

CAUVERY COLLEGE FOR WOMEN (AUTONOMOUS)

NATIONALLY ACCREDITED (IV CYCLE) WITH “A+” GRADE BY NAAC

TIRUCHIRAPPALLI – 620 018

PG AND RESEARCH DEPARTMENT OF PHYSICS



B.Sc., PHYSICS SYLLABUS

(2026-2027 and Onwards)

CAUVERY COLLEGE FOR WOMEN (AUTONOMOUS)

TIRUCHIRAPPALLI-620 018

PG AND RESEARCH DEPARTMENT OF PHYSICS

VISION

To establish a substratum for excellence and creation of knowledge by igniting the essence of learning physics and exploring its area of research with novel ideas.

MISSION

Our mission is two – fold.

- To provide an outstanding and distinctive education to our undergraduate and postgraduate students.
- To expand our research enterprises via centers and institutes to achieve national and international prominence in strategic research areas.

PROGRAMME EDUCATIONAL OBJECTIVES (PEOs)

PEOs	Statements
PEO1	LEARNING ENVIRONMENT To facilitate value-based holistic and comprehensive learning by integrating innovative learning practices to match the highest quality standards and train the students to be effective leaders in their chosen fields.
PEO2	ACADEMIC EXCELLENCE To provide a conducive environment to unleash their hidden talents and to nurture the spirit of critical thinking and encourage them to achieve their goal.
PEO3	EMPLOYABILITY To equip students with the required skills in order to adapt to the changing global scenario and gain access to versatile career opportunities in multidisciplinary domains.
PEO4	PROFESSIONAL ETHICS AND SOCIAL RESPONSIBILITY To develop a sense of social responsibility by formulating ethics and equity to transform students into committed professionals with a strong attitude towards the development of the nation.
PEO5	GREEN SUSTAINABILITY To understand the impact of professional solutions in societal and environmental contexts and demonstrate the knowledge for an overall sustainable development.

PROGRAMME OUTCOMES FOR B.Sc PHYSICS PROGRAMME

PO NO.	On completion of B.Sc Physics Programme, The students will be able to
PO 1	Domain Knowledge: Analyse, design and develop solutions by applying firm fundamental concepts of basic sciences and expertise in discipline.
PO 2	Problem solving: Ability to think rationally, analyse and solve problems adequately with practical knowledge to assess the environmental issues.
PO 3	Creative thinking and Team Work: Develop prudent decision-making skills and mobility to work in teams to solve multifaceted problems.
PO 4	Employability: Self-study acclimatize them to observe effective interactive practices for practical learning enabling them to be a successful science graduate.
PO 5	Life Long Learning: Assure consistent improvement in the performance and arouse interest to pursue higher studies in premium institutions.

PROGRAMME SPECIFIC OUTCOMES FOR B.Sc PHYSICS PROGRAMME**B.Sc PHYSICS CURRICULUM [2026-2027 and Onwards]**

PSO NO.	Programme Specific Outcomes Students of B.Sc Physics will be able to	POs Addressed
PSO1	Intensify the student academic capability, unique qualities and transferable skills which will give them opportunity to evolve as responsible citizens.	PO1, PO2, PO4
PSO2	Explain the fundamentals laws involved in physics.	PO1, PO5
PSO3	Understand the theory and consequence of the various physical occurrence.	PO1, PO2, PO3, PO5
PSO4	Carryout experiments to interpret the laws and concepts of Physics.	PO1, PO2, PO5
PSO5	Relate the theories learnt and the skills procured to solve enduring problems.	PO1, PO2, PO3, PO5



COLLEGE FOR WOMEN (AUTONOMOUS)

PG AND RESEARCH DEPARTMENT OF PHYSICS

B.Sc., Physics

CHOICE BASED CREDIT SYSTEM-LEARNING OUTCOME BASED CURRICULUM FRAMEWORK (CBCS - LOCF)

(For the candidates admitted from the academic year 2026-2027 and onwards)

