

2021-23


# TTWRDC (W), Siricilla Department of Physics VALUE ADDED COURSE


*We are the shapers  
of great minds and  
honorable values.*

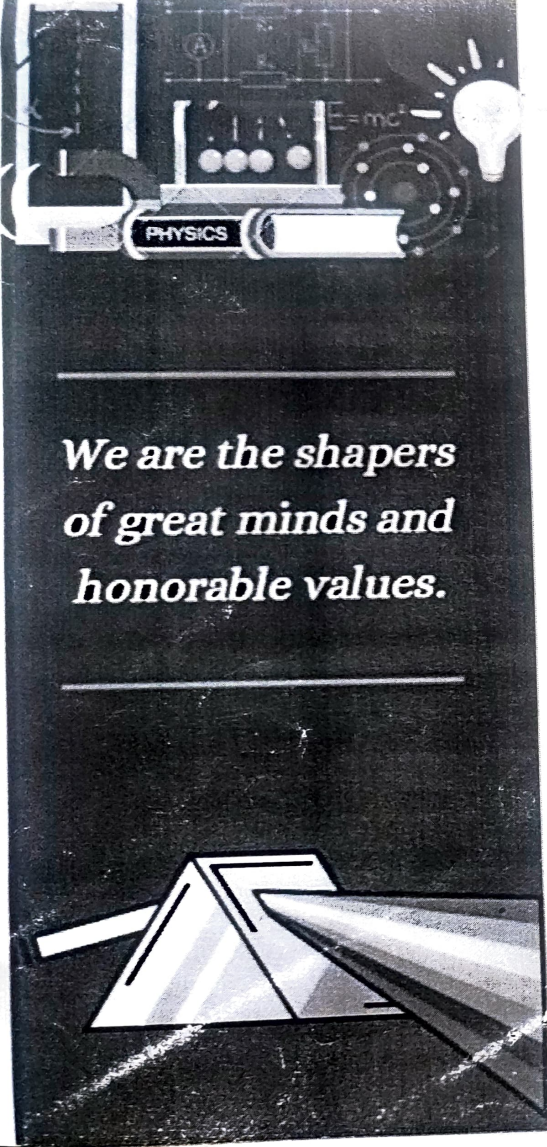
Organized by  
Department of physics

**Course name: Experimental physics**  
**Eligibility: All MPC and MPCs streams**  
**starts on:16-08-2022**  
**Last date for application: 14-08-2022**

  
Faculty  
sign

  
IQAC  
co-coordinators

  
Principal  
Principal  
TTWRDC(W)SIRCILLA  
Dist: Rajanna Sircilla



**TTWRDC(W), THANGALLAPALLY, RAJANNA SIRICILLA**

**DEPARTMENT OF PHYSICS**

**VALUE ADDED COURSE**

**Title:** Experimental physics

**course code:** VACPHY004

**Teaching hours:** 30 hours

**Syllabus:**

**Unit:1**


Introduction, basic tools and apparatus, Basic electrical components: Resistors, capacitors, inductors, description about mechanical components, Young's modulus of a metallic bar, Calculation of spring constant of given spring, Surface tension of the two different liquids.

**Unit:2**

Calculation of thermal conductivity of a bad conductor, determination of electrical equivalent of heat, Platinum Resistance Thermometer, current and voltage relationship of an L-R circuit, Theory on RC circuit.

### **Evaluation Procedure**

The course shall have two components of evaluation: a) Continuous evaluation of 30 marks, comprising of quizzes, assignments, etc., b) Practical/ study project-20 marks.

  
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TTWRDC(W) SIRICILLA  
Dist. Rajanna Sircilla

**Principal**

## Experimental Physics certificate course

Course code- Phy004

### Course outcomes:

On completion of this course, the student will be able to:

1. Design and perform an experiment to test a physical theory - identifying, quantifying and controlling sources of experimental error.
2. Analysis and critical review of experimental data and comparison with theory or literature as appropriate.
3. Maintain a complete and legible contemporary record of experimental methods, analysis, results and conclusions.
4. Present a complete, reproducible written or oral account of an experiment and the conclusions drawn from it to a professional standard, incorporating figures, tables and graphs where appropriate.
5. Resolve conceptual and technical difficulties by locating and integrating relevant information from a diverse range of sources.



