**DEPARTMENT OF ELECTRONICS ENGINEERING**

**Kurukshetra University, Kurukshetra (K.U.K) – 136119, Haryana, INDIA**

**(Established by the state Legislature Act XII of 1956; ‘A+’ Grade, NAAC Accredited)**

**Phone: +91-1744-239155; Fax: +91-1744-238967, Web:** [**http://www.uietkuk.org**](http://www.uietkuk.org)

1. **Definition of Credit:**

|  |  |
| --- | --- |
| 1 Hour Lecture (L) per week | 1 credit |
| 1Hour Tutorial (T) per week | 1 credit |
| 1 Hour Practical (P) per week | 0.5 credit |
| 2 Hours Practical (Lab) per week | 1 credit |

1. **Range of Credits:**

A total credit of 160 is required for a student to be eligible to get Under Graduate degree in Electronics Engineering. A student will be eligible to get Under Graduate degree (B.Tech.) with Honours, if he/she completes an additional 20 credits more. These could be acquired through MOOCs at Swayam portal or with in-house examination being conducted. In order to have an Honours degree, a student may choose minimum 20 credits provided that the student must ensure the course is approved by the Competent Authority, Government of India.

**Course Code and Definition for Scheme**

|  |  |
| --- | --- |
| **Course Code** | **Definitions** |
| BS | Basic Science |
| ES | Engineering Science |
| HM | Humanities and Social Sciences including Management |

**Bachelor of Technology (Electronics Engineering) Kurukshetra University, Kurukshetra**

*SCHEME OF STUDIES/EXAMINATIONS*

***w.e.f.* July 2018 (Batch: 2018-2022)**

**Semester–III (Common with B.Tech ECE 3rd Sem as per AICTE Model curriculum)**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **S.** | **Course No.** |  | **Course Title** | **Teaching Schedule** |  | **Examination Schedule** **Marks** |  | **Duration** |
| **No.** |  |  |  |  | **L** | **T** | **P** | **Hours/** | **Major Test**  | **Minor Test** | **Practical (Major Test)** | **Total** | **of Exam** |
|  |  |  |  |  | **(Hrs.)** |
|  |  |  |  |  |  |  |  | **Week** |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 1 |  BS – 201A |  | Optics and Wave | 3 | 0 | 0 | 3 | 75 | 25 | 0 | 100 | 3 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2 | EC – 201A |  | Electronic Devices | 3 | 0 | 0 | 3 | 75 | 25 | 0 | 100 | 3 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 3 | EC – 203A |  | Electronic Devices Lab | 0 | 0 | 2 | 2 | - | 40 | 60 | 100 | 3 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4 | EC-205A |  |  Digital Electronics | 3 | 0 | 0 | 3 | 75 | 25 | 0 | 100 | 3 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 5 | EC – 207A |  | Digital Electronics Lab | 0 | 0 | 2 | 2 | - | 40 | 60 | 100 | 3 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 6 | EC – 209A |  | Signal and System  | 3 | 0 | 0 | 3 | 75 | 25 | 0 | 100 | 3 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 7 | EC – 211A |  | Signal and System Lab | 0 | 0 | 2 | 2 | - | 40 | 60 | 100 | 3 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 8 | EC – 213A |  | Network Theory  | 3 | 0 | 0 | 3 | 75 | 25 | 0 | 100 | 3 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 9 | ES – 201A |  | Essential of Information Theory | 3 | 0 | 0 | 3 | 75 | 25 | 0 | 100 | 3 |
| 10 | \*EC-215 A |  | Industrial Training-I | 2 | 0 | 0 | 2 | - | 100 | - | 100 | 3 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 11 | \*\*MC-901A |  | Environmental sciences |  | 3 | 0 | 0 | 3 | 100 | - | 0 |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  | TOTAL | 18 | 0 | 6 | 26 | 450 | 270 | 180 | 900 |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |

*\*MC-901A is a mandatory course and student has to get passing marks in order to qualify for the award of degree but its marks will not be added in the grand total.*

***Students are allowed to use single memory, non-programmable scientific calculator during examination.***

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*SCHEME OF STUDIES/EXAMINATIONS*

