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| | **GOVERNMENT POLYTECHNIC, PURIDEPARTMENTOFMECHANICALENGINEERING** | |
| Discipline: MECHANICAL ENGG | Semester: 2nd | Name of the Teaching Faculty: **Mrs. Arundhati Behera, Sr. Lect in Physics and Dr. Prajna Priyadarshinee Rout, lect. In Physics** |
| Subject: **Engg. Physics Lab (Pr:2a)** | No. of days/per week class allotted:**04** | Semester From date: 14.03.2022 To Date: 18.06.2022<br>No.of Weeks:**14** |
| PRE-REQUISITE | Basic knowledge on Experiments on Optics, Magnetism and measuring instruments. | |
| COURSE OUTCOMES | **CO1: Get the knowledge on calculation of LC of various measuring instruments.**<br>**CO2: Know the idea of measuring small thickness, diameter, and radius of curvature of a curved surface.**<br>**CO3: Get the idea on refraction of light.**<br>**CO4: Get the knowledge on magnetic field and magnetic lines of force.** | |

| Week | Class Day | Theory/Practical Topics | DELIVERY METHOD |
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| 1ST | 1ST<br>2ND | Expt. 1: To find the cross sectional area of a wire using a screw gauge.<br>➢ **Demonstration** | Whiteboard |
| | 3RD<br>4TH | ➢ **Experimentation by students**<br>➢ **Observation: Data collection by students** | Whiteboard |
| 2ND | 1ST<br>2ND | ➢ **Experimentation by students**<br>➢ **Observation: Data collection by students** | Whiteboard |
| | 3RD<br>4TH | ➢ **Calculation**<br>➢ **Record writing** | |
| 3RD | 1ST<br>2ND | Expt. 2: To find the thickness and volume of a glass piece using a screw gauge<br>➢ **Demonstration**<br>➢ **Experimentation by students**<br>**Observation: Data collection by students** | Whiteboard |
| | 3RD<br>4TH | ➢ **Calculation**<br>➢ **Record writing and record checking** | Whiteboard |
| 4TH | 1ST<br>2ND | Expt. 3: To find the volume of solid cylinder using a Vernier Calipers<br>➢ **Demonstration** | Whiteboard |
| | 3RD<br>4TH | ➢ **Experimentation by students**<br>**Observation: Data collection by students** | Whiteboard |
| 5TH | 1ST<br>2ND | ➢ **Calculation**<br>**Record writing and record checking** | Whiteboard |
| | 3RD<br>4TH | Expt. 4: To find the volume of solid cylinder using a Vernier Calipers<br>➢ **Demonstration** | Whiteboard |
| 6TH | 1ST<br>2ND | ➢ **Experimentation by students**<br>**Observation: Data collection by students** | Whiteboard |
| | 3RD<br>4TH | ➢ **Calculation**<br>➢ **Record writing and record checking** | Whiteboard |
| 7TH | 1ST<br>2ND | Expt. 5: To determine the radius of curvature of convex surface using spherometer<br>➢ **Demonstration** | Whiteboard |

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| | 3RD<br>4TH | ➢ **Experimentation by students**<br>➢ **Observation: Data collection by students** | Whiteboard |
| 8TH | 1ST<br>2ND | ➢ **Calculation**<br>➢ **Record writing and record checking** | Whiteboard |
| | 3RD<br>4TH | Expt. 6: To determine the radius of curvature of convex surface using spherometer<br>➢ **Demonstration** | Whiteboard |
| 9TH | 1ST<br>2ND | ➢ **Experimentation by students** | Whiteboard |
| | 3RD<br>4TH | ➢ **Record writing and record checking** | Whiteboard |
| 10TH | 1ST<br>2ND | Expt. 7: To Determine the angle of Prism<br>➢ **Demonstration** | Whiteboard |
| | 3RD<br>4TH | ➢ **Experimentation by students** | Whiteboard |
| 11TH | 1ST<br>2ND | ➢ **Record writing and record checking** | Whiteboard |
| | 3RD<br>4TH | Expt. 8 : To determine the angle of minimum deviation by I-D curve method.<br>➢ **Demonstration**<br>➢ **Concept of Refraction through Prism** | Whiteboard |
| 12TH | 1st & 2nd | ➢ **Experimentation by student** | Whiteboard |
| | 3RD<br>4TH | ➢ **Observation: Data collection by students**<br>➢ **Record writing and record checking** | Whiteboard |
| 13TH | 1ST<br>2ND | Expt. 9 : To trace the magnetic lines of force due to a bar magnet with north pole pointing towards geographic north and to locate its neutral points.<br>➢ **Demonstration** | Whiteboard |
| | 3RD<br>4TH | ➢ **Experimentation by students**<br>➢ **Calculation**<br>➢ **Record writing and record checking** | Whiteboard |
| 14TH | 1ST<br>2ND | Expt. 10 : To trace the magnetic lines of force due to a bar magnet with north pole pointing towards geographic south and to locate its neutral points.<br>➢ **Demonstration** | Whiteboard |
| | 3RD<br>4TH | ➢ **Experimentation by students**<br>➢ **Calculation**<br>➢ **Record writing and record checking** | |

**LEARNINGRESOUCES:**

1. E-learning material on engineering physics practical of 1st /2nd semester of all engineering branches. Contents Written by Ms. Babita Padhi, Lecturer in Physics, JES, Jharsuguda, Dr. A. N. Arpita Aparajita, Lecturer in Physics, GP, Bhadrak, Ms. Renu Ekka, Lecturer in Physics, GP, Deogarh

Signature of Concerned Faculty
Pragna P. Rout
(Lect. in Phys.)

Signature of HOD

Principal
GP Puri