SRI MANAKULA VINAYAGAR ENGINEERING COLLEGE
(An Autonomous Institution)
(Approved by AICTE, New Delhi and Affiliated to Pondicherry University)
(Accredited by NAAC with 'A' Grade and Accredited by NBA-AICTE, New Delhi)
Madagadipet, Puducherry

SCHOOL OF ARTS AND SCIENCE

Department of Physics

Sixth Meeting of the Board of Studies for the UG (B.Sc)programme
and
First Meeting of the Board of Studies for the PG (M.Sc) programme

Venue

Physics lab, SAS Block

Sri ManakulaVinayagar Engineering College

Madagadipet, Puducherry – 605 107

Date & Time

26.05.2023&10.00 A.M

Minutes of Board of Studies

The Sixth Meeting of the Board of Studiesfor the programme B.Sc. and First Meeting of the Board of studies for the programme M.Sc. of the Department of Physics were held on Friday, the **26th May 2023 at 10.00 am** in the Physics Lab, SAS Block, Sri Manakula Vinayagar Engineering College with the Head of the Department in the chair.

The following members were present for the BoS meeting

Sl.No	Name of the Member with Designation and official Address	Responsibility in the BoS
1	**Dr. T. Jayavarthanan,** M.Sc., M.Phil., Ph.D. Professor Department of Physics, SMVEC	Chairman
External Members		
2	**Dr. B. J. Kalaiselvi,** M.Sc., M.Tech., Ph.D Professor, Department of Physics, Pondicherry Engineering College, Puducherry-605014	Pondicherry University Nominee
3	**Dr. S. Senthilnathan**, M.Sc., M.Phil., Ph.D. Professor, Department of Physics University college of Engineering, Pattukottai	Academic Council Nominee
4	**Dr. D. Manikandan**, M.Sc., M.Phil., Ph.D. Assistant Professor,Arignar Anna Govt Arts College, Villupuram	Academic Council Nominee
5	**Mr. J. Bagairathan**, M.Sc., M.Tech Manager, L.G. balakrishnan& brothers Ltd	Industrial Nominee
Internal Members		
1	Mr. K. Oudayakumar. M.Sc., M.Tech., (Ph.D)	Member
2	Dr.T.Sivarajani M.Sc., M.Phil., Ph.D	
3	Ms. S. GeethaM.Sc., M.Phil., B.Ed.	Member
4	Dr. K. SamuvelM.Sc., M.Phil., Ph.D	Member
Co-opted Members		
1	Dr.M.A.IshrathJahan M.A., M.Phil., Ph.D	Member
2	Dr. S. SavithriM.Sc., M.Phil., Ph.D	Member
3	Mr.M. Krishnamoorthy,M.Sc.,M.Phil	Member

AGENDA OF THE MEETING

BOS/2023/SAS/PH U.G/P.G / 6.1	Welcome Address, Introduction about the Institution, Department and BoS Members
6.2	Confirmation of Minutes of the Fifth Meeting of the Board of Studies.
6.3	To discuss and approve B.Sc. Physics Curriculum (I-VI Semester) and Syllabi (I – Semester) under R-2023 regulation
6.4	To discuss and recommend ❖ Project area of the third year students ❖ Placement Training for the Final Year Students
6.5	To discuss and approve M.Sc. Physics Curriculum (I-IV Semester) and Syllabi (I – Semester) under R-2023 regulation
6.6	Discussion of the following as in the Regulation - 2023 of School of Arts and Science ❖ Admission eligibility criteria / norms to enroll as student in the specific programme as prescribed by UGC ❖ Conduct of Internal assessment test, model practical exams, award of internal assessment /Re Earn / Improvement / Evaluation Procedures. ❖ Value added Courses ❖ Department research activities Professional Bodies activities and its outcome
6.7	Any other itemwith the permission of the Chair

The Chairman proceeded with the presentation to deliberate on agenda items.

BOS /2023/ SAS /PH/ UG /6.1	**Welcome Address, Introduction about the Institution, Department and BOS Members**
	❖ The Chairman of the meeting formally welcomed the hon'ble members of the Board and introduced them the credentials of the Institution and of the Department. ❖ The attainments and awards of the Institution have been briefed for the benefit of the members of the Board. ❖ The members have expressed their appreciations for the achievements of the Institution, the Department and students who placed in the Campus.

6.2	**Confirmation of Minutes of the BoS-5th Meeting held on 01.09.2022**
	The BoS- 5th Meeting for B.Sc. Physics under regulation 2020 held on 01-09-2022 confirmed the following points. The BOS members discussed elaborately and reviewed the Syllabi of Semesters V to VI and suggested the following points, ➢ BoS members was satisfied with the Changes made in V & VI semesters as per discussion carried in the Fifth BoS ➢ The Board suggested to take the students for industrial visit as per the theory papers they are studying in that semesters ➢ The Board suggested to pair the students in a group and to give separate field for each group like electronics, basis of nano-materials, optical and electrical properties etc. to come out with recent advancement in each fields. ➢ Suggested to make the students to write a project article based on their project work and make them to publish in the journal Further BOS members suggested signing MOUs with industries in order to ensure practical understanding of theory learning. **Minutes were Reviewed and Confirmed**
6.3	**To discuss and approve B.Sc. Physics Curriculum (I-VI Semester) and Syllabi (I – Semester) under R-2023 regulation**
	The BOS members discussed elaborately B.Sc PhysicsCurriculum (I-VI) and Syllabi of I Semester and they suggested the following points, ➢ Boards of Study members were satisfied with the uniqueness of the R-2023 Curriculum structure and I Semester Syllabi. ➢ The Board members appreciated the Internship procedures and parameters for IV Semester Students. ➢ Theysuggested few modifications in the revised curriculumand syllabi (I – Semester) as per Autonomous Regulation –2023 and the same had been approved by the board members. **Suggestion given below**

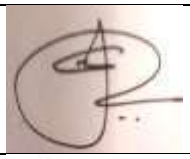
Sl. No	Regulation	Semester	Course Title with Course code	Suggested
1	2023	III	Open Elective I	Board Members suggested to add the below syllabi for Open Elective I - 1. Everyday Physics 2. Basic of Electrical Circuits 3. Historical Physics
2	2023	IV	Open Elective II	Board Members suggested to add the below syllabi for Open Elective II - 1. Instrumentation Physics 2. Electrical Wiring 3. Basic of Nanomaterials

6.4	**To discuss and recommend** ❖ **Project area of the third year students** ❖ **Placement Training for the Final Year Students**
	➢ The Board suggested to take the students for Industrial Visit based on the core papers that are studying on that semesters ➢ The Board recommended providing distinctive fields in Physics like Electronics, Basis of Nano-Materials, Optical and Electrical properties to identify and bring out the recent trends and advancement in each field either as a group activity or individual activity. ➢ Members stressed to equip and develop research skills and project skills by inculcating themselves in Article writing, Research writing, and Journal writing. ➢ Further BOS members suggested signing MOUs with industries in order to ensure practical understanding of theory learning.
6.5	**To discuss and approve M.Sc. Physics Curriculum (I-IV Semester) and Syllabi (I – Semester) under R-2023 regulation**
	Board Chairman presented M.Sc. Physics Curriculum (I-IV Semester) and Syllabi (I – Semester) as per Autonomous Regulation – 2023 ➢ The BoS members appreciated M.Sc.Physics Curriculum (I-IV Semester) and Syllabi (I – Semester). ➢ Members suggested few modifications in the M.Sc. Physics Curriculum and I Semester Syllabi, and the same had been approved by the board members. ➢ Board Members suggested to include Non-Major courses as Inter discipline syllabi **The details are given in Annexure - I**
6.6	**Discussion of the following as in the Regulation 2023 of School of Arts and Science**
	❖ Admission eligibility criteria / norms to enroll as student in the specific programme as prescribed by UGC ❖ Conduct of Internal assessment test, model practical exams, award of internal assessment /Re Earn / Improvement / Evaluation Procedures. ❖ Value added Courses ❖ Department research activities ❖ Professional Bodies activities and its outcome The Board members appreciated and approved the above mentioned
6.7	**Any other Item with the permission of chair**
	➢ Members of the BOS proposed offering online courses like NPTEL and MOOCs. ➢ Members of BOS advised that honor'sdegree for students majoring in B.Sc., and M.Sc., should be prioritized.

The Board of Studies approved the above suggestions for B.Sc. Physics and M.Sc.Physics

. The meeting was concluded at 11:45amwith vote of thanks by Dr.T.Jayavarthanan, Professor Department of Physics.

Minutes of the sixth Meeting of the Board of studies held on 26.05.2023 is signed by the members who attended the meeting.

Sl.No	Name of the Member with Designation and official Address	Responsibility in the BoS	Signature
1	**Dr. T. Jayavarthanan,** M.Sc., M.Phil., Ph.D. Professor Department of Physics, SMVEC	Chairman	
External Members			
2	**Dr. B. J. Kalaiselvi,** M.Sc., M.Tech., Ph.D Professor, Department of Physics, Pondicherry Engineering College, Puducherry-605014	Pondicherry University Nominee	
3	**Dr. S. Senthilnathan**, M.Sc., M.Phil., Ph.D. Professor, Department of Physics University college of Engineering, Pattukottai	Academic Council Nominee	
4	**Dr. D. Manikandan**, M.Sc., M.Phil., Ph.D. Assistant Professor,Arignar Anna Govt Arts College, Villupuram	Academic Council Nominee	
5	**Mr. J. Bagairathan**, M.Sc., M.Tech Manager, L.G. balakrishnan& brothers Ltd	Industrial Nominee	
Internal Members			
1	Mr. K. Oudayakumar. M.Sc., M.Tech	Member	
2	Dr.T.Sivarajani M.Sc., M.Phil., Ph.D	Member	
3	Dr. K. Samuvel M.Sc., M.Phil., Ph.D	Member	
4	Ms. S. Geetha M.Sc., M.Phil., B.Ed.	Member	
Co-opted Members			
1	Dr.M.A.IshrathJahan M.A., M.Phil., Ph.D	Member	
2	Dr. S. Savithri, M.Sc., M.Phil., Ph.D	Member	
3	Mr.Krishnamoorthy, M.Sc.,M.Phil	Member	

DEAN SAS
(Dr.S.Muthulakshmi)

Dr.T.Jayavarthanan
Professor / Physics
Chairman –BOS

SRI MANAKULA VINAYAGAR ENGINEERING COLLEGE
(An Autonomous Institution)
(Approved by AICTE, New Delhi and Affiliated to Pondicherry University)
(Accredited by NAAC with 'A' Grade and Accredited by NBA-AICTE, New Delhi)
Madagadipet, Puducherry

SCHOOL OF ARTS AND SCIENCE

BACHELOR OF SCIENCE
IN
PHYSICS

ACADEMIC REGULATIONS 2023
(R-2023)
CURRICULUM AND SYLLABI

COLLEGE VISION AND MISSION

Vision

To be globally recognized for excellence in quality education, innovation and research for the transformation of lives to serve the society.

Mission

M1: Quality Education:

To provide comprehensive academic system that amalgamates the cutting edge technologies with best practices.

M2: **Research and Innovation:**

To foster value based research and innovation in collaboration with industries and institutions globally for creating intellectuals with new avenues.

M3: Employability and Entrepreneurship:

To inculcate the employability and entrepreneurial skills through value and skill based training.

M4: Ethical Values:

To instill deep sense of human values by blending societal righteousness with academicprofessionalism for the growth of society.

DEPARTMENT OF PHYSICS

VISION AND MISSION

Vision

To excel in quality based science education by igniting the young talented minds with novel ideas and to develop a scientific temper and a sense of social commitment in students.

Mission

M1: Preeminent Education

To impart quality education both in theoretical and experimental physics through effective Teaching Learning process and to motivate students to pursue higher studies in Physics this will improve their career forecasts.

M2: Reach global standard

To reach global standards in production and value based living through an honest and scientific approach

M3: Ethical Responsibility

To create a sense of ethical responsibilities among the students

STRUCTURE FOR UNDERGRADUATE PROGRAMME

Sl. No	Course Category	Breakdown of Credits
1	Modern Indian Language (MIL)	6
2	English (ENG)	6
3	Discipline Specific Core Courses (DSC)	76
4	Discipline Specific Elective Courses (DSE)	16
5	Inter-Disciplinary Courses (IDC)	20
6	Skill Enhancement Courses (SEC)	12
7	Employability Enhancement Courses (EEC*)	--
8	Ability Enhancement Compulsory Courses (AECC)	4
9	Open Elective (OE)	4
10	Extension Activity (EA)	--
11	Online Certificate Course	--
Total		**144**

SCHEME OF CREDIT DISTRIBUTION – SUMMARY

Sl.No	Course Category	Credits per Semester						Total Credits
		I	II	III	IV	V	VI	
1	Modern Indian Language (MIL)	3	3	-	-	-	-	6
2	English (ENG)	3	3	-	-	-	-	6
3	Discipline Specific Core Courses (DSC)	10	10	10	13	16	17	76
4	Discipline Specific Elective Courses (DSE)	-	-	4	4	4	4	16
5	Inter-Disciplinary courses (IDC)	4	4	6	6	-	-	20
6	Skill Enhancement Courses (SEC)	2	2	2	2	2	2	12
7	Employability Enhancement Courses (EEC*)	-	-	-	-	-	-	-
8	Ability Enhancement Compulsory Courses (AECC)	1	1	1	1	-	-	4
9	Open Elective (OE)	-	-	2	2	-	-	4
10	Extension Activity (EA)	-	-	-	-	-	-	-
11	Online Certificate Course	-	-	-		-	-	-
Total		**23**	**23**	**25**	**28**	**22**	**23**	**144**

**** EEC will not be included for the computation of "total of credits" as well as "CGPA"***

PROGRAMME OUTCOMES

At the end of the programme the students will

P**O1**	Enhance academic abilities, personal qualities and transfer able skills which will give the man opportunity to develop as responsible citizens.
PO2	Excel in the competencies and value required for leadership to serve a rapidly evolving global community
PO3	Acquire sound knowledge in the concepts and significance of the various physical phenomena.
PO4	Apply the theories learnt and the skills acquired to solve real time problems and to develop the interest to gauge the physical properties of materials.
PO5	Effectively apply the core concepts through information technology.

