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

**Electronics and Communication 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 |  |

**Electronics and Communication 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 |  |

**Electronics and Communication Engineering**

**Second Year Third Semester**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1. **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 | M301 | Mathematics-III | 3 | 1 | 0 | 4 | 4 |
| 3 | M(CS)301 | Numerical Methods | 2 | 1 | 0 | 3 | 3 |
| 4 | EC301 | Circuit Theory & Networks | 3 | 1 | 0 | 4 | 4 |
| 5 | EC302 | Solid State Device | 3 | 0 | 0 | 3 | 3 |
| 6 | EC303 | Analog Electronic Circuits | 3 | 1 | 0 | 4 | 4 |
| Total of Theory | | |  |  |  | 22 | 21 |
| **B. PRACTICAL** | | | | | | | |
| 7 | EC391 | Circuit Theory & Network Lab | 0 | 0 | 3 | 3 | 2 |
| 8 | EC392 | Solid State Devices Lab | 0 | 0 | 3 | 3 | 2 |
| 10 | EC393 | Analog Electronic Circuits Lab | 0 | 0 | 3 | 3 | 2 |
| 9 | M(CS)391 | Numerical Methods Lab | 0 | 0 | 3 | 3 | 2 |
| Total of Practical | | |  |  |  | 12 | 8 |
| Total of Semester | | |  |  |  | 34 | 29 |

**Second Year Fourth Semester**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1. **THEORY** | | | | | | | | |  |
| Sl. No. | Course Code | Theory | Contact  Hours/Week | | | | | Credit Points |
| L | T | P | | Total |
| 1 | CS(EC)401 | Data Structure & Algorithm | 3 | 1 | 0 | | 4 | 3 |
| 2 | CH401 | Basic Environmental Engineering | 2 | 0 | 1 | | 3 | 2 |
| 3 | EC401 | EM Theory & Transmission Lines | 3 | 1 | 0 | | 4 | 4 |
| 4 | EC402 | Digital Electronic & Integrated Circuits | 3 | 1 | 0 | | 4 | 4 |
| 5 | EC403 | Signals & Systems | 3 | 0 | 0 | | 3 | 3 |
| Total of Theory | | |  |  |  | | 18 | 16 |
| **B. PRACTICAL** | | | | | | | | |
| 6 | HU481 | Technical Report Writing & Language Lab Practice | 0 | 0 | | 3 | 3 | 2 |
| 7 | CS(EC)491 | Data Structure & Algorithm Lab | 0 | 0 | | 3 | 3 | 2 |
| 8 | EC491 | EM Theory & Transmission Lines Lab | 0 | 0 | | 3 | 3 | 2 |
| 9 | EC492 | Digital Electronic & Integrated Circuits Lab | 0 | 0 | | 3 | 3 | 2 |
| 10 | EC493 | Signal System Lab | 0 | 0 | | 3 | 3 | 2 |
| Total of Practical | | |  |  | |  | 15 | 10 |
| Total of Semester | | |  |  | |  | 33 | 26 |

**Electronics and Communication Engineering**

**Third Year Fifth Semester**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **A. THEORY** | | | | | | | |
| Sl.No | Course Code | Theory | Contact Hours/Week | | | | Credit Points |
| L | T | P | Total |
| 1 | HU-501 | Economics for Engineers | 3 | 0 | 0 | 3 | 3 |
| 2 | EC-501 | Analog Communication | 3 | 1 | 0 | 4 | 4 |
| 3 | EC-502 | Microprocessors & Microcontrollers | 3 | 1 | 0 | 4 | 4 |
| 4 | EC-503 | Control System | 3 | 0 | 0 | 3 | 3 |
| 5 | F. E.-  EC 504A EC-504B | Computer Architecture  Advanced OOPs Using C++ | 3 | 1 | 0 | 4 | 4 |
| Total of Theory | | |  |  |  | 18 | 18 |
| **B. PRACTICAL** | | | | | | | |
| 6 | EC-591 | Analog Communication Lab | 0 | 0 | 3 | 3 | 2 |
| 7 | EC-592 | Microprocessors & Microcontrollers  Lab | 0 | 0 | 3 | 3 | 2 |
| 8 | EC -593 | Control System | 0 | 0 | 3 | 3 | 2 |
| 9 | F.E.  EC-594A EC-594B | Computer Architecture Lab  OOPs Using C++ Lab | 0 | 0 | 3 | 3 | 2 |
| Total of Practical | | |  |  |  | 12 | 8 |
| Total of Semester | | |  |  |  | 30 | 26 |

Laboratories should have both physical experiments and simulation. Only virtual laboratory is not accepted.