Semester	Part	Course	Course Title	Course Code	Inst. Hrs. /	Credits	Exam			Total	
							Hrs.	Marks			
								Int	Ext		
I	I	Ability Enhancement Course – I (AEC - I)	பொதுத்தமிழ் – I	26ULT1	6	3	3	30	70	100	
			Hindi ka Samanya Gyan aur Nibandh	26ULH1							
			Poetry, Grammar and History of Sanskrit Literature	26ULS1							
			Foundation Course: Paper I- French I	26ULF1							
	II	Ability Enhancement Course – II (AEC - II)	General English –I	26UE1	6	3	3	30	70	100	
	III	Core Course – I(CC-I)	Properties of Matter and Acoustics	26UPH1CC1	5	5	3	30	70	100	
		Core Practical - I (CP-I)	Properties of Matter and Acoustics (P)	26UPH1CP1	3	3	3	40	60	100	
		Minor Course- I (MC-I)	Calculus and Fourier Series	26UPH1MC1	3	3	3	30	70	100	
		Minor Course -II (MC-II)	Algebra, Analytical Geometry (3D) & Trigonometry	26UPH1MC2	3	3	3	30	70	100	
IV	Ability Enhancement Compulsory Course-I (AECC-I)	Value Education	26UGVE	2	2	-	100	-	100		
	Ability Enhancement Compulsory Course-II (AECC-II)	Cyber Security	26UGCS	2	2	-	100	-	100		
	Total				30	24				800	
II	I	Ability Enhancement Course – III (AEC - III)	பொதுத்தமிழ்- II	26ULT2	6	3	3	30	70	100	
			Hindi Literature & Grammar –II	26ULH2							
			Prose, Grammar and History of Sanskrit Literature	26ULS2							
			Basic French – II	26ULF2							
	II	Ability Enhancement Course – IV (AEC - IV)	General English – II	26UE2	6	3	3	30	70	100	
	III	Core Course – II (CC-II)	Mechanics and Relativity	26UPH2CC2	5	5	3	30	70	100	
		Core Practical - II (CP-II)	Mechanics and Digital Electronics (P)	26UPH2CP2	3	3	3	40	60	100	
		Minor Course- III (MC-III)	Ordinary Differential Equations, Partial Differential Equations, Laplace Transforms and Vector Analysis	26UPH2MC3	3	3	3	30	70	100	
		Minor Course Practical-I(MCP-I)	Mathematical Computation using MATLAB (P)	26UPH2MCP1	3	3	3	40	60	100	
	IV	Ability Enhancement Compulsory Course-III (AECC-III)	Environmental Science	26UGES	2	2	-	100	-	100	
		Ability Enhancement Compulsory Course-IV (AECC-IV)	Innovation and Entrepreneurship	26UGIE	2	2	-	100	-	100	
	Extra Credit Course #			SWAYAM	As per UGC Recommendation						
	Total					30	24				800

III	I	Ability Enhancement Course – V (AEC - V)	பொதுத்தமிழ் – III	26ULT3	6	3	3	30	70	100
			Hindi Literature & Grammar –III	26ULH3						
			Drama, Grammar and History of Sanskrit Literature	26ULS3						
			Intermediate French-I	26ULF3						
	II	Ability Enhancement Course – VI (AEC - VI)	Learning Grammar Through Literature – I	26UE3	6	3	3	30	70	100
	III	Core Course–III (CC-III)	Thermal Physics and Statistical Mechanics	26UPH3CC3	6	5	3	30	70	100
		Core Practical -III(CP-III)	Thermal Physics (P)	26UPH3CP3	3	3	3	40	60	100
		Minor Course- IV (MC-IV)	Chemistry – I	26UPH3MC4	4	3	3	30	70	100
		Minor Course Practical-II (MCP-II)	Chemistry-I (P)	26UPH3MCP2	3	3	3	40	60	100
	IV	Interdisciplinary Course- I (IDC-I)	Introduction to NCC@	26UNC3IDC1	2	2	3	30	70	100
Physics in Everyday Life			26UPH3IDC1							
Basic Tamil – I			26ULC3BT1							
Special Tamil – I			26ULC3ST1							
Ability Enhancement Compulsory Course-V (AECC-V)		Health and Wellness *	26UGHW	2*	1	-	100	-	100	
Extra Credit Course #			SWAYAM		As per UGC Recommendation					
Total					30	23				800