PROGRAMME SPECIFIC OUTCOMES

At the time of graduation the students will

PSO1	Gain a wide spectrum of skills which will enable them to solve both theoretical and experimental problems
PSO2	Acquire laboratory skills as per standards, and will proficiently handle the electrical and electronic instruments
PSO3	Understand the importance of energy conservation and skill to gauge the Physical properties of materials

.

SEMESTER – I										
Sl. No.	**Course Code**	**Course Title**	**Category**	**Periods**			**Credits**	**Max. Marks**		
				L	**T**	**P**		**CAM**	**ESM**	**Total**
Theory										
1	A23TAT101C	Tamil I	**MIL**	3	0	0	3	25	75	100
	A23FRT101C	French I								
2	A23GET101C	General English I	**English**	3	0	0	3	25	75	100
3	A23PHT101D	Mechanics and Properties of Matter	**DSC**	4	0	0	4	25	75	100
4	A23PHT102D	Thermal Physics	**DSC**	4	0	0	4	25	75	100
5	A23MAD103C	Allied Mathematics – I	**IDC**	3	1	0	4	25	75	100
Practical										
6	A23PHL101D	Physics Practical – I	**DSC**	0	0	2	2	50	50	100
Skilled Enhancement Courses										
7	A23ENSA02C	Soft Skills	**SEC**	2	0	0	2	100	0	100
Ability Enhancement Course										
8	A23AETA01C	Public administration	**AEC**	2	0	0	1	100	0	100
Employability Enhancement Course										
9	A23PHC101D	Certification Course - I	**EEC**	2	0	0	0	100	0	100
			First Semester Total				23	475	425	900

SEMESTER – II										
Sl. No.	**Course Code**	**Course Title**	**Category**	**Periods**			**Credits**	**Max. Marks**		
				L	**T**	**P**		**CAM**	**ESM**	**Total**
Theory										
1	A23TAT202C	Tamil II	**MIL**	3	0	0	3	25	75	100
	A23FRT202C	French II								
2	A23GET202C	General English II	**English**	3	0	0	3	25	75	100
3	A23PHT203D	Electricity and Magnetism	**DSC**	4	0	0	4	25	75	100
4	A23PHT204D	Optics	**DSC**	4	0	0	4	25	75	100
5	A23MAD204C	Allied Mathematics II	**IDC**	3	1	0	4	25	75	100
Practical										
6	A23PHL202D	Physics Practical II	**DSC**	0	0	2	2	50	50	100
Skilled Enhancement Courses										
7	A23ENSA01C	Communication Skills	**SEC**	2	0	0	2	100	0	100
Ability Enhancement Course										
8	A23AETA02C	Environmental Studies	**AEC**	2	0	0	1	100	0	100
Employability Enhancement Course										
9	A23PHC202D	Certification Course - II	**EEC**	2	0	2	0	100	0	100
Extension Activity										
10	A23EAS201C	National Service Scheme	**EA**	0	0	2	0	100	0	100
Semester Total							23	575	425	1000

SEMESTER – III										
Sl. No.	Course Code	Course Title	Category	Periods			Credits	Max. Marks		
				L	T	P		CAM	ESM	Total
Theory										
1	A23PHT305D	Waves, Oscillations and Acoustics	**DSC**	3	1	0	4	25	75	100
2	A23PHT306D	Basic Electronics	**DSC**	3	1	0	4	25	75	100
3	A23PHEXXXD	Discipline Specific Elective- I*	**DSE**	3	1	0	4	25	75	100
4	A23CHD304C	Allied Chemistry – I	**IDC**	3	1	0	4	25	75	100
5	A23XXO30XC	Open Elective – I**	**OE**	2	0	0	2	25	75	100
Practical										
6	A23PHL303D	Physics Practical III	**DSC**	0	0	2	2	50	50	100
7	A23CHI304C	Allied Chemistry Practical I	**IDC**	0	0	2	2	50	50	100
Skilled Enhancement Courses										
8	A23MASA01C	Quantitative Aptitude and Logical Reasoning	**SEC**	2	0	0	2	100	0	100
Ability Enhancement Course										
9	A23AETA03C	Indian Constitution	**AEC**	2	0	0	1	100	0	100
Employability Enhancement Course										
10	A23PHC303D	Certification Course - III	**EEC**	2	0	2	0	100	0	100
			Third Semester Total				25	525	475	1000

SEMESTER – IV										
Sl. No.	Course Code	Course Title	Category	Periods			Credits	Max. Marks		
				L	T	P		CAM	ESM	Total
Theory										
1	A23PHT407D	Applied Electronics	**DSC**	3	1	0	4	25	75	100
2	A23PHT408D	Laser and Fiber Optics Communication	**DSC**	3	1	0	4	25	75	100
3	A23PHEXXXD	Discipline Specific Elective-II*	**DSE**	3	1	0	4	25	75	100
4	A23CHD405C	Allied Chemistry – II	**IDC**	3	1	0	4	25	75	100
5	A23XXO40XC	Open Elective – II**	**OE**	2	0	0	2	25	75	100
Practical										
6	A23PHL404D	Physics Practical IV	**DSC**	0	0	2	2	50	50	100
7	A23CHI405C	Allied Chemistry Practical II	**IDC**	0	0	2	2	50	50	100
Internship										
8	A23PHN401D	Internship / In-plant training	**DSC**	0	0	6	3	40	60	100
Skilled Enhancement Courses										
9	A23PHS401D	Essentials of Electricity	**SEC**	2	0	0	2	100	0	100
Ability Enhancement Course										
10	A23AETA04C	Value Education	**AEC**	2	0	0	1	100		100
Employability Enhancement Course										
11	A23PHC404D	Certification Course - IV	**EEC**	2	0	2	0	100	0	100
Fourth Semester Total							28	565	535	1100

SEMESTER – V										
Sl. No.	**Course Code**	**Course Title**	**Category**	**Periods**			**Credits**	**Max. Marks**		
				L	**T**	**P**		**CAM**	**ESM**	**Total**
Theory										
1	A23PHT509D	Atomic and Molecular Spectroscopy	**DSC**	3	1	0	4	25	75	100
2	A23PHT510D	Solid state Physics	**DSC**	3	1	0	4	25	75	100
3	A23PHT511D	Relativity and Quantum Mechanics	**DSC**	3	1	0	4	25	75	100
4	A23PHEXXXD	Discipline Specific Elective-III**	**DSE**	3	1	0	4	25	75	100
Practical										
5	A23PHL505D	Physics Practical V	**DSC**	0	0	2	2	50	50	100
6	A23PHL506D	Physics Practical VI	**DSC**	0	0	2	2	50	50	100
Skilled Enhancement Course										
7	A23PHS502D	Research Methodology for Physics	**SEC**	2	0	0	2	100	0	100
Online Certificate Course										
8	A23PHM501D	MOOC – Certificate Course	**OCC**	0	0	2	0	100	0	100
			Fifth Semester Total				22	400	400	800

SEMESTER – VI											
Sl. No.	**Course Code**	**Course Title**	**Category**	**Periods**			**Credits**	**Max. Marks**		
				L	**T**	**P**		**CAM**	**ESM**	**Total**
Theory										
1	A23PHT612D	Nuclear& Radiation Physics	**DSC**	3	1	0	4	25	75	100
2	A23PHT613D	Semiconductor Device	**DSC**	3	1	0	4	25	75	100
3	A23PHEXXXD	Discipline Specific Elective – IV**	**DSE**	3	1	0	4	25	75	100
Practical										
4	A23PHL607D	Physics Practical VII	**DSC**	0	0	2	2	50	50	100
5	A23PHL608D	Physics Practical VIII	**DSC**	0	0	2	2	50	50	100
Project										
6	A23PHP601D	Project	**DSC**	0	0	10	5	40	60	100
Skilled Enhancement Course										
7	A23PHS603D	Weather Forecasting	**SEC**	2	0	0	2	100	0	100
Sixth Semester Total							23	315	385	700

Department	**TAMIL**	Programme: **B.Sc.Physics**						
Semester	**I**	Course Category Code: **MIL**			End Semester Exam Type: **TE**			
Course Code	**A23TAT101C**	Periods/Week			Credit	Maximum Marks		
		L	T	P	C	CAM	ESE	M
Course Name	**TAMIL – I**	**3**	**0**	**0**	**3**	**25**	**75**	**.00**

(Common to **B.A, B.Sc., BBA., B.COM., BCA., B.COM CS.,**)

Prerequisite	பன்னிரெண்டாம்வகுப்பில் தமிழைஒருபாடமாகப்பயின்றிருக்கவேண்டும்.
Course Objectives	• செவ்விலக்கியதன்மைகொண்டதமிழ்மொழியின் சிறப்பினைஎடுத்துரைப்பதாக இப்பாடத்திட்டம் அமைக்கப்பட்டுள்ளது. • இரண்டாயிரம் ஆண்டுகாலத் தமிழின் தொன்மையையும் வரலாற்றையும் அதன் விழுமியங்களையும் பண்பாட்டையும் எடுத்துரைப்பதாக இப்பாடத்திட்டம் அமைக்கப்பட்டுள்ளது. • தமிழ் இலக்கியம் உள்ளடக்கத்திலும்,வடிவத்திலும் பெற்றமாற்றங்கள்,அதன் சிந்தனைகள்,அடையாளங்கள் ஆகியவற்றைக் காலந்தோறும் எழுதப்பட்ட இக்கியங்களின் வழியாகக் கூறுவதற்கு இப்பாடத்திட்டம் அமைக்கப்பட்டுள்ளது. • வாழ்வியல் சிந்தனைகள்,ஒழுக்கவியல் கோட்பாடுகள்,சமத்துவம், சூழலியல் எனப் பல கூறுகளைமாணவர்களுக்குஎடுத்துரைக்கும் விதத்தில் இப்பாடத்திட்டம் உருவாக்கப்பட்டுள்ளது. • சிந்தனைஆற்றலைப் பெருக்குவதற்குத் தாய்மொழியின் பங்களிப்பினைஉணர்த்த இப்பாடத்திட்டம் அமைக்கப்பட்டுள்ளது.

CourseOutcome	**On completion of the course, the students will be able to**		BT Mapping (Highest Level)
	CO1	இலக்கியங்கள் உணர்த்தும் வாழ்வியல் நெறிமுறைகளைப் பேணிநடத்தல்.	**K3**
	CO2	நமதுஎண்ணத்தைவெளிப்படுத்தும் கருவியாகத் தாய்மொழியைப் பயன்படுத்துதல்.	**K3**
	CO3	தகவல் தெடர்புக்குத் தாய்மொழியின் முக்கியத்துவத்தைஉணர்தல்.	**K2**
	CO4	தாய்மொழியின் சிறப்பைஅறிதல்.	**K2**
	CO5	இலக்கிய இன்பங்களைநுகரும் திறன்களைவளர்த்தல்.	**K3**

UNIT-I	**இக்கால இலக்கியம்- மரபுக்கவிதைகள்- புதுக்கவிதைகள்- சிறுகதை**	**Periods: 09**
மரபுக்கவிதைகள் - பாரதியார்-வெள்ளிப் பனிமலையின் மீதுலாவுவோம்... (13 பாடல்கள்)- பாரதிதாசன்-புரட்சிக்கவி (பேரன்புக் கொண்டவரே...முதல் - கவிஞனுக்கும் காதலிக்கும் மீட்சிதந்தார்வரை) தங்கப்பா - பனிப்பாறைநுனிகள் - வாழ்க்கைஓவியம். **புதுக்கவிதைகள்-**அப்துல் ரகுமான் - வடலூரும் வார்தாவும் - யுகி - உயிர்ப்பு (இயற்கையின் எலும்புமுறிப்பு) **–சிறுகதை -**ஆர்.சூடாமணி - சாம்பலுக்குள்.		**CO1**
UNIT-II	**நாடகம் -உரைநடை- நாவல்**	**Periods: 09**
நாடகம் - பிரபஞ்சன் - முட்டை - **உரைநடை** - இரா.வேங்கடாசலபதி - அந்தக் காலத்தில் காப்பி இல்லை**–நாவல் -** இரா.முருகவேள் - மிளிர்கல்		**CO2**
UNIT-III	**பக்தி இலக்கியம் -சைவம்- வைணவம் - கிறித்துவம் - இஸ்லாம**	**Periods: 09**
பக்தி இலக்கியம் -சைவம்-திருஞானசம்பந்தா - முதல் திருமுறை - தோடுடையசெவியன்...பாடல் மட்டும் - திருநாவுக்கரசர் - நான்காம் திருமுறை - கூற்றாயினவாறு...பாடல் மட்டும்- சுந்தரர் - ஏழாம் திருமுறை - பித்தாபிறைசூடி...பாடல் மட்டும் - மாணிக்கவாசகர் - திருவாசகம் - புல்லாய் புழுவாய்...பாடல் மட்டும் - திருமூலர் - திருமந்திரம் - ஆர்க்கும் இடுமின்...பாடல் மட்டும் - காரைக்காலம்மையார்-திருவிரட்டைமணிமாலை - அன்பால் அடைவதெவ்வாறு...பாடல் மட்டும். **வைணவம் -** பொய்கையாழ்வார் - வையம் தகளியாய்...பாடல் மட்டும் -பூதத்தாழ்வார் - அன்பேதகளியாய்...பாடல் மட்டும் - பேயாழ்வார் - திருக்கண்டேன் பொன்மேனி...பாடல் மட்டும் - நம்மாழ்வார் - திருவாய்மொழி - உளன் எனின்...பாடல் மட்டும் - பெரியாழ்வார் - பெரியாழ்வார்திருமொழி - வாக்குத் தூய்மை...பாடல் மட்டும் -ஆண்டாள் - நாச்சியார்திருமொழி– என்புஉருகி இனவேல்...பாடல் மட்டும் - **கிறித்துவம் -** இரட்சண்யமனோகரம் - ஆவிக்குறுவெந்துயர்...முதல் உனையல்லதுபற்றுதோவரை - **இஸ்லாம் -** குணங்குடி மஸ்தான் சாகிபு– ரகுமான் கண்ணி -அடைத்தமனக்கோட்டை...முதல் என்கண் வரை		**CO3**
UNIT-IV	**சிற்றிலக்கியம் - முத்தொள்ளாயிரம் -உலா- கலம்பகம்- பள்ளு-இடைக்காலப் புலவர்கள்**	**Periods: 09**
சிற்றிலக்கியம் - முத்தொள்ளாயிரம் - 1.வேரறுகைபம்பிச் சுரையாய்...2.மாலை விலைபகர்வார்... 3.என்னை உரையல் ...எனத் தொடங்கும் பாடல்கள் மட்டும் - **உலா**- குலோத்துங்கசோழன் உலா- தாளைஅரவிந்தச் சாதி...முதல் நிலவென்றாள் வரை - **கலம்பகம் -**திருவரங்கக்கலம்பகம் - உருமாறிப் பலபிறப்பும்...முதல் ஆடீர் வாசல் வரை - **பள்ளு -** முக்கூடற்பள்ளு - நாட்டுவளம் - கறைபட்டுள்ளது...எனத்தொடங்கும் பாடல் மட்டும் -**தூது**-அழகர்கிள்ளைவிடு தூது - இன்சொல்லை.....முதல் உபதேசமாகஉரைப்பாய் வரை**இடைக்காலப் புலவர்கள் -** இராமலிங்கஅடிகள் - மஹாதேவமாலை– படித்தேன்...முதல் பொய் உலகியல் வரை–வீரமாமுனிவர்திருக்காவலூர்க் கலம்பகம் - தழை–போதவிழ்ப்...எனத்தொடங்கும் பாடல் மட்டும் - மு.முஹம்மதுதஹா - ∴கௌதுமுஹிய்யித்தீன் பிள்ளைத் தமிழ் - வயிறுபுடைக்கஉண்கின்றீர்...பாடல் மட்டும்.		**CO4**
UNIT-V	**மொழிப்பயிற்சி-இலக்கியவரலாறு**	**Periods: 09**
மொழிப்பயிற்சி - 1.வலிமிகும் இடங்கள் ,வலிமிகா இடங்கள்.- 2.அகரவரிசைப்படுத்துதல்.-3.நேர்காணல் - **இலக்கியவரலாறு -** இக்கால இலக்கியம்,பக்தி இலக்கியம்,சிற்றிலக்கியம் குறித்தபாடப்பகுதியைஒட்டியது.		**CO5**

