**KURUKSHETRA UNIVERSITY KURUKSHETRA**

**Bachelor of Technology (Electronics & Communication Engineering) (Credit Based)**

**A. Definition of Credit:**

|  |  |
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| 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 |

**B. Range of Credits:**

A total credit of 160 is required for a student to be eligible to get Under Graduate degree in **Electronics and Communication Engineering**. A student will be eligible to get Under Graduate degree **(B.Tech.) with Honours**, if he/she completes an additional 20 credits. 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.

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| **Bachelor of Technology (Electronics & Communication Engineering) (Credit Based)****KURUKSHETRA UNIVERSITY KURUKSHETRA****Scheme of Studies/Examination****Semester III (w.e.f. session 2019-2020 )** |
| **Sr. No.** | **Course No.** | **Subject** | **L:T:P** | **Hours/Week** | **Credits** | **Examination Schedule (Marks)** | **Duration of Exam (Hrs)** |
|
| **Major Test** | **Minor Test** | **Practical** | **Total** |
| 1 | BS-201A | Optics & Waves | 3:0:0 | 3 | 3 | 75 | 25 | 0 | 100 | 3 |
| 2 | EC-201A | Electronic Devices | 3:0:0 | 3 | 3 | 75 | 25 | 0 | 100 | 3 |
| 3 | EC-203LA | Electronic Devices Lab | 0:0:2 | 2 | 1 | - | 40 | 60 | 100 | 3 |
| 4 | EC-205A | Digital Electronics | 3:0:0 | 3 | 3 | 75 | 25 | 0 | 100 | 3 |
| 5 | EC-207LA | Digital Electronics Lab | 0:0:2 | 2 | 1 | - | 40 | 60 | 100 | 3 |
| 6 | EC-209A | Signals & Systems | 3:0:0 | 3 | 3 | 75 | 25 | 0 | 100 | 3 |
| 7 | EC-211LA | [Signals & Systems Lab](#somlab) | 0:0:2 | 2 | 1 | - | 40 | 60 | 100 | 3 |
| 8 | EC-213A | Network Theory | 3:0:0 | 3 | 3 | 75 | 25 | 0 | 100 | 3 |
| 9 | ES-201A | Essentials of Information Technology | 3:0:0 | 3 | 3 | 75 | 25 | 0 | 100 | 3 |
| 10 | \*EC-215A | Industrial Training-I | 2:0:0 | 2 | - | - | 100 | - | 100 | 3 |
| 11 | \*\*MC-901A | Environmental Sciences  | 3:0:0 | 3 | - | 100 | - | 0 | 100 | 3 |
|  |  | **Total** |  | **26** | **21** | **450** | **270** | **180** | **900** |  |
| \*EC-215A is a mandatory credit-less course in which the students will be evaluated for the industrial training undergone after 2nd semester and students will be required to get passing marks to qualify.\*\*MC-901A is a mandatory credit-less course in which the students will be required to get passing marks in the major test. |
| **Bachelor of Technology (Electronics & Communication Engineering) (Credit Based)****KURUKSHETRA UNIVERSITY KURUKSHETRA****Scheme of Studies/Examination****Semester IV (w.e.f. session 2019-2020 )** |
|  |  |  |  |  |  |  |  |  |  |  |
| **S. No.** | **Course No.** | **Subject** | **L:T:P** | **Hours/****Week** |  **Credits** | **Examination Schedule (Marks)** | **Duration of Exam (Hrs)** |
|
| **Major Test** | **Minor Test** | **Practical** | **Total** |
| 1 | BS-204A | Higher Engineering Mathematics | 3:0:0 | 3 | 3 | 75 | 25 | 0 | 100 | 3 |
| 2 | HM-903A | Soft Skills & Interpersonal Communication | 3:0:0 | 3 | 3 | 75 | 25 | 0 | 100 | 3 |
| 3 | EC- 202A | Digital Communication | 3:0:0 | 3 | 3 | 75 | 25 | 0 | 100 | 3 |
| 4 | EC-204LA | Communication Lab | 0:0:2 | 2 | 1 | - | 40 | 60 | 100 | 3 |
| 5 | EC-206A | Analog Circuits | 3:0:0 | 3 | 3 | 75 | 25 | 0 | 100 | 3 |
| 6 | EC-208LA | Analog Circuits Lab | 0:0:2 | 2 | 1 | - | 40 | 60 | 100 | 3 |
| 7 | EC-210A | Microprocessors & Microcontrollers  | 3:0:0 | 3 | 3 | 75 | 25 | 0 | 100 | 3 |
| 8 | EC-212LA | Microprocessors & Microcontrollers Lab | 0:0:2 | 2 | 1 | 0 | 40 | 60 | 100 | 3 |
| 9 | ES-202A | Basics of Analog Communication | 3:0:0 | 3 | 3 | 75 | 25 | 60 | 100 | 3 |
| 10 | \*MC-902A | Constitution of India | 3:0:0 | 3 | - | 100 | - | 0 | 100 | 3 |
|  |  | **Total** |  | **27** | **21** | **550** | **270** | **240** | **900** |  |

\*MC-902A is a mandatory credit-less course in which the students will be required to get passing marks in the major test.

