**The Islamia University of Bahawalpur**

**Computer Science and Information Technology Department**

**Course Plan**

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| Instructor | Irtaqa Hafeez |
| Course title | Applied Physics |
| Program | Software Engineering 1st Semester |

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| **Lecture Week** | **Topics** | **Reading Material** |
| 1 | Introduction  Charge, Electric Force, Electric field, Electric field Applications, Conservation of charge, Quantization of charge, Conductor/Insulator, Related Problems | Chapter 21 |
| 2 | Electric field  Electric field lines  Electric field due to a point charge  Related Problems | Chapter 22 |
| 3 | Electric current, Current density, Resistance, Resistivity, Conductivity, Related Problems.  Quiz | Chapter 26 |
| 4 | Ohm’s law, Power  Ohms law application ( in circuits), calculating series and parallel resistance in single and multiple loop circuits, Related Problems | Chapter 27 |
| 5 | how to calculate total resistance and current in circuits using Ohms law, Related Problems  Assignment | Chapter 27 |
| 6 | Semiconductor  Intrinsic semiconductor  Extrinsic Semiconductor |  |
| 7 | Amperes law  Solenoid  Toroid’s, Related Problems.  Quiz | Chapter 29 |
| 8 | Faraday’s Experiment, Faraday’s law of Induction, Related Problems | Chapter 30 |
|  | **Mid Exam** |  |
| 9 | The flux of vector field, The flux of Electric Field, Gauss law, Application of Gauss’ law, Related Problems | Chapter 23 |
| 10 | Spherically symmetric charge distribution, A charge isolated conductor,  Electric Potential Energy, Electric Potentials  Quiz | Chapter 24 |
| 11 | Calculating the potential from the field, Related Problems  Potential due to a point and continuous charge distribution. | Chapter 24 |
| 12 | Equipotential Surfaces, Calculating the field from the potential, Related Problems  Assignment | Chapter 24 |
| 13 | Reflection, Refraction of light waves, Total internal Reflection, Two source Interference, Related Problems.  quiz | Chapter 33 |
| 14 | Double slit Interference, Related Problems, Diffraction.  Presentation | Chapter 35 |
| 15 | Capacitor  Calculating capacitance  Capacitor in series  Capacitor in parallel |  |
|  | **Final Exam** |  |

**Reference Book: Fundamental of Physics (Extended) 10th Edition**