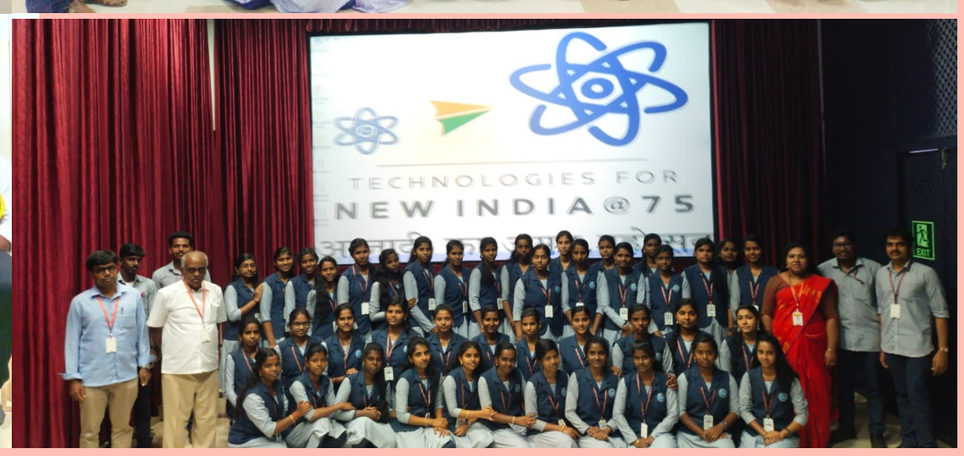
NANJIL CATHOLIC COLLEGE OF ARTS AND SCIENCE

DEPARTMENT OF PHYSICS

NAAC QUALITATIVE MATRICES REPORT



YEAR
2017 - 2022

Criterion I

Curricular Aspects

The Department of Physics was established during the year 2013 and it is one of the important research departments of our college, which offers B.Sc, M.Sc, M.Phil and Ph.D programmes in physics. Department of physics implements curriculum prescribed by the manonmaniam sundaranar university. Studying physics strengthens quantitative reasoning and problem solving skills that are valuable in areas beyond physics. Students who study physics are prepared to work on forefront ideas in science and technology, in academia, the government, or the private sector. Careers might focus on basic research in astrophysics, cosmology, particle physics, atomic physics, photonics or condensed matter physics, or in more applied research in areas such as renewable energy, quantum information science, materials development, biophysics, or medical physics.

CURRICULUM PLANNING, DELIVERY AND DOCUMENTATION

Curriculum Planning

The department of physics follows the curriculum and syllabus with choice based credit system (CBCS) as suggested by manonmaniam sundaranar university. Effective curriculum is always well planned and documented by the department in line with university's guidelines. Academic planning is done in two major steps.

1. Planning by the HOD during department staff meeting
2. Planning by individual faculty members

Steps in Planning:

In order to ensure the smooth functioning of the curriculum, HOD of physics conducts the first staff meeting at the beginning of each semester. By getting inputs from all the faculties, HOD drafts the academic planning of the physics department.

Subject Allocation:

HOD allocates the courses to all the faculty members based on their field of interest and experience. In general, based on the competence level of the faculty, subject allocation is done.

Workload Planning:

After allocating subjects to individual faculty members, HOD assigns the workloads for each faculty member for the forthcoming semester with the maximum of 18 hours per week for single faculty. Hours for theory classes are fixed based on the credits of the subjects according to the syllabus. Totally 90 days are distributed over theory and lab classes. This distribution of classes used to compliance with the guidelines of syllabus. In addition with teaching hours, discipline duty hours are also added for workload calculation while framing time table

Time table:

After fixing workloads and subjects to all the faculty members, Master timetable is prepared by HOD with well planned details. On the basis of the master timetable, class time table and individual staff time tables are prepared which reveals the accurate details of the periods related with staff.

Planning by individual faculty members:

After getting the plans from HOD, Individual faculty members are instructed to prepare the academic plan for their subjects and classes.

Course Plan (Theory):

Faculty members prepare a structured course plan which strictly follows the time table. Number of classes for each topic is described according to the syllabus and credits assigned to each paper.

(a) Major Paper: 5 hours per week for UG
(b) Elective Paper: 4 hours per week for UG
(c) Allied Paper: 4 hours per week for UG
(d) Language Paper: 6 hours per week for UG
(e) EVS/VBE: 2 hours per week
(f) Major Paper: 5 hours per week for PG
(g) Elective Paper: 4 hours per week for PG

Unit wise course plans are prepared based on the topics and allotted periods per week

Course Plan (Lab):

Laboratory course in charges prepared a list of experiments depends on the availability and working conditions of the instruments. Working conditions of all the apparatus are thoroughly checked before the commencement of first lab class.

Totally four hours per week for one practical course.

I UG and II UG students are allotted with four hours per week for one practical course.

III UG and PG students are allotted with eight hours per week for two practical courses.

Laboratory course plan strictly follows the academic plan of the department till the end of the lab exams.

Lesson Plan (Theory):

All the subject teachers prepare proper lesson plan for each period according to which they teach the classes. Using lesson plan ensures the completion of syllabus within the prescribed periods.

(a) 1 Unit : 8 hours Lecture Class
(b) 1 Unit: 1 hour Revision
(c) Recap of the Class: 5 minutes
(d) Introduction about the Class: 5 minutes
(e) Teaching on the topic: 45 minutes
(f) Summary of the Class: 5 minutes

Lot of recommended books are referred by the faculties to draft notes for each units. Before the commencements of the regular academic schedule, each faculty members are well ready with lesson plans for each class. Lesson plans includes all the regular teaching aids like PPT, OHP sheets, well written notes with question bank

Lesson Plan (Lab):

Manuals are well drafted as per the calculation procedures with neat diagram for each experiment as per syllabus. Model calculations are kept in separate files.

Planning during Pandemic Period:

During the pandemic period, college council approved the process of conducting classes through online modes using google meet platform, and also the college council permitted the class teachers to form a whatsapp group to deliver academic information on time.

After getting this approval, HOD conducted a online staff meeting via google meet and instructed the covid-19 guidelines for conducting online classes. Separate timetable was

prepared by HOD for online classes which comprised 7 hours per day. 7 hours were distributed for three different process

(a) 3 hours per day for live class on google meet

(b) 2 hours per day for notes /study materials uploading

(c) 2 hours per day for assignment uploading or seminar class by students

HOD gave the proper plan to all the faculties for using google class room id, google meet id and whatsapp group for the purpose of online classes.

Effective Delivery

The well planned effective curriculum is delivered to the students by various strategies like black board teaching, PPT presentation with other ICT facilities, project oriented learning, assignment making, group discussion, seminar, webinar, hands on training, field work and extension activities.

Traditional Teaching Method (Black board teaching):

During the traditional teaching methods, subject teacher deliver the lecture by using chock and black board. Lot of recommended books are referred by the faculties to draft notes for each units. Faculties used to prepare the theory paper for class with strong basics before moving to class. Before the regular lecture, recap of previous class is done by asking simple questions. Lectures are delivered effectively with the help of the meticulously prepared notes. After the class, clarifications are given based on their doubts.

Combined Teaching (ICT enabled methods):

In this method, the well planned curriculum is delivered with the help of high quality PPTs, fascinating educational videos with regular class room teaching. To execute this process, all the class rooms are incorporated with projector facility.

Learning by doing method (Laboratory teaching):

The well planned laboratory classes are delivered via proper hands on training. As per the laboratory procedure, each student must take their own readings by doing experiments individually. Students are encouraged to refer the well prepared manual again and again before staring the experiments. All the experimental readings are verified then and there by the laboratory course in charge on daily basis.

Effective delivery during Pandemic Period:

During the pandemic period, all the faculty members were instructed to use google classroom for each subject to process all the assignment related works. Notes were also uploaded in google class room.

(a). Live classes were always conducted through google meet platform

(b). All the academic instructions were delivered via official whatsapp group of each class which was directly administrated and handled by HOD and other subject teachers

(d). Laboratory classes were delivered via google class room by uploading recorded videos of related experiments.

After finishing exams, students scanned their answer sheets and compressed it into single pdf. This single pdf of answer sheets were uploaded in google class room. All the assignments were uploaded in the same manner. Subject teachers downloaded the answer scripts from google class room and evaluated . Mark list was displayed in the official class whatsapp group.

Documentation

The process of effective curriculum planning and delivery is supported by the following documents in our department

(a) Departmental minutes of meeting (MOM)
(b) Departmental session plan (Annual Plan)
(c) College Academic Calendar
(d) Time table file
(e) Workload file
(f) CIE Schedules
(g) Online Class time table
(h) Course plan
(i) Course file
(j) Lesson plan
(k) ICT Register (proof for seminar class)
(l) Question bank

To ensure the effective delivery of well planned curriculum, all the above documents are periodically updated by the faculty members and verified by the HOD

CONTINUOUS INTERNAL EVALUATION (CIE)

CIE on Daily Basis:

Performance of students on daily basis is done by concerned subject teachers using

(a) Quiz based approach
(b) Problem Solving approach
(c) Assignment workout
(d) Mini recap talk by students

In quiz based approach, mini quiz is conducted by the subject teacher at the initial ten minutes of that period to assess the student's understanding on previous classes. Quiz questions mainly related with the teachings of previous class.

In problem solving approach, student's performance is evaluated by making them to solve mini problems related with previous class

In assignment workout, mini assignments are given to students as a home work to make them to explain the concepts by their own way. Performance on writing assignments is evaluated by the subject teacher on daily basis.

In recap talk, students are randomly selected to give a recap talk on previous class

CIE on Weekly Basis:

Some teachers of our department proceeds CIE on weekly basis by giving assignment work or instructing the students to do mini project at weekends.

CIE on Monthly Basis (University Internal Assessment test):

CIE on Monthly basis is always in line with the university internal assessment test. Three internal tests are conducted per semester to evaluate the performance of the students on monthly basis.

CIE by Model Exam:

CIE on end semester is done by conducting model exam on entire syllabus. So the subject teachers easily evaluate the vertical growth of the students by this exam.

CIE on Laboratory Courses:

CIE on lab classes is done on daily basis. Lab course instructor demonstrates the allotted experiment and encourages the students to take readings. These readings are verified by the instructor then and there to evaluate the skill of doing experiments. Accuracy of readings clearly reveals that whether the students acquire sufficient hands on training or not. Each experiment carries internal marks, so the completion of the experiments accurately on that day is mandatory for the students. Final internal mark is calculated as the average mark of all the experiments with the mark of model practical examination

CIE on end of the semester is processed by conducting one model lab practical examination which is always in line with university guidelines

CIE during Pandemic Period:

CIE during pandemic period was well executed on daily basis for both theory and lab classes.

Google meet live classes not only used for live classes but also very helpful for CIE on daily basis. All the subject teachers of the department used Google meet chat box to assess

the understanding of the students on previous classes. Students were randomly picked and asked questions, they typed the answers on the chat box or gave the answers orally by unmuting the mic.

CIE based on quiz and assignment was done with the help of Google class room for both theory and lab.

All the CIE on monthly basis related with university internal exams were also conducted via Google class room.

CIE on semester end happened one day on offline mode for lab classes alone by following 100% covid-19 guidelines.

In general the following online tools played vital role to execute CIE on daily basis

(a) Whatsapp groups

(b) Google class room

(c) Google meet

(d) Zoom

CURRICULUM ENRICHMENT

All the programmes of the department of physics follows the syllabus of manonmaniam sundaranar university, the syllabus comprises the parts which deals with crosscutting issues related to professional ethics, gender, human values, environment and sustainability by offering the courses on personality development, value based education and environmental studies.

Students Ethics

. Our college prepared a handbook and distributed to all the staff and all the students of UG and PG programmes. Concern class teacher explains college ethics to the students which is printed in the handbook.

Gender

Gender equality is not only a fundamental human right, but a necessary foundation for a peaceful, prosperous and sustainable world. In order to promote gender equality and women empowerment, curriculum of our department is integrated with the course of value based education by giving sufficient knowledge on the following topics related with gender equality.

(a) Gender discrimination

(b) Gender balance

(c) Gender Effect

(d) Gender-based violence (GBV)

(e) Gender-based constraints

(f) Gender equality

(g) Gender Development Index (GDI)

(h) Gender and development (GAD)

(i) Gender-Based Violence Information Management System (GBVIMS)

(j) Women Empowerment

(k) Women in Development (WID)

(l) Wikigender

Concepts of gender equality make the students to treat the men and women equally. While teaching this concepts, the following acts and organization related with gender equality is introduced with the students.

(a). Article 14, Article 15, Article 16, Article 39 and Article 42 of the Constitution

(b). The Equal Remuneration Act, 1976

(c). The Women's Reservation Bill

(d). The Dowry Prohibition Act, 1961

(e). United nations development fund for women (UNIFEM)

(f). UN Women

Human Values

Human values are integral part of our curriculum which imparts social, moral, cultural, spiritual and human values. Value based education is allotted as an one course for the students of physics as per the syllabus of the university. Aim of this course clearly points that humans values are integral part of one's personality and affects employability quotient. By studying this course, students are expected to cultivate the important human values like discipline, truth, tolerance, patriotism and peace. As per the syllabus of value based education, students are introduced and explained with the concepts of communal harmony, national integration, alcoholism, drug addiction, social justice, globalization, child rights and human rights. By learning these concepts, students acquire the view that everyone deserves equal economic, political and social rights.

Environment

In addition with the regular curriculum, Environmental Studies (EVS) is added as one course for our department students as per the syllabus suggested by university. The following main topics are discussed during the progress of the course

(a) Scope of Environmental studies
(b) Natural resources
(c) Eco system
(d) Biodiversity
(e) Pollution
(f) Human Population and environment

As this field is a major cross cutting issue, multidisciplinary nature of environmental studies is integrated with the curriculum of our department to give awareness on this topic. By discussing the above topic students are having thorough knowledge about the awareness on environment and understand the impact of environmental degraded which affect sustainability.

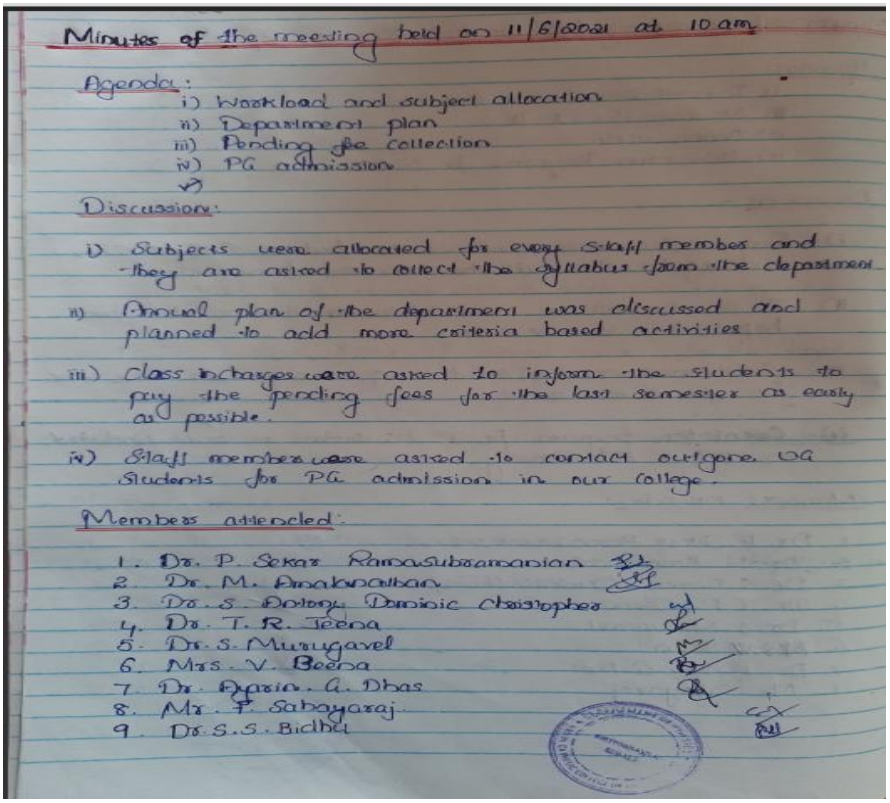
Sustainability

The continuous maintenance of quality environment for many years gives the fruit of sustainable environment. Students of our department are always given with the awareness on the activities against the degrading of environment and its resources. In the same mentioned EVS course, the following topics were added in the syllabus to enrich the awareness on sustainability.

(a) Causes of Environment Degradation
(b) Methods to Develop Sustainable Environment
(c) Water Conservation
(d) Water Shed management
(e) Resettlement and Rehabilitation
(f) Wasteland Reclamation
(g) Consumerism and waste products

Thus our department curriculum is integrated with the major crosscutting issues by incorporating the additional courses like value based education and environmental studies. Separate college manual (hand book) throws the light on professional ethics and human values

DEPARTMENT MINUTES OF MEETING



Minutes of the meeting held on 11/6/2021 at 10 am.

Agenda:

i) Workload and subject allocation
ii) Department plan
iii) Pending fee collection
iv) PG admission

Discussion:

i) Subjects were allocated for every staff members and they are asked to collect the syllabus from the department

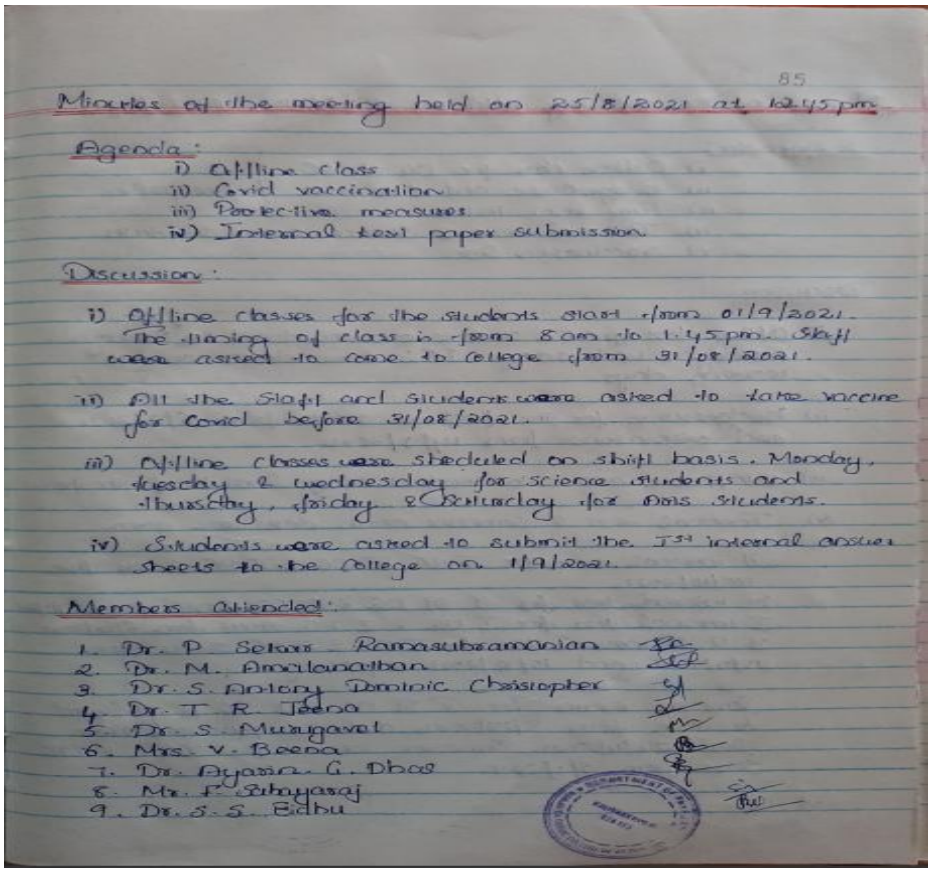
ii) Annual plan of the department was discussed and planned to add more criteria based activities

iii) Class incharges were asked to inform the students to pay the pending fees for the last semester as early as possible.

iv) Staff members were asked to contact outgone UG students for PG admission in our college.

Members attended:

1. Dr. P. Sekar Ramasubramanian
2. Dr. M. Amalanathan
3. Dr. S. Antony Dominic Christopher
4. Dr. T. R. Jeena
5. Dr. S. Murugavel
6. Mrs. V. Beena
7. Dr. Ayasa. G. Dhas
8. Mr. F. Sahayaraj
9. Dr. S. S. Bidhu



85

Minutes of the meeting held on 25/8/2021 at 12.45 pm.

Agenda:

i) Offline class
ii) Covid vaccination
iii) Protective measures
iv) Internal test paper submission

Discussion:

i) Offline classes for the students start from 01/9/2021. The timing of class is from 8 am to 1.45 pm. Staff were asked to come to college from 31/08/2021.

ii) All the staff and students were asked to take vaccine for Covid before 31/08/2021.

iii) Offline classes were scheduled on shift basis. Monday, Tuesday & Wednesday for Science students and Thursday, Friday & Saturday for Arts students.

iv) Students were asked to submit the 1st internal answer sheets to the college on 1/9/2021.

Members attended:

1. Dr. P Sekar Ramasubramanian
2. Dr. M. Amalanathan
3. Dr. S. Antony Dominic Christopher
4. Dr. T. R. Jeena
5. Dr. S. Murugavel
6. Mrs. V. Beena
7. Dr. Ayasa. G. Dhas
8. Mr. F. Sahayaraj
9. Dr. S. S. Bidhu

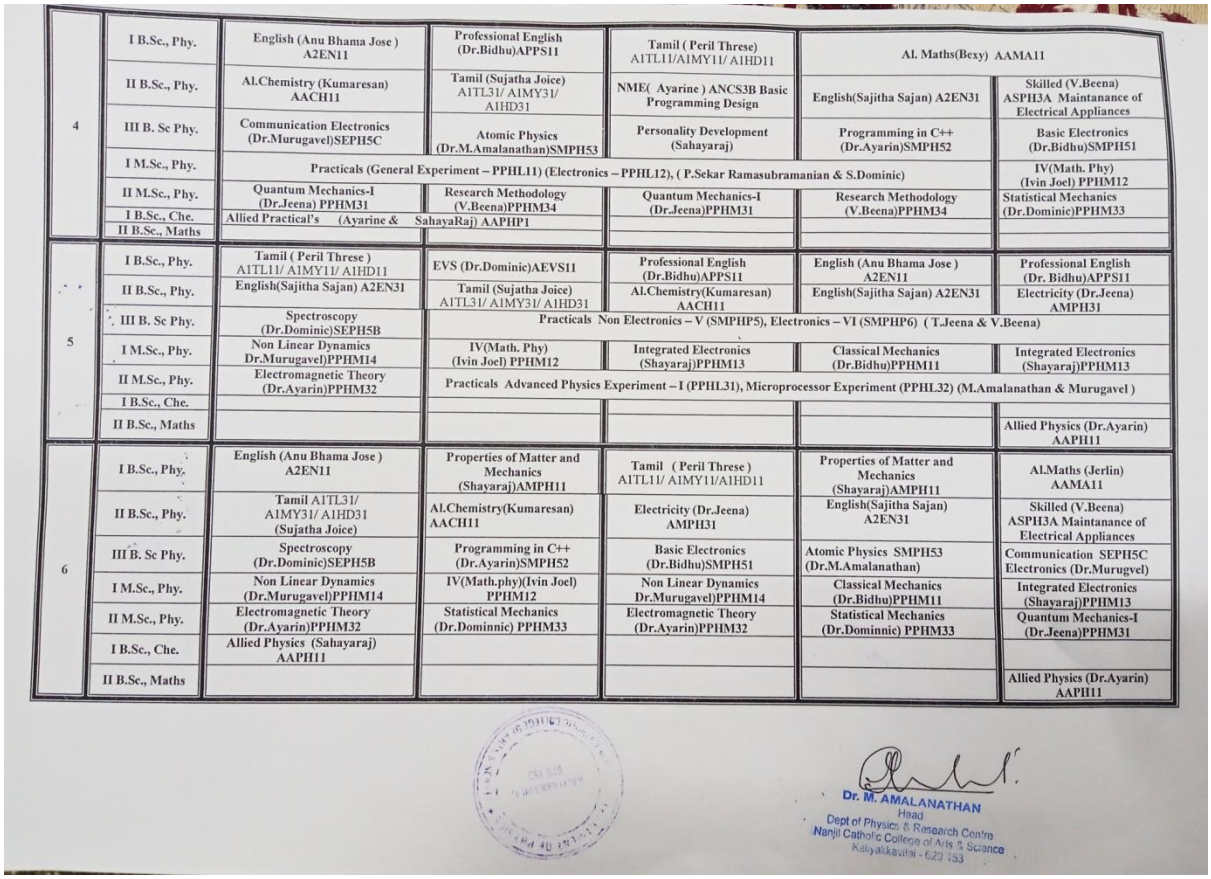
MASTER TIME TABLE

Nanjil Catholic College of Arts and Science

Department of Physics

Time Table 2021-22 (odd semester)

DAY	Class	I Hour	II Hour	III Hour	IV Hour	V Hour
1	I B.Sc., Phy.	Tamil (Peril Threse) A1TL11/ A1MY11/ A1HD11	Properties of Matter and Mechanics(Sahayaraj) AMPH11	Al. Maths (Jerlin)AAMA11	English A2EN11 (Anu Bhama Jose)	Professional English (Dr. Bidhu)APPS11
	II B.Sc., Phy.	Skilled Maintanance of Electrical Appliances (V.Beena)ASPH3A	Tamil (Sujatha Joice) A1TL31/A1MY31/A1HD31	Allied Chemistry Practical - 1 (Lab) AACHP1		English(Sajitha Sajan) A2EN31
	III B. Sc Phy.	Programming in C++ (Dr.Ayarin)SMPH52	Practical Non Electronics – V (SMPHP5), Electronics – VI (SMPHP6) (T.Jeena & V.Beena)			
	I M.Sc., Phy.	Integrated Electronics (Shayaraj)PPHM13	Classical Mechanics (Dr.Bidhu)	IV(Math.Phy) (Ivin Joel)PPHM12	Classical Mechanics (Dr.Bidhu)PPHM11	Integrated Electronics (Sahayaraj)PPHM13
	II M.Sc., Phy.	Quantum Mechanics-I (Dr.Jeena)PPHM31	Practicals Advanced Physics Experiment – I (PPHL31), Microprocessor Experiment (PPHL32) (M.Amalanathan & (Dr.Murugavel))			
	I B.Sc., Che.				Allied Physics (Sahayaraj)AAPH11	
	II B.Sc., Maths			Allied Physics (Dr. Ayarin) AAPH11		
2	I B.Sc., Phy.	Properties of Matter and Mechanics(Sahayaraj)AMPH11	Tamil (Peril Threse) A1TL11/A1MY11/A1HD11	EVS (Dr.Murugavel) AEVS11	Al. Maths(Jerlin) AAMA11	English A2EN11 (Anu Bhama Jose)
	II B.Sc., Phy.	Al. Chemistry(Kumaresan) AACH11	Tamil(Sujatha Joice) A1TL31/ A1MY31/A1HD31	Electricity (Dr.Jeena) AMPH31	Practical – III (AMPHP3) (P.Sekar Ramasubramanian & Bidhu)	
	III B. Sc Phy.	Basic Electronics (Dr.Bidhu)SMPH51	CommunicationElectronics SEPH5C(Dr.Murugavel)	Atomic Physics SMPH53 (Dr.M.Amalanathan)	Communication SEPH5C Electronics(Dr.Murugavel)	Programming in C++ (Dr.Ayarin)SMPH52
	I M.Sc., Phy.	Math.Phy(IvinJoel)PPHM12	Practicals (General Experiment – PPHL11) (Electronics – PPHL12), (P.Sekar Ramasubramanian & S.Dominic)			
	II M.Sc., Phy.	Statistical Mechanics (Dr.Dominic) PPHM33	Quantum Mechanics-I (Dr.Jeena)PPHM31	Research Methodology (V. Beena)PPHM34	Electromagnetic Theory (Dr. Ayarin)PPHM32	Research Methodology (V.Beena)PPHM34
	I B.Sc., Che.					Allied Physics (Sahayaraj) AAPH11
	II B.Sc., Maths		Allied Practical's (Ayarine & SahayaRaj) AAPHP1			
3	I B.Sc., Phy.	Practical Physics - 1 AMPHP1(Shayaraj, Dr.Bidhu, Dr.Ayarin)	Tamil (Peril Threse) A1TL11 /A1MY11/A1HD11	Al. Maths (Bexy) AAMA11	Practical Physics - 1 AMPHP1(Shayaraj, Dr.Bithu, Dr.Ayarin)	English A2EN11 (Anu Bhama Jose)
	II B.Sc., Phy.	Tamil (Sujatha Joice) A1TL31/ A1MY31/ A1HD31	NME (Shayaraj)ANCS3B BasicProgramming design	Skilled (V.Beena) ASPH3A Maintanance of Electrical Appliances	English(Sajitha Sajan) A2EN31	Electricity (Dr.Jeena)AMPH31
	III B. Sc Phy.	Spectroscopy (Dr.Dominic) SEPH5B	Basic Electronics (Dr.Bidhu)SMPH51	Atomic Physics SMPH53 (Dr.M.Amalanathan)	Personality Development (V.Beena)SCSB5A	Spectroscopy (Dr.Dominic)SEPH5B
	I M.Sc., Phy.	Non Linear Dynamics (Dr.Murugavel)PPHM14	IV(Math.Phy) PPHM12 (Ivin Joel)	Classical Mechanics (Dr.Bidhu)PPHM11	Non Linear Dynamics (Dr.Murugavel)PPHM14	Classical Mechanics (Dr.Bidhu)PPHM11
	II M.Sc., Phy.	Electromagnetic Theory (Dr.Ayarin)PPHM32	Quantum Mechanics-I (Dr.Jeena)PPHM31	Electromagnetic Theory (Dr.Ayarin)PPHM32	Statistical Mechanics (Dr.Dominic) PPHM33	Research Methodology (V.Beena)PPHM34
	I B.Sc., Che.				Allied Physics (Sahayaraj) AAPH11	
	II B.Sc., Maths					Allied Physics (Dr.Ayarin) AAPH11



4	I B.Sc., Phy.	English (Anu Bhama Jose) A2EN11	Professional English (Dr.Bidhu)APPS11	Tamil (Peril Threse) A1TL11/A1MY11/ A1HD11	Al. Maths(Bexy) AAMA11	
	II B.Sc., Phy.	Al.Chemistry (Kumaresan) AACH11	Tamil (Sujatha Joice) A1TL31/ A1MY31/ A1HD31	NME(Ayarine) ANCS3B Basic Programming Design	English(Sajitha Sajan) A2EN31	Skilled (V.Beena) ASPH3A Maintanance of Electrical Appliances
	III B. Sc Phy.	Communication Electronics (Dr.Murugavel)SEPH5C	Atomic Physics (Dr.M.Amalanathan)SMPH53	Personality Development (Sahayaraj)	Programming in C++ (Dr.Ayarin)SMPH52	Basic Electronics (Dr.Bidhu)SMPH51
	I M.Sc., Phy.	Practicals (General Experiment – PPHL11) (Electronics – PPHL12), (P.Sekar Ramasubramanian & S.Dominic)				IV(Math. Phy) (Ivin Joel) PPHM12
	II M.Sc., Phy.	Quantum Mechanics-I (Dr.Jeena) PPHM31	Research Methodology (V.Beena)PPHM34	Quantum Mechanics-I (Dr.Jeena)PPHM31	Research Methodology (V.Beena)PPHM34	Statistical Mechanics (Dr.Dominic)PPHM33
	I B.Sc., Che.	Allied Practical's (Ayarine & SahayaRaj) AAPHP1				
	II B.Sc., Maths					
5	I B.Sc., Phy.	Tamil (Peril Threse) A1TL11/ A1MY11/ A1HD11	EVS (Dr.Dominic)AEVS11	Professional English (Dr.Bidhu)APPS11	English (Anu Bhama Jose) A2EN11	Professional English (Dr. Bidhu)APPS11
	II B.Sc., Phy.	English(Sajitha Sajan) A2EN31	Tamil (Sujatha Joice) A1TL31/ A1MY31/ A1HD31	Al.Chemistry(Kumaresan) AACH11	English(Sajitha Sajan) A2EN31	Electricity (Dr.Jeena) AMPH31
	III B. Sc Phy.	Spectroscopy (Dr.Dominic)SEPH5B	Practicals Non Electronics – V (SMPHP5), Electronics – VI (SMPHP6) (T.Jeena & V.Beena)			
	I M.Sc., Phy.	Non Linear Dynamics Dr.Murugavel)PPHM14	IV(Math. Phy) (Ivin Joel) PPHM12	Integrated Electronics (Shayaraj)PPHM13	Classical Mechanics (Dr.Bidhu)PPHM11	Integrated Electronics (Shayaraj)PPHM13
	II M.Sc., Phy.	Electromagnetic Theory (Dr.Ayarin)PPHM32	Practicals Advanced Physics Experiment – I (PPHL31), Microprocessor Experiment (PPHL32) (M.Amalanathan & Murugavel)			
	I B.Sc., Che.					
	II B.Sc., Maths					Allied Physics (Dr.Ayarin) AAPH11
6	I B.Sc., Phy.	English (Anu Bhama Jose) A2EN11	Properties of Matter and Mechanics (Shayaraj)AMPH11	Tamil (Peril Threse) A1TL11/ A1MY11/A1HD11	Properties of Matter and Mechanics (Shayaraj)AMPH11	Al.Maths (Jerlin) AAMA11
	II B.Sc., Phy.	Tamil A1TL31/ A1MY31/ A1HD31 (Sujatha Joice)	Al.Chemistry(Kumaresan) AACH11	Electricity (Dr.Jeena) AMPH31	English(Sajitha Sajan) A2EN31	Skilled (V.Beena) ASPH3A Maintanance of Electrical Appliances
	III B. Sc Phy.	Spectroscopy (Dr.Dominic)SEPH5B	Programming in C++ (Dr.Ayarin)SMPH52	Basic Electronics (Dr.Bidhu)SMPH51	Atomic Physics SMPH53 (Dr.M.Amalanathan)	Communication SEPH5C Electronics (Dr.Murugvel)
	I M.Sc., Phy.	Non Linear Dynamics (Dr.Murugavel)PPHM14	IV(Math.phy)(Ivin Joel) PPHM12	Non Linear Dynamics Dr.Murugavel)PPHM14	Classical Mechanics (Dr.Bidhu)PPHM11	Integrated Electronics (Shayaraj)PPHM13
	II M.Sc., Phy.	Electromagnetic Theory (Dr.Ayarin)PPHM32	Statistical Mechanics (Dr.Dominnic) PPHM33	Electromagnetic Theory (Dr.Ayarin)PPHM32	Statistical Mechanics (Dr.Dominnic) PPHM33	Quantum Mechanics-I (Dr.Jeena)PPHM31
	I B.Sc., Che.	Allied Physics (Sahayaraj) AAPH11				
	II B.Sc., Maths					Allied Physics (Dr.Ayarin) AAPH11

Dr. M. AMALANATHAN
Head
Dept of Physics & Research Centre
Nanjil Catholic College of Arts & Science
Kaliyakkavilai - 629 153

INDIVIDUAL TIME TABLE

Nanjil Catholic College of Arts and Science,
Kaliyakkavilai
DEPARTMENT OF PHYSICS
Individual Time Table, 2021-2022
ODD Semester

Dr.P.Sekar Rama subramanian

Day/Hour	I Hour	II Hour	III Hour	IV Hour	V Hour
1					
2		I M. Sc Practical, II B. Sc Practical			
3					
4		I M. Sc Practical			
5					
6					

Dr.M.Amalanathan

Day/Hour	I Hour	II Hour	III Hour	IV Hour	V Hour
1		II M.Sc Practical			
2			III B.Sc		
3			III B.Sc		
4		III B.Sc			
5		II M.Sc Practical			
6				III B.Sc	

Dr.S.Antony Dominic Christobher

Day/Hour	I Hour	II Hour	III Hour	IV Hour	V Hour
1					
2	II M.Sc	I M.Sc Practical			
3	III B.Sc	II M.Sc		II M.Sc	III B.Sc
4		I M.Sc Practical			
5	III B.Sc	I B.Sc			
6	III B.Sc	II M.Sc		II M.Sc	

Dr.T.Jeena

Day/Hour	I Hour	II Hour	III Hour	IV Hour	V Hour
1	II M.Sc		II B.Sc Practical		
2		II M.Sc	II B.Sc		
3					II B.Sc
4	II M.Sc		II M.Sc		II M.Sc
5		III B.Sc Practical			II B.Sc
6			II B.Sc		II M.Sc

Dr.Murugavel

Day/Hour	I Hour	II Hour	III Hour	IV Hour	V Hour
1		II M.Sc Practical			
2		III B.Sc	I B.Sc	III B.Sc	
3	I M.Sc			I M.Sc	
4	III B.Sc				
5	I M.Sc	II M.Sc Practical			
6	I M.Sc		I M.Sc		III B.Sc

Dr.Bithu					
Day/Hour	I Hour	II Hour	III Hour	IV Hour	V Hour
1		I M.Sc		I M.Sc	I B.Sc
2	III B.Sc			II B.Sc Practical	
3	I B.Sc Practical	III B.Sc	I M.Sc	I B.Sc Practical	I M.Sc
4		I B.Sc			III B.Sc
5			I B.Sc	I M.Sc	I B.Sc
6			III B.Sc	I M.Sc	

Dr.Ayarin					
Day/Hour	I Hour	II Hour	III Hour	IV Hour	V Hour
1	III B. Sc		II B. Sc Maths		
2		II B. Sc Maths Practical		II M.Sc	III B. Sc
3	II M.Sc		II M.Sc		II B. Sc Maths
4	I B.Sc Chemistry Practical		II B. Sc	III B. Sc	
5	II M.Sc				II B. Sc Maths
6	II M.Sc	III B.Sc	II M.Sc		II B.Sc Maths

Mr.Sahayaraj					
Day/Hour	I Hour	II Hour	III Hour	IV Hour	V Hour
1	I M.Sc	I B. Sc		I B. Sc Chem	I M. Sc
2	I B.Sc	II B. Sc Maths Practical			I B. Sc Chem
3	I B.Sc Practical	II B. Sc		I B.Sc Practical, I B. Sc Chem	
4	I B.Sc Chem. Practical		III B. Sc		
5			I M. Sc		I M. Sc
6	I B.Sc Chem.	I B. Sc		I B.Sc	I M. Sc

Mrs.V.Beena					
Day/Hour	I Hour	II Hour	III Hour	IV Hour	V Hour
1	II B.Sc	III B. Sc Practical			
2			II M.Sc		II M.Sc
3			II B. Sc	III B. Sc	II M.Sc
4		II M. Sc		II M. Sc	II B. Sc
5		III B. Sc Practical			
6					II B. Sc

Dr. M. AMALANATHAN
Head
Dept of Physics & Research Centre
Nanjil Catholic College of Arts & Science
Kaliyakkavilai - 629 153

TIMETABLE FOR ONLINE CLASSES

Nanjil Catholic College of Arts and Science
Kaliyakkavilai
Department of Physics
Online class Time Table odd semester - 2020-2021

Day	Class	1st	2nd	3rd	4th	5th	6	7th	8th	9th
M	I B.Sc	Tamil (S.J) Uploading	Tamil (S.J) Live	English (Asst) Live	Al. Maths Live	Maj.Prac.	Prop. Matr.& Mech (S.D) Uploading	Al. Maths Uploading	English (Asst) Uploading	Tamil (S.J) Seminar
	II B.Sc	El.city(B.U) Uploading	English (S S) Live	Tamil (P T) Live	English (S S) Uploading	Skilled(V.B) Uploading	All. Chem Live	Tamil (P T) Seminar		
	III B.Sc	At. Phy. (V.B) Uploading	C++(M.A) Live	Ba. Ele.(B.U) Live	C++(M.A) Uploading	Ba. Ele.(B.U) Uploading	C++(M.A) Seminar	Ba. Ele.(B.U) Seminar		
	I M.Sc	Math.1 Phy Live	Cl.Mech(K.M) Live	NLD (M.V) Live	NLD(M.V) Seminar	Cl.Mech(K.M) Uploading	NLD (M.V) Uploading	Clas.Mech. (K.M) Live	NLD (M.V) Uploading	Cl.Mech(K.M) Seminar
	II M.Sc	Stat. Mech. (S.D) Uploading	Q.Mec.(T.J) Live	Practical	Q.Mec.(T.J) Uploading	Q. Mech. 1 Seminar	Ran. Meth. (M.A) Uploading	Practical		
	I B.Sc Chem					Al. Phy.(V.B) Live				
	II B.Sc Maths					Al. Phy.(K.M) Live				
T	I B.Sc	Ral.Mech.(T.J) Uploading	Tamil (S.J) Live	Prop.Matr.(S.D) Live	English (Asst) Uploading	Ral. Mech.(T.J) Seminar	Al. Maths Uploading	Ral.Mech.(T.J) Uploading	Prac.(M.V&K.M)	
	II B.Sc	Skilled(V.B) Uploading	El.city(S.D) Live	Skilled(V.B) Live	English (S S) Uploading	Tamil (P T) Uploading	All.Chem. Uploading	Skilled(V.B) Seminar		
	III B.Sc	Prac.(T.J &V.B)	Spectro.(M.V) Live	Com.Ele.(K.M) Live	Spectro.(M.V) Uploading	Com.Ele.(K.M) Seminar	Spectro.(M.V) Seminar	Com.Ele.(K.M) Uploading		
	I M.Sc	Math.1 Phy (I.J) Uploading	Int. Elec. (P.S) Live	NLD (M.V) Live	Int.Elec.(P.S) Uploading	Math.1 Phy (I.J) Seminar	Int. Elec. (P.S) Uploading	Math.1 Phy (I.J) Uploading	Int. Elec. (P.S) Seminar	Math.1 Phy (I.J) Seminar
	II M.Sc	Prac. II (M.A & B.U)		Res. Meth.(M.A) Live	Prac. II (M.A & B.U)			EMT (B.U)	EMT (B.U)	
	I B.Sc Chem					Al. Phy.(V.B) Live				
	II B.Sc Maths				Al. Phy.(K.M) Uploading					
W	I B.Sc	English (Asst) Uploading	Ral. Mech.(T.J) Live	Ral. Mech.(T.J) Live	Tamil (S.J) Uploading	Al. Maths Uploading	Prop. Matr.& Mech (S.D) Uploading	English (Asst) Seminar	Tamil (S.J) Uploading	Practical
	II B.Sc	El.city(B.U) Seminar	English (S S) Live	Tamil (P T) Live	All. Chem Uploading	Skilled(V.B) Uploading	Tamil (P T) Uploading	NME Uploading		
	III B.Sc	Com.Elec.(K.M) Uploading	Par.Dev.(V.B) Uploading	At. Phy.(V.B) Live	Prac. I(T.J &V.B)					
	I M.Sc	Int. Elec. (P.S) Live	Math.1 Phy. Live	Clas.Mech. (K.M) Live	Clas.Mech. (K.M) Uploading	Math.1 Phy.(I.J) Uploading	Clas.Mech. (K.M) Seminar	Math.1 Phy.(I.J)	Clas.Mech. (K.M)	Math.1 Phy.(I.J)
	II M.Sc	Ran. Meth. (M.A)	EMT(B.U) Live	Stat. Mech. (S.D) Live	EMT (B.U)	Stat. Mech. (S.D) Seminar	EMT (B.U)	Stat. Mech. (S.D) Uploading		
	I B.Sc Chem						Al. Phy.(V.B)			
	II B.Sc Maths				Al. Phy.(K.M) Live					