IV	I	Ability Enhancement Course – VII (AEC - VII)	பொதுத்தமிழ் – IV	26ULT4	6	3	3	30	70	100
			Hindi Literature & Functional Hindi	26ULH4						
			Alankara, Didactic and Modern Literatures and Translation	26ULS4						
			Intermediate French –II	26ULF4						
	II	Ability Enhancement Course – VIII (AEC - VIII)	Learning Grammar Through Literature– II	26UE4	6	3	3	30	70	100
	III	Core Course – IV(CC-IV)	Electricity, Magnetism and Electromagnetism	26UPH4CC4	5	5	3	30	70	100
		Core Practical - IV(CP-IV)	Electricity and Magnetism (P)	26UPH4CP4	3	3	3	40	60	100
		Minor Course- V (MC-V)	Chemistry – II	26UPH4MC5	3	3	3	30	70	100
		Minor Course Practical-III (MCP-III)	Chemistry – II(P)	26UPH4MCP3	3	3	3	40	60	100
	IV	Interdisciplinary Course- II (IDC-II)	Specialisation in Army@	26UNC4IDC2	2	2	2	30	70	100
			Photography and Videography	26UPH4IDC2						
			Basic Tamil - II	26ULC4BT2						
			Special Tamil - II	26ULC4ST2						
Skill Enhancement Course – I (SEC-I)		Physics concepts through Animation (P)	26UPH4SEP1	2	2	3	40	60	100	
Extra Credit Course #			SWAYAM		As per UGC Recommendation					
Total					30	24				800

30 Days INTERNSHIP during Semester Holidays

V	III	Core Course – V(CC-V)	Optics	26UPH5CC5	6	5	3	30	70	100
		Core Course – VI (CC-VI)	Atomic and Nuclear Physics	26UPH5CC6	6	5	3	30	70	100
		Core Practical- V(CP-V)	General Physics -I (P)	26UPH5CP5	3	3	3	40	60	100
		Core Practical- VI(CP-VI)	Electronics -I (P)	26UPH5CP6	3	3	3	40	60	100
		Internship *	Internship	26UPH5INT	-	2	-	20	80	100
		Discipline Centric Elective Course– I (DCEC-I)	A. Materials Science	26UPH5DCE1A	5	4	3	30	70	100
			B. Laser Physics	26UPH5DCE1B						
			C. Astrophysics and Cosmology	26UPH5DCE1C						
		Discipline Centric Elective Course– II (DCEC-II)	A. Analog and Digital Electronics	26UPH5DCE2A	5	4	3	30	70	100
			B. Sensors, Transducers and IoT	26UPH5DCE2B						
			C. Renewable Energy Sources and Applications	26UPH5DCE2C						
		Ability Enhancement Compulsory Course-VI(AECC-VI)	Introduction to Disaster Management	26UGDM	2	2	-	100	-	100
Extra Credit Course #		SWAYAM	As per UGC Recommendation							
Total				30	28				800	

VI	III	Core Course – VIII(CC-VII)	Fundamentals of Microprocessor	26UPH6CC7	6	5	3	30	70	100	
		Core Course – IX(CC-IX)	Classical and Quantum Physics	26UPH6CC8	5	5	3	30	70	100	
		Core Practical –VII(CP-VII)	Electronics -II (P)	26UPH6CP7	3	3	3	40	60	100	
		Core Practical –VIII(CP-VIII)	Microprocessor (P)	26UPH6CP8	3	3	3	40	60	100	
		Discipline Centric Elective Course– III (DCEC-III)	A. Medical Physics	26UPH6DCE3A	5	4	3	30	70	100	
			B. Computational Physics	26UPH6DCE3B							
			C. Robotics and Automation	26UPH6DCE3C							
		Project	Project Work	26UPH6PW	5	3	-	20	80	100	
		IV	Skill Enhancement Course – II (SEC-II)	Professional Competency-General Studies for Competitive Examinations	26UPH6SE2	2	2	2	-	100	100
			Ability Enhancement Compulsory Course-VII (AECC-VII)	Gender Studies	26UGGS	1	1	-	100	-	100
		V	Extension Activity *		26UGEA	-	1	-	-	-	-
		Total				30	27				800

Grand Total				180	150				4800
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- @ NCC is one of the choices in GEC. Only the NCC cadets are eligible to chooses this course. However, NCC Course is a Compulsory Course for the NCC Cadets. If the Cadet has not studied Tamil in the school level, she has to take Basic Tamil Course.
- *Shall be outside instruction hours
- # Should complete a minimum of one Extra Credit Course from Semester II onwards