Lecture Periods: 45	Tutorial Periods:-	Practical Periods:-	Total Periods:45

Text Books

1. **பாரதியார்–பாரதியார்கவிதைகள்,Kindle Edition**, Published June 2, 2020.
2. **சிவகுமார். எஸ்., - கொங்குதேர்வாழ்க்கை,**பாடல் தொகுப்பு நூல் - தொகுதி -1 யுனைடெட் ரைட்டர்ஸ்,சென்னை -86. முதற்பதிப்பு 2003.
3. **சூடாமணி.ஆர். - தனிமைத் தளிர்,தேர்ந்தெடுத்தசிறுகதைகள்,**காலச்சுவடுபதிப்பகம்,முதல் பதிப்பு: செப்டம்பர் 2013.
4. **பிரபஞ்சன் - ஜீவநதி (நாடகங்கள்) –கவிதாபப்ளிகேஷன், 8,மாசிலாமணிதெரு,பாண்டிபஜார்,தி.நகர்,சென்னை -600 017**
5. **முருகவேள்.இரா., - மிளிர்கல்,**ஐம்பொழில் பதிப்பகம்,திருப்பூர், இரண்டாம் பதிப்பு, 2014.

Reference Books

1. **வல்லிக்கண்ணன்,புதுக்கவிதையின் தோற்றமும் வளர்ச்சியும்,ஸ்ரீசெண்பகாபதிப்பகம்**, ஜனவரி,1, 2020.
2. **சிற்பிபாலசுப்பிரமணியம் மற்றும் நீலபத்மநாபன் (ப.ஆசி.) – புதியதமிழ் இலக்கியவரலாறு, தொகுதி-1,2,3,**சாகித்தியஅகாதெமி,புதுடெல்லி, 2013.
3. **பாக்கியமேரி,வகைமைநோக்கில் தமிழ் இலக்கியவரலாறு (செம்மைமற்றும் விரிவுப் பதிப்பு),**பாரிநிலையம். சென்னை,
4. **ஆனந்தன்,முனைவர்.சு., - தமிழ் இலக்கியவரலாறு,**கண்மணிபதிப்பகம், திருச்சி-2. இருபத்தி மூன்றாம் பதிப்பு– 2015.
5. **பரந்தாமனார்,அ.கி., - நல்லதமிழ் எழுதவேண்டுமா,**பாரிநிலையம்,சென்னை, 1998.

Web References

1. http://www.tamilvu.org
2. http://www.tamilweb.com
3. http://www.tamilkodal.com
4. www.store.tamillexican.com
5. www.kala.tamilforu.blogspot.com
6. www.noolagam.com

COs/POs/PSOs Mapping

COs	Program Outcomes (POs)					Program Specific Outcomes (PSOs)		
	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO 3
1	3	3	3	3	3	3	3	3
2	3	3	3	3	3	3	3	3
3	3	2	3	3	2	3	3	3
4	2	3	2	1	2	2	3	2
5	3	3	3	3	3	3	3	3

Correlation Level: 1:Low, 2:Moderate, 3:High

Evaluation Method

Assessment	Continuous Assessment Marks (CAM)					End Semester Examination (ESE) Marks	Total Marks
	CAT 1	CAT 2	Model Exam	Assignment*	Attendance		
Marks	10		5	5	5	75	100

* Application oriented / Problem solving / Design / Analytical in content beyond the syllabus

Department	**French**	Programme : **B.Sc.Physics**					
Semester	**I**	Course Category Code: **MIL**			End Semester Exam Type: **TE**		
Course Code	**A23FRT101C**	**Periods/Week**			**Credit**	**Maximum Marks**	
		L	**T**	**P**	**C**	**CAM**	**ESE**
Course Name	**FRENCH I**	**3**	**0**	**0**	**3**	**25**	**75**

(Common to B.A.., B.SC., and BCA Branches)

Prerequisite	French language in class 12th	
Course Objectives	To introduce the basics of French language to the students	
	To enable the students to read, understand and write simple sentences	
	To help them to grasp the fundamentals of French grammar	
	To make the students to formulate correct phrases	
	To introduce them French and Francophone countries and their cultures	
Course Outcomes	***On completion of the course, the students will be able to***	BT Mapping(Highest Level)
	CO1 have a general understanding of the language	**K1**
	CO2 analyze and interpret simple phrases written in French	**K2**
	CO3 have the basics of French grammar	**K3**
	CO4 communicate and ask basic questions in French language	**K4**
	CO5 appreciate the diversity and multiplicity of French and Francophone world	**K5**

UNIT-I	**S'introduire**	**Periods:09**
1. Le francais, les Francais, la France 2. Je m'appelle Elise, et vous ? 3. Saluer, se presenter, remercier 4. Vousdansez ?D'accord 5. Interroger quelqu'un et donner des informations		**CO1**
UNIT-II	**Demander des questions sur quelqu'un**	**Periods:09**
1. Monica, Yokiko et compagnie 2. Dire cequ'onl'aime 3. Les voisins de Sophie 4. Demander des informations sur quelqu'un		**CO2**
UNIT-III	**Expliquerquelque chose**	**Periods:09**
1. Tu vas au Luxembourg ? 2. Dire où on va, dire d'où on vient 3. Nous venons pour l'inscription 4. A vélo, en train, en avion… 5. Expliquer un itinéraire, proposer quelque chose		**CO3**
UNIT-IV	**Poser des questions et commander**	**Periods:09**
1. Pardon monsieur, le BHV s'il vous plait 2. Au marché 3. Acheter quelque chose, demander le prix 4. On déjeuneici ? 5. Aller au restaurant, comprendre un menu		**CO4**
UNIT-V	**Inviter et proposer quelque chose**	**Periods:09**
1. On va chez ma copine ? 2. Proposer quelque chose 3. Demander et donner des informations sur quelqu'un 4. Chez Susana 5. Etreinvité chez quelqu'un		**CO5**

Lecture Periods:45	**Tutorial Periods:-**	**Practical Periods:-**	**Total Periods:45**

Text Books

1. Sylvie Poisson Quinton and Michèle Maheo, *Festival 1 Méthode de Français*, CLE editions, 2009
2. Nathalie Hirschsprung and Tony Tricot, *Cosmopolite 1*, Hachette editions, 2017
3. Caroline Veltcheff and Stanley Hilton, *Preparation du Delf A1*, Hachette editions, 2011

Reference Books

1. Régine Mérieux and Yves Loiseau, *Latitudes 1*, Didier editions, 2017
2. Annie Berthet and Emmanuelle Daili, *Alter Ego + A1*, Hachette editions, 2012
3. Bruno Giradeau, *Réussir le Delf A1*, Didier editions, 2019
4. Richard Lescure, *Delf A1 150 Activités,* Langers and CLE, 2005
5. ManishaVerma, *La grammaire élémentaire française*, Notion Press, 2010

Web References

1. https://www.tv5monde.com
2. https://www.rfi.fr
3. https://www.lemonde.fr
4. https://www.frenchpodcasts.com
5. https://www.coursera.org

COs/POs/PSOs Mapping

COs	Program Outcomes (POs)					Program Specific Outcomes (PSOs)		
	PO 1	PO 2	PO 3	PO 4	PO 5	PSO 1	PSO 2	PSO 3
1	3	3	3	3	3	3	3	3
2	3	3	3	3	3	3	3	3
3	3	2	3	3	2	3	3	3
4	2	3	2	1	2	2	3	2
5	3	3	3	3	3	3	3	3

Correlation Level: 1:Low, 2:Moderate, 3:High

Evaluation Method

Assessment	Continuous Assessment Marks (CAM)					End Semester Examination (ESE) Marks	Total Marks
	CAT 1	CAT 2	Model Exam	Assignment*	Attendance		
Marks	10		5	5	5	75	100

***** Application oriented / Problem solving / Design / Analytical in content beyond the syllabus

Department	**ENGLISH**	Programme:**B. Sc.Physics**						
Semester	**I**	Course Category Code: **ENG**			End Semester Exam Type:**TE**			
Course Code	**A23GET101C**	Periods/Week			Credit	Maximum Marks		
		L	T	P	C	CAM	ESE	TM
Course Name	**GENERAL ENGLISH - I**	**3**	**0**	**0**	**3**	**25**	**75**	**100**
(Common to B.A.., B.SC., AND BCA Branches)								

Prerequisite	Basic part-two language and knowledge gained from Grammar and Vocabulary		
Course Objectives	To recognize the rhythms, metrics and other aspects of Literature		
	To read a variety of texts critically and proficiently		
	To enable the students to enjoy the flair of literature through the work of great writer		
	To make the students to know the functions of basic grammar		
	To enable them understanding the intrinsic nuances of writing in English language		
Course Outcomes	***On completion of the course, the students will be able to***		BT Mapping (Highest Level)
	CO1	comprehend and discuss the various facets of selected poems	**K3**
	CO2	analyze and interpret texts written in English	**K3**
	CO3	read drama with graduate-level interpretive and analytical proficiency	**K3**
	CO4	improve the fluency and formation of grammatically correct sentence	**K3**
	CO5	enhance the writing skills for specific purposes	**K3**

UNIT-I	**POETRY**	**Periods:09**
1. Rudyard Kipling – *IF* 2. William Wordsworth – *Daffodils* 3. Percy Bysshe Shelley – *Ozymandias* 4. William Ernest Henley – *Invictus* 5. Rabindranath Tagore – *On the Nature of Love*		**CO1**
UNIT-II	**PROSE**	**Periods:09**
1. Bertrand Russell – *The Road to Happiness* 2. Charles Lamb – *A Dissertation upon Roast Pig*		**CO2**
UNIT-III	**SHORT STORIES**	**Periods:09**
1. Oscar Wilde – *The Devoted Friend* 2. R. K. Narayan – *God and the Cobbler*		**CO3**
UNIT-IV	**DRAMA**	**Periods:09**
1. H H Munro – *The Death Trap* 2. J.M. Synge – *Riders to the Sea*		**CO4**
UNIT-V	**GRAMMAR AND COMPOSITION**	**Periods:09**
1. Parts of Speech 2. Subject-Verb Agreement 3. Letter Writing 4. Essay Writing		**CO5**

Lecture Periods:45	**Tutorial Periods:0**	**Practical Periods:-**	**Total Periods:45**

Text Books

1. Narayan, R.K, *Malgudi days*, Indian Thought Publication, 2019
2. Synge John Millington, *Riders to the Sea*, SahityaSarowar Publisher, 2022
3. P. C. Wren, H. Martin, *High School Wren and Martin English Grammar and Composition*, S. Chand & Company Pvt. Ltd, 2022.

Reference Books

1. Lamb, Charles, *Selected Prose*, Penguin Classics Publication, 2nd Edition, 2013.
2. S.C. Gupta, *English Grammar & Composition Very Useful for All Competitive Examinations*, Arihant Publications, 2014.
3. Saki, H. H. Munro, F. Carruthers Gould, *The Complete Works of Saki: Illustrated Edition: Novels, Short Stories, Plays, Sketches & Historical Works, including Reginald, The Chronicles of Clovis, ... The Death-Trap*, The Westminster Alice Kindle Edition, e-artnow, 2018.
4. J.M. Synge, S.C. Narula. *Riders to the Sea*. Surjeet Publication. 2018.
5. S.C.Gupta. *A Handbook for Letter Writing*. Arihant Publication. 2016.