**Note: All the students have to undergo 4 to 6 weeks Industrial Training after 4th semester which will be evaluated in 5th semester.**

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| **Bachelor of Technology (Electronics & Communication Engineering) (Credit Based)****KURUKSHETRA UNIVERSITY KURUKSHETRA****Scheme of Studies/Examination****Semester V (w.e.f. session 2020-2021 )** |
|  |  |  |  |  |  |  |  |  |  |  |
| **S. No.** | **Course No.** | **Subject** | **L:T:P** | **Hours/****Week** | **Credits** | **Examination Schedule (Marks)** | **Duration of Exam (Hrs.)** |
|
| **Major Test** | **Minor Test** | **Practical** | **Total** |
| 1 | EC-301A | Electromagnetic Waves | 3:0:0 | 3 | 3 | 75 | 25 | 0 | 100 | 3 |
| 2 | EC-303LA | Electromagnetic Waves Lab | 0:0:2 | 2 | 1 | - | 40 | 60 | 100 | 3 |
| 3 | EC-305A | Computer Organization & Architecture | 3:0:0 | 3 | 3 | 75 | 25 | 0 | 100 | 3 |
| 4 | EC-307A | Information Theory and Coding | 3:0:0 | 3 | 3 | 75 | 25 | 0 | 100 | 3 |
| 5 | EC-309A | Digital Signal Processing | 3:0:0 | 3 | 3 | 75 | 25 | 0 | 100 | 3 |
| 6 | EC-311LA | Digital Signal Processing Lab | 0:0:2 | 2 | 1 | 0 | 40 | 60 | 100 | 3 |
| 7 | ECP\* | Program Elective-I | 3:0:0 | 3 | 3 | 75 | 25 | 0 | 100 | 3 |
| 8 | ECO\* | Open Elective-I | 3:0:0 | 3 | 3 | 75 | 25 | 0 | 100 | 3 |
| 9 | \*\*EC-313A | Industrial Training-II | 2:0:0 | 2 | - | - | \*100 | - | \*100 | 3 |
| 10 | \*\*\*MC-903A | Essence of Indian Traditional Knowledge | 3:0:0 | 3 | - | 100 | - | 0 | 100 | 3 |
|  |  | **Total** |  | **27** | **20** | **550** | **230** | **120** | **900** |  |

**\* 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-313A 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.

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| **Bachelor of Technology (Electronics & Communication Engineering) (Credit Based)****KURUKSHETRA UNIVERSITY KURUKSHETRA****Scheme of Studies/Examination** **Semester VI (w.e.f. session 2020-2021 )** |
| **S. No.** | **Course No.** | **Subject** | **L:T:P** | **Hours/****Week** |  **Credits** | **Examination Schedule (Marks)** | **Duration of Exam (Hrs.)** |
|
| **Major Test** | **Minor Test** | **Practical** | **Total** |
| 1 | HM-901A | Organizational Behavior | 3:0:0 | 3 | 3 | 75 | 25 | 0 | 100 | 3 |
| 2 | EC-302A | Control System Engineering | 3:0:0 | 3 | 3 | 75 | 25 | 0 | 100 | 3 |
| 3 | EC-304LA | Control System Engineering Lab | 0:0:3 | 3 | 1.5 | - | 40 | 60 | 100 | 3 |
| 4 | EC-306A | Verilog HDL | 3:0:0 | 3 | 3 | 75 | 25 | 0 | 100 | 3 |
| 5 | EC-308LA | Verilog HDL Lab | 0:0:3 | 3 | 1.5 | - | 40 | 60 | 100 | 3 |
| 6 | EC-310LA | Mini Project/Electronic Design Workshop | 0:0:4 | 4 | 2 | - | 40 | 60 | 100 | 3 |
| 7 | ECP\* | Program Elective-II | 3:0:0 | 3 | 3 | 75 | 25 | 0 | 100 | 3 |
| 8 | ECO\* | Open Elective-II | 3:0:0 | 3 | 3 | 75 | 25 | 0 | 100 | 3 |
|  |  | **Total** |  | **25** | **20** | **375** | **245** | **180** | **800** |  |

