**Syllabus to be implemented from the Academic Year 2014-15**

**Computer Science & Engineering**

**First Year First Semester**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **A. THEORY** | | | | | | | | |  |
| Sl. No. | Course Code | Theory | Contact Hours/Week | | | | Credit  Points | |
| L | T | P | Total |
| 1 | HU101 | English Language  & Technical  Communication-I | 2 | 0 | 0 | 2 | 2 | |
| 2 | PH101 | Physics-I | 3 | 1 | 0 | 4 | 3 | |
| 3 | M101 | Mathematics-I | 3 | 1 | 0 | 4 | 3 | |
| 4 | ES101 | Basic Electrical &  Electronic Engineering-I | 3 | 0 | 0 | 3 | 4 | |
| 5 | ME101 | Engineering Mechanics | 3 | 0 | 0 | 3 | 3 | |
| 6 | CS101 | Basic Computation &  Principles of Computer  Programming-I | 3 | 0 | 0 | 3 | 3 | |
| Total of Theory | | |  |  |  | 19 | 18 | |
| **B. PRACTICAL** | | | | | | | | |
| 7 | PH191 | Physics-I Lab | 0 | 0 | 3 | 3 | 2 | |
| 8 | ES191 | Basic Electrical &  Electronic Engineering-I Lab | 0 | 0 | 3 | 3 | 2 | |
| 9 | ME191 | Engineering Drawing &  Computer Graphics Lab | 1 | 0 | 3 | 4 | 3 | |
| 10 | CS191 | Basic Computation &  Principles of Computer  Programming-I Lab | 0 | 0 | 3 | 3 | 2 | |
| Total of Practical | | |  |  |  | 13 | 9 | |
| **C. SESSIONAL** | | | | | | | | |
| 11 | HU181 | Language Laboratory-I | 0 | 0 | 2 | 2 | | 2 |  |
| 12 | XC181 | Extra Curricular  Activities(NSS/NCC/NSO  etc) | 0 | 0 | 2 | 2 | | 1 |  |
| Total of Sessional | | | | | | 4 | | 3 |  |
| Total of Semester | | | | | | 36 | | 30 |  |

**Computer Science & Engineering**

**First Year Second Semester**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **A. THEORY** | | | | | | | | |  |
| Sl. No. | Course Code | Theory | Contact Hours/Week | | | | Credit  Points | |
| L | T | P | Total |
| 1 | CS201 | Principles of Computer  Programming-(C++) | 3 | 1 | 0 | 4 | 4 | |
| 2 | PH201 | Physics-II | 3 | 1 | 0 | 4 | 3 | |
| 3 | M201 | Mathematics-II | 3 | 1 | 0 | 4 | 3 | |
| 4 | ES201 | Basic Electrical &  Electronic Engineering-II | 3 | 1 | 0 | 4 | 4 | |
| 5 | ME201 | Engineering  Thermodynamics & Fluid  Mechanics | 3 | 1 | 0 | 4 | 3 | |
| 6 | HU201 | English Language  & Technical Communication-II | 2 | 0 | 0 | 2 | 2 | |
| Total of Theory | | |  |  |  | 22 | 19 | |
| **B. PRACTICAL** | | | | | | | | |
| 7 | CS291 | Principles of Computer  Programming-II Lab | 0 | 0 | 3 | 3 | 2 | |
| 8 | PH291 | Physics-II Lab | 0 | 0 | 3 | 3 | 2 | |
| 9 | ES291 | Basic Electrical &  Electronic Engineering-II Lab | 0 | 0 | 3 | 3 | 2 | |
| 10 | ME291 | Workshop Practice Lab | 1 | 0 | 3 | 4 | 3 | |
| Total of Practical | | |  |  |  | 13 | 9 | |
| **C. SESSIONAL** | | | | | | | | |
| 11 | HU281 | Language Laboratory-II | 0 | 0 | 2 | 2 | | 2 |  |
| Total of Sessional | | | | | | 2 | | 2 |  |
| Total of Semester | | | | | | 37 | | 30 |  |

**Computer Science & Engineering**

**Second Year Third Semester**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **A. THEORY** | | | | | | | | |  |
| Sl. No. | Course Code | Theory | Contact Hours/Week | | | | Credit Points | |
| L | T | P | Total |  |
| 1 | HU301 | Values & Ethics in Profession | 3 | 1 | 0 | 4 | 3 | |
| 2 | M 301 | Mathematics-III | 3 | 1 | 0 | 4 | 4 | |
| 3 | CS301 | Advanced OOPs Using C++ | 3 | 0 | 0 | 3 | 3 | |
| 4 | CS302 | Analog & Digital Electronics | 3 | 0 | 0 | 3 | 3 | |
| 5 | CS303 | Data Structure & Algorithm | 3 | 1 | 0 | 4 | 4 | |
| 6 | CS304 | Computer Organization | 3 | 1 | 0 | 4 | 4 | |
| Total of Theory | | |  |  |  | 22 | 21 | |
| **B. PRACTICAL** | | | | | | | | |
| 7 | CS391 | Advanced OOPs Using C++ Lab | 0 | 0 | 3 | 2 | 2 | |  |
| 8 | CS392 | Analog & Digital Electronics Lab | 0 | 0 | 3 | 2 | 2 | |
| 9 | CS393 | Data Structure & Algorithm Lab | 0 | 0 | 3 | 2 | 2 | |
| 10 | CS394 | Computer Organization Lab | 0 | 0 | 3 | 2 | 2 | |
| Total of Practical | | |  |  |  | 8 | 8 |
| Total of Semester | | |  |  |  | 30 | 29 |