PG AND RESEARCH DEPARTMENT OF PHYSICS
CHOICE BASED CREDIT SYSTEM-LEARNING OUTCOME
BASED CURRICULUM FRAMEWORK (CBCS - LOCF)
(For the Candidates admitted from the Academic year 2026-2027 and onwards)

Curriculum Structure

Courses & Credits for UG Science Programmes

Part	Course	No. of Courses	Hours	Credits	Total Credits
I	Ability Enhancement Course	4	6	12	12
II	Ability Enhancement Course	4	6	12	12
III	Core (Theory)	8	5/6	8*5=40	105
	Core (Practical)	8	3	8*3=24	
	Project Work	1	5	3	
	Internship	1	-	2	
	Minor Courses	8	4/3	8*3=24	
	DCEC	3	5	3*4=12	
IV	IDC	2	2	2*2=4	20
	SEC	2	2	2*2=4	
	AECC-I -Value Education	1	2	2	
	AECC-II Cyber Security	1	2	2	
	AECC-III- Environmental Science	1	2	2	
	AECC-IV-Innovation and Entrepreneurship	1	2	2	
	AECC-V- Health and Wellness	1	-	1	
	AECC-VI - Introduction to Disaster Management	1	2	2	
	AECC-VII Gender Studies	1	1	1	
V	Extension Activities		-	1	01
		48		150	150

Semester I	Internal Marks: 30		External Marks: 70	
COURSE CODE	COURSE TITLE	CATEGORY	HRS/WEEK	CREDITS
26UPH1CC1	PROPERTIES OF MATTER AND ACOUSTICS	CC-I	5	5

Course Objective

- To build the conceptual understanding of materials with mathematical skills and reviews the prior knowledge of properties of matter.
- To study the basics of bending of beams and its applications.
- To understand the concepts of viscosity and surface tension.
- To learn about Acoustics of buildings
- To study the concept of ultrasonics and its applications

S. No.	Course Features	Relevance Status
1.	Course emphasis on Employability/Entrepreneurship/Skill Development	Employability, Entrepreneurship, Skill Development
2.	Course integrates cross cutting issues relevant to Professional Ethics/Gender sensitization/ Environment and Sustainability/ Human Values/Indian Knowledge System	Environment and Sustainability
3.	Course relevant to Local/Regional/National/ Global needs	Global needs
4.	Course focus on Sustainable Developmental Goals	SDG 3,4,6,9

Course Outcome and Cognitive Level Mapping

CO Number	CO Statement	Cognitive Level
	On the successful completion of the course, students will be able to	
CO1	Explain the introduction of different properties of matter namely elasticity, mass, viscosity, and surface tension.	K1, K2
CO2	Identify the concept of bending of a beam, uniform bending, and non-uniform bending of the beam.	K2, K3
CO3	Apply the concepts of surface tension and its methods	K3
CO4	Analyze the properties of Viscosity in fluids and analyze the capillarity nature in liquids	K 4
CO5	Interpret the concepts of intensity of sound and to understand the concept of ultrasonics and its applications	K5

Mapping of CO with PO and PSO

COs	PSO1	PSO2	PSO3	PSO4	PSO5	PO1	PO2	PO3	PO4	PO5
CO1	3	3	3	2	1	3	2	3	2	1
CO2	3	3	2	3	1	3	2	3	2	2
CO3	3	3	2	1	1	3	3	2	2	1
CO4	3	3	3	2	2	3	3	2	3	1
CO5	3	3	3	2	1	3	3	2	2	1

“1” – Slight (Low) Correlation; “2” – Moderate (Medium) Correlation;

“3” – Substantial (High) Correlation; “-” indicates there is no correlation.

