1. M. Sc.

Program objectives

- To provide, thorough well designed studies of theoretical and experimental Physics, a worthwhile educational experience for all students.
- To acquire deep knowledge in fundamental aspects of all branches of Physics.
- To acquire basic knowledge in the specialized thrust areas like Classical Mechanics, Quantum Mechanics, Mathematical Physics, Electromagnetic Theory, Thermodynamics and Statistical Mechanics, Electronics, Microprocessor & Electronic Instrumentation, Condensed Matter Physics, Nuclear and Particle Physics, Materials Science etc.,
- To develop abilities and skills that:
  - are relevant to the study and practice of science,
  - are useful in everyday life,
  - are encouraging efficient & safe practice and effective communication,
  - are encouraging research and development activities.
- To develop attitudes relevant to science such as:
  - Concern for accuracy and precision,
  - Objectivity,
  - Integrity,
  - Enquiry,
  - Initiative and
  - Inventiveness.

Eligibility

A candidate who has passed B.Sc., Degree Examination with Physics or Applied Physics as main course of study of any University or any of the B.Sc., degree examination with specialization such as Applied Physics, Electronics, Nuclear Physics, Biophysics, Nanoscience or any other specialization in Physics of some other University accepted by the syndicate as equivalent thereto, subject to such condition as may be prescribed therefore shall be permitted to appear and qualify for the M.Sc. Degree in Physics of this University after a course of study of two academic years.

Selection Procedure

Non-Entrance Scheme and selection as per Government Reservation Norms

Programme structure

The programme is named as Master of Science (M.Sc.) in Physics. The syllabus for this programme is framed under the rules of the Choice Based Credit System (CBCS) of this University and both Core and Elective courses were incorporated as its components. The CBCS enables the students to select variety of subjects as per their interest and requirement. Acquiring knowledge in the related fields is advantageous to the students. Fast learners can earn more credits than the stipulated minimum of 90 credits.

CBCS - Structure of the Programme

Sl.No.	Course Code No.	Title of the Course	No. of Credit	Contact Hours
I SEMESTER				
1	521101	Classical Mechanics	4	5
2	521102	Mathematical Physics-I	4	5
3	521103	Linear and Integrated Electronics	4	5
4	521104	Advanced Electronics Laboratory	5	6
5	--	Elective Course	4	5
			21	26
II SEMESTER				
6	521201	Quantum Mechanics-I	4	5
7	521202	Mathematical Physics-II	4	5
8	521203	Electromagnetic Theory	4	5
9	--	Elective Course	4	5
10	521222	Interdepartmental Course-I	3	3
			19	23
III SEMESTER				
11	521301	Molecular Spectroscopy	4	5
12	521302	Quantum Mechanics-II	4	5
13	521303	Microprocessor & Electronic Instrumentation	4	5
14	521304	Advanced Physics Laboratory	5	6
15	--	Elective Course	4	5
16	521333	Interdepartmental Course - II	3	3

		Village Placement Programme (3 days)		
			24	29
IV SEMESTER				
17	521401	Condensed Matter Physics	4	5
18	521402	Nuclear and Particle Physics	4	5
19	521403	Materials Science	4	5
20	521444	Project & Viva-voce	8	6
21	--	Elective Course	4	5
22	521445	Skill development	2	2
			26	28
TOTAL CREDIT			90	

Interdepartmental Courses				
1	521222	Physics for Everyone	3	3
2	521333	Analytical Instrumentation	3	3
TOTAL CREDIT			6	

ELECTIVE COURSES

Sl.No.	Course Code No.	Title of the Course	No. of Credit	
I SEMESTER				
1	521501	Elementary Numerical Analysis	4	
2	521502	Modern Optics	4	
		Any one course		4
II SEMESTER				
3	521503	Thermodynamics and Statistical Mechanics	4	
4	521504	Quantum Chemistry	4	
		Any one course		4
III SEMESTER				
5	521505	Basic Concepts of Instrumentation	4	
6	521506	Solar Energy Utilization	4	
		Any one course		4
IV SEMESTER				
7	521507	Digital Electronics Principles	4	
8	521508	Fiber and Integrated Optics	4	
		Any one course		4

Fee structure

As per University Norms

2. M. Phil.

Program objectives

The programme is named as Master of Philosophy (M.Phil.,) in Physics. This programme is offered under Choice Based Credit System (CBCS). The CBCS enables the students to select variety of subjects as per his/her interest and requirement. Acquiring knowledge in the related fields is advantageous to the students. Fast learners can earn more credits than the stipulated minimum of 30 credits. The programme is structured in such a way to impart more knowledge in science, in particular in Physics. Physics is the natural science that involves the study of matter and its motion through space and time along with the related concepts such as energy and force. It is one of the most fundamental scientific disciplines. The main goal of Physics is to understand how the universe behaves. Physics explains the natural phenomena in the universe and often considered to be the most fundamental science. It provides a basis for all other sciences - without Physics, we could not have Biology, Chemistry, or anything else. Physics also makes significant contributions through advances in new technologies. One academic Programme is necessary to create awareness to students in the emerging field and also it should teach basic concepts and developments of Physics to students to make them as scientist or technologists in this field. Hence our task is to introduce M.Phil., programme in Physics to educate the postgraduate students in the fascinating fields. Rigorous and comprehensive in approach, this syllabus presents essential contents in a detailed, clear and direct way.

