S.K.R. COLLEGE FOR WOMEN , RAJAMAHENDRAVARAM
DEPARTMENT OF PHYSICS
PROFILE

NAME : Y.V.S.S.N.LAKSHMINARAYANA
DESIGNATION : LECTURER
QUALIFICATION: M.Sc., M.B.A.
DEPARTMENT : PHYSICS
DATE OF BIRTH : 25-08-1974
ADDRESS : H.NO. 68-13-4, FLAT NO. 402, ANJANA ARCADE, SBI OFFICER'S COLONY, LALACHERUVU, GNDHIPURM-4, RAJAHMUNDRY-533106
DATE OF APPOINTMENT : 30-09-1997
NAME OF THE INSTITUTE: S.K.R COLLEGE FOR WOMEN, RAJAHMUNDRRY

EDUCATIONAL QUALIFICATIONS:

EXAM PASSED	BOARD/UNIVESITY	YEAR	DIVISION
SSC	BOARD OFSECONDARY EDUCATION	1989	FIRST
INTERMEDIATE	BOARD OF INTERMEDIATEEDUCATION	1991	SECOND
GRADUATION (B.Sc.)	ANDHRA UNIVERSITY	1994	FIRST
POST GRADUATION(M.Sc.)	ANDHRA UNIVERSITY	1996	FIRST

S.K.R. COLLEGE FOR WOMEN, RAJAHMUNDRY

DEPARTMENT OF PHYSICS

COURSE WISE LEARNING OUTCOMES

2021-22

Semester I

COURSE TITILE: Mechanics, Waves and Oscillations

- To understand basic theories related with properties of matter and its applications to determine values of various physical quantities associated with matter.
- Be able to apply knowledge of the properties of matter to explain natural physical processes and related technological advances.
- To learn about fundamentals of verbal and mathematical concepts of waves and oscillations
- We should make the students to know their skills required to get the information from the syllabus and use them in a proper way

Semester II

COURSE TITILE: Wave Optics

- Understand the nature of light and principles of Laser and holography.
- Analyze the intensity variation of light due to interference, diffraction and polarization.
- Solve problems in Optics by selecting the appropriate equations and performing numerical or analytical calculations.
- Student can able to operation of optical devices including polarizers, interferometers, and Lasers.

Semester III

COURSE TITILE: Heat and thermodynamics

- Students will be able to Perform experiments and interpret the results of observation, including making an assessment of experimental uncertainties.
- They develop the ability to apply the knowledge acquired in the classroom and laboratories to specific problems in theoretical and experimental Physics.
- To apply the theories learnt and the skills acquired to solve real time problems.
- To understand the concepts and significance of the various physical phenomena.

Semester IV

COURSE TITILE: Electricity, Magnetism & Electronics

- To learn about Gauss law and solve the electric field and magnetic field for various geometric objects and to learn basic electronic concepts in analog and digital theory.
- To be Explain all the topics of Experiments, Concepts and Derivations to the student
- Apply the principles of electronics in day to day life.
- Encourage all the students to study higher educational courses in reputed institutes and to enrich the students with creative, logical and analytical skills and to motivate the students towards research side.

Semester IV

COURSE TITILE: Modern Physics

- To Create awareness on the topics of Atomic & Molecular Physics, Quantum mechanics, Nuclear Physics, and Solid state physics.
- To be Explain all the topics of Experiments, Concepts and Derivations to the student.
- Explain the basic principles of quantum mechanics and apply to Atomic, Molecular structure of energy levels etc..
- Motivate all the students to pursue PG courses in reputed institutes and to endow the students with creative and analytical skills: this will equip them to become entrepreneurs.

Semester V (Skill Enhancement Course -Elective)

Course: 6C

COURSE TITILE: Applications of Electricity & Electronics

1. Identify various components present in Electricity& Electronics Laboratory.
2. Acquire a critical knowledge of each component and its utility (like resistors, capacitors, inductors, power sources etc.).
3. Demonstrate skills of constructing simple electronic circuits consisting of basic circuit elements.
4. Understand the need & Functionality of various DC & AC Power sources.
5. Comprehend the design, applications and practices of various electrical & Electronic devices and also their trouble shooting.