Syllabus

UNIT	CONTENT	HOURS	COs	COGNITIVE LEVEL
I	ELASTICITY Hooke's law-stress-strain diagram- Elastic constants- Poisson 's ratio -relation between elastic constants - Work done in stretching and twisting a wire-twisting couple on a cylinder-rigidity modulus by static torsion-torsional pendulum (with and without masses)	15	CO1, CO2, CO3, CO4, CO5	K1, K2, K3, K4, K5
II	BENDING OF BEAMS Cantilever -Expression for bending moment-expression for depression at the loaded end of the cantilever -oscillations of a cantilever -experiment to find Young's modulus-non-uniform bending-experiment to determine Young's modulus using microscope	15	CO1, CO2, CO3, CO4, CO5	K1, K2, K3, K4, K5
III	FLUID DYNAMICS: Surface Tension Definition-molecular forces-Excess pressure over curved surface-application to spherical and cylindrical drops and bubbles- determination of surface tension - Jaeger's method-variation of surface tension with temperature	15	CO1, CO2, CO3, CO4, CO5	K1, K2, K3, K4, K5
IV	VISCOSITY: Definition- Streamline and turbulent flow- Rate of flow of liquid in a capillary tube-Poiseuille's formula-corrections-Terminal velocity-Stokes Formula-Stoke 's method for coefficient of viscosity-Searle's viscometer-Viscosity of gas- Meyer's formula	15	CO1, CO2, CO3, CO4, CO5	K1, K2, K3, K4, K5
V	ACOUSTICS OF BUILDINGS AND ULTRASONICS: Intensity of sound-Decibel-Loudness of sound-Reverberation- Sabine's reverberation formula-acoustic intensity-factors affecting the acoustics of buildings Ultrasonic waves: Production of ultrasonic waves-Piezoelectric crystal method- Magnetostriction effect-application of ultrasonic waves	15	CO1, CO2, CO3, CO4, CO5	K1, K2, K3, K4, K5
VI	SELF STUDY FOR ENRICHMENT: (Not to be included for External Examination) Rigidity modulus of different materials - I- shaped grids and its uses - surface tension of soap bubble - sonic waves and its types – application of acoustics and advances in ultrasound imaging	-	CO1, CO2, CO3, CO4, CO5	K1, K2, K3, K4, K5

Text Books

1. Murugesan, R., (2012). *Properties of Matter and Acoustics*, Reprint 2020, S. Chand & Co, New Delhi.
2. Newman, F.H., & Searle, V.H. L., (1961). *The General Properties of Matter*. E.Arnold.
3. Brijlal & Subrahmanyam N, (1989), *Properties of Matter*, Fifth Edition, Eurasia Publishing House (Pvt) Ltd, New Delhi,
4. Mathur, D.S., (2010). *Elements of Properties of Matter*. S. Chand & Company, New Delhi.
5. Khanna, D.R., & Bedi, R.S., (1969). *Textbook of Sound*, 8th edition, Atmaram and sons.
6. Subrahmanyam, N., & BrijLal , (2015). *Textbook of Sound*, Second Revised and Enlarged Edition, Vikas Publishing House, New Delhi.

Reference Books

1. Murugesan, R., & Kiruthiga Sivaprasath, (2012). *Properties of Matter and Acoustics*, Revised edition, S. Chand & Co, New Delhi.
2. Gulati, H.R., (1982). *Fundamentals of General Properties of Matter*. S.Chand & Co, New Delhi
3. Saighal, R.L., (1998). *Text Book of Sound*, Second edition. Chand & Company, New Delhi.
4. Brown, R.C., (2005). *Mechanics and Properties of Matter*. Longmans Green and company.
5. David Halliday, Robert Resnick., (2013). *Fundamentals of physics*, 10th edition, Wiley Plus.

Web References

1. <https://www.insula.com.au/physics/1279/L7.html>
2. <https://www.insula.com.au/physics/1279/L7.html>
3. <https://www.youtube.com/watch?v=CQGlgU-8dmA>
4. <https://hyperphysics.phy-astr.gsu.edu/hbase/pbuoy.html>
5. [https://kanchiuniv.ac.in/coursematerials/Physics%20book_Final%20\(1\).pdf](https://kanchiuniv.ac.in/coursematerials/Physics%20book_Final%20(1).pdf)

Pedagogy

Chalk and Talk, Assignment, Group discussion, and quiz

Course Designer

Dr. G. Maheswari

Dr. S. Gowri

Semester I	Internal Marks: 40		External Marks: 60	
COURSE CODE	COURSE TITLE	CATEGORY	HRS/WEEK	CREDITS
26UPH1CP1	PROPERTIES OF MATTER AND ACOUSTICS (P)	CP-I	3	3

Course Objectives

- To enhance experimental skills in determining physical constants like Young's modulus, rigidity modulus, surface tension, viscosity and acceleration due to gravity.
- To gain hands-on experience with precision instruments and techniques such as torsional pendulum, optical lever, capillary flow, sonometer and ultrasonic apparatus.
- To develop proficiency in data analysis, graphical interpretation and error estimation for reliable experimental results.

