

Bon Secours College for Women (Autonomous)

NAAC Accredited with A++ Grade in cycle II

UGC recognized 2(f) and 12(B) Institution

An ISO 21001:2018 Certified Institution

Affiliated with Bharathidasan University, Tiruchirappalli

Vilar Bypass, Thanjavur- 613 006, Tamil Nadu



2025

2026

ANNUAL PROGRESS REPORT

*Ignition-Skilling-Up-skilling-Implementation-
Impact (ISI)*

DBT STAR COLLEGE PROGRAMME



Submitted to
DEPARTMENT OF BIOTECHNOLOGY
Ministry of Science and Technology
New Delhi-110003



1. Name of the College : Bon Secours College for Women (Autonomous)

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UGC Recognized under Sections 2(f) and 12(B)

An ISO 21001:2018 Certified Institution

Vilar Bypass, Thanjavur - 613 006

2. Name of Coordinator & Designation : Dr. R. Kalaivani

Assistant Professor & Coordinator- IQAC

Department of Biotechnology

Address, Phone nos.

: Bon Secours College for Women (Autonomous)

Vilar Bypass, Thanjavur- 613 006, Tamil Nadu

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3. Assessment duration : Year 1- 03/06/2024 to 31.03/2025 (Phase I) &
01/04/2025 to 31/03/2026 (Phase II)

Duration in Years : 2nd year

4. Details of Departments Supported: Biotechnology, Botany, Physics and Chemistry
Administrative order : HRD-11011/16/2023-HRD-DBT & 03.06.2024

5. Assessment duration : 03/06/2024 to 31.03/2025 & 01/04/2025 to 31/03/2026
Duration in Years : 2nd year

6. Details of Departments Supported: HRD-11011/16/2023-HRD-DBT & 03.06.2024

7. Qualitative improvements due to DBT support. Please highlight 5 salient points (within 500 words).

6.1.Shift from Theoretical & Demonstration-Based Learning to Hands-on Scientific Learning

DBT support enabled the conversion of several laboratory activities previously conducted only as theoretical approach & demonstrations into **student-performed hands-on experiments**. Techniques such as bacterial transformation, SDS-PAGE, immunological assays, RFLP, Southern blotting and quantitative biochemical analysis could be incorporated into practical learning inbuilt with curriculum.

Curriculum Revision: The Department wise revised curriculum is presented in Table 1-4.

Annual Progress Report supported under DBT Star College Programme				
Department of Biotechnology				
S. No.	Class	Course Name & Code	Category	Experiments
1.	III B.Sc.	Nanotechnology – 22SMBEBT2B	Theoretical Concept are offered as Hands-on experiment	1. Synthesis of Nanoparticles from Biological Sources 2.Extraction and Quantitative Estimation of Plant Bioactive Compounds 3. <i>In vitro</i> Plant Tissue Culture and Micropropagation
The following experiments given in the Practical syllabus as Demonstration are converted to Hands-on due the availability of equipment procured through DBT Star Programme				
2.	I B.Sc.	Cell & Molecular Biology – 24ULS451	Demonstration Converted to Hands-on	1. Transformation of Bacteria – CaCl ₂ method 2. Separation of Protein by SDS PAGE
3.	I B.Sc.	Immunology & Immunotechnology – 24UBT551	Demonstration Converted to Hands-on	1. Precipitation Reaction – AGID 2. Double Immunodiffusion 3. Rocket Immuno-electrophoresis
4.	II B.Sc.	rDNA Technology – 24UBT552	Demonstration Converted to Hands-on	1. RFLP ; 2. Southern Blotting
5.	II B.Sc.	Biochemistry Lab- 24UBC352	Demonstration Converted to Hands on	Quantitative analysis of Minerals and Vitamins
6.	III B.Sc.	Industrial Biotechnology Practical – 24UBT506	Theoretical Concept as Hands-on	1. Production of Beer; 2. Production of Bacteriocins from Lactic Acid Bacteria 3. Production of Cheese; 4. Production of Kimchi 5. Production of Sauerkraut, Pickled Cucumber ; 6.Production of Kefir and Kombucha

7.	III B.Sc	Industrial Biotechnology-24UBT507	Theoretical Concept as Demonstration	Production of Antibiotics using Bioreactor Production of Acetic Acid using Bioreactor
Department of Botany				
S.No.	Class	Course Name & Code	Category	Experiment Details
For B.Sc., Botany, Cell & Molecular Biology course was introduced under autonomy curriculum and offered the theoretical parts as hands-on.				
1.	I B.Sc.	Cell & Molecular Biology – 24ULS451	Demonstration Converted to Hands-on	1.Transformation of Bacteria – CaCl ₂ method; 2. Bacterial Mutagenesis – Physical and Chemical methods 3. Separation of Protein by SDS PAGE
2.	III B.Sc.	Plant Physiology, Biochemistry, Biophysics, Ecology, Phytogeography & Environmental Biotechnology – 22SCCBO6P	Newly Added Experiments	1.Determination of Alkaloids, Flavonoids, Tannins 2. Determination of Organic Matter in Soil 3.Determination of Total Dissolved Solid
3.	III B.Sc.	-Plant Physiology, Biochemistry, Biophysics, Ecology, Phytogeography & Environmental Biotechnology – 22SCCBO6P	Theoretical Concept as Hands-on	1.Determination of Alkaloids, Flavonoids, Tannins ; 2. Determination of Organic Matter in Soil 3.Determination of Total Dissolved Solid
Department of Physics				
S.No	Class	Course & Code	Category	Experiment / Activity
1	I B.Sc.	Core Practical I – General Physics I – 24UPH551	Newly Added Experiments	1. The viscosity of highly viscous liquid – Stokes’s method 2. Determination of Young’s Modulus by Cantilever depression.
			Conversion of Demonstration into Hands-on	To determine the modulus of rigidity (η) of the given wire using static torsion.
			Theoretical concepts to Demo	Verification of Hooke’s Law and determines the spring constant (k) (for wire).

		Core Practical II – General Physics II – 24UPH552	Newly Added Experiments	1. The figure of merit of a mirror galvanometer – Ballistic Galvanometer 2. Determine the Specific Heat capacity of Solid-Joule’s Calorimeter.	
2	II B.Sc.	Core Practical III Modern Optics Lab 24UPH553	Newly Added Experiments	1. Polarizability of liquids by finding the refractive indices at different wavelengths. 2. Determination of wavelengths, particle size using He-Ne Laser.	
			Conversion of Demonstration into Hands-on	Plane diffraction grating– experiment to determine wavelengths	
			Theoretical concepts to Demo	Determination of resolving power of telescope.	
		Core Practical IV – Electricity & Magnetism Lab - 24UPH554	Newly Added Experiments	1. B.G – Determination of mutual inductance. 2. Potentiometer – Determination of resistance of a coil.	
			Theoretical concepts to Demo	1. Thermo EMF determination 2. Wheatstone’s Bridge 3. Self-Inductance of Solenoid	
3	III B.Sc.	Core Practical V – Optics & Digital Electronics – 22SCCPH5P	Newly Added Experiments	1. Spectrometer – Diffraction Grating (Normal Incidence); 2. Transistor Characteristics -	
			Conversion of Demonstration into Hands-on	Construction and study of Full wave rectifier	
		Core Practical VI – Electronics, Microprocessor, Programming – 22SCCPH6P	Newly Added Experiments	1. Hattley Oscillator using Transistor. 2. Arrange Array Data in Descending Order	
			Conversion of Demonstration into Hands-on	1.BCD to HEX Conversion	
Department of Chemistry					
S.No	Class	Course Title & Code	Category	Experiment / Activity	

1	I B.Sc.	Volumetric and Applied Volumetric Analysis – 24UCH551	Newly Added Experiments	1. Estimation of Chromium (VI) in Industrial Effluents
2	I B.Sc.	Inorganic Qualitative Analysis – 24UCH552	Newly Added Experiments	1. Green Detection of Metal Ions Using Plant Extracts
3	II B.Sc.	Organic Qualitative Analysis and Preparation – 24UCH553	Newly Added Course	1. Identification of Organic Functional Groups in Cosmetic Product
4	II B.Sc.	Gravimetric Analysis – 24UCH554	Newly Added Course	1. Estimation of Aluminium in Antiperspirants / Deodorants
5	III B.Sc.	Inorganic Chemistry – 22SCCCH5	Theoretical Concept as Demonstration	1. Development of Metal-Based Antimicrobials 2. Chromatographic Separation of Green Pigments 3. Techniques of Food Preservation
6	II B.Sc.	General Chemistry-III – 24UCS403	Theoretical Concept as Hands-on	1. Crystal Growth 2. Kinetic Study Thermodynamic Reaction
7	III B.Sc.	Organic Chemistry II – 22SCCCH8	Theoretical Concept as Hands-on	1. Isolation of Natural dye 2. Tests for Carbohydrates, Fats & Proteins in Food
8	II B.Sc.	Polymer Chemistry – 24UCS601	Theoretical Concept as Hands-on	1. Extraction & Preparation of biopolymer 2. Determination of Molecular Weight of Polymers
9	III B.Sc.	Physical Chemistry Practical – 22SCCCH5P	Newly Added Experiments	1. Determination of Partition Coefficient of Natural Dyes Between Aqueous and Oil Phases
10	III B.Sc.	Gravimetric Analysis and Determination of Physical Constant - 22SCCCH6P	Newly Added Experiments	1. Gravimetric Estimation of Metal Ions using Eco-Friendly Reagents (Plant Extract)
11	III B.Sc.	Gravimetric Analysis and Determination of Physical Constant - 22SCCCH6P	Conversion of Demo to Hands-on	1. Measurement of Atmospheric Pressure using Boiling Point 2. Estimation of Chloride in Common Salt

Change after DBT Star College Programme

Students no longer only observe experiments-they perform, analyse and interpret them.

6.2. Emergence of Interdisciplinary Scientific Thinking and Creation of a Research-Ready Undergraduate Ecosystem

DBT support has encouraged students from Biotechnology, Botany, Physics and Chemistry even with Computer Studies to work beyond disciplinary boundaries. Interdisciplinary projects have been undertaken across combinations such as Biotechnology–Physics, Biotechnology–Chemistry and Physics–Chemistry, Physics-Biotechnology-Botany-Computer Studies

6.2.a. List of Interdisciplinary Student research projects:

1. *In-silico* Molecular docking analysis of bioactive compounds from Swarna Masuri, a traditional rice variety for anti- diabetic management.
2. *In silico* molecular Docking Analysis of Bioactive Compounds from Pokkuru Samba traditional rice variety, for antidiabetic management.
3. Comparative production and characterization of bioplastics from marine macroalgae.
4. A Comparative Study of Chitosan-Based Liquid and Nano formulations for Weed Control as Hyacinth-X.
5. Investigation of Microplastic Contamination in Milk Samples by using MoF.
6. Eco-Friendly Solid-State Synthesis of Copper Oxide Nanoparticles Using *Ficus religiosa* Bark Extract and Study of Anti-Inflammatory and Antibacterial Activity.
7. Plant-Assisted Solid-State Synthesis of Copper Oxide Nanoparticles Using *Ficus racemosa* Bark Extract for anti-Inflammatory and antibacterial Applications.
8. Solvent-Assisted Green Synthesis of Carbon Dots and Evaluation of their antibacterial and UV-Protective Properties.
9. Green Synthesis of Ni–Cu–Zn Oxide Nanoparticles Using *Azadirachta indica* Leaf Extract and Evaluation of Methylene Blue Dye Degradation Activity.
10. Phytochemical Screening, Antibacterial Activity and UV-Protective Analysis of *Cassia fistula* Extracts.
11. Investigation of Microplastic Contamination in Milk Using Ni-MOF.
12. Comparative production and characterization of bioplastics from marine macroalgae.

b. Strengthening of Laboratory Infrastructure and Learning Resources: Financial support from DBT has enabled the procurement of modern scientific equipment, consumables, and essential learning resources. The upgraded laboratory infrastructure has expanded the scope of practical training, allowing students to engage with laboratory techniques and instrumentation. Access to enriched learning resources, including reference books, journals, and digital materials, has further elevated the quality of science education by reinforcing the principle of learning by doing. A separate Central laboratory was established for UG Research Ecosystem under DBT Star College Programme.