T	I B.Sc	Prop. Matr..& Mech (S.D)	Tamil (S J) Live	Prop.Matr.(S.D) Live	English (Anu)	Rel. Mech.(T.J)	Prop. Matr..& Mech (S.D)	Rel.Mech.(T.J)	Al. Maths	Rel. Mech.(T.J)
	II B.Sc	Prac. (P.S & M.V)	NME Live	El.city (B.U) Live	El.city(S.D) Uploading	English (S S) Uploading	Tamil (P T) Uploading	All. Chem Uploading		
	III B.Sc	Prac.(T.J &V.B)	Al. Phy.(V.B) Live	C++(M.A) Live	At. Phy (V.B) Uploading	C++(M.A) Uploading	At. Phy (V.B) Seminar	C++(M.A) Seminar		
	I M.Sc	Prac. I (P.S & S.D)				Math.I Phy. Live	Prac.I (P.S&S.D)			
	II M.Sc	EMT(B.U) Live	Q. Mech. I(T.J) Live	Prac. II (M.A & B.U)				EMT (B.U) Uploading		
	I B.Sc Chem			Al. Phy.(M.V) Live						
	II B.Sc Maths				Al. Phy (K.M) Uploading					
F	I B.Sc	Prac.(M.V&K.M)	English (Anu) Live	EVS(T.J) Uploading	Al. Maths Uploading	Prop. Matr.& Mech(S.D) Uploading	Al. Maths Seminar	Tamil (S J) Uploading	English (Anu) Seminar	Tamil (S J) Seminar
	II B.Sc	Ma.Prac.(P.S&M.V)	Skilled(V.B Live	All. Chem Live	Tamil (P T) Uploading	Skilled(V.B) Seminar	English (S S) Uploading	NME Uploading		
	III B.Sc	Com.Ele.(K.M) Uploading	Com.Ele.(K.M) Live	Ba. Ele.(B.U) Live	Prac. II(T.J &V.B)					
	I M.Sc	Class.Mech. (K.M) Uploading	NLD (M.V) Live	Int. Elec. (P.S) Live	Int. Elec. (P.S) Seminar	NLD (M.V) Live	Int. Elec. (P.S) Uploading	NLD (M.V) Uploading	Int. Elec. (P.S) Seminar	NLD (M.V) Seminar
	II M.Sc	Stat. Mech. (S.D) Uploading	Res. Meth. (M.A) Live	Q. Mech. (T.J) Live	Res. Meth. (M.A) Uploading	Res. Meth. (M.A) Seminar	Q.Mec.(T.J) Uploading	Res. Meth.(M.A) Uploading		
	I B.Sc Chem				Al. Prac. (M.V&K.M)					
	II B.Sc Maths			Al. Prac. (M.V&K.M)						
S	I B.Sc	EVS (T.J) Uploading	Rel.Mech.(T.J) Live	Prop. Matr.(S.D) Live	Al. Maths Live	Prac.(M.V&K.M)		Prop.Matr.& Mech(S.D) Seminar	English (Anu) Seminar	Tamil (S J) Seminar
	II B.Sc	English (S S) Seminar	All. ChemPrac.		Prac (P.S &M.V)	El.city(B.U) Seminar	All. Chem Seminar	El.city(S.D) Uploading		
	III B.Sc	Spectro.(M.V) Uploading	Per.Dev.(V.B) Uploading	Spectro.(M.V) Live	Ba. Ele.(B.U) Seminar	Spectro (M.V) Seminar	Com.Ele.(K.M) Uploading	At. Phy. (V.B) Uploading		
	I M.Sc					Prac. II (P.S & S.D)				
	II M.Sc	Q. Mech. (T.J) Uploading	Stat. Mech. (S.D) Live	EMT (B.U) Live	Stat. Mech. (S.D) Uploading	Stat. Mech. (S.D) Seminar	EMT (B.U) Seminar	Q. Mech. (T.J) Seminar		
	I B.Sc Chem							Al. Phy.(M.V) Uploading		
	II B.Sc Maths									

Dr. M. ARULANATHAN
Head
Dept of Physics & Research Centre
Nanjil Catholic College of Arts & Science
Kaliyakkavilai - 629 153

WORK LOAD

Nanjil Catholic College of Arts and Science, Kaliayakkavilai
Department of Physics [Total Workload (2021-22)ODD]

Class	Subject	Theory	Practical	Subject Code	Total
I B.Sc., Physics	Properties of Matter &Mechanics	4		AMPH11	14
	Professional English for Physical Sciences -I	4		APPS11	
	Environmental Studies	2		AEVS11	
	Major Practical-I		2×2=4	AMPHP1	
II B.Sc., Physics	Electricity	4		SMPH31	12
	Skill Based Subject: Maintanance of Electrical appliances	4		SSPH3A	
	Major Practical-II		2×2=4	SMPHP3	
III B.Sc. Physics	Basic Electronics	4		SMPH51	36
	Programming in C++	4		SMPH52	
	Atomic physics	4		SMPH53	
	Spectroscopy	4		SEPH5B	
	Communication electronics	4		SEPH5C	
	Personality Development	2		SCSB5A	
	Practical: Non electronics 4 Electronics 4		8×2=16	SMPHP5 SMPHP6	
I M.Sc., Physics	Classical Mechanics	6		PPHM11	38
	Mathematical Physics I	6		PPHM12	
	Integrated Electronics	5		PPHM13	
	Non Linear Dynomics	5		PPHM14	
	Practicals:				
	General Experiments 4 Electronics Experiments 4		8×2=16	PPHL11 PPHL12	
II M.Sc., Physics	Quantum Mechanics-I	6		PPHM31	38
	Electromagnetic Theory	6		PPHM32	
	Statistical Mechanics	5		PPHM33	
	Research Methodology	5		PPHM34	
	Practicals: Advanced Physics Experiments I 4 Microprocessor Experiments 4		8×2=16	PPHL31 PPHL32	
Allied Physics					
I B.Sc. Chemistry	Allied Physics -I	4		AAPH11	8
	Practical		2×2=4	AAPHP1	
II B.Sc., Maths	Allied Physics -I	4		AAPH11	8
	Practical		2×2=4	AAPHP1	
Total Hours					**156**

DEPARTMENT OF PHYSICS * NANJIL CATHOLIC COLLEGE OF ARTS & SCIENCE * KALIYAKKAVILAI 629 153

Dr. M. AMALANATHAN
Head
Dept of Physics & Research Centre
Nanjil Catholic College of Arts & Science
Kaliyakkavilai - 629 153

SYLLABUS REVIEW

Review on Syllabus for MSC Physics

(With effect from the academic year 2021-2022)

MSc Physics is a two year postgraduate programme that deals with the advanced concepts of physics. MSc in physics aims at teaching post graduates essential and advanced topics such as classical mechanics, statistical mechanics, quantum mechanics, electromagnetic theory, spectroscopy, etc. As per new syllabus of MS University (With effect from the academic year 2021-2022), MSc Course duration is divided into four semesters and each semester comprises theory and lab. The new course syllabus is focused on both modern and classical physics which gives the post graduates a strong foundation for further studies.

The new syllabus gives the opportunity for the students to choose elective allied subjects. In addition with theory and lab, students are given with the chance of doing one skill enrichment based industrial visit/field work (Maintenance of Electrical applications) which gives deep insights on applied physics.

Apart from theory and practical, this new syllabus insisting students to take one project work at final semester with the weightage of 100 marks. As per the guidelines of the syllabus, this project must be a individual project. Project work must be related with physics. The new project guidelines strictly warning that readymade projects are not allowed. Field trip visit (maximum of two day) related to project is allowed. In a nutshell, project work in syllabus definitely will play vital role in giving tremendous practical exposure to the students by strictly prohibiting the readymade projects.

SUBJECT WISE REVIEW

Classical Mechanics (Reviewed by Dr. Bidu)

The learning objectives areclear and appropriate to 1 MSc Physics. The new syllabus has lot of modifications. Including relativity unit syllabus is good. The text for study is not covered all the topic. E-reference is good. Overall syllabus is good

Mathematical Physics-1&II (Reviewed by Dr. Ivin Joel)

- Both syllabus are most heaviest
- Very difficult to understand for Physics Students
- Many Unnecessary topics are included in Both syllabus. For example , In unit I for Mathematical Physics I Syllabus, Linear Algebra is not necessary for Physics Students.
- Kindly reconsider the syllabus

Integrated Electronics (Reviewed by Mr.Sahayaraj)

Compared to previous syllabus, the portion 'registers' from second unit is extended to its types to avoid ambiguity. Over all, the revised syllabus is good.

Nonlinear Dynamics (NLD) (Reviewed by Dr.S.Murugavel)

The revised syllabus of NLD explores the concepts of non linearity and chaos. The new and research oriented chaotic concepts are introduced to give the insights on the applications of chaos theory. Each unit of revised syllabus reveals the individual domains of NLD.

Unit 1 introduces the background of NLD and its mathematical implication. Unit 2 contains the parts of bifurcations and their types and importance.

Unit 3 gives the opportunity of studying NLD and chaotic concepts on Electronic circuits. Unit 4 reveals very new topic of NLD which is named as fractals. Different types of nonlinear equations are given in unit 5.

In general, the revised syllabus of NLD is well matched for beginner level PG students. After the completion of syllabus, students will acquire the skill of analysing complex systems at elementary level.

Electromagnetic theory (Reviewed by Dr. Ayarine)

In Electromagnetic theory syllabus from unit-1 Electrostatics newly added boundary value problems with linear dielectrics in unit-2 Magnetostatics they are extra added magnetization-bound current and its physical interpretation-a deceptive parallel - boundary conditions,in unit-3 Electrodynamics they are newly added induced electric field - Neumann formula - energy in magnetic field - the continuity equation - poynting's theorem , in unit - 4 Electromagnetic waves they are newly added the wave equation - simusoidal waves - polarization - wave equation for E and B - reflection at conducting surface - frequency dependence of permittivity for unit-5 in old syllabus heading is Electromagnetic radiation now in new syllabus it change to Potentials,fields and radiation they are newly added what is radiation? In old syllabus scalar and vector potentials - gauge transformation - Lorentz and coulomb gauge these in unit-3 itself in old syllabus now in new syllabus they are just skip to unit-5 these problems to obtain a good understanding of the material covered.

Microprocessor 8085&Microcontroller 8051 (Reviewed by Mr.Sahayaraj)

Introduction to microcomputers and programming languages are added in the first unit, which is good.

Overall, the syllabus is good.

Statistical Mechanics (Reviewed by Dr. Antony Dominic Christoper)

The syllabi framed by the university demand with the onset of time entering into the third millennium to the postgraduate level. The syllabus is weaving required context which is missing terribly in the lower level physics curriculum. This syllabi stimulate interest in the minds of present- day physics learners.

Each and every objective, principle, problems, applications etc..have been included in the syllabus. It is my hope that this syllabi will enable the students attain even the higher levels of learning in Bloom' taxonomy, viz. application, analysis, synthesis and evaluation.

Quantum Mehcanics I & II (Reviewed by Dr.Jeena)

In Quantum Mechanics-I, basic concepts of Quantum Mechanics are included compared with the old syllabus.Even the syllabus is vast, it gives much knowledge about solving eigenvalue problems and perturbation theory.

In Quantum Mechanics-II, new approximation method to solve Schrödinger Equation is included. In addition, theory of identical particle and spin is added. Even though the revised syllabuscontains more new topics, the students will get a wide knowledge about Quantum Mechanics.

Atomic and Molecular Spectroscopy (Reviewed by Dr.S.Murugavel)

The revised syllabus of atomic and molecular spectroscopy gives comprehensive overview on various spectroscopic techniques providing a large deal of underlying theory and also technical details.

First unit comprises basics of atomic spectra and stern-gerlach experiment. There is a major change in second and third unit. New theoretical topics of atomic and molecular physics are sandwiched in second unit.

IR and Microwave spectroscopy are merged in third unit. There is no major change in fourth unit in which Electronic and resonance spectroscopy combined altogether.

Raman and laser spectroscopy were introduced in fifth unit with little bit modification. Important parts of X-ray spectroscopy were fully omitted in revised syllabus. Indeed X-ray based spectroscopic methods are highly useful for project work of PG students, so this may be included in next revision.

Overall this revised syllabus is good, Surely students can gain enough knowledge regarding the basics of spectroscopy. This revised syllabus is worth for the PG level physics students.

Condensed Matter Physics (Reviewed by Dr. Antony Dominic Christoper)

The syllabi framed by the university demand with the onset of time entering into the third millennium to the postgraduate level. The syllabus is weaving required context which is missing terribly in the lower level physics curriculum. This syllabi stimulate interest in the minds of present- day physics learners.

Each and every objective, principle, problems, applications etc..have been included in the syllabus. It is my hope that this syllabi will enable the students attain even the higher levels of learning in Bloom' taxonomy, viz. application, analysis, synthesis and evaluation.

Numerical Methods & Programming (Reviewed by Dr.Ayarine)

In this subject unit - 1 heading is change to Roots of equations and solution of linear systems also in new syllabus they are added additionally solution of algebraic and transcendental equations : bisection method - method of false position.in unit - 2 their is no change also in unit - 5 their are some changes due to this changes students can get more knowledge than old syllabus these problems to obtain a good understanding of the material covered

Nuclear and Particle Physics (Reviewed by Dr. P. Sekar Rama subramaniam)

There is no change in nuclear & particle physics syllabus. It were better if nuclear disintegration energy for beta and alpha decays are included for odd & even isobaric families in unit II.

Quark model to be discussed with baryon ocet and meson Octet models in unit V

Since p-p scattering theory is little complicated, it can be omitted in unit III

Research Methodology (Reviewed by Ms.Beena)

The current syllabus of Research Methodology seems to slightly changed compared to the previous syllabus. The renewed syllabus is quite satisfactory for the PG students.

Renewable Energy Sources (Reviewed by Dr.M.Amalanathan)

The new revised syllabus of renewable energy sources introduces several types of non conventional energy sources. Unit 1 introduces the types of energy and their scenario in india.

Solar and Biomass energy were briefly given in second unit. Introduction and application of geothermal and tidal energy topics were revealed in third unit.

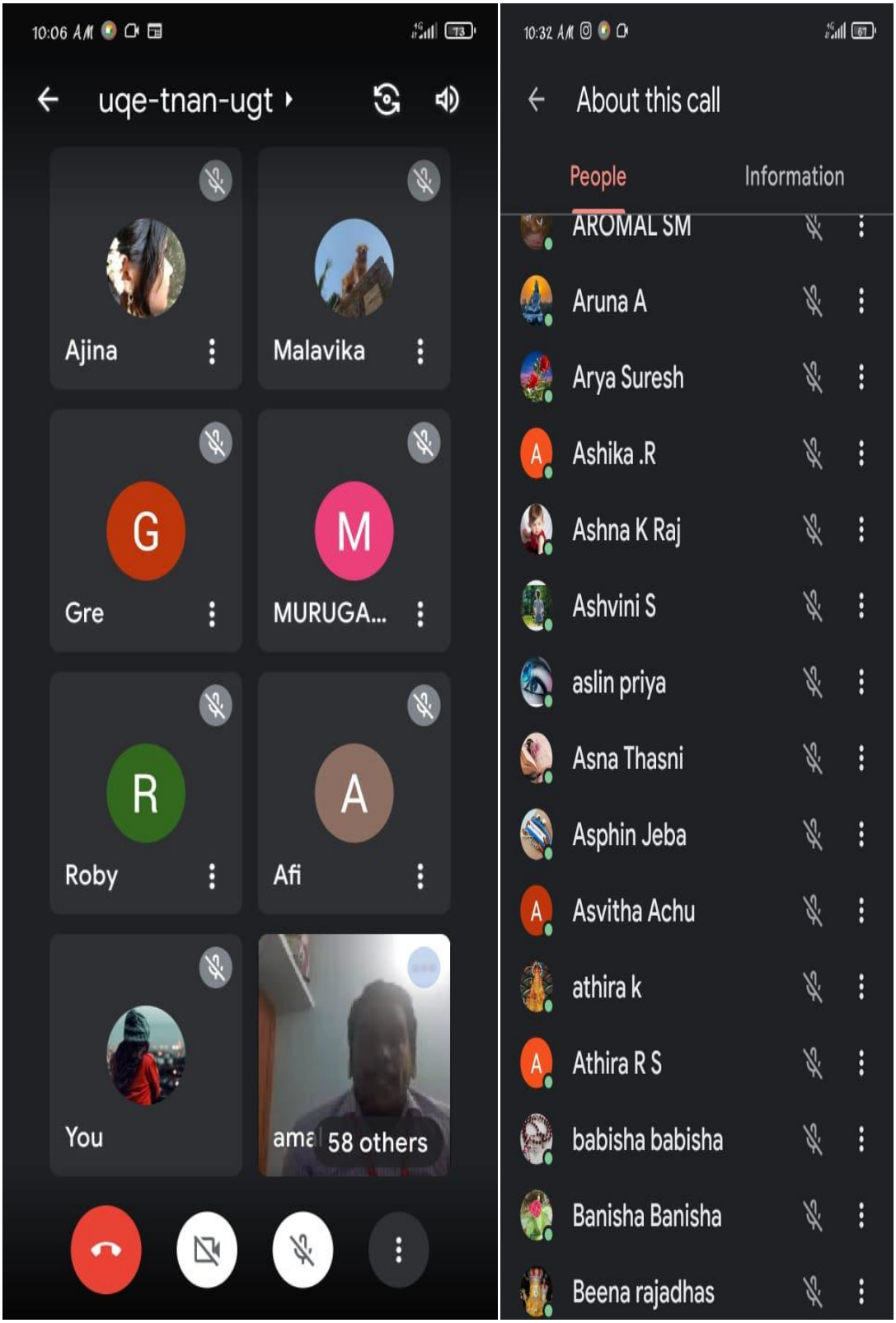
Power generation based on thermo electric, thermionic and nuclear energy are given in fourth unit. Unit 5 talks about chemical energy sources which consist fuel cells and

batteries. Designs and principles of fuel cells and batteries are added in this unit with their applications.

This revised syllabus will help the PG physics students to understand about different types of energy sources and their applications. A very nicely organized syllabus to follow, some of the materials, students already have been taught and some others were new to them. This revised syllabus is excellent both for the students who wishes to refresh some concepts regarding renewable energy sources and for the students who are very new to this energy field.

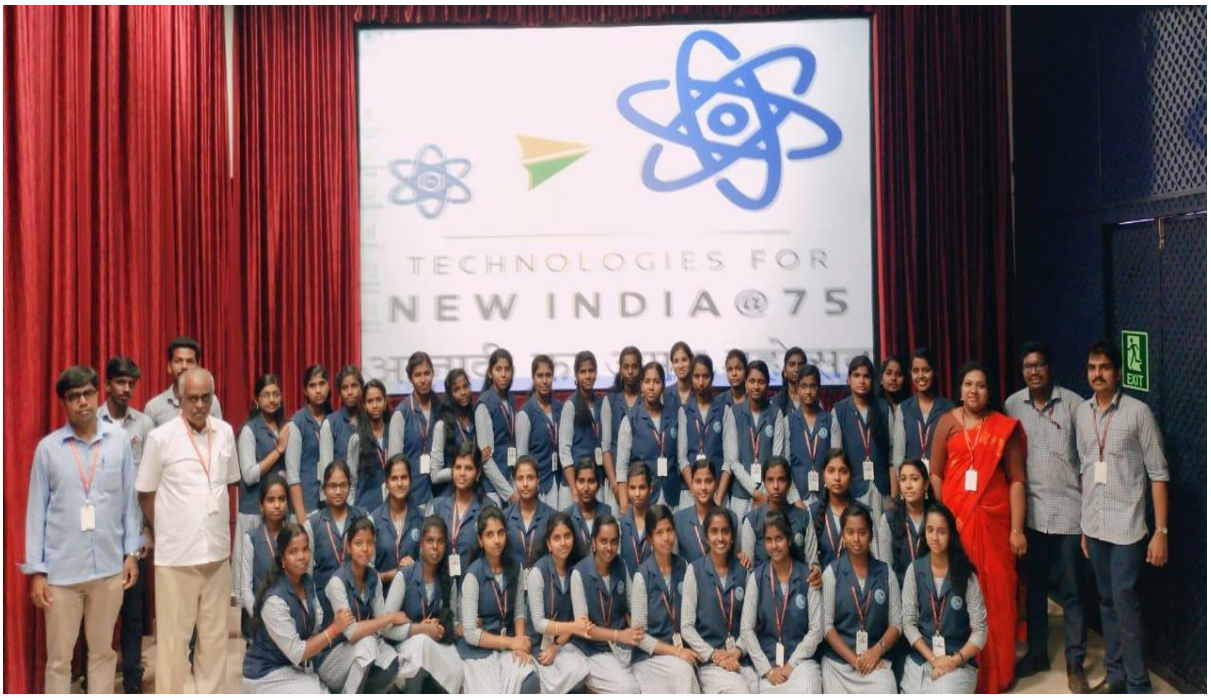
Dr. M. AMALANATHAN
Head
Dept of Physics & Research Centre
Nanjil Catholic College of Arts & Science
Kalliyakkavilai - 629 153

ONLINE WEBINAR CLASSES DURING PANDEMIC PERIODS (2020-2021)



FIELD WORK VISIT AT KUNDANKULAM NUCLEAR POWER PLANT

(2021-2022)



FEEDBACK

Nanjil Catholic College of Arts and Science
Kaliyakkavilai
Academic Year 2020-21
Students Feedback form

For designing and review of syllabus

Name: Anisha kumari. A.V

Department : Physics

Programme : BSc

Year of Study : 2020 – 2021

Please put the tick mark in the appropriate boxes

Sl No	Parameters	Strongly agree	agree	disagree	Strongly disagree
1	Size of syllabus in terms of the load		✓		
2	The objectives stated for each of the course are clear	✓			
3	The course conceptually difficult to understand			✓	
4	The entire syllabus was covered by the teacher	✓			
5	Electives are offered in relation to the technological advancements.	✓			
6	Course content encourages extra learning and self learning.	✓			
7	I was able to get the prescribed text books and reference books	✓			
8	The courses have sufficient number of practical/project components	✓			

Any other suggestions: Nil.

Signature

Nanjil Catholic College of Arts and Science

Kaliyakkavilai
Academic Year 2020-21
Teachers Feedback form

For designing and review of syllabus

Name: Dr. S. Antony Dominic Christopher.
Department: Physics
Programme: Bsc
Course: Physics -

Please put the tick mark in the appropriate boxes

Sl No	Parameters	Strongly agree	agree	disagree	Strongly disagree
1	The learning objectives are clear for each course	✓			
2	The syllabus is well updated and suitable to course and the program	✓			
3	The prescribed text books and Reference books are available		✓		
4	The syllabus meets the requirements of industries		✓		
5	The contact hours allotted for each unit is sufficient.	✓			
6	The syllabus has sufficient number of practical/project components	✓			
7	I am able to complete the syllabus on time	✓			

Any other suggestions: Nil

Signature

ENVIRONMENTAL AWARENESS PROGRAMME

(Curriculum related with cutting edge issues)

CRITERION II

TEACHING, LEARNING AND EVALUATION

1.TEACHING

Teaching is the meaningful way of delivering relevant and comprehensive ideas to the students. It is a set of events which are designed to support internal process of learning. The different modes of teaching are traditional mode and the modern mode.

Traditional mode:

- The traditional mode is a teacher centered mode.
- Here, the students are the passive listeners.
- In this method the teacher convey the knowledge to the student through lectures and scripted lesson plans, without considering the opportunities for hands-on learning

Modern mode:

- The modern mode is the student centered mode.
- Here, the teacher is a facilitator.
- The students are forming the group for discussion on various topic, doing projects , etc.
- This method enacted to ensure equal access to public education for all children.

The institution holds the Under Graduate and Post Graduate students and the Scholars of M.Phil. Based on the program provided different methodologies have been adopted for the programs , for the theory and practicals.

Teaching Methods Adopted for UG students:

Theory:

Based on the syllabus framed by the university, the classes are conducted for the students by adopting the method of lecturing for the theory classes Here, the instructor is getting a chance to convey his knowledge on the subject to the more number of students at a single stretch. This is the traditional method adopted even now. The department staff members also adopts the modern mode of teaching such as ICT enable teaching method, by presenting the syllabus topic through the PPt. presentation and also presenting the videos on the topic. At the end of each

class the teacher asks the questions to the students and also they get the verbal feedback from the students.

Practical:

In the practical class the students are split up into various groups. Each group contains four or five students. The teacher explains the principle based on the particular experiments to each group and then demonstrates it to them. Afterwards the students are asked the students to demonstrate it by themselves and take the observations. The observations are verified by the instructor. In the next class the students are able to explain the experiment to the other group members. Here by, they attain the skill of handling the practical equipments and convey their knowledge to others. They are understanding the principle by the method of learning by doing.

Teaching Methods Adopted for PG students:

Theory:

Here, the teacher make the students to recall the basic topics on the concern course , that the students have learned in the UG class. The ICT enable teaching method is also adopted for the PG students for their deep understanding on the topic. After teaching a portion, the students are asked to prepare the note by themselves and submit it. Also, as a part of the curriculum students are asked to take the seminar in each course. This is the part of the student centric method. Here, the students mostly use the new technologies such as PPt. presentation for presenting their topics.

Practical:

The students of PG are split up into different groups and each group is assigned an experiment to them. The teacher in charge explains the principle and construction of the apparatus/circuit and then asks the students to construct themselves and take the observations individually. The observations are verified by the teacher.

Project:

The students of the class are grouped for project under the guidance of the staff. This is a student centric method, where the student is trying to find the solution of the problem. There are four or five members under the guidance of staff. The title given for each student is different. Each group is given a topic by the guide and they are supposed to collect the literature review on the topic. They are guided to do the project individually and it is observed clearly by the guide. First it is examined by the guide and make the student prepared for the viva-voce examination.

Teaching Methods Adopted for M.Phil. Scholars:

Theory:

As per the syllabus the M.Phil program has three theory courses in the first semester. Based on the syllabus the portions are taken by following the traditional as well as the modern method. Topics was given to the students for taking seminars.

Project:

Here, one scholar is under the guidance of one staff. Their work is frequently observed and analysed by the concern guide and brought prepared for the university viva-voce.

ONLINE mode of Teaching:

- During the pandemic period of covid-19 there was no possibility of implementing the offline mode of education.
- During this period the education has transformed through the ONLINE mode.
- Here, the teachers have gathered the students in the single platform through the **google meet or zoom meet** platform.
- Google classroom was organized for the distribution of notes, submission of assignments, conducting the tests conducting the quiz programmes.,etc..
- The information to the students are passed through the gooogle classroom.
- Several webinars were organized in online mode.
- Students also learned to organize the seminars through online.

2. LEARNING

Learning is a process that leads to change, which occurs as a result of experience and increases the potential for improved performance. The change can happen in the level of knowledge, attitude and behavior. The students can adopt various methods of learning such as, auditory, writing, reading, kinesthetic and multimodal methods.

For developing the critical thinking and self-reflection skills and for showing the students specific techniques for accessing the information relevant to their interests, it is very necessary to adopt the **Student Centric Methods** of learning.

This method of learnig gives the students to understand what they have learned and how they have learned it? In this method the students are not the passive listeners. There is great role for the students to do with,

The following are some of the students centric method:

1. **Experimental learning method:** It is the method of learning through first hand experience.

   - **Theory:** In addition to the explanation of the theoretical part of the curriculum by the staff, presenting the same content through the ppt. or by displaying the video the student is able to learn the theory by co-relating it with the experimental view he has seen visually.
   - **Practicals:** Through the practical classes allotted for the students , the students are able to attain the skill in handling the equipments and understand the output of the complicated circuits.
   - **Project**: The project allotted for the students help them to develop the problem solving skill and gain lot of ideas through the group discussion. This help them to form an innovative work in the research field. The Ph,D scholars help the PG students for the completion of the ir PG project.

- **Hands-on- Training**: The hand-on-training is given to the students weekly once which help them to technically solve the small issues in electrical and electronics appliances in their home.

2. Participatory Learning:

This is the method of gaining and understanding a community and situation through interaction with them. The following are the few participatory learning methods:

- **Group Discussion**: Through the method of group discussion the students are able to interact with others and are able to understand the view and ideas regarding a topic and able analyse their own decision.
- **Quiz Programme**: The department organizes the quiz programme for the students and also they are encourage d to participate in in the intercollege quiz competitions. Through this they gain knowledge on various topics apart from physics also.
- **Debate:** The debate was also organized for knowing the talent in the students to react and admit various thoughts of others. The winners were awarded for their performances.

3. Problem Solving Method:

This is the method of identifying the problem, developing possible solution and implementing it in action.

- This is the continuation of the experimental learning.
- Once after gaining the enough ideas from the experimental learning the students try to solve a problem mathematically related to various concepts of physics.
- They are also able to apply the various concepts and theories of physics for solving the environmental problems.

ICT enable Tools:

This is the mode of education that use information and communications technology to support enhance and optimize the delivery of the information to the students.

- The department is having the four ICT enabled class rooms.
- For each course of the program there is one ICT enabled teaching class.
- Hence, there should be 17 ICT enabled class for one week.
- This is one of the good tool for making ideas to reach the students easily.
- The ppt. or videos presented on each topic creates great impact on the students.
- The students take the seminars through the ICT mode .
- The staff felt this as the effective mean of learning , since they got positive feedback from the students.
- Hence, it was planned to increase the number of ICT enabled classes in the forthcoming years.

ASSESSMENT:

Identification of Slow and Advanced Learners:

Assessment is the measuring the progress of the student's learning. It is the method of understanding the strength and weakness of the students learning.

- An orientation program was arranged for the fresher's of UG course.
- In continuation to that the Bridge Course was conducted for them in the department.
- The performances of the students are assessed from the Bridge course onwards by understanding their performance, talents and involvement in the curricular and extracurricular activities.
- The learning level of the students was identified from the exam conducted at the end of the bridge course.
- The understanding and the learning level of the students are identified through the class test and the unit test test.
- From this the slow learners and the advanced learners are identified.

Slow Learners:

The identified slow learners of each class is given special attention. The following methods are adopted for the upliftment of the slow learners:

- They are given special attention in the class by asking questions to create more attention in the class.
- They are given remedial classes for the concern subjects to upgrade their level in that particular course.
- They are given important questions on each unit and made them to be thorough with that under the guidance of the course instructor.
- If they feel difficulty in understanding it in English, it is translated to them in regional language.
- They are given important questions from the previous university question paper and are asked to study after the regular time of the college.
- Tests on the basis of the questions given are conducted.
- They are asked to work out the important problems in the syllabus.
- They are also counseled for making the mind well prepared for attending the university exam.

Year	Semester	Class	No. of students attended	Number of students passed
2017-2018	Odd	I B.Sc.	10	8
		II B.Sc.	10	8
		III B.Sc.	10	10
		I M.Sc.	5	5
		II M.Sc.	5	4
	Even	I B.Sc.	4	1
		II B.Sc.	5	1
		III B.Sc.	5	1
		I M.Sc.	3	3
		II M.Sc.	5	4

2018-2019	Odd	I B.Sc.	5	2
		II B.Sc.	3	0
		III B.Sc.	4	1
		I M.Sc.	4	1
		II M.Sc.	3	1
	Even	I B.Sc.	4	2
		II B.Sc.	3	2
		III B.Sc.	4	3
		I M.Sc.	3	1
		II M.Sc.	3	2
2019-2020	Odd	I B.Sc.	7	5
		II B.Sc.	4	2
		III B.Sc.	5	3
		I M.Sc.	4	2
		II M.Sc.	5	3
	Even	I B.Sc.	8	8
		II B.Sc.	6	6
		III B.Sc.	5	5
		I M.Sc.	4	4
		II M.Sc.	5	5
2020-2021	Odd	I B.Sc.	-	-
		II B.Sc.	-	-
		III B.Sc.	-	-
		I M.Sc.	-	-
		II M.Sc.	-	-
	Even	I B.Sc.	6	6
		II B.Sc.	7	7
		III B.Sc.	7	7
		I M.Sc.	5	5
		II M.Sc.	6	6

Outcome: It was found that there is great improvement for the students in the next internal exam. Among the slow learners 70% of the students passed the final year of the progam successfully.

Advanced learners:

Advanced learning is the learning of students who learn at a rate that The advanced learners are given special attention to attend the competitive exam through the career guidance classes.

For encouraging and motivating advanced learners some of the special activities given to them are listed here with,

- Advance learning assignments or tasks are assigned to the advanced learners.
- They are given special career guidance class for motivating them to attempt the competitive examinations and also, to through the higher courses.
- They are motivated to get ranks in the university examination.
- They are encouraged to aim high and are helped by timely supply of reference books, stdudy materials from various e-portals like INFLIBNET subscribed by the college.
- They are also asked to download the previous year questions papers for reference.
- They are also given complex task for solving the problems.
- They are also encouraged to be supportive towards the slow learners of their class.

Outcome: Due to the extra attention given to the advanced learners it was able to secure rank in UG and also in PG level. Also, it was able to produce more number of distinction holders also.

INTERNAL ASSESSMENT:

The internal assessment is done for the UG, PG, M.Phil and the Ph.D students in a very transparent manner.

Mechanism of Internal Exam:

Offline

- The internal exam is a centralized test.
- The intimation of the internal exam is given to them in the beginning of the semester through the college diary as per the university prescribed date.
- Final date for each internal exam is decided by Principal council along with the HoDs of all departments.
- The HoDs intimate the date of examination to the department staff in the Departmental meeting.
- The date of submission of the question paper is intimated.
- The date of the exam is intimated to the students before one week and the time table is issued.
- The hall arrangements for the exam are displayed in the notice board.
- The exam usually be conducted as per the schedule and the papers are collected by the exam committee and it is handed over to the concern course instructors.
- The exam takes place under the supervision of the staff for 2 hours
- For the UG students the internal assessment is done based on their internal exam conducted for 20marks and the assignment for 5 marks.
- For PG students the internal exam is conducted for 15 marks, assignment for 5 marks and seminar for 5 marks.

Online

As it was not able to conduct the exam through in offline mode, during the covid-19 it was insisted to conduct the exam through the online mode.

- As same as the offline mode after the putting the schedule the time table was given to the students through the Google class room.
- The question paper for the exam was sent to them through the online mode and asks them to submit the scanned copy of the papers within the same day.

- They are also instructed to bring the paper to the college in a particular day allotted to each department for evaluation.

EXTERNAL ASSESSMENT:

Mechanism of External Examination:

Offline Mode of Examination:

- The circular regarding the date of exam fee payment send by the university is informed to the students.
- The last date of fee payment along with the penalty is also informed to them.
- The class in charge gives the subject code to all the student before remitting the fee.
- As soon as the exam time table was received it is circulated to the students of our department.
- The hall ticket will be downloaded by the students and it will be duely attested by the principal.
- The exam was conducted by the college, which is declared as the exam centre by the university, under the supervision of the chief superintendent.
- After the examination the papers are collected by the college and send to the University for the Centralized Valuation.

Online Mode of Examination:

- During the covid-19 pandemic period the exam was conducted through the online platform.
- The process starts by intimating the date of payment of the exam fee and thereby issuing the time table.
- Mock test were organized by the university through the university link for the better understanding of the students to attend the online exam.
- The exam was conducted through online mode and the students are asked to upload the the answer sheets through online as pdf within hours.
- They are also instructed to submit the hard copy of the exam paper to the college.

3.EVALUATION:

Evaluation is a systematic method to study the academic performance, the practices, the knowledge and the skill the students has achieved throughout this program. For UG and PG students the internal exam is conducted for 20 marks and 15 mark. Remaining 5 mark for UG is given for their assignment and 10 mark for PG is given for the assignment and the seminar.

- After assessing the student initially through the class test and the unit test, the student is made ready for the internal examination.
- The examination is conducted as per the time table.
- The evaluated papers are given to the students within 3 to 4 days from the date of examination.
- The papers are recollected and the marks are entered in the register and are uploaded in the university portal.

Transparency of the Internal exam:

The internal exam thus conducted is very ***transparent way*** to the students from the beginning onwards:

- The evaluations of the assignment, seminars, projects, etc. are highly clear and satisfactory to the students.
- The knowledge and understanding of the topic can be understood by organizing the quiz regarding the topic in the class room.
- After the conduction of the unit test and the class test the teacher evaluates the paper and it is given to the students to under the level of their studying.
- Similarly, after the internal examination the marks are displayed in the notice board.
- After that only the mark is entered in the mark register and uploaded in the office automation, thereby, the students and the parents can view the marks.
- The absentees, with genuine reason are given permitted to write the retest.
- Also, the students those who secured low marks are also given a chance for improvement.
- Through the PTA meeting the parents are also able to understand the status of performance of the students.

Online:

- In the online mode the uploaded answer scripts of the students are evaluated through online.
- The marks are entered in the office automation, so the students can view and clear their doubts.
- It is then uploaded in the university web portal.

External Exam:

Evaluation:

Offline:

- After the examination the collected papers are distributed to various exam zones and the staffs from each college based on their experience are invited for the valuation.
- The marks obtained by each student is entered in the sheet and submitted to the university.
- The consolidated mark statement is issued by the university to the college through the e-mail and it is send to the individual student through the sms to their registered mobile number.
- The university publishes the exam result through sms to the registered mobile number of the student and a copy e-mailed to the college.

Online:

In the online mode the university enquires the willingness of the staff for valuation through the registered link.

- They also enquires the willingness of the subject option also.
- There by, they send the paper through the online and it is evaluated through online and the concern mark is uploaded to the university for the result publication.

Transparency of the External exam:

- If the student is having any unsatisfaction regarding the university exam result he can apply for the Xerox of the paper and analyze the valuation.
- If not satisfied he can apply for retotalling or the revaluation of the paper.
- Also, if the result is coming withheld he can contact the controller of examination of the university through the principal.
- Also, the supplementary exam is conducted for the final year students who failed for one course.

Grieveances:

Internal Exam:

- After the evaluation the internal mark are displayed in the notice board.
- The genuine grievances regarding the internal mark are acceptable by the faculties.
- If the student is not satisfied with the marks obtain they can approach the subject in charge.
- If not satisfied then to the HOD.
- If the student is feeling that he is not getting the right response from the department he can approach the Exam grievance cell of the college.
- All the problems regarding the internal mark can be rectified.

External Exam:

- After the publishing of the university result, if the student is having any grievances, he can apply for the revaluation within the stipulated time and apply for the Xerox of the paper.
- After the availability of the Xerox of the paper it is reviewed by the subject expert of the college and can apply for revaluation again.
- The result comes within 15days.
- If not it is rectified the student can approach the controller of examination through the HOD and the Principal of the college.

- The defects in the marksheet are also rectified within the stipulated time through the principal by consulting with the university exam cell.

OUTCOMES:

Course Outcome:

Course outcome help the learners to understand the reason for pursuing the course and helps them to identify their level of academic performance in end of the course.

