**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+1  3+0  3+1  3+0 |
| 7th | 1. ELEN-03753 High Voltage Engineering 2. ELEN-03754 Power Electronics 3. ELEN-03755 Integrated Electronics | 3+1  3+1  3+1 |
| 8th | 1. ELEN-03856 Power System Protection 2. ELEN-03857 Power System Operation & Control 3. ELEN-03858 Advanced Electrical Machine Design | 3+1  3+1  3+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+0  2+0  2+0  2+0 |
| 8th | 1. SOCI-03844 Professional Psychology 2. SOCI-03845 Organizational Behavior 3. SOCI-03846 Introduction to Sociology 4. SOCI-03847 Critical Thinking | 3+0  3+0  3+0  3+0 |

Summary of Credit Hours

|  |  |  |  |
| --- | --- | --- | --- |
| Total Credit Hours | Credit Hours of Engineering Courses | Credit Hours of Non-Engineering Courses | Ratio |
| Max – 137  Min - 136 | 98  97 | 39 | **28.5 : 71.5**  **28.4 : 71.3** |