**\* 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.**

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

**Bachelor of Technology (Electronics & Communication Engineering) (Credit Based)**

**KURUKSHETRA UNIVERSITY KURUKSHETRA**

**Scheme of Studies/Examination**

**Semester VII (w.e.f. session 2021-2022)**

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| --- | --- | --- | --- | --- | --- | --- | --- |
| **S. No.** | **Course No.** | **Subject** | **L:T:P** | **Hours/****Week** | **Credits** | **Examination Schedule (Marks)** | **Duration of Exam (Hrs)** |
|
| **Major Test** | **Minor Test** | **Practical** | **Total** |
| 1 | HM- 904A | Intellectual Property Rights for Technology Development & Management | 3:0:0 | 3 | 3 | 75 | 25 | 0 | 100 | 3 |
| 2 | ECP\* | Program Elective-III | 3:0:0 | 3 | 3 | 75 | 25 | 0 | 100 | 3 |
| 3 | ECP\* | Program Elective-IV | 3:0:0 | 3 | 3 | 75 | 25 | 0 | 100 | 3 |
| 4 | ECP\* | Program Elective-V | 3:0:0 | 3 | 3 | 75 | 25 | 0 | 100 | 3 |
| 5 | ECO\* | Open Elective-III | 3:0:0 | 3 | 3 | 75 | 25 | 0 | 100 | 3 |
| 6 | EC-401LA | Project Stage-I | 0:0:6 | 6 | 3 | - | 40 | 60 | 100 | 3 |
| 7 | \*\*EC-403A | Industrial Training-III | 2:0:0 | 2 | - | - | \*100 | - | \*100 | 3 |
|  |  | **Total** |  | **23** | **18** | **375** | **165** | **60** | **600** |  |
| **\* 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-403A is a mandatory credit-less course in which the students will be evaluated for the industrial training undergone after 6th semester and students will be required to get passing marks to qualify.  |
| **Bachelor of Technology ( Electronics & Communication Engineering) (Credit Based)****KURUKSHETRA UNIVERSITY KURUKSHETRA****Scheme of Studies/Examination****Semester VIII(w.e.f. session 2021-2022 )** |
| **S. No.** | **Course No.** | **Subject** | **L:T:P** | **Hours/****Week** |  **Credits** | **Examination Schedule (Marks)** | **Duration of Exam. (Hrs.)** |
|
| **Major Test** | **Minor Test** | **Practical** | **Total** |
| 1 | ECP\* | Program Elective-VI | 3:0:0 | 3 | 3 | 75 | 25 | 0 | 100 | 3 |
| 2 | ECP\* | Program Elective-VII | 3:0:0 | 3 | 3 | 75 | 25 | 0 | 100 | 3 |
| 3 | ECO\* | Open Elective-IV | 3:0:0 | 3 | 3 |  75 | 25 | 0 | 100 |  3 |
| 4 | ECO\* | Open Elective-V | 3:0:0 | 3 | 3 | 75 | 25 | 0 | 100 | 3 |
| 5 | EC-402LA | Project Stage-II | 0:0:14 | 14 | 7 | - | 40 | 60 | 100 | 3 |
|  |  | **Total** |  | **26** | **19** | **300** | **140** | **60** | **500** |  |
|  |  |  |  |  |  |  |  |  |  |  |
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|  |  |  |  |  |
| **\*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.** **Bachelor of Technology ( Electronics & Communication Engineering) (Credit Based)****KURUKSHETRA UNIVERSITY KURUKSHETRA****Scheme of Studies/Examination**

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| **LIST OF OPEN ELECTIVES (B.TECH. ECE)** |  | **LIST OF PROGRAM ELECTIVES (B.TECH. ECE)** |
| **SEM** | **CODE** | **SUBJECT** | **SEM** | **CODE** | **SUBJECT** |
| **V** | ECO-1A | Computer Networks | **V** | ECP-1A | Probability Theory & Stochastic Processes |
| ECO-2A | Mechatronics | ECP-2A | Speech and Audio Processing  |
| ECO-3A | Electronic Measurement and Instruments | ECP-3A | Introduction to MEMS |
| ECO-4A | Renewable Energy Resources | ECP-4A | Power Electronics |
| **VI** | ECO-5A | Data Structures | ECP-5A | VLSI |
| ECO-6A | Multimedia Communication | **VI** | ECP-6A | Antennas and Propagation  |
| ECO-7A | Consumer Electronics | ECP-7A | CMOS Design |
| ECO-8A | Transducers and Their Applications | ECP-8A | Bio-Medical Electronics |
| **VII** | ECO-9A | Bio-informatics | ECP-9A | Scientific Computing  |
| ECO-10A | Electromechanical Energy Conversion | **VII** | ECP-10A | Fiber Optic Communications |
| ECO-11A | Operating Systems | ECP-11A | Nano electronics |
| ECO-12A | Robotics | ECP-12A | Microwave Theory and Techniques |
| **VIII** | ECO-13A | Machine Learning | ECP-13A | Adaptive Signal Processing |
| ECO-14A | Soft Computing | **VIII** | ECP-14A | Wireless Sensor Networks |
| ECO-15A | Neural Networks and Fuzzy Logic | ECP-15A | Satellite Communication |
| ECO-16A | Software Defined Radio | ECP-16A | High Speed Electronics |
| ECO-17A | Statistics and Operational Research | ECP-17A | Wavelets |
| ECO-18A | Biomedical Signal Processing | ECP-18A | Embedded systems |
| ECO-19A | Internet of Things | ECP-19A | Mixed Signal Design  |
| ECO-20A | Wireless Sensor Networks | ECP-20A | Error correcting codes |
|  |  |  | ECP-21A | Digital Image & Video Processing |
|  |  |  | ECP-22A | Mobile Communication and Networks |

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