The outcome of the students in various courses of the program is mentioned below:

Year	**Class**	**Subject**	**No. of students appeared**	**No. of students Passed**	**Pass Percentage %**	**No. of students with distinction [O & O^+]**
2017 -2018	IB.Sc.	Mechanics	53	51	96	14
		Properties of mater and Acoustics	53	48	90	13
		Thermal Physics & Statistical Mechanics	53	51	96	2
		Optics	53	41	77	-
	II B.Sc.	Electricity and Magnetism	46	44	96	24
		Maintenance of Electrical Appliances	45	44	98	15
		Object Oriented Programming with C++	45	40	89	1
		Maintenance of Electronic Appliances	45	45	100	-
	III B.Sc	Atomic Physics	45	42	93	14
		Basic Electronics	45	37	82	9

		Solid State Physics	44	40	91	6
		Quantum Mechanics	44	39	89	13
		Nuclear Physics	45	41	91	21
		Spectroscopy	45	41	91	7
		Digital Electronics	45	41	91	6
		Statistical Mechanics	46	46	100	7
	I M.Sc.	Classical Mechanics	28	28	100	9
		Mathematical PhysicsI	28	28	100	2
		Integrated Electronics	28	20	71	-
		Non-Linear Dynamics	28	28	100	7
		Mathematical Physics II	28	28	100	2
		Condensed Matter Physics	28	27	96	1
		Microprocessor & Microcontroller	28	24	86	1
		Numerical Methods	28	12	43	-
	II M Sc	Quantum Mechanics- I	24	17	71	-
		Electromagnetic Theory	23	20	87	5
		Research Methodology	24	24	100	18
		Statistical Mechanics	24	22	92	3
		Quantum Mechanics II	23	23	100	2
		Spectroscopy	23	23	100	4
		Nuclear & Particle Physics	23	12	52	-
2018-2019	IB.Sc.	Mechanics& Relativiy	46	44	96	6
		Properties of Matter	46	45	98	2
		Thermal Physics	46	42	91	6
		Statistical Mechanics	46	40	87	1
	II B.Sc.	Electricity	52	48	92	2
		Maintenance of Electrical Appliances	52	40	77	-
		Electromagnetism	52	48	92	6

		Maintanance of Electronic Appliances	52	51	98	5
	III B.Sc	Basic Electronics	45	44	98	-
		Solid State Physics	45	45	100	-
		Spectroscopy	45	44	98	6
		Communication Electronics	45	40	89	-
		Digital Electronics	45	42	93	3
		Quantum Mechanics	45	44	98	3
		Nuclear Physics	45	45	100	-
		Solid State Physics	45	45	100	-
	I M.Sc	Classical Mechanics	25	21	84	-
		Mathematical PhysicsI	25	24	96	18
		Integrated Electronics	25	25	100	-
		Non-Linear Dynamics	25	22	88	-
		Mathematical Physics II	24	23	96	6
		Condensed Matter Physics	24	23	96	-
		Microprocessor & Microcontroller	24	22	92	-
		Numerical Methods	24	14	58	-
	II M.Sc	Quantum Mechanics- I	28	25	89	7
		Electromagnetic Theory	28	27	96	5
		Statistical Mechanics	28	26	93	11
		Research Methodology	28	28	100	3
		Quantum Mechanics- II	28	27	96	1
		Spectroscopy	28	25	89	-
		Nuclear & Particle Physics	28	25	89	1
		Renewable Sources of Energy	28	27	96	1
2019-2020	IB.Sc.	Mechanics	37	37	100	19
		Properties of Matter	37	37	100	19

		Thermal Physics	37	37	100	
		Optics	37	37	100	
	II B.Sc.	Electricity	45	42	93	7
		Maintenance of Electrical Appliances	45	43	96	-
		Electromagnetism	45	45	100	30
		Maintanance of Electronic Appliances	45	45	100	41
	III B.Sc.	Basic Electronics	52	48	92	-
		Solid State Physics	52	49	94	1
		Spectroscopy	52	50	96	2
		Communication Electronics	52	43	83	2
		Digital Electronics	53	53	100	26
		Quantum Mechanics	53	53	100	11
		Nuclear Physics	53	53	100	23
		Solid State Physics	53	53	100	14
		Energy Physics	53	53	100	12
	I M.Sc.	Classical Mechanics	25	25	100	1
		Mathematical PhysicsI	25	24	100	6
		Integrated Electronics	25	22	100	5
		Non-Linear Dynamics	25	19	100	11
		Mathematical Physics II	25	25	100	19
		Condensed Matter Physics	25	25	100	16
		Microprocessor & Microcontroller	25	25	100	13
		Numerical Methods & Programming in C++	25	25	100	17
	II M.Sc.	Quantum Mechanics- I	24	23	96	11
		Electromagnetic Theory	24	23	96	13
		Research Methodology	24	20	83	6

		Statistical Mechanics	24	23	96	1
		Quantum Mechanics- II	23	22	96	16
		Spectroscopy	23	22	96	17
		Nuclear & Particle Physics	23	22	96	2
		Renewable Sources of Energy	23	22	96	16
2020-2021	I B.Sc.	Properties of Matter & Mechanics	23	23	100	9
		Professional English I	23	23	100	1
		Optics &Thermal Physics	23	23	100	5
		Professional English II	23	23	100	2
	II B.Sc.	Electricity	37	37	100	-
		Maintenance of Electrical Appliances	37	37	100	-
		Electromagnetism	37	36	97	23
		Maintanance of Electronic Appliances	36	35	95	13
	III B.Sc.	Basic Electronics	45	44	98	44
		Computer Programming in C++	45	44	98	9
		Spectroscopy	44	44	100	14
		Communication Electronics	44	44	100	22
		Digital Electronics	45	44	98	9
		Quantum Mechanics	45	44	98	7
		Nuclear Physics	45	44	98	17
		Solid State Physics	45	44	100	7
	I M.Sc.	Classical Mechanics	27	27	100	18
		Mathematical PhysicsI	27	27	100	24
		Integrated Electronics	27	27	100	14
		Non-Linear Dynamics	27	27	100	11

		Mathematical Physics II	28	28	100	28
		Condensed Matter Physics	28	28	100	21
		Microprocessor & Microcontroller	27	27	100	2
		Numerical Methods & Programming in C++	27	27	100	24
	II M.Sc.	Quantum Mechanics- I	26	26	100	12
		Electromagnetic Theory	26	26	100	15
		Statistical Mechanics	26	26	100	23
		Research Methodology	26	26	100	13
		Quantum Mechanics- II	26	26	100	24
		Spectroscopy	26	26	100	7
		Nuclear & Particle Physics	26	26	100	15
		Renewable Sources of Energy	26	26	100	10
2021-2022	I B.Sc.	Properties of Matter & Mechanics	23	23	100	4
		Professional English I	13	13	100	4
	II B.Sc.	Electricity	37	37	100	8
		Maintenance of Electrical Appliances	37	37	100	6
	III B.Sc.	Basic Electronics	44	44	100	-
		Solid State Physics	44	44	100	4
		Spectroscopy	44	44	100	10
		Communication Electronics	44	44	100	12
	I M.Sc.	Classical Mechanics	29	28	100	13
		Mathematical PhysicsI	29	28	100	28
		Integrated Electronics	29	28	100	25
		Non-Linear Dynamics	29	28	100	28
	II	Quantum Mechanics- I	26	26	100	9

	M.Sc.	Electromagnetic Theory	26	25	96	24
		Research Methodology	26	26	100	9
		Statistical Mechanics	26	26	100	13

- On an average of more than 85% of the students clear each course of the program successfully.
- Among that many students secured the distinction mark with the grade of O and O^+.
- After the publication of the results by the university, the result is being analysed in the department meeting organized by the HoD.and steps are taken to improve the result on the forthcoming semester.

PROGRAM OUTCOME

Program outcome is the knowledge or skills that students achieve upon completion of their academic program.

Year	**Program Name**	**Number of students appeared in the final year examination**	**Number of students passed in final year examination**	**Number of students got distinction**
2017 - 2018	B.Sc. Physics	44	41	6
	M.Sc. Physics	23	18	7
	M. Phil. Physics	5	5	-
2018 - 2019	B.Sc. Physics	45	41	
	M.Sc. Physics	28	24	
	M. Phil. Physics	7	7	-
2019 - 2020	B.Sc. Physics	51	48	5
	M.Sc. Physics	24	23	11
2020 - 2021	B.Sc. Physics	44	40	6
	M.Sc. Physics	25	25	7

The students are able to

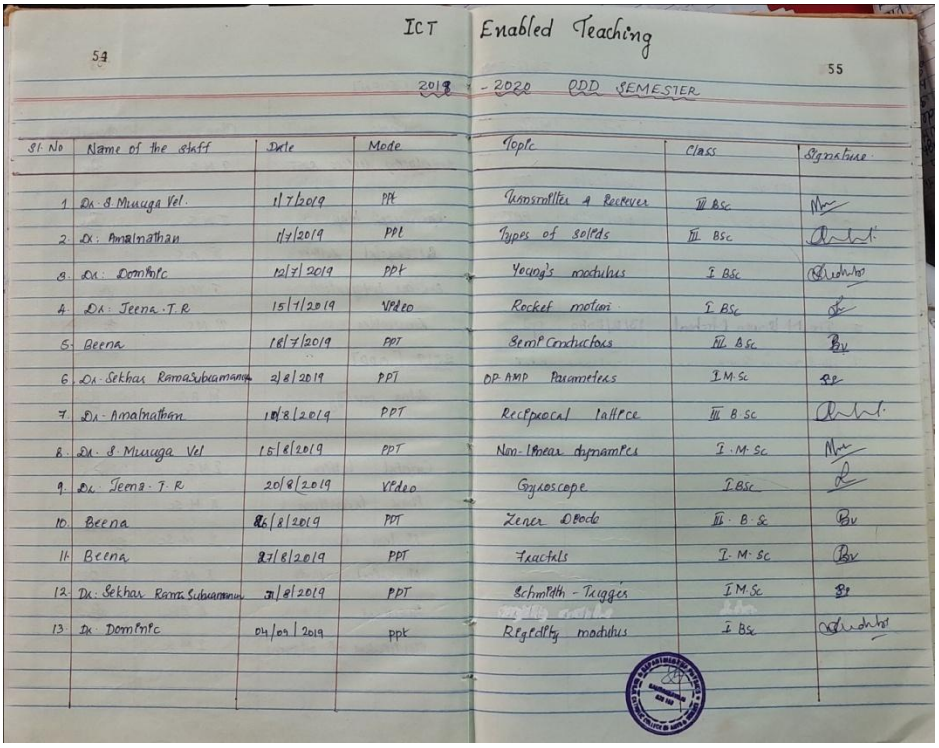
- Apply the knowledge of the theoretical and the practical skills in solving the various complex problems.
- They are able identify the problem, formulate and review the literature regarding the various research topics.
- After the completion of the program they are able to work in the industrial field skill fully.
- They develop the skill to comprehend and solve the problem effectively.
- They are able to incorporate various areas in physics
- 80% of the students completed the program successfully and are eligible for the higher studies.
- Those students who secured ranks are honoured by the management and also, by the department faculties.

ATTAINMENT OF OUTCOMES:

The outcomes that are attained through the theory classes on all the courses , the practical classes, the project work, the seminars, etc. are analysed. The program outcomes and the course outcomes are evaluated by the institution through the internal examination, university examination, practical examination, the seminar conducted by the student, their project work and also their participation in the departmental programmes and activities. Their progression after the completion of the course is also analysed. The result is evaluated in the department in the presence of the HoD. Further, it is been evaluated in the charge of the Secretary and the Principal. All pros and cons were identified and rectified. The availability of the rank and the distinctions are the fruitful outcome of the course.

TEACHING

ICT TOOLS



54

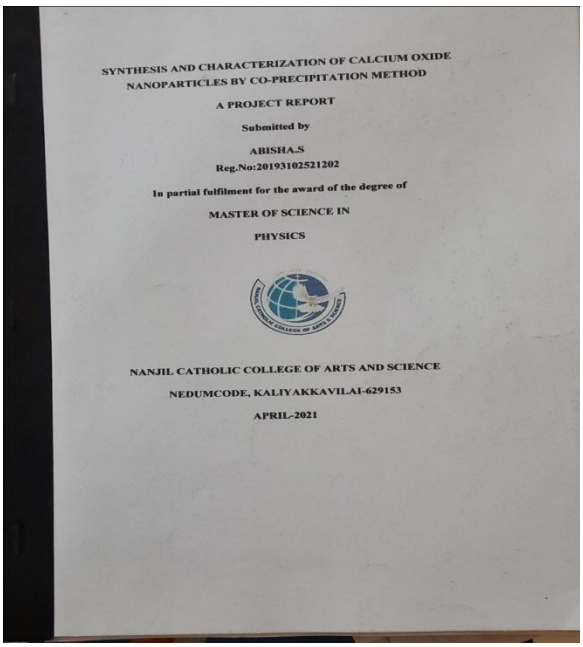
ICT Enabled Teaching

55

2019 - 2020 ODD SEMESTER

Sl. No	Name of the staff	Date	Mode	Topic	Class	Signature
1	Dr. S Muruga Vel.	1/7/2019	PPt	Transmitter & Receiver	III BSc	
2	Dr: Amalmathan	11/7/2019	PPt	Types of solids	III BSc	
3	Dr: Dominic	12/7/2019	PPT	Young's modulus	I BSc	
4	Dr: Jeena. T.R	15/7/2019	Video	Rocket motion	I BSc	
5	Beena	18/7/2019	PPT	Semiconductors	III BSc	
6	Dr. Sekhar Ramasubramanian	2/8/2019	PPT	OP AMP Parameters	I M.Sc	
7	Dr. Amalmathan	12/8/2019	PPT	Reciprocal lattice	III B Sc	
8	Dr. S Muruga Vel	15/8/2019	PPT	Non-linear dynamics	I. M. Sc	
9	Dr. Jeena. T.R	20/8/2019	Video	Gyroscope	I BSc	
10	Beena	26/8/2019	PPT	Zener Diode	III. B. Sc	
11	Beena	27/8/2019	PPT	Fractals	I. M. Sc	
12	Dr. Sekhar Rama Subramanian	31/8/2019	PPT	Schmidth - Triggers	I M.Sc	
13	Dr Dominic	04/09/2019	ppt	Rigidity modulus	I BSc	

LEARNING



SYNTHESIS AND CHARACTERIZATION OF CALCIUM OXIDE NANOPARTICLES BY CO-PRECIPITATION METHOD

A PROJECT REPORT

Submitted by

ABISHA.S

Reg.No:20193102521202

In partial fulfilment for the award of the degree of

MASTER OF SCIENCE IN

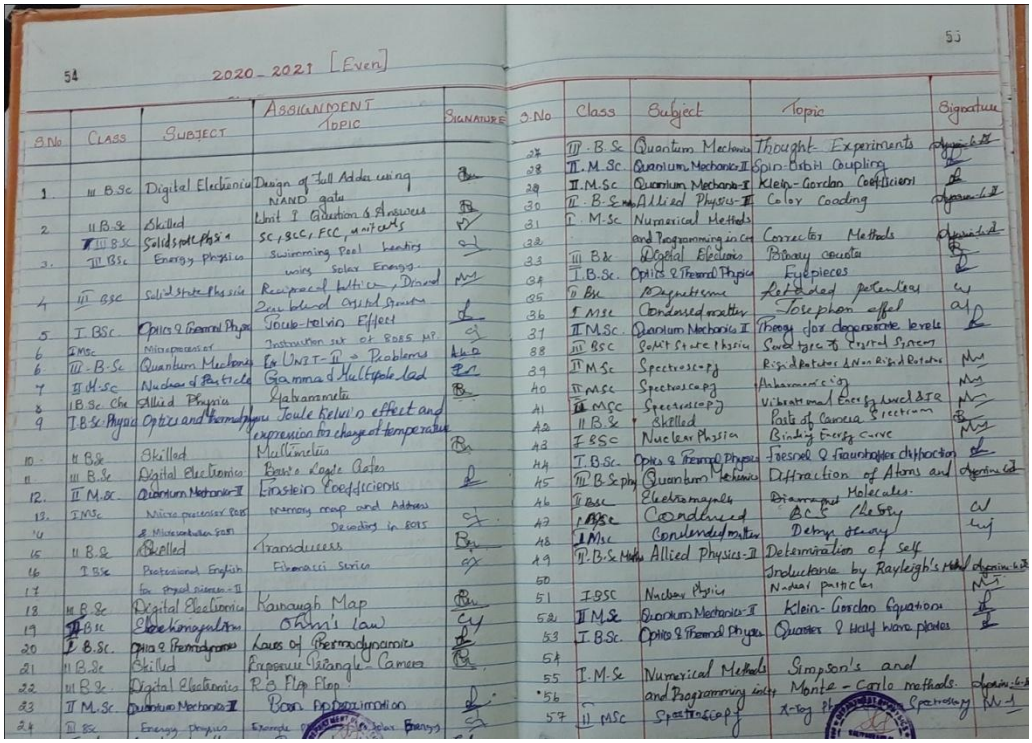
PHYSICS

NANJIL CATHOLIC COLLEGE OF ARTS AND SCIENCE

NEDUMCODE, KALIYAKKAVILAI-629153

APRIL-2021

ASSIGNMENT



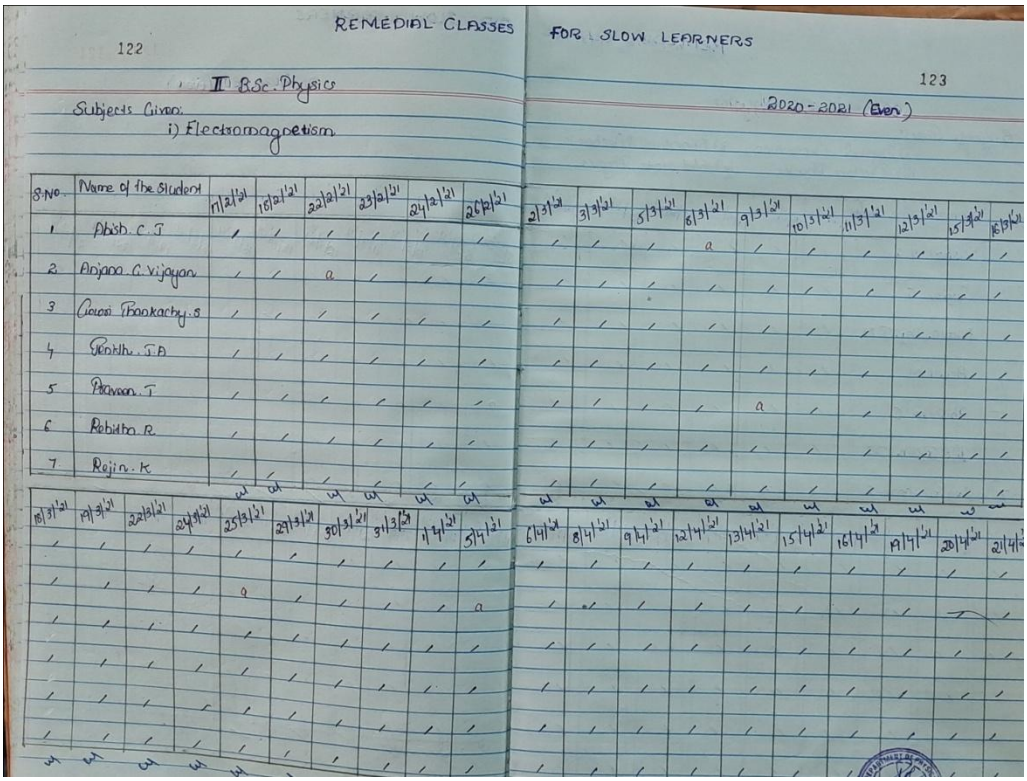
54 2020 - 2021 [Even]

S.No	Class	Subject	Assignment Topic	Signature
1	III B.Sc	Digital Electronics	Design of full Adder using NAND gate	
2	II B.Sc	Skilled	Unit I Question & Answers	
	III B.Sc	Solid State Physics	SC, BCC, FCC, units	
3.	III B.Sc	Energy Physics	Swimming Pool heating using Solar Energy	
4	III B.Sc	Solid State Physics	Reciprocal lattice, Direct Lattice, Bond Crystal Structure	
5	I B.Sc	Optics & Thermal Physics	Joule-Kelvin Effect	
6	I M.Sc	Microprocessor	Instruction set of 8085 µP	
6	III B.Sc	Quantum Mechanics	Ex UNIT - II - Problems	
7	II M.Sc	Nuclear & Particle	Gamma & Multipole rad	
8	I B.Sc. Che	Allied Physics	Hydrometer	
9	I B.Sc. Physics	Optics and Thermal Physics	Joule Kelvin effect and expression for change of temperature	
10.	II B.Sc	Skilled	Multimeter	
11	III B.Sc	Digital Electronics	Basic Logic Gates	
12.	II M.Sc	Quantum Mechanics II	Einstein Coefficients	
13.	I M.Sc	Micro processor 8085 & Microcontroller 8051	memory map and Address Decoding in 8085	
14				
15	II B.Sc	Skilled	Transducers	
16	I B.Sc	Professional English for Physical Sciences - II	Fibonacci Series	
17				
18	III B.Sc	Digital Electronics	Karnaugh Map	
19	II B.Sc	Electromagnetism	Ohm's Law	
20	I B.Sc.	Optics & Thermodynamics	Laws of Thermodynamics	
21	II B.Sc	Skilled	Fresnel Triangle Camera	
22	III B.Sc.	Digital Electronics	R S Flip Flop	
23	II M.Sc	Quantum Mechanics II	Born Approximation	
24	II B.Sc	Energy Physics	Energy Solar Energy	

55

S.No	Class	Subject	Topic	Signature
27	III B.Sc	Quantum Mechanics	Thought Experiments	
28	II M.Sc	Quantum Mechanics II	Spin-Orbit Coupling	
29	II M.Sc	Quantum Mechanics I	Klein-Gordon Coefficient	
30	II B.Sc	Allied Physics - I	Color Coading	
31	I M.Sc	Numerical Methods and Programming in C++	Corrector Methods	
32				
33	III B.Sc	Digital Electronics	Binary counter	
34	I B.Sc.	Optics & Thermal Physics	Eyepieces	
35	II B.Sc	Magnetism	Retarded potentials	
36	I M.Sc	Condensed matter	Josephson effect	
37	II M.Sc	Quantum Mechanics I	Theory for degenerate levels	
38	III B.Sc	Solid State Physics	Symmetries in Crystal Systems	
39	II M.Sc	Spectroscopy	Rigid Rotator & Non Rigid Rotator	
40	II M.Sc	Spectroscopy	Anharmonicity	
41	II M.Sc	Spectroscopy	Vibrational Energy Level & IR	
42	II B.Sc	Skilled	Parts of Camera & spectrum	
43	I B.Sc	Nuclear Physics	Binding Energy Curve	
44	I B.Sc.	Optics & Thermal Physics	Fresnel & Fraunhofer diffraction	
45	III B.Sc Phy	Quantum Mechanics	Diffraction of Atoms and	
46	II B.Sc	Electromagnetism	Diamagnet Molecules	
47	I M.Sc	Condensed matter	BCS Theory	
48	I M.Sc	Condensed matter	Debye theory	
49	II B.Sc Maths	Allied Physics - II	Determination of self Inductance by Rayleigh's Method	
50			Normal particles	
51	I B.Sc	Nuclear Physics		
52	II M.Sc	Quantum Mechanics II	Klein-Gordon Equations	
53	I B.Sc.	Optics & Thermal Physics	Quarter & Half wave plates	
54				
55	I M.Sc	Numerical Methods and Programming in C++	Simpson's and Monte-Carlo methods	
56			X-ray Physics Spectroscopy	
57	II M.Sc	Spectroscopy		

REMEDIAL CLASS FOR SLOW LEARNERS



122 REMEDIAL CLASSES FOR SLOW LEARNERS 123

II B.Sc. Physics

Subjects Given:

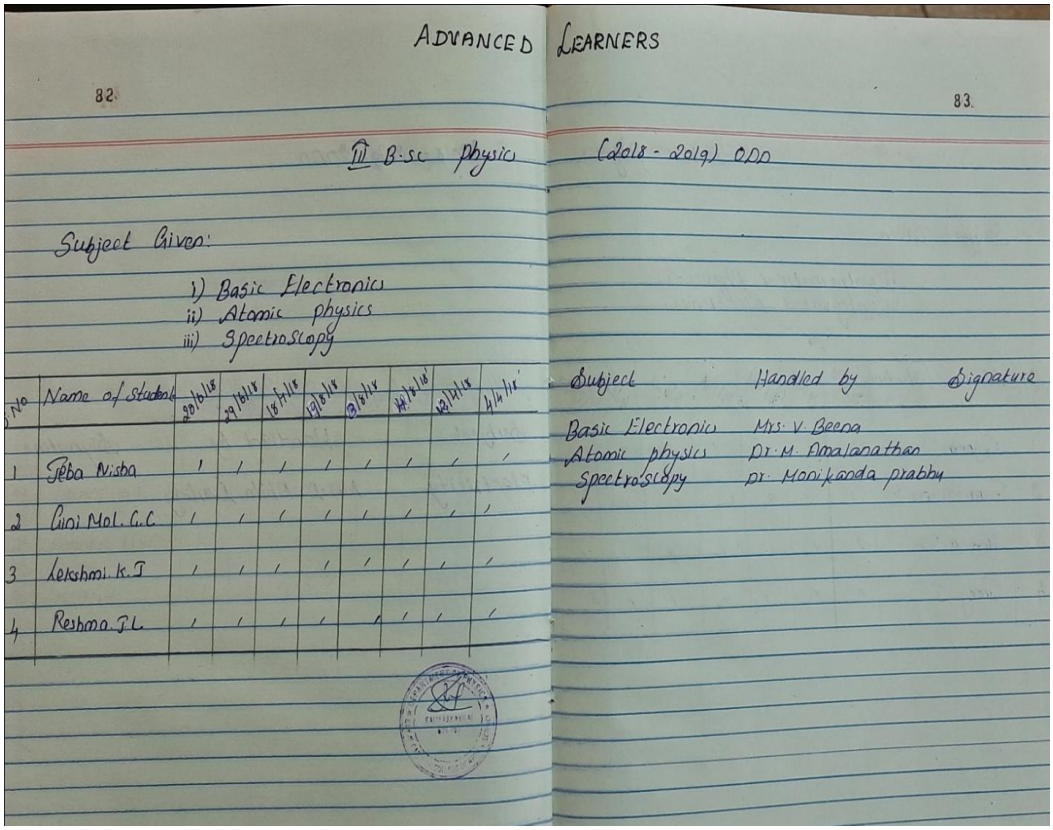
i) Electromagnetism

2020 - 2021 (Even)

S.No.	Name of the Student	11/2/21	16/2/21	22/2/21	23/2/21	24/2/21	26/2/21	2/3/21	3/3/21	5/3/21	6/3/21	9/3/21	10/3/21	11/3/21	12/3/21	15/3/21	16/3/21
1	Abish. C.J	✓	✓	✓	✓	✓	✓	✓	✓	✓	a	✓	✓	✓	✓	✓	✓
2	Anjana C. Vijayan	✓	✓	a	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
3	Gowri Thankachy. S	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
4	Sruthi. J.A	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
5	Praveen. T	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	a	✓	✓	✓	✓	✓
6	Rohith R	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
7	Rejin. K	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

S.No.	Name of the Student	30/3/21	31/3/21	1/4/21	2/4/21	5/4/21	6/4/21	8/4/21	9/4/21	12/4/21	13/4/21	15/4/21	16/4/21	19/4/21	20/4/21	21/4/21
1	Abish. C.J	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
2	Anjana C. Vijayan	✓	✓	✓	✓	a	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
3	Gowri Thankachy. S	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
4	Sruthi. J.A	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
5	Praveen. T	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
6	Rohith R	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
7	Rejin. K	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

ADVANCED LEARNERS



ADVANCED LEARNERS

82

III B.Sc physics

Subject Given:

i) Basic Electronics
ii) Atomic physics
iii) Spectroscopy

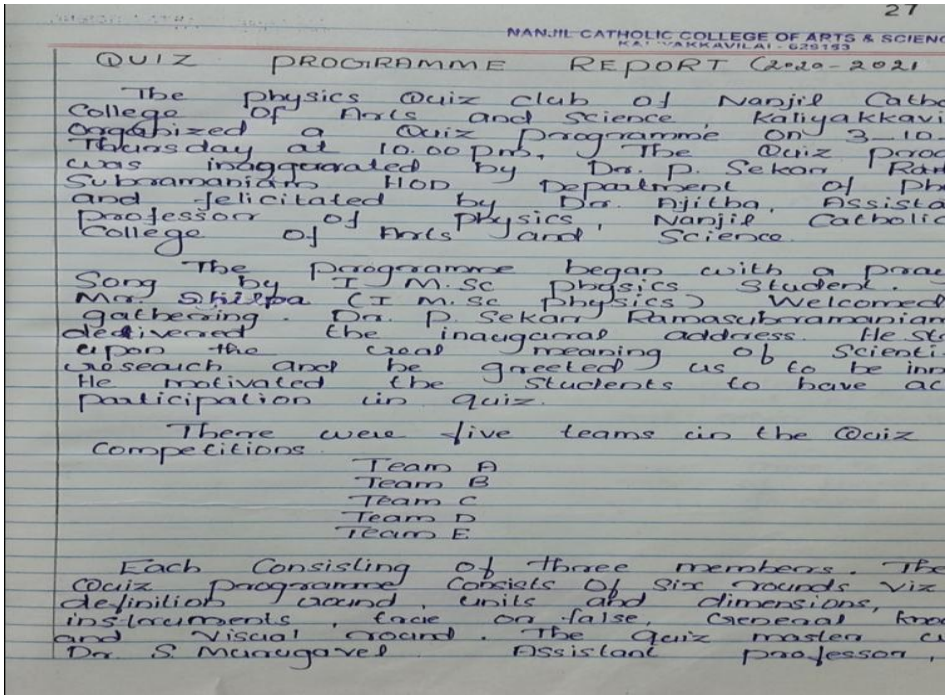
S.No	Name of Student	29/10/18	29/10/18	18/9/18	13/8/18	31/8/18	24/8/18	22/11/18	4/4/18
1	Seba Nisha	/	/	/	/	/	/	/	/
2	Gini Mol. G.C	/	/	/	/	/	/	/	/
3	Lekshmi. K.T	/	/	/	/	/	/	/	/
4	Reshma. J.L	/	/	/	/	/	/	/	/

83.

(2018 - 2019) ODD

Subject	Handled by	Signature
Basic Electronics	Mrs. V. Beena	
Atomic physics	Dr. M. Amalanathan	
Spectroscopy	Dr. Manikanda prabhu	

QUIZ



27

NANJIL CATHOLIC COLLEGE OF ARTS & SCIENCE
KALIYAKKAVILAI - 629153

QUIZ PROGRAMME REPORT (2020-2021

The physics Quiz club of Nanjil Catholic College Of Arts and Science, Kaliyakkavilai organized a Quiz Programme on 3.10.2020 Thursday at 10.00 pm. The Quiz programme was inaugurated by Dr. P. Sekar Ramasubramanian HOD, Department of Physics and felicitated by Dr. Ajitha, Assistant Professor of Physics, Nanjil Catholic College of Arts and Science.

The Programme began with a prayer Song by I M.Sc Physics Student. Ms. Shilpa (I M.Sc Physics) Welcomed the gathering. Dr. P. Sekar Ramasubramanian delivered the inaugural address. He spoke upon the real meaning of Scientific research and be greeted us to be innovative. He motivated the students to have active participation in Quiz.

There were five teams in the Quiz Competitions.

Team A
Team B
Team C
Team D
Team E

Each Consisting of three members. The Quiz Programme Consists of six rounds viz. definition round, units and dimensions, instruments, face or false, General knowledge and Visual round. The quiz master was Dr. S. Murugavel Assistant professor,

Depaalment of physics. The participants were from I B.Sc physics, II B.Sc Physics, I M.Sc Physics and II M.Sc Physics. The answering time was thirty seconds for first two rounds and twenty seconds for remaining rounds. The first two rounds had twenty questions and the remaining had fifteen questions. The Winners of quiz Competition were team C Students

Score board

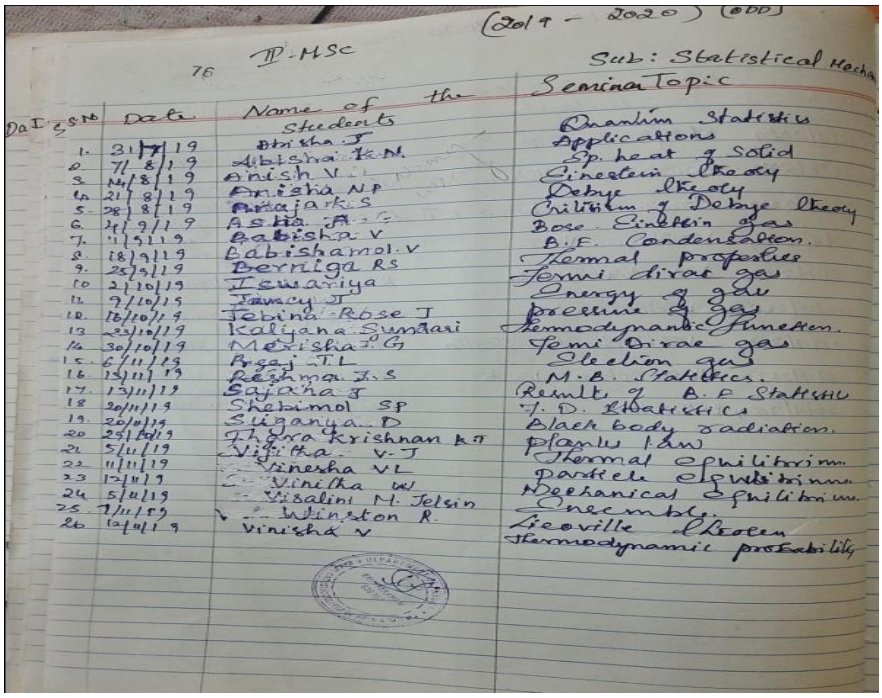
Team A – 80
Team B – 100
Team C – 110
Team D – 90
Team E – 70

The Winners were appreciated by Dr. P. Sekar Ram Subramaniam, Head of the depaalment of physics and other faculty members.

The quiz programme came to an end at 12.00 pm with the vote of thanks by M. Suaya of I M.Sc Physics followed by National Anthem.

Head
Department of Physics
Nanji Catholic College of Arts & Science
Kalliyakkavilai - 629 153, Tamil Nadu

SEMINAR



(2019 – 2020) (ODD)

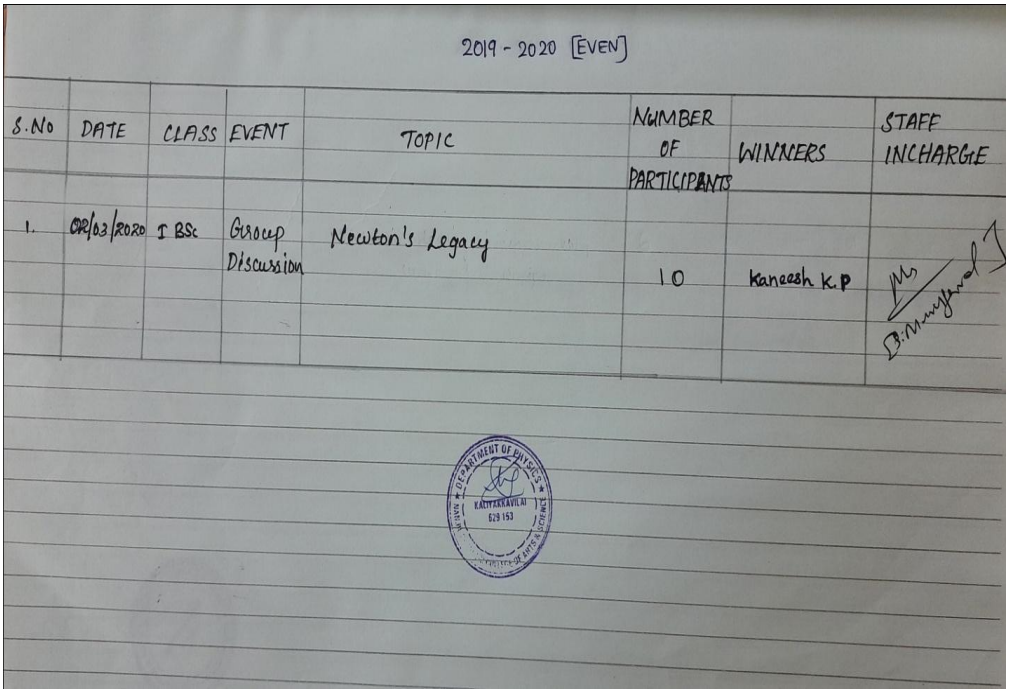
II M.Sc

Sub: Statistical Mecha

76

Dat	S.No	Date	Name of the Students	Seminar Topic
	1.	31/7/19	Abrisha J	Quantum Statistics Applications
	2.	7/8/19	Abisha K.M.	Sp. heat of Solid
	3.	14/8/19	Anish V	Einestein theory
	4.	21/8/19	Anisha N.P	Debye theory
	5.	28/8/19	Anjaja K.S	Critisism of Debye theory
	6.	4/9/19	Asha A	Bose Einstein gas
	7.	11/9/19	Babisha V	B.E. Condensation.
	8.	18/9/19	Babishamol V	Thermal properties
	9.	25/9/19	Berniga RS	Fermi dirac gas
	10	2/10/19	Iswariya	Energy of gas
	11.	9/10/19	Jancy J	pressure of gas
	12.	16/10/19	Jebina Rose J	Thermodynamic functions.
	13	23/10/19	Kaliyana Sundari	Fermi Dirac gas
	14	30/10/19	Mobrisha G	Electron gas
	15.	6/11/19	Ajay T.L	M.B. Statistics.
	16	13/11/19	Reshma J.S	Result of B.E Statistic
	17.	13/11/19	Sajana J	F.D. Statistics
	18	20/11/19	Shebimol SP	Black body radiation.
	19.	20/11/19	Suganya D	planks law
	20	25/11/19	Thara Krishnan K.T	Thermal equilibrium.
	21	5/12/19	Vijitha V.J	particle equilibrium.
	22	11/12/19	Vinesha V.L	Mechanical equilibrium.
	23	12/12/19	Vinitha W	Ensemble.
	24	5/12/19	Visalini M. Jelsin	Liouville theorem
	25.	7/12/19	Winston R.	Thermodynamic probability
	26	12/12/19	Vinisha V	

GROUP DISCUSSION

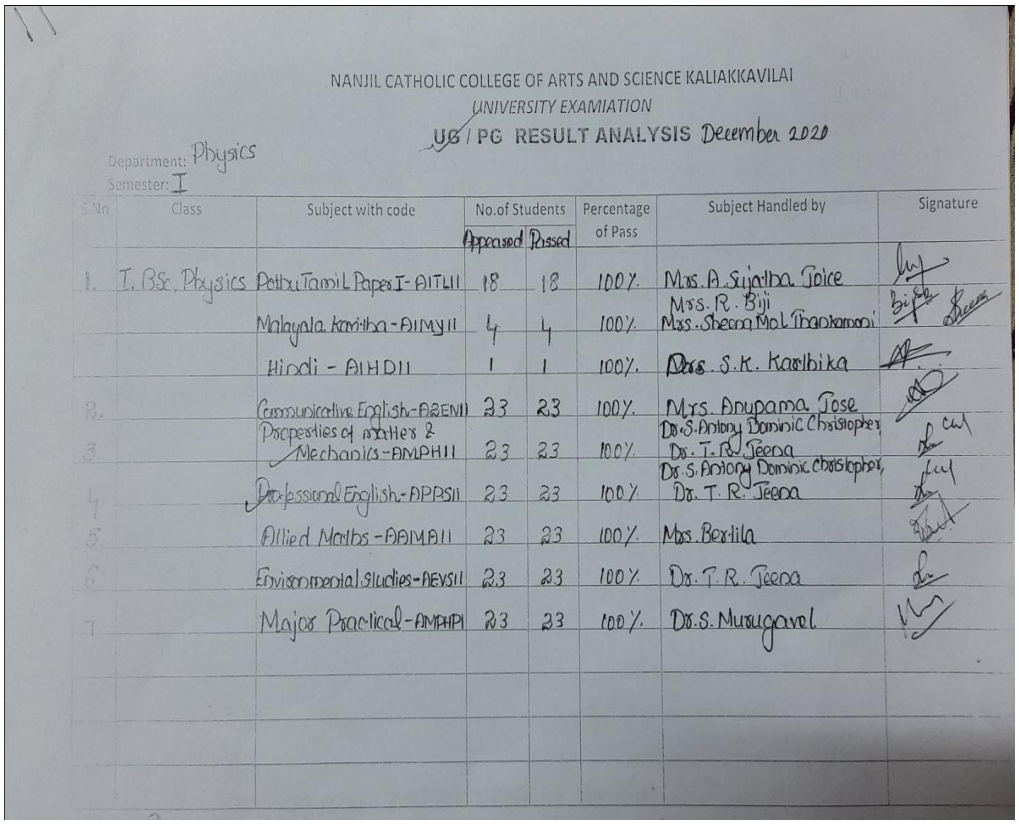


2019 - 2020 [EVEN]