S. No.	Course Features	Relevance Status
1.	Course emphasis on Employability/Entrepreneurship/Skill Development	Employability, Skill Development
2.	Course integrates cross cutting issues relevant to Professional Ethics/Gender sensitization/ Environment and Sustainability/ Human Values/Indian Knowledge System.	Professional Ethics, Environment and Sustainability, Human Values
3.	Course relevant to Local/Regional/National/ Global needs	National and Global needs
4.	Course focus on Sustainable Developmental Goals	SDG 4, 9, 11, 12, 13

Course Outcome and Cognitive Level Mapping

CO Number	CO Statement On the successful completion of the Course, the Student will be able to	Cognitive Level
CO 1	Select the equipment and get the necessary accessories.	K1
CO 2	Demonstrate the use of equipment for various measures.	K2
CO 3	Construct the experiment by arranging and assembling the equipment.	K3
CO 4	Solve the physical quantity using the relevant formula after gathering accurate data through observations. Keep a detailed record of all laboratory activities.	K3
CO 5	Apply experimental approaches to correlate with physics theory to develop practical understanding.	K3

Mapping of CO with PO and PSO

COs	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PO 1	PO 2	PO 3	PO 4	PO 5
CO 1	1	1	1	2	1	3	2	1	2	1
CO 2	2	3	2	2	2	3	3	1	2	1
CO 3	1	1	2	3	1	3	2	1	3	1
CO 4	2	3	3	3	2	1	3	1	3	2
CO 5	3	2	3	3	3	1	3	2	3	2

“1” – Slight (Low) Correlation

“2” – Moderate (Medium) Correlation

“3” – Substantial (High) Correlation

“-” indicates there is no correlation

Syllabus

LIST OF EXPERIMENTS (Any 8)

1. Measurement of rigidity modulus using a Torsional pendulum.
2. Estimation of rigidity modulus using static torsion method.
3. Evaluation of Young's modulus by uniform bending using Pin and Microscope.
4. Determination of Young's modulus through non-uniform bending with Pin and Microscope.
5. Calculation of Young's modulus by non-uniform bending method using Scale and Telescope.
6. Study of Young's modulus using cantilever method: Load-Depression graph.
7. Measurement of surface tension and interfacial surface tension via drop weight method.
8. Estimation of coefficient of viscosity using Stokes' method (terminal velocity).
9. Analysis of coefficient of viscosity by Poiseuille's capillary flow method.
10. Evaluation of acceleration due to gravity (g) using a compound pendulum.
11. Sonometer- Frequency measurement of tuning fork.

Text Book

1. Ouseph, C.C., Rao, U.J. and Vijayendran, V., (2016), *Practical Physics and Electronics*, S. Viswanathan Printers & Publishers Pvt Ltd., Chennai.
2. Arora, C.L., (2020), *B.Sc. Practical Physics*, S. Chand Publishing, New Delhi.
3. Gupta, S.L. and Kumar, V., (2018), *Practical Physics (Vol. I & II)*, Pragati Prakashan, Meerut.
4. Aruldas, G. and Rajagopal, P., (2021), *Practical Physics for Degree Students*, Universities Press, Hyderabad.

Reference Book

1. Namboodirippad, M.N. and Daniel, P.A., (1982), *B.Sc. Practical Physics*, G.B.C. Publications, Cochin.
2. Worsnop, B.L. and Flint, H.T., (2015), *Advanced Practical Physics for Students*, Asia Publishing House, Mumbai.
3. Squires, G.L., (2018), *Practical Physics*, Cambridge University Press, Cambridge.

Web References

1. <https://vlab.amrita.edu/?sub=1&brch=280&sim=550&cnt=1>
2. <https://vlab.amrita.edu/index.php?sub=1&brch=280&sim=1518&cnt=4>
3. <https://vlab.amrita.edu/?sub=1&brch=280&sim=602&cnt=2>
4. <https://vlab.amrita.edu/?sub=1&brch=280&sim=210&cnt=2>

Pedagogy

Demonstration, Practical sessions, and viva voce

Course Designer

Dr.R.Gayathri