Web References

1. https://www.englishcharity.com/of-love-by-francis-bacon-explanation/
2. https://www.gradesaver.com/charles-lamb-essays/study-guide/summary-a-dissertation-upon-roast-pig
3. https://allpoetry.com/On-The-Nature-Of-Love
4. http://sittingbee.com/god-and-the-cobbler-r-k-narayan/
5. https://www.toppr.com/guides/essays/

COs/POs/PSOs Mapping

COs	Program Outcomes (PO)					Program Specific Outcomes (PSOs)		
	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
1	3	3	3	3	3	3	3	3
2	3	3	3	3	2	3	3	3
3	3	3	3	3	3	3	2	3
4	2	3	2	2	3	3	3	3
5	3	3	3	3	3	3	3	3

Correlation Level: 1 - Low, 2 - Medium, 3 – High

Evaluation Method

Assessment	Continuous Assessment Marks (CAM)					End Semester Examination (ESE) Marks	Total Marks
	CAT 1	CAT 2	Model Exam	Assignment*	Attendance		
Marks	10		5	5	5	75	100

***** Application oriented / Problem solving / Design / Analytical in content beyond the syllabus

Department	**PHYSICS**	Programme: **B.Sc.Physics**						
Semester	**I**	Course Category Code: **DSC**				End Semester Exam Type: **TE**		
Course Code	**A23PHT101D**	Periods/Week			Credit	Maximum Marks		
		L	T	P	C	CAM	ESE	TM
Course Name	**MECHANICS AND PROPERTIES OF MATTER**	**4**	**-**	**-**	**4**	**25**	**75**	**100**
Prerequisite	Physics of 12th standard or equivalent							
Course Objectives	• To apply the concepts of dynamics to develop skills in analysis of both particles and rigid bodies. • To learn the mathematical formulations of dynamics problems. • To find center of mass and inertia of mechanical systems. • To study the elastic behavior and Analyse the expression for young's modulus. • To Learn the properties of viscosity for liquids							

Course Outcome	**On completion of the course, the students will be able to**		BT Mapping(Highest Level)
	CO1	Understand the concepts of dynamics.	**K2**
	CO2	Identify the concepts of rigid body motion.	**K3**
	CO3	Understand the Gravitational interaction and central field	**K2**
	CO4	Know about the principles of elasticity	**K2**
	CO5	To understand the surface tension and viscosity of liquid	**K2**

SECTION A - PHYSICS

UNIT-I	**DYNAMICS**	**Periods:12**
Projectile –range of horizontal and inclined plane- impulse – impact – Impulsive force – laws of impact – direct and oblique impact of smooth sphere – loss in kinetic energy - impact of smooth sphere on a smooth horizontal plane – motion of two interacting bodies – reduced mass.		**CO1**
UNIT-II	**GRAVITATIONAL INTERACTION AND CENTRAL FIELD**	**Periods:12**
Inertial and Gravitational mass- Gravitational potential - Potential and field due to a spherical shell and solid sphere - Gravitational self-energy - central forces - Angular momentum in central forces - Central motion as one body and two body problem, reduced mass - Principle of space flight and satellite (Geostationary).		**CO2**
UNIT-III	**ELASTICITY**	**Periods:12**
Stress-Strain – Hooke's law – Relation between elastic constants – Poisson's ratio – Expression for poisson's ratio in terms of elastic constants – work done in twisting wire – torsion of cylinder – torsional pendulum – determination of rigidity modulus.		**CO3**
UNIT-IV	**BENDING OF BEAMS**	**Periods:12**
Bending Moment – Expression for Bending moment – Cantilever expression for depression at the loaded end of a Cantilever – Experiment ot determine Young's by Cantilever depression (Pin and Microscope) – Non Uniform bending – Expression for depression at the midpoint of a beam subjected to Non uniform bending – Experiment to determine to determine Young's modulus by Non uniform bending (using Pin and Microscope) – uniform bending – Expression for elevation at the midpoint of a beam subjected to Uniform bending (using Pin & Microscope).		**CO4**
UNIT-V	**FLUID DYNAMICS**	**Periods:12**
Viscosity Poiseuille's formula for flow of liquid through a capillary tube, viscous resistance, combination of capillary tubes, effects of temperature and concentration on viscosity. **Surface Tensions**: Molecular theory of surface tension, Excess of pressure inside a curved surface, Excess pressure inside a liquid drop and soap bubble, Effect of temperature on surface tension, Jaeger's method of determination of surface tension.		**CO5**

Lecture Periods: 60	**Tutorial Periods: -**	**Practical Periods:-**	**TotalPeriods:60**

Text Books

1. D.S. Mathur. "Mechanics" S. Chand Publishing Company Limited, New Delhi
2. R.K.Shukla and AnchalSrivastava, "Mechanics", New age international Private Ltd.,
3. Brijlal Subramanian "Properties of Matter" by, S. Chand Publishing Company Limited

Reference Books

1. University Physics FW sears, M.W Zemansky and H.D Young 13 e, 1986, AddisionWesley
2. Mechanics: Berkeley Physics Physics course Volume 1: Charles Kittel et.al, 2007, Tata McGraw Hill.
3. Physics – Resnick, Halliday and Walker 9 e, 2010 Wiley.

Web References

1. https://www.stem.org.uk/elibrary/resource/32028
2. https://physicstoday.scitation.org/doi/abs/10.1063/1.3057473?journalCode=pto
3. https://mppsc.nic.in/preliminary_exam/PHYSICS%20(pre).pdf
4. https://www.baselius.ac.in/wp-content/uploads/2020/04/Hrdrodynamics_Viscosity_Nibu-George.pdf
5. https://pubs.aip.org/physicstoday/article/14/3/66/422155/Mechanics-and-Properties-of-Matter

COs/POs/PSOs Mapping

COs	Program Outcomes (POs)					Program Specific Outcomes (PSOs)		
	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
1	2	2	3	3	3	3	2	3
2	3	3	3	3	3	3	2	3
3	3	3	3	3	3	3	2	3
4	3	3	3	1	3	3	3	3
5	3	2	2	2	3	3	3	3

Correlation Level: 1:Low, 2:Moderate, 3:High

Evaluation Method

Assessment	Continuous Assessment Marks (CAM)					End Semester Examination (ESE) Marks	Total Marks
	CAT 1	CAT 2	Model Exam	Assignment*	Attendance		
Marks	10		5	5	5	75	100

* Application oriented / Problem solving / Design / Analytical in content beyond the syllabus

Department	**PHYSICS**	Programme: **B.Sc. Physics**						
Semester	**I**	Course Category Code: **DSC**			End Semester Exam Type: **TE**			
Course Code	**A23PHT102D**	Periods/Week			Credit	Maximum Marks		
		L	T	P	C	CAM	ESE	TM
Course Name	**THERMAL PHYSICS**	**4**	**-**	**-**	**4**	**25**	**75**	**100**
Prerequisite	Physics of 12th standard or equivalent							
Course Objectives	• To demonstrate an understanding of the first and second laws of thermodynamics, entropy.							
	• To explain and derive the fundamental thermodynamic relation.							
	• To explain the concepts of entropy, enthalpy, reversibility and irreversibility.							
	• Understand the role of the internal energy, temperature, pressure and thermodynamic properties.							
	• To understand different form of pure substances and their boiling point							
Course Outcome	**On completion of the course, the students will be able to**					BT Mapping(Highest Level)		
	CO1	Develop the ideas of classical thermodynamics				**K2**		
	CO2	Understand all thethermodynamic relation equations				**K3**		
	CO3	Demonstrate the power of statistical methods in physics				**K2**		
	CO4	Learn the principles and properties of thermodynamics				**K2**		
	CO5	Know the concepts of statistical thermodynamics				**K2**		

SECTION A - PHYSICS

UNIT-I	**TRANSMISSION OF HEAT**	**Periods:12**
Thermal conductivity – good & bad conductors – Forbe's method - Lee's disc method– relationship between thermal and electrical conductivities - Wiedemann Franz's law - Radiation- Prevost's theory of heat exchanges - law of cooling – Black body radiation - Kirchhoff's law - Wien's laws of energy distribution in black body radiation - Wien's displacement law- Rayleigh-Jean's law -Plank's law.		**CO1**
UNIT-II	**KINETICTHEORY**	**Periods:12**
Expression for pressure **-** Transport phenomenon – expression for mean free path - thermal conductivity and diffusion of gases - distribution of molecular velocities – energy distribution function - Degrees of freedom - equipartition law of energy.		**CO2**
UNIT-III	**GASSES AND LOW TEMPERATURE PHYSICS**	**Periods:12**
Molar heat capacities –Linde process – Liquid air, oxygen, hydrogen and Helium – He I and He II – super fluidity - practical applications of low temperatures – refrigerating machines– electroflux refrigerator – Frigidaire – air conditioning machines – effects of CF_2 and Cl_2 on Ozone layer.		**CO3**
UNIT-IV	**THERMODYNAMICS**	**Periods:12**
Intensive and extensive variables – I & II laws of thermodynamics – reversible and irreversible processes – Hea engines – Otto and diesel engines – thermodynamic scale of temperature - entropy - change of entropy ir reversible and irreversible processes – T-S diagram– entropy for a perfect gas - third law of thermodynamics.		**CO4**
UNIT-V	**PHASE TRANSITION**	**Periods:12**
First Latent heat equation (Clausius – Clapeyron equation), effect of pressure on melting and boiling point – second Latent heat equation - Maxwell's Thermodynamical relations– derivations - Phase space – MB statistics.		**CO5**

LecturePeriods: 60	**TutorialPeriods: -**	**PracticalPeriods:-**	**TotalPeriods:60**

TextBooks

1. Brijlal and Subramanyam, "Heat and Thermodynamics", S. Chand & Co.2000
2. MathurD.S,"Heat and Thermodynamics", S. Chand, 2014.
3. Murugeshan.R.,"Thermal Physics", S. Chand & Co.,2009.

ReferenceBooks

1. Nelkon Parker, *Advanced Level Physics* (Vol 5), Arnold Publication, Berkely Series, 1995.
2.Dr. Ilangovan and Dr.D. Jayaraman,, *Thermal Physics*, S. Chand & Co.,2014.
3. Physics – Resnick, Halliday and Walker 9 e, 2010 Wiley.

Web References

1.https://www.livescience.com/50776-thermodynamics.html
2.http://hyperphysics.phy-astr.gsu.edu/hbase/Kinetic/kinthe.html
3.https://nationalmaglab.org/education/magnet-academy/learn-the-basics
4.https://www.physicsclassroom.com/class/thermalP.
5.https://www.physicsclassroom.com/class/thermalP

COs/POs/PSOs Mapping

COs	Program Outcomes (POs)					Program Specific Outcomes (PSOs)		
	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
1	2	2	3	3	2	3	3	2
2	3	3	3	3	2	3	3	3
3	3	3	3	2	2	3	3	2
4	3	3	3	3	1	3	2	3
5	3	3	3	3	1	3	2	3

Correlation Level: 1:Low, 2:Moderate, 3:High

Evaluation Method

Assessment	Continuous Assessment Marks (CAM)					End Semester Examination (ESE) Marks	Total Marks
	CAT 1	CAT 2	Model Exam	Assignment*	Attendance		
Marks	10		5	5	5	75	100

***** Application oriented / Problem solving / Design / Analytical in content beyond the syllabus

Department	**MATHEMATICS**			Programme:**B.Sc. Physics**				
Semester	**I**			Course Category Code: **IDC**			End Semester Exam Type:**TE**	
Course Code	**A23MAD103C**			Periods/Week			Credit	Maximum Marks
				L	T	P	C	CAM	ESE	TM
Course Name	**ALLIED MATHEMATICS I**			**3**	**1**	**-**	**4**	**25**	**75**	**100**
(Common to B.Sc. Physics and B.Sc. Chemistry Branches)										
Prerequisite	Basic Electrical Engineering, Laplace Transform									
Course Outcome	**On completion of the course, the students will be able to**							BT Mapping (Highest Level)		
	CO1	Find Eigenvalues and Eigen vectors, diagonalization of matrix.						**K2**		
	CO2	Find values and solution of trigonometric solution.						**K3**		
	CO3	Analyze and solve Differential Equations.						**K4**		
	CO4	Understand the different types of integration.						**K3**		
	CO5	Solve double and Triple integral problems.						**K3**		

UNIT-I	**MATRICES**	**Periods:12**	
Definitions - Rank of a Matrix- Consistency of system of equations - Characteristic equation -Eigen values and Eigen vectors of a real matrix- Diagonalization of matrices - Properties of Eigen values and Eigen vectors.			**CO1**
UNIT-II	**TRIGNOMETRY**	**Periods:12**	
Expansions of cosnθ, sin nθ, tan nθ in terms of θ - Powers of sines and cosines of θ in terms of functions of multiples of θ – Expansions of sin θ and cos θ in a series of ascending powers of θ.			**CO2**
UNIT-III	**DIFFERENTIALEQUATION**	**Periods:12**	
Lineardifferential equations with constant coefficients - simultaneous linear differential equations - Solution by variation of parameter method.			**CO3**
UNIT-IV	**DEFINITEINTEGRALS**	**Periods:12**	
Definiteintegrals–Integrationbyparts–Reductionformula.			**CO4**
UNIT-V	**MULTIPLEINTEGRALS**	**Periods:12**	
MultipleIntegrals - change of order of integration - Applications: Areas by double integration and volumes by triple integration (Cartesian).			**CO5**

LecturePeriods:45	**TutorialPeriods:15**	**PracticalPeriods:-**	**TotalPeriods:60**

TextBooks

1. S.DuraiPandianandLaxmiDuraiPandian(1984)*Trigonometry*.EmeraldPublishers,Chennai.
2. M.K. Venkataraman, Engineering Mathematics (First Year), 2rd Edition, The NationalPublishingCompany,Madras,2001.
3.ShantiNarayan,"IntegralCalculus",SChand&Co.NewDelhi,2001.

ReferenceBooks

1. A. Singaravelu"Algebraand Trigonometry", Vol.-IMeenakshiAgency, Chennai (2003).
2. P.R. Vittal,"Trigonometry,Margham"Publications,Chennai.(2004)
3. P.Kandasamy,K.Thilagavathy,"MathematicsofB.SC",VolI&II,S.ChandCompanyLtd,NewDelhi—2004.
4. ErwinKreyszig,"AdvancedEngineeringMathematics",Wiley,Tenthedition,2019
5. B.V.Ramana,"HigherEngineeringMathematics",TataMcGraw-Hill,NewDelhi, Sixth edition2018.