6.2.b. List of Equipment Purchased:

S.No.	Name of Equipment/ Asset	Quantity Procured (in Nos)	Cost(Rs.)	Date of Placing order	Date of Receiving Equipment
DEPARTMENT OF BIOTECHNOLOGY					
1.	Microcentrifuge (Maximum Speed 150000 RPM)	3	1,59,000.00	10.12.25	31.03.26
2.	Soxhlet Extraction Mantles (C.O.D) Apparatus	2	28,761.00	10.12.25	31.03.26
3.	Double Distillation Unit	1	38,000.00	10.12.25	31.03.26
4.	Southern Blotting Apparatus	1	19,848.31	10.12.25	31.03.26
5.	Northern Blotting Apparatus	1	19,848.31	10.12.25	31.03.26
6.	Haemocytometer	12	25,200.00	10.12.25	31.03.26
7.	Precision Balance	3	18,900.00	10.12.25	31.03.26
8.	Hot Air Oven	1	28,000.00	10.12.25	31.03.26
9.	Stirred Stainless Steel Fermenter	1	2,97,150.00	10.12.25	02.04.26
	TOTAL		7,48,955.00		
DEPARTMENT OF BOTANY					
1.	LABOMED-LXLED LX-200 Binocular Microscope	7	34,810.00	10.12.25	18.03.2026
2.	Borosil -3840, Soxhlet apparatus 200 ml Heating Mantles 500ml Capacity	2	68,798.00	10.12.25	11.03.2026 31.08.2026
3.	Orbital Shaking Incubator without Cooling	1	47,200.00	10.12.25	31.03.2026
4.	Autoclave (Vertical Model)	1	3,73,200.00	10.12.25	31.03.2026
5.	Microtome	1	2,20,683.00	10.12.25	31.03.2026
	TOTAL		7,44,558.00		
DEPARTMENT OF PHYSICS					
1.	Meter Bridge Apparatus	4	53,283.04	10.12.25	24.07.2024
2.	Static Torsion Apparatus	2	38,220.34	10.12.25	25.02.2026
3.	Figure of Merit Apparatus	3	80,508.45	10.12.25	3.03.2026
4.	High Resistance by Leakage App Using B.G	3	66,470.34	10.12.25	25.02.2026
5.	Carey Foster Bridge Apparatus	4	53,283.04	10.12.25	18.03.2026
6.	Potentiometer Ammeter Calibration	2	50,942.36	10.12.25	24.07,2024

7.	Ballistic Galvanometer	1	26,800.65	10.12.25	3.03.2026
8.	Ballistic Galvanometer (Complete Set)	3	85,762.71	10.12.25	3.03.2026
9.	Anderson Bridge for Self Inductance	3	60,127.11	10.12.25	02.04.2026
10.	Hartley Oscillator Using Transistor	3	17,288.97	10.12.25	02.04.2026
11.	Monostable Multivibrator Using Transistor	2	18,050.84	10.12.25	02.04.2026
12.	Microprocessor 8085	3	27,910.17	10.12.25	02.04.2026
13.	Field Along the Axis of the Coil Apparatus	2	15,567.80	10.12.25	18.03.2026
14.	LCR Series & Parallel Resonance Circuit Apparatus	2	18,271.18	10.12.25	02.04.2026
	TOTAL		7,22,735.00		
DEPARTMENT OF CHEMISTRY					
1.	TLC Kit	2	36,580.00	10.12.25	05.12.2025
2.	Chromatography Column, plain with stopcock 18X300 mm	20	14,250.00	10.12.25	05.12.2025
3.	Single Distillation Unit	3	67,260.00	10.12.25	09.01.2026
4.	Magnetic Stirrer with Hot plate	13	1,60,070.00	10.12.25	17.11.2025
5.	Muffle Furnace Working Size 12X12X12 Digital temperature upto 1100°C	1	95,180.00	10.12.25	17.11.2025
6.	Mechanical Shaker	2	98,000.00	10.12.25	05.12.2025
7.	Mechanical Shaker with Thermostat	2	82,600.00	10.12.25	17.11.2025
8.	Soxhlet Apparatus	3	75,000.00	10.12.25	17.11.2025
9.	Rotary Vacuum Evaporator	1	1,15,050.00	10.12.25	06.03.2026
	Total		7,43,990.00		

6.2.c. Details of Books purchased and its utility

1. Department of Biotechnology

S. No.	Title of the Book Purchased	Class	Title of the Course and Code	No. of Beneficiaries
1.	Biotechnology (Satyanarayana)	I B.Sc. Biotechnology	Cell and Molecular Biology- 24ULS451	87
2.	Essentials of Microbiology (Rajan/CBS Publish)	I B.Sc. Biotechnology	Basic Microbiology and Medical Microbiology – 24UMB301 & 302	87
3.	Textbook of Immunology	I B.Sc.	Immunology and	87

	(C.V. Rao/Narosa Publ)	Biotechnology	Immunotechnology – 24UBT501	
4.	Text book of Environmental Studies (Jain)	I B.Sc. Biotechnology	Environmental Studies – 24UFC905	87
5.	Textbook of Environmental Biology (G. K. Agrawal/Satyam Publ)	I B.Sc. Biotechnology	Environmental Studies – 24UFC905	87
6.	Molecular genetics (Gunther/CBS Publish)	II B.Sc. Biotechnology	r-DNA Technology -24UBT502	69
7.	Bioinformatics (Menka Sisodia/Asia Pub)	II B.Sc. Biotechnology	Introductory to Bioinformatics and Biostatistics – 24ULS402	69
8.	Industrial Microbiology (Patel/Triunity Press)	III B.Sc. Biotechnology	Microbial Biotechnology – 22SCCBT8	82
9.	Plant Biotechnology (Sumit Bhargav)	III B.Sc. Biotechnology	Plant Biotechnology 22SCCBT5	82
10.	Research Methodology for Biological Sciences (N.Gurumani/MJPH)	III B.Sc. Biotechnology	Project – 22SCCBTPW	82
11.	Fundamentals of Bioanalytical Techniques and Instrumentation — Ghosal	II B.Sc. Biotechnology	Analytical Techniques in Biology- 24UBC304	69
12.	Microbiology — Baker	I B.Sc. Biotechnology	Basic Microbiology- 24UMB301	87
13.	Medical Microbiology — Irving	I B.Sc. Biotechnology	Medical Microbiology-24UMB302	87
14.	SHARGEL & YU'S Applied Biopharmaceutics & Pharmacokinetics — Ducharme	III B.Sc. Biotechnology	Clinical Trial and data management- 22SSBEBT2 Molecular Diagnostics- 22SSBEBT1	82
15.	Basic Bioinformatics — S. L. Gadis	II B.Sc. Biotechnology	Introductory to Bioinformatics and Biostatistics- 24ULS402	69
16.	Cell and Molecular Biology — Prakash S. Lohar	I B.Sc. Biotechnology	Cell and Molecular Biology - 24ULS401	87
17.	Computational Biology — B. Thagarajan	II B.Sc. Biotechnology	Introductory to Bioinformatics and Biostatistics- 24ULS402	69
18.	Nanotechnology — N. Shanmugam	III B.Sc. Biotechnology	Nanotechnology -22SMBEBT2V	82
19.	Cell and Molecular Biology: Concepts and Experiments — Rama	I B.Sc. Biotechnology	Practical in Cell and Molecular Biology- 24ULS451	87
20.	Fundamentals of Molecular Biology — Kavya	I B.Sc. Biotechnology	Cell and Molecular Biology - 24ULS401	87
21.	Pharmaceutical Technology — Singh	III B.Sc. Biotechnology	Molecular Diagnostics- 22SSBEBT1	82
22.	Handbook of General Microbiology — Tiwari	I B.Sc. Biotechnology	Basic Microbiology- 24UMB301	87
23.	Current Topics in Developmental Biology — Schatta	II B.Sc. Biotechnology	Developmental Biology and Genetics-24ULS403	69
24.	Basic Concepts of	II B.Sc.	Biochemistry-24UBC303	69

	Biochemistry — Gilbert	Biotechnology	
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2. Department of Botany

S. No	Title of the Book Purchased	Class	Title of the Course & Code	No. of Beneficiaries
1.	A Textbook of Practical Botany Vol-1	I.B. Sc., Botany II B.Sc., Botany	Microbiology and Plant Diversity- 24UBO501 Plant Pathology and Plant Disease Management 24UBO502	19
2.	B.Sc. 1st Year Practical Botany	I.B. Sc., Botany II B.Sc., Botany	Microbiology and Plant Diversity- 24UBO501 Plant Pathology and Plant Disease Management 24UBO502	19
3.	Biotechnology	I.B. Sc., Botany III B.Sc., Botany	Cell and Molecular Biology 24ULS401 Cell and Molecular Biology- 22SCCBO5	28
4.	Botany for Degree Fungi	I.B. Sc., Botany II B.Sc., Botany	Microbiology and Plant Diversity- 24UBO501 Plant Pathology and Plant Disease Management 24UBO502	19
5.	Botany for Degree Students Algae	I.B. Sc., Botany	Microbiology and Plant Diversity- 24UBO501	09
6.	Botany for Degree Students Pteridophyta	III B.Sc., Botany	Bryophytes, Pteridophytes, Gymnosper & Paleobotany - 24UBO503	10
7.	CSIR-UGC NET/JRF/SET Life Science	I , II, III B.Sc., Botany	All courses	38
8.	Essentials of Microbiology	I B.Sc., Botany	Microbiology and Plant Diversity I 24UBO501	09
9.	Fundamentals of Plant Physiology	III B.Sc Botany	Plant Physiology, Biochemistry and Biophysics- 24UBO507	19
10.	Medicinal and Aromatic Plants Vol-1	III B.Sc Botany	Taxonomy, Morphology- 24UBO505	19
11.	Medicinal and Aromatic Plants Vol-2	III B.Sc Botany	Taxonomy, Morphology- 24UBO505 Herbal Botany -22SMBEBO1A	19
12.	Molecular Development Biology	II B.Sc., Botany	Developmental Biology and Genetics -24ULS403	10
13.	Plant Anatomy	III B.Sc Botany	Plant Anatomy & Embryology - 24UBO504	19
14.	Plant Propagation and Nursery Management	III B.Sc Botany	Nursery Business and Ecotourism	30
15.	Principles and Procedures of Plant Breeding	III B.Sc Botany	Nursery Business and Ecotourism	20

16.	Textbook of Genetics Vol-I	II B.Sc Botany III B.Sc Botany	Developmental Biology-24ULS403 Genetics and Evolution 22sSCCBO6	29
17.	A Modern Textbook of Zoology – Vertebrates	I B.Sc., Botany	Animal diversity - 24UZOO301	9
18.	A Textbook of Botany	III B.Sc Botany	Morphology, Taxonomy and Economic Botany-22SCCBO7	19
19.	Developmental Biology HB	II B.Sc., Botany	Developmental Biology and Genetics - 24ULS403	10
20.	Economic Botany	III B.Sc Botany	Morphology, Taxonomy & Economic Botany- 22SCCBO7	19
21.	Economic Zoology	I B.Sc., Botany	Animal diversity- 24UZOO301	9
22.	Endemic Medicinal Plants	III B.Sc Botany	Herbal Botany- 22SMBEBO1A	19
23.	Flowering Plants of Tamil Nadu – Terrestrial Plants of the Plains	III B.Sc Botany	Morphology, Taxonomy & Economic Botany-22SCCBO7	19
24.	Dictionars of Medicinal Plants	III B.Sc Botany	Herbal Botany- 22SMBEBO1A	19
25.	Laboratory Manual Biology	II B.Sc Botany	Plant Pathology and Plant Disease Management Lab- 24UBO552	10

3. Department of Physics

S.NO	TITLE	Class	Title of the Course and Code	No. of Beneficiaries
1.	Optical Fiber Communications	III B.Sc Physics	24UPH707: Fundamentals of Optoelectronics 24UPH754 : Optoelectronics Lab	12
2.	The Universe	III B.Sc Physics	24UPH701: Cosmology and Astronomy	12
3.	Medical Physics and Biomedical Engineering	III B.Sc Physics	24UPH703: Fundamentals of Medical Physics 24UPH704: Medical Imaging Technology	12
4.	A Textbook of Biophysics	III B.Sc Physics	24UPH703: Fundamentals of Medical Physics 24UPH704: Medical Imaging Technology	12

5.	BSc., Practical Physics	I B.Sc Physics II B.Sc Physics III B.Sc Physics III B.Sc Chemistry II BCA II B.Sc Computer Science II B.Sc IT II B.Sc AI & ML	24UPH551: General Physics Lab I 24UPH552: General Physics Lab II 24UPH553: Modern Optics Lab 24UPH554: Electricity & Magnetism Lab 24UPH555: Analog Electronics Lab 24UPH556: Digital Electronics and Micro Processor Lab 24UPH352: Digital Electronic lab 24UPH351: Applied Physics lab	321
6.	Electronic Devices/Conventional Current version	III B.Sc Physics	24UPS403: Analog and Communication Electronics 24UPH804: Principles of Electronics	12
7.	Elementary biophysics	III B.Sc Physics	24UPH703: Fundamentals of Medical Physics 24UPH704: Medical Imaging Technology	12
8.	Introduction to Integrated Electronics	III B.Sc Physics	24UPH711: Digital Electronics 24UPH756: Digital Circuits	12
9.	Nano technology and Nano electronics	III B.Sc Physics	24UPH706: Nanotechnology and Applications 24UPH753: Experimental Nanotechnology Lab	12
10.	The 80151 Micro controller	III B.Sc Physics	24UPH709: Micro Processor and Micro Controller 24UPH755: Micro Processor and Micro Controller Lab	12
11.	Handbook of biomedical Instrumentation	III B.Sc Physics	24UPH703: Fundamentals of Medical Physics 24UPH704: Medical Imaging Technology	12
12.	Numerical Methods	III B.Sc Physics	22SCCPH6P: Electronics, Microprocessor and Programming lab	8
13.	Non-conventional Energy Resources	Open Elective to other Department	24UPH803: Renewable Energy Resources	30
14.	Material Science	III B.Sc Physics	24UPH705- Introduction to Materials Science	8
15.	Solar Energy	Open Elective to other Department	24UPH803: Renewable Energy Resources	30
16.	Material Science	II B.Sc Physics, III B.Sc Physics	24UPH705: Introduction to Materials Science	20
17.	Atomic and Nuclear Physics	III B.Sc Physics	24UPH505: Atomic and Molecular Physics 24UPH507-Nuclear	8

