

Programme Project Report for M. Sc PHYSICS (6044)

The Department of Physics Directorate of Distance Education Madurai Kamaraj University

I. About the Department

The Department of Physics in the Directorate of Distance Education of Madurai Kamaraj University is having full-fledged laboratory for both General and Electronics. The course started in the year of late 1970s. The department currently offers both U.G. and P.G programs in physics.

II. Program Overview:

The physics department is committed to impart quality education for both in theoretical as well as experimental physics with special emphasis on ‘learning by doing’ for socio-economic growth and “reach to not reach”.

Owing to their wide-ranging and comprehensive training, there is a high demand for physics graduates in many walks of life. Potential career prospects range from research and development at universities, research institutions and in industry to positions in the field of information and communications or in management consultancy. The ideal basis for taking advantage of these opportunities is for students to follow up their B.Sc. degree with a research-oriented M.Sc. programme that gives them in-depth specialist knowledge and understanding of the scientific methods employed in physics along with insights into neighboring fields (depending on the choice of modules). In addition, the M.Sc. lays the foundations for a later doctorate

III. Objectives of the Program

- To impart quality education in physics to students so as they become globally competitive physicist.
- To make the students to accept the challenges in physics and can effectively disseminate the physics knowledge to coming generations.
- To create strong interest in physics so as students can further develop themselves through self-study.
- To create a sense of ethical responsibilities among students.
- a) To enabling as a master mind in Physics. Because physics as a father of the science.
- b) Physics as fundamental science and mandatory subject for engineering and medical. Hence the post graduate teacher should be an acknowledgeable person.
- c) If you know physics you can study any other subject but other specialization can't be do.

IV. Program Target Groups

Those who have completed B. Sc physics and not to pursue further by the family situation. Those who are working as a science teacher in the school, to improve their knowledge and they are the ignition to the future of India.

To provide Higher Education to diverse section of society as an instruments of democratizing Education

To provide Education to such section of society, which are unable to get education through face to face education?

To educate the society, which are deprived educations due to crossing of their age limit

To increase the Gross Enrollment Ratio of State and in turn to Nation

To provide the opportunity to employed person to increase their education Qualification

To provide education of person (Male & Female) working in their business, Housewife or Agriculture

To provide alternative Cost effective non formal Channel for tertiary Education

To encourage the people for Online Transaction

V. Program Requirements

1. Candidate who have passed under graduate in B. Sc Physics as a major subjects and recognized by University Grand Commission.

2. Marks required a student must have passed in his/her Under-Graduate degree;

VI. Degree Overview

M.Sc. Physics or Master of Science in Physics is a postgraduate Physics course. Physics is a natural science that involves the study of matter and its motion through space time, along with related concepts such as energy and force. More broadly, it is the general analysis of nature, conducted to understand how the universe behaves. The duration of M.Sc. in Physics is mostly of two academic years

The basic laws of physics are applied in advancements in many areas including modern medical and space-related technologies, climate research as well as energy generation and storage. As the study of physics continues to evolve through new discoveries, we need inquisitive minds to explore the connections between traditional and emerging research areas, including medical and nano-scale physics, and biophysics.

Day to day lesson plan of each Course on the day registration
Distribution of Printing Material of Course on the day of Registration of students
Regular Monitoring of students by faculty members on Phone/Video Calling
Fixing the date of Examination Schedule, Quiz, and Annual Examination
Calling the Students in University Campus for Face to face Interaction, especially when seminar/ conference organization related to their subject
Deputing concern faculty to divisional place and calling all the students of concern subject for face to face interaction, conduction of classes, midterm review, solving the queries of students

VII. Degree Title **M.Sc. in PHYSICS**

VIII. Duration of the Program All students must complete the program within two years. The program is dedicated to maintaining a full year-round program with four semesters. In all the four semester the students may be engaged in mandatory core and optional courses;