Web References

1. https://nptel.ac.in/courses/111/105/111105122/
2. https://www.khanacademy.org/math/precalculus/x9e81a4f98389efdf:trig/x9e81a4f98389efdf:inverse-trig/v/inverse-trig-functions-arcsin
3. https://www.khanacademy.org/math/statistics-probability
4. http://www.yorku.ca/yaoguo/math1025/slides/chapter/kuttler-linearalgebra –slides- Systemsofquation-handout.pdf
5. https://nptel.ac.in/courses/111/105/111105122/

COs/POs/PSOs Mapping

COs	Program Outcomes (POs)					Program Specific Outcomes (PSOs)		
	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
1	3	2	3	2	-	2	3	1
2	3	2	3	2	1	3	2	1
3	3	2	3	3	-	2	3	1
4	2	3	2	-	3	3	2	2
5	3	2	-	3	1	3	2	1

Correlation Level: 1:Low, 2:Moderate, 3:High

Evaluation Method

Assessment	Continuous Assessment Marks (CAM)					End Semester Examination (ESE) Marks	Total Marks
	CAT 1	CAT 2	Model Exam	Assignment*	Attendance		
Marks	10		5	5	5	75	100

* Application oriented / Problem solving / Design / Analytical in content beyond the syllabus

Department	**PHYSICS**	Programme:**B.Sc.Physics**						
Semester	**I**	Course Category Code: **DSC**			End Semester Exam Type: **LE**			
Course Code	**A23PHL101D**	Periods/Week			Credit	Maximum Marks		
		L	T	P	C	CAM	ESE	TM
Course Name	**PHYSICS PRACTICAL– I**	**0**	**0**	**2**	**2**	**50**	**50**	**100**

Prerequisite	Basic Physics	
Course Objectives	To provide a practical understanding of some of the concepts learnt in the theory course on Physics.	
	To evaluate the process and outcomes of an experiment quantitatively and qualitatively.	
	To extend the scope of an investigation whether or not results come out as expected.	
	To conduct an experiment collaboratively and ethically.	
	To collect data and revise an experimental procedure iteratively and reflectively	
Course Outcome	**On completion of the course, the students will be able to**	(BT Mapping Highest Level)
	CO1 Understand to know the moment of inertia. Capable of handling screw gauge, and Vernier calliper	**K2**
	CO2 Acquired basic knowledge about Potentiometer and magnetic field due to a current carrying coil.	**K3**
	CO3 Gain the knowledge about the thermal conductivity behavior in good and bad conductors.	**K4**
	CO4 Gain the knowledge about formal laboratory reports describing the results of experiments and to interpret the data from the experiments	**K3**
	CO5 Know the practical knowledge to describe the experiments and to correlate the theoretical values	**K3**

LIST OF EXPERIMENTS

1. pendulum - determination of g, radius of gyration and moment of inertia
2. Young's modulus - non-uniform bending – Pin and Telescope.
3. Compound Spectrometer – Ordinary & Extraordinary rays.
4. Determination of moment of inertia – fly wheel method
5. Rigidity modulus - torsional oscillations without masses.
6. Thermal conductivity of a bad conductor- Lee's disc method.
7. Surface tension of a liquid and interfacial surface tension (water & kerosene) - method of drops.
8. Young's modulus –non- uniform bending – Scale and Telescope.
9. Specific heat capacity of a liquid and emissivity of a surface – newton's law of cooling.
10. Y - Searle's method for determining Y, n and η of a material.

Lecture Periods:-	**Tutorial Periods:-**	**Practical Periods:30**	**Total Periods:30**

Text Books

1.C.C Ouseph, V.J.Rao and V. Vijayendran "Practical Physics"
2.M.N. Srinivasan "Practical Physics", Sultan son Pub.
3.D P Khandelwal, "Laboratory Manual of Physics" for UG classes (Vani Pub. House, New Delhi).

Reference Books

1. V Y Rajopadhye and V L Purohit, Text book of experimental Physics
2.C.C Ouseph, V.J.Rao and V.Vijayendran "Practical Physics"

Web References

1.https://www.niser.ac.in/sps/sites/default/files/basic_page/Compound%20pendulum_2017.pdf
2.https://www.iist.ac.in/departments/physics-lab
3.https://www.tvu.edu.in/wp-content/uploads/2017/06/B-Sc-Physics.pdf
4.https://www.physics.louisville.edu/cldavis/phys298/notes/torpend.html
5.https://www.youtube.com/watch?v=YzG7po1F5hE

COs/POs/PSOs Mapping

COs	Program Outcomes (POs)					Program Specific Outcomes (PSOs)		
	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
1	3	3	1	1	1	3	3	2
2	3	3	3	3	2	3	3	2
3	3	3	3	3	2	3	3	2
4	3	3	3	3	2	3	3	2
5	3	3	3	3	2	3	3	2

Correlation Level: 1:Low, 2:Moderate, 3:High

Evaluation Method

***** Application oriented / Problem solving / Design / Analytical in content beyond the syllabus

Internal Assessment	Internal Marks			End Semester Examination (ESE) Marks	Total Marks
	Model	Record	Attendance		
Marks	30	10	10	50	100

Department	**ENGLISH**	Programme:**B. Sc.Physics**						
Semester	**I**	Course Category Code:**SEC**			End Semester Exam Type: - LE			
Course Code	**A23ENSA02C**	Periods/Week			Credit	Maximum Marks		
		L	T	P	C	CAM	ESE	TM
Course Name	**SOFT SKILLS**	**2**	**0**	**0**	**2**	**100**	**0**	**100**
Prerequisite	Knowledge gained from Journal reading and Newspaper reading							

Course Objectives	To train students in Soft skills in order to enable them to be professionally competent		
	To facilitate the students for Goal setting and Goal Achieving skills		
	To enrich the sense of social responsibility and accountability of the students		
	To help the students to train them for Stress Management and Time Management		
	To train the students to work with team environment and Creative thinking		
Course Outcomes	***On completion of the course, the students will be able to***		BT Mapping (Highest Level)
	CO1	enhance the Soft skills and compete professionally	**K3**
	CO2	achieve Goal setting and Goal Achieving skills	**K3**
	CO3	improve their social responsibility and accountability skills	**K3**
	CO4	enrich Stress Management and Time Management	**K3**
	CO5	demonstrate the quality of a Team ship and Creative thinking	**K3**

UNIT-I	**POSITIVE ATTITUDE**	**Periods:06**
Skills-Personal Skills: Knowing Oneself/Self-Discovery - Confidence Building - Defining Strengths of Attitude - formation of attitudes - psychological factors - the power of positive attitude - the benefits of positive attitude – developing positive attitude - negative attitude – the causes of negative attitude - the consequences of negative attitude - how to change negative attitude.		**CO1**
UNIT-II	**GOAL SETTING**	**Periods:06**
Introduction - importance of goal setting - goal definition - types of goals - what exactly goal setting - why people don't set goals - how to choose the right goals - SMART GOALS - Career goals - benefits of career goal setting - goal setting tips.		**CO2**
UNIT-III	**STRESS AND TIME MANAGEMENT**	**Periods:06**
Definition of Stress management - types of stress - causes of stress - stress management and reduction techniques - Definition of Time management - Setting goals, planning – prioritizing - setting deadlines - multi-tasking - practicing self-discipline - overcoming procrastination		**CO3**
UNIT-IV	**TEAMWORK SKILLS**	**Periods:06**
Communication as Social Construction - Dynamics of professional Group communication - Group and Team - Team Building Process - Managing conflict and appreciating/respecting differences - Decision making & effective negotiation - Types of teams - Understanding, Identity and nurturing sensitivity (in terms of gender, orientation, language)		**CO4**
UNIT-V	**PROBLEM SOLVING THROUGH CREATIVE THINKING**	**Periods:06**
Thinking Creatively - Improving Perceptions - Creative thinking as an essential skill - Techniques of creative thinking (such as brainstorming, lateral thinking, mind mapping, rich pictures, role play) - Practical problem solving through creative thinking - Case Study		**CO5**

Lecture Periods: 30	**Tutorial Periods:-**	**Practical Periods:-**	**TotalPeriods:30**

Text Books

1. Sabina Pillai, Agna Fernandez, *Soft Skills and Employability Skills*, Cambridge University Press, 2017.
2. Jeff Butterfield, *Soft Skills for Everyone*, Cengage India Private Limited, 2nd Edition, 2020.
3. Alex K, *Soft Skills*, S Chand & Company, 1st Edition, 2014.

Reference Books

1. BarunMitra, *Personality Development and Soft Skills 2*, Oxford University Press, 2016.
2. Prashant Sharma, *Soft Skills 3rd Edition: Personality Development for Life Success*, BPB Publications, 2021.
3. Ghosh, B.N, *Managing Soft Skills for Personality Development*, Tata McGraw Education Publication, 1st Edition, 2012.
4. R.S.Aggarwal. *A Modern Approach to Non-Verbal*. S Chand Publication. 2017.
5. K. K. Sinha, *Business Communication*, Galgotia Publishing, 4th Edition, 2011.

Web References

1. https://www.mindtools.com/a5ykiuq/personal-goal-setting
2. https://www.healthlinkbc.ca/health-topics/stress-management-managing-your-time
3. https://www.herzing.edu/blog/7-important-teamwork-skills-you-need-school-and-your-career
4. https://online.hbs.edu/blog/post/what-is-creative-problem-solving
5. https://www.lucidchart.com/blog/7-steps-to-creating-better-goals

COs/POs/PSOs Mapping

COs	Program Outcomes (POs)					Program Specific Outcomes (PSOs)		
	PO 1	PO 2	PO 3	PO 4	PO 5	PSO 1	PSO 2	PSO 3
1	1	3	3	1	1	1	3	3
2	3	3	3	1	1	1	3	2
3	3	3	3	1	2	1	3	3
4	3	3	3	1	2	1	3	1
5	3	3	3	1	3	1	3	3

Correlation Level: 1:Low, 2:Moderate, 3:High

Evaluation Method

Assessment	Continuous Assessment Marks (CAM)					End Semester Examination (ESE) Marks	Total Marks
	CAT 1	CAT 2	Model Exam	Assignment*	Attendance		
Marks	80		-	10	10	-	100

***** Application oriented / Problem solving / Design / Analytical in content beyond the syllabus

Department	**PHYSICS**			**Programme: B.Sc.Physics**				
Semester	**I**			Course Category Code: **AEC**		End Semester Exam Type: TE		
Course Code	**A20AETA01C**	Periods/Week			Credit	Maximum Marks		
		L	T	P	C	CAM	ESE	TM
Course Name	**PUBLIC ADMINISTRATION**	**2**	**0**	**0**	**1**	**100**	**0**	**100**

Prerequisite	Journal reading and Newspaper reading		
Course Objectives	To introduce the elements of public administration		
	To help the students obtain a suitable conceptual perspective of public administration		
	To introduce them the growth of institution devices to meet the need of changing times		
	To instill and emphasize the need of ethical seriousness in contemporary Indian Public Administration		
Course Outcomes	***On completion of the course, the students will be able to***		BT Mapping Highest Level)
	CO1	Understand the concepts and evolution of Public Administration.	**K1**
	CO2	Understand what is happening in the Public Administration in the country	**K1**
	CO3	Know the Territory Administration in the State and the Centre	**K2**
	CO4	Gain the knowledge about the emerging issues in Indian Public Administration	**K1**

UNIT-I	**INTRODUCTION TO PUBLIC ADMINISTRATION**	**Periods:06**	
Meaning, nature and Scope of Public Administration and its relationship with other disciplines- Evolution of Public Administration as a discipline – Woodrow Wilson, Henry Fayol , Max Weber and others - Evolution of Public Administration in India – Arthashastra – Colonial Administration upto 1947			**CO1**
UNIT-II	**PUBLIC ADMINISTRATION IN INDIA**	**Periods:06**	
Enactment of Indian Constitution - Union Government – The Cabinet – Central Secretariat -– All India Services – Training of Civil Servants – UPSC – NitiAyog – Statutory Bodies: The Central Vigilance Commission – CBI - National Human Rights Commission – National Women's Commission –CAG			**CO2**
UNIT-III	**STATE AND UNION TERRITORY ADMINISTRATION**	**Periods:06**	
Differential Administrative systems in Union Territories compared to States Organization of Secretariat: -Position of Chief Secretary, Functions and Structure of Departments, Directorates – Ministry of Home Affairs supervision of Union Territory Administration – Position of Lt.Governor in UT – Government of Union Territories Act 1963 – Changing trend in UT Administration in Puducherry and Andaman and Nicobar Island			**CO3**
UNIT-IV	**EMERGING ISSUES IN INDIAN PUBLIC ADMINISTRATION**	**Periods:06**	
Changing Role of District Collector – Civil Servants – Politicians relationship – Citizens Charter - Public Grievance Redressal mechanisms –– The RTI Act 2005 – Social Auditing and Decentralization – Public Private partnership.			**CO4**

Lecture Periods:30	**Tutorial Periods:-**	**Practical Periods:**	**Total Periods:30**

Text Books

1. Avasthi and Maheswari, “Public Administration”, Lakshmi NarainAgarwal, 1st Edition, 2016.
2. Ramesh K.Arora, “Indian Public Administration: Institutions and Issues”, New Age International Publishers, 3rd Edition, 2012.
3. RumkiBasu, “Public Administration: Concept and Theories”, Sterling, 1st Edition, 2013.

Reference Books

1. SiuliSarkar, “Public Administration in India”, Prentice Hall of India, 2nd Edition, 2018.
2. M. Laxmikanth, “Public Administration”, McGraw Hill Education, 1st Edition, 2011.
3. R.B.Jain, “Public Administration in India,21st Century Challenges for Good Governance”,Deep and Deep Publications, 2002.