			Physics	
18.	Principles of Mechanics	II B.Sc Physics	24UPH502: Mechanics and Relativity	12
19.	Microprocessor Architecture Programming and Applications- Gaonkar	III B.Sc Physics	24UPS601: Digital Electronics and 8085 Microprocessor	8
20.	Introduction to Electrodynamics- Griffiths	II B.Sc Physics	24UPH504: Electricity, Magnetism & Electromagnetism	12
21.	Non Conventional Energy Resources- B H Khan	Open Elective to other Department	24UPH803: Renewable Energy Resources	30
22.	Digital Principles and Applications-Leach	III B.Sc Physics	22SCCPH7: Electronics	8
23.	Digital Fundamentals- Floyd	III B.Sc Physics	22SCCPH7: Electronics	8
24.	Electromagnetic theory and Electrodynamics- Prakash	II B.Sc Physics	24UPH504: Electricity, Magnetism & Electromagnetism	12
25.	An Introduction to Astrophysics- Basu	III B.Sc Physics	24UPS404: Astrophysics	8
26.	Quantum Mechanics- Aruldas	III B.Sc Physics	24SCCPH9: Theoretical Physics	8
27.	Nuclear Physics- R R Roy	III B.Sc Physics	24SCCPH8: Nuclear Physics	8
28.	Object Oriented Programming with C++ - Balagurusamy	III B.Sc Physics	22SMBEPH2: Microprocessor and C Programming	8
29.	Intellectual Property Rights- Pandey	III B.Sc Physics	24UPS603: Intellectual Property Rights	8
30.	Lasers and non linear optics- Laud	III B.Sc Physics	24UPS402: Optics and Laser Physics	8
31.	Quantum Mechanics- Schiff	III B.Sc Physics	24UPH506: Classical and Quantum Physics	8
32.	Intellectual Property Rights- Nithyananda	III B.Sc Physics	24UPS603: Intellectual Property Rights	8

4. Department of Chemistry

S.No.	Title of the Book	Class	Title of the Course and course code	No. of Beneficiaries
1.	Organic Chemistry (7 th edition, Pearson Education, Robert Thornton Morrison & Robert Neilson Boyd)	I, II, III B.Sc.,	General Chemistry II – 24UCS402 General Chemistry IV – 24UCS404 Organic Chemistry I – 22SCCCH6 Organic Chemistry II – 22SCCCH8	60

2.	An Introduction to Electrochemistry (Pragati Book Centre-East-West press, Samuel Glasstone)	III B.Sc., I M.Sc.	Physical Chemistry I – 22SCCCH7 Physical Chemistry II – 22SCCCH9	41
3.	Modern Spectroscopy (4th edition, Wiley, J. Michael Hollas)	III B.Sc., I, II M.Sc.	Physical Chemistry II – 22SCCCH9	54
4.	Physical Chemistry: A Molecular Approach (University Science Books, Donald A. McQuarrie & John D. Simon)	III B.Sc., I, II M.Sc.	General Chemistry IV – 24UCS404 Physical Chemistry II – 22SCCCH9 Electrochemistry and spectroscopy 24PCH109	54
5.	Basic Organometallic Chemistry (3rd edition, CRC Press, B. D. Gupta & Anil J. Elias)	III B.Sc., I M.Sc.	Inorganic Chemistry – 22SCCCH5 Structure and bonding in Inorganic chemistry –24PCH102	54
6.	Organic Chemistry (Janice Gorzynski Smith)	III B.Sc.,	Organic Chemistry II - 22SCCCH8	28
7.	Organic Chemistry — Morrison / Pearson	III B.Sc., II B.Sc.,	Organic Chemistry I -22SCCCH6 Organic Chemistry II - 22SCCCH8 General Chemistry II- 24UCS402	47
8.	Advanced Organic Chemistry — Arun Bahl / S. Chand	III B.Sc., II B.Sc.,	Organic Chemistry I -22SCCCH6 General Chemistry III-24UCS403	47
9.	Environmental Chemistry: Pollution and Remedial Perspectives — A. V. Salker / Narosa	III B.Sc.,	Dyeing Techniques And Water Treatment- 22SSBECH2	28
10.	Fundamentals of Photochemistry — K. K. Rohatgi / New Age International	II B.Sc., III B.Sc.,	General Chemistry IV - 24UCS404 Physical Chemistry I-22SCCCH7	47
11.	Nuclear and Radiation Chemistry — B. K. Sharma / Krishna Prakashan	III B.Sc.,	Industrial Chemistry- 22SSBECH2	28
12.	Organic Reaction Mechanisms — V. K. Ahluwalia / Narosa Publishing	I B.Sc.,	General Chemistry I - 24UCS401	13
13.	Organic Spectroscopy — William Kemp / Bloomsbury	III B.Sc.,	Organic Chemistry II- 22SCCCH8	28

14.	Physical Methods in Inorganic Chemistry — Drago / Empty Canva	III B.Sc.,	Inorganic Chemistry- 22SCCCH5	28
15.	Quantum Chemistry and Spectroscopy — Thomas Engel / Pearson	III B.Sc.,	Physical Chemistry II-22SCCCH9	28
16.	Food Chemistry (MJP Publishers) — Alex V. Ramani	III B.Sc.,	Food Chemistry- 24UCH801	28
17.	Nanotechnology (Swastik Publications) — Pathan	III B.Sc.,	Material and Nano Chemistry- 24UCH507	28

6.2.d. Establishment of Central UG Common Laboratory under the support of DBT Star College Programme



Change after DBT Star College Programme: Department-wise learning is gradually transforming into collaborative scientific problem-solving and a central Laboratory was established for UG Research Ecosystem under DBT Star College Programme.

6.3. Strengthening of Faculty Scientific Capacity

DBT-supported expert interactions, training programmes, workshops and faculty participation in scientific programmes have expanded faculty exposure to contemporary scientific methods, research practices and emerging technologies. The 100 % faculty participation in advanced experimental, computational, AI, interdisciplinary training etc. are ensured.

Based on comment of DBT on last year 5th Task force review meeting, arranged exclusive faculty training and development programmes and 100% faculty development & training was achieved in 2025-26.

6.3.a. Faculty Publications:

S.No	Title of paper	Name of the author/s	Department	Name of journal	Year of publication	ISSN number	DOI Number	Category
1	Impact of Hydrothermal Treatment on the Bioactive Compounds of Different Brown Rice Varieties in India	R. Kalaivani S. V. Bakiya Lakshmi,	Biotechnology	Applied Biochemistry and Biotechnology	2025-2026	0273-2289	10.1007/s12010-025-05322-0	Scopus and WOS
2	Evaluation of free radical scavenging activity and antimicrobial activity of various leaves extracts from <i>Eichhornia crassipes</i>	Dr.S. Sivaranjani, D.K. Usha		Biochemical and Cellular Archives	2025-2026	0972-5075	10.51470/bca.2025.25.2.2287	Scopus
3	Biogenic Mediated Green Synthesis of Silver Nanoparticles: Assessment of Antimicrobial and Cytotoxic Potential	Dr. S. Sivaranjani	Biotechnology	Journal of Xidian University	2025-2026	1001-2400	--	Scopus
4	Isolation of pigmented marine bacteria and evaluation of their antibacterial and antioxidant activities against multidrug-resistant bacterial pathogens	Dr.S. Sivaranjani Dr.A. Sarumathi Dr.D.K.Usha	Biotechnology	Indian Journal of natural products and resources	2025-2026	0976-0504	--	Scopus
5	Effects of plant extracts of <i>Coleus amboinicus</i> against Antioxidant and antimicrobial activity	Dr.S. Sivaranjani Dr.A. Sarumathi Dr.D.K. Usha P. Sathiyavani	Biotechnology & Botany	Advances in BioResearch	2025-2026	0976-4585	10.15515/abr.0976-4585.SPL2.25.122130	UGC Care
6	Synergistic Enhancement of Photocatalytic and Anti-Inflammatory Properties in Nickel-Doped Zinc Oxide Nanorods	J. Princess Gracia	Chemistry	Rasayan Journal of Chemistry	2025-2026	0974-1496	10.31788/RJC.2025.1849399	Scopus

7	One-pot green bio-assisted synthesis of ZnO/SnO ₂ -rGO hybrid nanocomposites using Prosopis juliflora leaf extract for high-performance supercapacitor electrode	J. Princess Gracia	Chemistry	Journal of Organometallic Chemistry	2025-2026	0022-328X	10.1016/j.jorganchem.2025.123842	Scopus
8	Prosopis Juliflora Leaf Extract Mediated Synthesis Of Doped Tin Oxide Nanoparticles And Evaluation Of Antimicrobial Activity	J. Princess Gracia	Chemistry	International Journal of Environmental Sciences	2025-2026	2229-7359	10.64252/kddf0e51	Scopus
9	SnO ₂ :V/g-C ₃ N ₄ nanocomposite enriched with papaya peels-elicited enzyme for photocatalytic dye detoxification and cytotoxic applications	Dr.R.Anandhi	Physics	Surfaces and Interfaces	2025-2026	2468-0230	10.1016/j.surfin.2025.107401	Scopus
10	Synthesis, Structural Characterization, and Quantum Chemical Analysis of (E)-2-(1-(4-Bromophenyl)ethylidene)hydrazinecarbothioamide: A Potential Candidate for Biological Applications	Dr.R.R. Saravanan, Dr. M. Karthika	Physics	Mapana Journal of Sciences	2025-2026	0975-3303	10.12723/mjs.73.2	UGC Care
11	Photocatalytic and anti-bacterial activity of Y3+ doped ZnO thin films deposited by simplified spray pyrolysis technique	Dr.R.Anandhi	Physics	Materials Science & Engineering B	2025-2026	1873-4944	https://www.sciencedirect.com/science/article/pii/S0921510726000115	Scopus
12	Photocatalytic dye detoxification by cost-effective SnO ₂ : Ce thin films and verification of toxicity by histology using Labeo rohita fish	Dr. N. Anuradha	Physics	Process Biochemistry	2025-2026	1359-5113	https://doi.org/10.1016/j.procbio.2025.05.014	Scopus
13	Effects of enzyme inherited from bio-wastes and Er doping on the photocatalytic dye detoxification ability of ZnO: Assessment of soil sustainability and phytotoxicity	Dr. N. Anuradha	Physics	Materials Chemistry and Physics	2025-2026	0254-0584	https://doi.org/10.1016/j.matchemphys.2025.130750	Scopus

14	Investigation of the structural, hirshfeld surface, DFT, spectroscopic, and nonlinear optical properties of (E)-2-(3-Ethoxy-4-hydroxybenzylidene) hydrazinecarboxamide	Dr.R.R. Saravanan	Physics	Journal of Molecular Structure	2025-2026	0022-2860	10.1016/j.molstruc.2025.143825	Scopus
15	Continuous wave laser induced nonlinear optical, optoelectronic and magnetic properties of Co ²⁺ ions substituted (Mg+Ag) doped CdO thin films	Dr.M.Karthika	Physics	Journal of Alloys & Compounds	2025-2026	0925-8388	10.1016/j.jallcom.2025.181481	Scopus
16	Engineered hybrid electrode for endocrine disruptor detection in milk products	Dr.A.Gayathri	Chemistry	Journal of Food Engineering	2025-2026	1873-5770	DOI: 10.1016/j.jfoode.2025.112880	Scopus
17	Eco functionalized PAgNPs and chitosan nanocomposites from <i>Parashorea aptera</i> bark for multifaced superhydrophobic, biomedical and environmental applications	Dr.A.Gayathri	Chemistry	International Journal of Biological Macromolecules	2025-2026	1879-0003	10.1016/j.ijbiomac.2026.151433	Scopus
18	Electrochemical impedance spectroscopic analysis of (La+Br) codoped CdO nanoparticles for optimal use in energy storage devices	Dr.M.Karthika	Physics	Spectroscopy Letter	2025-2026	0038-7010	10.1080/00387010.2026.2652073	Scopus
19	Highly selective and sensitive electrochemical detection of 4-nitroaniline based on onepot green preparation of NiO/ZnO/AlO multiple metal oxides nanocomposite using Citrullus lanatus fruit juice	J..Princess Gracia	Chemistry	Physica Scripta	2025-2026	0031-8949	10.1088/1402-4896/ad5f21	Scopus

