



## **MANNAR THIRUMALAI NAICKER COLLEGE(Autonomous)**

(An Autonomous Institution Affiliated to Madurai Kamaraj University)

(Accredited with “A” Grade by NAAC)

Pasumalai, Madurai -625004

<b>Programme</b>	<b>: UG</b>	<b>Part III</b>	<b>: Core</b>
<b>Semester</b>	<b>: III</b>	<b>Hours per week</b>	<b>: 4</b>
<b>Subject Code</b>	<b>: 18UPHC31</b>	<b>Credit</b>	<b>: 4</b>

### **OPTICS AND SPECTROSCOPY**

#### **Course Outcomes**

**CO1:** To understand the concepts in optics

**CO2:** To gain knowledge in geometrical and physical optics and Photoelectric effect and its applications.

**CO3:** To analyse the types of polarising material.

**CO4:** To evaluate the optical instruments.

<b>Programme</b>	<b>: UG</b>	<b>Part III</b>	<b>: Core</b>
<b>Semester</b>	<b>: III &amp; IV</b>	<b>Hours per week</b>	<b>: 02</b>
<b>Subject Code</b>	<b>: 18UPHCP2</b>	<b>Credit</b>	<b>: 02</b>

### **MAJOR PHYSICS PRACTICAL – II**

#### **Course Outcomes**

**CO1:** To develop experimental knowledge by handling various apparatus

**CO2:** To know the various components and its important

**CO3:** To know the circuit connections and functioning of experiments.

**CO4:** To analyse various types of measuring instruments.

<b>Programme</b>	<b>: UG</b>	<b>Part IV</b>	<b>: NME</b>
<b>Semester</b>	<b>: III</b>	<b>Hours per week</b>	<b>: 02</b>
<b>Subject Code</b>	<b>: 18UPHN31</b>	<b>Credit</b>	<b>: 02</b>

### **PHYSICS FOR EVERYDAY LIFE**

#### **Course Outcomes**

**CO1:** To enable the students to understand the basic concepts of Physics

**CO2:** To gain Knowledge about different types of energy

**CO3:** To study the concept of light and its applications

**CO4:** To analyse the light properties

<b>Programme</b> : UG	<b>Part III</b>	<b>: Core</b>
<b>Semester</b> : IV	<b>Hours per week</b>	<b>: 4</b>
<b>Subject Code</b> : 18UPHC41	<b>Credit</b>	<b>: 4</b>

### ATOMIC PHYSICS

#### Course Outcomes

- CO1:** To understand the atomic structure and different energy levels  
**CO2:** To understand the splitting of spectral lines and X – ray diffraction  
**CO3:** To understand the photoelectric effect and black body radiation  
**CO4:** To study the dual nature of material particles

<b>Programme</b> : UG	<b>Part III</b>	<b>: Core</b>
<b>Semester</b> : III & IV	<b>Hours per week</b>	<b>: 02</b>
<b>Subject Code</b> : 18UPHCP2	<b>Credit</b>	<b>: 02</b>

### MAJOR PHYSICS PRACTICAL – II

#### Course Outcomes

- CO1:** To develop experimental knowledge by handling various apparatus  
**CO2:** To know the various components and its important  
**CO3:** To know the circuit connections and functioning of experiments.  
**CO4:** To analyse various types of measuring instruments.

<b>Programme</b> : UG	<b>Part IV</b>	<b>: NME</b>
<b>Semester</b> : IV	<b>Hours per week</b>	<b>: 02</b>
<b>Subject Code</b> : 18UPHN41	<b>Credit</b>	<b>: 02</b>

### PHYSICS OF ELECTRICAL APPLIANCES

#### Course Outcomes

- CO1:** To gain Knowledge about Conductors insulators semiconductors  
**CO2:** To study simple parallel and series circuits using theorems  
**CO3:** To understand the working and application of electronics components.  
**CO4:** To evaluate household consumption of electrical energy.