Web References

1. http://cic.gov.in/
2. http://www.mha.nic.in/
3. http://rti.gov.in/

Evaluation Method

Assessment	Continuous Assessment Marks (CAM)					End Semester Examination (ESE) Marks	Total Marks
	CAT 1	CAT 2	Model Exam	Assignment*	Attendance		
Marks	70		-	20	10	0	100

* Application oriented / Problem solving / Design / Analytical in content beyond the syllabus

Department	**TAMIL**	Programme: **B.A.(TAMIL)**						
Semester	**II**	Course Category Code: **MIL**			*End Semester Exam Type: **TE**			
CourseCode	**A23TAT202C**	Periods/Week			Credit	MaximumMarks		
		L	T	P	C	CAM	ESE	TM
Course Name	**TAMIL – II**	**3**	**0**	**0**	**3**	**25**	**75**	**100**
(Common to	**B.A, B.Sc., BBA., B.COM., BCA., B.COM CS.,)**							

Prerequisite	பன்னிரெண்டாம் வகுப்பில் தமிழை ஒரு பாடமாகப் பயின்றிருக்க வேண்டும்.
Course Objectives	• செவ்விலக்கிய தன்மை கொண்ட தமிழ்மொழியின் சிறப்பினை எடுத்துரைப்பதாக இப்பாடத்திட்டம் அமைக்கப்பட்டுள்ளது. • இரண்டாயிரம் ஆண்டுகாலத் தமிழின் தொன்மையையும் வரலாற்றையும் அதன் விழுமியங்களையும் பண்பாட்டையும் எடுத்துரைப்பதாக இப்பாடத்திட்டம் அமைக்கப்பட்டுள்ளது. • தமிழ் இலக்கியம் உள்ளடக்கத்திலும், வடிவத்திலும் பெற்றமாற்றங்கள், அதன் சிந்தனைகள், அடையாளங்கள் ஆகியவற்றைக் காலந்தோறும் எழுதப்பட்ட இக்கியங்களின் வழியாகக் கூறுவதற்கு இப்பாடத்திட்டம் அமைக்கப்பட்டுள்ளது. • வாழ்வியல் சிந்தனைகள், ஒழுக்கவியல் கோட்பாடுகள், சமத்துவம், சூழலியல் எனப் பல கூறுகளை மாணவர்களுக்கு எடுத்துரைக்கும் விதத்தில் இப்பாடத்திட்டம் உருவாக்கப்பட்டுள்ளது. • சிந்தனை ஆற்றலைப் பெருக்குவதற்குத் தாய்மொழியின் பங்களிப்பினை உணர்த்த இப்பாடத்திட்டம் அமைக்கப்பட்டுள்ளது.

Course Outcome	**On completion of the course, the students will be able to**		BT Mapping (Highest Level)
	CO1	இலக்கியங்கள் உணர்த்தும் வாழ்வியல் நெறிமுறைகளைப் பேணிநடத்தல்.	**K3**
	CO2	நமது எண்ணத்தை வெளிப்படுத்தும் கருவியாகத் தாய்மொழியைப் பயன்படுத்துதல்.	**K3**
	CO3	தகவல் தெடர்புக்குத் தாய்மொழியின் முக்கியத்துவத்தை உணர்தல்.	**K2**
	CO4	தாய்மொழியின் சிறப்பை அறிதல்.	**K3**
	CO5	இலக்கிய இன்பங்களை நுகரும் திறன்களை வளர்த்தல்.	**K3**

UNIT-I	**காப்பியம்**	**Periods: 09**	
சிலப்பதிகாரம்	- வழக்குரைகாதை–காவியுகுநீரும்...முதல் தோற்றான் உயிர்வரை (8 வரிகள்)		**CO1**
மணிமேகலை	- பளிக்கறை புக்ககாதை–மதுமலர்க் கூந்தல்...முதல் புறமறிப் பாராய் வரை (106-121வரிகள்)		
பெரியபுராணம்	- இளையான்குடிமாறநாயனார்புராணம் - உள்ளம் அன்புகொண்டு...(17ஆவது பாடல்மட்டும்)		
கம்பராமாயணம்	- கும்பகர்ணவதைப்படலம் - உறங்குகின்ற கும்பகன்ன... (45ஆவதுபாடல் மட்டும்)		
தேம்பாவணி	- பாலமாட்சிப்படலம் - ஊட்டினார்அருள்...(229 பாடல் மட்டும்)		
சீறாப்புராணம்	- மழையழைப்பித்தப் படலம் - வேயினை முறித்து எனத் தொடங்கும் (15ஆவது பாடல் மட்டும்)		

UNIT-II	**பதினெண் கீழ்க்கணக்கு நூல்கள்**	**Periods: 09**	
திருக்குறள்	- வலியறிதல் (48),நெஞ்சொடுகிளத்தல் (125)		**CO2**
நாலடியார்	- அரும்பெறல்...(பாடல் எண்:34)		
சிறுபஞ்சமூலம்	- பூவாது காய்க்கும்...(பாடல் எண்:22)		
ஐந்திணைஐம்பது	- சுனைவாய்ச் சிறுநீரை...(பாடல் எண்:38)		
கார்நாற்பது	- கருவிளை கண்மலர்போல் பூத்தன...(பாடல் எண்:34)		
களவழிநாற்பது	- ஞாட்பினுளெஞ்சிய (பாடல் எண்:2)		

UNIT-III	**சங்க இலக்கியம் - எட்டுத்தொகை**	**Periods: 09**	
ஐங்குறுநூறு	- பாடல் எண்:44 - தோழி கூற்று		**CO3**
குறுந்தொகை	- பாடல் எண்:224 - தலைவி கூற்று		
நற்றிணை	- பாடல் எண்:284 - தலைவன் கூற்று		
அகநானூறு	- பாடல் எண்:145 - செவிலி கூற்று		
புறநானூறு	- பாடல் எண்:102 - ஔவையார்		
பரிபாடல்	- பாடல் எண்:3 - திருமால் வாழ்த்து (1-11வரிகள்)		

UNIT-IV	**பத்துப்பாட்டு**	**Periods: 09**	
பொருநராற்றுப்படை	- வாரியும் வடித்தும்...முதல் பெருந்தகு பாடினி வரை (25-47)		**CO4**
சிறுபாணாற்றுப்படை	- பைந்தனை அவரை...முதல் வென்றிவேலூர் எய்தின் வரை (164-173)		
பெரும்பாணாற்றுப்படை	-பார்வையாத்த...முதல் பதம் மிகப் பருகுவீர் வரை (95-105)		
குறிஞ்சிப்பாட்டு	- அண்ணல் நெடுங்கோடு...முதல் சிவந்தகண்ணேம் வரை(54-61)		
மதுரைக்காஞ்சி	- மைபடுபெருந்தோள்...முதல் பெரும்பெயர் மதுரை வரை (687-699)		
நெடுநல்வாடை	- குளிர்காலக்காட்சி- கல்லென் துவலைத்...முதல் பண்ணுமுறை நிறுப்ப வரை (64-70)		

UNIT-V	**மொழிப்பயிற்சி, இலக்கியவரலாறு**	**Periods: 09**

1.முதல், கரு, உரிப்பொருள் அறிதல் 2.அலகிட்டு வாய்ப்பாடு 3.அணிகள் அறிதல் **இலக்கிய வரலாறு** காப்பியம், அறஇலக்கியம், சங்க இலக்கியம் குறித்தப் பாடப்பகுதியை ஒட்டிய இலக்கிய வரலாறு.	**CO5**

Lecture Periods: 45	**Tutorial Periods:-**	**Practical Periods:-**	**TotalPeriods:45**

Text Books

6. **சிவகுமார்,எஸ்., -கொங்குதேர்வாழ்க்கை,** பாடல் தொகுப்பு நூல் - தொகுதி -1, யுனைடெட் ரைட்டர்ஸ்,சென்னை -86. முதற்பதிப்பு.2003.
7. **சாமிநாதையர் டாக்டர் உ.வே. குறுந்தொகை மூலமும் உரையும்,** டாக்டர் உ.வே.சாமிநாதையர் நூல் நிலையம், வெளியீட்டெண்: 277,பெசன்ட் நகர், சென்னை– 600 090.எட்டாம் பதிப்பு– 2020.
8. **வேங்கடராமன், வித்துவான்.ஹெச். (பதி.) - நற்றிணை மூலமும் உரையும்,**டாக்டர்உ.வே.சாமிநாதையர் நூல் நிலையம், வெளியீட்டெண்: 277,பெசன்ட் நகர்,சென்னை– 600 090. எட்டாம் பதிப்பு– 2020.
9. **திருவள்ளுவர்- சேயோன் டாக்டர் - திருக்குறள்,**மயிலைத் திருவள்ளுவர்தமிழ்ச் சங்கம்,184,பிராட்வே,சென்னை 600 108
10. **வேங்கடசாமிநாட்டார்,ந.மு., - கார்நாற்பது,களவழிநாற்பது–**சாரதாபதிப்பகம்,சாந்திஅடுக்ககம், ஸ்ரீகிருஷ்ணபுரம் தெரு, இராயப்பேட்டை,சென்னை -14. முதற்பதிப்பு: 2005.

Reference Books

6. **சிற்பிபாலசுப்பிரமணியம் மற்றும் நீலபத்மநாபன் (ப.ஆசி.) –புதியதமிழ் இலக்கியவரலாறு, தொகுதி-1,2,3,** சாகித்திய அகாதெமி, புதுடெல்லி, 2013.
7. **பாக்கியமேரி, வகைமை நோக்கில் தமிழ் இலக்கிய வரலாறு (செம்மை மற்றும் விரிவுப் பதிப்பு),** பாரிநிலையம். சென்னை,
8. **ஆனந்தன். சு. முனைவர்., - தமிழ் இலக்கியவரலாறு,**கண்மணிபதீப்பகம், திருச்சி-2. இருபத்தி மூன்றாம் பதிப்பு– 2015.
9. **பரந்தாமனார்,அ.கி.,நல்லதமிழ் எழுதவேண்டுமா,**பாரிநிலையம்,சென்னை, 1998.
10. **சம்பத், இரா., (பதி) -தொல்காப்பியக் கவிதையியல் வடிவம்-பாடுபொருள்-உத்தி-வகைமை,**புதுச்சேரிமொழியியல் பண்பாட்டுஆராய்ச்சிநிறுவனம், புதுச்சேரி-605 001. முதற்பதிப்பு–அக்டோபர் 2015.

Web References

4. http://www.tamilvu.org
5. http://www.tamilweb.com
6. http://www.tamilkodal.com
4. www.store.tamillexican.com
5. www.kala.tamilforu.blogspot.com
6. www.noolagam.com

* TE – Theory Exam, LE – Lab Exam

COs/POs/PSOs Mapping

Cos	Program Outcomes (POs)					Program Specific Outcomes (PSOs)		
	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO 3
1	3	3	3	3	3	3	3	3
2	3	3	3	3	3	3	3	3
3	3	2	3	3	2	3	3	3
4	2	3	2	3	2	2	3	2
5	3	2	3	2	3	3	3	3

Correlation Level: 1: Low, 2: Moderate, 3: High

Evaluation Method

Assessment	Continuous Assessment Marks (CAM)					End Semester Examination (ESE) Marks	Total Marks
	CAT 1	CAT 2	Model Exam	Assignment*	Attendance		
Marks	10		5	5	5	75	100

***** Application oriented / Problem solving / Design / Analytical in content beyond the syllabus

Department	**ENGLISH**	Programme: **B. A.**						
Semester	**II**	Course Category Code: **ENG**			End Semester Exam Type: **TE**			
Course Code	**A23GET201C**	Periods / Week			Credit	Maximum Marks		
		L	T	P	C	CAM	ESE	TM
Course Name	**GENERAL ENGLISH - II**	**3**	**0**	**0**	**3**	**25**	**75**	**100**
(Common to B.A.., B.SC., AND BCA Branches)								
Prerequisite	Basic part-two language and knowledge gained from Grammar and Composition							

Course Objectives	To train students to identify poetic forms and issues related to contexts	
	To enable the student in the skill of reading for ideas	
	To enable the students to enjoy the literature through the work of great writer	
	To introduce drama as a social product and a literary form	
	To hone composition skills in students	

Course Outcomes	***On completion of the course, the students will be able to***		BT Mapping (Highest Level)
	CO1	comprehend and discuss the various facets of selected poems	**K3**
	CO2	evaluate and Criticize the prose texts.	**K3**
	CO3	illustrate various reflections and instances in short stories with personal experiences	**K3**
	CO4	develop critical appreciation based on the understanding of the prescribed texts	**K3**
	CO5	enhance the writing skills for specific purposes	**K3**

UNIT-I	**POETRY**	**Periods: 09**	
6. Nissim Ezekiel - *Minority Poem* 7. Sarojini Naidu – *Indian Weaver* 8. Walt Whitman – *O Captain My Captain* 9. William Blake – *Tyger* 10. Rabindranath Tagore – *Paper Boat*			**CO1**
UNIT-II	**PROSE**	**Periods: 09**	
5. Jawaharlal Nehru – *A Tryst With Destiny* 6. Martin Luther King – *I have a dream* 7. Swami Vivekananda – *Speech at world Parliament of Religion Chicago*			**CO2**
UNIT-III	**SHORT STORIES**	**Periods: 09**	
6. Arthur Canon Doyle – *A Scandal in Bohemia* 7. Stephen Crane – *The Open Boat*			**CO3**
UNIT-IV	**DRAMA**	**Periods: 09**	
6. Cedric Mount Short – *The Never Never Nest* 7. Fritz Karinthy – *Refund*			**CO4**
UNIT-V	**GRAMMAR AND COMPOSITION**	**Periods: 09**	
6. Cause and Effect Analysis 7. Note Making 8. Picture Comprehension 9. Sentence Pattern 10. Sentence Punctuation			**CO5**

Lecture Periods: 45	**Tutorial Periods: 0**	**Practical Periods: -**	**Total Periods: 45**

Text Books

4. Pegasus, *Scandal in Bohemia & Other Stories*, B Jain Publisher, 2016.
5. Stephen Crane, *The Open Boat and Other Stories*, Createspace Independent Publisher, 2017.
6. Wren & Martin, *Primary School English Grammar and Composition*, Generics Publication, 2023.

Reference Books

6. Anjli Sehrawat, *Mother's Day : Bhagat Phoolsingh Women's University,* Notion Press Publication, 2022.
7. Martin Luther, Heming Daoudi, *Martin Luther King's I have a dream speech*, Kindle Edition, 2020.
8. Stephen Crane, *The Open Boat Stephen Crane*, Createspace Independent Publication, 2013.
9. Rabindranath Tagore, William Radice, *Selected Poems: Rabindranath Tagore*, Penguin Publication, 2000.
10. Swami Tapasyananda, *Swami Vivekananda his life and Legacy*, Ramakrishna Math Publication, 2008.

