**COURSE STRCUTURE FOR UG ENGINEERING UNDER**

**DIBRUGARH UNIVERSITY**

**INSTRUMENTATION 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 | Credit |
| 01 | MA2C01 | Mathematics III | 3 | 1 | 0 | 4 | 4 |
| 02 | EE2C01 | Electrical Engineering Materials | 3 | 1 | 0 | 4 | 4 |
| 03 | EE2C02 | Basic Electronics Engineering | 3 | 1 | 0 | 4 | 4 |
| 04 | EE2C03 | Electrical Circuit Analysis | 3 | 1 | 0 | 4 | 4 |
| 05 | IN2C01 | Transducers | 3 | 1 | 0 | 4 | 4 |
| 06 | EE2C05 | DSLD & Microprocessor | 4 | 1 | 0 | 5 | 5 |
| 07 | EE2C06 | DSLD & Microprocessor Laboratory | 0 | 0 | 2 | 2 | 1 |
| 08 | IN2C02 | Instrumentation Laboratory I | 0 | 0 | 2 | 2 | 1 |
| 09 | EE2C08 | Basic Electronics Engineering Laboratory | 0 | 0 | 2 | 2 | 1 |
|  |  | **Total** |  |  |  | **31** | **28** |
| 10 | AC2C01 | Language laboratory | 0 | 0 | 4 | 4 | 0 |

**SEMESTER IV**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Sl No. | Course Code | Course Title | L | T | P | Contact hrs/wk | Credit |
| 01 | MA2C02 | Mathematics IV | 3 | 1 | 0 | 4 | 4 |
| 02 | EE2C09 | Automatic Control System I | 3 | 1 | 0 | 4 | 4 |
| 03 | EE2C10 | Electro Magnetic Field Theory | 3 | 1 | 0 | 4 | 4 |
| 04 | EE2C11 | Advanced Electronics& Microprocessor Interfacing | 4 | 2 | 0 | 6 | 6 |
| 05 | IN2C03 | Electrical Machines and Application | 3 | 1 | 0 | 4 | 4 |
| 06 | IN2C04 | Industrial Instrumentation | 3 | 1 | 0 | 4 | 4 |
| 07 | EE2C14 | Advance Electronics & Microprocessor Laboratory | 0 | 0 | 2 | 2 | 1 |
| 08 | IN2C05 | Electrical Machines and Application Laboratory | 0 | 0 | 2 | 2 | 1 |
|  |  |  |  |  |  | **30** | **28** |
| 09 | AC2C01 | Language laboratory | 0 | 0 | 4 | 4 | 0 |

**SEMESTER V**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Sl No. | Course Code | Course Title | L | T | P | Contact hrs/wk | Credit |
| 01 | MA3C01 | Mathematics V | 3 | 1 | 0 | 4 | 4 |
| 02 | EE3C01 | Automatic Control System II | 3 | 1 | 0 | 4 | 4 |
| 03 | IN3C01 | Fluid Power and Control | 3 | 1 | 0 | 4 | 4 |
| 04 | EE3C03 | Power Electronics | 4 | 1 | 0 | 5 | 5 |
| 05 | EE3C04 | Digital Signal Processing | 3 | 1 | 0 | 4 | 4 |
| 06 | EE3C05 | Electrical Measurement I | 3 | 1 | 0 | 4 | 4 |
| 07 | EE3C06 | Power Electronics Laboratory | 0 | 0 | 2 | 2 | 1 |
| 08 | EE3C07 | Automatic Control System & DSPLaboratory | 0 | 0 | 2 | 2 | 1 |
| 09 | EE3C08 | C++ & Object Oriented Programming Laboratory | 0 | 0 | 2 | 2 | 1 |
|  |  |  |  |  |  | **31** | **28** |