**Second Year Fourth Semester**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **A. THEORY** | | | | | | | |  |
| Sl. No. | Course Code | Theory | Contact Hours/Week | | | | Credit Points |
| L | T | P | Total |  |
| 1 | M(CS)401 | Numerical Methods | 2 | 1 | 0 | 3 | 2 |
| 2 | CH 401 | Basic Environmental Engineering & Elementary Biology | 2 | 1 | 0 | 3 | 2 |
| 3 | CS401 | Communication Engg. & Coding  Theory | 3 | 1 | 0 | 4 | 3 |
| 4 | CS402 | Software Engineering | 3  3 | 1  1 | 0  0 | 4  4 | 3  4 |
| 5 | CS403 | Computer Architecture | 3  3 | 1  1 | 0  0 | 4  4 | 3  4 |
| 6 | CS404 | Formal Language & Automata Theory | 3 | 1 | 0 | 4 | 4 |  |
| Total of Theory | | |  |  |  | 22 | 17 |
| **B. PRACTICAL** | | | | | | | |
| 6 | HU481 | Technical Report Writing & Language Lab Practice | 0 | 0 | 3 | 3 | 1 |  |
| 7 | M(CS)491 | Numerical Method Lab | 0 | 0 | 3 | 3 | 2 |
| 8 | CS491 | Communication Engg. & Coding  Theory Lab | 0 | 0 | 3 | 3 | 2 |
| 9 | CS492 | Software Engineering Lab | 0 | 0 | 3 | 3 | 2 |
| 10 | CS493 | Computer Architecture Lab | 0 | 0 | 3 | 3 | 2 |
| Total of Practical | | |  |  |  | 15 | 9 |
| Total of Semester | | |  |  |  | 35 | 26 |

**Computer Science & Engineering**

**Third Year Fifth Semester**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **A. THEORY** | | | | | | | |
| Sl. No | Course  Code | Theory | Contact Hours/Week | | | | Credit  Points |
| L | T | P | Total |  |
| 1 | HU501 | Economics for Engineers | 3 | 0 | 0 | 3 | 3 |
| 2 | CS501 | Design & Analysis of Algorithm | 3 | 1 | 0 | 4 | 4 |
| 3 | CS502 | Microprocessors & Microcontrollers | 3 | 1 | 0 | 4 | 4 |
| 4 | CS503 | Discrete Mathematics | 3 | 1 | 0 | 4 | 3 |
| 5 | CS504 | Free Elective-I | 3 | 1 | 0 | 4 | 4 |
| Total of Theory | | |  |  |  | 19 | 18 |
| **B. PRACTICAL** | | | | | | | |
| 6 | CS591 | Design & Analysis of Algorithm Lab | 0 | 0 | 3 | 3 | 2 |
| 7 | CS592 | Microprocessors & Microcontrollers Lab | 0 | 0 | 3 | 3 | 2 |
| 8 | CS593 | PHP, .NET Practice Lab | 1 | 0 | 2 | 3 | 2 |
| 9 | CS594 | Free Elective-I Lab | 0 | 0 | 3 | 3 | 2 |
| Total of Practical | | |  |  |  | 12 | 8 |
| Total of Semester | | |  |  |  | 31 | 26 |

**List of Electives:**

**Free Elective-I**

CS504A: Circuit Theory & Network (ECE)

CS504B: Data Communication (ECE)

CS504C: Digital Signal Processing (ECE)