20	A Benign Lewis Acid Catalyzed Approach for Mannich Reaction: Straight Forward Synthesis of β -Amino Ketones using Simple Iron Salts as Catalyst	A.Sarartha	Chemistry	Asian Journal of Chemistry	2025-2026	0970-7077	--	Scopus
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6.3.b. Patent :

S. No.	Application No.	Faculty Members	Patent / Design	Published Date
1	202541005391	Dr. R. Kalaivani (Biotech) Ms. S. Sumitha (Biotech Student) Ms. H. Sifa Hazura (Biotech Student) Ms. P.Dhanalakshmi (Biotech Student) Ms. M. Maliha (Biotech Student) Ms.D. Padmaja (Biotech Student)	Process for Extracting Levodopa and a method thereof	31.01.2025
2	202541112696A	Dr. R. Kalaivani (Biotech) Dr. S. Sivaranjani (Biotech) Dr. D. K. Usha (Biotech) Dr. A. Sarumathi (Biotech) Ms.A.H. Thakreem Rahmath (Biotech Student)	Detoxification Kit for Used cooking oil	05.12.2025
3	500081-001	Ms. P. Sathiyavani (Botany) Dr. M. Renuga Devi (Botany) Dr. G. Gayathri (Botany)	Moisture Analyser	28.04.2026
4	500082-001	Dr. R. Kalaivani (Biotech) Dr. S. Sivaranjani (Biotech) Dr. S. Amirtham (Biotech) Dr. D. Sumithra (Biotech) Dr. D. K. Usha (Biotech)	TDS Meter	28.04.2026
5	500097-001	Ms. I. Princess Gracia (Chemistry) Ms. A. Saratha (Chemistry) Dr. A. Gayathri (Chemistry) Dr. U. Revathi (Chemistry) Dr. A. Sarumathi (Biotech)	pH Meter	28.04.2026
6	500086-001	Dr. N. Anuradha (Physics) Dr. M. Karthika (Physics) Dr. R. R. Saravanan (Physics) Dr. R. Anandhi (Physics) Mrs. A. Vivetha (Physics)	Solar Panel Rotator	29.04.2026

6.3.c. Faculty presentation and publications in conference proceedings

S. No	Name of the Faculty Member	Title of the Proceedings	Name of the Conference	ISBN / ISSN number of the proceeding	Name of the Publisher	Date
Biotechnology						
1	Dr.S.Sivaranjani	Review article of	International	978-93-	PG& Research	August

		Activatable luminescent probe of imaging brain diseases.	Conference on research Avenues in life sciences: Challenges and opportunities	95323-20-8	Dept. of. Biotechnology , Thanthai Hans Rover College (A), Perambalur	2025
2.	Dr.A.Sarumathi Dr.D.K.Usha	Research Article on Acalypha Indica (Kuppaimeni)	National Conference on Emerging trends and innovation in Bioscience	978-93-4867-15-770	Ryan Publishers	23.08.2025
3.	Dr.R.Kalaivani	Neuroprotective evaluation of traditional pigmented rice illuppanpoo samba: implications for Parkinson's Disease management	Third national conference on Emerging trends and new vistas in applied sciences	9788195709922	Society for Nature and applied Sciences	06.12.2025
4.	Dr.S.Sivaranjani	Stevia rebaudiana: A natural sweetner for Type II Diabetic patents	Third national conference on Emerging trends and new vistas in applied sciences	9788195709922	Society for Nature and applied Sciences	06.12.2025
5.	Dr.A.Sarumathi	Therapeutic and antimicrobial activity of Alovera: An overview	Third national conference on Emerging trends and new vistas in applied sciences	9788195709922	Society for Nature and applied Sciences	06.12.2025
6.	Dr.D.K.Usha	Antimicrobial properties and therapeutic potential of Cumin: An overview	Third national conference on Emerging trends and new vistas in applied sciences	9788195709922	Society for Nature and applied Sciences	06.12.2025
7.	Dr.S.Amirtham	Formulation and Evaluation of Natural Hair Dye Powder as a Sustainable Alternative to Synthetic Dyes	International e-Conference on "Advanced Materials: Bridging Physics, Chemistry, Biosciences and Computational Modelling" (AMBPC-2026)	9789393376619	R & D Cell, Arul Anandar College (Autonomous) , Madurai, Asian Research Association & A.C.T Academy Kerala	24.01.2026 & 25.01.2026
8.	Dr.S.Sivaranjani	Review Article on Alzheimer's Disease	5 th International Conference on	97881961125410	Jamal Mohamed	16.02.2026

			Achieving Sustainable Development Goals: Prospects & Challenges		College (A), Trichy.	
Chemistry						
1.	Dr.A.Gayathri	Eco Engineered Carbon Dots Loaded with Curcumin for Versatile Wound Healing and UV Shielding Performance	International Academia – Industry – Innovation Conclave (AIIC-2025)	ISSN:2229-4953	Lady Doak College(A), Madurai	27.11.2025 to 29.11.2025
2.	Dr.U.Revathi	Thermodynamic and molecular simulation Analysis of Molecular interaction between 2-Pyrrolidone with Nitro Methane, Aniline and nitromethane with Aniline at T=308.15,318.15K	International Conference on Chemistry Innovation, Current Developments and Future Perspectives (ICCI-2025)	ISBN:978-93-9448-98-8	St. Joseph's College (A). Tiruchirapalli	15.09.2025 & 16.09.2025
3.	Ms. J. Princess Gracia	Influence of Nickel Doping on the Anti – Inflammatory Properties of Zinc Oxide Nanorods	National Conference on Frontiers of Bioinorganic Chemistry and Green Catalysis(FBCG C 2026)	ISBN: 978-93-49618-32-9	Seethalakshmi Ramaswami College (Autonomous), Tiruchirappalli	21.01.2026 & 22.01.2026

6.3.d. Book Publication by faculty members

S. No	Name of the Faculty Member	Title of the Book	ISBN No	Name of the Publisher	Date of Publication
Biotechnology					
1.	Dr.R.Kalaivani	The Miracle of 40 Years: The eternal spirit of Indian heritage (Research based IKS study on Athivaradhar under water for 40 years)	979-8898262860	Notion Press	24.06.2025
2.	Dr.S.Sivaranjani Dr.A.Sarumathi	A text book of cell biology	9789371504669	AKINIK, New Delhi	12.02.2026
Botany					
1.	Dr.G.Gayathri,	A Laboratory Manual	978-93-5605-	FOREVER SHININGS	JUNE 2025

	Ms.P.Sathiyavani, Dr.M.Renuga Devi		613-8		
Chemistry					
1.	Dr.A.Gayathri Ms.G.Porselvi	Master Minds of Chemistry: The Complete Nobel Prize Chronicle (1901-2024)	978-93-5605- 923-8	FOREVER SHININGS	MAY 2025

6.3.e.Faculty Development Programmes, Refresher course attended by the Faculty members

S.N o.	Name of the Faculty Member	Title of the Programme	Name of the Hosting Institution	Date(s)	Nature of Participation
Biotechnology					
1	Dr.S.Amirtham	Generative AI Tools for Smart Teaching	All India Association for Christian Higher Education, New Delhi	09.06.2025 to 13.06.2025	Participated
2	Dr.D.Sumithra	AI & Chatgpt Innovation Appilcation and Ethics in Education & Research	Department of Research & Development, Indira Ganesan Institution, Trichy	28.07.2025 to 02.08.2025	Participated
3	Dr.S.Amirtham	Online FDP on Outcome Based Education and Application of Generative AI in Teaching and Research	St. John Technical & Educational Campus, Palghar, Maharashtra	19.11.2025 to 26.11.2025	Participated
4	Dr.S.Sivaranjani Dr.A.Sarumathi Dr. D.K.Usha	Online FDP on Emerging Trends in Health Care & Med-Tech: Innovations for a Better Future	AICTE Training and Learning (ATAL) Academy. I.K. Gujral Punjab Technical University Amritsar Campus	15.12.2025 to 20.12.2025	Participated
5	Dr.S.Amirtham	Online Future Skills FDP on Patents, Generative AI & Agentic AI	Tamilnadu Advanced Technical Training Institute (TATTI).	08.01.2026 to 10.01.2026	Participated
6	Ms.G.Shalini Dr.N.Rabita	Faculty Induction Programme	UGC – Malaviya Mission Teacher Training Centre	22.01.2026 to 18.02.2026	Participated
7	Dr.S.Sivaranjani Dr.A.Sarumathi Dr.D.K.Usha	Faculty Development program on Research Writing for Educators	Malaviya Mission Teacher Training Programme. Indian Institute of technology, Varanasi	02.02.2026 to 07.02.2026	Participated
Botany					
1	Dr. M. Renuga Devi	Faculty Development Programme	Bharathidasan University, Tiruchirappalli	09.06.2025 to 14.06.2025	Participated
2	Dr.G.Gayathri	Online Faculty Development Programme on "Generative AI Tools for Smart Teaching"	All India Association for Christian Higher Education, New Delhi	09.06.2025 to 13.06.2025	Participated
3	Ms.P.Sathiyavani Dr.M.Renuga Devi	FDP on "Innovative Teaching Strategies &	Department of Life Science, Bon Secours Arts and Science	22.07.2025 - 26.07.2025	Participated

		Research Skills For Academic Excellence"	College, Mannargudi		
4	Dr.G.Gayathri	Refresher Course on "Inter Disciplinary Life sciences"	UGC – MMTTC, Bharathidasan University	21.08.2025 to 03.09.2025	Participated
5	Dr.G.Gayathri	Online Faculty Induction Programme	UGC-MMTTC, Bharathidasan University	22.01.2026 to 18.02.2026	Participated
6	Ms.P.Sathiyavani	Faculty Development Programme on Design Thinking	ICT Academy, Chennai	02.02.2026 to 04.02.2026	Participated
Chemistry					
1	Ms. G. Porselvi	6 Day Virtual Faculty Development Program on "Innovation Through Tradition: Embracing Indian Knowledge Systems for Viksit Bharath"	Sree Ayyappa College for Women, Nagercoil	02.06.2025 to 07.06.2025	Participated
2	Ms. J. Princess Gracia Ms. A. Saratha Ms. G. Porselvi Dr. A. Gayathri Dr. M. Amutha	Faculty Development Programme on "Generative AI Tools for Smart Teaching"	All India Association for Christian Higher Education, New Delhi	09.06.2025 to 13.06.2025	Participated
3	Ms. J. Princess Gracia	Five Day Faculty Development Program on "Faculty Fusion for Future Innovation (TRIFI 2K25)"	Bon Secours Arts and Science College for Women, Mannargudi	14.07.2025 to 18.07.2025	Participated
4	Ms. G. Porselvi	5 Days National Level Faculty Development Programme on Synergistic Chemistry: Innovations in Materials, Modelling & Medicine	DRBCCC Hindu College & ACT Academy, Kerala	04.08.2025 to 08.08.2025	Participated
5	Ms. G. Porselvi Ms. S. Janani	Five Day Online International Faculty Development Program on "Recent Trends in Chemical Sciences and Engineering:	New Prince Shri Bhavani College of Engineering & Technology	18.08.2025 to 22.08.2025	Participated
6	Ms. J. Princess Gracia	Five Days Online Faculty Development Programme on Recent Advances and Interdisciplinary Applications of Chemistry	Sacred Heart College (Autonomous), Tirupattur	27.10.2025 to 31.10.2025	Participated
7	Dr.U.Revathi	Employability Skills	Naan Mudhalvan Scheme, Tamil Nadu Skill Development	06.01.2026 to	Participated

			Corporations, Govt. of Tamil nadu.	12.01.2026	
8	M. A. S. ...	UGC – Sponsored Nineteenth Online	UGC – Malaviya Mission	22.01.2026	Participated
Change after DBT Star College Programme: Faculty development has increasingly translated into an enhanced capacity to deliver contemporary, research-oriented science education.					
1	Dr. R. R. Saravanan, Ms. S. Suganya, Ms. G Glarvina Trinee	One week online Faculty Development programme on “Generative AI Tools for Smart Teaching”	All India Association for Christian Higher Education, New Delhi	09.06.2025 to 13.06.2025	Participated
2	Ms.S.Suganya	Two – Week International Faculty Development programme on “Advanced Computational and experimental research in Physics”	Department of Physics, SRM Institute of Science and Technology, Ramapuram, Chennai.	21.07.2025 to 01.08.2025	Participated
3	Dr.N.Anuradha Dr.R.Anandhi Dr.M.Karthika	Five days Online FDP on “Artificial Intelligence in Physics: Transforming Education and Research for the future ”	Department of Science and Humanities, Nehru Institute of Technology, Coimbatore	11.08.2025 to 16.08.2025	Participated
4	Dr.M.Karthika Dr.R.Anandhi Ms.A.Vivetha Ms.S.Suganya Ms.P.Gayathri	Five Day Faculty Development Programme on “Recent Trends and Innovations in Science and Research”	R&D cell of Thanthai Hans Roever College (A) Perambalur, in Collabroration with A.C.T Academy, Palakad, Kerala & Tamil Nadu.	06.01.2026 to 10.01.2026	Participated
5	Dr. M. Karthika Dr. R. Anandhi	UGC-Sponsored Online Short Term Programme in Entrepreneurship & Skill Development	Malaviya Mission Teacher Training Centre, Bharathidasan University	05.01.2026 to 10.01.2026	Participated
6	Ms. S. Suganya, Ms. P. Gayathri	UGC-Sponsored Faculty Induction Programme	Malaviya Mission Teacher Training Centre, Bharathidasan University	22.01.2026 to 18.02.2026	Participated
7	Dr. M. Karthika, Ms.K.Kalaimathi	Five Days Online International Interdisciplinary FDP On Science and Technology-Interface of Materials, Biology and Medicine for Sustainable Future	Ethiraj College for Women, Egmore, Chennai.	25.03.2026 to 29.03.2026	Participated

6.4. Expansion from Institutional Learning to Regional Scientific Engagement

DBT-supported facilities and expertise have been extended to students from schools and other colleges through hands-on programmes, training and science outreach.

