

SCHEME OF STUDY FOR B.TECH.(COMPUTER SCIENCE)

Admission Year: 2010

1. As per the institute level guidelines, the credit structure for students admitted in 2009 or later is as below (Ref - Notice on student notice board, www.vnit.ac.in, Date - March 20, 2012, **Ref** : No. Acad/Regn/Odd (July) Term /2012-13/):

| | Category | Symbol | B.Tech (4-year) |
|---|--------------------------|---------------------------------|--------------------|
| 1 | Departmental core | DC | 152 |
| 2 | Departmental Elective | DE | 72-90 |
| 3 | Humanities & Management | HM | 0-6 |
| 4 | Open course | OC | 0-12 |
| | TOTAL REQUIREMENT | Total =(DC+DE+HM+OC) | 320 |

2. As per this latest credit structure, the credits reserved for OC-HM are 0-18 (0 minimum - 18 maximum).
3. The OC-HM courses can be registered *only in the semesters identified* in the scheme below, that is, **3rd, 4th, 7th and 8th semesters**.
4. If a student does not register for an OC-HM course in one of these (3rd/4th/7th/8th) semesters, he/she should compensate for those 6 credits in the *same* semester by registering for one more DE subject in that semester.
5. The 6 credits for the course on “Technical Communication” in 6th semester (offered by Humanities deptt), will be considered as part of the maximum 18 credits reserved for OC-HM courses. A student if registers for “technical Communication” cannot register for any other HM course.

Semester III

| Course Code | Course Title | Credits | Cat. |
|-------------|--|---------|------|
| MAL 201 | Integral Transforms and Partial Differential Equations | 6 | DC |
| ECL 2xx | Digital Circuits and Logic Design | 6 | DC |
| EEL 2xx | Electrical Sciences | 6 | DC |
| PHL 2xx | Physics II | 6 | DC |
| CSL 2xx | Data Structures and Program Design I | 8 | DC |
| | OC -HM | 6 | |
| | DC: 32; DE + OC-HM: 6 | 38 | |

Semester IV

| Course Code | Course Title | Credits | Cat. |
|-------------|---|---------|---|
| CSL 2xx | Discrete Mathematics and Graph Theory | 6 | DC |
| MAL 205 | Numerical Analysis and Probability Theory | 6 | DC |
| CSL 2xx | Data Structures and Program Design II | 8 | DC |
| CSL 2xx | Concepts in Programming Languages | 6 | DC |
| CSL 2xx | Business Information Systems | 6 | DE |
| CSL 2xx | Internet Technologies | 6 | DE |
| ECL 2xx | Analog Circuits | 6 | DE |
| | OC - HM | 6 | |
| | DC: 58; DE + OC-HM: 18 | 38 | DEs: (1 of 3 DEs + 1 OC-HM) OR (2 of 3 DEs) |

Semester V

| Course Code | Course Title | Credits | Cat. |
|-------------|--------------------------------|---------|---------------------|
| CSL 3xx | Microprocessor-based Systems | 8 | DC |
| CSL 3xx | Computer Organization | 6 | DC |
| CSL 3xx | Software Engineering | 6 | DC |
| CSL 3xx | Introduction to OO Methodology | 8 | DC |
| CSP 3xx | Software Lab I | 2 | DC |
| CSL 3xx | Neurofuzzy Techniques | 6 | DE |
| CSL 3xx | Computer Graphics | 6 | DE |
| ECL 3xx | Signals and Systems | 6 | DE |
| | DC: 88; DE + OC-HM: 30 | 42 | DEs : 2 of 3 DEs |