Web References

6. https://allpoetry.com/Minority-Poem
7. http://www.sourcecodeonline.com/list?q=the_never_never_nest_author_cedric_mount
8. https://www.cam.ac.uk/files/a-tryst-with-destiny/index.html
9. https://poets.org/poem/tyger
10. https://www.poetryfoundation.org/poems/45474/o-captain-my-captain

COs/POs/PSOs Mapping

COs	Program Outcomes (POs)					Program Specific Outcomes (PSOs)		
	PO 1	PO 2	PO 3	PO 4	PO 5	PSO 1	PSO 2	PSO 3
1	3	2	3	2	3	3	3	3
2	2	3	3	3	2	2	2	2
3	3	2	2	3	1	3	2	3
4	2	3	3	2	1	2	3	2
5	3	3	3	3	3	2	2	3

Correlation Level

High	Moderate	Low
3	2	1

Evaluation Method

Assessment	Continuous Assessment Marks (CAM)					End Semester Examination (ESE) Marks	Total Marks
	CAT 1	CAT 2	Model Exam	Assignment*	Attendance		
Marks	10		5	5	5	75	100

***** Application oriented / Problem solving / Design / Analytical in content beyond the syllabus

Department	**PHYSICS**	Programme: **B.Sc. Physics**						
Semester	**II**	Course Category Code: **DSC**			End Semester Exam Type: **TE**			
Course Code	**A23PHT203D**	Periods/Week			Credit	Maximum Marks		
		L	T	P	C	CAM	ESE	TM
Course Name	**ELECTRICITY AND MAGNETISM**	**4**	**-**	**-**	**4**	**25**	**75**	**100**
Prerequisite	Physics of 12th standard or equivalent							
Course Objectives	• To understand the phenomena of electricity and magnetism • To describe the electric field and potential and related concepts, for stationary charges. • To understand the basic of electric circuits capacitors and resistors. • To calculate electrostatic properties of simple charge distributions using Coulomb's law Gauss's law and electric-potential. • To calculate the magnetic force act on moving charges and magnetic fields due to current							
Course Outcome	**On completion of the course, the students will be able to**					BT Mapping(Highest Level)		
	CO1 Develop a basic understanding of electric and magnetic fields in free space using the integral forms of Maxwell's laws.					**K2**		
	CO2 Understand the chemical effects of electric current					**K3**		
	CO3 Understand of growth and decay of current					**K2**		
	CO4 Know the difference between ac and dc current					**K2**		
	CO5 Know the magnetic properties of materials					**K2**		

UNIT-I	**ELECTROSTATICS**	**Periods:12**
Coulomb's law – electric intensity and electric potential – electrical images(any four examples)- electric intensity and potential due to an earthed conducting sphere applying the principle of electrical images- electric dipole – potential and intensity due to a dipole – capacity – capacitance of a spherical and cylindrical capacitor – energy of a charged capacitor – loss of energy due to sharing of charges.		**CO1**
UNIT-II	**CHEMICAL EFFECTS OF ELECTRIC CURRENT**	**Periods:12**
Carey foster bridge - theory – Determination of temperature co-efficient of resistance– Calibration of voltmeter – Ammeter - Using Potentiometer - thermoelectricity- Peltier's coefficient – Thomson coefficient – application of thermodynamics to a thermocouple and connected relations- thermoelectric diagram and uses.		**CO2**
UNIT-III	**TRANSIENT CURRENT**	**Periods:12**
Growth and decay of current in a circuit containing resistance and inductance – Growth and decay of charge in a circuit containing resistance and capacitor-Growth and decay of charge in a LCR circuit – condition for the discharge to be oscillatory – frequency of oscillation.		**CO3**
UNIT-IV	**A.C AND ELECTROMAGNETIC INDUCTION**	**Periods:12**
Power in AC circuit – wattles current- choke coil construction and working of transformers- energy losses – AC motors – single phase, three phases – star and delta connection –electric fuses- circuit breakers.Inductances in series and parallel-Self-inductance of co-axial cylinders-energy stored in a magnetic field-time varying magnetic field-Single phase induction motor.		**CO4**
UNIT-V	**MAGNETIC PROPERTIESOF MATERIALS**	**Periods:12**
Susceptibility- permeability- intensity of magnetization and the relation B= μ(H+M), M-H and B-H curves for a magnetic material using magnetometer method and ballistic galvanometer method – Terrestrial magnetism – magnetic elements- dip circle.		**CO5**

Lecture Periods: 60	**Tutorial Periods: -**	**Practical Periods:-**	**Total Periods:60**

Text Books

1. MurugeshanR"*ElectricityandMagnetism"* 8th Edition,NewDelhi, S. Chand & Co.,2006.
2. Brijlal and N. Subramanian," Electricity and Magnetism", Agra, Ratan & Prakash, 6th Edition.
3. Narayanamoorthy M & Nagarathnam N, *Electricity and Magnetism*, Meerut, National Publishing Co., 4th edition.

Reference Books

1. David J Griffith, *Introduction to Electrodynamics*, 2nd Edition, New Delhi, Prentice Hall of India Pvt. Ltd,1997.
2. Sehgal D.L, Chopra K. L and Sehgal N. K, *Electricity and Magnetism*, New Delhi, Sultan Chand &Co.,
3. Brij Lal, Subramanian N and Jivan Seshan, *Mechanics and Electromagnetics*, New Delhi, Eurasia Publishing House Pvt .Ltd,2005.

Web References

1. https://www.britannica.com/science/physics-science/The-study-of-electricity-and-magnetism
2. https://www.materialstoday.com/electronic-properties/news/relationship-between-electricityand-magnetism

COs/POs/PSOs Mapping

COs	Program Outcomes (POs)					Program Specific Outcomes (PSOs)		
	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
1	2	2	3	3	2	3	3	2
2	3	3	3	3	2	3	3	3
3	3	3	3	2	2	3	3	2
4	3	3	3	3	1	3	2	3
5	3	3	3	3	1	3	2	3

Correlation Level: 1:Low, 2:Moderate, 3:High

Evaluation Method

Assessment	Continuous Assessment Marks (CAM)					End Semester Examination (ESE) Marks	Total Marks
	CAT 1	CAT 2	Model Exam	Assignment*	Attendance		
Marks	10		5	5	5	75	100

* Application oriented / Problem solving / Design / Analytical in content beyond the syllabus

Department	**PHYSICS**	Programme: **B.Sc. Physics**						
Semester	**II**	Course Category Code: **DSC**			End Semester Exam Type: **TE**			
Course Code	**A23PHT204D**	Periods/Week			Credit	Maximum Marks		
		L	T	P	C	CAM	ESE	TM
Course Name	**OPTICS**	**4**	**-**	**-**	**4**	**25**	**75**	**100**
Prerequisite	Physics of 12th standard or equivalent							
Course Objectives	• To produce ray diagrams to predict the position and size of the image produced by simple lenses. • To understand the behavior of light rays travelling in free space on reflective surfaces • To measure the focal length of a simple convex lens by producing an image of a distant object. • To understand the interference of two or more optical waves • To calculate the focal length of a simple lens by making measurements of image and object distance and using the lens equation							

Course Outcome	**On completion of the course, the students will be able to**		BT Mapping(Highest Level)
	CO1	Understand the geometric optics and the use of ray diagrams using lenses and mirrors.	**K2**
	CO2	Operate how to analyze the simple optical instruments work.	**K3**
	CO3	Know the principle and uses of interference.	**K2**
	CO4	Understand the concept of diffraction.	**K2**
	CO5	Learn the optical instruments and the concepts of polarization.	**K2**

UNIT-I	**RAY OPTICS**	**Periods:12**
Fermat's principle and its applications Principle of extreme path, Proof of laws of reflection and refraction, paraxial approximation, matrix method in paraxial optics, Snell's law of reflection and refraction, reflection and refraction at spherical surfaces: formula for refraction at single spherical surface. Lenses: Introduction, dispersion of prism. Aberration in images: chromatic aberrations; achromatic combination of lenses in contact and separated lenses. Monochromatic aberrations and their reduction.		**CO1**
UNIT-II	**INTERFERENCE**	**Periods:12**
Interference of light: The principle of superposition; two slit interferences, coherence requirements for the sources, localized fringes in thin films, transition from fringes of equal thickness to those of equal inclination Michelson interferometer; its uses for determination of wavelength, wavelength difference and standardization of the meter. Intensity distribution in multiple beam interference; Fabry - Perot interferometer		**CO2**
UNIT-III	**DIFFRACTION**	**Periods:12**
Fresnel diffraction: Half-period zones, circular apertures and obstacles, straight edge, explanation of rectilinear propagation. Fraunhofer diffraction: Diffraction at a single slit a circular aperture and a circular disc. Resolution of images; Rayleigh criterion, resolving power of a telescope and a microscope -Outline of phase contrast microscope (no derivations). Diffraction grating: Diffraction at N parallel slits; plane diffraction grating, resolving power of gratings and prisms.		**CO3**
UNIT-IV	**POLARIZATION OPTICS**	**Periods:12**
Electromagnetic nature of light. Transverse nature of light waves. Plane polarized light – production and analysis. Circular and elliptical polarization. Double refraction, interference of polarized light, phase retardation plates (quarter wave and half wave plates).		**CO4**
UNIT-V	**QUANTUM OPTICS**	**Periods:12**
Mechanism of Light emission: Introduction, the Planck's radiation law, the photon, the photoelectric effect, Compton effect. Holography: Introduction, Principle of holography, recording of the hologram, reconstruction of the image, important properties of hologram, applications. Nonlinear optics: Introduction, wave propagation and momentum conservation, linear medium, nonlinear polarization, second harmonic generation.		**CO5**

Lecture Periods: 60	**Tutorial Periods: -**	**Practical Periods:-**	**Total Periods:60**

Text Books

1. Ajoy Ghatak, "Introduction to Modern Optics" (Tata McGrawHill)
2. Brijilal and Subramanian, "Optics" ((S.Chand &Co).
3. S.L. Kakani and H.C. Bhandrai, "Optics" (S.Chand &Co)

Reference Books

1. Optics, K D Meller, (Oxford UniversityPress)
2. Optics, Smith and Thomson, (John Wiley and Sons,1980)
3. Optics, A.N.Matveev, (Mir Publishers1988)

Web References

1. https://www.britannica.com/science/optics
2. https://www.learncbse.in/ray-optics-optical-instruments-cbse-notes-class-12-physics
3. https://www.student-baba.com/2020/01/ray-optics-importantce-for-board-and-handwritten-notes-pdf.html.
4. https://en.wikipedia.org/wiki/Quantum_optics
5. https://byjus.com/question-answer/what-are-the-two-types-of-diffraction/

COs/POs/PSOs Mapping

COs	Program Outcomes (POs)					Program Specific Outcomes (PSOs)		
	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
1	2	2	3	3	2	3	3	2
2	3	3	3	3	2	3	3	3
3	3	3	3	2	2	3	3	2
4	3	3	3	3	1	3	2	3
5	3	3	3	3	1	3	2	3

Correlation Level: 1:Low, 2:Moderate, 3:High

Evaluation Method

Assessment	Continuous Assessment Marks (CAM)					End Semester Examination (ESE) Marks	Total Marks
	CAT 1	CAT 2	Model Exam	Assignment*	Attendance		
Marks	10		5	5	5	75	100

***** Application oriented / Problem solving / Design / Analytical in content beyond the syllabus

Department	**MATHEMATICS**	Programme: **B.Sc.**					
Semester	**II**	Course Category Code: I**DC**				*End Semester Exam Type: **TE**	
Course Code	**A23MAD206C**	Periods / Week			Credit	Maximum Marks	
		L	T	P	C	CAM	TM
Course Name	**ALLIED MATHEMATICS II**	**3**	**1**	**0**	**4**	**25**	**100**
(Common to B.Sc. Physics and B.Sc. Chemistry Branches)							

Prerequisite	Basic Mathematics Knowledge		
Course Objectives	To find solutions of Solenoidal and Irrotational.		
	To bring the knowledge of vector calculus and its application in theorems		
	To understand the concept of complete integrals and general integrals.		
	To learn linear differential equations of higher order with constant coefficients		
	To introduce the concept of correlation and regression.		
Course Outcome	**On completion of the course, the students will be able to**		BT Mapping (Highest Level)
	CO1	Understand the concept of Scalar point functions and Vector point functions	**K3**
	CO2	Apply the various techniques of vector integration in solving Line and surface integrals.	**K3**
	CO3	Understand the use of Lagrange's equations	**K3**
	CO4	Solve higher order differential equations.	**K3**
	CO5	Solve problems related to central tendency and measures of dispersion.	**K2**

UNIT-I	**VECTOR ANALYSIS**	**Periods: 12**
Scalar point functions - Vector point functions – Gradient, divergence and curl - Directional derivatives - Unit to normal to a surface – Solenoidal and Irrotational vector field.		**CO1**
UNIT-II	**VECTOR ANALYSIS (continued)**	**Periods: 12**
Line and surface integrals – Gauss Divergence theorem, Stoke's theorem and Green's theorems (without proofs) - Simple problem based on these Theorems.		**CO2**
UNIT-III	**PARTIAL DIFFERENTIAL EQUATION**	**Periods: 12**
Formation of partial differential equation - complete integrals and general integrals - Equations solvable for p, equations solvable for y and equations solvable for x - Lagrange's equations.		**CO3**
UNIT-IV	**PARTIAL DIFFERENTIAL EQUATION (continued)**	**Periods: 12**
Partial derivatives - Total derivatives - Differentiation of implicit functions - Maxima and Minima of two variables - Partial differential equations of higher order with constant coefficients.		**CO4**
UNIT-V	**STATISTICS**	**Periods: 12**
Measures of central tendency – Arithmetic Mean, Median and Mode – Measures of dispersion – Range and its Coefficient, Standard deviation – Measures of Skewness – Pearson's coefficient of Skewness – Correlation – Rank correlation and regression.		**CO5**

Lecture Periods: 45	**Tutorial Periods: 15**	**Practical Periods: -**	**Total Periods: 60**

Text Books

1. Erwin Kreyszig, "Advanced Engineering Mathematics", Wiley, Tenth edition, 2019
2. P. Duraipandian and S. Udayabaskaran, (1997) Allied Mathematics, Vol. I & II.Muhil Publishers, Chennai
3. B. V. Ramana," Higher Engineering Mathematics", Tata McGraw-Hill, New Delhi, Sixth edition 2018.
4. N.P. Bali and Manish Goyal," A Text Book of Engineering Mathematics", Lakshmi Publications, New Delhi, Ninth Edition, 2018

Reference Books

1. P. Balasubramanian and K. G. Subramanian, (1997) Ancillary Mathematics. Vol. I & II. Tata McGraw Hill, New Delhi.
2. S. P. Rajagopalan and R. Sattanathan, (2005) Allied Mathematics, Vol. I & II Vikas Publications, New Delhi.
3. P. R. Vittal, (2003). Allied Mathematics, Marghan Publications, Chennai.
4. P. Kandasamy, K. Thilagavathy, (2003) Allied Mathematics Vol-I, II S Chand& company Ltd., New Delhi-55.
5. Isaac, Allied Mathematics. New Gamma Publishing House, Palayamkottai.