***w.e.f.* July 2018 (Batch: 2018-2022)**

**Semester–IV (Common with B.Tech ECE 4th Sem as per AICTE Model curriculum)**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **S.** | **Course No.** | **Course Title** |  | **Teaching Schedule** |  | **Allotment of Marks** |  | **Duration** |
| **No.** |  |  |  | **L** | **T** | **P** | **Hours/** | **Major Test**  | **Minor Test** | **Practical (Major Test)** | **Total** | **of Exam** |
|  |  |  |  | **(Hrs.)** |
|  |  |  |  |  |  |  | **Week** |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
| 1 | BS – 204A | Higher Engineering Mathematics |  | 3 | 0 | 0 | 3 | 75 | 25 | 0 | 100 | 3 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2 | HM – 903A | Soft Skills and Interpersonal Communication |  | 3 | 0 | 0 | 3 | 75 | 25 | 0 | 100 | 3 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
| 3 | EC – 202A | Digital Communication |  | 3 | 0 | 0 | 3 | 75 | 25 | 0 | 100 | 3 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4 | EC – 204A | Digital Communication Lab |  | 0 | 0 | 2 | 2 | 0 | 40 | 60 | 100 | 3 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
| 5 | EC – 206A | Analog Circuits |  | 3 | 0 | 0 | 3 | 75 | 25 | 0 | 100 | 3 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
| 6 | EC – 208A | Analog Circuits Lab |  | 0 | 0 | 2 | 2 | 0 | 40 | 60 | 100 | 3 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
| 7 | EC– 210A | Microprocessor and Microcontroller |  | 3 | 0 | 0 | 3 | 75 | 25 | 0 | 100 | 3 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
| 8 | EC – 212A | Microprocessor and Microcontroller Lab |  | 0 | 0 | 2 | 2 | 0 | 40 | 60 | 100 | 3 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
| 9 | ES- 202A | Basic of Analog Communication |  | 3 | 0 | 0 | 3 | 75 | 25 | 0 | 100 | 3 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
|  10 | \*MC-902A |  Constitution of India |  | 3 | 0 | 0 | 3 |  100 |  - | 0 | 100 |  3 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  Total |  | 21 | 0 | 6 | 27 | 550 | 270 | 180 | 900 |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |

\*MC-902 A *is a mandatory course and student has to get passing marks in order to qualify for the award of degree but its marks will not be* *added in the grand total.*

***Note:*** *All the students have to undergo six weeks industrial training after IVth**semester and it will be evaluated in Vth**semester.*

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*SCHEME OF STUDIES/EXAMINATIONS*

***w.e.f.* July 2018 (Batch: 2018-2022)**

**Semester–V**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **S.No** | **Subject code** | **Course Title** | **Teaching Schedule** | **Marks Allotment** | **Duration of Exam** |
| **L** | **T** | **P** | **Total** | **Major Test**  | **Minor Test** | **Practical (Major Test)** | **Total** |  |
| 1 | EC-301A# | Electromagnetic Waves | 3 | 0 |  0 | 3 | 75 | 25 |  0 | 100 | 3 |
| 2 | EC-303A# | Electromagnetic Waves Lab |  0 |  0 | 2 | 2 | 0 | 40 | 60 | 100 | 3 |
| 3 | EL-305A | Stochastic process and Probability Theory | 3 | 0 |  0 | 3 | 75 | 25 |  0 | 100 | 3 |
| 4 | EC-307A# | Information Theory and Coding | 3 | 0 | 0 | 3 | 75 | 25 | 0 | 100 | 3 |
| 5 | EC-309A# | Digital Signal Processing | 3 | 1 |  0 | 4 | 75 | 25 |  0 | 100 | 3 |
| 6 | EC-311A3 | Digital Signal Processing Lab |  0 |  0 | 2 | 2 | 0 | 40 | 60 | 100 | 3 |
| 7 | ELP |  Program Elective-1 | 3 | 0 |  0 | 3 | 75 | 25 |  0 | 100 | 3 |
| 8 | ELO | Open Elective-1 |  3 |  0 | 0 | 3 | 75 | 25 | 0 | 100 | 3 |
| 9 | \*\*EC-313A# | Industrial Training-II | 2 | 0 | 0 | 2 | 0 |  | 100 | \*100 | 3 |
| 10 | \*\*\*MC-903A# | Essence of Indian Traditional Knowledge | 3 | 0 | 0 | 3 | 100 |  |  | 100 | 3 |
|  |   | Total | 23 | 1 | 2 | 26 | 550 | 230 | 220 | 900 | 27 |

