**COURSE STRCUTURE FOR UG ENGINEERING UNDER**

**DIBRUGARH UNIVERSITY**

**COMPUTER SCIENCE AND ENGINEERING**

**SEMESTER I**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Sl No. | Course Code | Course Title | L | T | P | Contact hrs/wk | Credit |
| 01 | HS1C01 | Sociology | 2 | 0 | 0 | 2 | 2 |
| 02 | HS1C02 | Business Communications | 2 | 0 | 0 | 2 | 2 |
| 03 | MA1C01 | Mathematics I | 3 | 1 | 0 | 4 | 4 |
| 04 | PH1C01 | Applied Physics I | 3 | 1 | 0 | 4 | 4 |
| 05 | PH1C02 | Applied Physics Laboratory I | 0 | 0 | 2 | 2 | 1 |
| 06 | CH1C01 | Engineering Chemistry I | 3 | 1 | 0 | 4 | 4 |
| 07 | CH1C02 | Engineering Chemistry Laboratory I | 0 | 0 | 2 | 2 | 1 |
| 08 | CE1C01 | Engineering Graphics | 1 | 3 | 0 | 4 | 4 |
| 09 | EE1C01 | Basic Electrical Engineering | 3 | 1 | 0 | 4 | 4 |
| 10 | EE1C02 | Basic Electrical Engineering Laboratory | 0 | 0 | 2 | 2 | 1 |
| 11 | ME1C01 | Engineering Workshop I | 0 | 0 | 2 | 2 | 1 |
| **Total** | | | | | | **32** | **28** |

**SEMESTER II**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Sl No. | Course Code | Course Title | L | T | P | Contact hrs/wk | Credit |
| 01 | HS1C03 | Economics for Engineers | 2 | 0 | 0 | 2 | 2 |
| 02 | HS1C04 | Presentation Skills | 1 | 2 | 0 | 3 | 2 |
| 03 | MA1C02 | Mathematics II | 3 | 1 | 0 | 4 | 4 |
| 04 | PH1C03 | Applied Physics II | 3 | 1 | 0 | 4 | 4 |
| 05 | PH1C04 | Applied Physics Laboratory II | 0 | 0 | 2 | 2 | 1 |
| 06 | CH1C03 | Engineering Chemistry II | 3 | 1 | 0 | 4 | 4 |
| 07 | CH1C04 | Engineering Chemistry Laboratory II | 0 | 0 | 2 | 2 | 1 |
| 08 | CS1C01 | Computer Programming | 3 | 0 | 0 | 3 | 3 |
| 09 | CS1C02 | Computer Programming Laboratory | 0 | 0 | 2 | 2 | 1 |
| 10 | ME1C02 | Engineering Mechanics | 3 | 1 | 0 | 4 | 4 |
| 11 | ME1C03 | Engineering Mechanics Laboratory | 0 | 0 | 2 | 2 | 1 |
| 12 | ME1C04 | Engineering Workshop II | 0 | 0 | 2 | 2 | 1 |
| **Total** | | | | | | **34** | **28** |
| 13 | AC1C01 | Environmental studies |  |  |  |  | 0 |

**SEMESTER III**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Sl. No. | Course  code | Course Title | L | T | P | Contact  Hrs/wk | Credits |
| 1 | MA2C01 | Mathematics III | 3 | 1 | 0 | 4 | 4 |
| 2 | CS2C01 | Discrete Mathematics | 3 | 1 | 0 | 4 | 4 |
| 3 | CS2C02 | Object Oriented Programming | 4 | 0 | 0 | 4 | 4 |
| 4 | CS2C03 | Basic Electronic Devices and Circuits | 3 | 1 | 0 | 4 | 4 |
| 5 | CS2C04 | Data Structures & Algorithms | 4 | 0 | 0 | 4 | 4 |
| 6 | CS2C05 | Digital Systems and Microprocessor | 3 | 1 | 0 | 4 | 4 |
| 7 | CS2C06 | Basic Electronics Engineering Laboratory | 0 | 0 | 2 | 2 | 1 |
| 8 | CS2C07 | OOP Laboratory | 0 | 0 | 2 | 2 | 1 |
| 9 |  | Digital Systems and Microprocessor Laboratory | 0 | 0 | 2 | 2 | 1 |
| 10 | CS2C08 | Data Structures Laboratory | 0 | 0 | 2 | 2 | 1 |
|  |  | ***TOTAL*** |  |  |  | **32** | **28** |
| 11 | AC2C01 | Language laboratory | 0 | 0 | 4 | 4 | 0 |