1. **Higher Secondary School Students:** A Study Module Kit covering Physics, Chemistry and Biology was prepared with infographic-based on Class XII lessons and practical experiments, supporting easy understanding, quick revision and better retention of concepts, and was provided to St. Joseph's Girls Higher Secondary School, Gnanam Matriculation Hr.Sec.School and Kalyana Sundaram Higher Secondary School, Thanjavur during their visit on 04.11.2025.

2. Training offered to other institutions:

- On July 22, 2025, Workshop on Western Blotting was offered to students of the Department of Microbiology at Arputha College of Arts and Science, Pudukkottai.
- From February 24 to 28th, 2026, Department of Biotechnology, Physics and Chemistry, offered training was offered on Solar study kit assembly, fermented foods and beverages, natural dyes and socially useful products making to students from Arul Anandar College (A), Madurai.
- The Department of Biotechnology organized BIOUTSAV – 2K26 an Intercollegiate meet on 22.01.2026 Dr. Mini Shaji Thomas, Chief Executive Officer (Director, NIT-Trichy) Centre For Entrepreneurship Development And Incubation (CEDI) was the chief guest.

3. **National Science Day Celebration – Science Expo:** National Science Day was celebrated on 28.02.2026, with students from around 10–12 colleges in and around Thanjavur participating in the Science Expo and viewing innovative models exhibited by Bon Secours College for Women students. Science Quiz, Science Connection, Model Presentation, Poster Presentation and Scientific Rangoli were organized by the four science departments, with active student participation. Certificates, medals, shields and prizes were awarded to winners and participants in recognition of their achievements.

Change after DBT Star College Programme

The institution is evolving from a college-level science-learning centre into a regional platform for science engagement. Biotechnology seats were fully filled, while student enrolment improved across other disciplines.

6.5.a. **Students achievements:** Students are increasingly being exposed to research presentation, scientific exhibitions, newsletters, digital applications, research documentation and external academic forums. Details are given below.

- a) Students from III B.Sc., Biotechnology prepared a book named Folk to Fact (F2F), an application that explains the science behind traditional and indigenous practices documented under IKS.
- b) III B.Sc. Botany students prepared an **e-Herbarium** comprising 100 herbal specimens, documented using standard scientific techniques and subsequently digitised to create an accessible online repository. The e-Herbarium serves as a vital resource for the study,

documentation, and conservation of medicinal and herbal plant species, underscoring the ecological significance of plants and their role in human well-being.

- c) Students from Department of Physics: All laboratory experiments have been digitalised and are accessible through the college website, ensuring wider reach and ease of reference for students.
- d) Students from Chemistry have prepared and published "**Chemistry in Daily Life**", a newsletter that connects chemical concepts with everyday applications.
- e) All four departments have compiled and published a **Research Compendium** serving as a record of student-led research outcomes.
- f) A total of 61 students won prizes in various technical events organised by other colleges; won overall championship; runner up awards covering 44 different prizes.
- g) 21 students presented their research outcomes in terms of paper and poster in different seminars and conferences.
- h) 11 students pitched ideas in events organized by VIT, AP, St. Joseph's College (A), Tiruchirappalli, Start-up TN and MSME.

6.5.b. Interdisciplinary Knowledge and Skill Development: The DBT Star College Programme effectively facilitates interdisciplinary learning and research across the supported and other departments. The following programmes were conducted at the inter/multi-disciplinary level:

1. The Department of Biotechnology conducted an In-house training in PCR techniques for Biotechnology and Botany on 16.10.2025,
2. Conducted an In-house training on Plant Tissue Culture techniques for II B.Sc., Biotechnology and Botany Students on 19.12.2025.
3. Workshop on Chromatographic Techniques to Biotechnology, Botany and chemistry students on 03.12.2025.
4. The Department of Biotechnology hosted a "Capacity Building Programme on Molecular Studies and Drug Designing to the students of biotechnology, botany, physics and chemistry on 08.10.2025.
5. The Department of Biotechnology organized an invited lecture on "From Innovation to Market: Leveraging Design Patents for Growth to all the students of the deanery of arts, humanities, science and technology on 13.10.2025.
6. Conducted a Seminar on Microbial Polymer for Food Products to students of biotechnology, botany and chemistry on 28.11.2025.
7. Department of Biotechnology conducted a webinar on "Sustainable Agriculture and Bio fertilizers," featuring to students of biotechnology and botany on 04.07.2025.
8. The Department of Biotechnology organized a "Career Guidance Programme on Higher Studies Abroad", for all the students of all 4 deanery on 01.12.2025.
9. Department of Biotechnology organized an International Seminar on Transforming weed into wealth (products from water hyacinth) on 11-02-2026 to all the students of biotechnology, botany and chemistry.
10. The Department of Biotechnology organized a six-day Faculty Development Programme (FDP), conducted online from 23-03-2026 to 28-03-2026, on Integration of the Indian Knowledge System in Modern Biotechnology to all the faculty members of our institution and other institutions.
11. Conducted a Workshop in Plant Disease identification and Bio control agents on 03.09.2025 to students of biotechnology and Botany.

12. Conducted a In house Training on Phytochemical Analysis to Botany, Biotechnology and chemistry Students on 03.12.2025.
13. Conducted a Hands-on Training on Extraction of Natural Dyes on 05.12.2025 to Botany, Biotechnology and Chemistry students.
14. Department of Botany organized a Seminar on Empowering Young Scientist in the Era of AI, in association with departments of Physics and Chemistry 21.02.2026.
15. Conducted a Training programme in Advance Bioinformatics tools and techniques on 08.04.2026 to students of Biotechnology & Botany.
16. Conducted a Training Programme on Advanced Bioinformatics Tools and Techniques on 08.04.2026 for students of Biotechnology, Botany, and Chemistry.
17. Organized a Workshop on Research Methodology and Project Writing on 25.07.2025 at multidisciplinary level.
18. Organized a Workshop on IPR on 23.08.2025 for all the students of Biotechnology, Botany, Physics, Chemistry, and Computer Studies.
19. Organized a Seminar on "MOF-based Sensors for Environmental Pollutant Monitoring and Remediation" for Chemistry and Biotechnology students on 26.07.2025.
20. Organized a Seminar on "Fundamentals of Metal-Organic Frameworks and their Electrochemical Applications for Chemistry and Biotechnology students on 26.08.2025.
21. Conducted a Training Programme on "Dyeing Techniques and their Applications in Textile and Food Industries" for Chemistry, Botany, and Biotechnology students on 29.09.2025.
22. Organized a Seminar on "Nano Architectures: From Design to Environmental Protection, Smart Healthcare, and Clean Energy Applications" for Chemistry and Biotechnology students on 10.02.2026.
23. On 22.02.2026 the Departments of Biotechnology, Chemistry, and Physics jointly organized a Workshop on "Innovation and Emerging Trends in Science & Technology" for III B.Sc. Science and Technology students of Bon Secours College for Women (Autonomous), Thanjavur. Dr.R.Kalaivani, Assistant Professor of Biotechnology, Dr. A. Gayathri, Assistant Professor of Chemistry, and Dr. R. R. Saravanan, Assistant Professor of Physics, Bon Secours College for Women (A), offered training in identifying the problem, defining the statement of the problem, and finding solutions with proof of concepts.

6.5.c. Achievements of Students towards Academic and Research

S. No.	Name of the Student	Class	Name of the Event Participated	Prize / Place won	Level of Programme & Title of the Programme	Name of the Hosting Department & Institution	Date
BIOTECHNOLOGY							
1	Ms.J.Jeni Roshini	III B.Sc.,	Poster Presentation	3 rd	IC-RALCO-2025	PG & Research Department of Biotechnology & Society of Biotechnologists, Thanthai Hans	05.08.2025

						Rover College (Autonomous), Elambaur, Perambalur.	
2	Ms.P.Praveena Ms.P.R.Neeharika	III B.Sc.,	Arts From Waste	2 nd	A State Level Intercollegiate Carnival on VITA FEST- 2K25	Department of Biotechnology, Srimad Andavan Arts and Science College (Autonomous), Tiruchirappalli	08.09.2025
3	Ms.S.Narmadha	III B.Sc.,	Toon Time	2 nd	A state Level Intercollegiate Technical Fest on BIO-DE- FESTA 2025	Department of Biotechnology, St. Joseph's College (Autonomous), Tiruchirappalli	17.09.2025
4	Ms.G.Varshika Ms.M.Bhaseera Thasneem	III B.Sc.,	Poster Presntation	3 rd	A state Level Intercollegiate Technical Fest on BIO-DE- FESTA 2025	Department of Biotechnology, St. Joseph's College (Autonomous), Tiruchirappalli	17.09.2025
5	Ms.G.Vardhini	III B.Sc.,	Meme It Up	1 st	A state Level Intercollegiate Technical Fest on BIO-DE- FESTA 2025	Department of Biotechnology, St. Joseph's College (Autonomous), Tiruchirappalli	17.09.2025
6	Ms.G.Varshika	III B.Sc.,	Collage	1 st	A state Level Intercollegiate Technical Fest on BIO-DE- FESTA 2025	Department of Biotechnology, St. Joseph's College (Autonomous), Tiruchirappalli	17.09.2025
7	Overall Championship				A state Level Intercollegiate Technical Fest on BIO-DE- FESTA 2025	Department of Biotechnology, St. Joseph's College (Autonomous), Tiruchirappalli	17.09.2025
8	Ms.R.Roshini Ms.B.Rithika	III B.Sc.,	Minute Mastery / Adventure	3 rd	Intercollegiate Competition on MICROGALAXY	Department of Biotechnology, Srimad Andavan Arts and Science College (Autonomous), Tiruchirappalli.	19.12.2025
9	Ms.G.Varshika	III B.Sc.,	Micro Focus	1 st	Intercollegiate Competition on MICROGALAXY	Department of Biotechnology, Srimad Andavan Arts and Science College (Autonomous),	19.12.2025

						Tiruchirappalli.	
10	Ms.R.Princy Ms.V.Sangavi	III B.Sc.,	Adventure	3 rd	Intercollegiate Competition on MICROGALAXY	Department of Biotechnology, Srimad Andavan Arts and Science College (Autonomous), Tiruchirappalli.	19.12.2025
11	Ms.S.Sivaranjani Ms.S.F.Sheema	III B.Sc.,	Just a Minute	1 st	State Level Intercollegiate Competition on MICROMIRACLE	PG & Research Department of Microbiology, J.J.College of Arts and Science (Autonomous), Pudukkottai	27.01.2026
12	Ms.M.Mahira Sultana Ms.J.Jemsha	III B.Sc.,	Model Presentation	1 st	State Level Intercollegiate Competition on MICROMIRACLE	PG & Research Department of Microbiology, J.J.College of Arts and Science (Autonomous), Pudukkottai	27.01.2026
13	Overall Runner				State Level Intercollegiate Competition on MICROMIRACLE	PG & Research Department of Microbiology, J.J.College of Arts and Science (Autonomous), Pudukkottai	27.01.2026
14	Ms.R.Dharani Ms.M Swetha	I B.Sc.,	Paper Presentation	Best Poster Presentation Award	5 th International Conference on Achieving Sustainable Development Goals: Prospects and Challenges (ICSDG- PC- 2026)	Jamal Mohamed College (Autonomous), Tiruchirappalli	16.02.2026
BOTANY							
1	Ms.P.Aarthi	III B.Sc.,	Mystery Munch – Blind Taste	Runner	"NUTRINEER 2025"	National Institute of Food Technology, Entrepreneurship & Management, Thanjavur (NIFTEM-T)	03.09.2025
2	Ms.P.Kethrin Ms.R.Roselin Mary Ms.J.Jasmiine Pransa	II B.Sc.,	Group Dance	3 rd	PHRASTAFEST – 25	PG & Research Department of Botany, St. Joseph's College ,	10.09.2025