**\* The course of both Program Elective and Open Elective will be offered at 1/3rd strength or 20 students (whichever is smaller) of the section.**

 **\*\*EC-313 A is a mandatory credit-less course in which the students will be evaluated for the industrial training undergone after 4th semester and students will be required to get passing marks to qualify.**

**\*\*\*MC-903A is a mandatory credit-less course in which the students will be required to get passing marks in the major test.**

**# The Subjects are common with B.Tech Electronics & Communication Engineering**

|  |  |  |
| --- | --- | --- |
|  | **Course Name** | **Course Title** |
| **Program Elective-1** | ECP-7A# | CMOS Design |
| ECP-11A# | Nano Electronics |
| ECP-4A# | Power Electronics |
| ECP-3A# | Introduction to MEMS |

|  |  |  |
| --- | --- | --- |
|  | **Course Name** | **Course Title** |
| **Open Elective-1** | ELO-301A | Smart Material and Systems |
| ELO-303 A | Intelligent Instrumentation |
| ECO-10A# | Electromechanical Energy Conversion |
| ECO-3A# | Electronic Measurement and Instrumentation |

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*SCHEME OF STUDIES/EXAMINATIONS*

***w.e.f.* July 2018 (Batch: 2018-2022)**

**Semester – VI**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **S. No.** | **Course No.** | **Course Title** | **Teaching Schedule** |  **Marks Allotment** | **Duration of Exam****(Hrs.)** |
| **L** | **T** | **P** | **Hours/****Week** | **Major Test**  | **Minor Test** | **Practical (Major Test)** | **Total** |
| 1 | HM 901 A# |  Organizational Behavior | 3 | 0 | 0 | 3 | 75 | 25 | 0 | 100 | 3 |
| 2 | EC-302A# | Control System Engineering | 3 | 0 | 0 | 3 | 75 | 25 | 0 | 100 | 3 |
| 3 | EC-304A# | Control System Lab | 0 | 0 | 3 | 3 | 0 | 40 | 60 | 100 | 3 |
| 4 | EC-306A# | Verilog HDL | 3 | 0 | 0 | 3 | 75 | 25 | 0 | 100 | 3 |
| 5 | EC-308 A# | Verilog HDL Lab | 0 | 0 | 3 | 3 | 0 | 40 | 60 | 100 | 3 |
| 6 | EC-310 A# | Mini Project/Electronic Design Workshop | 0 | 0 | 4 | 4 | 0 | 40 | 60 | 100 | 3 |
| 6 | ELP | Program Elective-II | 3 | 0 | 0 | 3 | 75 | 25 | 0 | 100 | 3 |
| 8 | ELO | Open Elective-II | 3 | 0 | 0 | 3 | 75 | 25 | 0 | 100 | 3 |
|  |  | Total | 15 | 0 | 10 | 25 | 375 | 245 | 180 | 800 | 24 |

**\* The course of both Program Elective and Open Elective will be offered at 1/3rd strength or 20 students (whichever is smaller) of the section.**

**# The Subjects are common with B.Tech Electronics & Communication Engineering**

**Note: All the students have to undergo 4 to 6 weeks Industrial Training after 6th semester which will be evaluated in 7th semester.**

|  |  |  |
| --- | --- | --- |
|  | **Course Name** | **Course Title** |
| **Program Elective-II** | ECP-2A# | Speech and Audio Processing |
| ECP-8A# | Bio Medical Electronics |
| ECO-1 A# | Computer Network |
| **Open Elective-II** | ECP-22A# | Mobile Communication and network |
| ELO -302 A | Quality and Reliability of Electronics System |
| ELO-304 A | Electronics Waste Management |