**SEMESTER IV**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Sl. No. | Course  code | Course Title | L | T | P | Contact  Hrs/wk | Credits |
| 1 | MA2C02 | Mathematics IV | 3 | 1 | 0 | 4 | 4 |
| 2 | CS2C09 | Computer Organization | 4 | 0 | 0 | 4 | 4 |
| 3 | CS2C10 | Operating Systems | 4 | 0 | 0 | 4 | 4 |
| 4 | CS2C11 | Database Management System | 4 | 0 | 0 | 4 | 4 |
| 5 | CS2C12 | Computer Network | 4 | 0 | 0 | 4 | 4 |
| 6 | CS2C13 | Software Engineering | 3 | 0 | 0 | 3 | 3 |
| 7 | CS2C14 | Operating System Laboratory | 0 | 0 | 2 | 2 | 1 |
| 8 | CS2C15 | Network Lab | 0 | 0 | 2 | 2 | 1 |
| 9 | CS2C16 | Java programming laboratory | 0 | 0 | 4 | 4 | 2 |
| 10 | CS2C17 | DBMS Laboratory | 0 | 0 | 2 | 2 | 1 |
|  |  | ***TOTAL*** |  |  |  | **33** | **28** |
| 11 | AC2C01 | Language laboratory | 0 | 0 | 4 | 4 | 0 |

**SEMESTER V**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Sl. No. | Course  code | Course Title | L | T | P | Contact  Hrs/wk | Credits |
| 1 | MA3C01 | Mathematics V | 3 | 1 | 0 | 4 | 4 |
| 2 | CS3C01 | Compiler Design | 4 | 0 | 0 | 4 | 4 |
| 3 | CS3C02 | Theory of Computation | 3 | 1 | 0 | 4 | 4 |
| 4 | CS3C03 | Design & Analysis of Algorithms | 4 | 0 | 0 | 4 | 4 |
| 5 | CS3C04 | Data Warehousing and Data Mining | 3 | 1 | 0 | 4 | 4 |
| 6 | CS3C05 | Distributed Computing Systems | 3 | 1 | 0 | 4 | 4 |
| 7 | CS3C06 | Mobile Application Development Laboratory | 0 | 0 | 2 | 2 | 1 |
| 8 | CS3C07 | Internet web programming laboratory | 0 | 0 | 4 | 4 | 2 |
| 9 | CS3C08 | System programming and Assembly programming Lab | 0 | 0 | 2 | 2 | 1 |
|  |  | **TOTAL** |  |  |  | **32** | **28** |

**SEMESTER VI**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Sl. No. | Course  code | Course Title | L | T | P | Contact  Hrs/wk | Credits |
| 1 | HS3C01 | Introduction to Accountancy & Management | 3 | 1 | 0 | 4 | 4 |
| 2 | CS3C09 | Cryptography & Information Security | 3 | 1 | 0 | 4 | 4 |
| 3 | CS3C10 | Object Oriented Analysis & Design | 4 | 0 | 0 | 4 | 4 |
| 4 | CS3EXX | Elective-1 | 3 | 1 | 0 | 4 | 4 |
| 5 | CS3EXX | Elective-2 | 4 | 0 | 0 | 4 | 4 |
| 6 | CS3C13 | Mini Project | 0 | 0 | 3 | 3 | 3 |
| 8 | CS3C14 | Distributed computing laboratory | 0 | 0 | 4 | 4 | 2 |
| 9 | CS3C15 | Software Engineering Laboratory | 0 | 0 | 2 | 2 | 1 |
| 10 | CS3C16 | Knowledge Engineering Laboratory | 0 | 0 | 2 | 2 | 1 |
| 11 | CS3C17 | Industrial/Professional Training | 0 | 0 | 0 | 0 | 1 |
|  |  | **TOTAL** |  |  |  | **31** | **28** |