Eligibility for Admission

A candidate who has passed M.Sc., Degree Examination with Physics, Applied Physics, Electronics as subject of study of any University or any of the M.Sc., degree examination with specialization such as Nanoscience, Applied Physics, Electronics, Nuclear Physics, Biophysics of some other University accepted by the syndicate as equivalent thereto, subject to such condition as may be prescribed therefore shall be permitted to appear and qualify for the M.Phil., Degree in Physics of this University after a course of study of one academic year.

For securing admission to the M.Phil., programme, candidates must have secured 55% of marks in the respective PG Degree Programme or any equivalent programme in the case of inter-disciplinary subjects. However, the minimum marks for the SC/ST candidates would be 50%.

For all the candidates, who have completed their PG Degree on or before 1991, the minimum eligible marks for admission to M.Phil. would be 50%.

Duration of the Programme

The Programme for the degree of M.Phil., in Physics shall consist of one academic year divided in to two semesters. Each semester consist of 90 working days.

Courses of Study

CBCS - Structure of the Programme

S.No.	Course Code No.	Title of the Course	No. of Credit	Contact Hours
		I SEMESTER		
1	581101	Research Methodology and programming	5	5
2	581102	Advanced Physics	5	5
3	581103	General Skills in Science	5	5
4		Literature Survey and Consolidation		5
			15	
		II SEMESTER		
5	581201	Materials Science of Thin Films	5	5
6	581202	Solid State Ionics		
7	581203	Crystal Growth and Characterisation		
8	581204	Nanoscience and Technology		
9	581999	Dissertation & Viva-voce	10	15
			15	
		TOTAL CREDIT	**30**	

Fee structure

As per University Norms

3. Ph.D.

DEGREE OF DOCTOR OF PHILOSOPHY (Ph.D.)

I. REGULATIONS

1 GENERAL Candidates who fulfill the eligibility requirements of the Alagappa University for seeking admission to Ph.D. programs can pursue Ph.D. programs in the University.

1.1 Place of Research Research can be pursued in any of the Departments / Constituent Colleges of the Alagappa University or in the Research Department of an Affiliated College / Collaborating Institution recognized as Research Centre by the Alagappa University for the purpose.

1.2 Categories of Ph.D. Scholars

1.2.1 Full-Time Research Scholars

1.2.2 Part-Time Research Scholars

1.2.3 Independent Research Scholars

1.3 Departmental Research Committee The conduct of pre-registration Ph.D program entrance examination work, admission and registration of candidates, guide allocation to candidates, title evaluation and course work coordination shall vest with Departmental Research Committee comprising all eligible guides of the Department under the chair of the Head of the Department, with appropriate support from the office of Dean, Research.

2 ELIGIBILITY REQUIREMENTS

2.1 Common for Full-Time/Part-Time/Independent Research

A: Post Graduate Qualifying Degree Marks 50% of Marks for those who got P.G. degree prior to 1-1-1991. 50% of Marks for SC/ST/Physically or visually challenged candidates 55% of Marks – For all others

B: Clearing the Pre-registration Ph.D. Program Eligibility Entrance Examination (Exemption from 2.1 B is available to candidates under category 2.1.3 only) 2

Candidates who possess Masters degree as mentioned in 2.1(A) in the faculties of Arts, Science, Management, Education or any faculty that may be approved and a pass in the pre-registration Ph.D. Program Entrance Examination referred to in 2.1(B) are eligible to register for Ph.D. in this University under the respective faculty in the disciplines in which Ph.D. programs are offered by the University. The PG degrees of the candidates must be as per the regulations of this University or any other University recognized by the UGC for award of degrees in the disciplines of study considered equivalent to those of Alagappa University. A candidate is expected to take Pre-registration Ph.D. Program Entrance Examination in the discipline in which the candidate has PG Degree or a discipline closely related to that.

II. Course of Study

PhD Physics

CBCS - Structure of the Programme

Sl.No.	Course Code No.	Title of the Course	No. of Credits	Contact Hours
1	11211	Research Methodology and programming	6	5
		Any 2 of the following		
4	11212	Materials Science of Thin Films		5
5	11213	Solid State Ionics	12	5
6	11214	Crystal Growth and Characterisation		5
7	11215	Nanoscience and Technology		5
			18	
TOTAL CREDITS			**18**	

Fee structure

As per University Norms