**LESSON PLAN**

**NAME OF FACULTY: MS. JASMINE**

**DISCIPLINE :** DIPLOMA FIRST YEAR

**SEMESTER :** II nd

**SUBJECT:** PHYSICS

**LESSON PLAN DURATION :** 15 WEEKS (FROM JAN 2018 TO APRIL 2018)

\*\* Work load ( lecture / practical) per week (in hrs.) : lectures-04, practicals-02

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| **Week** | **Theory** | | **Practical** | |
|  | **Lecture day** | **Topics** | **Practical day** | **Topics** |
| **1st** | 1 | Wave motion, transverse and longitudinal wave motion with examples | 1 | To find the time period of a simple pendulum |
|  | 2 | Terms  used in wave motion |  |  |
|  | 3 | relationship among wave  velocity, frequency and wave length . |  |  |
|  | 4 | Simple Harmonic Motion (SHM) |  |  |
| 2nd | 5 | Cantilever |  |  |
|  | 6 | Free, forced vibrations |  |  |
|  | 7 | resonant vibrations |  |  |
|  | 8 | Acoustics of buildings – reverberation, reverberation time, | 2 | To determine and verify the time period of Cantilever |
| 3rd | 9 | echo, noise,  coefficient of absorption of sound | 3 | To verify ohm’s laws by plotting a graph between voltage and current. |
|  | 10 | methods to control reverberation time. |  |  |
|  | 11 | Ultrasonics – Introduction |  |  |
|  | 12 | engineering applications(cold  welding,drilling,SONAR) |  |  |
| 4th | 13 | **Optics:** Reflection and refraction with laws, refractive index | 4 | To verify laws of resistances in series combination |
|  | 14 | lens formula, power of lens |  |  |

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| **Week** | **Theory** | | **Practical** | |
|  | **Lecture day** | **Topics** | **Practical day** | **Topics** |
| 4th | 15 | Total internal reflection and its applications |  |  |
|  | 16 | Critical angle and conditions for  total internal reflection |  |  |
| 5th | 17 | Microscope,Telescope(definition) |  |  |
|  | 18 | Uses of microscope and telescope. | 5 | To verify laws of resistance in parallel combination. |
|  | 19 | **Electrostatics:** Coulombs law, unit charge, |  |  |
|  | 20 | Electric field, |  |  |
| 6th | 21 | Electric lines of force |  |  |
|  | 22 | Electric flux |  |  |
|  | 23 | Electric Intensity and Electric potential | 6 | To find resistance of galvanometer by half deflection method |
|  | 24 | Electric field  intensity due to a point charge |  |  |
| 7th | 25 | Gauss law (Statement and derivation) | 7 | To verify laws of reflection of light using mirror. |
|  | 26 | Capacitor and Capacitance |  |  |
|  | 27 | Series combination of capacitors |  |  |
|  | 28 | parallelcombination of capacitors |  |  |
| 8th | 29 | **Current Electricity:** Electric Current and its Unit |  |  |
|  | 30 | Direct and alternating current |  |  |
|  | 31 | Resistance and Specific Resistance(definition and units) Conductance | 8 | To identify different components like resistance,capacitor,diode. |
|  | 32 | Series combination of Resistances |  |  |
| 9th | 33 | Parallel combination of Resistances |  |  |
|  | 34 | Ohm’s law (statement and formula), | 9 | To study colour coding scheme of resistance |
|  | 35 | Super conductivity (definition only). |  |  |
|  | 36 | Heating effect of current |  |  |
| 10th | 37 | Electric power |  |  |
|  | 38 | Electric energy and its units |  |  |
|  | 39 | Kirchhoff’s laws |  |  |
|  | 40 | **Electromagnetism:** Introduction |  |  |
| 11th | 41 | Types of magnetic material Dia, paras |  |  |
|  | 42 | ferromagnetic materials with examples |  |  |
|  | 43 | Magnetic field |  |  |
|  | 44 | magnetic intensity |  |  |
| **Week** | **Theory** | | **Practical** | |
|  | **Lecture day** | **Topics** | **Practical day** | **Topics** |
| 12th | 45 | magnetic lines of force, |  |  |
|  | 46 | magnetic flux and their units |  |  |
|  | 47 | Electromagnetic induction (definition) |  |  |
|  | 48 | **Semiconductor physics:** Energy bands |  |  |
| 13th | 49 | Types of materials |  |  |
|  | 50 | intrinsic and extrinsic semiconductors, |  |  |
|  | 51 | p-n junction diode and its V-I  characteristics |  |  |
|  | 52 | Diode as rectifier– half wave rectifier |  |  |
| 14th | 53 | full wave rectifier |  |  |
|  | 54 | Semiconductor; pnp transistor |  |  |
|  | 55 | npn transistor |  |  |
|  | 56 | **Modern Physics:** Lasers: full form, characteristics |  |  |
| 15th | 57 | engineering and medical applications of  lasers |  |  |
|  | 58 | Fibre optics: Introduction to optical fibers |  |  |
|  | 59 | applications of  optical fibers in different fields |  |  |
|  | 60 | Introduction to nanotechnology and its applications. |  |  |