Semester V (Skill Enhancement Course -Elective)

Course: 7C

COURSE TITILE: Electronic Instrumentation

1. Identify various facilities required to set up a basic Instrumentation Laboratory.
2. Acquire a critical knowledge of various Electrical Instruments used in the Laboratory.
3. Demonstrate skills of using instruments like CRO, Function Generator, Multimeter etc. through hands on experience.
4. Understand the Principle and operation of different display devices used in the display systems and different transducers
5. Comprehend the applications of various biomedical instruments in daily life like B.P. meter, ECG, Pulse oxymeter etc. and know the handling procedures with safety and security.

Signature of the Incharge of the Dept.

Head of the Department of Physics
Smt. KANDUKURI RAJYA LAK
COLLEGE FOR WOMEN
RAJAHMUNDRY - 533 10

Validated by **IQAC**

S.K.R. COLLEGE FOR WOMEN, RAJAHMUNDRY
DEPARTMENT OF PHYSICS
COURSE OUTCOMES *2021-22*

Semester - 1:

Mechanics

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

- Understand Newton's laws of motion and motion of variable mass system and its application to rocket motion and the concepts of impact parameter, scattering cross section.
- Apply the rotational kinematic relations, the principle and working of gyroscope and it applications and the processional motion of a freely rotating symmetric top.
- Comprehend the general characteristics of central forces and the application of Kepler'slaws to describe the motion of planets and satellite in circular orbit through the study of law of Gravitation.
- Understand postulates of Special theory of relativity and its consequences such as length contraction, time dilation, relativistic mass and mass-energy equivalence.

Semester – II

Waves & Oscillations

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

- Examine phenomena of simple harmonic motion and the distinction between un-damped, damped and forced oscillations and the concepts of resonance and quality factor with reference to damped harmonic oscillator.
- Appreciate the formulation of the problem of coupled oscillations and solve them to obtain normal modes of oscillation and their frequencies in simple mechanical systems.
- Figure out the formation of harmonics and overtones in a stretched string and acquire the knowledge on Ultrasonic waves, their production and detection and their applications in different fields.

Semester - 3:

Wave Optics:

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

- Understand the phenomenon of interference of light and its formation in (i) Lloyd's single mirror due to division of wave front and (ii) Thin films, Newton's rings and Michelson interferometer due to division of amplitude.
- Distinguish between Fresnel's diffraction and Fraunhoffer diffraction and observe the diffraction patterns in the case of single slit and the diffraction grating.
- Describe the construction and working of zone plate and make the comparison of zone plate with convex lens.
- Explain the various methods of production of plane, circularly and polarized light and their detection and the concept of optical activity..
- Comprehend the basic principle of laser, the working of He-Ne laser and Ruby lasers and their applications in different fields.
- Explain about the different aberrations in lenses and discuss the methods of minimizing them

Semester - 4:

Thermodynamics and Radiation Physics:

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

- Understand the basic aspects of kinetic theory of gases, Maxwell-Boltzmann distribution law, equipartition of energies, mean free path of molecular collisions and the transport phenomenon in ideal gases
- Gain knowledge on the basic concepts of thermodynamics, the first and the second law of thermodynamics, the basic principles of refrigeration, the concept of entropy, the thermodynamic potentials and their physical interpretations.
- Understand the working of Carnot's ideal heat engine, Carnot cycle and its efficiency
- Develop critical understanding of concept of Thermodynamic potentials, the formulation of Maxwell's equations and its applications.

- Differentiate between principles and methods to produce low temperature and liquefy air and also understand the practical applications of substances at low temperatures.
- Examine the nature of black body radiations and the basic theories.