S.No	DATE	CLASS	EVENT	TOPIC	NUMBER OF PARTICIPANTS	WINNERS	STAFF INCHARGE
1.	06/03/2020	I BSc	Group Discussion	Newton's Legacy	10	Kaneesh K.P	Ms B. Murugavel

DEPARTMENT OF PHYSICS KALIYAKKAVILAI 629 153

COURSE OUTCOME



NANJIL CATHOLIC COLLEGE OF ARTS AND SCIENCE KALIAKKAVILAI

UNIVERSITY EXAMIATION

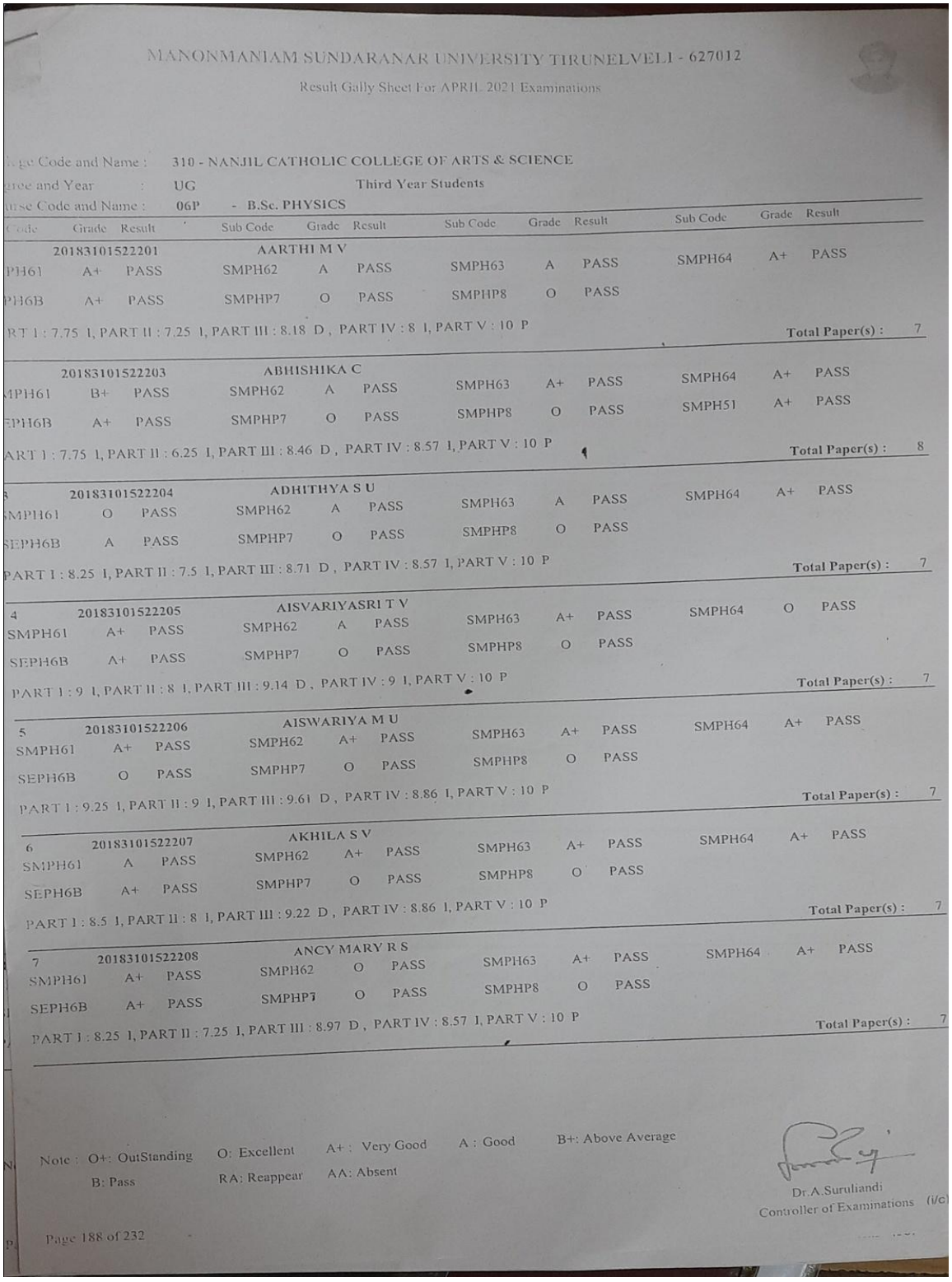
UG / PG RESULT ANALYSIS December 2020

Department: Physics

Semester: I

S.No	Class	Subject with code	No.of Students Appeared	No.of Students Passed	Percentage of Pass	Subject Handled by	Signature
1.	I. BSc. Physics	Pothu Tamil Paper I - AITL11	18	18	100%	Mrs. A. Sujatha Joice	
		Malayala kavitha - AIMY11	4	4	100%	Mrs. R. Biji / Mrs. Sheena Mol Thankamani	
		Hindi - AIHD11	1	1	100%	Mrs. S.K. Kavibika	
2.		Communicative English - A2EN11	23	23	100%	Mrs. Anupama Jose	
3.		Properties of Matter & Mechanics - AMPH11	23	23	100%	Dr. S. Antony Dominic Christopher / Dr. T. R. Jeena	
4		Professional English - APPS11	23	23	100%	Dr. S. Antony Dominic Christopher / Dr. T. R. Jeena	
5		Allied Maths - A2MA11	23	23	100%	Mrs. Bertila	
6		Environmental studies - AEVS11	23	23	100%	Dr. T. R. Jeena	
7		Major Practical - AMPHP1	23	23	100%	Dr. S. Murugavel	

PROGRAM OUTCOME



MANONMANIAM SUNDARANAR UNIVERSITY TIRUNELVELI - 627012

Result Gally Sheet For APRIL 2021 Examinations

ge Code and Name : 310 - NANJIL CATHOLIC COLLEGE OF ARTS & SCIENCE

gree and Year : UG Third Year Students

urse Code and Name : 06P - B.Sc. PHYSICS

Code	Grade	Result	Sub Code	Grade	Result	Sub Code	Grade	Result	Sub Code	Grade	Result
	20183101522201		AARTHI M V								
PH61	A+	PASS	SMPH62	A	PASS	SMPH63	A	PASS	SMPH64	A+	PASS
PH6B	A+	PASS	SMPHP7	O	PASS	SMPHP8	O	PASS			

RT I : 7.75 I, PART II : 7.25 I, PART III : 8.18 D , PART IV : 8 I, PART V : 10 P — Total Paper(s) : 7

	20183101522203		ABHISHIKA C								
MPH61	B+	PASS	SMPH62	A	PASS	SMPH63	A+	PASS	SMPH64	A+	PASS
EPH6B	A+	PASS	SMPHP7	O	PASS	SMPHP8	O	PASS	SMPH51	A+	PASS

ART I : 7.75 I, PART II : 6.25 I, PART III : 8.46 D , PART IV : 8.57 I, PART V : 10 P — Total Paper(s) : 8

3	20183101522204		ADHITHYA S U								
SMPH61	O	PASS	SMPH62	A	PASS	SMPH63	A	PASS	SMPH64	A+	PASS
SEPH6B	A	PASS	SMPHP7	O	PASS	SMPHP8	O	PASS			

PART I : 8.25 I, PART II : 7.5 I, PART III : 8.71 D , PART IV : 8.57 I, PART V : 10 P — Total Paper(s) : 7

4	20183101522205		AISVARIYASRI T V								
SMPH61	A+	PASS	SMPH62	A	PASS	SMPH63	A+	PASS	SMPH64	O	PASS
SEPH6B	A+	PASS	SMPHP7	O	PASS	SMPHP8	O	PASS			

PART I : 9 I, PART II : 8 I, PART III : 9.14 D , PART IV : 9 I, PART V : 10 P — Total Paper(s) : 7

5	20183101522206		AISWARIYA M U								
SMPH61	A+	PASS	SMPH62	A+	PASS	SMPH63	A+	PASS	SMPH64	A+	PASS
SEPH6B	O	PASS	SMPHP7	O	PASS	SMPHP8	O	PASS			

PART I : 9.25 I, PART II : 9 I, PART III : 9.61 D , PART IV : 8.86 I, PART V : 10 P — Total Paper(s) : 7

6	20183101522207		AKHILA S V								
SMPH61	A	PASS	SMPH62	A+	PASS	SMPH63	A+	PASS	SMPH64	A+	PASS
SEPH6B	A+	PASS	SMPHP7	O	PASS	SMPHP8	O	PASS			

PART I : 8.5 I, PART II : 8 I, PART III : 9.22 D , PART IV : 8.86 I, PART V : 10 P — Total Paper(s) : 7

7	20183101522208		ANCY MARY R S								
SMPH61	A+	PASS	SMPH62	O	PASS	SMPH63	A+	PASS	SMPH64	A+	PASS
SEPH6B	A+	PASS	SMPHP7	O	PASS	SMPHP8	O	PASS			

PART I : 8.25 I, PART II : 7.25 I, PART III : 8.97 D , PART IV : 8.57 I, PART V : 10 P — Total Paper(s) : 7

Note : O+: OutStanding O: Excellent A+ : Very Good A : Good B+: Above Average
B: Pass RA: Reappear AA: Absent

Dr.A.Suruliandi
Controller of Examinations (i/c)

Page 188 of 232

Criterion III - Department of Physics

Research, Innovations and Extensions

The physics department of Nanjil catholic college was upgraded as**research centre,** an establishment founded for doing research in the year 2017,affiliated to ManonmaniamSundaranar University, Tirunelveli. Research centre provides a focus for a collection of academic working on a particular research topic or theme, working in a emerging or established area of expertise. In our research centre mainly focussed on applied physics research.The aim of our physics research centre is to equip scholars and students with the skills, motivation and confidence to become creative thinkers.

1. Infrastructure for Research

To achieve excellence in research, we have research infrastructure such as facilities and related services that are used by the research scholarsto conduct top-level research in their respective fields.It includes major scientific equipment and knowledge-based resources such as data collections, Grid, computing, software and communication facilities.

- The physics research Lab equipped with modern equipments and power connections and is located at the optimal space in the campus dedicated exclusively to research. Physics research lab provide collaborative atmosphere in Ph.D, M.Phil and Masters Research.
- These days, most new infrastructures are digital. One particular area of growth is in Open Science: the push for the results of scientific research to be freely accessible to all. Physics research centre provides high speed internet with broadband connections. So scholars can easily access data, current developments and innovations in their research area and access thesis from shodhganga and journals from reputed publishing house like Springer and Elsevier.
- Research centre provides mentoring support and testing facilities to the scholars and students.All required facilities are provided and Guidance is extended to the students and scholars.
- The research centre also provide computational software tools like Guassian software, gaussview 5.08 version, guass sum 3.0, VMD etc

- Spin coater: Spin coating is a technique used to spread uniform thin films on flat substrates by centrifugal force. The apparatus used for spin coating is called a spin coater, or a spinner.
- Dip coater: Dip coating refers to the immersing of a substrate into a tank containing coating material, removing the piece from the tank, and allowing it to drain. The coated piece can then be dried by force-drying or baking. It is a popular way of creating thin film coated materials along with the spin coating procedure.
- UV-Visible Spectrophotometer: UV-Vis Spectroscopy (or Spectrophotometry) is a quantitative technique used to measure how much a chemical substance absorbs light. This is done by measuring the intensity of light that passes through a sample with respect to the intensity of light through a reference sample or blank.
- LCR Meter:LCR meters are measuring instruments that measure a physical property known as impedance. Impedance, which is expressed using the quantifier Z, indicates resistance to the flow of an AC current. It can be calculated from the current I flowing to the measurement target and the voltage V across the target's terminals.
- Microwave Ovens: A microwave oven is an electric oven that heats food by exposing it to electromagnetic radiation in the microwave frequency. In our lab it is used to dry the chemicals.
- Muffle furnaces: Muffle furnaces isolate the samples from the fuel and the combustion to eliminate contamination of the samples. They are durable, reliable, and work well for extensive use
- Hot plates: A hot plate can be used as a stand-alone appliance, but is often used as a substitute for one of the burners from an oven range or a kitchen stove.
- Particle size analyser: Particle analyzers are used to determine the size and distribution of particles making up a material. Particle size analyzers are used in numerous fields for research and development, manufacturing and for quality control and product testing.
- Distillation plant :Distillation, or classical distillation, is the process of separating the components or substances from a liquid mixture by using selective boiling and condensation.

- Magnetic stirrer and magnetic pellet :A magnetic stirrer or magnetic mixer is a laboratory device that employs a rotating magnetic field to cause a stir bar (or flea) immersed in a liquid to spin very quickly, thus stirring it
- Dielectric constant (liquid, Solid) : It is used to determination of dielectric constants of liquids and solids.
- Centrifuge: A centrifuge is used to separate particles suspended in a liquid according to particle size and density, viscosity of the medium, and rotor speed. Within a solution, gravitational force will cause particles of higher density than the solvent to sink, and those less dense than the solvent to float to the top.
- Electronic Balance: Electronic balance is an instrument used in the accurate measurement of weight of materials. Electronic balance is a significant instrument for the laboratories for precise measurement of chemicals which are used in various experiments.
- pH meter: A pH meter is an instrument used to measure hydrogen ion activity in solutions - in other words, this instrument measures acidity/alkalinity of a solution.
- Digital ultrasonic cleaner: Ultrasonic cleaning uses high-frequency, high-intensity sound waves in a liquid to facilitate or enhance the removal of foreign contaminants from surfaces submerged in an ultrasonically activated liquid.
- Autoclave:An autoclave is a machine that uses steam under pressure to kill harmful bacteria, viruses, fungi, and spores on items that are placed inside a pressure vessel.
- Physics Research journals such asPramana-Journal of Physics, Current Science, Journal of Physical Sciences, Journal of earth Science and international journal of polymers and technology are available in our research centre.

Post graduate students, M.Phil and Ph.D scholars use spin coater, dip coater, microwave oven, muffle furnace, hot plates and centrifuge to sysnthesis nanoparticle and crystals. U-V visible spectrometer is used for characterisation of sample. Using LCR meter, scholars measure the impedence of synthesised nano particle and crystals. The size of particles in synthesised materials is found out using particle size analyser. Reseach scholars calculatedielectric constant of both liquid and solids.

2. Steps in Research

2.a). Post graduate students

- Every year second year M.Sc Physics students have projects in their fourth semester.
- Five faculties guide the second year post graduate students. Every students carry out their projects individually.
- The supervisor give them the necessary idea about the selected research area.
- Then the students find out the problem in selected area.
- With the guidance of research the supervisor, they selectthe title for their thesis.
- Within this time period students collect the information regarding their topic.
- Then they collect the literature review of the problem.
- They have selected a valid methodology to address their project title with the help of the research supervisor.
- Then they collect the experimental and theoretical characterization and interpretation of their topic.
- From these they find out result. Then students write the thesis.
- After repeated discussion and correction of thesis with the research supervisor, the thesis is submitted within the timeline.
- During their university practical examination, the external examiner evaluate their projects by conducting viva.

2.b) For M.Phil Scholars

- The MPhil, or 'Master of Philosophy', is a postgraduate research programme. Instead of completing taught units and assessments, an MPhil consists entirely of own independent project.
- The M.Phil course has two semesters. First semester they have theory papers and the second semester has project alone.
- M.Phil Scholar are supervised by one faculty.
- Before choosing the project, the M.Phil scholars discuss to potential supervisors and fellow students about how much independent work the task

might involve, and how much will be expected to work with other group members.

- With the guidance of the research guide first they identify the title for their thesis.
- Then they find out literature review for their thesis.
- After that the synthesised compounds and characterization of compound using different technical tools is being done.
- Using the result from these characterization techniques, they interpret their result and come to the conclusion of their work.
- The students then write the thesis.
- After repeated discussion and correction of thesis with research the supervisor, the thesis is submitted according to university rules and regulations.
- External examiner evaluates the thesis and viva is conducted as per university norms.
- Research project is a valuable part of M.Phil degree, and provides a real opportunity to gain experience of research approaches and techniques

3.c) For Ph.D Scholars

- Finding the right supervisor is an important thing in doing research.
- Reading, and thinking a lot and working to find a topic.
- Exploring inner self, is essential.Gathering thoughts and realize what scholars actually are interested in researching is the next adequate step.
- This will help to find out a proper research topic.
- To get the registration for Ph.D, Scholar must pass the entrance exam conducted by ManonmaniamSundaranar University, Tirunelveli**.**
- After passing this entrance exam, there is a counselling section in which the scholars must give the one page abstract of the research topic.
- All the Ph.D scholars must attend the course work after theirP.hD registration.
- The area of specialization of our research scholars is spectroscopy.
- Latest technology provides a precise analytical method for finding the constituents in material having unknown chemical composition.

- Reading journals, referring thesis from research centre, university and online sites nourish the scholars' research work.
- Participating and presenting the research work in seminars and conference gives the new insight to the research work.
- After the data collection, the scholars develop an analysis plan.
- The innovations of research scholars are published with reputed publishing house like Springer, journals indexed with Scopus and UGC care with indexing.
- They then try to write the thesis chapter wise.
- After repeated discussion and correction of thesis with the research supervisor, the thesis undergoes plagiarism check.
- The thesis is submitted to ManonmaniamSundaranar University, Tirunelveli as per university guidelines.
- Then thesis undergoes internal and external evaluation.
- After getting both internal and external evaluation report of thesis, university sent the intimation regarding open viva.
- Openviva-voce examination conducted as per rules and regulations of University.

3. Total number of students guided by the individualfaculty

Number of PG students submitted the project report, number of M.Phil Scholars submitted the dissertation and the number of Ph.D scholars submitted the thesisthe years 2017-2022 to the faculty are as follows.

Sl.No	Name of Faculty	No. of PG students submitted the project report	No. of M.Phil Scholars submitted the dissertation	No. of Ph.D scholars submitted the thesis
1.	Dr. M Amalanathan	25	5	4
2.	Dr. Antony Dominic Christopher	16	2	-

3.	Dr. T R Jeena	16	3	-
4.	Dr. S Murugavel	15	1	-
5.	Dr. S SBidhu	9	1	-
6.	Dr.P Sekar Rama Subramaniam	13	-	-
7..	Dr. M. R Bindhu	-	2	-
8.	Dr. S Ajitha	10	3	-
9.	Mrs. V Beena	8	-	-
10.	Mrs. D Abila Darling	8	-	-
11.	Dr. M kavin Michal	3	-	-
12.	Dr. G Ayarine Das	5	-	-

- Under the guidance of Dr.Amalanathan, 25 PG students submitted the project report, 5 M.Phil scholars submitted the dissertation and 4Ph.D scholars submitted the thesis.
- 16 PG students submitted the project report and 2 M.Phil scholars submitted the dissertation under the supervision of Dr. Antony Dominic Christopher.
- Under the guidance of Dr.T R Jeena, 16 PG students submitted the project report and 3M.Phil scholars submitted the dissertation.
- 15 PG students submitted the project report and 1M.Phil scholars submitted the dissertation under the supervision of Dr. S Murugavel.
- Under the guidance of Dr.S SBidhu,9 PG students submitted the project report and 1M.Phil scholars submitted the dissertation.
- 13 PG students submitted the project report under the supervision of Dr. P Sekar RamaSubramaniam.
- Under the guidance of Dr. M.R Bindhu, 2 M.Phil scholars submitted the dissertation.
- 10 PG students submitted the project report and 3M.Phil scholars submitted the dissertation under the supervision ofDr. S Ajitha.
- Under the guidance of Mrs. V Beena, 8 PG students submitted the project report.
- 13 PG students submitted the project report under the supervision of Mrs. D Abila Darling.

- Under the guidance of Dr. M Kavin Michal, 3 PG students submitted the project report.
- 5 PG students submitted the project report under the supervision ofDr.Ayarine G Das.
-

4. Total number of thesis submitted – yearwise

128 M.Sc. projects are produced during the year 2017 to 2022. During these years, 17 M.Phil research theses and 3Ph.D thesis submitted. Yearwise submission of thesis by M.Sc students, M.Phil and Ph.D scholars are as follows

Sl. No	Year	No. of project report submitted by PG students	No.of dissertation submitted by M.Phil Scholars	No. of thesis submitted by research scholars
1.	2017-2018	25	5	-
2.	20018-2019	27	7	-
3.	2019-2020	25	-	-
4.	2020-2021	25	-	1
5.	2021-2022	26	5	2

5. Innovative findings

5. a) Major innovative findings of M.Sc Projects

- Guassian software is used to optimise the structure of the compound with minimum energy level.
- Nano particles are important in the domain which requires well tuned electrical properties
- Optical properties of the nanoparticles are important in designing electrical devices.
- Solar flares are the manifestation of solar activity

- Solar wind parameters change with solar cycle.
- Solar activity can be find out by studying solar wind.
- Titanium dioxide nanoparticles were prepared by sol-gel method. XRD studies showed that the compound has anatasephase with the size range of70-85
- Antibacterial study of grown crystal of pure TGS are antibacterial active. Uv-visible study showed that it has strong absorption.
- The homo-lumo energies of 6,7 dihydroxycoumarins molecule were calculated.
- Cadmium chloride mixed L-theronine crystals were prepared. And itd structural characterization was analysed.
- Using co-precipatation method the titanim dioxide nanoparticles were prepared. UV, XRD and SEM studies reveals its nano properties
- Barium oxide pure and Zinc chloride doped nanopartclec are synthesised using co-precipitation method. The samples are characterized by using XRD and FTIR techniques.
- Undoped and L-asparagine monohydrate doped triglycerinje sulphate single crystals were prepared. Pure compound is antibacterial active, abut the doped compound is antibacterial inactive
- Geometrical optimization of B3LYP/6-311G++(d,p) were done. The theorectical and experimental studies are in agreement with wave number.
- Cadmium chloride mixed L-theronine crystals were prepared. And itd structural characterization was analysed.
- Using green synthesis, titanium nanoparticles were prepared. XRD studies showed that the compound has anatasephase with the size range of 70-85.

5. b) Major innovative findings of M.phil projects

- ZnO and fluorine doped nanoparticles showed gradual decreases in crystallinity due to increasing doping of fluorine. Characterisation like FTIR, SEM, TEM and EDAX showed that fluorine is dopped in ZnO.
- The molecular geometry, vibrational mwavenumbers, infrared and Raman intensities of 4- ethyldiaminosalycyledehyde was calculated. Theorectical and experimental studies agreed with vibrational wave number.

- High quality of pure and $ZnCl_2$ doped KCl_xBr_{1-x} mixed crystal were grown by slow evaporationmethod. Optical studies revealed very low absorption over the entire region.
- Using DFT calculations, complete molecular structure, vibration wave number and their fundamental modes of vibrations were determined. The NBO analysis showed that lowest and highest energy energycontributions occurred in the compound due to imidazole group
- Gold nanoparticles prepared by chemical reduction method. It has FCC crystal structure.
- The pure and doped L-threonine cadmium chloride belongs to FCC with orthorhombic and simple cubic structure.The EDAX study confirmed the presence of dopant, NaCl in the crystal.
- Pure Cu^{2+}, Ni^{2+} and doped SnO_2nanoparticles were prepared. Its Characterization was done.The emission band , photoluminescence and morphological characteristics are found out.
- Pure Cu^{2+}, Ni^{2+} and doped ZnO nanoparticles were prepared using sol-gel method. Its FTIR< XRD, UV-visible studies are evaluated.Optical studies showed that the compound has strong absorption near 362nm.
- The crystals of pure and LA doped NSH were grown.These crystals belong to tetragonal space group. Both the crystal has orthorhombic structure.
- TiO2 nanoparticles were prepared using various methods; precipitation, sol-gel, co- precipitation and hydrothermal method. It s found that crystal has tetragonal crystal structure.
- The antibacterial activity of bio synthesised hydroxyappaitte nanoparticles was analysed against gram negative and gram positive bacteria. The synthesised hydroxyappaitte from egg shell powder are toxic to multidrug resistant microorganisms
- Structural, optical, magnetic and electrical are analysed and found out that it has significant role in daily life.
- Non linear activity of the compound can be identified with the help of hyperpolarassibility, simple harmonic generation(SHG) and Z-scan analysis
- By uv analysis, found out the band gap of a material thus one can identify the whether the material is conductor or insulator.

- Coronal mass ejection, a large outburst of solar energy from sun is responsible for auras.

5.c) Major innovative findings of Ph.D projects

- From the spectroscopic investigations of different molecule, our researchers identify the medicinal reactivity of molecule; anti cancerous, anti-tuberculosis, anti-inflamentary, anti-bacterial, anti-fungal and anti- microbial which is much useful in medical field.
- Gold nanoparticles prepared by chemical reduction method. It hac FCC crystal structure. The chemical reduction method for development of small sized spherical gold nano particles is valuable in environmental, biotechnological and biomedical applications.
- The antibacterial activity of bio synthesised hydroxyappaitte nanoparticles was analysed against gram negative and gram positive bacteria. The synthesised hydroxyappaitte from egg shell powder are toxic to multidrug resistant microorganisms. From this study it is showed that they have great potential in biomedical application.
- Molecular docking analysis was used to theoretically predict the activities of the investigated compounds.
- SEM image reveals that a uniform spherical shape surface morphology of TiO_2 nanoparticles.
- Photo catalytic degradation was performed by choosing TiO_2 as it poses to be a suitable semiconductor with visible range absorption (2.5 eV for anatase). However, the photo catalytic performance can be improved further by addition of ‘Ag’ as well as ‘AC’ to TiO_2 results in desirable enhancement in the photo catalytic activity in the degradation of MB.
- ‘Ag’ in TiO_2 helps in visible photo absorption enhancing by SPR effect as well as suppress the recombination rate of excited carriers by charge transfer from TiO_2 to ‘Ag’.

6.Extension activities

6.a) Research

- Nanotechnology has greatly contributed to major advances in computing and electronics, leading to faster, smaller, and more portable systems that can manage and store larger and larger amounts of information. Nanotechnology is already broadening the medical tools, knowledge, and therapies currently available to clinicians. Nanomedicine; the application of nanotechnology in medicine, draws on the natural scale of biological phenomena to produce precise solutions for disease prevention, diagnosis, and treatment.
- Spectroscopy is mainly used for studying the structure of molecules and atoms. Spectroscopy uses a large wavelength to investigate the structure and electron configurations of atoms and molecules. Spectroscopy can also be used for finding the unknown chemical composition of materials. Spectroscopy's emission spectrum will help to concentrate on a few parts per million of a trace element in a material. The property of TiO_2 nanoparticles is suited for biomedical andwastewater treatment (dye degradation) applications.

6.b) Society

- The antibacterial activity of bio synthesised hydroxyappaitte nanoparticles were analysed against gram negative and gram positive bacteria. The synthesised hydroxyappaitte from egg shell powder are toxic to multidrug resistant microorganisms. From this study it is proved that they have great potential in biomedical application in the society.
- In $Ag/AC/TiO_2$, the degradation is further enhanced by 'Ag', and 'AC' playing as an electron acceptor accepting from TiO_2 donor as well as individually acting as a photocatalyst due to its high surface area and porosity that results in further enhancement of photo catalytic degradation of $Ag/AC/TiO_2$. Its advantages are
    - No sludge formation and eco friendly
    - Low cost fabrication.
    - Large scale industry for removal of dye effluents.
    - Applicable for waste water treatment.

7. Contribution of staff

The innovations of staffsare published in reputed publishing house like Springer, journals indexed with Scopus and UGC care with indexing.Four of our faculty; Dr. M Amalanathan, Dr. S Ajitha, Dr.M.R Bindhu and Dr. A Karolin gotguideship from ManonmaniamSundaranar University, Tirunelveli. During 2017-2022, Dr M Amalanathan published 20 papers, Dr. S Ajitha published 3 papers and Mrs. V. Beena published 3 papers in reputed journals.

Sl.No	Name of Faculty	Title of paper	Name of Journal (ISSN no.)	Year	Impact factor
1.	Dr. M. Amalanathan	Structure activity relationship, vibrational spectral investigation and molecular docking analysis of anti-neuronal drug 4-(2-Aminoethyl) morpholine	Journal of Molecular Structure	2017	3.196
2.	Dr. M Amalanathan	IDENTIFICATION OF ANTICOAGULANTS ACTIVITY USING STRUCTURAL, SPECTROSCOPIC AND MOLECULAR DOCKING ANALYSIS OF 6-METHYL COUMARIN	INTERNATIONAL JOURNAL OF RESEARCH AND ANALYTICAL REVIEWS (IJRAR.ORG)	2018	5.75
3.	Dr. M Amalanathan	Quantum chemical computations on structural elucidation, homo-lumo and NLO analysis of 5-chloro-2-hydroxypyridine	International Journal of Engineering Science and Innovative	2018	0.765

			Technology (IJESIT)		
4.	Dr. M Amalanathan	Spectroscopic (UV, NMR) Investigation, AntiMicrobial And Molecular Docking Analysis Of 2,3Dichloronaphthalene-1,4-Dione	INTERNATIONAL JOURNAL OF SCIENTIFIC & TECHNOLOGY RESEARCH	2019	0.43
5.	Dr. M Amalanathan	Vibrational spectral, density functional theory and molecular docking analysis on 4-nitrobenzohydrazide	Journal of molecular structure	2019	3.196
6.	Dr. M Amalanathan	Spectroscopic (IR, Raman, UV, NMR) characterization and investigation of reactive properties of pyrazine-2-carboxamide by anti-bacterial, anti-mycobacterial, Fukui function, molecular docking and DFT calculations	Chemical Data Collections	2020	2.22
7.	Dr. M Amalanathan	Synthesis of TiO2 nanoparticles by chemical and green synthesis methods and their multifaceted properties	SN applied science	2020	0.683
8.		Vibrational Spectroscopic Analysis of 10H-	Asian Journal of Chemistry	2020	0.54

	Dr. M Amalanathan	Dibenzo[b,e][2,4]oxazine and Investigate their Structural Reactivity by DFT Computations and Molecular Docking Analysis			
9.	Dr. M Amalanathan	Vibrational Spectroscopic Analysis of 10H-Dibenzo[b,e][2,4]oxazine and Investigate their Structural Reactivity by DFT Computations and Molecular Docking Analysis	Asian Journal of chemistry	2020	0.54
10.	Dr. M Amalanathan	Synthesis, structural, spectroscopic and docking studies on (E)-1-Ferrocenyl-3-phenyl-propen-1-one by the density functional theory	Molecular simulation	2021	2.08
11.	Dr. M Amalanathan	Critical green routing synthesis of silver NPs using jasmine flower extract for biological activities and photocatalytical degradation of methylene blue	Journal of Environmental Chemical Engineering	2021	5.876
12.	Dr. M Amalanathan	Critical green routing synthesis of silver NPs using jasmine flower extract for biological activities and	Journal of environmental chmicalenginering	2021	5.876

		photocatalytical degradation of methylene blue			
13.	Dr. M Amalanathan	Enhanced Photocatalytic and Biological Observations of Green Synthesized Activated Carbon, Activated Carbon Doped Silver and Activated Carbon/Silver/Titanium Dioxide Nanocomposites	Journal of Inorganic and Organometallic Polymers and materials	2021	3.543
14.	Dr. M Amalanathan	Molecular structure, spectroscopic, Fukui function, RDG, anti-microbial and molecular docking analysis of higher concentration star anise content compound methyl 4-methoxybenzoate-DFT study	Journal of molecular structure	2021	3.196
15.	Dr. M Amalanathan	Molecular structure, vibrational spectroscopic, frontier molecular orbital and natural bond orbital analysis of anti-cancer drug 6-chloro-3- pyridine carbonitrile	Spectroscopy Letters An International Journal for Rapid Communication	2021	1.05
16.	Mrs. V Beena	Enhanced Photocatalytic and Antibacterial Activities of ZnSe Nanoparticles	Journal of Inorganic and Organometallic Polymers and Materials	2021	3.543

17.	Mrs. V Beena	Synthesis and Characterization of Sr-Doped ZnSe Nanoparticles for Catalytic and Biological Activities	Water	2021	2.250
18.	Mrs. V Beena	Photocatalytic Dye Degradation and Biological Activities of Cu-Doped ZnSe Nanoparticles and Their Insights	Water	2021	2.250
19.	Dr. M Amalanathan	Synthesis of TiO2 nanoparticles by chemical and green synthesis methods and their multifaceted properties	SN Applied Sciences	2021	0.683
20.	Dr. M Amalanathan	Structural, morphological, and optical properties of country egg shell derived activated carbon for dye removal	Materials today: proceedings	In press	1.24
21.	Dr. M Amalanathan	Investigation on vibrational spectral activity and theoreticalcomputation of an anticancer drug 1-(p-toluenesulfonyl) imidazole	AIP conference proceedings	2022	0.40
22.	Dr. M Amalanathan	Synthesis of Silver Nanoparticles Using Syzygiummalaccense Fruit Extract and Evaluation of Their Catalytic Activity and	Journal of Inorganic and Organometallic Polymers and materials	2022	3.543

		Antibacterial Properties			
23.	Dr. M Amalanathan	Enhanced Photocatalytic and Biological Observations of Green Synthesized Activated Carbon, Activated Carbon Doped Silver and Activated Carbon/Silver/Titanium Dioxide Nanocomposites	Journal of Inorganic and Organometallic Polymers and materials	2022	3.543
24.	Dr. S Ajitha	Study on Growth, Structural and Optical Properties of L-Alanine Doped Nickel Sulphate Hexahydrate Single Crystals	International Journal of Science and Research (IJSR)	2018	1.23
25.	Dr. S Ajitha	Growth and Characterization of L-Valine Doped Zinc Sulphate Single Crystals	International Journal of Science and Research (IJSR)	2018	1.23
26.	Dr. S Ajitha	Growth and Characterization of ZnN doped KClx Br1-x Mixed Crystals	International Journal of Science and Research (IJSR)	2018	1.23

Dr.MAmalanathanpublished a book entitled as “PROGRAMING IN C++” with ISBN number. Through the activities like exhibition, field work and industrial visit, students get hands on experience in new field of physics. Faculties provide necessary support for Documentation and Publication of Research Papers.

8. Departmental contributions

During these years, 11 research scholars were registered and among them two were awarded with Ph.D degree. Faculties published 26 research papers in various reputed journals. To promote eco-friendly environment, research scholars have done green synthesis in nano-particles.

Our lab is conducive for the research facilities for scholars. The publications in journals are discussed by research scholars to M.Phil scholars and PG students. So they can discuss and clarify the doubts related to their research. This motivates our PG students to explore the new areas of physics by doing research in future. So after completing their master degree, they wish to join as M.Phil scholars or Ph.D scholars. The physics research centre motivates and promotes in PG students and M.Phil scholars. As the result, 4 M.Phil scholars of previous batches were doing research in various reputed institutions.

Inorder to encourage and motivate the students to create interest in the research area, every year department of physics organised national level conference. During these years physics department conducted research related 3 national conference, one national webinar, two international webinars, one workshop and one webinar on intellectual property rightas follows.

8.a) Conferences

Sl.No.	Accademic year	TItle	Date	No. Of participants
1.	2017 – 2018	Second National Conference on Advanced Materials (NACAM 2018)	19-09-2017	220
2.	2018-2019	Third national conference on advanced materials (NACAM 2019)	16-03-2019	245
3	2021- 2022	Fourth national conference on advanced materials (NACAM 2019)	26-03-2022	169

8.b) Webinars

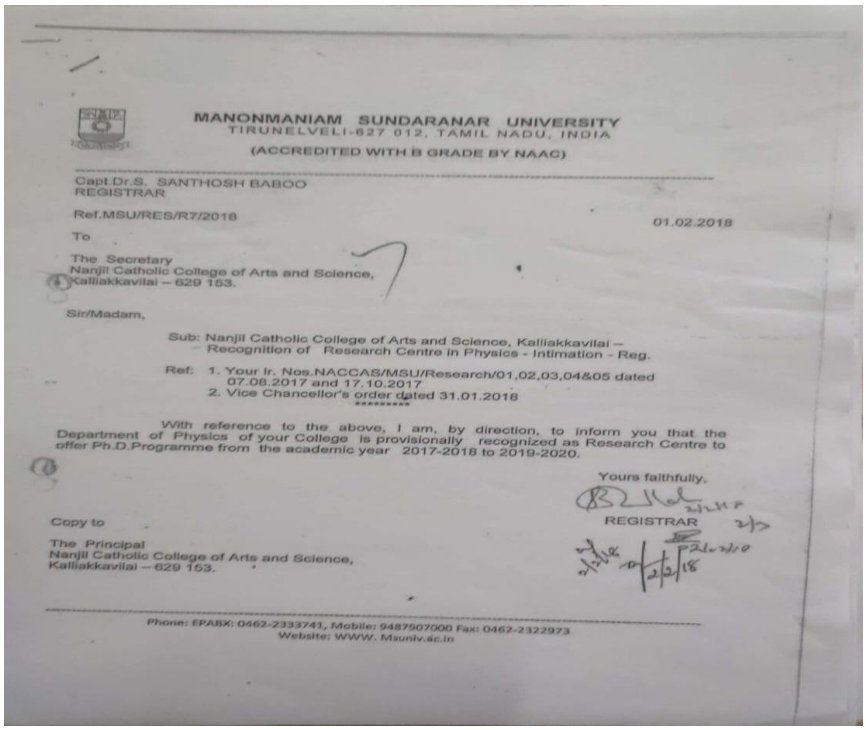
Sl.No.	Academic year	Title	Date	No. Of participants	Online platform
1.	2020-2021	National level webinar on Nano Structures - Gas sensing	17-07-2020	550	Google meet & YouTube
3.	2020-2021	International Level Webinar on emerging Technologies in Science	26-03-2021	88	Google meet
4.	2020-2021	International level Webinar on Computational Capabilities of SCIGRESS	04-08-2021	80	Google meet
5	2021-2022	Webinar on intellectual property right	10-09-2021	69	Google meet

8.c) Workshop

Sl.No.	Accademic year	Seminar/webinar/workshop/conference	Date	No. Of participants
1.	2021- 2022	Six Days hands on training on COSMOL MULTIPHYSICS	25-09-2021 to 30-09-2021	68

Discussion with research scholars and faculties, participation in various seminars and conferences; M.Phil scholars have the strong urge to find out more in their research fields. This inspires them to carry out research. Thus research centre created a environment for higher education and research.

Research, Innovations and Extensions



MANONMANIAM SUNDARANAR UNIVERSITY
TIRUNELVELI-627 012, TAMIL NADU, INDIA
(ACCREDITED WITH B GRADE BY NAAC)

Capt.Dr.S. SANTHOSH BABOO
REGISTRAR

Ref.MSU/RES/R7/2018 01.02.2018

To

The Secretary
Nanjil Catholic College of Arts and Science,
Kalliakkavilai – 629 153.

Sir/Madam,

Sub: Nanjil Catholic College of Arts and Science, Kalliakkavilai –
Recognition of Research Centre in Physics - Intimation - Reg.

Ref: 1. Your lr. Nos.NACCAS/MSU/Research/01,02,03,04&05 dated 07.08.2017 and 17.10.2017
2. Vice Chancellor's order dated 31.01.2018

With reference to the above, I am, by direction, to inform you that the Department of Physics of your College is provisionally recognized as Research Centre to offer Ph.D.Programme from the academic year 2017-2018 to 2019-2020.

Yours faithfully,

REGISTRAR

Copy to

The Principal
Nanjil Catholic College of Arts and Science,
Kalliakkavilai – 629 153.