IX. Program Structure The M. Sc Program in Physics is designed as core, elective and SSS course papers; for each semester there may be 4 core papers, two elective papers and one SSS paper. There one of the core paper must be a practical as part of this program.
Summary Description

M.SC PHYSICS			
COURSE CODE	COURSE	NATURE	CREDIT
SEMESTER - I			
PPHYC01	MATHAMATICAL PHYSICS - I	CORE	4
PPHYC02	CLASICAL MECHANICS	CORE	4
PPHYC03	ELELCTRONICS	CORE	4
PPHYCL1	PRACTICAL - I	CORE	3
PPHYE01	EXPERIMENTALDESIGN	ELELCTIVE	3
	SSS COURSE	SELECTIVE	2
SEMESTER – II			
PPHYC04	MATHEMATICLA PHYSICS – II	CORE	4
PPHYC05	STATISTICAL MECHANICS	CORE	4
PPHYC06	OPTICS AND SPECTROSCOPY	CORE	4
PPHYCL2	PRACTICAL – II	CORE	3
PPHYE02	COMPUTATIONAL PHYSICS	ELELCTIVE	3
	SSS COURSE	SELECTIVE	2
SEMESTER – III			
PPHYC07	ELELCTROMAGNETICS THEORY	CORE	4
PPHYC08	SOLID STATE PHYSICS -I	CORE	4
PPHYC09	QUANTUM THEORY –I	CORE	4
PPHYCL3	PRACTICAL - III	CORE	3
PPHYE03	DIGITAL ELELCTRONICS & MICRO CONTROLLERS	ELELCTIVE	3
	SSS COURSE	SELELCTIVE	2
SEMESTER – IV			
PPHYC10	SOLID STATE PHYSICS – II	CORE	4
PPHYC11	QUANTUM THEORY –II	CORE	4
PPHYC12	ATOMIC AND MOLECULAR PHYSICS	CORE	4
PPHYCL4	PRACTICAL - III	CORE	3
PPHYE07	NANOPHYSICS	ELELCTIVE	3
	SSS COURSE	SELECTIVE	2
		Total	80

X. Details of Syllabi each course has a detailed syllabus structured in terms of Units. The detailed syllabus for all core and optional courses has been attached in the Annexure I.

XI. Time Table for Contact Classtheory & Practical

The ODL Regulations insists of minimum 60 hours per semester of which 60 hours are for contact theory class and 60 hours for practical purpose. The following table demonstrates the time allotment for both contact theory and practical totaling 12 hours per week; for a semester there may be available 5 months and one round of contact/counseling class per month is enough to achieve the required hours.

Week/Hours		9:00 AM – 10:30 PM	11:15 AM – 1:15 PM	2:00 PM – 4:00 PM
Week I	Day I	Core I	Core II	Core III
	Day II	Core IV	Elective I	core
Week II	Day I	Practical Training	Practical Training	Practical Training
	Day II	Practical Training	Practical Training	Practical Training

Per Week 9.00 – 10.30 10.30 – 12.00 1.00 – 2.30 2.30 – 4.00 Day 1 C1 C2 / Discussion Forum
C3 E1 Day 2 C1 C2 / Discussion Forum C3 E1

XII. Evaluation Procedures

➤ Principles of Evaluation the rubrics of evaluation of the program will be based on the following principles:

Proof of Initiative,
Active immersion,
Interaction;

Use of DIE - Describe,

Interpret,

Evaluate;

utilizing variety of sources;

Analytical Approach.

➤ Methods of Evaluation the students will be assessed by two pronged evaluation methods:

- a) Continuous Internal Evaluation;
- b) End-of-semester evaluation.

c) Integration of Continuous and End-of-semester evaluation, the following points have been incorporated for effecting the integration of continuous and end-of-semester evaluation

- a) Continuous Internal Evaluation Aiming to assess values, skills and knowledge imbibed by students, internal assessment is to be done by the concerned faculty-member. It would comprise the following steps:

There may be three different modes of continuous internal assessment:

- i. Book Review (BKR)
- ii. Problem Solving (PS)
- iii. Writing Assignment (WRA)

Components for internal evaluation are to have a time-frame for completion (by students), and concurrent and continuous evaluation (by faculty-members).

