**BSc Electrical Engineering**

**Revised Curriculum and Syllabus**

**For**

**Session 2017 and onwards**

**University College of Engineering and Technology**

**The Islamia University of Bahawalpur**

|  |  |
| --- | --- |
| 1st **Year Semester-I** | 1st **Year Semester-II** |
| **Course Code** | **Course Name** | **Cr. Hr.** | **Course Code** | **Course Name** | **Cr. Hr.** |
| **Th** | **Lab** | **Th** | **Lab** |
| ISLA | 00100 | Islamic Studies | 2 | 0 | PAKS | 00206 | Pakistan Studies | 2 | 0 |
| COMP | 01101 | Programming Fundamentals | 2 | 1 | ELEN | 01207 | Electrical Network Analysis | 3 | 1 |
| ELEN | 01102 | Linear Circuit Analysis  | 3 | 1 | COMP | 01208 | Object Oriented Programing | 3 | 1 |
| ENGL | 00103 | Functional English  | 3 | 0 | MATH | 00209 | Differential Equations | 3 | 0 |
| ELEN | 01104 | Engineering Drawing  | 0 | 1 | ENGL | 00210 | Communication Skills  | 3 | 0 |
| MATH | 00105 | Calculus and Analytical Geometry | 3 | 0 | MECH | 01211 | Engineering Mechanics | 3 | 0 |
| **Total** | **13** | **3** | **Total** | **17** | **2** |
| **16** | **19** |
| 2nd **Year Semester-III** | 2nd **Year Semester-IV** |
| **Course Code** | **Course Name** | **Cr. Hr.** | **Course Code** | **Course Name** | **Cr. Hr.** |
| **Th** | **Lab** | **Th** | **Lab** |
| ELEN | 01312 | Electrical Machines-I | 3 | 1 | ELEN | 01418 | Electrical Machines-II  | 3 | 1 |
| MECH | 01313 | Applied Thermodynamics  | 3 | 0 | ELEC | 01419 | Instrumentation and Measurements  | 3 | 1 |
| ELEC | 01314 | Electronic Devices and Circuits  | 3 | 1 | ELEN | 01420 | Probability Methods in Engineering  | 3 | 0 |
| MATH | 00315 | Linear Algebra | 3 | 0 | ELEN | 01421 | Electromagnetic Field Theory  | 3 | 0 |
| ELEN | 01316 | Digital Logic Design  | 3 | 1 | MATH | 00422 | Complex Variable and Transforms | 3 | 0 |
| ELEN | 01317 | Engineering Workshop  | 0 | 1 |  |  |  |  |  |
| **Total** | **15** | **4** | **Total** | **15** | **2** |
| **19** | **17** |
| 3rd **Year Semester-V** | 3rd **Year Semester-VI** |
| **Course Code** | **Course Name** | **Cr. Hr.** | **Course Code** | **Course Name** | **Cr. Hr.** |
| **Th** | **Lab** | **Th** | **Lab** |
| MATH | 00523 | Numerical Methods | 2 | 1 | ELEN | 01628 | Power Distribution & Utilization | 3 | 1 |
| ELEN | 01524 | Power Generation and Transmission | 3 | 0 | MGMT | 00629 | Power Economics & Management | 3 | 0 |
| ELEN | 01525 | Linear Control Systems  | 3 | 1 | ELEN | 036xx | Depth Elective-I | 3 | 1/0 |
| ELEN | 01526 | Signal and Systems  | 3 | 1 | COMM | 01630 | Communication Systems | 3 | 1 |
| ENGL | 00527 | Technical & Business Writing | 3 | 0 | ELEN | 01631 | Microprocessor Based Systems  | 3 | 1 |
| **Total** | **14** | **3** | **Total** | **15** | **4/3** |
| **17** | **19/18** |
| 4th **Year Semester-VII** | 4th **Year Semester-VIII** |
| **Course Code** | **Course Name** | **Cr. Hr.** | **Course Code** | **Course Name** | **Cr. Hr.** |
| **Th** | **Lab** | **Th** | **Lab** |
| ELEN | 037xx | Depth Elective-II | 3 | 1 | ELEN | 038xx | Depth Elective-IV | 3 | 1 |
| ELEN | 037xx | Depth Elective-III | 3 | 1 | ELEN | 038xx | Depth Elective-V | 3 | 1 |
| SOCI | 037xx | Social Science Elective-I | 2 | 0 | SOCI | 038xx | Social Science Elective–II | 3 | 0 |
| MGMT | 00732 | Entrepreneurship and Leadership | 3 | 0 | ELEN | 01834 | Senior Project Design-II | 0 | 4 |
| ELEN | 01733 | Senior Project Design-I | 0 | 2 |  |  |  |  |
| **Total** | **11** | **4** | **Total** | **9** | **6** |
| **15** | **15** |
|  |  |  |  |  |  |  | **Total Credit Hours** | **137/136** |

**Summary of Courses**

List of Depth Electives

|  |  |  |
| --- | --- | --- |
| Semester | Courses | Credit Hours |
| 6th  | 1. ELEN-03650 Digital Signal Processing
2. ELEN-03651 Power System Analysis
3. ELEN-03652 Digital Control Systems
4. ELEN-03653 Renewable Energy Systems
 | 3+13+03+13+0 |
| 7th  | 1. ELEN-03753 High Voltage Engineering
2. ELEN-03754 Power Electronics
3. ELEN-03755 Integrated Electronics
 | 3+13+13+1 |
| 8th  | 1. ELEN-03856 Power System Protection
2. ELEN-03857 Power System Operation & Control
3. ELEN-03858 Advanced Electrical Machine Design
 | 3+13+13+1 |

List of Social Sciences Electives

|  |  |  |
| --- | --- | --- |
| Semester  | Courses | Credit Hours |
| 7th | 1. SOCI-03740 Sociology and Development
2. SOCI-03741 Social Anthropology
3. SOCI-03742 Understanding Psychology and Human Behavior
4. SOCI-03743 Introduction to Philosophy
 | 2+02+02+02+0 |
| 8th | 1. SOCI-03844 Professional Psychology
2. SOCI-03845 Organizational Behavior
3. SOCI-03846 Introduction to Sociology
4. SOCI-03847 Critical Thinking
 | 3+03+03+03+0 |

Summary of Credit Hours

|  |  |  |  |
| --- | --- | --- | --- |
| Total Credit Hours | Credit Hours of Engineering Courses | Credit Hours of Non-Engineering Courses | Ratio |
| Max – 137Min - 136 | 9897 | 39 | **28.5 : 71.5****28.4 : 71.3** |