<b>Programme</b> : B.Sc(Mathematics & Chemistry)	<b>Part III</b>	<b>: Allied</b>
<b>Semester</b> : III	<b>Hours per week</b>	<b>: 04</b>
<b>Sub code</b> : 18UPHA31	<b>Credit</b>	<b>: 04</b>

### ALLIED PHYSICS - III ELECTRICITY AND ELECTRONICS

#### Course Outcomes

- CO1:** To enable the students to understand the basic concepts of electricity and electronics.  
**CO2:** To understand the Gauss's law, Kirchhoff's laws and torque.  
**CO3:** To study diodes and Binary number system.  
**CO4:** To analyse the types of oscillator.

**Programme : B.Sc (Mathematics & Chemistry) Part III : Allied**  
**Semester : IV Hours per week : 04**  
**Sub code : 18UPHA41 Credit : 03**

**ALLIED PHYSICS - IV  
OPTICS AND MODERN PHYSICS**

**Course Outcomes**

**CO1:** To understand the basic concepts in optics.

**CO2:** To understand the properties of light like reflection, refraction, interference, diffraction and polarization

**CO3:** To study the infrared spectroscopy, Raman effect, Doppler Effect and fiber optic communication system.

**CO4:** To evaluate theory of relativity.

**Programme : B.Sc (Mathematics & Chemistry) Part III : Allied**  
**Semester : III & IV Hours per week : 02**  
**Sub code : 18UPHAP2 Credit : 01**

**ALLIED PHYSICS PRACTICAL – II**

**Course Outcomes**

**CO1:** To develop experimental knowledge by handling various apparatus

**CO2:** To know the various components and its important

**CO3:** To know the circuit connections and functioning of experiments.

**CO4:** To create interest to develop oscillatory circuit.

**Programme : B.Sc (Physics) Part III : Allied**  
**Semester : III Hours per week : 04**  
**Sub code : 18UCHA31 Credit : 03**

**Allied Chemistry – I  
ORGANIC CHEMISTRY**

**Course Outcomes**

**CO1:** To gain knowledge about carbohydrates

**CO2:** To gain the basic knowledge of halogen compounds and dyes

**CO3:** To understand about the types of organic reactions

**CO4:** To gain knowledge in stereoisomerism.

<b>Programme</b>	<b>: B.Sc (Physics)</b>	<b>Part III</b>	<b>: Allied</b>
<b>Semester</b>	<b>: III &amp; IV</b>	<b>Hours per week</b>	<b>: 02</b>
<b>Sub code</b>	<b>: 18UCHAP1</b>	<b>Credit</b>	<b>: 02</b>

**Allied Chemistry Practical – I  
VOLUMETRIC ANALYSIS (Practical)**

**Course Outcomes:**

**CO1:** To enable the students to develop skill in Acidimetry.

**CO2:** To gain know in Alkalimetry.

**CO3:** To gain knowledge in Permanganometry.

**CO4:** To know about the knowledge of Iodimetry.

<b>Programme</b>	<b>: B.Sc (Physics)</b>	<b>Part III</b>	<b>: Allied</b>
<b>Semester</b>	<b>: IV</b>	<b>Hours</b>	<b>: 04</b>
<b>Sub code</b>	<b>: 18UCHA41</b>	<b>Credit</b>	<b>: 03</b>

**Allied Chemistry – II  
INORGANIC CHEMISTRY**

**Course Outcomes:**

**CO1:** To have a basic knowledge in Periodic table

**CO2:** To understand the basic knowledge of Hydrides, Oxides and Nuclear Chemistry

**CO3:** To know about coordination compounds

**CO4:** To obtain knowledge in Nuclear Chemistry

<b>Programme</b>	<b>: B.Sc (Physics)</b>	<b>Part III</b>	<b>: Allied</b>
<b>Semester</b>	<b>: III &amp; IV</b>	<b>Hours per week</b>	<b>: 02</b>
<b>Sub code</b>	<b>: 18UCHAP1</b>	<b>Credit</b>	<b>: 02</b>

**Allied Chemistry Practical – I  
VOLUMETRIC ANALYSIS (Practical)**

**Course Outcomes:**

**CO1:** To enable the students to develop skill in Acidimetry.

**CO2:** To gain know in Alkalimetry

**CO3:** To gain knowledge in Permanganometry

**CO4:** To know about the knowledge of Iodimetry.