The evaluation outcome may be expressed either by pre-determined marks

The evaluation reports submitted by all the faculty-members are to be reviewed, from time to time, by the Examination Committee under the chairmanship of Director in order to ensure transparency,

- iv. Fair-play and accountability.

Following the review by the Examination Committee, the outcome of internal evaluation will be announced or displayed on the Notice Board and / or web-site as per the timeframe or academic calendar.

- b) End-of-semester evaluation:-

This is to be carried out at the end of first semester, and will aim to assess skills and knowledge acquired by students through class-room interaction. The evaluation can be in the form of written examination, or term paper assignment. Evaluation process should be verifiable and transparent. Towards this end, the following steps have been adopted:

All the students pursuing this program have to undergo external evaluation at the end of first semester as per syllabi;

With regard to written examination the internal faculty may associate themselves with the external examiners in the examination process.

In the case of written examination, the format of question paper is attached in annexure could be moderated by the Examination Committee.

Answer-books or –sheets are to be ‘encoded’ (before being passed on to examiner / evaluator, and decoded (before tabulation).

(c) Integration of Continuous and End-of-semester evaluation The following points have been incorporated for effecting the integration of continuous and end-of-semester evaluation: —

Relational weightage assigned to internal evaluation is 40 percent.

Relational weightage assigned to end of semester evaluation is 60 percent.

Following the integration of internal and external evaluations, the results may be expressed in marks

As soon as the integration of internal and external evaluations has been completed, the results should be announced, in keeping with the academic calendar, to facilitate students' academic or occupational pursuits.

3. Description of Evaluation

PATTERN OF EXAMINATIONS

A) Scheme for Internal Exam-Theory

- a. Internal marks = Maximum 25 marks
 - i. Two Assignments - 12.5 marks each
- Total - 25 Marks**

b) Scheme for External Exam-Theory

- a. External Examination – Maximum 75 marks

Grand Total 100 marks

Passing Minimum - Theory

- 1. 50% of the aggregate (Internal + External)
- 2. 34 marks out of 75 is the pass minimum for the External.

c) Scheme for Internal Exam-Practical

- a) Scheme for Internal Exam-Practical

Records as an Internal marks = Maximum 40 marks

d) Scheme for External Exam-Practical

External Examination	–60% marksMaximum
Records	- 25%
Viva voice	-10%

Grand Total -100 marks

Passing Minimum - Practical

1. 50% of the aggregate (Internal + External)

2. 21 marks out of 60 is the pass minimum for the External

Note: There is no passing minimum for internal assessment marks.

Description of Evaluation

This table lists all the components that make up the course assessment and their weightage. The column headed Qual. Mark indicates the percentage of marks that a student must have secured for declaring him as passed in that course.

Description of Program Evaluation	% Weightage	Qual. Mark
Internal-Theory Seminars & Writing Assignment	25%	No minimum
External -Theory 3 hour theory examinations	75%	34 marks
Total	100%	
Internal-Practical Skill in handling experiments – Record	30%	No minimum
External-Practical 3 hours laboratory examinations	60%	21 marks
Viva-voce	10%	
Total	100%	

XII. Program Facilities

1. Library & Documentation Unit:

The Directorate has a full-fledged state of the art reference library of standard text and reference books and research journals and well established documentation unit having NSS, NFHS and Census data.

2. Career Development Committee:

The Director may constitute a Career Development Committee consisting of at least three faculty members of the Directorate to look after the career opportunities of the students of the program. This Committee may undertake necessary initiatives in enhancing capabilities and skills such as English Language proficiency, computer and documentation skills, and

competency in project writing; it may organise, if possible, campus recruitment in collaboration with NGO sector and print and visual media.

Practical: LOG BOOK - DDE

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