Web References

1. http://www.yorku.ca/yaoguo/math1025/slides/chapter/kuttler-linearalgebra –slidesSystemsofquation-handout.pdf
2. https://nptel.ac.in/courses/122/104/122104017/
3. https://nptel.ac.in/courses/111/105/111105122/
4. https://www.khanacademy.org/math/statistics-probability
5. https://www.khanacademy.org/math/precalculus/x9e81a4f98389efdf:trig/x9e81a4f98389efdf:inverse-trig/v/inverse-trig-functions-arcsin

COs/POs/PSOs Mapping

Cos	Program Outcomes (POs)					Program Specific Outcomes (PSOs)		
	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
1	2	2	3	2	3	2	3	2
2	3	3	3	3	1	3	3	1
3	2	3	2	3	3	2	2	2
4	2	3	2	3	3	2	2	2
5	3	2	3	2	1	3	2	1

Correlation Level: 1 - Low, 2 - Medium, 3 – High

Evaluation Method

Assessment	Continuous Assessment Marks (CAM)					End Semester Examination (ESE) Marks	Total Marks
	CAT 1	CAT 2	Model Exam	Assignment*	Attendance		
Marks	10		5	5	5	75	100

* Application oriented / Problem solving / Design / Analytical in content beyond the syllabus

Department	**PHYSICS**	Programme:**B.Sc.Physics**						
Semester	**II**	Course Category Code: **DSC**			End Semester Exam Type: **LE**			
Course Code	**A23PHL202D**	Periods/Week			Credit	Maximum Marks		
		L	T	P	C	CAM	ESE	TM
Course Name	**PHYSICS PRACTICAL– II**	**0**	**0**	**2**	**2**	**50**	**50**	**100**

Prerequisite	Basic Physics
Course Objectives	To provide a practical understanding of some of the concepts learnt in the theory course on Physics.
	To evaluate the process and outcomes of an experiment quantitatively and qualitatively.
	To extend the scope of an investigation whether or not results come out as expected.
	To conduct an experiment collaboratively and ethically.
	To collect data and revise an experimental procedure iteratively and reflectively

Course Outcome	**On completion of the course, the students will be able to**	(BT Mapping Highest Level)
CO1	Understand the concepts of light experiments.	**K2**
CO2	Acquired basic knowledge about Potentiometer and magnetic field due to a current carrying coil.	**K3**
CO3	Acquired the knowledge about the purity of given solution.	**K4**
CO4	Gain the knowledge about formal laboratory reports describing the results of experiments and to interpret the data from the experiments	**K3**
CO5	Know the practical knowledge to describe the experiments and to correlate the theoretical values	**K3**

LIST OF EXPERIMENTS

1. Spectrometer- refractive index– Hollow prism.
2. Spectrometer – Grating-Determination N& λ (Normal incidence method).
3. Young's modulus - cantilever - pin &microscope.
4. Potentiometer - calibration of low range ammeter
5. Sonometer - determination of frequency of tuning fork
6. Laurent's Half Shade polarimeter – Determination of Specific rotation of an optically active substance.
7. P.O. Box - temperature coefficient of the material of a coil of wire.
8. Spring Balance – Variation of Periodic oscillations with mass and spring constant.
9. Stokes method of viscosity determination
10. Oscillations on a bifilar pendulum -verification of laws of parallel and perpendicular axes theorem

Lecture Periods:-	**Tutorial Periods:-**	**Practical Periods:30**	**Total Periods:30**

Text Books

1. C.C Ouseph, V.J.Rao and V. Vijayendran "Practical Physics"
2. M.N. Srinivasan "Practical Physics", Sultan son Pub.
3. D P Khandelwal, "Laboratory Manual of Physics" for UG classes (Vani Pub. House, New Delhi).

Reference Books

1. V Y Rajopadhye and V L Purohit, Text book of experimental Physics
2. C.C Ouseph, V.J.Rao and V.Vijayendran "Practical Physics"

Web References

1. https://www.niser.ac.in/sps/sites/default/files/basic_page/Compound%20pendulum_2017.pdf
2. https://www.iist.ac.in/departments/physics-lab
3. https://www.tvu.edu.in/wp-content/uploads/2017/06/B-Sc-Physics.pdf
4. https://www.physics.louisville.edu/cldavis/phys298/notes/torpend.html
5. https://www.youtube.com/watch?v=YzG7po1F5hE

COs/POs/PSOs Mapping

COs	Program Outcomes (POs)					Program Specific Outcomes (PSOs)		
	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
1	3	3	1	1	1	3	3	2
2	3	3	3	3	2	3	3	2
3	3	3	3	3	2	3	3	2
4	3	3	3	3	2	3	3	2
5	3	3	3	3	2	3	3	2

Correlation Level: 1:Low, 2:Moderate, 3:High

Evaluation Method

Internal Assessment	Internal Marks			End Semester Examination (ESE) Marks	Total Marks
	Model	Record	Attendance		
Marks	30	10	10	50	100

Department	**ENGLISH**		Programme: **B. A.**					
Semester	**II**		Course Category Code: **SEC**			End Semester Exam Type:-		
Course Code	**A23ENSA01C**		Periods / Week			Credit	Maximum Marks	
			L	T	P	C	CAM	ESE	TM
Course Name	**COMMUNICATION SKILLS**		**0**	**0**	**4**	**2**	**100**	**0**	**100**
Prerequisite	Knowledge gained from Communication and New paper reading								
Course Objectives	To improve the skill of rapid reading and communicate efficiently								
	To decode and impart speaking skills with confidence								
	To train students in analyzing articles and Newspaper								
	To enhance the sense of social responsibility and accountability of the students								
	To expound the significance in Managerial skills								
Course Outcomes	***On completion of the course, the students will be able to***						BT Mapping (Highest Level)		
	CO1	understand the pattern to communicate effectively					**K3**		
	CO2	impart Speaking skills with self-confidence					**K3**		
	CO3	enhance their strategies in analyzing articles and Newspaper					**K3**		
	CO4	the sense of social responsibility and accountability of the students					**K3**		
	CO5	expertise in Managerial skills					**K3**		
UNIT-I	**COMMUNICATION SKILLS - SPEAKING**					**Periods: 06**			
1. Aspects of speaking 2. Process of effective Speech 3. Techniques for effectual Presentation							**CO1**		
UNIT-II	**SELF-MANAGEMENT SKILLS**					**Periods: 06**			
1. Time Management 2. Stress Management 3. Emotional Management							**CO2**		
UNIT-III	**COMMUNICATION SKILLS - READING**					**Periods: 06**			
1. Article analysis 2. Comprehension 3. Skimming and Scanning							**CO3**		
UNIT-IV	**SOCIAL SKILLS**					**Periods: 06**			
1. Leadership 2. Teamwork 3. Decision making							**CO4**		
UNIT-V	**PUBLIC SPEAKING AND PRESENTATION**					**Periods: 06**			
1. Rules and Techniques for Public Speaking 2. Practice session (both, Public Speaking and Presentation)							**CO5**		
Lecture Periods: -		**Tutorial Periods: -**		**Practical Periods: 30**		**Total Periods: 30**			

Text Books

1. Barun K. Mitra, *Personality Development and Soft skills*, Oxford University Press, 2nd Edition, 2016.
2. Syamala, V, *Effective English Communication for you*, Chennai: Emerald Publisher, 1st Edition, 2002.
3. Sanjay Kumar &PusphLata. *Communication Skills*, Oxford University Press, 2nd Edition, 2015.

Reference Books

1.Murphy, John J, Pulling Together: 10 Rules for High-Performance Teamwork, Simple Truth Publication, 1st Edition, 2010.

2. Balasubramanian, T, A Textbook of English Phonetics for Indian Students, Trinity Press, 1st Ed, 1981.

3. Sardana,C.K, The Challenge of Public Relations, New Delhi: Harnand Publication,1st Edition, 1995.

4.Sabina Pillai, Agna Fernandez, Soft Skills and Employability Skills, Cambridge University Press, 2017.

5.Jeff Butterfield, Soft Skills for Everyone, Cengage India Private Limited, 2nd Edition, 2020.

Web References

1. https://blog.dce.harvard.edu/professional-development/10-tips-improving-your-public-speaking-skills
2. https://corporatefinanceinstitute.com/resources/careers/soft-skills/management-skills/
3. https://zety.com/blog/how-to-introduce-yourself
4. https://www.butte.edu/departments/cas/tipsheets/readingstrategies/skimming_scanning.html
5. https://www.mayoclinic.org/tests-procedures/stress-management/about/pac-20384898

COs/POs/PSOs Mapping

COs	Program Outcomes (POs)					Program Specific Outcomes (PSOs)		
	PO 1	PO 2	PO 3	PO 4	PO 5	PSO 1	PSO 2	PSO 3
1	3	3	3	2	3	1	3	3
2	3	3	3	2	3	1	3	2
3	3	3	3	2	2	1	3	2
4	3	3	3	3	3	1	3	2
5	3	3	2	2	2	1	2	2

Correlation Level

High	Moderate	Low
3	2	1

Evaluation Method

Assessment	Continuous Assessment Marks (CAM)					End Semester Examination (ESE) Marks	Total Marks
	CAT 1	CAT 2	Model Exam	Assignment*	Attendance		
Marks	80		-	10	10	-	100

***** Application oriented / Problem solving / Design / Analytical in content beyond the syllabus

Department	**PHYSICS**			**Programme: B.Sc.Physics**			
Semester	**II**			Course Category Code: **AEC**		End Semester Exam Type: TE	
Course Code	**A23AETA02C**	Periods/Week			Credit	Maximum Marks		
		L	T	P	C	CAM	ESE	TM
Course Name	**ENVIRONMENTALSTUDIES**	**2**	**0**	**0**	**1**	**100**	**0**	**100**

Prerequisite	Environmental issues and natural resources	
Course Objectives	To gain knowledge on the importance of natural resources and energy	
	To understand the structure and function of an ecosystem	
	To imbibe an aesthetic value with respect to biodiversity, understand the threats and its conservation and appreciate the concept of interdependence	
	To understand the causes of types of pollution and disaster management	
	To observe and discover the surrounding environment through field work	
Course Outcomes	***On completion of the course, the students will be able to***	BT Mapping Highest Level)
	CO1 Realize the importance of natural resources and various energy resources	**K1**
	CO2 Learn about the biodiversity	**K1**
	CO3 Learn the different types of pollution and to prevent the pollution	**K2**
	CO4 know about the pollution Act and social issues	**K1**
	CO5 understand Human related issued and environment	

UNIT-I	**INTRODUCTION TO NATURAL RESOURCES/ENERGY**	**Periods:06**
Natural Resources – Definition – Scope and Importance – Need for Public Awareness Renewable and Non-renewable Resources: Natural resources and associated problems. Forest resources and over-exploitation – Water resources and over- utilization – Mineral resource extraction and its effects - Food resources - food problems and Modern agriculture - Energy resources and its future.		**CO1**
UNIT-II	**ECOSYSTEMS**	**Periods:06**
Concept of an ecosystem-structure and function of an ecosystem-producers, consumers and decomposers- ecological succession- food chains(any 2 Examples)- food webs(any 2 Examples)-ECOLOGICAL PYRAMIDS.		**CO2**
UNIT-III	**ENVIRONMENTAL POLLUTION /DISASTER MANAGEMENT**	**Periods:06**
Definition-causes, effects and control measures of Air, Water and Soil pollution- e- waste management-Disaster management: Natural and manmade- food/earthquake/cyclone, tsunami and landslides.		**CO3**
UNIT-IV	**SOCIAL ISSUES AND THE ENVIRONMENT**	**Periods:06**
Sustainable development- Climate change: global warming, acid rain, ozone layer depletion and nuclear radiation- Environment Protection Act (any 2) air, water, wildlife and forest.		**CO5**
UNIT-V	**HUMAN POPULATION AND THE ENVIRONMENT**	**Periods:06**
Population growth, variation among nations - Population explosion-Family Welfare Programme - Environment and human health - Human rights - Value education - HIV/AIDS - Women and Child Welfare Role of Information Technology in environment and human health		**CO5**

Lecture Periods:30	**Tutorial Periods:-**	**Practical Periods:**	**Total Periods:30**

Text Books

1. K. De, “Environmental chemistry” 9th Ed; New age international (P) Ltd, New Delhi, 2010.
2. K. RaghavanNambiar, “Text Book of Environmental Studies” 2ndEd, Scitech Publications (India) Pvt Ltd, India, 2010.
3. G. S. Sodhi, Fundamental concepts of environmental chemistry, I Ed, Alpha Science International Ltd, India, 2000.

Reference Books

1. B.K. Sharma, “Environmental chemistry” 11th Ed, Krishna Prakashan Media (P) Ltd, Meerut, 2009.
2. S.S.Dara, and D.D. Mishra “A text book of environmental chemistry and pollution control, 5th Ed, S.Chandand Company Ltd, New Delhi, 2012.
3. Richard T. Wright, Environmental Science: Toward a Sustainable Future, 10thedition, Prentice Hall, 2008

Web References

1. www.ifpri.org/topic/environment-and-natural-resources
2. https://www.iucn.org/content/biodiversity
3. http://www.world.org/weo/pollution

Evaluation Method

Assessment	Continuous Assessment Marks (CAM)					End Semester Examination (ESE) Marks	Total Marks
	CAT 1	CAT 2	Model Exam	Assignment*	Attendance		
Marks	70		-	20	10	0	100

***** Application oriented / Problem solving / Design / Analytical in content beyond the syllabus