TTWRDC (W), SIRICILLA

**VALUE ADDED COURSE**

ORGANIZED BY

**Department of physics**

COURSE NAME: INTRODUCTION TO PHOTONICS

ELIGIBILITY: ALL MPC AND MPSC STREAMS

STARTS ON : 23-08-2021

LAST DATE FOR APPLICATION: 21-08-2021

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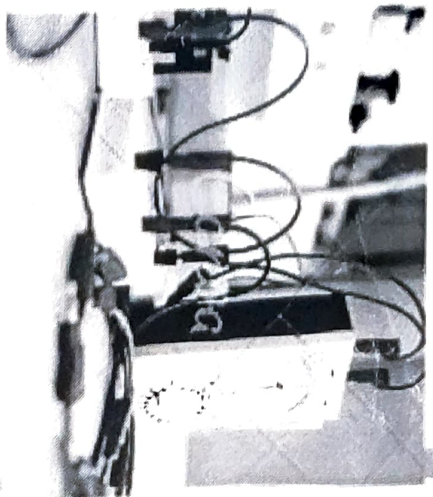
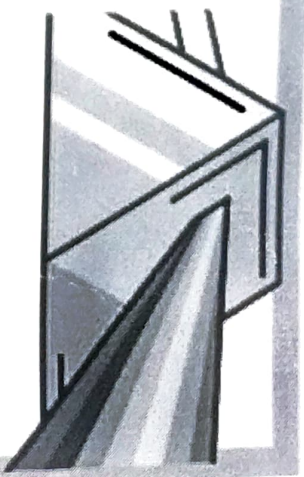
Faculty  
(HOD)

*Raksha*

IQAS  
Co-ordinator

*[Handwritten signature]*  
Principal

Principal  
TTWRDC(W)SIRICILLA  
Dist: Rajanna Sircilla



DEPARTMENT OF PHYSICS

VALUE ADDED COURSE

Title: Introduction to photonics

course code: VACPHY016

Teaching hours:30 Hrs

SYLLABUS:

Unit:1

Introduction to photonics, diffraction & interference, coherence, Michelson interferometer, fiber optics, photon properties.

Unit: 2

Photon optics, interaction light with matter, introduction of lasers, spontaneous emission, stimulated emission of radiation, semiconductor sources, semiconductor detectors.

Evaluation procedure:


Total marks: 50 M

Theory exam: 30M

Practical: 20M

  
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Rehane  
IQAC  
co-ordinator

  
principal

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## Course name: Introduction to Photonics

Course code:Phy016

Duration of Course: 30 hrs

### Course outcomes

- (1) Students can learn the fundamental principles of photonics and light-matter interactions.
- (2) They can develop the ability to formulate problems related to photonic structures/processes and analyze them.
- (3) Students can understand the processes that help to manipulate the fundamental properties of light.
- (4) Students can understand the Laser properties and how to produce laser light.
- (5) Students can know the process behind the laser light generation.
- (6) Understand the processes of spontaneous and stimulated emission.

  
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## NOTICE

### DEPARTMENT OF PHYSICS

DATE:

20-08-2020

Here by informing all the interested students to enroll in the certificate course "Experimental physics" conducting by the Department of Physics which is going to start from Dt: 04-09-2020. Those who are interested can apply.

**COURSE NAME:** Introduction to photonics

**ELIGIBILITY:**B.Sc( MPC & MPCS)

**LAST DATE FOR APPLICATION:**03-09-2020

**COURSE STARTS FROM:**04-09-2020

**EXAM DATE:** 12-10-2020



DEPARTMENT OF PHYSICS

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Dist: Rajanna Sircilla  
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DEPARTMENT OF PHYSICS

VALUE ADDED COURSE

| Date: 23-08-2020

Title: Introduction to photonics

course code: VACPHY016

Teaching hours:30 Hrs

SYLLABUS:

Unit:1

Introduction to photonics, diffraction & interference, coherence, Michelson interferometer, fiber optics, photon properties.

Unit: 2

Photon optics, interaction light with matter, introduction of lasers, spontaneous emission, stimulated emission of radiation, semiconductor sources, semiconductor detectors.