**SEMESTER VI**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Sl No. | Course Code | Course Title | L | T | P | Contact hrs/wk | Credit |
| 01 | HS3C01 | Introduction to Accountancy & Management | 3 | 1 | 0 | 4 | 4 |
| 02 | MA3C02 | Mathematics VI (Fuzzy & Discrete) | 3 | 0 | 0 | 3 | 3 |
| 03 | IN3EXX | Elective - I | 3 | 1 | 0 | 4 | 4 |
| 04 | IN3EXX | Process Dynamics and Control | 3 | 1 | 0 | 4 | 4 |
| 05 | EE3C11 | Electrical Measurement II | 3 | 1 | 0 | 4 | 4 |
| 06 | IN3C02 | Instrumentation System Design & Drawing | 0 | 0 | 8 | 8 | 4 |
| 07 | IN3C03 | Instrumentation System Laboratory II | 0 | 0 | 2 | 2 | 1 |
| 08 | IN3C04 | Mini Project | 0 | 0 | 3 | 3 | 3 |
| 09 | IN3C05 | Industrial/Professional Training | 0 | 0 | 0 | 0 | 1 |
|  |  |  |  |  |  | **32** | **28** |

**List of Elective – I**

01 Principles of Tele-communication Engineering

02 High Voltage Engineering

03 Advance Microprocessor and Microcontroller

04 Computer Organisation

05 Advance Digital Signal Processing

06 Solid Mechanics

07 Electronic Instruments

08 Advances in Solid State Physics

**SEMESTER VII**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Sl No. | Course Code | Course Title | L | T | P | Contact hrs/wk | Credit |
| 01 | IN4C01 | Analytical Instrumentation | 3 | 1 | 0 | 4 | 4 |
| 02 | IN4C02 | AdvanceProcessDynamics and Control | 3 | 1 | 0 | 4 | 4 |
| 03 | IN4EXX | Elective-II | 3 | 1 | 0 | 4 | 4 |
| 04 | IN4EXX | Elective - III | 3 | 1 | 0 | 4 | 4 |
| 05 | EE4EXX | Elective - IV | 3 | 1 | 0 | 4 | 4 |
| 06 | IN4C03 | Seminar Presentations | 0 | 0 | 4 | 4 | 2 |
| 07 | IN4C04 | Project I | 0 | 0 | 6 | 6 | 6 |
|  |  | **Total** |  |  |  | **30** | **28** |

**List of Elective – II, III & IV**

09 VLSI Circuits Design

10 Speech Processing

11 Digital Image Processing

12 Advance Control System (including Linear System Th, Optimal C, and Adaptive C)

13 Ultrasonic & High Frequency Instrumentation

14 MEMS and NEMS

15 Biomedical Instrumentation

16 Advances in Tele-communication Engineering

17 Optimisation Techniques

18 Kinematics and Dynamics of Robotics

19 Operation System Design

20 Data Communication & Networks

21 Utilization of Electrical Power & Machine Drives

22 Introduction to Chemical Processes

**SEMESTER VIII**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Sl No. | Course Code | Course Title | L | T | P | Contact hrs/wk | Credit |
| 01 | EE4C05 | Power Station& Sub-Station Practice | 3 | 1 | 0 | 4 | 4 |
| 02 | IN4C05 | Instrumentation System Installation & Professional Practice | 3 | 1 | 0 | 4 | 4 |
| 03 | IN4C06 | Elective - V | 3 | 1 | 0 | 4 | 4 |
| 04 | IN4C07 | Elective-VI | 3 | 1 | 0 | 4 | 4 |
| 05 | IN4C08 | Comprehensive Viva-Voce | 0 | 0 | 4 | 4 | 2 |
| 06 | IN4C09 | Project II | 0 | 0 | 10 | 10 | 10 |
|  |  |  |  |  |  | **30** | **28** |

**List of Elective – V & VI**

23 Illumination Engineering

24 Power System Instrumentation

25 Artificial Intelligence and Applications

26 VLSI Signal Processing

27 Adaptive Signal Processing

28 Computer Vision

29 Computer Graphics

30 Natural LanguageProcessing

31 Intelligent Control System

32 Distributed Control System

33 Discrete Time Control System

34 Optical Communication Engineering

35 Computer Architecture

36 Embedded Systems

37 Biomedical Engineering

38 Object Oriented Programming with JAVA

39 Cloud Computing