CS504D: Object Oriented Programming Using Java

**Computer Science & Engineering**

**Third Year Sixth Semester**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **A. THEORY** | | | | | | | |
| Sl. No. | Course Code | Theory | Contact Hours/Week | | | | Credit Points |
| L | T | P | Total |
| 1 | HU601 | Principles of Management | 2 | 0 | 0 | 2 | 2 |
| 2 | CS601 | Database Management System | 3 | 1 | 0 | 4 | 3 |
| 3 | CS602 | Computer Networks | 3 | 1 | 0 | 4 | 3 |
| 4 | CS603 | Operating System | 3 | 0 | 0 | 3 | 3 |
| 5 | CS604 | Professional Elective-I | 3 | 0 | 0 | 3 | 3 |
| 6 | CS605 | Free Elective-II | 3 | 0 | 0 | 3 | 3 |
| Total of Theory | | |  |  |  | 19 | 17 |
| **B. PRACTICAL** | | | | | | | |
| 7 | CS691 | Database Management System Lab | 0 | 0 | 3 | 3 | 2 |
| 8 | CS692 | Network Lab | 0 | 0 | 3 | 3 | 2 |
| 9 | CS693 | Operating System Lab | 0 | 0 | 3 | 3 | 2 |
| 10 | CS681 | Seminar | 0 | 0 | 3 | 3 | 2 |
| Total of Practical | | |  |  |  | 12 | 8 |
| Total of Semester | | |  |  |  | 31 | 25 |

**List of Electives:**

**Professional Elective – I**

CS604A: Information Theory & Coding

CS604B: Computer Graphics

CS604C: Multimedia Technology (IT)

**Free Elective-II**

CS605A: Operation Research (M)

CS605B: Human Resource Management (HSS)

CS605C: ERP

**Computer Science & Engineering**

**Fourth Year Seventh Semester**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **A. THEORY** | | | | | | | | | | |
| Sl. No. | Course Code | Theory | Contact Hours/Week | | | | | | | Credit Points |
| L | T | | P | | Total | |
| 1 | CS701 | Cloud Computing | 3 | 0 | | 0 | | 3 | | 3 |
| 2 | CS702 | Compiler Design | 3 | 1 | | 0 | | 4 | | 3 |
| 3 | CS703 | Professional Elective-II | 3 | 0 | | 0 | | 3 | | 3 |
| 4 | CS704 | Professional Elective-III | 3 | 0 | | 0 | | 3 | | 3 |
| 5  5 | CS705 | Free Elective-III | 3 | 0 | | 0 | | 3 | | 3 |
| Total of Theory | | |  |  | |  | | 16 | | 15 |
| **B. PRACTICAL** | | | | | | | | | | |
| 6 | CS793 | Professional Elective-II Lab | 0  0 | 0  0 | | 3  3 | | 3  3 | | 2  2 |
| 7 | CS795 | Free Elective-III Lab | 0 | 0 | | 3 | | 3 | | 2 |
| 8 | CS781 | Seminar on Industrial Training | 4 weeks duration during 6th-  7th Semester break | | | | | | | 2 |
| 9 | HU781 | Group Discussion |  | | | | | | | 2 |
| 10 | CS782 | Project Part-I |  | |  | | 6 | | 6 | 4 |
| Total of Practical | | |  | |  | |  | | 12 | 12 |
| Total of Semester | | |  | |  | |  | | 28 | 27 |
|  |

**List of Electives:**

**Professional Elective-II**

CS703A: Image Processing

CS703B: Pattern Recognition

CS703C: Soft Computing

CS703D: Artificial Intelligence

**Professional Elective-III**

CS704A: Distributed Operating System

CS704B: Data Warehousing and Data Mining

CS704C: Sensor Networks

CS704D: Mobile Computing

**Free Elective-III**

CS705A: Internet Technology (IT)

CS705B: Microelectronics & VLSI Design (ECE)

CS705C: Control System (EE)

CS705D: Modeling & Simulation (M)

**Computer Science & Engineering**

**Fourth Year Eighth Semester**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **A. THEORY** | | | | | | | | |
| Sl. No. | Course Code | Theory | Contact Hours/Week | | | | | Credit Points |
| L | T | P | Total | |
| 1 | HU801 | Organizational Behaviors/ Project Management | 3 | 0 | 0 | 3 | | 2 |
| 2 | CS801 | Professional Elective-IV | 3 | 0 | 0 | 3 | | 3 |
| 3 | CS802 | Free Elective-IV | 3 | 0 | 0 | 3 | | 3 |
| Total of Theory | | |  |  |  | 9 | | 8 |
| **B. PRACTICAL** | | | | | | | | |
| 4 | CS891 | Professional Elective-IV Lab | 0 | 0 | 3 | 3 | 3 | |
| 5 | CS881 | Grand Viva | 0 | 0 | 0 | 4 | 4 | |
| 6 | CS8823 | Project Part-II | 0 | 0 | 12 | 12 | 6 | |
| Total of Practical | | |  |  |  | 18 | 13 | |
| Total of Semester | | |  |  |  | 26 | 21 | |

**List of Electives:**

**Professional Elective-IV**

CS801A: Advanced Computer Architecture

CS801B: Parallel Computing

CS801C: Natural Language Processing

CS801: Cryptography & Network Security

**Free Elective-IV**

CS802A: Technology Management (HSS)

CS802B: Cyber Law & Security Policy (HSS)

CS802C: Optical Networking (ECE)

CS802D: Low Power Circuits & Systems (ECE)

CS802E: E-Commerce (IT)

CS802F: Robotics (EE&ME)