Semester - 5

Electricity, Magnetism and Electronics:

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

- Understand the Gauss law and its application to obtain electric field in different cases and formulate the relationship between electric displacement vector, electric polarization, Susceptibility, Permittivity and Dielectric constant.
- Distinguish between the magnetic effect of electric current and electromagnetic induction and apply the related laws in appropriate circumstances.
- Understand Biot and Savart's law and Ampere's circuital law to describe and explain the generation of magnetic fields by electrical currents. Develop an understanding on the unification of electric and magnetic fields and ϖ Maxwell's equations governing electromagnetic waves.
- Phenomenon of resonance in LCR AC-circuits, sharpness of resonance, Q- factor, Power factor and the comparative study of series and parallel resonant circuits.
- Describe the operation of p-n junction diodes, zener diodes, light emitting diodes and transistors Understand the operation of basic logic gates and universal gates and their truth tables ϖ

Semester – 6

Modern Physics:

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

- Develop an understanding on the concepts of Atomic and Modern Physics, basic elementary quantum mechanics and nuclear physics. Develop critical understanding of concept of Matter waves and Uncertainty principle.
- Get familiarized with the principles of quantum mechanics and the formulation of Schrodinger wave equation and its applications.

- **Examine the basic properties of nuclei, characteristics of Nuclear forces, salient features of Nuclear models and different nuclear radiation detectors.**
- **Classify Elementary particles based on their mass, charge, spin, half life and interaction. Get familiarized with the nano materials, their unique properties and applications. Increase the awareness and appreciation of superconductors and their practical applications.**

Signature of In-Charge of the Dept.

Head of the Department of Physics
Smt. KANDUKURI RAJYA LAKSHMI
COLLEGE FOR WOMEN
RAJAHMUNDRY - 533 103

Signature of Principal

SKR COLLEGE FOR WOMEN:: RAJAMAHENDRAVARAM

DEPARTMENT OF PHYSICS

RESULT ANALYSIS FOR THE ACADEMIC YEAR 2021-2022

LECTURER WISE

ODD SEMESTER

S.NO.	CLASS	SEMESTER	GROUP	APPEARED	PASSED	PASS PERCENTAGE	NAME PF THE LECTURER
3	III BSc	V	MPC	27	27	100	Mr. Y V S S N LakshmiNarayana
		V(B)					
		V	MPCs	39	39	100	Mr. Y V S S N LakshmiNarayana
		V(B)					

Signature of the In charge of the Dept.

Head of the Department of Physics
Smt. KANDUKURI RAJYA LAKSHMI
COLLEGE FOR WOMEN,
RAJAHMUNDRY - 533 103.

Signature of the Principal

PRINCIPAL
S.K.R. COLLEGE FOR WOMEN
HITHAKARINI SAMAJ
Endowments Dept.,Govt.of Andhra Pradesh
RAJAMAHENDRAVARAM

Rajamahendravaram S.K.R. College for Women

S.K.R. College for Women Rajamahendravaram

SKR COLLEGE FOR WOMEN:: RAJAMAHENDRAVARAM

DEPARTMENT OF PHYSICS

RESULT ANALYSIS FOR THE ACADEMIC YEAR 2021-2022

LECTURER WISE

EVEN SEMESTER

S.NO.	CLASS	SEMESTER	GROUP	APPEARED	PASSED	PASS PERCENTAGE	NAME PF THE LECTURER
1	I BSc	II	MPC	21	15	71	Y V S S N LakshmiNarayana
		II	MPCs	32	29	91	Y V S S N LakshmiNarayana
		IV(B)	MPC	23	12	52	Y V S S N LakshmiNarayana
		IV(B)	MPCs	31	17	55	Y V S S N LakshmiNarayana
3	III BSc	VI	MPC	27	25	92	Y V S S N LakshmiNarayana
		VI	MPCs	39	26	66	Y V S S N LakshmiNarayana

Signature of the In charge of the Dept.

Head of the Department of Physics
Smt. KANDUKURI RAJYA LAKSHMI
COLLEGE FOR WOMEN.
RAJAHMUNDRY - 533 103.

Signature of the Principal

PRINCIPAL
S.K.R. COLLEGE FOR WOMEN
HITHAKARINI SAMAJ
Endowments Dept.,Govt.of Andhra Pradesh
RAJAMAHENDRAVARAM

S.K.R. College for Women ★ Rajamahendravaram ★

Dt. 18-10-2021

To The Principal
S.K.R. College For Women
Rajahmundry.

Respected Madam,

Sub: Requisition for grant of Permission to conduct Certificate Course-Reg.