Evaluation procedure:

Total marks: 50 M

Theory exam: 30M

Practical: 20M



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**Course name: Introduction to Photonics**

**Course code:Phy016**

**Duration of Course: 30 hrs**

**Course outcomes**

- (1) Students can learn the fundamental principles of photonics and light-matter interactions.
- (2) They can develop the ability to formulate problems related to photonic structures/processes and analyze them.
- (3) Students can understand the processes that help to manipulate the fundamental properties of light.
- (4) Students can understand the Laser properties and how to produce laser light.
- (5) Students can know the process behind the laser light generation.
- (6) Understand the processes of spontaneous and stimulated emission.

  
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# NOTICE

## DEPARTRTMENT OF PHYSICS

**DATE:**

**30-08-2019**

Here by informing all the interested students to enroll in the certificate course "Experimental physics" conducting by the Department of Physics which is going to start from Dt: 09-09-2019. Those who are interested can apply.

**COURSE NAME:** Experimental physics

**ELIGIBILITY:**B.Sc( MPC & MPCs)


**LAST DATE FOR APPLICATION:**08-09-2019

**COURSE STARTS FROM:**09-09-2019

**EXAM DATE:** 30-11-2019



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TTWRDC(W), THANGALLAPALLY, RAJANNA SIRICILLA

DEPARTMENT OF PHYSICS

VALUE ADDED COURSE

**Title:** Experimental physics

**course code:** VACPHY004

**Teaching hours:** 30 hours

**Syllabus:**

**Unit:1**


Introduction, basic tools and apparatus, Basic electrical components: Resistors, capacitors, inductors, description about mechanical components, Young's modulus of a metallic bar, Calculation of spring constant of given spring, Surface tension of the two different liquids.

**Unit:2**

Calculation of thermal conductivity of a bad conductor, determination of electrical equivalent of heat, Platinum Resistance Thermometer, current and voltage relationship of an L-R circuit, Theory on RC circuit.

**Evaluation Procedure**

The course shall have two components of evaluation: a) Continuous evaluation of 30 marks, comprising of quizzes, assignments, etc., b) Practical/ study project-20 marks.

  
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Dist: Rajanna Sircilla

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# Experimental Physics certificate course

Course code- Phy004

## Course outcomes:

On completion of this course, the student will be able to:

1. Design and perform an experiment to test a physical theory - identifying, quantifying and controlling sources of experimental error.
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4. Present a complete, reproducible written or oral account of an experiment and the conclusions drawn from it to a professional standard, incorporating figures, tables and graphs where appropriate.
5. Resolve conceptual and technical difficulties by locating and integrating relevant information from a diverse range of sources.



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## NOTICE

### DEPARTMENT OF PHYSICS

**DATE:**

**29-06-2018**

Here by informing all the interested students to enroll in the certificate course "Experimental physics" conducting by the Department of Physics which is going to start from Dt: 09-07-2018. Those who are interested can apply.

**COURSE NAME:** Experimental physics

**ELIGIBILITY:** B.Sc( MPC & MPCs)

**LAST DATE FOR APPLICATION:** 08-07-2018

**COURSE STARTS FROM:** 09-07-2018

**EXAM DATE:** 13-08-2018



DEPARTMENT OF PHYSICS

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TTWRDC(W), THANGALLAPALLY, RAJANNA SIRICILLA

DEPARTMENT OF PHYSICS

VALUE ADDED COURSE

**Title:** Experimental physics

**course code:** VACPHY004

**Teaching hours:** 30 hours

**Syllabus:**

**Unit:1**

Introduction, basic tools and apparatus, Basic electrical components: Resistors, capacitors, inductors, description about mechanical components, Young's modulus of a metallic bar, Calculation of spring constant of given spring, Surface tension of the two different liquids.

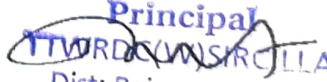
**Unit:2**

Calculation of thermal conductivity of a bad conductor, determination of electrical equivalent of heat, Platinum Resistance Thermometer, current and voltage relationship of an L-R circuit, Theory on RC circuit.

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Dist: Rajanna

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# Experimental Physics certificate course

Course code- Phy004

## Course outcomes:

On completion of this course, the student will be able to:

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