**COURSE DESCRIPTION FORM**

**THE GIFT UNIVERSITY**

**INSTITUTION**  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

BS Computer Science

**PROGRAM (S) TO BE**

**EVALUATED**

1. **Course Description**

(Fill out the following table for each course in your computer science curriculum. A filled out form should not be more than 2-3 pages.)

| **Course Code** | PHY-106 | | | |
| --- | --- | --- | --- | --- |
| **Course Title** | Applied Physics | | | |
| **Credit Hours** | 3 | | | |
| **Prerequisites by Course(s) and Topics** | Nill | | | |
| **Assessment Instruments with Weights** (Assignments, quizzes+ homeworks, Presentations, Viva, midterms(CP-1), final (CP-2), etc.) | (Assignment 10 %), (quizzes+ homeworks: 20%), (Presentations: 15%), (Viva: 25%) and (CP-1 and 2: 5%) (Mid 20 %) (Final 20%) | | | |
| **Course Coordinator** | Dr. Nmeeqa | | | |
| **URL (if any)** |  | | | |
| **Current Catalog Description** |  | | | |
| **Textbook** | Fundamentals of Physics (Extended), 10th edition, Resnick and Walker, | | | |
| **Reference Material** | Narciso Garcia, Arthur Damask, Steven Schwarz., “Physics for Computer Science Students”, Springer Verlag, 1998University Physics, Freedman. Young. 10th and higher editions. | | | |
| **Course Goals** | Gain deeper understanding of Electricity and Magnetism  Advance skills and capability for formulating and solving problems | | | |
| **Topics Covered in the Course, with Number of Lectures on Each Topic** (Lecture Time: 1 hr and 30 min) | |  | Introduction ,Electric Charge, Particles, Atoms, | | --- | --- | |  | Removal of electrons, Conductors, semiconductors, insulators, Superconductors | |  | Conservation of charge and Examples Charge quantization Examples | |  | Coulombs Law | |  | Problems | |  | Electric fields ,Different charge configurations , Superposition principle | |  | Point charge and lines of force.  Ring of charge and related examples | |  | Disk of charge and related examples  A point charge in an electric field, Dipole in a n electric field and related examples | |  | Problems | |  | The flux of electric field, Gauss’Law | |  | Applications of Gauss’s Law | |  | Applications of Gauss’s Law | |  | Problems | |  | Electric potential energy ,Electric potentials | |  | Calculating the potential from the field Field due to point and continuous charge distribution,Potential due to dipole, equipotential surfaces  Calculating the field from the, Problems | |  | Current and Current density, Drift velocity  Relationship with Electric field and Current density | |  | Introduction to Resistance and Resistivity  Conductivity and related examples  Ohm’s law and its applications with examples | |  | Introduction to Magnetic Field | |  | The Hall effect and related examples | |  | The Biot- Savart law and related examples, Line of B | |  | Amperes’ s Law and related examples | |  | Faraday’s experiments, Faraday’s Law of Induction and related examples | |  | Faraday’s experiments, Faraday’s Law of Induction and related examples | |  | Lenz’s law | |  | Lenz’s law and examples | |  | Problems | |  | Problems | |  | Induced Electric Field | |  | Displacement Current, Maxwell Equations | |  | Ineterference, Reflection and Rarefaction | | | | |
| **Laboratory Projects/Experiments Done in the Course** | Nill | | | |
| **Programming Assignments Done in the Course** | No Programming Assignment | | | |
| **Class Time Spent on** (in credit hours) | **Theory** | **Problem Analysis** | **Solution Design** | **Social and Ethical Issues** |
| 80minute’s | 50minute’s | 30 minute’s | 20 Minutes |
| **Oral and Written Communications** | Every student is required to submit at least **one** written report of typically **10** pages and to make \_\_\_\_\_ oral presentations of typically **10** minute’s duration. Include only material that is graded for grammar, spelling, style, and so forth, as well as for technical content, completeness, and accuracy. | | | |

**Instructor Name \_\_Awais Ahmad\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Instructor Signature \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**