We, the Physics Department Staff members were planning to conduct a certificate course for III BSc (MPC & MPCs) students of our College from 27-10-2021 to 10-12-2021 on **DOMESTIC ELECTRICAL DEVICES**. The duration of the course is 30 days with one hour per day instruction class, which was scheduled after the completion of college work, i.e., from 4:30 PM – 5:30 PM. So please kindly grant us permission to conduct the above said certificate course.

Thanking You

Yours Faithfully

MINUTES OF THE MEETING

The Staff members of the Department of Physics held a meeting on 20-10-2021 and passed a resolutionto organize a certificate course on " **DOMESTIC ELECTRICAL DEVICES"**
for III BSc (MPC & MPCs) students under the guidance of the faculty of Physics Department for 30 hours.
The curse will be held from 27-10-2021 to 10-12-2021 for the Academic year 2021-2022 under Curriculum Enrichment programme.
The Objectives of the course are:

1) Voltage Vs Current
2) Electric energy and electric power
3) Power consumption in electrical devices/ Appliance

Signature of Course Coordinator **Signature of the Principal**

A BRIEF REPORT

I, K. Rama Devi, In-Charge of the Department of Physics, S.K.R. College for Women herewith submit a brief report on the Certificate Course organized by the Department , with the prior permission from the Principal.

The Course is meant for the III BSc(MPC & MPCs) students. The course objectives along with the syllabus was intimated to the students. The interested students registered their names. An entry level exam was conducted to the registered students. Nearly 40 students were appeared for the entry level exam and 20 students were selected for the course. The course duration is 30 hours. The course was scheduled from 27-10-2021 to 10-12-2021 . After successful completion of the course, an Exit Exam was conducted for the students and certificates were presented to the students by the Principal.

In-Charge of the Department

Head of the Department of Physics
Smt. KANDUKURI RAJYA LAKSHMI
COLLEGE FOR WOMEN.
RAJAHMUNDRY - 533 103.

S.K.R. COLLEGE FOR WOMEN, RAJAHMUNDRY

DEPARTMENT OF PHYSICS

CERTIFICATE COURSE ON

DOMESTIC ELECTRICAL DEVICES

COURSE CONTENTS **DURATION: 30 HOURS**

1. Concept of electric charge and electron, current, voltage and resistance.

2. Ohm's Law, resistors in series and parallel, electric energy and electric power.

3. Basics of domestic electrical devices- electric fan, washing machine, electric iron box, television(LED) and android.

S.K.R. COLLEGE FOR WOMEN, RAJAHMUNDRY

DEPARTMENT OF PHYSICS

CERTIFICATE COURSE ON

DOMESTIC ELECTRICAL DEVICES

STUDENT ATTENDANCE

CLASS TIMINGS: **4:30 PM TO 5:30 PM**

S.NO.	REGD.NO.	NAME OF THE STUDENT															
1	190907101001	A. Vijaya Durga															
2	1003	A. Kalyani															
3	1006	B.S. Prasanna															
4	1008	J.M.S.R. Sowbhagya															
5	1009	J. Satya Prashanthi															
6	1026	M. HemaLatha															
7	1029	S.V.P.K. Sri Brundan															
8	1033	V. Ratna Kumari															
9	2035	A.S.S.S. Eswari															
10	2041	G. Akshitha															
11	2046	J. Vineetha Rani															
12	2050	K. VijayaBharathi															
13	2059	M.N.D.V. Prashanhi															
14	2063	P. Lasya															
15	2065	P. SriLakshmiVani															
16	2068	P. Deekshitha															
17	2069	P. Seeta MahaLakshmi															
18	2073	S. Swathi															
19	2074	Sk. Fareeda															
20	2084	Y. Kalpana Poornima															