Semester VI

| Course Code | Course Title | Credits | Cat. |
|-------------|---------------------------|---------|---------------------|
| CSL 3xx | Operating Systems | 6 | DC |
| CSL 3xx | Theory of Computation | 6 | DC |
| CSL 3xx | System Programming | 8 | DC |
| CSL 3xx | Computer Networks | 6 | DC |
| CSP 3xx | Software Lab II | 2 | DC |
| CSL 3xx | Paradigms in Programming | 6 | DE |
| HUL 3xx | Technical Communication | 6 | DE |
| EEL 3xx | Control Systems | 6 | DE |
| ECL 3xx | Digital Signal Processing | 6 | DE |
| | DC: 116; DE + OC-HM: 42 | 40 | DEs : 2 of 4 DEs |

Semester VII

| Course Code | Course Title | Credits | Cat. |
|-------------|----------------------------------|---------|--|
| CSL 4xx | Analysis of Algorithms | 6 | DC |
| CSL 4xx | Language Processors | 8 | DC |
| CSL 4xx | Database Management Systems | 8 | DC |
| CSD 4xx | Project Phase I | 4 | DC |
| CSL 4xx | Artificial Intelligence | 6 | DE |
| CSL 4xx | Formal Methods in Program Design | 6 | DE |
| CSL 4xx | Topics in Embedded Systems | 6 | DE |
| CSL4xx | Information Retrieval | 6 | DE |
| CSL4xx | Human Computer Interface | 6 | DE |
| CSL5xx** | Advances in Compilers | 8 | DE |
| CSL5xx** | Pattern Recognition | 8 | DE |
| CSL5xx** | Advanced Computer Architecture | 6 | DE |
| | OC - HM | 6 | |
| | DC: 142; DE + OC-HM: 60 | 44 | DEs : (2 of 5 DEs + 1 OC-HM) OR (3 of 5 DEs) |

** - These are M.Tech. level courses, that can be made available to B.Tech. students on the need basis. The prerequisite courses are as follows

- a. Advances in Compilers
 - i. CSL4xx : Language Processors
- b. Pattern Recognition
 - i. MAL 2xx : Numerical Methods and Probability Theory
- c. Advanced Computer Architecture
 - i. CSL3xx: Computer Organization

The instructors for these courses may announce additional criteria for students wishing to register for these courses. The criteria may be based on grades scored in pre-requisite courses (as applicable), overall CGPA or any other criteria and/or a combination of different criteria that can be announced before registration.

Semester VIII

| Course Code | Course Title | Credits | Cat. |
|-------------|----------------------------------|---------|--|
| CSD 4xx | Project Phase II | 8 | DC |
| CSP 4xx | Seminar | 2 | DC |
| CSL 4xx | Network Security | 6 | DE |
| CSL 4xx | Data Mining and Data Warehousing | 6 | DE |
| CSL 4xx | Topics in Graph Theory | 6 | DE |
| CSL 4xx | Software Project Management | 6 | DE |
| CSL 4xx | Topics in Distributed Systems | 6 | DE |
| CSL 4xx | Enterprise Resource Planning | 6 | DE |
| CSL 4xx | Business Intelligence | 6 | DE |
| CSL4xx | Introduction to Cloud Computing | 6 | DE |
| CSL 5xx ** | Software Architecture | 6 | DE |
| CSL 5xx ** | Topics in Bioinformatics | 6 | DE |
| | OC - HM | 6 | |
| | DC: 152; DE + OC-HM: 90 | 40 | DEs:(4 of 10 DEs + 1OC/HM) OR (5 of 10 DEs) |

** - These are M.Tech. level courses, that can be made available to B.Tech. students on the need basis. The prerequisite courses are as follows

- a. Software Architecture –
 - ii. CSL3xx Software Engineering,
 - iii. CSL3xx Introduction to OO Methodology
- b. Topics in Bioinformatics –
 - iv. CSL2xx – Discrete Mathematics and Graph Theory
 - v. CSL3xx – Analysis of Algorithms

The instructors for these courses may announce additional criteria for students wishing to register for these courses. The criteria may be based on grades scored in pre-requisite courses (as applicable), overall CGPA or any other criteria and/or a combination of different criteria that can be announced before registration.