Phone: EPABX: 0462-2333741, Mobile: 9487907000 Fax: 0462-2322973
Website: WWW. Msuniv.ac.in

Recognition as research centre

1.Infrastructure for Research

RESEARCH CENTRE

Broadband connections

Dielectric Constant(Solid, Liquid)

CENTRIFUGE

DIP- COATER

MAGNETIC STIRRER

ELECTRONIC BALANCE

PH METER

HOT PLATES

MICROWAVE OVEN

SPIN COATER

DIGITAL ULTRASONIC CLEANER

U- V VISIBLE SPECTROPHOTOMETER

FURNACE

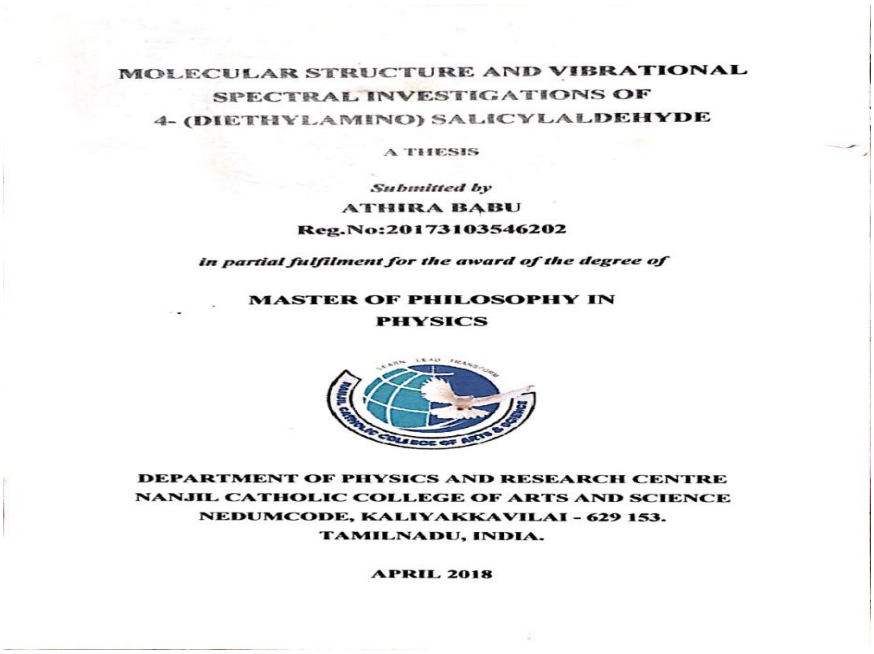
PARTICLE ANALYSER

LCR METER

AUTOCLAVE

2. Steps in Research

2.a) Post graduate students



MOLECULAR STRUCTURE AND VIBRATIONAL SPECTRAL INVESTIGATIONS OF 4- (DIETHYLAMINO) SALICYLALDEHYDE

A THESIS

Submitted by

ATHIRA BABU

Reg.No:20173103546202

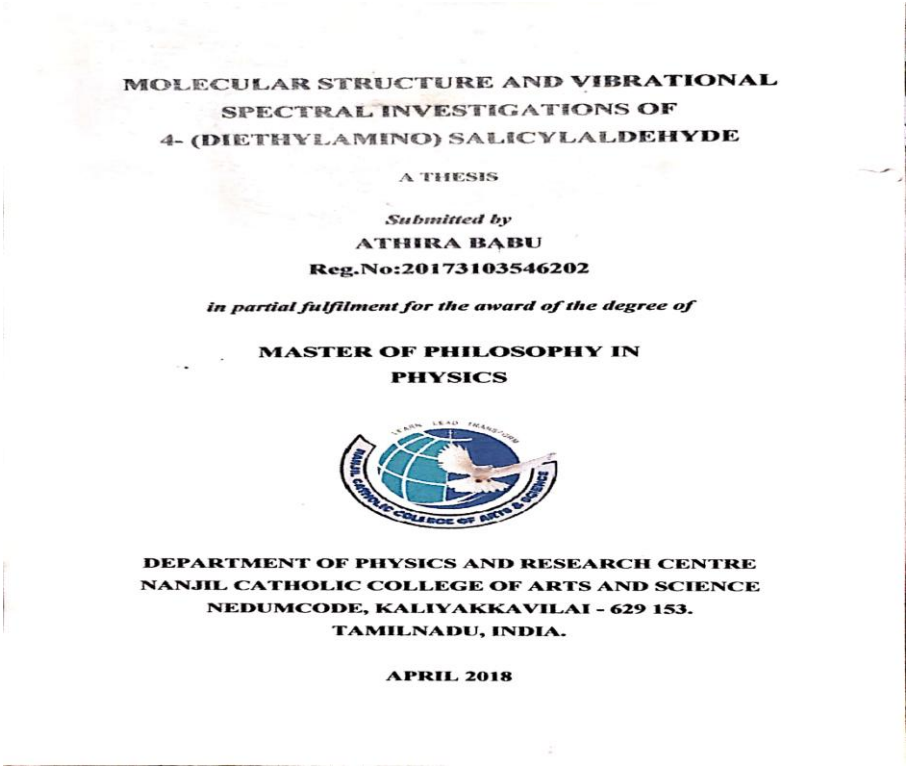
in partial fulfilment for the award of the degree of

MASTER OF PHILOSOPHY IN PHYSICS

DEPARTMENT OF PHYSICS AND RESEARCH CENTRE
NANJIL CATHOLIC COLLEGE OF ARTS AND SCIENCE
NEDUMCODE, KALIYAKKAVILAI - 629 153.
TAMILNADU, INDIA.

APRIL 2018

2.b) For M.Phil Scholars



MOLECULAR STRUCTURE AND VIBRATIONAL SPECTRAL INVESTIGATIONS OF 4- (DIETHYLAMINO) SALICYLALDEHYDE

A THESIS

Submitted by

ATHIRA BABU

Reg.No:20173103546202

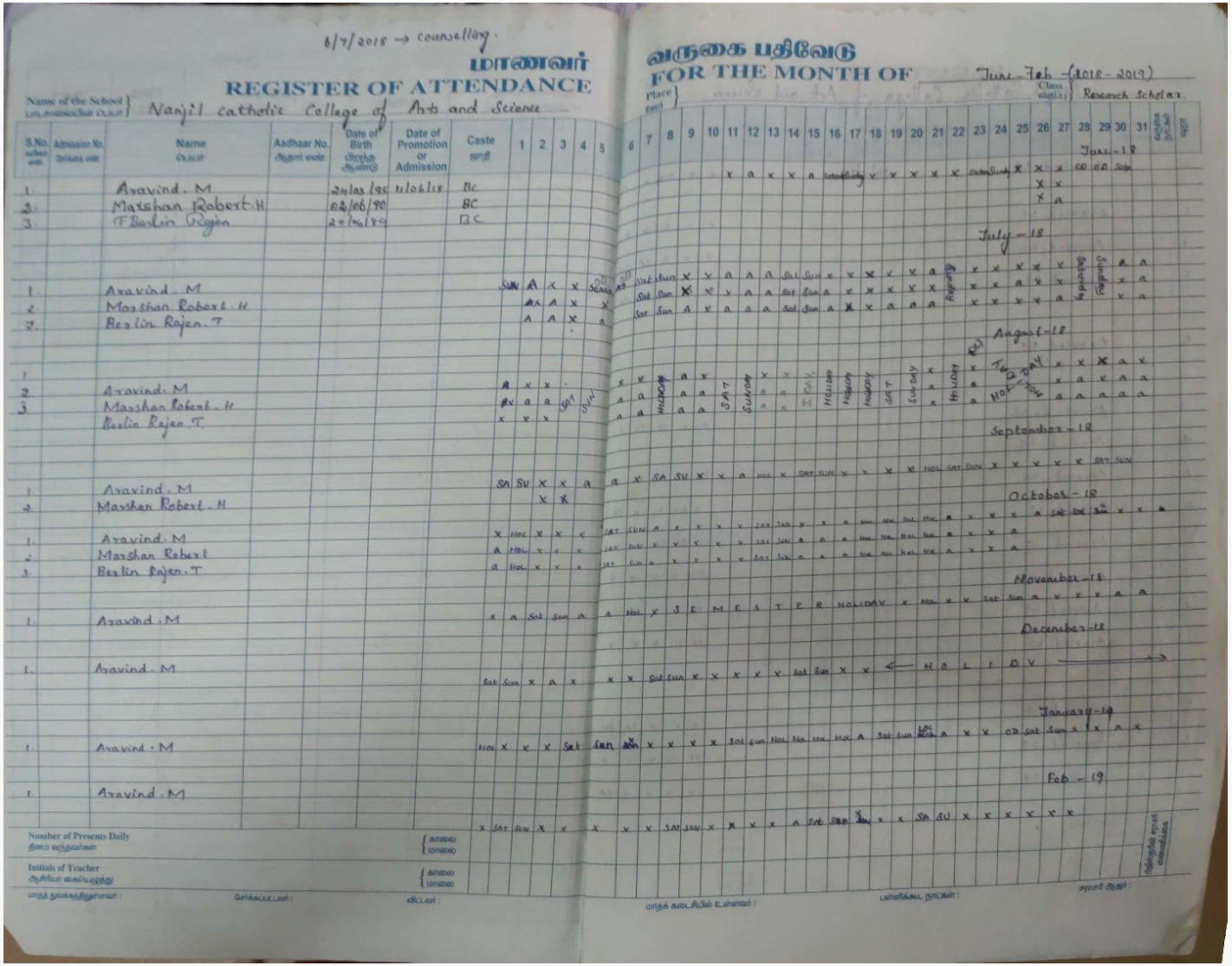
in partial fulfilment for the award of the degree of

MASTER OF PHILOSOPHY IN PHYSICS

DEPARTMENT OF PHYSICS AND RESEARCH CENTRE
NANJIL CATHOLIC COLLEGE OF ARTS AND SCIENCE
NEDUMCODE, KALIYAKKAVILAI - 629 153.
TAMILNADU, INDIA.

APRIL 2018

2.c) For Ph.D Scholars



8/7/2018 → counselling.

மாணவர்

REGISTER OF ATTENDANCE

Name of the School: Nanjil catholic College of Arts and Science

S.No.	Admission No.	Name	Aadhaar No.	Date of Birth	Date of Promotion or Admission	Caste
1.		Aravind. M		24/02/95	11/06/18	BC
2.		Marshan Robert. H		02/06/90		BC
3.		T Berlin Rajan		20/06/89		BC

வருகை பதிவேடு

FOR THE MONTH OF June - Feb - (2018 - 2019)

Class: Research Scholars

June - 18

July - 18

August - 18

September - 18

October - 18

November - 18

December - 18

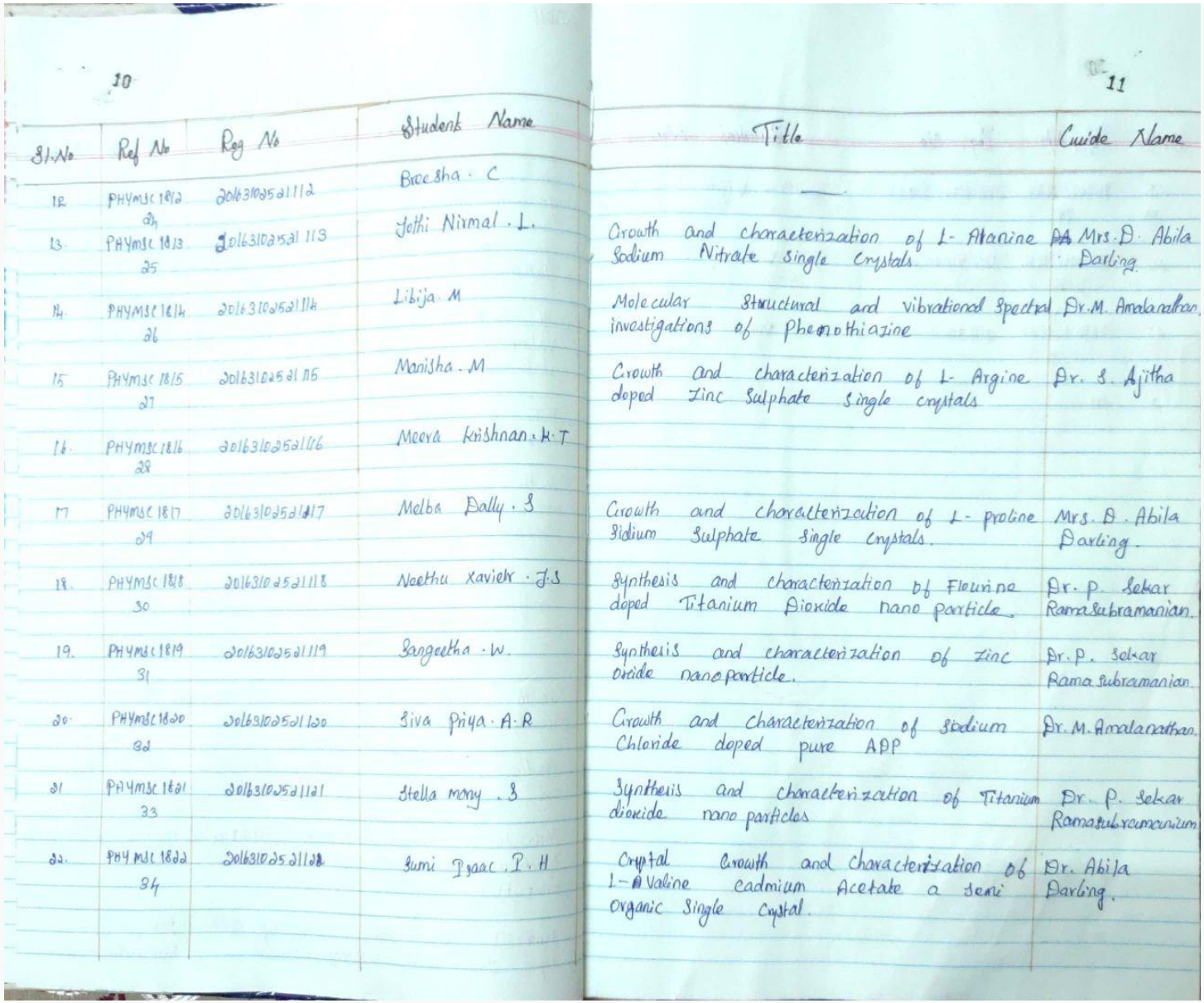
January - 19

Feb - 19

Number of Presents Daily

Initials of Teacher

3. Total number of students guided by the individual faculty



10

Sl.No	Ref No	Reg No	Student Name
12.	PHYMSC 1812	20163105011112	Bracsha . C
13.	PHYMSC 1813 25	20163105011113	Jothi Nirmal . L.
14.	PHYMSC 1814 26	20163105011114	Libija . M
15.	PHYMSC 1815 27	20163105011115	Manisha . M
16.	PHYMSC 1816 28	20163105011116	Meera Krishnan . K . T
17.	PHYMSC 1817 29	20163105011117	Melba Dally . S
18.	PHYMSC 1818 30	20163105011118	Neethu Xavier . J.S
19.	PHYMSC 1819 31	20163105011119	Sangeetha . W.
20.	PHYMSC 1820 32	20163105011120	Siva Priya . A . R
21.	PHYMSC 1821 33	20163105011121	Stella mary . S
22.	PHYMSC 1822 34	20163105011122	Sumi Isaac . I . H

11

Title	Guide Name
Growth and characterization of L- Alanine Sodium Nitrate single crystals	Mrs. D. Abila Darling.
Molecular Structural and vibrational Spectral investigations of Phenothiazine	Dr. M. Amalanathan
Growth and characterization of L- Argine doped Zinc Sulphate single crystals	Dr. S. Ajitha
Growth and characterization of L- proline Sidium Sulphate single crystals.	Mrs. D. Abila Darling.
Synthesis and characterization of Flourine doped Titanium Dioxide nano particle.	Dr. P. Sekar Ramasubramanian.
Synthesis and characterization of Zinc oxide nanoparticle.	Dr. P. Sekar Rama subramanian
Growth and characterization of Sodium Chloride doped pure APP	Dr. M. Amalanathan.
Synthesis and characterization of Titanium dioxide nano particles	Dr. P. Sekar Ramasubramanium
Cryptal Growth and characterization of L-Valine cadmium Acetate a semi organic Single Cystal.	Dr. Abila Darling.

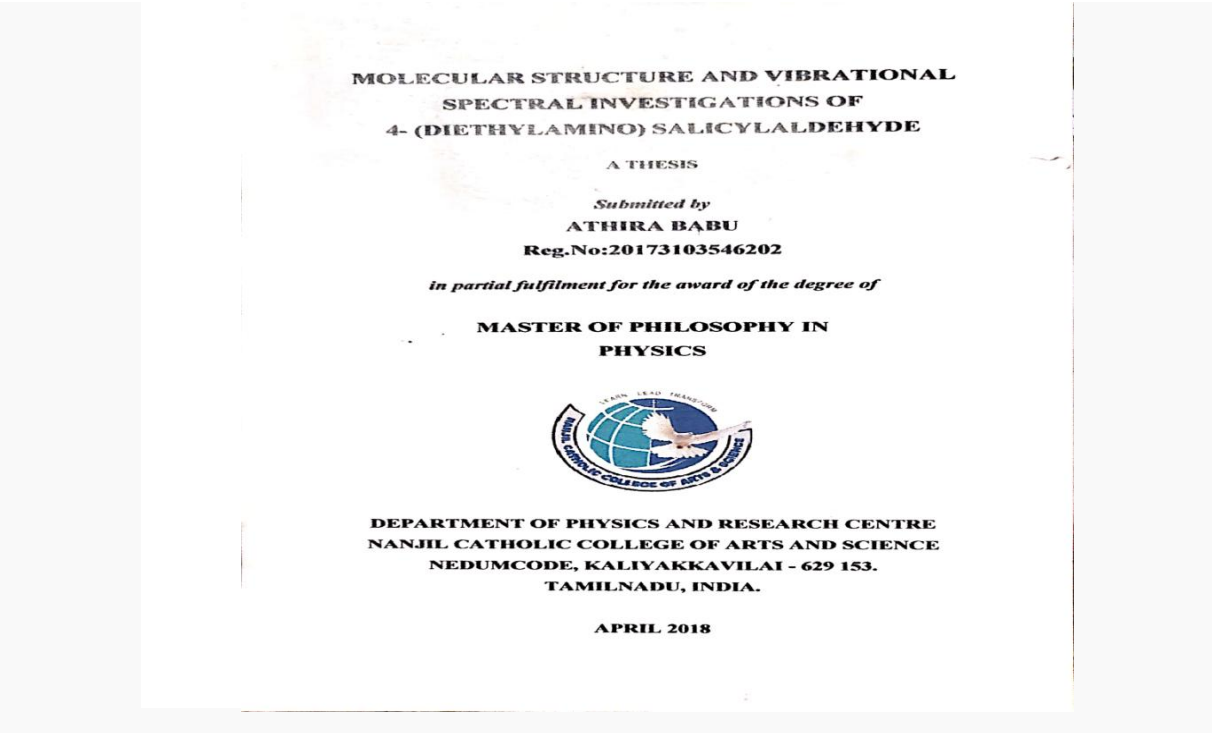
4. Total number of thesis submitted – year wise

37 31

Sl.No	Ref.No	Reg.No	Student Name	Title	Guide Name
20.	PHMSC2120 111	20193102521220	Soorya . S.P	Growth of cadmium Chloride mixed L- Theronine crystal.	Dr. S. Antony Dominic Christopher
21	PHMSC2121 112	20193102521221	Sowmiya . V.	preparation and characterization of Titanium Dioxide nanoparticles using co- precipitation method	Dr. S. Murugavel.
22.	PHMSC2122 113	20193102521222	Sree vidhya . V	Synthesis and characterization of calcium oxide nanoparticles by co- precipitation method.	Dr. T.R. Jeena
23.	PAMSC2123 114	20193102521223	Sruthi . S	Growth and characterization of pure and L- Glutanic acid doped Triglycine Sulphate Single crystals.	Dr. Ayarine C Dhas
24.	PHMSC2124 115	20193102521224	Stobia S	Molecular structural and vibrational. investigation of 2356 Tetra fluro -4- Pyridine carbonitrile.	Dr. M. Amalanathan.
25.	PHMSC2125 116	20193102521225	Vishnu priya	Growth of Cadmium chloride mixed L- Theronine crystal.	Dr. S. Antony Dominic christopher.

5. Innovative findings

5. a) Major innovative findings of M.Sc Projects



MOLECULAR STRUCTURE AND VIBRATIONAL SPECTRAL INVESTIGATIONS OF 4- (DIETHYLAMINO) SALICYLALDEHYDE

A THESIS

Submitted by

ATHIRA BABU

Reg.No:20173103546202

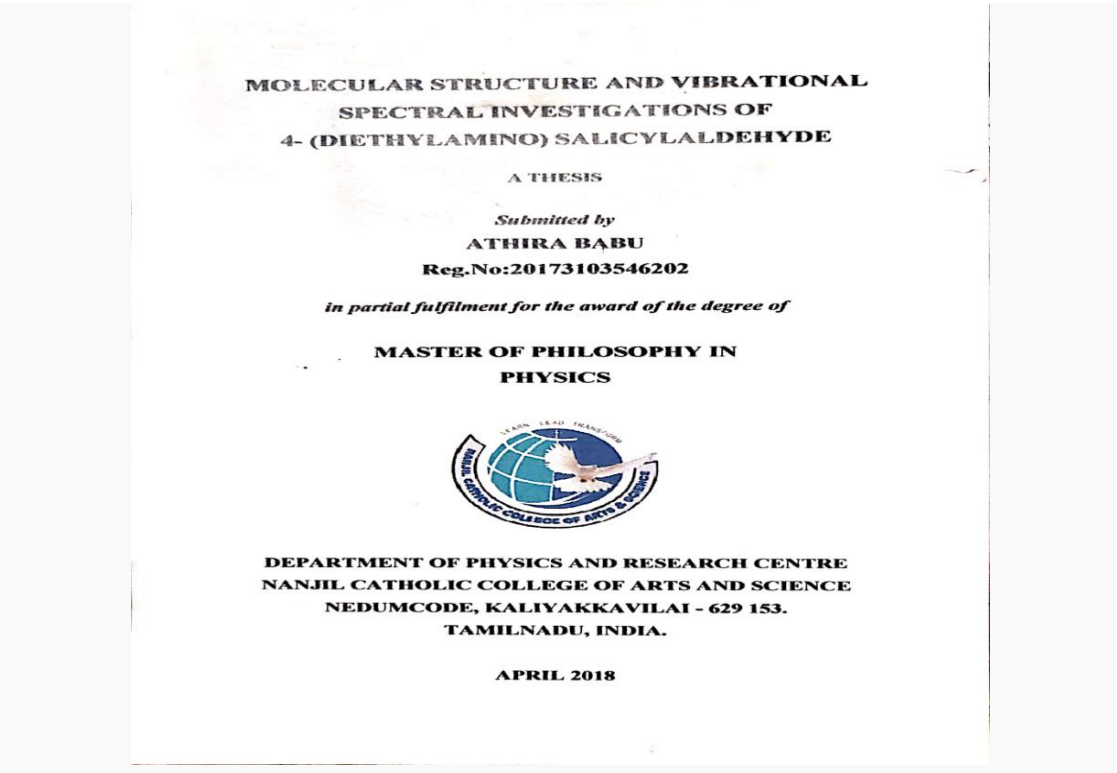
in partial fulfilment for the award of the degree of

MASTER OF PHILOSOPHY IN PHYSICS

DEPARTMENT OF PHYSICS AND RESEARCH CENTRE
NANJIL CATHOLIC COLLEGE OF ARTS AND SCIENCE
NEDUMCODE, KALIYAKKAVILAI - 629 153.
TAMILNADU, INDIA.

APRIL 2018

5. b) Major innovative findings of M.phil projects



MOLECULAR STRUCTURE AND VIBRATIONAL SPECTRAL INVESTIGATIONS OF 4- (DIETHYLAMINO) SALICYLALDEHYDE

A THESIS

Submitted by

ATHIRA BABU

Reg.No:20173103546202

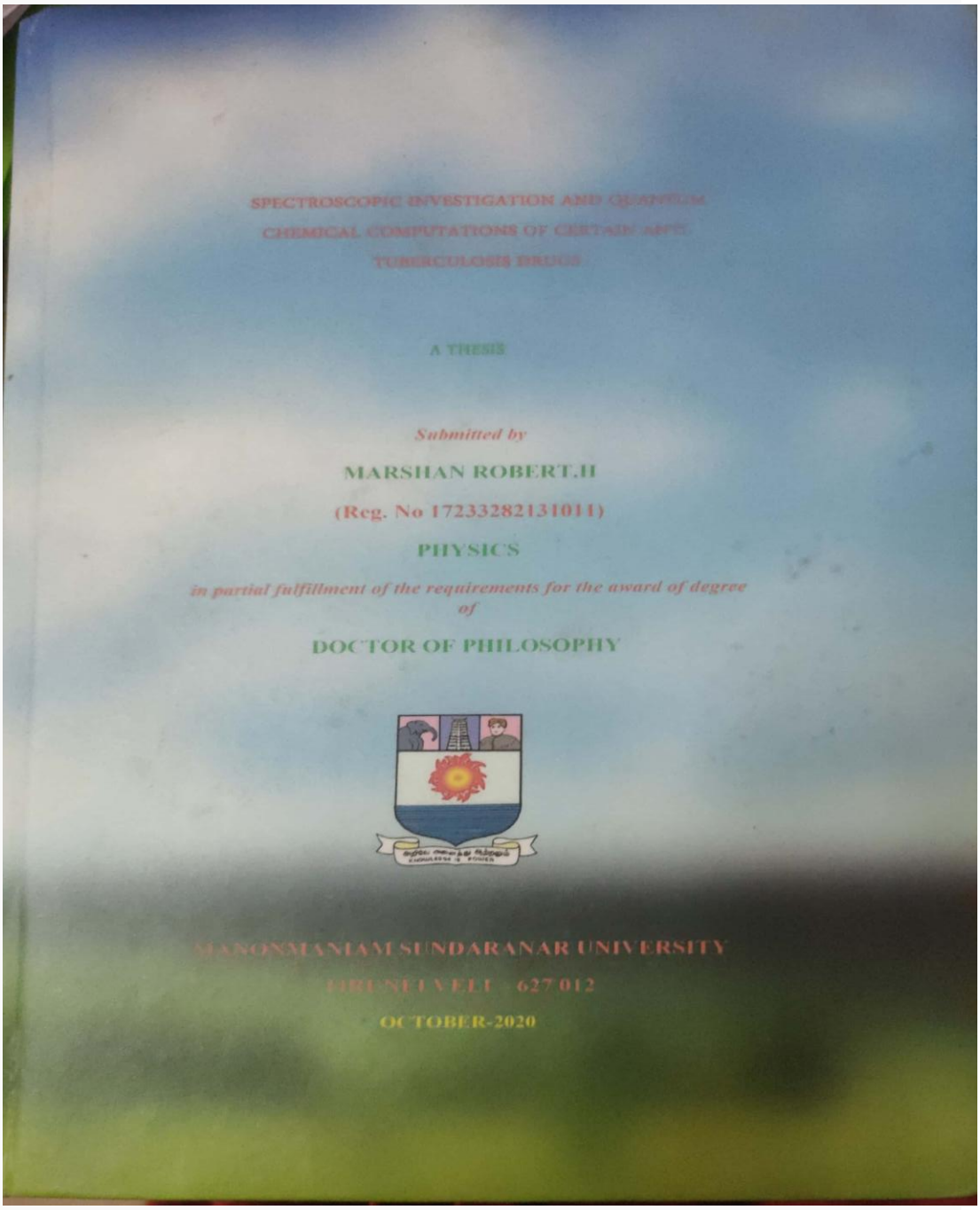
in partial fulfilment for the award of the degree of

MASTER OF PHILOSOPHY IN PHYSICS

DEPARTMENT OF PHYSICS AND RESEARCH CENTRE
NANJIL CATHOLIC COLLEGE OF ARTS AND SCIENCE
NEDUMCODE, KALIYAKKAVILAI - 629 153.
TAMILNADU, INDIA.

APRIL 2018

5.c) Major innovative findings of Ph.D projects



SPECTROSCOPIC INVESTIGATION AND QUANTUM
CHEMICAL COMPUTATIONS OF CERTAIN ANTI-
TUBERCULOSIS DRUGS

A THESIS

Submitted by

MARSHAN ROBERT.H

(Reg. No 17233282131011)

PHYSICS

in partial fulfillment of the requirements for the award of degree of

DOCTOR OF PHILOSOPHY

MANONMANIAM SUNDARANAR UNIVERSITY
TIRUNELVELI - 627 012

OCTOBER-2020

7. Contribution of staff

MANONMANIAM SUNDARANAR UNIVERSITY
TIRUNELVELI-627 012, TAMIL NADU, INDIA
(REACCREDITED WITH B GRADE BY NAAC)

Dr. A. JOHN DE BRITTO
REGISTRAR

Ref. No.MSU/RES/INT/SF/GUIDESHIP/R5/2017. 03.06.2017.

To

Dr. M.R. Bindhu
Assistant Professor of Physics
Nanjil Catholic College of Arts and Science
Kaliyakkavilai

Sir / Madam

Sub: Recognition as an approved Guide – intimation – reg.

Ref: Orders of the Vice – Chancellor dated 25.5.2017

I am by direction, to inform that Guideship has been granted in the Subject of PHYSICS and it is tenable only for the period of your service within the Manonmaniam Sundaranar University jurisdiction.

The maximum number of Ph.D. Scholars under your guidance is 4 (four) only.

Scholars registering under your guidance should opt for a Co-Guide in the recognized research centre at the time of registration itself

This is for information and adherence.

Kindly acknowledge the receipt of this communication.

Yours faithfully,
07/06/17
REGISTRAR

Copy to :

The Principal
Nanjil Catholic College of Arts and Science
Kaliyakkavilai

6/6/17 07/6/17

Ph... 0462-2333741, 2338632
Fax: 0462-2334363, website: www.msuniv.ac.in

PRINCIPAL
Nanjil Catholic College of Arts & Science
Kaliyakkavilai - 629 153

MANONMANIAM SUNDARANAR UNIVERSITY
TIRUNELVELI-627 012 TAMIL NADU, INDIA
(REACCREDITED WITH B GRADE BY NAAC)

Dr. A. JOHN DE BRITTO
REGISTRAR

05.05.2016.

Ref. No.MSU/RES/INT/GUIDESHIP/R5/2016.

To

Dr. M. Amalanathan,
Assistant Professor
Department of Physics,
Annai Velankanni College,
Tholayavattam,
Kanyakumari District

Sir.

Sub: Recognition as an approved Guide – intimation – reg.

Ref. 1. University Ph.D. Regulations (w.e.f.1.7.2013)
2. V.C's Order dated 22.04.2016

With reference to the above, I am by direction, to inform that the request given by you through your College to recognize as an approved Guide (Internal) in the Subject of **PHYSICS** is approved and it is tenable only for the period of your service within the Manonmaniam Sundaranar University jurisdiction.

As per the Ph.D. Regulations (w.e.f. 1.7.2013), the maximum number of Ph.D. Scholars under your guidance is 8.

This is for information and adherence.

Kindly acknowledge the receipt of this communication.

Yours faithfully,

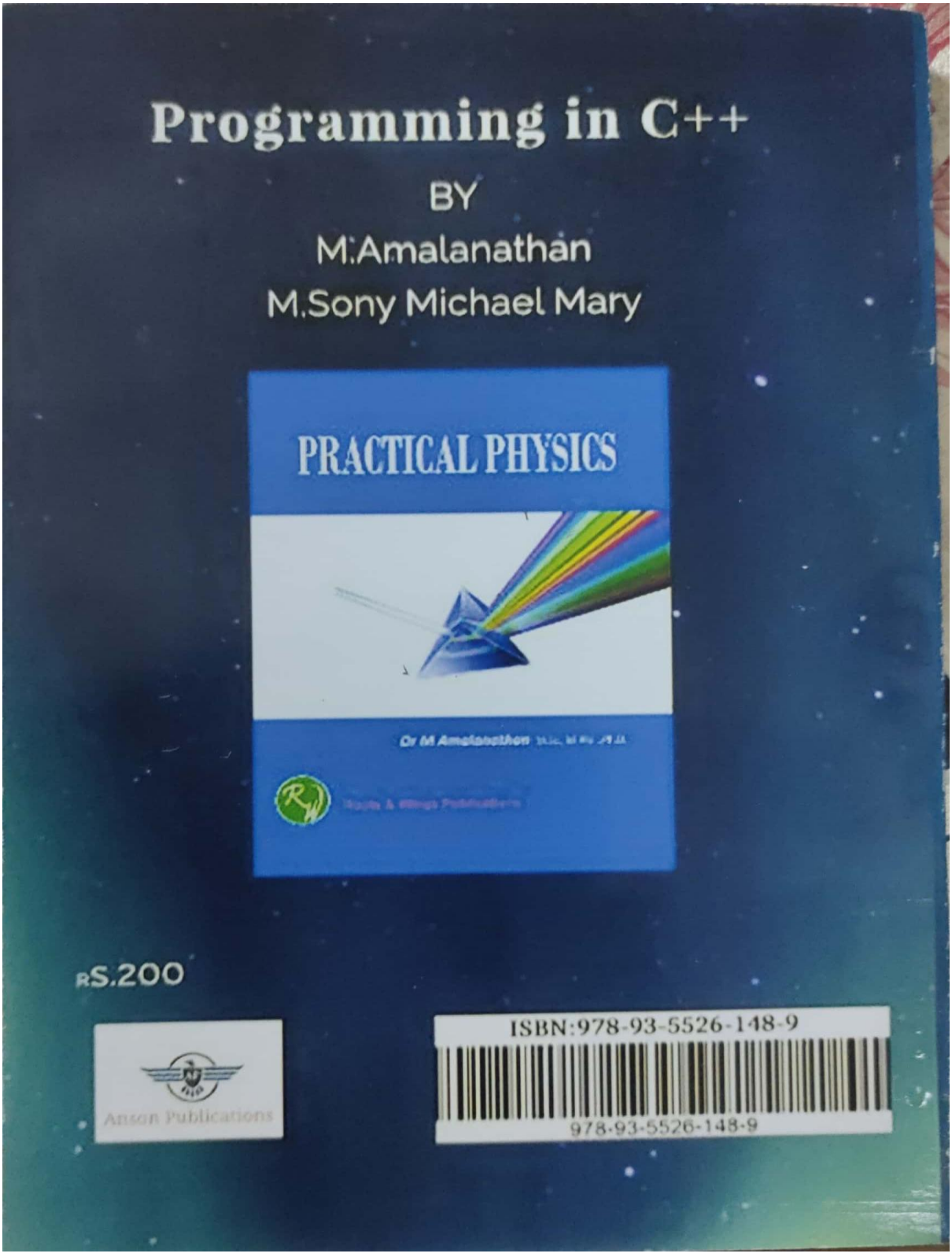
REGISTRAR

Copy to:
The Principal
Annai Velankanni College,
Tholayavattam, Kanyakumari District

Phone: EPABX: 0462- 2333741, 2338721
Fax: 0462-2322973 website: www. msuniv.ac.in

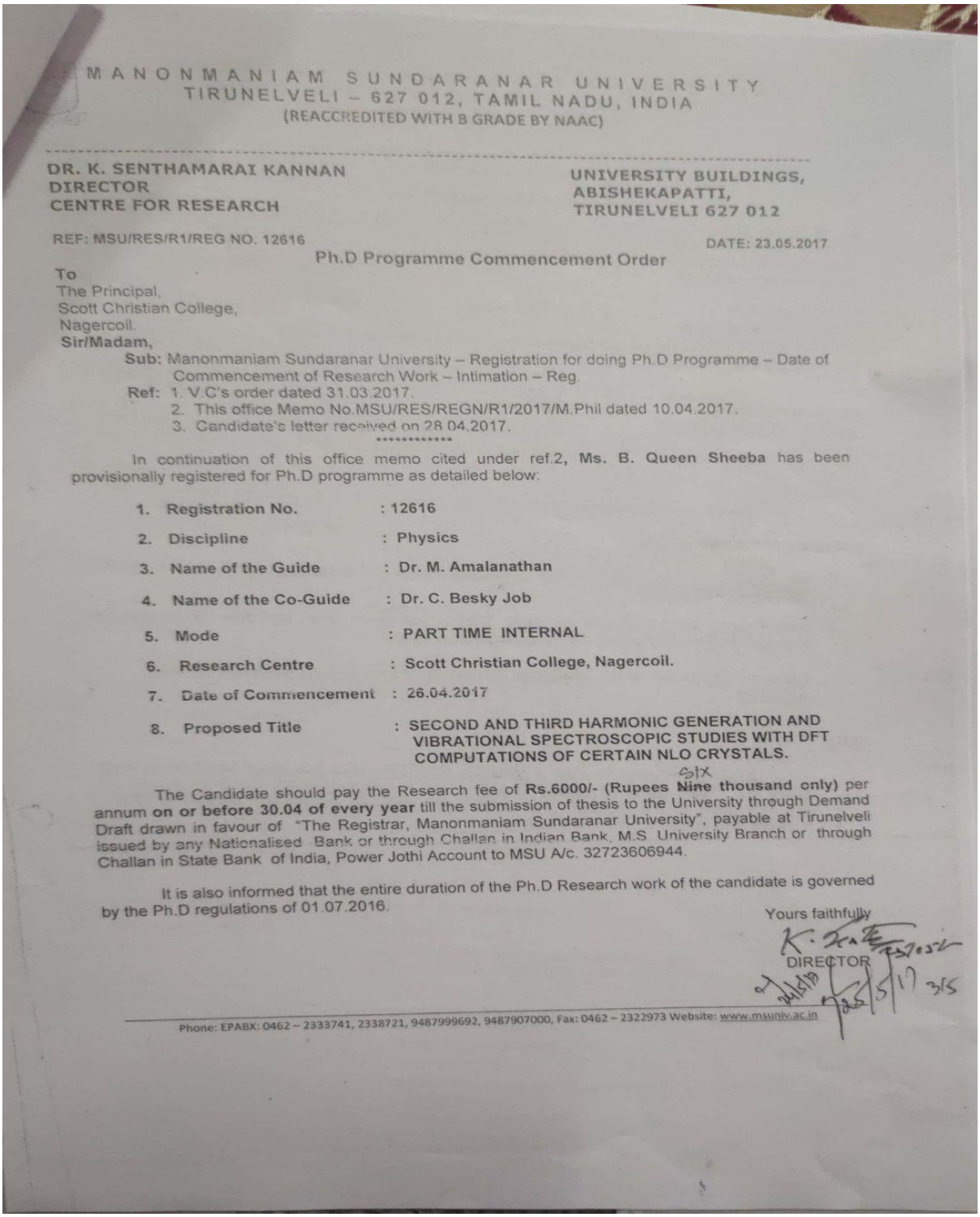
NANJIL CATHOLIC COLLEGE OF ARTS & SCIENCE
KALIYAKKAVILAI
629 153
K.K. DISTRICT
TAMILNADU
INDIA

PRINCIPAL
Nanjil Catholic College of Arts & Sc
Kaliyakkavilai - 629 153



Text book written by Dr. Amalanathan

8. Departmental contributions



MANONMANIAM SUNDARANAR UNIVERSITY
TIRUNELVELI – 627 012, TAMIL NADU, INDIA
(REACCREDITED WITH B GRADE BY NAAC)

DR. K. SENTHAMARAI KANNAN
DIRECTOR
CENTRE FOR RESEARCH

UNIVERSITY BUILDINGS,
ABISHEKAPATTI,
TIRUNELVELI 627 012

REF: MSU/RES/R1/REG NO. 12616

DATE: 23.05.2017

Ph.D Programme Commencement Order

To
The Principal,
Scott Christian College,
Nagercoil.

Sir/Madam,

Sub: Manonmaniam Sundaranar University – Registration for doing Ph.D Programme – Date of Commencement of Research Work – Intimation – Reg.

Ref: 1. V.C's order dated 31.03.2017.
2. This office Memo No.MSU/RES/REGN/R1/2017/M.Phil dated 10.04.2017.
3. Candidate's letter received on 28.04.2017.

****

In continuation of this office memo cited under ref.2, **Ms. B. Queen Sheeba** has been provisionally registered for Ph.D programme as detailed below:

1.	Registration No.	: 12616
2.	Discipline	: Physics
3.	Name of the Guide	: Dr. M. Amalanathan
4.	Name of the Co-Guide	: Dr. C. Besky Job
5.	Mode	: PART TIME INTERNAL
6.	Research Centre	: Scott Christian College, Nagercoil.
7.	Date of Commencement	: 26.04.2017
8.	Proposed Title	: SECOND AND THIRD HARMONIC GENERATION AND VIBRATIONAL SPECTROSCOPIC STUDIES WITH DFT COMPUTATIONS OF CERTAIN NLO CRYSTALS.

The Candidate should pay the Research fee of **Rs.6000/- (Rupees Nine thousand only)** per annum **on or before 30.04 of every year** till the submission of thesis to the University through Demand Draft drawn in favour of "The Registrar, Manonmaniam Sundaranar University", payable at Tirunelveli issued by any Nationalised Bank or through Challan in Indian Bank, M.S University Branch or through Challan in State Bank of India, Power Jothi Account to MSU A/c. 32723606944.

It is also informed that the entire duration of the Ph.D Research work of the candidate is governed by the Ph.D regulations of 01.07.2016.

Yours faithfully

DIRECTOR

Phone: EPABX: 0462 – 2333741, 2338721, 9487999692, 9487907000, Fax: 0462 – 2322973 Website: www.msuniv.ac.in

MANONMANIAM SUNDARANAR UNIVERSITY

CENTRE FOR RESEARCH

ABISHEKAPATTI, TIRUNELVELI – 627 012, TAMILNADU, INDIA

DR. K. SENTHAMARAI KANNAN
DIRECTOR

REF : MSU/RES/R1/JUNE2017

Date : August 10, 2017

Ph.D., Programme Commencement Order

To

MARSHAN ROBERT. H
Charakkal vilai veedu , Muzhucode
Arumanai Post
Tamil Nadu, Kanniyakumari, Pincode - 629151
Mobile No. : 9443016711, Email ID : marshanrobert.h@gmail.com

Sir/Madam,

Sub: Registration for doing Ph.D., programme - Date of Commencement of Research work - Intimation - Reg

Ref: Counseling attended by the candidate.