						Autonomous, Trichirappalli	
3	Ms.D.Kaviya Ms.P.Abirami	III B.Sc.,	Group Dance	3 rd	PHRASTAFEST – 25	PG & Research Department of Botany, St. Joseph's College , Autonomous, Trichirappalli	10.09.2025
4	Ms.P.Aarthi Ms.S.Abinaya Ms.S.Maria Satha Ms.K.Parameshwari Ms.M.Sree Gayathri	III B.Sc.,	MIME	3 rd	PHRASTAFEST – 25	PG & Research Department of Botany, St. Joseph's College , Autonomous, Trichirappalli	10.09.2025
5	Ms.K.S.Archana	III B.Sc.,	Employability Skill	2 nd	Naan Mudhalvan Scheme	TamilNadu Skill Development Training	31.01.2026
CHEMISTRY							
1	Ms. V. Sakthipriya	II B.Sc.,	Chem Rangoli	2 nd	Chem-Aura 25 – An Intercollegiate Competition	Seethalakshmi Ramaswami College (Autonomous), Tiruchirappalli	19.08.2025
2	Ms. G. Sabarisha	II B.Sc.,	Chem Draw	3 rd	Chem-Aura 25 – An Intercollegiate Competition	Seethalakshmi Ramaswami College (Autonomous), Tiruchirappalli	19.08.2025
3	Ms. K. Sakana	III B.Sc.,	Employability Skill	1 st	Naan Mudhalvan Scheme	Tamilnadu Skill Development Training	31.01.2026
4	Ms. A.Sameera Banu	III B.Sc.,	Employability Skill	3 rd	Naan Mudhalvan Scheme	Tamilnadu Skill Development Training	31.01.2026
5	Ms.S.Kaviya Ms. B.Arthi	III B.Sc.,	Chem Presentation	3 rd	Pushpam Inter Collegiate Competition for Chemistry Ingenious Participants (PIC-CIP)	Department of Chemistry A.V.V.M. Sri Pushpam College, Poondi	27.02.2026
6	Ms. N.Ishana jini Ms.S.Kaviya Ms.B.Arthi	III B.Sc.,	Chemistry Quiz	3 rd	Pushpam Inter Collegiate Competition for Chemistry Ingenious Participants (PIC-CIP)	Department of Chemistry A.V.V.M. Sri Pushpam College, Poondi	27.02.2026
7	Ms. S.Jayashree	III	Talent Show	2 nd	Pushpam Inter	Department of	27.02.2026

	Ms.R.Keerthana Ms.M.Vincy Priya Ms.K.Kaviya Ms.K.Sakana Ms.G.Santhiya Ms.B.Gayathri Ms.A.Preethi	B.Sc.,			Collegiate Competition for Chemistry Ingenious Participants (PIC-CIP)	Chemistry A.V.V.M. Sri Pushpam College, Poondi	
PHYSICS							
1	Ms. R. Abinayaa	I B.Sc	MECH-A- THON	1 st	Hyphy'25	Holy Cross College (A), Trichy	29.09.2025
2	Ms. M. Nivetha	II M.Sc	MECH-A- THON	1 st	Hyphy'25	Holy Cross College (A), Trichy	29.09.2025
3	Ms. P. Priyadharshini	II M.Sc	DRAW-IT- OUT	3 rd	Hyphy'25	Holy Cross College (A), Trichy	29.09.2025
4	Ms. P. Santhani	I M.Sc	DRAW-IT- OUT	3 rd	Hyphy'25	Holy Cross College (A), Trichy	29.09.2025
5	Ms. M. Supriya	I B.Sc.,	Play Smart	1 st Cash Prize (Rs.500/-)	Aperion-2026	Bharathidasan University, Tiruchirappalli	20.02.2026
6	Ms. Famidha Shaheen Umar Farook	I B.Sc.,	Play Smart	1 st Cash Prize (Rs.500/-)	Aperion-2026	Bharathidasan University, Tiruchirappalli	20.02.2026
7	Ms. R. Abinayaa	I B.Sc.,	Chaos Carnival	2 nd	SURPHY'26	Bishop Heber College, Trichy	26.02.2026
8	Ms. Famidha Shaheen Umar Farook	I B.Sc.,	Treasure Hunt	2 nd	SURPHY'26	Bishop Heber College, Trichy	26.02.2026
9	Ms. T. Preethi	I B.Sc.,	Meme Creation	3 rd	SURPHY'26	Bishop Heber College, Trichy	26.02.2026
10	Ms. J. Sathiyapriya	I B.Sc.,	Chaos Carnival	2 nd	SURPHY'26	Bishop Heber College, Trichy	26.02.2026
11	Ms. M. Supriya	I B.Sc.,	Treasure Hunt	2 nd	SURPHY'26	Bishop Heber College, Trichy	26.02.2026
12	Ms. B.S. Dharsnisri	II B.Sc.,	Physiquet	3 rd	SURPHY'26	Bishop Heber College, Trichy	26.02.2026
13	Ms. T. Ramajothi	II B.Sc.,	Physiquet	3 rd	SURPHY'26	Bishop Heber College, Trichy	26.02.2026
14	Ms. S.N. Sreedharshini	II B.Sc.,	Conceptual Conundrum	3 rd	SURPHY'26	Bishop Heber College, Trichy	26.02.2026
15	Ms. P. Sharlin Sumitha	II B.Sc.,	Conceptual Conundrum	3 rd	SURPHY'26	Bishop Heber College, Trichy	26.02.2026
16	Ms. M. Nivetha	II M.Sc.,	E-Waste Art	1 st	SURPHY'26	Bishop Heber College, Trichy	26.02.2026
17	Ms. M. Sushan	II M.Sc.,	E-Waste Art	1 st	SURPHY'26	Bishop Heber College, Trichy	26.02.2026
18	Overall Runner				SURPHY'26	Bishop Heber College, Trichy	26.02.2026

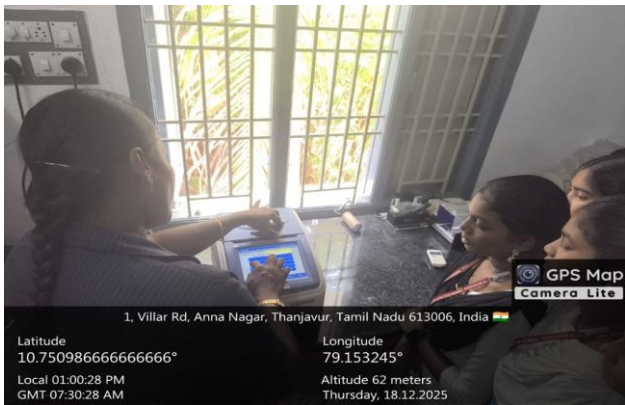
Change after DBT Star College Programme: Students are learning not only to do science, but also to communicate science.

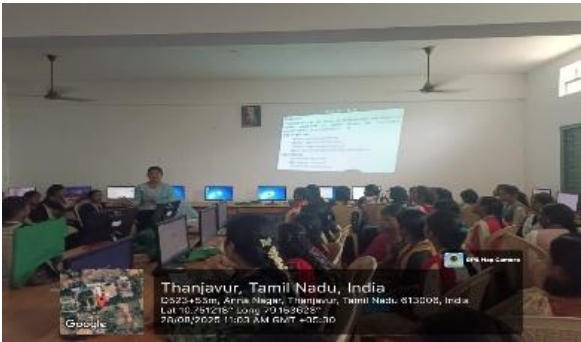
II. Implementation of DBT Star College Programme: ISI-Ignition-Skilling& Up-skilling-Implementation

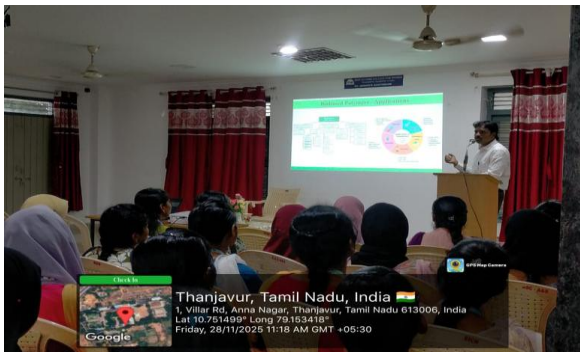
The components of ISI, a consolidated training program aimed at cultivating and nurturing interest in experiments and research among UG students, was initiated in the academic year 2025-26.

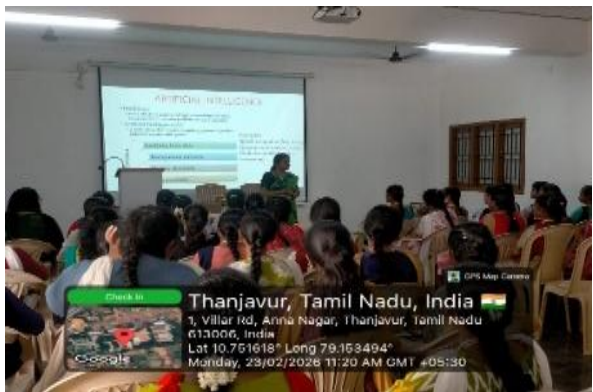
The second-year component of the proposed program is "Skilling & Upskilling" and is implemented for second-year UG students in Biotechnology, Botany, Physics, and Chemistry. A weekly activity, called Discovery Lounge, is introduced as part of Skilling & Upskilling. This activity is incorporated into the regular timetable and conducted regularly. Students are divided into 5-member groups, with each group presenting during their turn.

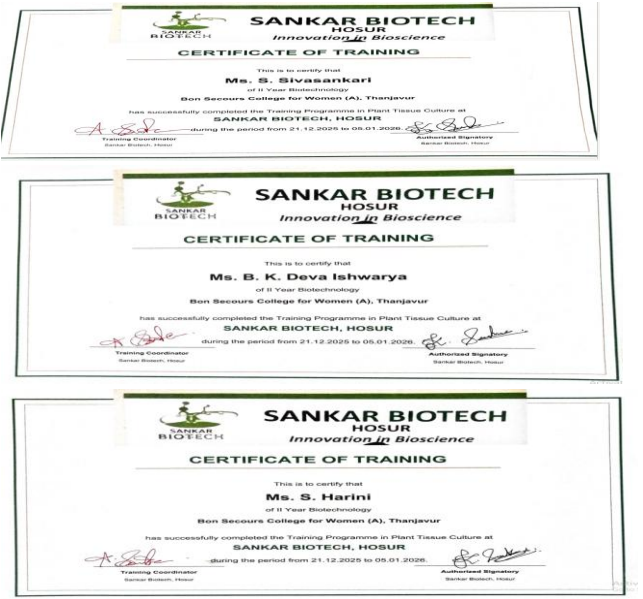
Department of Biotechnology: Programme for Students, (invited lectures, training, seminar/conference, hands-on and in-house training)

6.3.1. Department of Biotechnology		
S.N o.	Photograph	Programme
Programme for Students, (/invited lectures, training, seminar/conference, hands-on and in-house training)		
1.		The Department of Biotechnology conducted an In-house training in PCR techniques for III B.Sc., Biotechnology and III B.Sc., Botany students by Dr. S. Amirtham, Assistant Professor of Biotechnology, Bon Secours College for Women (A), Thanjavur on 16.10.2025,
2.		Conducted an In-house training on Plant Tissue Culture techniques for II B.Sc., Biotechnology and Botany Students by Dr. D.K. Usha. Assistant Professor of Biotechnology, Bon Secours College for Women (A), Thanjavur on 19.12.2025.

3.		conducted a Workshop on Chromatographic Techniques to I B.Sc., Biotechnology & Botany students on 03.12.2025
4.		On July 4, 2025, Department of Biotechnology conducted a webinar on "Sustainable Agriculture and Biofertilizers," featuring Dr. G. Lakshmanan, Department of Botany, University of Madras as the resource person.
5.		The Department of Biotechnology conducted a Capacity building programme on Molecular phylogenetic analysis Phase- I by Dr. A. Saranya, PDF, Dept. of Bioinformatics, Bharathidasan University, Tiruchirappalli on 28.8.2025
6.		The Department of Biotechnology observed an International Microorganism Day by organizing an invited lecture on Microbial Dialogues – Gut-Brain Axis; on 06.09.2025; Dr. V.B. Mary Prescilla, Consultant, Our lady Hospital, Thanjavur was the resource person.