**Bachelor of Technology (Electronics Engineering) Kurukshetra University, Kurukshetra**

*SCHEME OF STUDIES/EXAMINATIONS*

***w.e.f.* July 2018 (Batch: 2018-2022)**

**Semester–VII**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Subject code** | **Course Title** | **Teaching Schedule** | **Marks Allotment** | **Duration of Exam** |
|  |  | **L** | **T** | **P** | **Total** | **Major Test**  | **Minor Test** | **Practical (Major Test)** | **Total** |  |
| EL-401A |  Fuzzy Logics and Neural Network | 3 | 0 |  0 | 3 | 75 | 25 | 0  | 100 | 3 |
| ELP  | Program Elective- III | 3 | 0 | 0  | 3 | 75 | 25 |   | 100 | 3 |
| ELP  | Program Elective- IV | 3 | 0 |   | 3 | 75 | 25 |   | 100 | 3 |
| ELP | Program Elective- V | 3 | 0 | 0 | 3 | 75 | 25 |  | 100 |  |
| ELO | Open Elective- III | 3 | 0 |   | 3 | 75 | 25 |   | 100 | 3 |
| EC-401A# | Project Stage -I |   |   | 6 | 6 |  | 50 | 50 | 100 | 3 |
| EC-403A# | Industrial Training-III |   |   |   |   |  | 100  |   | 100 | 3 |
|   | Total | 12 | 0 | 13 | 25 | 300 | 290 | 110 | 700 | 21 |
|  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
| **COURSES** | **Course Name** | **Course Title** |
| **Program Elective-III** | ELP-401A | High Speed Electronics |
| ECP-19A# | Mixed Signal Design |
| ELP-403 A | Electronics System Design |
| **Program Elective-IV** | ELP-405 A | Operation Research |
| ECO-14A# | Soft computing |
| ELP-407 A | Microcontrollers |
| **Program Elective-V** | ELP-409A | Microwave Theory and Techniques |
| ECO16A# | Software Defined Radio |
| ECP-21A# | Digital Image and Video Processing |
| **Open Elective-III** | ECO-4A# | Renewable Energy Resources |
| ELO-401 A | Industrial Safety Engineering |
| ELO-403A  | Quality Management |

**# The Subjects are common with B.Tech Electronics & Communication Engineering**

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*SCHEME OF STUDIES/EXAMINATIONS*

***w.e.f.* July 2018 (Batch: 2018-2022)**

**Semester–VIII**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Sr. No.** | **Subject code** | **Course Title** | **Teaching Schedule** | **Marks Allotment** | **Duration of Exam** |
| **L** | **T** | **P** | **Total** | **Major Test**  | **Minor Test** | **Practical (Major Test)** | **Total** |   |
| 1 | ELO | Open Elective –IV | 3 | 0 | 0  | 3 | 75 | 25 | 0  | 100 | 3 |
| 2 | ELO | Open Elective –V |  3 | 0  | 0 | 3 | 75 |  25  | 0 | 100 | 3 |
| 3 |  ELP | Program Elective – VI | 3 | 0 | 0  | 4 | 75 | 25 |  0 | 100 | 3 |
| 4 |  ELP | Program Elective-VII | 3 | 0 |  0 | 3 | 75 | 25 |  0 | 100 | 3 |
| 5 | EC-402A# | Project stage –II |  0 | 0  | 14 | 14 |  |  40 | 60 | 100 |  3 |
|  |   | **Total** | 12 | 0 | 14 | 26 | 300 | 140 | 60 | 500 | 15 |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Sr. No.** | **Program Elective -VI** | **CODE** | **Sr. No.** | **Open Elective -IV** | **CODE** |
|  1 | Cyber Law and Security | ELP-402A | 1 | Wireless Sensor Networks | ECO-20A# |
| 2 | Artificial Intelligence and expert system | ELP-404A | 2 | Mechatronics | ECO-2A# |
| 3 | Analog Filter Design | ELP-406A | 3 | Software Defined Radio | ECO-16A# |
| **Sr. No.** | **Program Elective -VII** | **CODE** | **Sr. No.** | **Open Elective -V** | **CODE** |
| 1 | Human Resource Management | ELP-408A | 1 | Wavelets | ECP-17A# |
| 2 | Scientific Computing | ECP-9A# | 2 | Transducers and its Application | ECO-8A# |
| 3 | Robotics | ECO-12A# | 3 | Electronic Switching Theory | ELO-402A |

**# The Subjects are common with B.Tech Electronics & Communication Engineering**