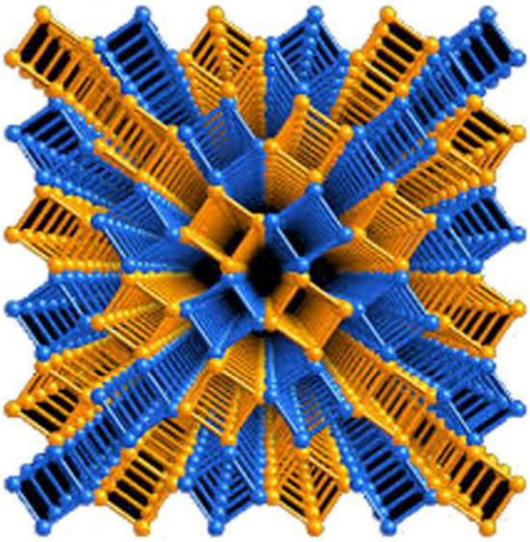
* * * * * * * * * * * * * * * * *

With reference to the above, you are provisionally registered for Ph.D., Programme as detailed below :

1.	Name of the Scholar	: MARSHAN ROBERT. H
2.	Registration No.	: 17233282131011
3.	Discipline	: Physics
4.	Gender	: Male
5.	Social Category (Community)	: BC
6.	Nationality	: indian
7.	PWD Status	: Not Applicable
8.	Admission Based On	: M.Phil
9.	Name of the Supervisor	: Dr M AMALANATHAN
10.	Name of the Co-Supervisor	: Dr D USHA
11.	Mode	: PART TIME EXTERNAL
12.	Research Centre	: Women's Christian College
13.	Date of Commencement	: 10.08.2017
14.	Proposed Title	: SPECTROSCOPIC INVESTIGATION AND QUANTUM CHEMICAL COMPUTATIONS OF CERTAIN TUBERCULOSIS DRUGS
15.	Doctoral Commmittee Members Details	: 1. DR A KAROLIN Assistant Professor, Department of Physics, Nanjil Catholic College of Arts and Science Mobile No. : 0, Email ID : NIL 2. DR G SHANTHI Assistant Professor, Department of Physics, Women's Christian College, Nagercoil Mobile No. : 9489878160, Email ID : shanthidicksm@gmail.com

8.a) Conferences

Third National Conference on ADVANCED MATERIALS (NCAM-2019)



Conference Proceeding

Editted By

Dr.M.Amalanathan

Organized by

DEPARTMENT OF PHYSICS

Nanjil Catholic College of Arts and Science

Kaliyakkavilai

8.b) Webinars


NANJIL CATHOLIC COLLEGE OF ARTS & SCIENCE
Kaliyakkavilai, K.K. Dist -629153.
Approved by the Government of Tamil Nadu
Affiliated to Manonmaniam Sundaranar University, Tirunelveli
Accredited by NAAC with 'B' Grade , Approved by UGC Section under 2(f) & 12(B) of the UGC Act.1956
Three Days Online FDP on
"Recent Trends and Challenges in Advanced Physics"
Organized By
Department of Physics and Research Centre
Date: 3, 4 & 5 June 2020
Resource Persons
Time : 10.00 am to 11.00 am
Dr. S. Shriganesh Prabhu, Professor, TIFR, Mumbai
Applications of THz Spectroscopy in Advanced or Artificial Materials
Dr.Shabi Scientist, CSIR-AMPRI, Bhopal
Flexible Electronics
Dr.S. Murugesh, Associate Professor, IIST Trivandrum
Inverse Scattering Ttechnique and Solitons
• No Registration Fee
•E-Certificate will be provide
For details Contact
Dr.M.Amalanathan, Coordinator
Mob: 9940347178
Dr.Sekarramaniam, HoD
Email:nanjil.physics@gmail.com
For Online Registration :
Rev.Fr.M.Ecermens Micheal, Secretary
Dr.A.Meenakshisundararajan, Principal


NANJIL CATHOLIC COLLEGE OF ARTS & SCIENCE
Kaliyakkavilai, K.K. Dist -629153.
Approved by the Government of Tamil Nadu
Affiliated to Manonmaniam Sundaranar University, Tirunelveli
Accredited by NAAC with 'B' Grade , Approved by UGC Section under 2(f) & 12(B) of the UGC Act.1956
Date: !7th July 2020
Time : 10.30 am to 12.00 pm
National Level Webinar
on nano structures- gas sensing
Resource Person
Dr. K Venkateswara Rao
Professor of nanotechnology & Head,
Center for Nano Science and Technology
JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY
HYDERABAD
• No Registration Fee
• Students, Scholars and Faculties can attend
•E-Certificate will be provide
For details Contact
Dr.Bithu, Assistant Professor
Dr.M.Amalanathan,
Asst Prof & Head-UG Dept of Physics
Mob: 9940347178
Dr.Sekarramasubramanian,
Asst Prof & Head-PG Dept. of Physics
Email:nanjil.physics@gmail.com
Rev.Fr.M.Ecermens Micheal, Secretary
Dr.A.Meenakshisundararajan, Principal
www.free-power-point-templates.com

NANJIL CATHOLIC COLLEGE OF ARTS & SCIENCE

Kaliyakkavilai, K.K. Dist -629153. Approved by the Government of Tamil Nadu.Affiliated to Manonmaniam Sundaranar University, Tirunelveli.Accredited by NAAC with 'B' Grade , Approved by UGC Section under 2(f) & 12(B) of the UGC Act.1956

Department of Physics
Organized
International Webinar on
Emerging Technologies in Science

Resource Person
Dr. P. THILLAI ARASU
Professor,
Department of Chemistry, Wollega University
Ethiopia

•E-Certificate will be provided
• Meeting Link : https://meet.google.com/bbd-wmko-gkr
•All are requested to join before 15 minutes

Date: 26th March 2021

Time : 11.00 am to 12.30 pm

For details Contact
Dr.S. Antony Dominic Christopher, Assistant Professor
Dr.M.Amalanathan, Asst Prof & Head-UG Dept of Physics
Dr.P.Sekar Ramasubramanian, Asst Prof & Head-PG Dept. of Physics
Email:nanjil.physics@gmail.com

Rev.Fr.M.Eckermens Michael, Secretary

Dr.A.Meenakshisundararajan, Principal

NANJIL CATHOLIC COLLEGE OF ARTS & SCIENCE

Kaliyakavilai, K.K. Dist -629153. Approved by the Government of Tamilnadu. Affiliated to Manonmaniam Sundaranar University, Tirunelveli . Accredited by NAAC with 'B' Grade , Approved by UGC Section under 2(f) & 12(B) of the UGC Act.1956

DEPARTMENT OF PHYSICS ORGANIZING AN INTERNATIONAL WEBINAR ON

COMPUTATIONAL CAPABILITIES OF SCIGRESS

RESOURCE PERSON
Wojtek Plonka
Senior Scientist at FQS Poland
Kraków, woj. małopolskie,
Polska

DATE
8th April 2021
Time: 4 pm to 5 pm

For details Contact
Mr.F.Sahayaraj,Assistant Professor,
Dr.M.Amalanathan, Asst Professor & Head-UG Dept of Physics
Dr.P.Sekar Ramasubramanian, Asst Professor& Head-PG Dept. of Physics
Email:nanjil.physics@gmail.com

•E-Certificate will be provided
• Meeting Link : meet.google.com/spa-cuir-ojz
•All are requested to join before 15 minutes

Rev.Fr.M.Eckermens Michael, Secretary

Dr.A.Meenakshisundararajan, Principal

8.c) Workshop

Department of Physics
Nanjil Catholic College of Arts & Science
Kaliyakkavilai, Tamil Nadu

SIAS Research Forum
Kohinoor
Calicut University, Kerala

6-Day Hands-on Training on

COMSOL MULTI-PHYSICS

Participation Certificate

This is to certify that

Mr./Ms. ***Dr. T. R. Jeena***

has successfully participated in 6-Day Hands-on Training Programme on **COMSOL MULTI-PHYSICS Software** during 25 – 30 September 2021 conducted by SIAS Research Forum in connection with the Department of Physics, Nanjil Catholic College of Arts & Science, Kaliyakkavilai, Tamil Nadu.

Dr. M SundaraRajan
Principal, Nanjil Catholic College of Arts and Sceince

Dr. Hijas KM
Director, Spark Institute of Advanced Science

Criterion IV

Infrastructure and Learning Resources

The department functions in a spacious way with modern infrastructure equipped with Computer in UG, PG, M.Phil, and Research laboratories. All classrooms have modern facilities with good ventilation and lighting. There is a commendable department library with large collection of books on various branches of physics.

4.1 Infrastructure of department of physics

- Department has 3 UG, 2 PG and one staff room. The details of each classroom, lab and staff room are listed as follows:

Materials	B.Sc. 1st year	B.Sc. 2nd year	B.Sc. 3rd year	M.Sc. 1st year	M.Sc. 2nd year	UG Lab	PG Lab	Research Lab	Staff Room
Black board	1	1	1	1	1	-	1	-	1
Desk	13	16	16	-	-	-	-	-	2
Bench	13	16	16	-	-	-	-	-	-
Fan	5	5	5	4	3	10	10	10	4
Tube light	6	6	6	4	5	11	9	9	3
Window	4	4	4	2	2	12	12	12	2
Door	2	2	2	2	2	2	2	1	2
Bureau	-	-	-	-	-	1	-	1	-
Practical Table	-	-	-	-	-	12	9	-	-
Chair	-	-	-	30	32	53	38	27	12
Table	1		1	1	1	3	3	1	10
Camera	-	-	-	-	-	1	1	1	-
Phone	-	-	-	-	-	1	1	1	1
Computer	-	-	-	-	-	-	-	11	1
Projector with CPU	1	1	1	-	-	-	-	1	-
Book self	-	-	-	-	-	1	1	1	2

- The department has a well-equipped UG, PG, M.Phil and Research Laboratory and very good infrastructure.
- Students use these equipments to learn the concepts of physics during practical hours.
- Department infrastructure supports smooth teaching-learning process.

4.1.1 Infrastructure of Teaching Resources

The following infrastructure available as teaching resources in physics department

i. Learning Resources include resources and infrastructure required for class room teaching.

ii. ii All the classrooms are incorporated with neat blackboard for teaching using chalks.

. Neat white walls in all the class rooms are highly helpful for teaching using OHP sheets.

iii. In addition with normal blackboard, each classroom is enabled with PPT projector for teaching using PPTs.

iv. All the classrooms are well maintained with full air flow for the functioning of smooth teaching learning process.

v. Physics laboratory is well equipped with good demo physics apparatus, instruments and computers for teaching in laboratory.

vi. Students are learning concepts in physics effectively by the lecturers delivered by the staffs.

vii. The department staffs are contributed their personal books for the students for reference.

4.1.2 Infrastructure of Learning Resources

- Students are learning concepts in physics effectively by PPT presentation and the lecturers delivered by the staffs.
- In UG and PG level, assignment submission is mandatory for internal marks. By preparing the assignments the students learn about the subject deeply.
- In PG level, seminar presentation is mandatory for their internal marks. For the preparation of seminar presentation students learn subject matters with how to prepare PPT and how to handle Projector and Computer with audio system.
- The department permits the students to access Wi-Fi for gathering ideas about their projects, subject matters and learning C^{++} programming.
- Students are learning by using computers MS office, excel and Photoshop for their preparation.
- Students are allowed to take department library books for learning purpose.
- The classrooms are equipped with modern facilities and learning resources to achieve academic excellence.

4.1.3. Facilities for cultural activities, sports, games (indoor, outdoor), gymnasium, yoga etc.

Cultural activities:

The department has utilized facilities for supporting extra-curricular activities related to culture and fine arts. Auditorium can accommodate more than 2000 students. Each semester, department of physics conducts cultural program on fine arts day in the auditorium or seminar hall. The department students make use of auditorium or seminar hall by participating in various celebrations and events organised by college. In 2022, there are 25 students participated in cultural program on fine arts day and 4 students participated in cultural program on college day celebration.

Sports and Games:

Students are motivated to participate actively in sports and games.

Facilities for Sports and Games:

200 meters track for all field events, handball, cricket, kho-kho, badminton, table tennis (Indoor), kabadi, hockey, volley ball, and chess ground is available in our campus. The number of participant's for each game and sports is listed as follows:

Games	2017-2018	2018-2019	2019-2020	2020-2021	2021-2022
Athletics Women	9	-	5	-	-
Athletics Men	16	-	2	1	-
Kho-Kho Women	5	12	3	6	21
Kho-Kho Men	11	8	-	-	-
Kabadi Women	-	-	-	-	9
Kabadi Men	21	13	-	-	11
Cricket	13	12	-	-	13
Badminton Women	-	-	-	-	2
Badminton Men	-	14	-	-	-
Volleyball Men	-	10	-	-	11
Handball Women	-	-	-	-	14
Handball Men	-	12	11	-	13
Chess Women	3	1	4	-	2
Chess Men	4	2		-	2
Table Tennis Womens	-	-	4	-	
Carrom Womens	-	-	-	-	2
Carrom Mens	-	-	-		2

In every year students participate in various sports and games. In our physics department 14 girls and 19 boys are participated in different athletic events such as running, jumping, shortput and javelin throws. 70 girls and 192 boys had participated in outdoor games such as kho-kho, Kabadi, Cricket, Volleyball and Handball. 18 girls and 24 boys had participated in indoor games such as Badminton, Chess, Table Tennis and Carroms.

Gymnasium:

At the time of playground hours students make use of playground and gymnasium to improve the skills in the respective games as well as to enhance the physical fitness.

Yoga:

Yoga is included in the curriculum to provide adequate knowledge to the students. All the 2nd year UG students have yoga theory paper and the theory is handled by the concerned staff. The department students are practicing yoga under the guidance of physical director. Yoga improves strength, balance and flexibility of students.

4.2 Library as a Learning Resource

Department of physics has department library and it has 116 books related to varies branches of physics.

Topics	Number of Books
Optics	23
Electronics	12
Classical Mechanics	4
Quantum Mechanics	5
Electro Magnetic Theory	7
Atomic and Molecular Spectroscopy	5
Nuclear Physics	4
Statistical Mechanics	5
Solid State Physics	9
C^{++} Programme	2
Modern Physics	2
Numerical Methods in Physics	6
Energy Physics	3
Physics	13
Research Methodology	2
Environmental studies	1
Value Based Education	2
Other Books	11

Research resources in library:

The department library has the following research resources which are immensely helpful for students, scholars and faculties.

i. PG dissertations: 128
ii. M.Phil dissertations: 17
iii. PhD thesis: 3

The staffs take department library books for reference and teaching purpose. Books are available to students according to the syllabus. Students take department library books for the purpose of learning and assignments writing.

4.3. IT Facilities for Teaching and Learning

- In our physics department, we have 11 desktop computers with internet facility in the research lab.
- Those computers can be utilized by staff and students.
- They can access internet by their own login portal with their personal ID and password.
- Staff using these computers to teach C^{++} programming for UG and PG students.
- Staff prepares notes from e-sources for teaching purpose by using these computers.
- UG, PG and research students using these computers for C^{++} programming, project work and research work. The students also learn the basic ideas about MS office, Paint, Excel, Photoshop and project related software's such as Gaussian 09W, Origin, Multiwfn, Pyrx, Pymol and Autodock.
- We are using four land lines for internal communication purpose in the physics department. Staff and lab assistants are attending the phone calls.

4.4 Maintenance of Campus Infrastructure

4.4.1 Procedures for Maintaining Classrooms

- Classrooms are cleaned by the housekeepers every day and kept them opened and closed as per the instruction of office manager.
- Staff and students must ensure that all power supply is switched off when leaving the classroom.
- Students purposefully scribbling, breaking or causing any kind of damage to the classroom equipment will be identified by the staff and informed to the HOD. The HOD takes necessary action against those students and is penalized.

- All requirements, repairs and servicing of the equipment/furniture in the class room or any problems detected on the building infrastructure are to be reported in writing by the class teacher to the HOD. The HOD reports it to the manager who in turn shall attend on these issues after obtaining the necessary sanctions from the Principal.

4.4.2 Procedures for Maintaining Laboratory

Overall maintenance of the laboratory contains two parts

i. Maintenance of instruments
ii. Maintenance of cleanliness inside the lab

Maintenance of instruments

All the instruments in the physics laboratory are constantly checked and verified on weekly basis. The process of checking and verification is always entered in the following three registers

i. Stock register
ii. Lab maintanence register
iii. Breakage register

Stock register

Stock register consists the details of all the equipments in the laboratory. This register reveals the details of all the available equipments in the lab with their date of purchase, quantity and price.

Lab maintenance register

If any damage happened in the instruments, immediately it will be noted separately by the lab assistants.

Lab assistants first check the working conditions of the instruments and try to rectify the fault by her own efforts. In case the problem is not rectified, she will note it in the lab maintenance register which shows the details of all the problematic instruments.

Breakage register

The details of all the broken instruments are entered in breakage register which gives the details of names and counting of broken instruments.

Service mechanism in physics laboratory:

In our department all the equipments are serviced and maintained by the following three ways.

1. Rectification by internal faculty in charge of laboratory maintenance.
2. Rectification by external service engineer.

3. Purchasing of new instruments.

Rectification by internal faculty in charge:

Lab maintenance register is verified by concerned faculty in charge on weekly basis. The in charge faculty fix the error of the instrument by his own effort at the most of the time.

Rectification by external service engineer:

If the faculty in charge finds any serious issues in the instrument, the related service engineer is called with the permission of HOD. Service engineer rectifies the damages.

Replacing of Defective instruments:

If the service engineer confirmed that the instrument is broken, then immediately the detail is entered in breakage register which is verified by the HOD on weekly basis. The HOD informs the details of defective instruments to the secretary through the principal. The college secretary takes necessary action on his request immediately.

Maintenance of cleanliness inside the lab

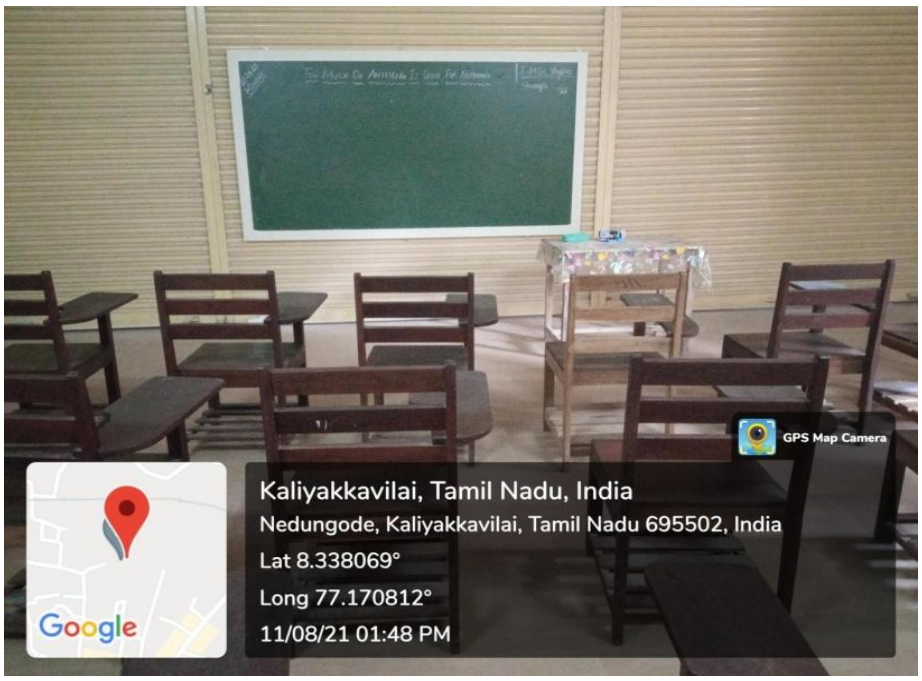
Cleanliness of the physics laboratory is always well maintained by the lab assistants with the help of housekeeping servants.

4.4.2 Procedures for Maintaining Department Library

- ✓ If the students or staff takes a book from department library, it is registered in department library register.
- ✓ The books must be returned before the end of the each semester.
- ✓ If the staff or students not returning the book within the prescribed period they must pay the fine, if they lost the book they have to pay the price of the book.
- ✓ Department library books names are entered and maintained in the book bank register.
- ✓ Damaged books are refurbished by binding.

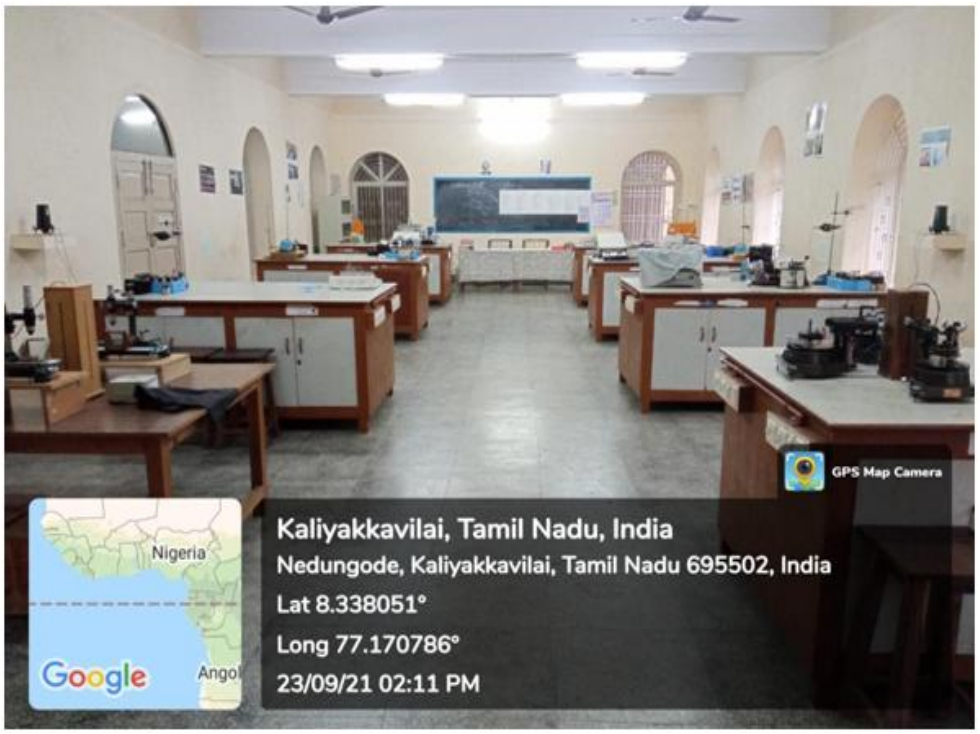
IST B.SC CLASS ROOM

IST M.SC CLASS ROOM

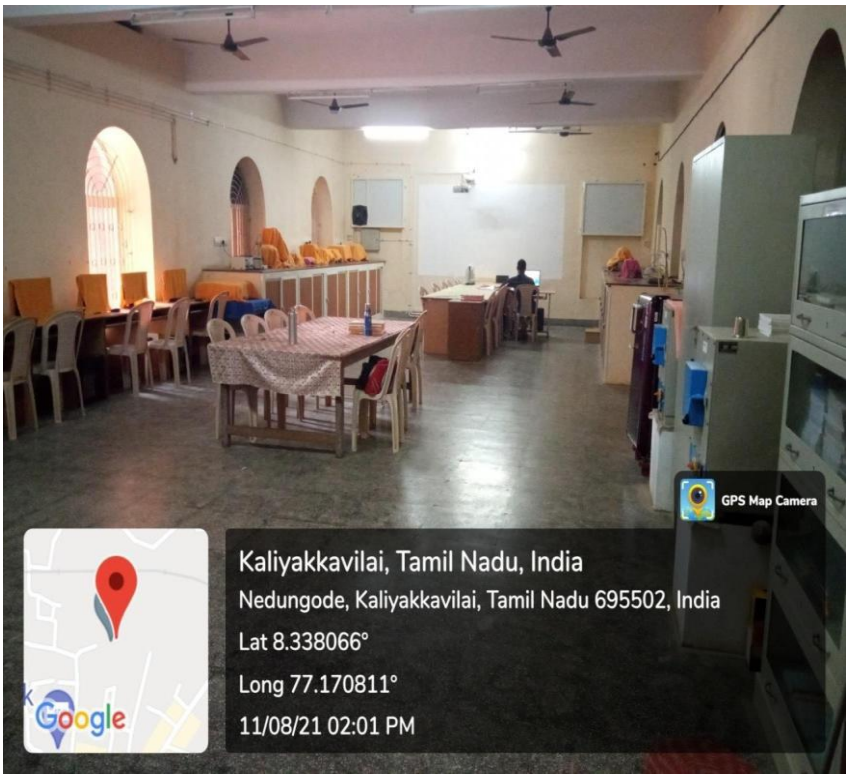


UG PHYSICS LABORATORY

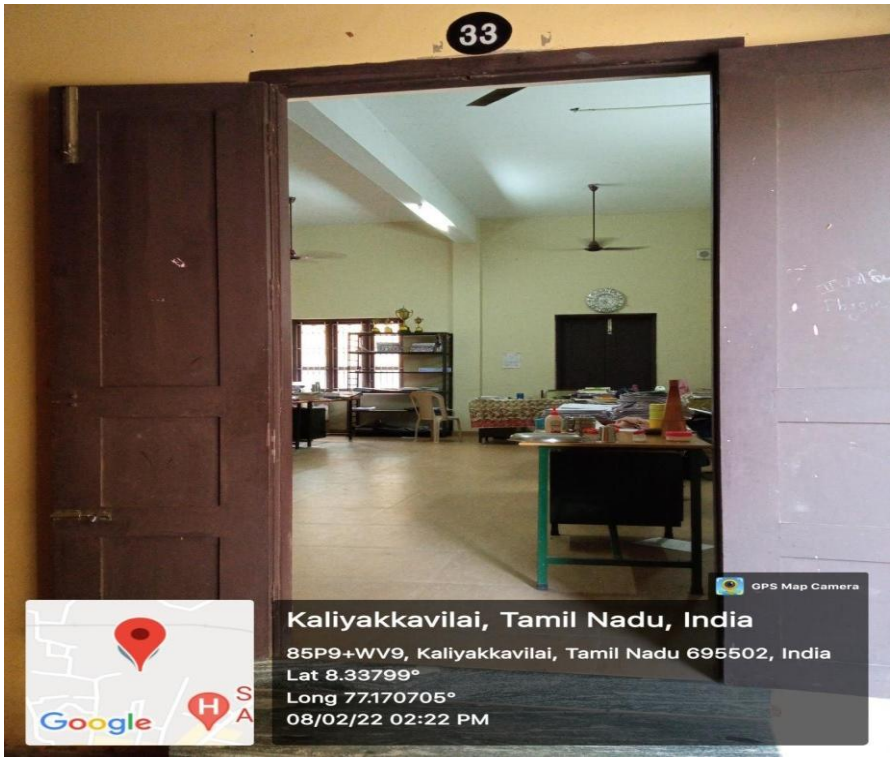
PG PHYSICS LABORATORY



RESEARCH LABORATOY



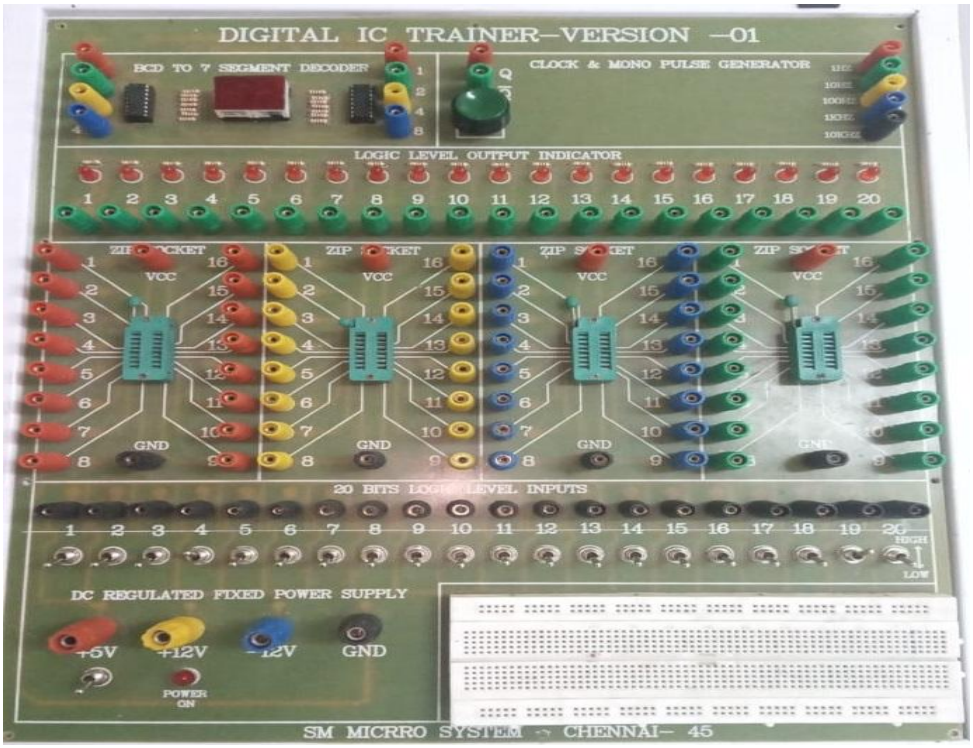
PHYSICS DEPATRMENT STAFF ROOM



DIELECTRIC CONSTANT

PH METER

DIGITAL IC TRAINER BOARD

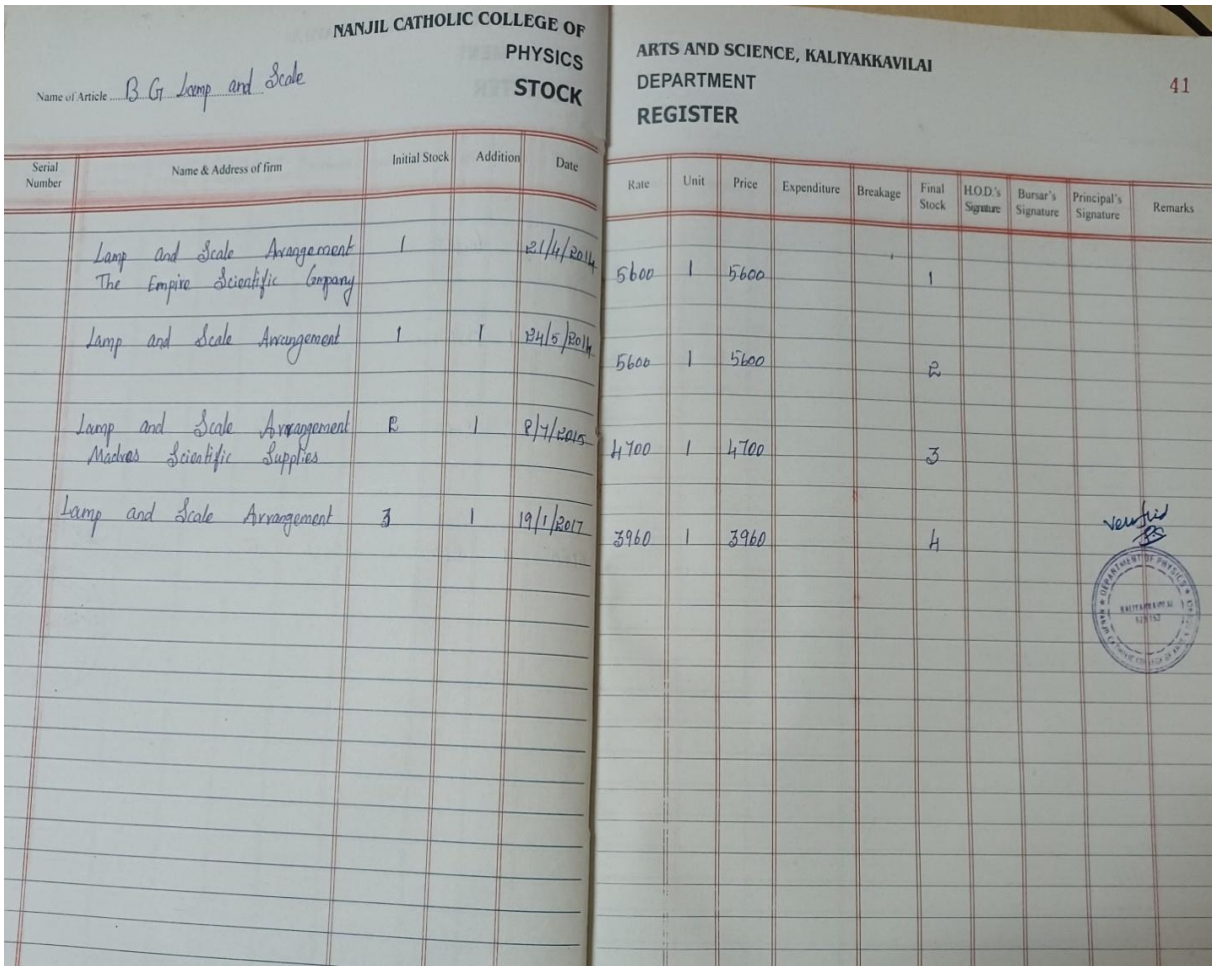


DIGITAL CRO

DIP- COATER

U-V VISIBLE SPECTROPHOTOMETER

DEPARTMENT LABORATORY STOCK REGISTER



NANJIL CATHOLIC COLLEGE OF ARTS AND SCIENCE, KALIYAKKAVILAI

PHYSICS DEPARTMENT

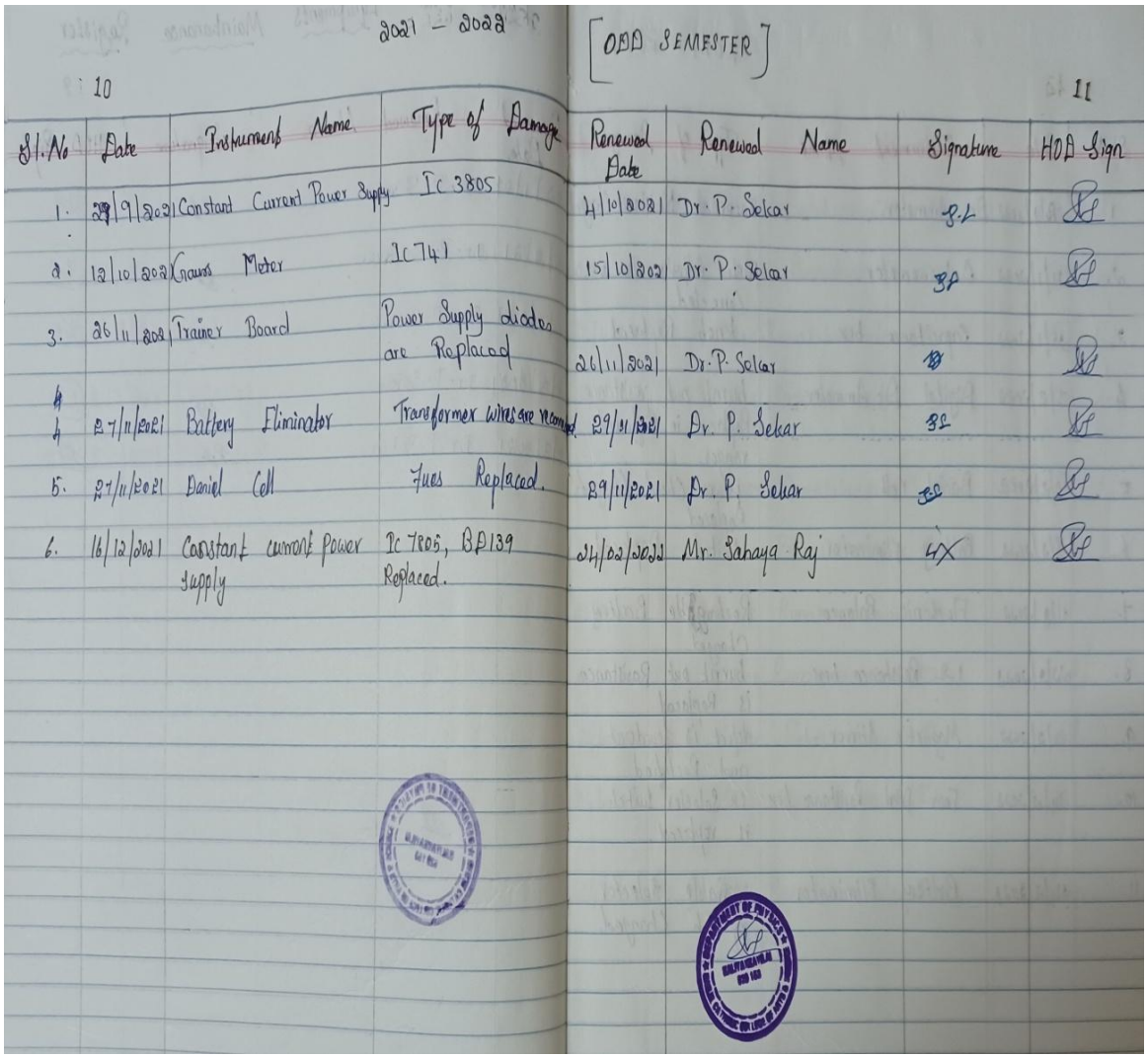
STOCK REGISTER

41

Name of Article B.G. Lamp and Scale

Serial Number	Name & Address of firm	Initial Stock	Addition	Date	Rate	Unit	Price	Expenditure	Breakage	Final Stock	HOD's Signature	Bursar's Signature	Principal's Signature	Remarks
	Lamp and Scale Arrangement The Empire Scientific Company	1		21/4/2014	5600	1	5600			1				
	Lamp and Scale Arrangement	1	1	24/5/2014	5600	1	5600			2				
	Lamp and Scale Arrangement Madras Scientific Supplies	2	1	8/7/2015	4700	1	4700			3				
	Lamp and Scale Arrangement	3	1	19/1/2017	3960	1	3960			4				

DEPARTMENT LABORATORY MAINTANANCE REGISTER



2021 – 2022

[ODD SEMESTER]

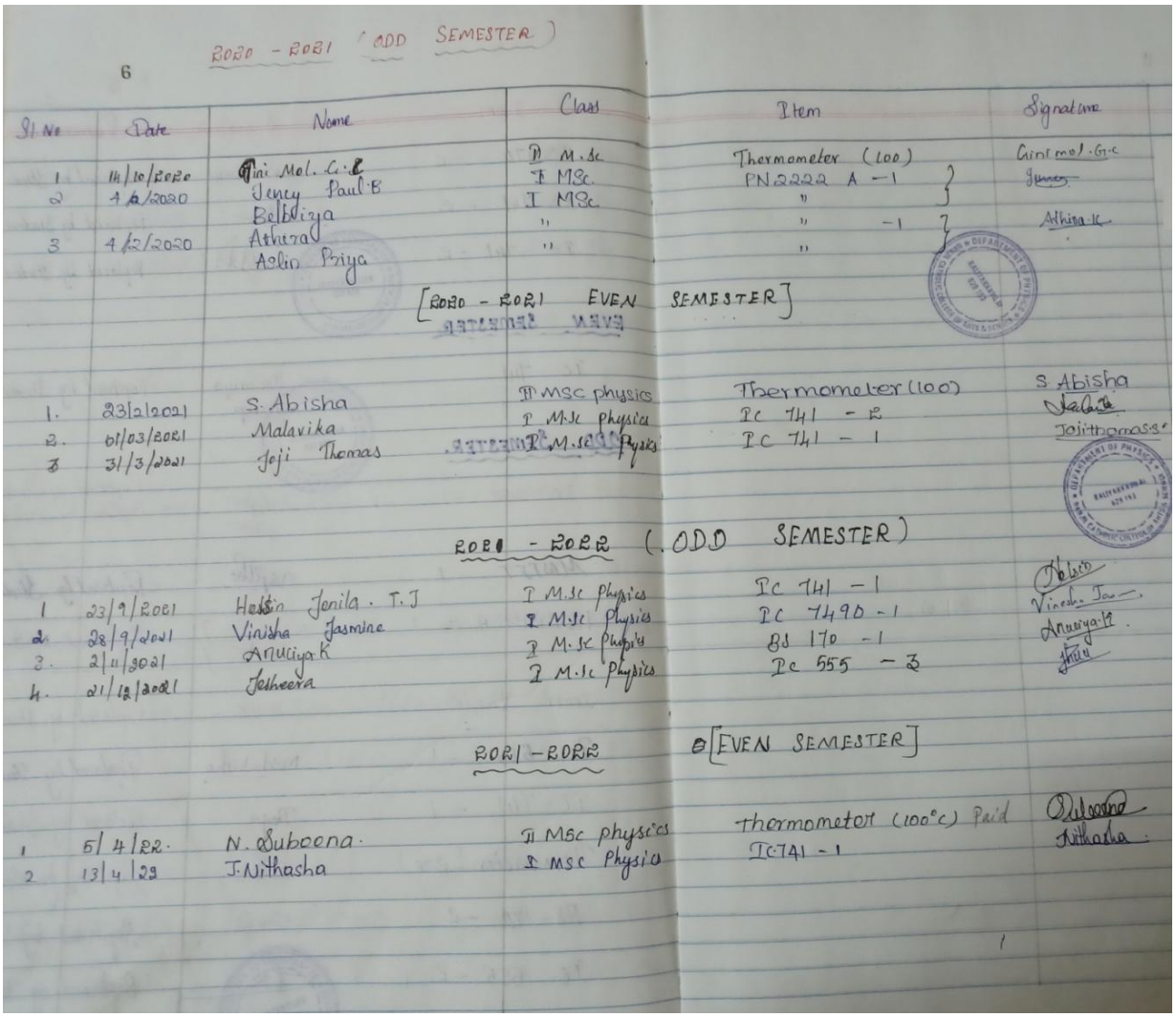
10

Sl.No	Date	Instrument Name	Type of Damage
1.	28/9/2021	Constant Current Power Supply	IC 3805
2.	12/10/2021	Krauss Meter	IC741
3.	26/11/2021	Trainer Board	Power Supply diodes are Replaced
4	27/11/2021	Battery Eliminator	Transformer wires are rewound
5.	27/11/2021	Daniel Cell	Fues Replaced.
6.	16/12/2021	Constant current power supply	IC 7805, BD139 Replaced.