Signature of Course Coordinator

S.K.R. COLLEGE FOR WOMEN, RAJAHMUNDRY

DEPARTMENT OF PHYSICS

CERTIFICATE COURSE ON

DOMESTIC ELECTRICAL DEVICES

EXIT EXAM – ABSENTEES STATEMENT

S.NO.	REGD.NO.	NAME OF THE STUDENT	SIGNATURE OF THE STUDENT
1	**190907101001**	**A. Vijaya Durga**	
2	**1003**	**A. Kalyani**	
3	**1006**	**B.S. Prasanna**	
4	**1008**	**J.M.S.R. Sowbhagya**	
5	**1009**	**J. Satya Prashanthi**	
6	**1026**	**M. HemaLatha**	
7	**1029**	**S.V.P.K. Sri Brundan**	
8	**1033**	**V. Ratna Kumari**	
9	**2035**	**A.S.S.S. Eswari**	
10	**2041**	**G. Akshitha**	
11	**2046**	**J. Vineetha Rani**	
12	**2050**	**K. VijayaBharathi**	
13	**2059**	**M.N.D.V. Prashanhi**	
14	**2063**	**P. Lasya**	
15	**2065**	**P. SriLakshmiVani**	
16	**2068**	**P. Deekshitha**	
17	**2069**	**P. Seeta MahaLakshmi**	
18	**2073**	**S. Swathi**	
19	**2074**	**Sk. Fareeda**	
20	**2084**	**Y. Kalpana Poornima**	

S.K.R. COLLEGE FOR WOMEN, RAJAHMUNDRY

DEPARTMENT OF PHYSICS

CERTIFICATE COURSE ON

DOMESTIC ELECTRICAL DEVICES

EXIT EXAM – QUESTION PAPER

DATE: TIME: ONE HOUR MAXIMUM MRKS: 20

1. **What is the unit of charge in CGS units?**

2. **How many electrons constitute one microcoulomb charge?**

3. **An electric heater draws 3.5 A from a 110 V source. The resistance of the heating element is approximately**

4. **If 750 μA is flowing through 11 k Ω of resistance, what is the voltage drop across the resistor?**

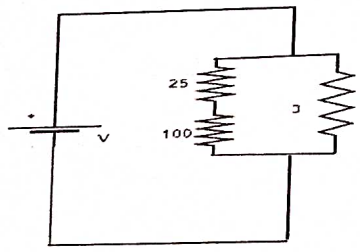
5. **Approximately how many milliamperes of current flow through a circuit with a 40 V source and 6.8 k Ω of resistance?**

6. **The formula to find *I* when the values of *V* and *R* are known is**

7. **Three resistances of 1, 1, and 2 ohms are connected in parallel. Find the equivalent resistance for the system.**

8. **Three resistances of 6, 10, and 20 ohms are connected in series. Find the equivalent resistance for the system.**

9. **Find the equivalent resistance for the system shown in the figure below:**



10. **Find the value of carbon resistor with colour bands Yellow, Violet, Brown, Gold**

11. **Who Invented Resistor Colour Code?**

S.K.R. COLLEGE FOR WOMEN, RAJAHMUNDRY

DEPARTMENT OF PHYSICS

CERTIFICATE COURSE ON

DOMESTIC ELECTRICAL DEVICES

EXIT EXAM – RESULTS

S.NO.	REGD.NO.	NAME OF THE STUDENT	MARKS (FIGURES)	MARKS (WORDS)
1	**190907101001**	**A. Vijaya Durga**		
2	**1003**	**A. Kalyani**		
3	**1006**	**B.S. Prasanna**		
4	**1008**	**J.M.S.R. Sowbhagya**		
5	**1009**	**J. Satya Prashanthi**		
6	**1026**	**M. HemaLatha**		
7	**1029**	**S.V.P.K. Sri Brundan**		
8	**1033**	**V. Ratna Kumari**		
9	**2035**	**A.S.S.S. Eswari**		
10	**2041**	**G. Akshitha**		
11	**2046**	**J. Vineetha Rani**		
12	**2050**	**K. VijayaBharathi**		
13	**2059**	**M.N.D.V. Prashanhi**		
14	**2063**	**P. Lasya**		
15	**2065**	**P. SriLakshmiVani**		
16	**2068**	**P. Deekshitha**		
17	**2069**	**P. Seeta MahaLakshmi**		
18	**2073**	**S. Swathi**		
19	**2074**	**Sk. Fareeda**		
20	**2084**	**Y. Kalpana Poornima**		

Outcomes of the course:

After studying this course, you should be able to

1Understand the working principles involved in the operation of domestic electrical devices.

2) Checking of electric connections and minor repairing of domestic electrical appliances.

Signature of Course Coordinator **Signature of the Principal**