7.		On September 29, 2025, Department of Biotechnology, conducted a Career Guidance programme on "Passport to Pharma and Biotech Placements" by Dr. P. Balaji, Professor from the Department of Pharmacology at VELS Institute of Science, Technology and Advanced Studies (VISTAS), Chennai.
8.		On October 8, 2025, the Department of Biotechnology hosted a "Capacity Building Programme on Molecular Studies and Drug Designing", featuring Dr. R. R. Saravanan, Assistant Professor, Department of Physics, Bon Secours College for Women (A), Thanjavur as the resource person.
9.		On October 13, 2025, Dr. R. Arunkumar from PRIST University delivered a lecture to III B.Sc. Biotechnology students entitled "From Innovation to Market: Leveraging Design Patents for Growth."
10.		The Department of Biotechnology organized an Seminar on Microbial Polymer for Food Products by Dr. S. Vignesh, Associate Professor of Food Quality and Assurance, NIFTEM, Thanjavur on 28.11.2025

11.		On December 1, 2025, the Department of Biotechnology organized a "Career Guidance Programme on Higher Studies Abroad", for III B.Sc. Biotechnology students featuring Mr. Er. Parthiban Kannan, CEO, Advise Wise Solution, Chennai.
12.		The Department of Biotechnology organized the 3rd National Conference on Emerging Trends and New Vistas in Applied Sciences & SNAS Awards and Honours 2025 on 06.12.2025, sponsored by the Society for Nature and Applied Sciences.
13.		On February 23, 2026, Department of Biotechnology organized soft skill Programme on Integrating AI in Biotechnology featuring Dr. Brindha, Assistant Professor, UCE BIT Campus, Trichy.
14.		On 28 February 2026, Department of Biotechnology hosted an impactful online endowment lecture on Nobel Prize in Medicine 2025 and Insights of Prominent Research on Nobel Laurels 2025-2026 featuring Dr. Balakrishnan Srinivasan, Scientist-E from the Zoological Survey of India, Digha.

15.		Department of Biotechnology organized an International Seminar on Transforming weed into wealth on 11-02-2026. Ms. Sushmita Krishnan, Research and Director events, International Sustainable academy, Germany was a resource person.
16.		13 students from department of Biotechnology were trained in Drug designing and Bioinformatics by Dr.P.Chellapandi, Professor and Head Industrial Systems Biology Lab Department of Bioinformatics School of Life Sciences Bharathidasan University Tiruchirappalli – 24.11.2025 – 03.12.2025
17.		Sankar Biotech: Training in plant tissue culture to III B.Sc, Biotechnology and Botany students. From 21.12.2025 to 05.01.2026. 40 students in II Batches.
BioUtsav-Intercollegiate Competition		

1.		The Department of Biotechnology organized BIOUTSAV – 2K26 an Intercollegiate meet on 22.01.2026 Dr. K. Susil Kumar, Chief Executive Officer (Director, NIT-Trichy) Centre For Entrepreneurship Development And Incubation (CEDI) was the chief guest.
Industrial visit		
1.		Biotechnology students went to Industrial visit to Bangalore Bio innovation centre and Zen fold Sustainable Technologies, Bangalore on 30.01.2026 – 31.01.2026.
2.		On September 27, 2025, I-B.Sc. Biotechnology students visited CSIR-CECRI, Karaikudi.
3.		I-B.Sc. Biotechnology students visited KVK, Needamangalam from 21st to 23rd January 2026. Gained knowledge on sustainable organic waste Management through Vermi Composing and Bio Economy
Training to Non-teaching staff members		

1.		On November 20, 2025, Department of Biotechnology organized a hands-on training session on "Microbial culture". Dr.D.K.Usha, Assistant Professor offered training. On December 18, 2025, the Department of Biotechnology organized a training Programme on "MS Office" for non-teaching staff.
Faculty Training Programmes		
1.		The Department of Biotechnology organized a six-day Faculty Development Programme (FDP), conducted online from 23-03-2026 to 28-03-2026, on Integration of the Indian Knowledge System in Modern Biotechnology.
2.		On January 29, 2026, faculty members participated in a Training Programme at Anna University focused on professional development and instructional excellence.
3.		Dr.S.Sivaranjani, Dr.D.K.Usha, Dr.A.Sarumathi, Assistant Professor of Biotechnology participated in Training in Food Processing Technology, AMET University on 12.03.2026.

4.		On December 18, 2025, the Department of Biotechnology organized a training Programme on "MS Office" for non-teaching staff. Assistant Professor, Department of Biotechnology has participated three days training programme on "Animal model and their care in herbal research, TANVAS, Orathanadu from 18.11.2026 to 20.11.2026.
Students Participation & Presentation in Co-curricular Activities and its outcomes		
1.		Ms. G. Varshika, III B.Sc. Biotechnology Received First Prize in Hackathon by Nan Mudhalvan Programme organized by Bharathidasan University, Tiruchirappalli
2.		Paper Presentation: Undergraduate students presented their research outcomes in various National and International level conferences organized by Institution viz., Students from III B.Sc., Biotechnology Ms. J. Jeni Roshini and Ms. S. Asina Firthouse won the first prize in poster presentation in Thanthai Hans Roever College (A), Perambalur, J.J College of Arts and Science (A), Pudukottai, Nirmala Nikhetan College (A), Maharashtra, Bon Secours Arts and Science College for Women, Manargudi, 27.02.2026 to 28.02.2026.,
3.		Poster Presentation: Ms. R Dharani and S Swetha from III B.Sc. Biotechnology presented a poster presentation entitled "Review article on Fig" in the International Conference Achieving Sustainable Development Goals" at Jamal Mohamed College, Tiruchirappalli.

4.		Ms. M Maliha and C Subiksha from II B.Sc. Biotechnology participated TANCAM's Hackathon for Tamil Nadu Women in Science and Engineering (TNWISE - 2026) conducted by Tamil Nadu Centre of Excellence for Advanced Manufacturing, Chennai in Association with Periyar Maniammai Institute of Science and Technology Thanjavur on 07-03-2026.
Outreach Programmes		
Other institutions - College		
1.		On July 22, 2025, Dr. A. Sarumathi has taken a session on Western Blotting," to students of the Department of Microbiology at Arputha College of Arts and Science, Pudukkottai.
2.		From February 24 to 28, 2026, Department of Biotechnology, offered training in fermented food and beverages to students from Arul Anandar College (A), Madurai
Schools		
1.		On October 14, 2025, Dr. A. Sarumathi Assistant Professor of Biotechnology, conducting a specialized session on Food Adulteration in Kalyana Sundaram Higher Secondary School (KHSS), Thanjavur as a outreach Programme.

2.		On November 4, 2025, Department of Biotechnology conducted a workshop on agarose gel Electrophoresis on 04.11.2025 to the XII th standard students of St. Joseph's Higher Secondary School, Pookara Street, Thanjavur.
3.		On October 16, 2025, Department of Biotechnology organized an outreach programme in the form of a "Food Expo" to showcase student-developed products and the practical applications of nutritional science.
4.		On November 21, 2025, the Department of Biotechnology organized an extension programme on Microbiological Techniques.
5.		On November 21, 2025, the Department of Biotechnology organized an extension programme in which II B.Sc. Biotechnology students demonstrated to the Kalyana Sundaram Higher Secondary School (KHSS), Thanjavur.
Collaborations extended through DBT Star College Programme		
1.		On September 16, 2025, an MoU was signed between the Department of Biotechnology and Tamil Nadu Dr. J. Jayalalithaa Fisheries University (TNJFU) for student research projects.

2.		On December 6, 2025, during the 3rd National Conference on Emerging Trends and New Vistas in Applied Sciences, our institution formalized a collaboration with the Society for Nature and Applied Sciences (SNAS), Tiruchirappalli.
3.		On December 6, 2025, our institution inked a Memorandum of Understanding (MoU) with Sankar Biotech, Hosur, to foster industry-academic collaboration for tissue culture.
4.		On February 16, 2026, a formal Memorandum of Understanding (MoU) was signed at Jamal Mohamed College (A), Tiruchirappalli.

Newspaper Clipping:

Newspaper Clippings



National Conference

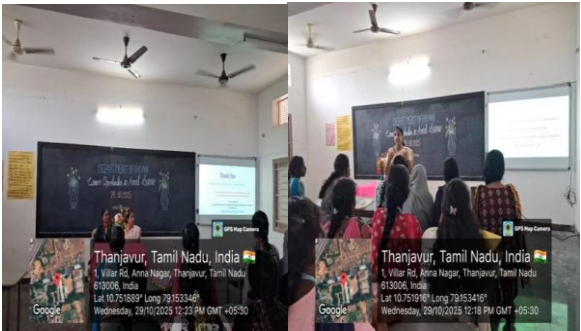


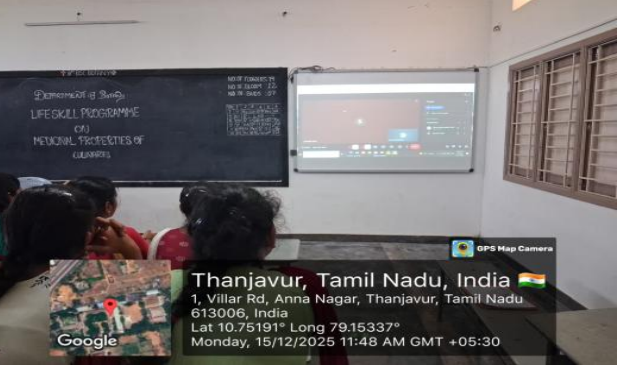
Food Expo

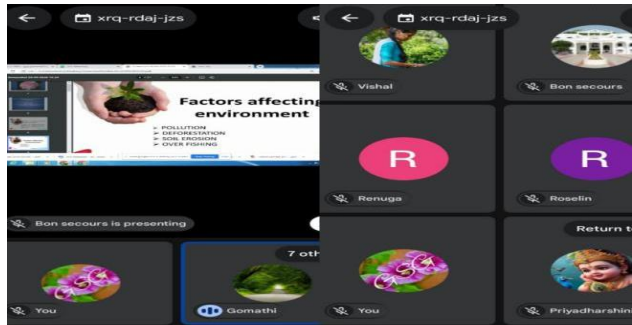
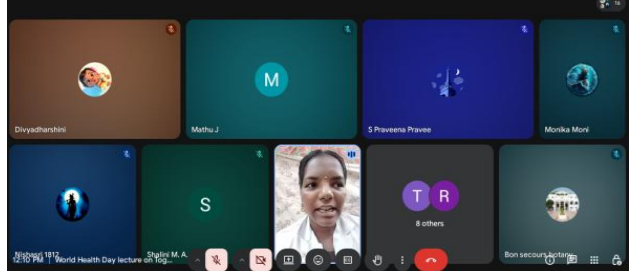
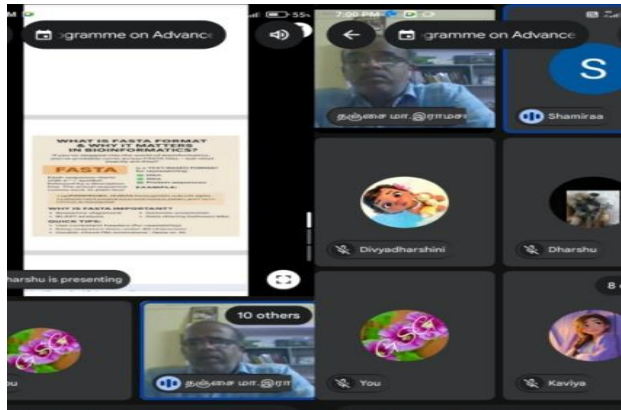


BIOUTSAV - 2k26

Department of Botany		
S.No.	Photograph	Programme conducted/organized
Programme for Students, (/invited lectures, training, seminar/conference, hands-on and in-house training)		
1.		Conducted a Hands-on Training in Microscopy Techniques on 25.6.2025 to I B.Sc., Botany Students, Dr. G.Gayathri, Assistant Professor, Department of Botany, Bon Secours College for Women (Autonomous), offered training.
2.		Conducted a Hands-on Training in Slide Preparation on 09.07.2025 to I B.Sc., Botany students. Dr. P. Prabakaran Assistant Professor, Department of Botany, M.R. Government Arts College, Mannargudi was the resource person.
3.		Conducted a Workshop in Plant Disease identification and Bio control agents on 03.09.2025 to III B.Sc., Dr. S.V. Bakiyalakshmi, Assistant Professor, Department of Biotechnology, Bon Secours College for Women (Autonomous), Thanjavur offered a training.