11

Renewal Date	Renewal Name	Signature	HOD Sign
4/10/2021	Dr. P. Sekar		
15/10/2021	Dr. P. Sekar		
26/11/2021	Dr. P. Sekar		
29/11/2021	Dr. P. Sekar		
29/11/2021	Dr. P. Sekar		
24/02/2022	Mr. Sahaya Raj		

DEPARTMENT INSTRUMENT BREAKAGE REGISTER



6

2020 - 2021 (ODD SEMESTER)

Sl No	Date	Name	Class	Item	Signature
1	14/10/2020	Mini Mol. C.S	II M.Sc	Thermometer (100)	Mini mol. C.S
2	4/12/2020	Jency Paul B	I MSc	PN 2222 A - 1	Jency
		Belbiziya	I MSc	"	
3	4/12/2020	Athira J	"	" - 1	Athira J
		Aslin Priya	"	"	

[2020 - 2021 EVEN SEMESTER]

1.	23/2/2021	S. Abisha	II MSc physics	Thermometer (100)	S. Abisha
2.	01/03/2021	Malavika	I M.Sc Physics	IC 741 - 2	Malavika
3	31/3/2021	Joji Thomas	I M.Sc Physics	IC 741 - 1	Joji Thomas

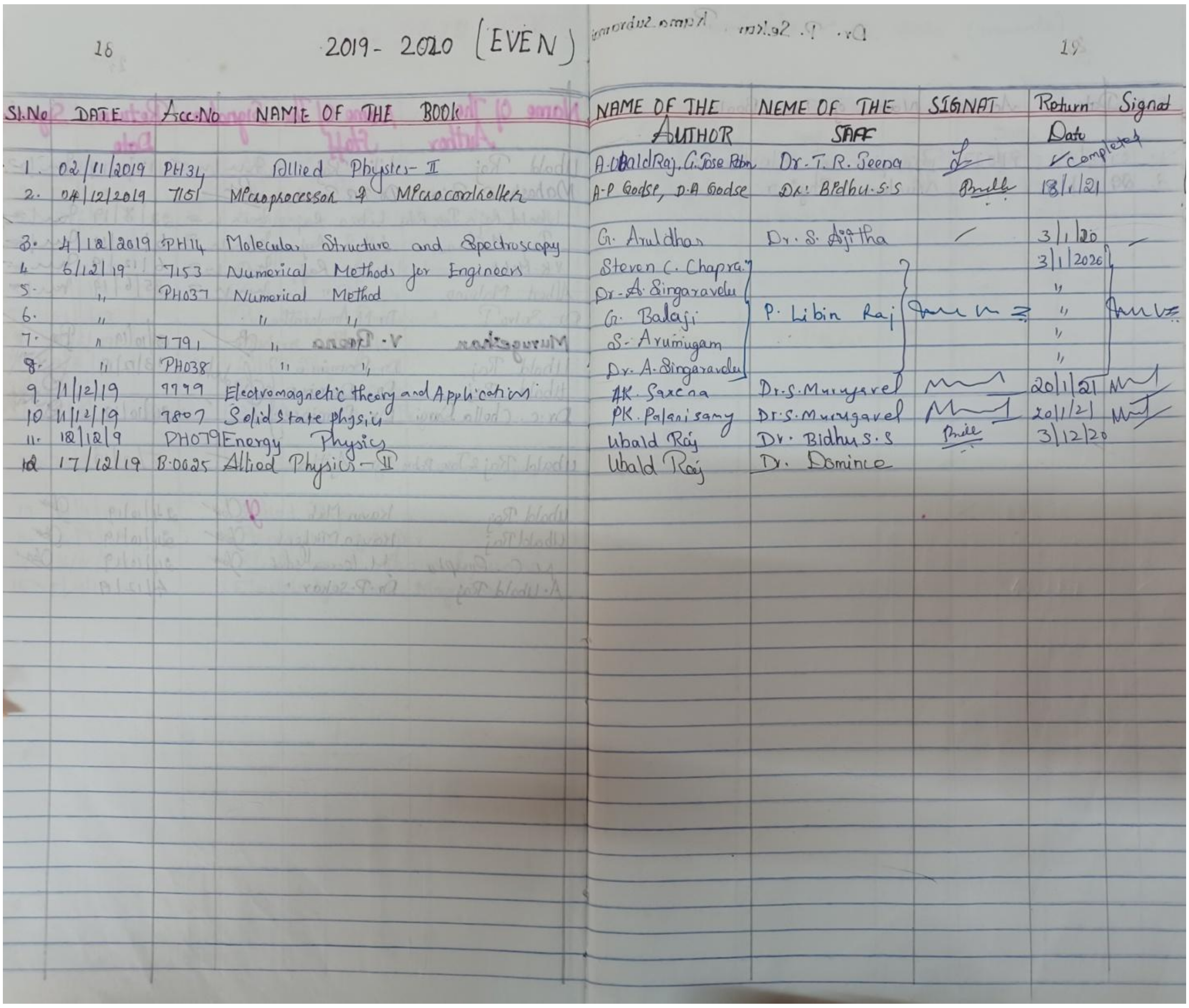
2021 - 2022 (ODD SEMESTER)

1	23/9/2021	Helsin Jenila . T.J	I M.Sc Physics	IC 741 - 1	Helsin
2.	28/9/2021	Vinisha Jasmine	I M.Sc Physics	IC 7490 - 1	Vinisha Jas.
3.	2/11/2021	Aruuciyar K	I M.Sc Physics	BS 170 - 1	Aruuciyar K
4.	21/12/2021	Jeshreera	I M.Sc Physics	IC 555 - 3	Jeshreera

2021 - 2022 [EVEN SEMESTER]

1	5/4/22.	N. Suboena.	II MSc physics	Thermometer (100°C) Paid	Suboena
2	13/4/22	J. Nithasha	I MSc Physics	IC 741 - 1	Nithasha

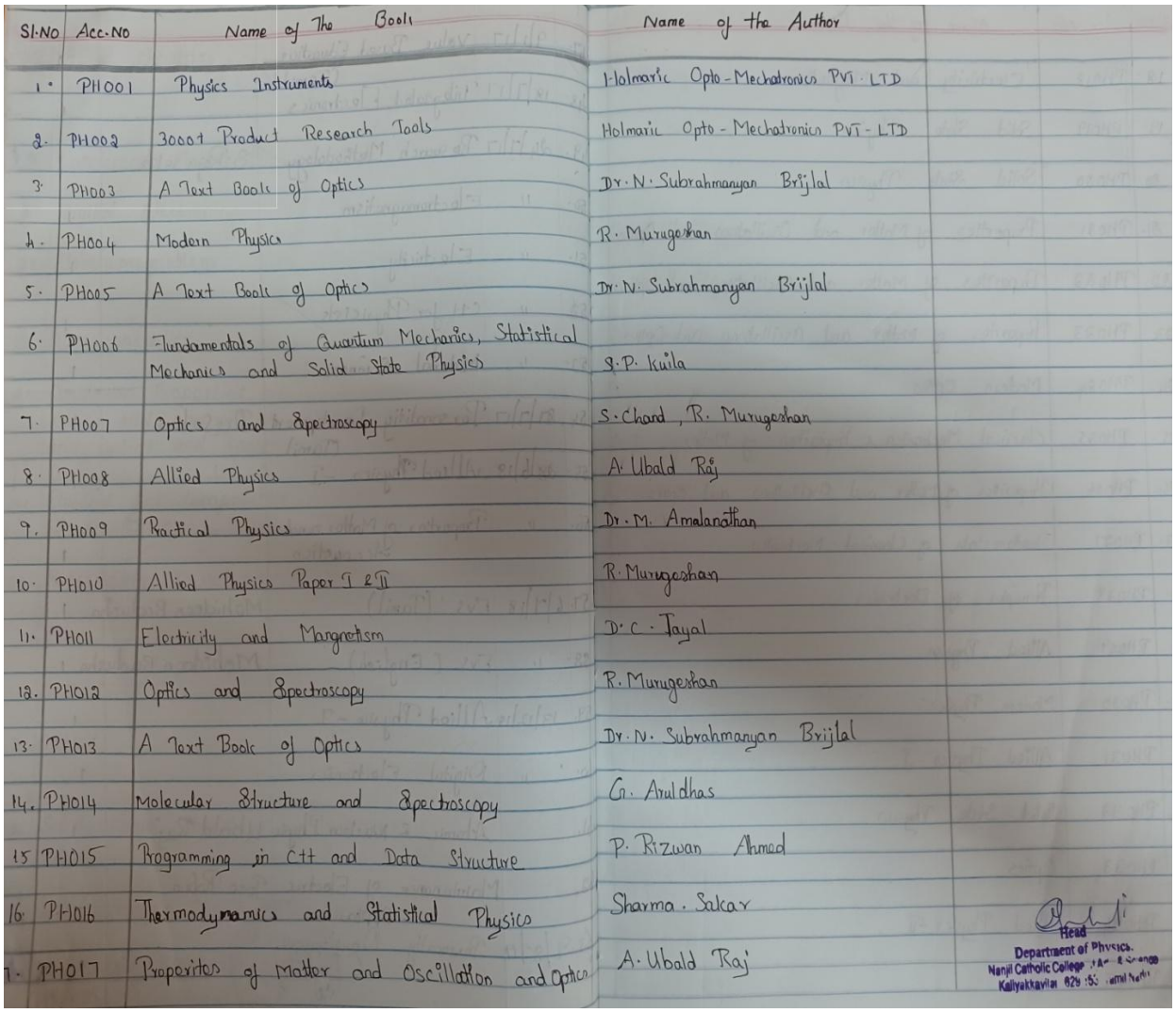
DEPARTMENT LIBRART REGISTER



18   2019- 2020 (EVEN)   19

Sl.No	DATE	Acc.No	NAME OF THE BOOK	NAME OF THE AUTHOR	NEME OF THE STAFF	SIGNAT	Return Date	Signat
1.	02/11/2019	PH34	Allied Physics- II	A.Ubald Raj, G.Jose Robin	Dr. T. R. Seena		✓ completed	
2.	04/12/2019	7151	Microprocessor & Microcontroller	A.P Godse, D.A Godse	Dr. Bidhu. S.S		18/1/21	
3.	4/12/2019	PH14	Molecular Structure and Spectroscopy	G. Aruldhas	Dr. S. Ajitha	✓	3/1/20	✓
4	6/12/19	7153	Numerical Methods for Engineers	Steven C. Chapra			3/1/2020	
5.	"	PH037	Numerical Method	Dr. A. Singaravelu			"	
6.	"		" "	G. Balaji	P. Libin Raj		"	
7.	"	7791	"	S. Arumugam			"	
8.	"	PH038	" "	Dr. A. Singaravelu			"	
9	11/12/19	7779	Electromagnetic theory and Application	AK. Saxena	Dr. S. Murugavel		20/1/21	
10	11/12/19	7807	Solid state physics	PK. Palanisamy	Dr. S. Murugavel		20/1/21	
11.	12/12/9	PH079	Energy Physics	Ubald Raj	Dr. Bidhu S.S		3/12/20	
12	17/12/19	B.0025	Allied Physics - II	Ubald Raj	Dr. Domince			

DEPARTMENT BOOK BANK REGISTER



Sl.No	Acc.No	Name of The Book	Name of the Author
1.	PH1001	Physics Instruments	Holmaric Opto-Mechatronics PVT LTD
2.	PH002	3000+ Product Research Tools	Holmaric Opto-Mechatronics PVT-LTD
3.	PH003	A Text Book of Optics	Dr. N. Subrahmanyan Brijlal
4.	PH004	Modern Physics	R. Murugeshan
5.	PH005	A Text Book of Optics	Dr. N. Subrahmanyan Brijlal
6.	PH006	Fundamentals of Quantum Mechanics, Statistical Mechanics and Solid State Physics	S.P. Kuila
7.	PH007	Optics and Spectroscopy	S. Chand, R. Murugeshan
8.	PH008	Allied Physics	A. Ubald Raj
9.	PH009	Practical Physics	Dr. M. Amalanathan
10.	PH010	Allied Physics Paper I & II	R. Murugeshan
11.	PH011	Electricity and Magnetism	D. C. Tayal
12.	PH012	Optics and Spectroscopy	R. Murugeshan
13.	PH013	A Text Book of Optics	Dr. N. Subrahmanyan Brijlal
14.	PH014	Molecular Structure and Spectroscopy	G. Aruldhas
15	PH015	Programming in C++ and Data Structure	P. Rizwan Ahmed
16.	PH016	Thermodynamics and Statistical Physics	Sharma. Sakar
17.	PH017	Properties of Matter and Oscillation and Optics	A. Ubald Raj

Head
Department of Physics.
Nanjil Catholic College
Kalliyakkavilai

Department of Physics-Vth Criterion

Students Support and Progression

Students Support

The department provides the necessary support to students, to acquire meaningful experiences for learning and facilitate their overall development and progression. The department encourages and motivates student representation and participation in all the academic and non-academic activities of the department.

Academic Support

Department Administration Activities

The department has an active class committee which actively involves in the administrative activities of the department.

- The class committee of the department consists of the HOD, the class in charge, the faculty members and the class representatives of all classes. It acts as a bridge between the students of the department and the faculty members.
- The committee conducts meetings often during the semester to plan for the academic and non-academic activities of the department.
- The academic and non-academic information given by the Principal will be discussed with the department staff members by the head of the department and will be informed to the students through class representatives.
- The major role of the class committee is to bring awareness among the students about the academic regulations of the college, attendance requirements, and discipline criteria.
- The committee encourages students to provide feedback regarding the teaching, learning, internal assessment, co/ extracurricular activities, student support services, mentoring, covering of the syllabus, etc.
- Also, the suggestions and grievances of the students are received by the class committee through the class representatives and taken remedial measures for the transparent governance of the department.
- During organization of any departmental activities, the class committee members gather together to make decisions regarding the programme. The decisions are conveyed to all the students of the department through the class representatives.

- They work with the faculty and the other students of the department in coordinating all the events organized by the department.
- They are involved in conducting association meeting, national seminar and conference, science exhibition, science forum, practical training for school students, industrial visit, study tour and various other activities of the department.
- They are members of various committees such as reception committee, stage decoration committee, hall and seating arrangement committee and food committee for all the programs conducted by the department.
- They help in maintaining discipline, serve refreshments, take care of assets, and other similar tasks.
- They ensure that all the curricular and co/extra curricular activities of the department are carried out smoothly.

Support for Participation in Co-curricular activities

For the overall development of students, the department encourages and provides opportunities to explore their interests and abilities to participate in co-curricular activities. These activities help students to develop problem-solving, reasoning, critical thinking, creative thinking, communication, and collaborative abilities.

- All the UG and PG students are given assignments on different topics for all the subjects. They prepare those topics descriptively and submit them to the concerned subject in charge.
- PG students are given seminars in all the subjects which creates teaching ability among the students. In addition, fieldwork and projects are given for the PG students which motivates them towards research in various fields.
- Also, research scholars of our department are given opportunities to participate and present research papers in the seminars/conferences conducted by our/other institutions.

Details about participation of research scholars of the department in conferences for the last five years is below:

Sl. No.	Name of the Research Scholar	Number of Seminar/ Conferences attended
1.	Gino. J	Conference -10
2.	Aravind. M	Conference -4
3.	Gini. D	Seminar -13 Conference -5
4.	Beena. V	Conference -5
5.	Jeni James. J	Conference -1

- Students of the department are given equal opportunities to participate in the debate and quiz competitions conducted by the department/other departments of the institution or other institutions to prepare them to take challenges and to think critically.
- Fine arts competitions such as drawing, essay writing and poem writing conducted in the department help students discover, develop and to learn about their abilities and talents.
- In addition, interested students of our department are allowed to participate in coaching classes for competitive examinations such as TNPSC, Defence, Banking and Tailoring, Art and Craft etc. conducted by the institution to make them better understand how to manage their time efficiently and to become professionals in the future.

Non-Academic Support

Student Grievences Redressal

In all the day to day activities of the department, students well being is the first priority. Any student grievances in the department regarding academic or non-academic matters are given mere attention and are solved at the earliest.

- Students with a poor concentration in studies, irregularity for classes, family issues, physical or mental health challenges, etc. are suggested to get personal counselling to improve their behaviour and attendance.

- Also, students who are not able to buy new textbooks are helped by providing books collected from the previous batch of students.
- In addition, the staff and the fellow students of the department support the poor needy students to meet their expenses for the departmental and college wise programs.

Support for Participation in Extra-curricular activities:

Our institution conducts sports and cultural events regularly. Students of the department have participated both in department wise and college wise sports and cultural programs and won medals and prizes. In the last five years, more than 200 students of our department students have participated and received prizes in inter and intramural sports and cultural competitions organized by the institution and other institutions. Also, they participate in extracurricular activities like Yoga, NSS and Youth Red Ribbon Club of the institution.

Details of student participation in sports and cultural competitions for the last five years is below:

Year	No. of students participated in sports	No. of students won prizes in sports (University/State level)	No. of students participated in cultural	No. of students won prizes in cultural (University/State level)
2017-2018	35	-	1	-
2018-2019	55	University level-1	5	State level-2
2019-2020	28	-	10	-
2020-2021	1	-	-	-
2021-2022	38	-	42	State level -2

Student Progression:

The department motivates the students towards their progression in higher education and towards employment.

- It takes remedial measures for the students who are weak in studies to upgrade their academic performance.
- Similarly, advanced learners are motivated to strive for higher goals.
- Final year UG students of the department participate in special career counselling programs conducted by the institution which gives them better ideas about the path to choose for higher studies and jobs to make their future better.
- Also, UG students are motivated for joining higher degree courses and PG students in addition to research and job opportunities.

The percentage of progression of students to higher studies during the last five years is mentioned below:

Year	**UG**			**PG**			**M.Phil.**	
	Total Strength	**UG to PG**	**UG to B.Ed.**	**Total Strength**	**PG to M.Phil.**	**PG to B.Ed.**	**Total Strength**	**M.Phil. to Ph.D**
2017-2018	48	20.8%	29.2%	26	15.4%	50%	5	40%
2018-2019	46	38%	28%	28	-	53.6%	7	28.6%
2019-2020	53	56.6%	7.5%	26	-	30.7%	-	-
2020-2021	46	60.9%	16%	25	-	32%	-	-

- During the academic year **2017-2018**, among 48 UG students, 10 have gone for PG, 14 for B.Ed. and 1 for a diploma course. Among 26 PG students, 4 have gone for M.Phil. and 13 for B.Ed. course. Among 5 M.Phil. scholars, 2 have gone for the Ph.D programme.
- During the academic year **2018-2019**, among 46 UG students, 19 have gone for PG and 14 for B.Ed. course. Among 28 PG students, 15 have gone for B.Ed. course. Among 7 M.Phil. scholars, 2 have gone for the Ph.D programme.
- During the academic year **2019-2020**, among 53 UG students, 30 have gone for PG, 4 for B.Ed. course and 2 for a diploma course. Among 26 PG students, 8 have gone for B.Ed. course.

- During the academic year **2020-2021**, among 46 UG students, 27 have gone for PG and 4 for B.Ed. course. Among 25 PG students, 8 have gone for B.Ed. course and 1 for a diploma course.
- The progression percentage of undergraduate students to higher education has increased from 50% to nearly 77% during the last five years.
- Students who have not opted for higher studies are admitted to typewriting, software training courses, and coaching classes for various competitive examinations and many of them have got placed too.

Student Placement

Placement is a decisive factor in the successful completion of any coursework at the graduate or postgraduate level. The department encourages the students to map their talent in various fields and get relevant job opportunities. During the last five years, five students have passed government competitive examinations and sixteen students have got placed in various fields.

Placement details of the students during the last five years are below:

Year	Number of students placed
2017-2018	3 (2-Army, 1-Airport)
2018-2019	4 (Assistant Professor-1, PG Teacher-1, Software-2)
2019-2020	4 (Navy-1, Software-1, Bank-2)
2020-2021	5 (1-Army, 1-Navy,Software-1, Teacher-1, Post office-1)

Self Employment:

Self-employment creates decision making quality, gives the ability to solve problems independently and increases the earning potential in students. The department encourages the students to utilize their skills in various fields and earn while learning. They utilize their

academic skills by taking tuition after college hours. Students trained in dancing conduct dance classes for the interested kids. Also, many of the boys of the department work in catering services and as technical staff in computer centre. Those self-employed students use their earnings for paying college fees and for their family needs. **30** students in the department are self-employed.

Details of students who are self employed during the last five years are below:

Type of Self-Employment	Number of students
Tuition	19
Catering	7
Violin class	1
Dance class	2
Film Industry	1

Alumni Association:

The alumni association provides a platform for interaction between alumni, present students and faculty of the department. Our department nurtures the alumni association to make them contribute to the development of the department. They have contributed by donating 30 books to the library and to the junior students who can't afford to buy new books.

There are separate Whatsapp groups for all the alumni batches to contact them and give information from the department and the institution. Updation regarding higher education and job opportunities will be communicated through those groups.

During the last five years, two alumni association meetings were held in common to all the alumni of the college and two alumni association meetings were organized by the department. Also, the department encourages the Alumni to provide financial contributions for the welfare of the department.

Criterion 5-Students Support and Progression

Academic Support

Department Administration Activities-Class Committee

Students Participation in various activities of the department

Participation in Conference

Participation of Research Scholars in Conferences

NANJIL CATHOLIC COLLEGE OF ARTS AND SCIENCE
Kaliyakkavilai, Kanyakumari District - 629153
Accredited by NAAC with 'B' Grade
(Approved by the Govt. of Tamil Nadu and Affiliated to Manonmaniam Sundaranar University, Tirunelveli)

FOURTH NATIONAL CONFERENCE ON ADVANCED MATERIALS
(NCAM-2022)
March 26, 2022

Certificate

This is to certify that Mr./Ms./Dr. JENI JANES. T., Research Scholar, Nanjil Catholic College of Arts & Science, Kaliyakkavilai has attended the Fourth National Conference on Advanced Materials (NCAM-2022) organized by the Department of Physics, Nanjil Catholic College of Arts and Science, Kaliyakkavilai on March 26, 2022 and presented a paper (Poster/Oral) entitled Vibrational Spectral investigation, DFT computational studies and charge transfer interactions analysis of L-lysine monohydrate.

Rev. Fr. Dr. M. Bekermens Michael, Secretary and Correspondent
Dr. M. Amalanathan, Convenor
Dr. A. Mermakshisundaresan, Principal

SMTBEA 2021 BEST PAPER AWARD
SMTBEA177

IEEE ComSoc
IEEE Communications Society Madras Chapter

Department of Electronics & Communication Engineering
& SSN Research Centre (SSNRC)

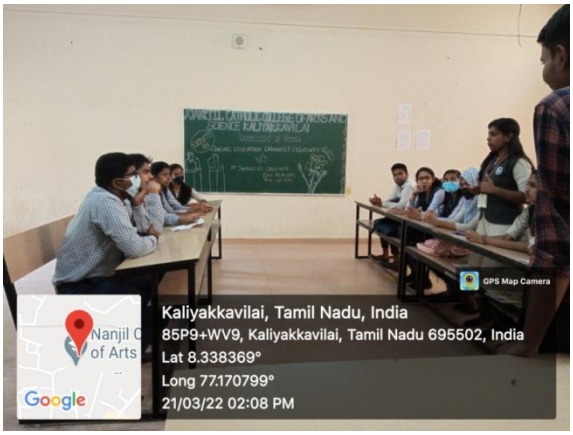
CERTIFICATE
of Best Paper Presentation Award
This certificate is proudly presented to
GINO D J
for the paper entitled "Growth, Structural, Hirshfeld surface analysis and Physicochemical properties of Semi organic Sodium Acid Phthalate Hemihydrate single crystals"
Presented in the three day International Conference on
"Sustainable Materials and Technologies for Bio and Energy Applications (SMTBEA-2021)"
during 19-21, May 2021.

Convener Dr. B. S. Sreeja
Convener Dr. M. Srinivasan
HoD Dr. S. Radha
Principal Dr. V. E. Annamalai
Dean (Research) Prof. P. Ramasamy

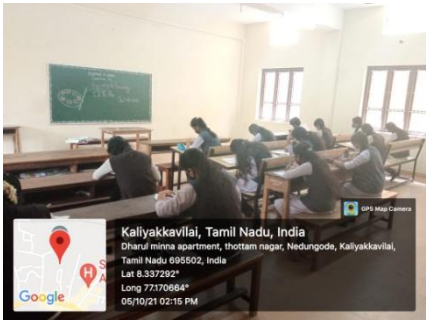
Sri Sivasubramaniya Nadar College of Engineering
Kalavakkam-603110
Date: 21.05.2021
SSN

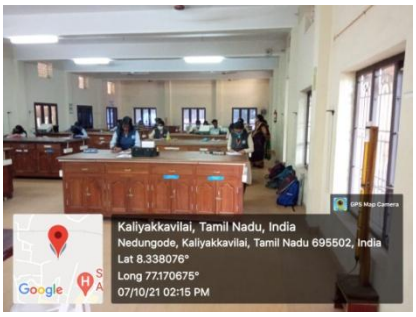
Student Participation in Quiz Competition

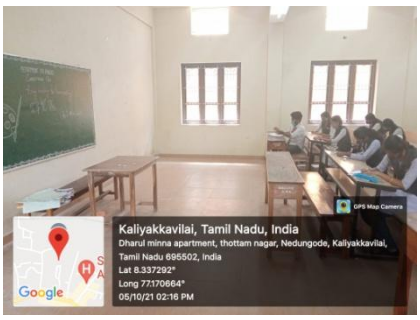
Student Participation in Debate



Students Participating in Drawing, Poem and Essay Writing Competition







Non-Academic Activities

Practical training for school students

Study Tour and Industrial Visit:

Student Participation in Extra-curricular Activities:

Participation in Sports:

NANJIL CATHOLIC COLLEGE OF ARTS AND SCIENCE
KALIYAKKAVILAI - 629 153

Sports Day
2019 - 2020
Intramural Tournaments

This is to certify that Mr./~~Mrs.~~ JIBIN. D
of III B.Sc PHYSICS has participated in the Annual Games/~~Athletic~~ meet held on 14th March 2020. He / ~~She~~ has Secured RUNNER ~~Prize~~ / Position in FOOTBALL with the Performance of —

Director of Physical Education | Principal | Secretary

KANYAKUMARI DISTRICT AMATEUR KHO-KHO ASSOCASTION
Affiliated to Tamil Nadu State Kho-Kho Association
2nd Year District Championship
Kho - Kho Tournament 2022

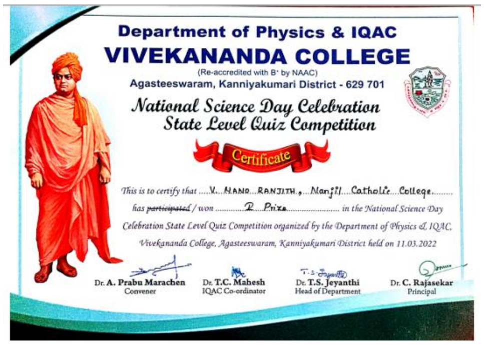
PARTICIPATION CERTIFICATE

Awarded to ABI S.M
Father's Name Mr.B.SUDHI
Date of Birth 19-04-2004
KKFI UID Number: KINFP

District / Unit as Player in the 2nd Year DISTRICT CHAMPIONSHIP 2021-22 FOR MEN & WOMEN held on 4th and 5th March 2022, under the aegis of Kanyakumari District AMATEUR KHO KHO ASSOCIATION, organized by MAR EPHRAEM COLLEGE OF ENGINEERING & TECHNOLOGY, Elavuvilai, Kanyakumari District.

F. Judes Berlin, PRESIDENT | Dr. A. Lenin Fred, Principal, ORGANISING SECRETARY, Mar Ephraem College of Eng. & Tech. | Mrs. Kamani Kandan, CHAIRMAN, Managin Director, Vivek Laboratories, Nagercoil | C. Selvin, GENERAL SECRETARY

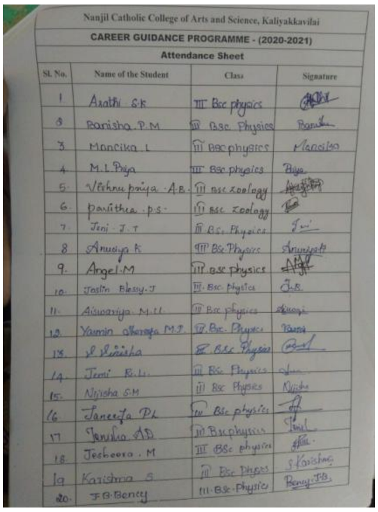
Participated and won in State level and Intercollegiate Quiz competition


Department of Physics & IQAC
VIVEKANANDA COLLEGE
(Re-accredited with B+ by NAAC)
Agasteeswaram, Kanniyakumari District - 629 701
National Science Day Celebration
State Level Quiz Competition
Certificate
This is to certify that V. NAND RANJITH, Nanjil Catholic College has ~~participated~~ / won 2 Prize in the National Science Day Celebration State Level Quiz Competition organized by the Department of Physics & IQAC, Vivekananda College, Agasteeswaram, Kanniyakumari District held on 11.03.2022
Dr. A. Prabu Marachen, Convener
Dr. T.C. Mahesh, IQAC Co-ordinator
Dr. T.S. Jeyanthi, Head of Department
Dr. C. Rajasekar, Principal


PIONEER KUMARASWAMY COLLEGE
NAGERCOIL-3
(Accredited with B + Grade by NAAC)
DEPARTMENT OF PHYSICS
Certificate of Appreciation
National Science Week Celebrations - NSWC 2018
This certificate is awarded to Mr./Ms. D. Jibin, Nanjil Catholic College of Arts and Science. for his / her active participation in the Intercollegiate event, "FOP QUIZ 2018" held on 20th Feb.2018.
H.O.D.
COORDINATOR
PRINCIPAL

Student Progression

i)Participation in Career Guidance Programme for final year students
ii)Students benefitted by coaching classes for Competitive Examinations


Nanjil Catholic College of Arts and Science, Kaliyakkavilai
CAREER GUIDANCE PROGRAMME - (2020-2021)
Attendance Sheet

Sl. No.	Name of the Student	Class	Signature
1	Arathi S.R	III Bsc physics	
2	Ranisha P.M	III BSc Physics	
3	Monicka L	III BSc physics	
4	M.L.Priya	III BSc physics	
5	Vishnu priya A.B.	III BSc Zoology	
6	Pavithra P.S.	III BSc Zoology	
7	Jeni J.T	III B.Sc. Physics	
8	Anusiya K	III BSc Physics	
9	Angel M	III BSc physics	
10	Jestin Blessy J	III BSc Physics	
11	Aiswariya M.U	III BSc physics	
12	Yasmin Sherapa M.T	III BSc Physics	
13	[illegible]	III BSc Physics	
14	Jemi R.L	III BSc Physics	
15	Nijisha S.M	III BSc Physics	
16	Janesifa P.L	III BSc physics	
17	Sruthi A.D	III BSc physics	
18	Jesheera M	III BSc physics	
19	Karishma S	III BSc Physics	
20	J.B.Bency	III BSc Physics	


No. KTET-III 120322
GOVERNMENT OF KERALA
DEPARTMENT OF GENERAL EDUCATION
KTET
Kerala Teacher Eligibility Test
ELIGIBILITY CERTIFICATE
Roll Number : 732471
This is to certify that Smt./Sri. NEETHU XAVIER J S Date of birth 27/05/1996 appeared for Kerala Teacher Eligibility Test February 2020 Category - III (for High School classes) conducted by Pareeksha Bhavan, Kerala, Thiruvananthapuram on 16/02/2020 and is declared qualified.
The details of marks obtained are given below

Part	Content	Maximum Marks	Marks Obtained
I	Adolescent Psychology, Theories of Learning and Teaching Aptitude	40	24
II	Language (Malayalam)	30	25
III	Optional Subject (Physical Science)	80	41
	TOTAL	150	90
	Percentage of Total marks Obtained		60%

Date of Publication of Result : 30/05/2020
LAL. K. I
Secretary
Board of Examinations (K-TET)
Kerala
Thiruvananthapuram
Dated : 17/10/2020

Students Academic Progression


CCS
College for Career Studies
CERTIFICATE
Diploma in Office Automation
is awarded to
JINSI .W
who has completed the prescribed course of study in the above discipline and passed in 93% First Class in the examination held at
CCS COMPUTER CENTRE, MARTHANDAM.
Period Of Study : 01-03-2021 to 02-09-2021

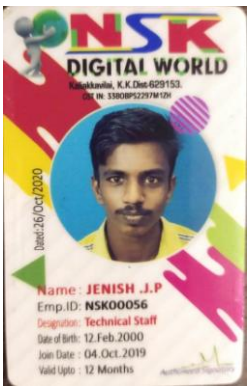
Subject Name	Scored	Marks
IT Fundamentals & MS-Office	183	200
Internet Concept	190	200

Correspondent / Principal
Controller of Exams

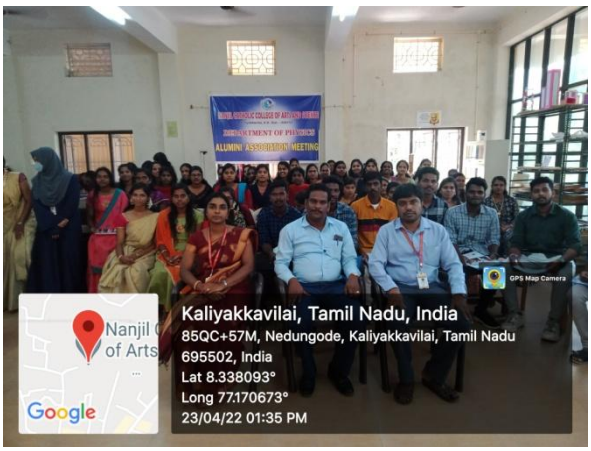
Student Placement

Self-Employment

i)Tuition Class and dance class taken by the department students
ii) Student working as technical staff in computer centre



Alumni Association Meeting in the department



Criterion-VI

Governance, Leadership and Management

Governance of Department of Physics

Academic Governance

The Academic Governance of Department is done by the HOD.

1. The matters discussed in the Council meeting are intimated to the staff by the HOD in the Department meeting.

2. The HOD ensures that the portions were completed before each internal exam/model exam for theory and practical subjects. It is done by collecting feedbacks periodically from the students. If there are any grievances, it will be rectified immediately.

3. The departmental programs such as Seminar, Conference, Fine Arts Day, etc., are planned in the Class committee meeting and staffs are chosen by the HOD to coordinate the program. While organizing Conference faculties are chosen to be in-charge for events such as stage decoration, registration, seating arrangements, presentation and food, etc. The staff would assign some of the work to the students and guide them throughout the program. The HOD supervises the progress and guide throughout for the success of the program. This improves leadership qualities and skills of staff and students.

   Thus by implementing and guiding the staff and students, the HOD ensures the proper and smooth functioning of Department.

<u>Governance of Class:</u>

A class in-charge is assigned to each class by the HOD and the class is governed by the class in-charge.

1. Seating arrangement of students is done based on roll number by the class in-charge.

2. A student's representative is chosen by the class in-charge based on willingness.

3. The rules and regulations of the college is intimated to the students by the class in-charge.

4. The communications of college, regarding internal exams, fee payment, etc will be done through class in-charge.

5. Discipline is strictly maintained inside the class by the teaching faculties.

6. Grievances from the students are handled by the class in-charge. If it was not solved, it will be handled by the HOD and still if it was not solved, it will be handled by the Principal.

7. Feedback is collected from the students by the class in-charge periodically to make sure that everything is going smoothly.

8. Students are motivated to participate cultural and sports events by the faculties of our department.

Governance of Laboratory:

Two staffs were chosen to be lab in-charge by the HOD and the Lab is governed by the Lab in-charges.

1. As per the norms of Physics Department, students of UG and PG should enter the lab in their allotted practical hours. They should keep their bags outside and should only bring Record Note, Observation Note and Calculator, etc.

2. As per the norms of Physics Department, students should complete their observation note for previous experiments and should write the preliminary details of current experiment as instructed by the staff in-charges.

3. The experiments are explained to the students by the staff in-charge. Lab assistants assist the staff in-charges in setting up the experiments.

4. Once they completed their experiment they should get sign from the staff in-charge.

5. As per the norms of Physics Department, usage of instruments for the experiment is registered in Lab Entry Register and breakage of instruments/items will be noted in the Breakage Register. They should pay the fine for breakage before the end of semester to get No Due Certificate.

6. As per the norms of Physics Department, students should get sign in the record note from the lab in-charge before the model Practical examination.

7. Discipline is strictly maintained inside the lab by staff in-charges.

Governance of Department library:

Department library is governed by the Lab Assistant staffs. Staff and students of physics department could borrow book by entering the details in the Department Library Register. Borrowed books should be returned before the end of the semester.

Governance of Research Centre:

Research scholars/MPhil students of physics department could utilize Research Centre facilities after getting permission from their guide. The instruments of Research Centre can be used by other department scholars only after getting permission from the HOD. The usage of such instruments and facilities will be noted in the research lab usage register.

Governance of Co-Curricular Activities

Departmental Co-Curricular events such as Conference, seminar, Association Meeting are planned in the Class Committee meeting where HOD assign the work to each staff and student representatives.

While organizing Conference/Association Meeting/Departmental PTA Meeting, faculties are chosen to be in-charge for events along with class representatives to plan and coordinate such events. Responsibilities for stage decoration, registration, seating arrangements, presentation and food, etc are assigned to each staff by the HOD. The staff would assign some of the work to the students and guide them throughout the program. This improves leadership qualities of staff and students. The feedback from the participants is collected by the HOD and it is discussed in the department meeting. The final report is submitted to the HOD by the program coordinator.

While conducting Seminar, a staff is chosen as in-charge by the HOD and he/she is responsible to conduct the event. Preparing invitation, Inviting Resource person, Inviting staff and students and feedback preparation are done by the coordinator and it was supervised and guided by the HOD. The feedback from the participants is collected by the program coordinator. The final report is submitted to the HOD by the coordinator.

Thus by giving responsibilities and opportunities to the students and staff in co-curricular activities, we achieved participative management and improved leadership qualities of staff and students.

Non-academic Governance

Non academic programs such as Quiz Competition, Debate and Fine Arts Day Celebrations were conducted in each semester. These events are planned in the Class committee meeting conducted by the HOD. Staff and class representatives are participated in this meeting and they would tell their suggestions and ideas. The program schedule and date is finalized by the HOD. The progress of program preparations is constantly intimated to the HOD by the program coordinator. At the end of program, student's feedback is asked by the HOD and the suggestions or appreciations were intimated to the staff at the department meeting.

Students were continuously motivated by the class in-charges to participate sports and cultural events conducted by our college or from other colleges/University. Students can get OD from concerned staff to participate these extra-curricular events.

Governance of Extra-Curricular Activities

Departmental Extra-Curricular activities such as Quiz Competition and Debate are planned in the Class Committee meeting by the HOD.

A staff is chosen as the coordinator and guided by the HOD. The date and program schedule is finalized in the meeting.

Class wise list of interested and eligible students is prepared by the program coordinator. The progress of the program is continuously updated to the HOD by the program coordinator. The Competition/event is conducted by the coordinator after giving necessary time to the students for preparation and final verification.

While organizing Fine Arts Day, responsibilities for stage decoration, seating arrangements, food distribution, event coordination, etc are assigned to each staff. The progress of the program is monitored by the HOD. Students are guided by the staff in-charges so that all work together for the success of the program. Since we all work together, this ensures participative management of our department.

While conducting Debate/Group discussion, a staff is chosen as in-charge by the HOD. Preparing invitation and participants list, Inviting staff and students, feedback preparation are done by the coordinator and it was supervised and guided by the HOD. After the program, the final report is submitted to the HOD by the coordinator.

Students are encouraged to participate actively in sports events and University tournaments. Around 100 students were participated in sports events of college from physics department.

Effective Leadership via decentralization and participative management

When conducting Conference, Workshop, Association meeting, responsibilities for stage decoration, registration, seating arrangements, presentation and food, etc are given to each staff and they chose few students and assign some of the work to them and guide them throughout the program. Thus students and staff worked together for the success of the program. So, the work is decentralized by dividing and giving it to each staff and students, and the participation of students and staff is achieved. In this decentralization, students were chosen to lead students and this could improve their leadership qualities and ensured participative management.

While organizing department level programs such as Fine Arts Day, Debate, Quiz, etc department meeting with class representatives is conducted and a staff in-charge is chosen by the HOD. Students were chosen by the class in-charge to coordinate and prepare different events associated with that program. Thus, improved leadership qualities of students and ensured participative management of students and staff.

Our department staffs are in various, institute academic positions such as science forum, Alumni Association, IQAC, etc to ensure a participative management and that also improve their leadership qualities.

By all these activities and programs, all the staff of our department got chance to lead and coordinate many programs. Over the five years, around 150 students got opportunity to lead students as class representative and as event manager and thus improved their leadership qualities.

Vision of Department of Physics:

Towards the search for scientific truth and physical reality

Achieving the vision of the department through the Governance:

Through Qualified Teachers and ICT enabled classes, the subject matters are conveyed effectively. Also through the feedback collected from students, the teaching learning process is constantly analyzed and improved. Skill development and job oriented courses are introduced to improve their skills and employability. Students are growing inside the campus with discipline and scientific knowledge, and this would make them a socially responsible, keep learning science personals. Thus, by well-disciplined and active governance, we achieved the vision of our department.