**Electronics and Communication Engineering**

**Third Year Sixth Semester**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **A. THEORY** | | | | | | | | |
| Sl. No. | Course Code | Theory | Contact Hours/Week | | | | | Credit Points |
| L | | T | P | Total |
| 1 | HU-601 | Principles of Management | 2 | | 0 | 0 | 2 | 2 |
| 2 | EC601 | Digital Communications | 3 | | 0 | 0 | 3 | 3 |
| 3 | EC602 | Digital Signal Processing | 3 | | 0 | 0 | 3 | 3 |
| 4 | EC 603 | Telecommunication System | 3 | | 0 | 0 | 3 | 3 |
| 5 | P.E  EC-604A EC-604B  EC-604C  EC-604D | A. Antenna Theory & Propagation  B. Optical Communication & N/W C. Computer Networks  D. FPGA & Reconfigurable Computing | 3 | | 0 | 0 | 3 | 3 |
| 6 | F.E  EC-605A EC-605B EC-605C | OOPs Using Java  Programming Language  Electronic Measurement & Instrumentation | 3 | | 0 | 0 | 3 | 3 |
| Total of Theory | | |  | |  |  | 17 | 17 |
| **B. PRACTICAL** | | | | | | | | |
| 7 | EC691 | Digital Communications Lab | | 0 | 0 | 3 | 3 | 2 |
| 8 | EC 692 | Digital Signal Processing Lab | | 0 | 0 | 3 | 3 | 2 |
| 9 | F.E.  EC-695A EC-695B EC-695C | OOPs Using Java Lab  Programming Language Lab  Electronic Measurement & Instrumentation Lab | | 0 | 0 | 3 | 3 | 2 |
| 10 | P.E  EC-694A EC-694B  EC-694C  EC-694D | A. Antenna Theory & Propagation Lab  B. Optical Communication & N/W Lab C. Computer Networks Lab  D. FPGA & Reconfigurable Lab | | 0 | 0 | 3 | 3 | 2 |
| Total of Practical | | | |  |  |  | 12 | 8 |
| Total of Semester | | | |  |  |  | 29 | 25 |

**Electronics and Communication Engineering**

**Fourth Year Seventh Semester**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 1. **THEORY** | | | | | | | |
| Sl. No. | Course Code | Theory | Contact Hours/Week | | | | Credit Points |
| L | T | P | Total |
| 1 | EC701 | Wireless Communication & N/W | 3 | 0 | 0 | 3 | 3 |
| 2 | EC702 | Microelectronics & VLSI Designs | 3 | 0 | 0 | 3 | 3 |
| 3 | P.E  EC703 | A. RF & Microwave Engineering  B. Information Theory & Coding | 3 | 0 | 0 | 3 | 3 |
| 4 | P.E  EC704 | A. Radar Engineering  B. Embedded Systems  C. Biomedical Instrumentation | 3 | 0 | 0 | 3 | 3 |
| 5 | F. E.  EC705 | A. Artificial Intelligence (CSE)  B. Robotics (CSE )  C. Data Base Management System  D. Power Electronics | 3 | 0 | 0 | 3 | 3 |
| Total of Theory | | |  |  |  | 15 | 15 |
| **B. PRACTICAL** | | | | | | | |
| 6 | EC792 | VLSI Design Lab | 0 | 0 | 3 | 3 | 2 |
| 7 | F.E  EC795 | A. Artificial Intelligence Lab (CSE)  B. Robotics lab (CSE)  C. Data Base Management System Lab (CSE)  D. Power Electronics Lab (EE) | 0 | 0 | 3 | 3 | 2 |
| 8 | EC781 | Seminar on Industrial Training | 4 weeks duration during 6th-  7th Semester break | | | | 2 |
| 9 | HU781 | Group Discussion |  | | | | 2 |
| 10 | EC781 | Project Part -I |  |  | 6 | 6 | 4 |
| Total of Practical | | |  |  |  | 12 | 12 |
| Total of Semester | | |  |  |  | 27 | 27 |

**Electronics and Communication Engineering**

**Fourth Year Eighth Semester**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **A. THEORY** | | | | | | | |
| Sl. No. | Course Code | Theory | Contact Hours/Week | | | | Credit Points |
| L | T | P | Total |
| 1 | HU801 | Organizational Behavior/ Project Management | 3 | 0 | 0 | 3 | 2 |
| 2 | P.E  EC801 | A. Smart Antenna  B. Material Sc. & Engg. (Mat. Sc)  C. Satellite Communication & Remote Sensing | 3 | 0 | 0 | 3 | 3 |
| 3 | F.E  EC802 | A. Neural N/W & Applications (CSE)  B. Digital Image Processing  C. Renewable Energy (EE)  D. Audio & Speech Processing (CSE) | 3 | 0 | 0 | 3 | 3 |
| Total of Theory | | |  |  |  | 9 | 8 |
| **B. PRACTICAL** | | | | | | | |
| 4 | EC892 | Free Elective Lab | 0 | 0 | 3 | 3 | 3 |
| 5 | EC881 | Grand Viva | 0 | 0 | 0 | 3 | 4 |
| 6 | EC882 | Project Part-2 |  |  | 12 | 12 | 6 |
| Total of Practical | | |  |  |  | 18 | 13 |
| Total of Semester | | |  |  |  | 26 | 21 |

P.E: Professional Elective, F.E: Free Elective