**SEMESTER VII**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Sl. No. | Course  code | Course Title | L | T | P | Contact  Hrs/wk | Credits |
| 1 | CS4C01 | Principles of Programming Languages | 4 | 0 | 0 | 4 | 4 |
| 2 | CS4C02 | Computer Graphics | 3 | 1 | 0 | 4 | 4 |
| 3 | CS4C03 | Mobile Computing | 4 | 0 | 0 | 4 | 4 |
| 4 | CS4EXX | Elective-3 | 4 | 1 | 0 | 4 | 4 |
| 5 | CS4EXX | Elective-4 | 4 | 0 | 0 | 4 | 4 |
| 6 | CS4C04 | Seminar Presentations | 0 | 0 | 4 | 4 | 2 |
| 7 | CS4C05 | Project I | 0 | 0 | 6 | 6 | 6 |
|  |  | **TOTAL** |  |  |  | **30** | **28** |

**SEMESTER VIII**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Sl. No. | Course  code | Course Title | L | T | P | Contact  Hrs/wk | Credits |
| 1 | CS4C06 | Artificial Intelligence | 3 | 1 | 0 | 4 | 4 |
| 2 | CS4C07 | Advanced Databases | 4 | 0 | 4 | 4 | 4 |
| 3 | CS4EXX | Elective-5 | 4 | 0 | 0 | 4 | 4 |
| 4 | CS4EXX | Elective -6 | 3 | 1 | 0 | 4 | 4 |
| 5 | CS4C08 | Comprehensive Viva-voce | 0 | 0 | 4 | 4 | 2 |
| 6 | CS4C09 | Project II | 0 | 0 | 10 | 10 | 10 |
|  |  | **TOTAL** |  |  |  | **30** | **28** |

List of Electives:

|  |  |  |  |
| --- | --- | --- | --- |
| Course  Serial  number  (XX) | **Name of Elective** | Course  Serial  number  (XX) | **Name of Elective** |
| 01 | Embedded Computing System | 20 | Web Service and Service OrientedArchitecture |
| 02 | Simulation and Modeling | 21 | Bioinformatics |
| 03 | Software Testing | 22 | Script Programming |
| 04 | Approximation of Algorithms | 23 | Multimedia Computing |
| 05 | Information Retrieval | 24 | Digital Signal Processing |
| 06 | Software Architecture | 25 | Electronic Design Automation |
| 07 | VLSI Design & Algorithms | 26 | Soft Computing |
| 08 | Game Theory | 27 | Software Project Management |
| 09 | Computer Vision | 28 | Human Computer Interface |
| 10 | DNA Computing | 29 | Real Time Systems |
| 11 | Advanced Computer Architecture | 30 | Pattern Recognition |
| 12 | Knowledge based systems | 31 | Digital Image Processing |
| 13 | Data Warehousing And Data Mining | 32 | Advanced Databases |
| 14 | Business Intelligence | 33 | Semantic Web |
| 15 | Secure Software Engineering | 34 | Distributed Object Technologies |
| 16 | Advanced Compiler Design | 35 | Machine Learning And Soft Computing |
| 17 | Heterogeneous Computing | 36 | Social Network Analysis |
| 18 | Intelligent Agents | 37 | Big Data Analytics |
| 19 | Data Mining | 38 | Graph Theory |