Mission of Department Physics:

To impart quality education to the economically weaker sections, strengthen the areas research and enhance the process of sensitizing the students to ethical values and social responsibilities.

Achieving the mission of the department through the Governance:

Quality education is given to the students by the experienced and qualified faculties by ICT enabled classrooms, well equipped laboratory and research centre. Since the fee is affordable to economically weaker students, we achieved our mission of imparting quality education to economically weaker students. The faculties and class in-charges are also committed to grow their students to posses discipline and social values. Through the active governance of class-in-charges along with other staff, we achieved the mission of our department.

Strategy Development and Deployment

Perspective plans of Physics Department 2017-2022

1) It was planned to upgrade the Physics department with Research Centre.

2) It was planned to publish more papers.

3) It was planned to motivate faculties to publish syllabus oriented books.

4) It was planned to produce more university ranks in coming years.

5) It was planned to organize National level Conferences to promote research interest among students.

6) It was planned to get PhD Guideship for all eligible faculties.

7) It was planned to provide adequate support to the students to play in university, state level and national level sports and athletics.

Achievements:

2017-2018

It was planned to organize the Second National Conference on Advanced Materials.

Achievements:

'Second National Conference on Advanced Materials' organized by Department of physics on 19-08-2017. There were 87 outside participants and 85 students and scholars from our department who participated and received certificates.

Three university ranks from UG in April 2018 University Exam.

2018-2019

It was planned to organize the Third National Conference on Advanced Materials.

Achievements:

'Third National Conference on Advanced Materials' organized by Department of physics on 16-03-2019 to make students to understand the recent trends in advanced materials.

Two university ranks from UG in April 2019 University Exam.

2019-2020

It was planned to conduct an awareness program on Anti ragging to make students to understand eve teasing.

Achievements:

Anti Ragging awareness program is conducted on 23-07-2022 and Dr.M.Amalanathan was invited as Chief Guest.

Three university ranks from UG in April 2018 University Exam.

2020-2021

It was planned to show scientific documentaries to the students.

Achievement:

Documentary about Michael Faraday was shown to the students at the Research Center on 10-03-2021.

2021-2022

It was planned to conduct a Hands on Training course to the students.

It was planned to conduct “Fine Arts Day” to showcase student’s talents.

It was planned to conduct a science exhibition to the students.

It was planned to organize the Fourth National Conference on Advanced Materials.

Achievements:

"Hands on Training in Basic Electrical and Electronics Applications" was introduced on March 17, 2022. The course instructor is Mr.F.Sahaya Raj and 26 students were registered for this course. It will be conducted every Thursday at 2pm to 3pm.

Documentary on “Adverse effects of Greenhouse Gases” was shown to the students at the Seminar Hall on 28-02-2022.

Students show their models in science exhibition conducted on 10/03/2022. Around 25 models were showcased by the students.

'Fourth National Conference on Advanced Materials' organized by Department of physics at seminar hall on 26-03-2022. There were 32 outside participants and students and scholars from our department, participated and received certificates. It was coordinated by Dr.Bidhu.

Fine Arts day was conducted on 02-11-2021 in the seminar hall at 12.45 pm.

Achievements of perspective plan:

1. Research Centre of Department of Physics was recognized and sanctioned by MS University on October 2017. The validation period is from 2017-1018 to 2019-2020. It was renewed for 2020-2021 to 2021-2022. Over these five years, four staff had guideship,11 students registered for PhD and two of them completed their PhD from our department.
2. Over these five years, 26 papers were published from our department.
3. A book on 'Computer programming in C++' is published by Dr.M.Amalanathan, HOD- Department of Physics on 20-10-2021.
4. Over these five years, we have produced 14 university ranks.
5. We have conducted three National conferences on "Advanced Materials", in which three of them conducted in the period 2017-2022.

Reason for Perspective Plans which are not achieved:

Due to covid-19, the viva date for PhD of some staff delayed and eligibility criteria is not fulfilled for some staff. But in the five years, four of our staff got Guideship. It is expected that, in the upcoming years, many of our faculties will get PhD Guideship.

One of our students from first UG Physics achieved second place in University level Kho-Kho match. In the coming years, we expect more students will play in the University, State and National Level sports events.

Faculty Empowerment Strategies

Welfare measures for teaching and non-teaching staff

All the staff of our department was attended the family function of teaching or non teaching staff.

If any staff is absent, his class hours were taken by other staff of our department so that his classes were utilized effectively.

Welfare measures for students

Two economically weaker students from our department is chosen and provided with a financial support every year before Christmas. Each staff contributed Rs.500 for this welfare of students. Total of Rs.5000 is given to two students so that each student received a sum of Rs.2500 to celebrate the Christmas festival happily.

All the staff and students of our department were actively participating Good Samarian Scheme of helping for the education of a economically weak students from the college.

Staffs of our department are helping for student's education financially at the needy times. Staffs of our department helped to pay the exam fee for three students.

Performance Appraisal System for teaching and non-teaching staff

Performance appraisal system for teaching staff is done by the HOD at the time of University result publication. The pass percentage for each subject is analyzed by the HOD.

Staff showed 100% pass percentage and good grades is appreciated and staff shows low pass percentage asked to explain the reason. The reason is analyzed and the corresponding staff is motivated to show full pass results in the upcoming semesters. Staffs are also appreciated based on number of University Ranks produced each year from our department and motivated to produce more university ranks in upcoming years.

Financial Management and Resource Mobilization

Internal and external financial audit

Internal financial Audit:

Internal audit will be done once in a year by the HOD, Dr.M.Amalanathan. Department account register is maintained to register the income and expenses of department fund with proper bills. Fund utilization for lab infrastructure is updated in stock register of our department.

External financial Audit:

External financial Audit was done in each year by the college office Accountant. There is a department bank account given by the college administration, in which the fund at the end of external audit was deposited.

Mobilization of funds and the optimal utilization of resources

While organizing Conference, student's registration is completed once the registration fee is paid. The program coordinator received the fund and it is distributed to in-charges of supporting events like decoration, food committee, etc. The staff hands over the remaining money at the end of program to the program coordinator. The income-expenditure was updated in the department account register with proper bills. It is audited by the college and the balance money is deposited to department bank account.

Internal Quality Assurance System

Internal Quality Assurance Cell (IQAC) contributions for the quality assurance strategies and processes:

As per the decisions taken in the IQAC meeting, the following strategies and processes were introduced in the department.

Mentors assigned to each student to guide them to achieve their goals.

Bridge course was conducted to the first UG students by the faculty members at the time of joining to prepare and motivate them for the programme.

Remedial classes were conducted to the students who had learning difficulties.

PTA meeting, FDP programme, three internal exams are conducted in each semester. Feedback collected from parents at the PTA meeting was discussed and necessary actions were taken accordingly.

To increase employability and skills, shift II courses introduced to the students. From our department, 48 students attended these courses and benefitted.

Extracurricular activities are promoted to improve student's talents and to reduce their stress.

Audio and visual method of teaching with the help of projector is used by the staff for student's understanding.

Reviewing teaching learning process, structures & methodologies of operations and learning outcomes at periodic intervals through IQAC:

Teaching and Learning processes were reviewed by analyzing the feedback collected from the students and their parents (through PTA meetings) in each semester. Based on such feedback and suggestions, teaching methodologies reviewed and modified if needed. As per IQAC suggestions,

To improve student skills, we introduced Hands on Training Course on "Basic Electrical and Electronics applications" in every Thursday. Totally 26 students from our department registered and attended this course.

Students, who got low marks in the exam, were identified and provided with remedial coaching, to improve their progress in academics. Similarly, advanced learners are motivated to get university ranks.

Extracurricular activities are promoted to improve student's talents and to reduce their stress. Four students from UG physics department, participated kho-kho and around 100 students from UG and PG were participated department level Fine Arts day celebrations.

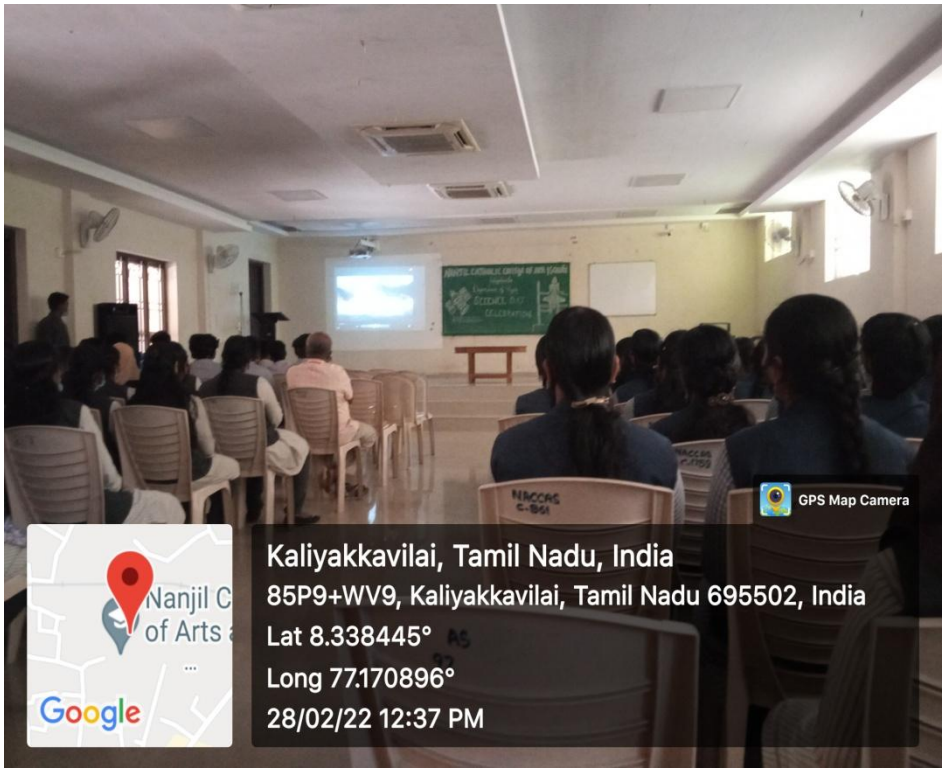
Senior staffs were chosen as mentors for the counseling of students.

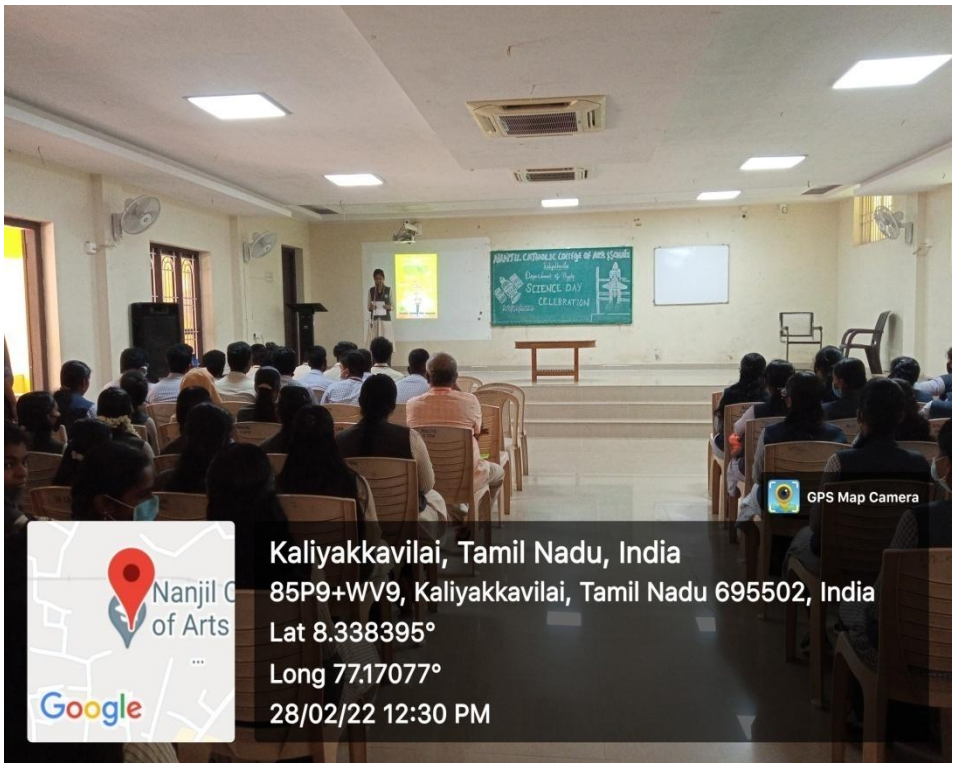
Through Alumni Association meeting conducted each year, alumni students are in contact with the college. Around 250 students are registered as alumni over the five years from our department.

National Conference

Science Exhibition

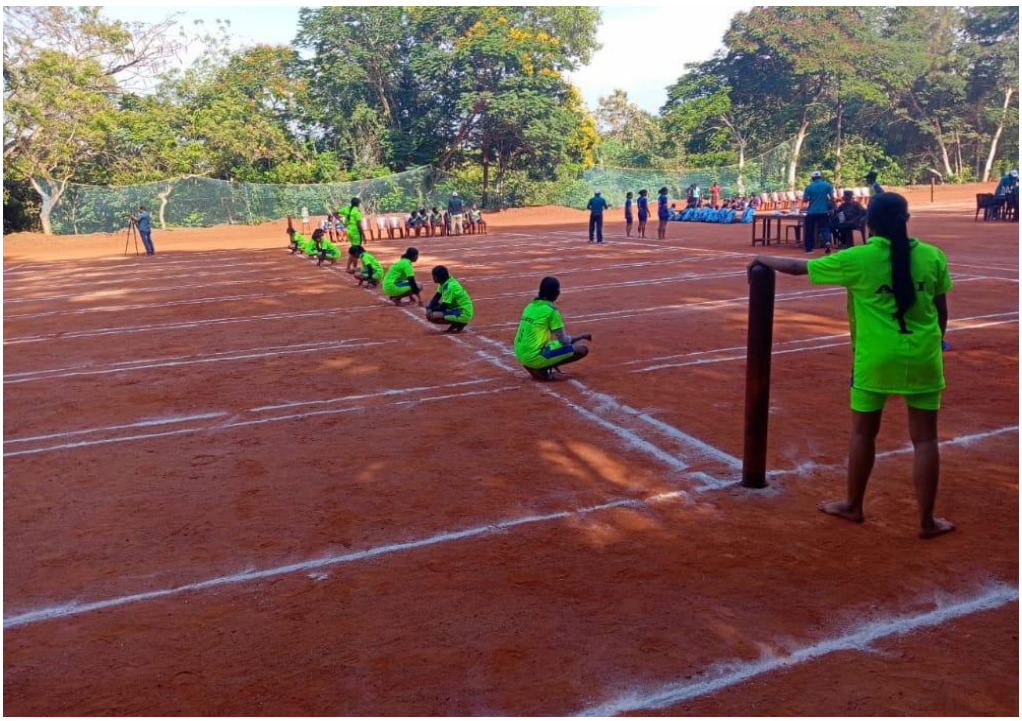
Documentary show on science day





Debate

OLIVIA FEST- Sports




GPS Map Camera
Kaliyakkavilai, Tamil Nadu, India
85P9+WV9, Kaliyakkavilai, Tamil Nadu 695502, India
Lat 8.338275°
Long 77.170775°
06/04/22 02:01 PM
Google

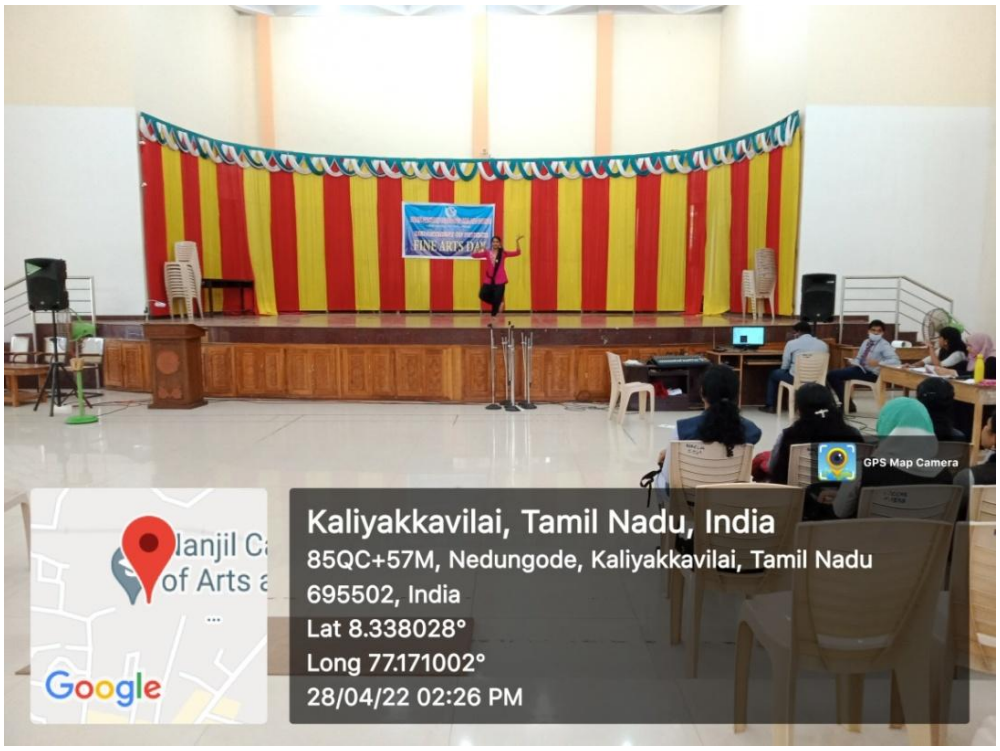
PTA Meeting

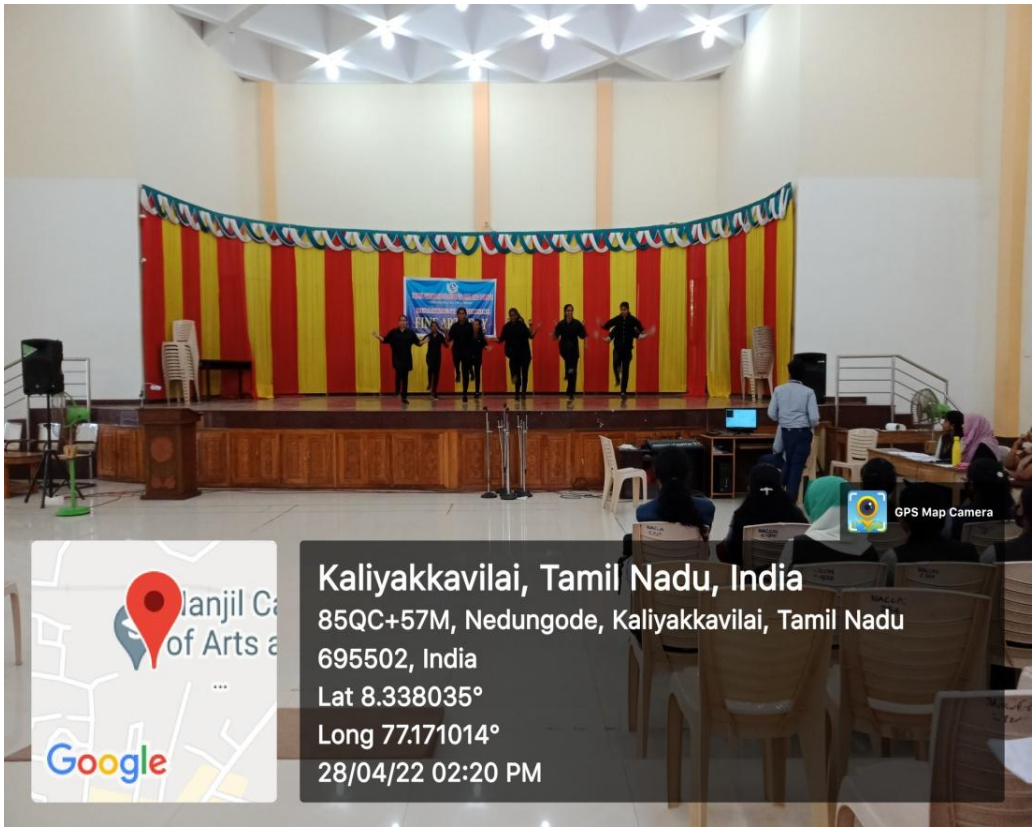

CATHOLIC COLLEGE OF
ARTS & SCIENCE
Department of Physics
On 22-11-2021
TEACHERS MEETING
GPS Map Camera
Mali
Nigeria
Kaliyakkavilai, Tamil Nadu, India
Nedungode, Kaliyakkavilai, Tamil Nadu 695502, India
Lat 8.338412°
Long 77.170853°
22/11/21 02:32 PM
Google

Department Student welfare- Christmas Child

Class committee meeting

Fine Arts Day Celebrations





Department Meeting Register

131

Minutes of the meeting held on 11/3/'22 at 1.45 pm

Agenda:

1. HDFC bank - placement drive
2. Shift-II Orientation
3. Fine arts Day
4. Staff late attendance
5. School students Practical class
6. College Bus from kulasekharam
7. FDP for the department
8. Womens day celebration
9. Internal test Question

Discussion:

1. Our institution is conducting a placement drive in collaboration with HDFC bank. Staffs were asked to inform it to the passed out students and to collect the name list of willing students.

2. Shift-II Orientation program for I UG & I PG students was conducted on 11/3/22 at 12.45 pm.

3. Fine arts day for the department will be conducted on the first week of April.

4. 12/3/'22 will be working day. II schedule will be followed. Department conducts a practical class for the +2 students from 12/3/'22.

5. Staff were informed that if they come to college after 7.55 am, it will be considered as half day leave.

6. Staff and students were informed that college bus

facility will be available from kulasekharam. Willing staff and students can use it by paying the bus fare.

7. Department plans to organize an FDP program for the staff members and the date of the program is discussed.

8. Staff and students were informed that they can celebrate Womens day departmentwise if they wish.

9. The last date for the question paper submission for the I internal test is on 12/3/'22.

Members Attended:

1. Dr. P. Sekar Ramasubramanian
2. Dr. M. Amalanathan
3. Dr. T. R. Jeena
4. Dr. S. Antony Dominic christopher
5. Dr. S. Murugavel
6. Mrs. V. Beena
7. Dr. S. S. Bidhu
8. Mr. F. Sabayaraj
9. Dr. H. Marshan Robert

DEPARTMENT OF PHYSICS
KALIYAKKAVILAI
629 153
ST. JEROME'S CATHOLIC COLLEGE OF ARTS & SCIENCE

IQAC Meeting Decisions

NANJIL CATHOLIC COLLEGE OF ARTS AND SCIENCE,
KALIYAKKAVILAI – 629 153.

Minutes of the Meeting of the Internal Quality Assurance Cell (IQAC) held on 12th December, 2018

A meeting of the Internal Quality Assurance Cell (IQAC) was held on 12 December, 2018 at 10.00 am in the IQAC room.

The following members attended the meeting:

Dr. A. Meenakshi Sundararajan	Principal
Dr. M. Amalanathan	IQAC Coordinator
Dr. M. George David	Member
Dr. R. Murali	Member
Dr. R. Shoba Rani	Member
Mrs. V. Vincy	Member
Ms. C. Subhashini	Member
Mr. K.R. Krishna Prasad	Member
Mrs. V. Reena Catherine	Member
Mr. J. Jose Mon	Member
Mr. A. Joseph Jaya Prakash	Member

Agenda

1. Extra-curricular activies
2. Social interaction
3. Counselling system
4. National and International collaboration
5. Campus Interview selections
6. Orientation programme for 3rd years
7. Advisory team discussion
8. Industrial Visit, Tour

Minutes

1. Extra-curricular activities, improve the students talents, and is to lower the academic stress of students.
2. Social interaction helps to build up a relation between students and society. It is to improve the helping mentality of the students and to promote their idea of social awareness.
3. Counselling system, helps to find out the mental stress of the students. It helps to understand the complete character of the students. Through counselling students bring to overcome their problem.
4. Collaboration seminars provides an opportunity to develop friendship with foreigners.

5. Campus interview, will be an experience to face future interviews. It make the students secure a job while studying. It also given an opportunity for evaluate their serves.
6. Orientation programme was given to all third year students. It make the students aware of the job opportunities. It help the students to decide their career.
7. Advisory team, track the students in a right path make them more disciplinary and punctual. Make them to become a good learner and a good citizen.

Dr. M. Amalanathan
IQAC Coordinator

NANJIL CATHOLIC COLLEGE OF ARTS & SCIENCE * KALIYAKKAVILAM 629 153 K.K. DISTRICT TAMILNADU INDIA

Dr. A. Meenakshi Sundararajan
Principal

PRINCIPAL
Nanjil Catholic College of Arts & Science
Kaliyakkavilai - 629 153

Criterion-VII

Institutional Values and Best Practice

7.1.1 Gender Equity

Department of physics treats all the students equally irrespective of sex . The teachers does not treat the students with any discrimination including caste, creed, religion, etc.. All the students are allowed to participate all the program which are conducted in physics department . During association meeting , fine arts day, seminar and other celebrations in physics department , girls students gives prayer song, dance , reception etc. and boys gives the program of skit, drama etc. All are participated

The institute will take all measures to enlighten the students on Women Empowerment and Gender Sensitization The mandatory compliance committees in the institution will take care of peace and harmony among the students.

To maintain Equity among, students, uniform is advised to students.

Separate sports and gamesareallotted to the boys and girls .

If any gender equity problem arise, the problem is reported to the Anti Ragging Committee, Grievance Appeals and Redressal Committee and Sexual Harassment Cell (ICC), is being constituted as per norms laid by university/UGC/ Tamilnadu Government.

Through these activity, physics department maintains gender equity.

Steps taken to gender equity

Safety and security

To maintain safety and security for students, Physics department has the following features

1) Safety Camera is fixed in all the labs including UG, PG, Mphil lab and the class room varandas.
2) Women teachers provide safety measures to the girls students . Gent staffs provide safety measures to the boys
3) No student is allowed to leave from the college without any prior permission. If a student wants to go home due to sick or any other reason , he/she would be informed to their parents . Then only they are allowed to leave the college.

4) Separate rest rooms is available for both boys and girls.

5) Health department provides separate room for both boys and girls. If a student gets sick ,he is being treated and take rest in the health room.

Counseling

Each class has one mentor-class teacher, If a student has any problem regarding physically and mentally, he /she is counseled by the corresponding mentor. If the problem is not solved by the mentor, he/she would be sent to the college counselor, whogives counseling to the students those who are affected. Again if the problem has not solved, the parent of concern student is called and the problem is discussed with them to settle down the problem.

In every semester teacher- parent meeting is organized, In that meeting the parents consult with the teachers parents aboutthe progress and problems .

Common rooms

Physics department provides class room , lab etc.. for both the genders. Our institution provides common room for both the gender.

By taking the above steps, Physics department maintains gender equity.

Degradable waste

Solid Waste Management

In order to maintain neat and cleanliness in the class room and laboratory, dust pin is provided, the students put the solid wastes including paper dust, pencil dust, food waste and dead lab equipments in the dust pin and these waste are collected by the college sweepers for recycling .

In Physics lab, renewable and non renewable wastes are separated separately. Damaged equipments were rectified with the help of students. The students are asked to check the damaged equipments. They try to rectify back with the help of the staff. If it is not rectified, it will be put into the non renewable waste box. This will be collected by college sweepers and is being disposed.

Used batteries (unchargeable), bulbs are kept separately and Paper wastages are handed over to the College Management.

Plastic Free campus

The students are advised not to use plastics .They are advised not bring plastic lunch box, plastic bottles etc .. to motivate the students not use any plastics items in the campus and make the campus plastic free as well as class room.

Water Management

Students have purified drinking water facility near the physics lab as well as class room. Separate water system is provided for hand cleaning purpose. The students are monitored not wasting the drinking water.

In Physics department rain water harvesting system is available, it helps to increase the ground water level.Waste water is let out .

RECYCLING:

Rechargeable batteries are used in torch lights and in Multimeters.

.

REPAIRING:

Ballistic Galvanometer alignments are often tested for proper functioning.Blown out fuse are replaced in electronics instruments like power supply, oscillator and C.R.O. Main chord wires are open circuited or damagedoften. They are replaced. Transformers (step down) in power supplies are often burnt out due to short circuit. So short circuit protection circuits are added with the power supplies. Enough transformers, fuses with different ratings & Main chords are bought and kept sufficiently in laboratory for future replacement. Technicians are invited in every year for major servicing.

Resistance in resistance boxes and capacitance in capacitance boxes are frequently burnt out due to flow of exces current. They are frequently changed.

Indicator lamps in power supplies, function generators and in measuring instruments are replaced by newer one.

Non= Degradable waste

E= waste management

Physics department is practicing the E waste management as per the guidelines .

Electronic wastages (e-waste) like transistors, IC's, Capacitors, Diodes &batteries are buried deeply in the waste land.

Magnets in dead speakers are used for other purposes like collecting steel screws. Dust pins are provided in each lab to put waste. Thewastes are dumped in proper place.

The students are instructed to switch off the fans and lights which are not in use in order to save energy.

Inclusion and Situatedness

Genderwise

The following table gives the particulars of students about gender wise

Boys	Girls
19	113

Of the total of 132 students , 113 are girls and the remaining are boys. They are maintaining smooth relation.

Linguistic language wise

The following table gives the particulars of students about Linguistic language wise

Tamil	Malayalam
116	13

Tamil, and Malayalam speaking peoples are studying in physics department, But they have no difference of opinion . All the student celebrate Tamil culture (Pongal) and Malayalam culture (Onam) festivals collectively.

Community wise

The following table gives the particulars of students about community wise

OC	BC	MBC	SC
7	122	2	1

In Physics department different community students are studying, Among the students , they have no discrimination on the basis of caste. They share their foods. They invite their peer groups for their home functions. All the students participated the respective function without any discrimination.

Religion wise

The following table gives the particulars of students about religion wise

Hindu	Christian	Muslim
58	70	4

Though Our department has various gender, state, community, religion students we celebrate Women's Day, Pongal, Onam and Christmas. It creates awareness about the gender imbalance. Department take all measures to enlighten the students on Women Empowerment and Gender Sensitization .Since our college is located at the border line between two states Tamil Nadu and Kerala, it is easy to have the harmony between the students with linguistic difference. The students of our department celebrate all the religious and cultural program without any caste discrimination

Constitutional values

Through qualified lawyer our department arranged a lecture on constitutional values to our students. He deliver a lecture among the students to create knowledge of human rights, Rights of Women, fundamental duties, fundamental rights, constitutional duties , constitutional rights and directive principles of state policy

Through this session, the student gets awareness regarding all these concepts. They ensure to follow the rules and regulations

Department celebrates

Department Staffs and students celebrated famous scientist birthday, national science day through debate and seminar. National and international day also be celebrated

Independence Day

Department Students participated Independence Day celebration.

Republic Day

Department Students participated republic day celebration'

National Science Day

Department Students participated national science day celebration

Christmas Day

Department Students participated Christmas day celebration irrespective of religion

Women's Day

Department student participated woman's day celebration

Pongal Day

Physics Department Students participated pongal day celebration irrespective of religion and linguistic language. Through Onam, Pongal celebration ,they developedand understood the unity among diversity about our nation

Aids Day

Department Students participatedaids day awareness program.

7.2 Best Practices

1) Physics Department organize fresher's day . Every year in the fresher's day , the seniorstudents welcome the fresher in the fresher's day program. During Fresher's day, the seniors present plants to the fresher. Like this the junior students organize the send off party to the seniors. During Send off party , plants were presented to the seniors by juniors.

2) Our Department organizes Hands -on Training to service house hold electrical goods. It helps the students to repair the house hold goods.

3) Our department staff , gives training to other college staffs, school teachers and students every year to be familiar in their lab up to date equipments. Our Department staff help to establish physics lab in newly affiliated colleges.

4) Our Department established staff student committee, ,Good Samaritan saving money is collected through class representative and the collected money is handed over to the management for helping poor students.

7.3 *Area distinctive*

The primary purpose of the college is to provide education of moral and ethical values to students to promote the social responsibilities. Since the college is in the border of Tamil Nadu and Kerala state and the majority of the students in this college is belonging to Tamil Nadu and Kerala coming from rural areas

The College has always tried to give not only book knowledge but to educate them with good manner, self respect, politeness, conscientious, good physical and mental health. They also focus on national standards of quality education and enduring sense of discipline

Though this college is run by Christian minority organization, secularism is practiced

Gender Equity


GPS Map Camera
Kaliyakkavilai, Tamil Nadu, India
85QC+57M, Nedungode, Kaliyakkavilai, Tamil Nadu
695502, India
Lat 8.338034°
Long 77.171004°
28/04/22 03:30 PM
Google


GPS Map Camera
Kaliyakkavilai, Tamil Nadu, India
85QC+57M, Nedungode, Kaliyakkavilai, Tamil Nadu
695502, India
Lat 8.338035°
Long 77.171012°
28/04/22 03:19 PM
Google

Sports Day

Exhibition

Safety and security

Counselling

Common class room

Solid Waste Management

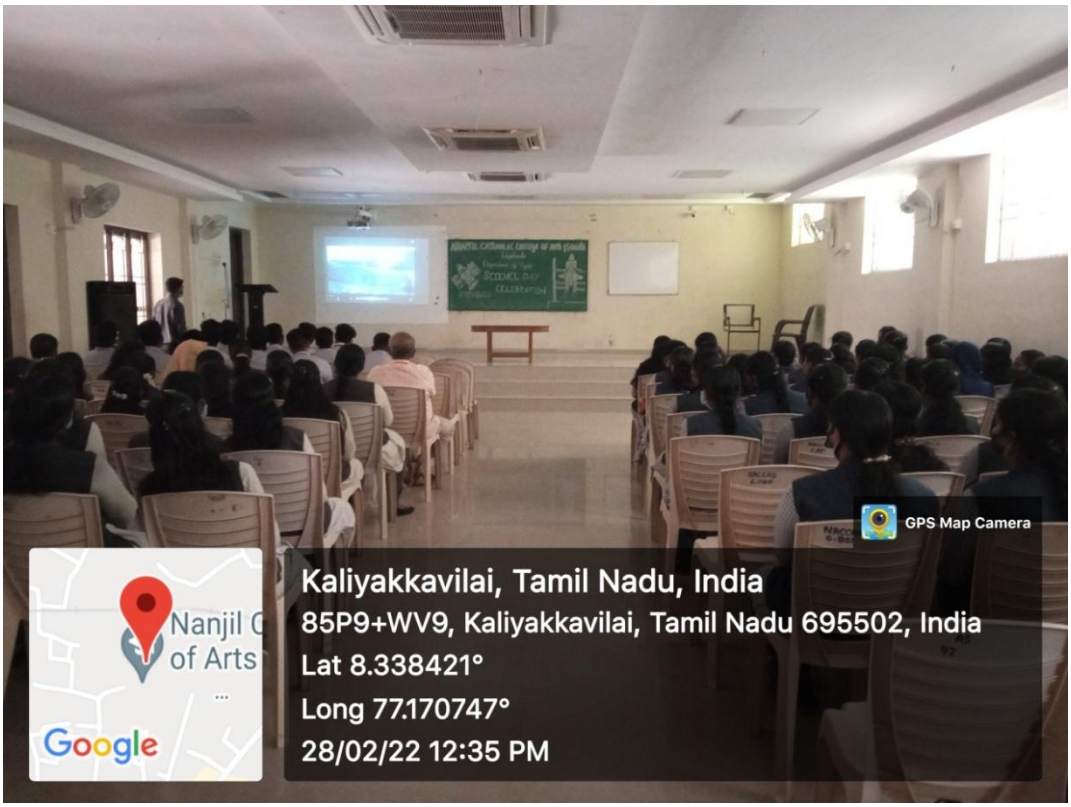
Water system Management

Repairing

Independence Day

Republic Day

National Science Day

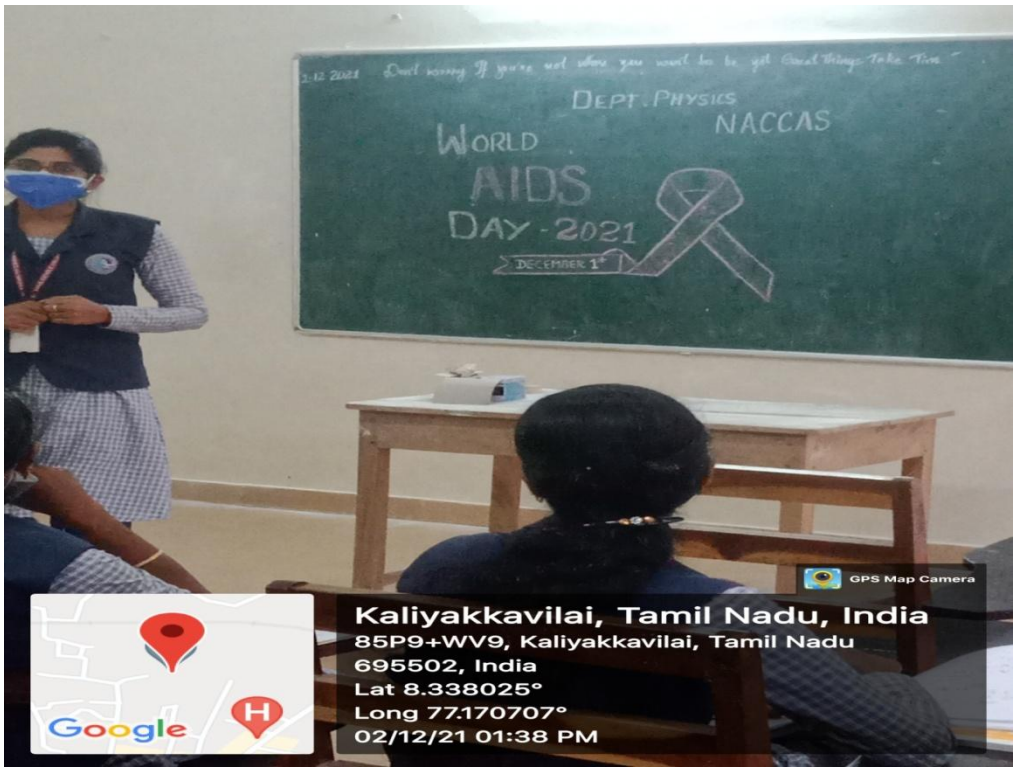


Christmas Day

Women's Day

Pongal Day

Aids Day



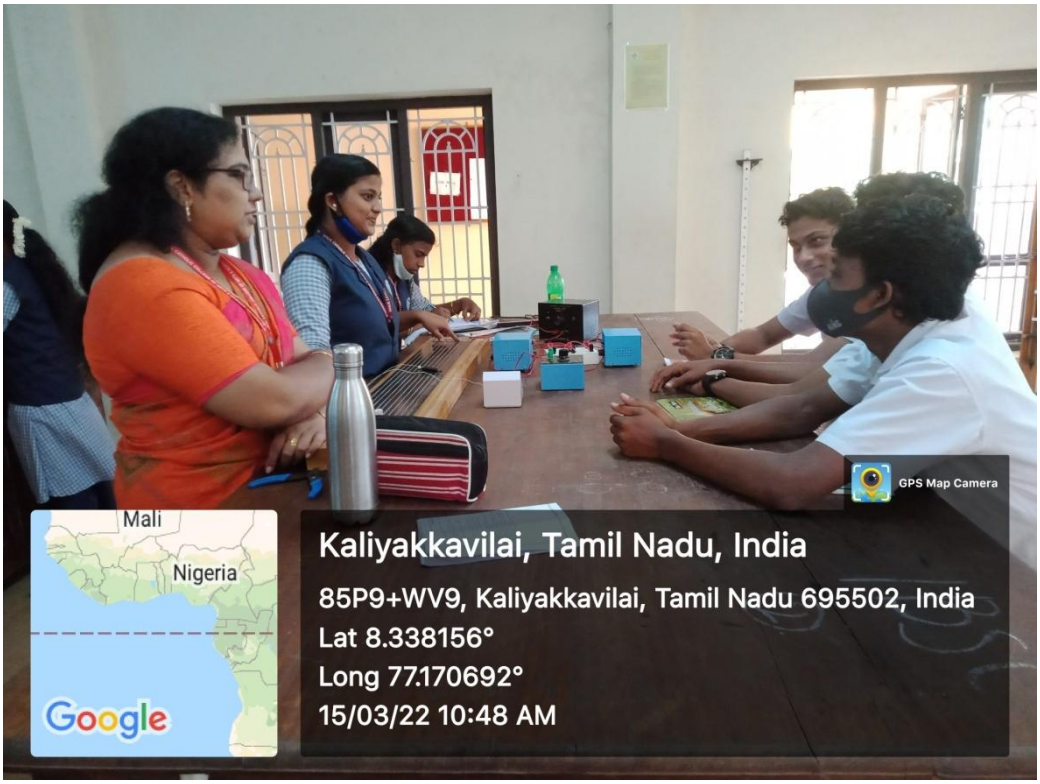
Debate

Fresher's Day.

Hands –on- Training

Establishment of New Lab

Student Support



YEAR
2017 - 2022