assessed based on the written report and a presentation to a committee consisting of two faculty members from the Department. * Students will be assigned a grade based on the written report and a presentation; evaluated by a committee of faculty members. | | | | | | | | | | | | | | |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **SEMESTER – VII (will be of 10 weeks duration)** | | | | | | | | | | | |
| **No.** | **Subjects** | **Credits** | **Hrs/week** | | | **Marks for various Exams** | | | | | |
| **L** | **T** | **P** | **C. A.** | **M.S.** | | **E. S.** | **Total** | |
|  | Special Subject X |  |  |  |  |  |  | |  |  | |
|  | Special Subject XI |  |  |  |  |  |  | |  |  | |
|  | Special Subject XII |  |  |  |  |  |  | |  |  | |
|  | Humanities / Management Subject I |  |  |  |  |  |  | |  |  | |
| CEP 1714 | Chem. Eng. Laboratory | 2 | 0 | 0 | 3 | 25 |  | | 25 | 50 | |
|  | Seminar |  |  |  |  |  |  | |  |  | |
|  | Project I |  |  |  |  |  |  | |  |  | |
|  | Total |  |  |  |  |  |  | |  |  | |
| **SEMESTER – VIII** | | | | | | | | | | | |
| **No.** | **Subjects** | **Credits** | **Hrs /week** | | | **Marks for various Exams** | | | | | |
| **L** | **T** | **P** | **C. A.** | **M.S. – I** | **M.S. – II** | **E. S.** | | **Total** |
| CET 1514 | Chemical Project Economics | 3 | 2 | 1 | 0 | 20 | 20 | 20 | 40 | | 100 |
|  | Humanities / Management Subject II |  |  |  |  |  |  |  |  | |  |
|  | Humanities / Management Subject III |  |  |  |  |  |  |  |  | |  |
|  | Special Subject XIII |  |  |  |  |  |  |  |  | |  |
|  | Special Subject Elective |  |  |  |  |  |  |  |  | |  |
|  | Project II |  |  |  |  |  |  |  |  | |  |
|  | Total |  |  |  |  |  |  |  |  | |  |