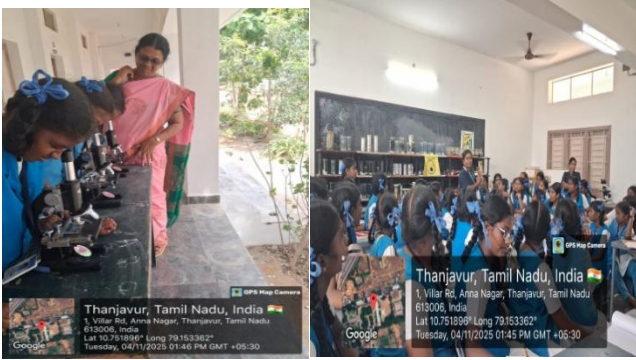
4.		Conducted A Workshop in Plant Identification and Herbarium Techniques on 09.09.2025 , Dr.M.Ayyanar, Assistant Professor, Department of Botany, AVVM Sri Pushpam College, Thanjavur was the resource Person, I & II B.Sc., Botany students Participated
5.		Conducted an In-house training in Vegetative Propagation methods on 10.10.2025 for I, II, III B.Sc., Botany students, Dr.M.Renuga Devi, Assistant Professor, Department of Botany Bon Secours College for Women (Autonomous), Thanjavur offered the training.
6.		Organized a invited lecture on Animal Science for B.Sc., Botany Students on 29.10.2025 to all the students of Botany aligning with job perspectives, Dr. V. Deepika , Assistant Professor, Veterinary College and Research Institute Orathanadu, was the resource person.
7.		Conducted a In house Training on Phytochemical Analysis for B.Sc., Botany Students on 03.12.2025, Dr. A. Sarumathi, Assistant Professor, Department of Biotechnology, Bon Secours College for Women (Autonomous), Thanjavur offered a training.

8.		Conducted a Workshop on DNA Isolation from plant samples and Amplification on 04.12.2025 for I & III B.Sc., Botany & Biotechnology students Dr. S. Amirtham, Assistant Professor, Department of Biotechnology, Bon Secours College for Women (Autonomous), Thanjavur offered a training.
9.		Conducted a Hands-on Training on Extraction of Natural Dyes on 05.12.2025; Dr. A. Gayathri, Assistant Professor, Department of Chemistry, Bon Secours College for Women (Autonomous), Thanjavur offered the training.
10.		Organized a webinar on "Medicinal Properties of culinaries" on 15.12.2025 to all Botany Students. Dr. S. Rajkumar, Associate Professor and Head, Department of Biotechnology, Don Bosco College (Autonomous) Maram, Manipur was the resource person.
11.		Department of Botany, association with Physics and Chemistry organized a Seminar on Empowering Young Scientist in the Era of AI 21.02.2026. Dr. R. R. Saravanan, Assistant Professor, Department of Physics, Bon Secours College for Women (Autonomous), Thanjavur was the resource person 132 students were participated.
12.		organized a invited talk on Achieving Problem –Solution Fit for B.Sc., Botany Students on 27.02.2026 Dr. Senthilkumar Shanmugasundram, Assistant Professor, Department of Horticulture, School of Life sciences, Central University of Tami Nadu, Thiruvarur was the resource person.

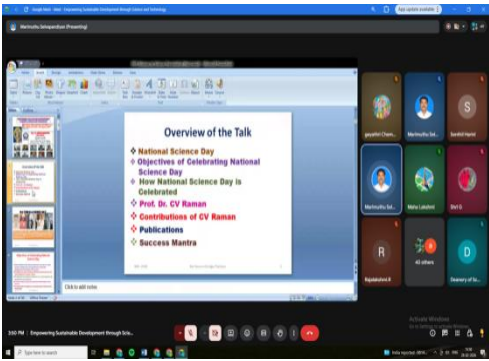
13.		Department of Biotechnology & Botany in Association organized a Webinar on Innovations in Marine and Coastal Ecosystem towards SDG (Under the aegis of DBT Star College Programme) on 28.02.2026. Resource Person: Dr. Balakrishnan Srinivasan, Scientist-E from the Zoological Survey of India, Digha
14.		Organized Seminar on Recent Trends in Hydroponics on 05.03.2026. Resource person Dr. G. Premkumar, Associate professor, Department of Botany, Virudhunagar Hindu Nadars' Senthikumara Nadar College, Virudhunagar was the Resource person
15.		Organized a lecture on Together for health Stand with science on 08.04.2026; Ms .S. Sindhuja, Assistant professor and Head, Department of Nutrition and Dietetics, Naina Mohamed College of Arts and Science, Rajendrapuram, Pudukottai was the resource person.
16.		Conducted a Training programme in Advance Bioinformatics tools and techniques on 08.04.2026 Dr. M. Ramaswamy, Assistant professor, PG & Research Department of Zoology, A.V.V.M Sri Pushpam College (Autonomous), Poondi was the resource person.

17.		Organized a seminar on Youth in Environmental Conservation on 09.04.2026. Dr. S. Gomathi, Assistant professor, PG & Research Department of Botany, A.V.V.M Sri Pushpam College (Autonomous), Poondi was the resource person.
Programmes for Non-teaching staff members		
18.		Training in Laboratory and documents maintenance. Dr.S.Amirtham, Assistant Professor, Department of Biotechnology offered training.
19.		Conducted a Training Programme on Eco-Friendly Waste Management on 28.02.2026 for non-teaching staff members. Dr. G. Gayathri, Assistant Professor, Department of Botany, Bon Secours College for Women (Autonomous), Thanjavur offered the training.
Industrial / Field Visits		
20.		On September 27, 2025, B.Sc. Botany students visited CSIR-CECRI, Karaikudi.

21.		Visited KVK, Needamangalam from 21st to 23rd January 2026.
Participation and presentation of Student and Faculty in Seminar / Conference / workshop / Training etc:		
22.		S. Fazila, S.Rathipriya, S. Abinaya from III B.Sc., Botany actively participated oral presentation in IC-RALCO-2025 (International conference) at PG & Research Department of Biotechnology & Society of Biotechnologies, Thanthai Hans Rover College, (Autonomous) Perambalur on 04.08.2025 & 05.08.2025.
Faculty Training Programme		
23.		P.Sathiyavani, Dr.M.Renuga devi, Dr.G.Gayathri, Assistant Professors, the Department of Botany participated in the Training Programme on "Phyto-analytical Techniques in Herbal Research" at the Department of Veterinary Pharmacology and Toxicology College and Research Institute, Orathanadu from 03.12.2025 to 05.12.2025.
Outreach Programme to School Students		
24.		Conducted a training in Micro green Technology to the students of students. Gnanam Matriculation Higher Secondary School, Thanjavur on 15.10.2025.

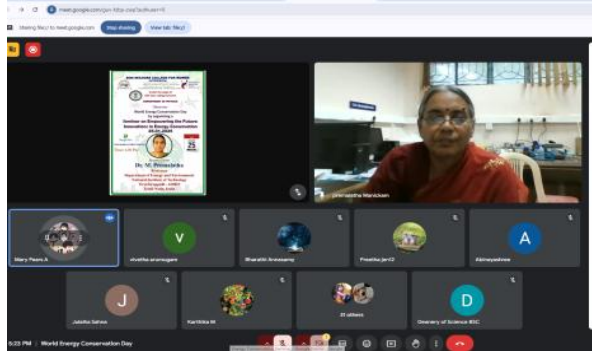
25.		Conducted a Expo 2K25 on 21.11.2025 for Kalyana Sundaram Girls Higher Secondary Schools Students; Students acquired knowledge on microscopy, herbarium, and scope of Botany in different sectors.
26.		Conducted Outreach Programme entitled Science in Focus: Microscope and Herbarium in Action. Conducted the programme for St. Joseph Higher Secondary School students.

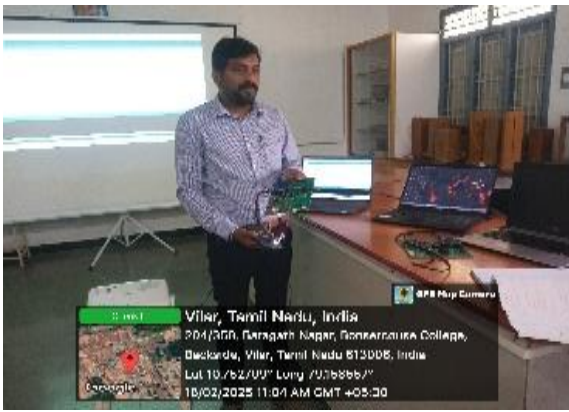
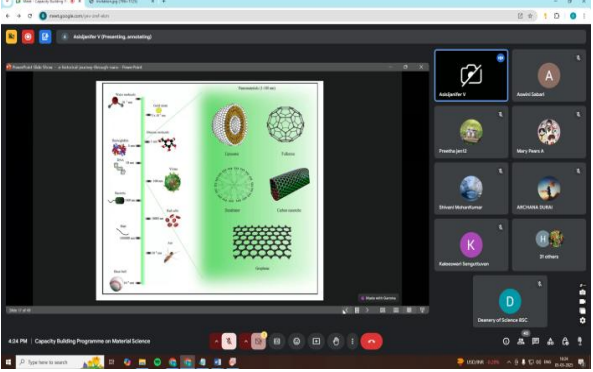
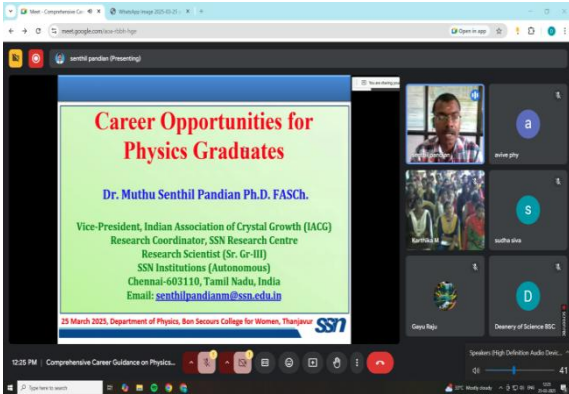
6.3.1. Department of Physics		
S.No.	Photograph	Programme
Programme for Students, (/invited lectures, training, seminar/conference, hands-on and in-house training)		
1.		The department of Physics organized a session on "Fueling Scientific Dreams: Careers and Funding Avenues in Physical & Chemical Sciences," led by Dr. S. Snega, Assistant Professor of Physics, Kundavai Naachiyar Govt. Arts College for Women, Thanjavur on 27.06.2025. A total of 35 students actively participated in the programme.
2.		The Career Perception Programme on Exploring Future Paths in Physics was conducted on 21.11.2025, led by Dr. Indumathi, Associate Professor, Department of Physics, Sethu Institute of Technology, Virudhunagar. A total of 40 participants attended the session.

3.		A motivational session titled "My Story" was organized via Google Meet. Dr. B. Krishnakumar, Founder & CEO of New Technology Institutions, Coimbatore, shared his inspiring journey and insights with the participants on 22.12.2025. A total of 51 students actively participated in the programme.
4.		Organized a "Empowering Young Scientists in the Era of AI". Dr. R.R. Saravanan, R&D Co-Ordinator, IIC Ambassador, Bon Secours College for Women (A), Thanjavur was the Resource Person on 21.02.2026.
5.		On the occasion of National Science Day organized a special lecture on "Empowering Sustainable Development through Science and Technology" on 28.02.2026. The lecture delivered by Dr. M. Selvapandiyan, Director i/c, Professor and Head, Centre for Post Graduate and Research Studies, Periyar University, Dharmapuri. A total of 40 students actively participated in the programme.
6.		Career Guidance Programme for Competitive Examinations was organized on 08.04.2026.. The session was delivered by Dr. P. Pandi, Coordinator, Department of Physics, The Madura College, Madurai. He provided valuable insights on various competitive examinations, preparation strategies, and career opportunities. A total of 51 students actively participated in the programme.

7.		Organized a Workshop on Research Methodology and Project Writing was conducted on 25.07.2025. The session was led by Dr. K. Ravichandran, Principal, Thanthai Hans Roever College, Perambalur.
8.		Organized a hands-on training programme on Advanced Electrical Instruments for Students was conducted on 12.08.2025. Ms. Tamilmani, Associate Professor and Head, Department of Electronics, Adaikala Madha College, Thanjavur.. A total of 20 students actively participated in the programme.
9.		Organized a Workshop on IPR and IP Management was organized on 23.08.2025. Dr. Kumaran Shanmugam, Professor and Director of Innovation, IPR and Community Engagement, Periyar Maniyammai Institute of Technology, Thanjavur.
10.		Organized a "Capacity Building Programme on Semiconductors" on 19.11.2025, The programme was conducted by Dr. N. Jabena Begum, Assistant Professor, Department of Physics, D.K.M. College for Women, Vellore,
11.		A Soft Skills Training Programme was conducted on 21.11.2025 by Ms. R. Rajalakshmi, Assistant Vice President (AVP), Talent Acquisition, Consultants, Chennai.

12.		Hands-on Training on Mobile Phone Servicing was conducted on 11.12.2025 to impart practical skills in mobile phone maintenance and repair. The programme was handled by Mr. N. Venkatesh and Mr. T. Mohamed Ibrahim, Mobile Technicians from iMount (An Independent iProduct Store), Thanjavur.
13.		Workshop on Simple Circuits to PCB Boards was conducted on 13.12.2025. The session was handled by Er. Vinoth Natarajan, Embed Firmware Developer and Certified Chip-Level Mobile Technician, FixNFly Mobile Technologies, Thanjavur.
14.		Hands-on Training on Ultrasonic Interferometer. The session was conducted by Dr. B. Saravanan, Assistant Professor, Marudhupandiyar College, Thanjavur. He explained the working principle and demonstrated the operation of the instrument on 26.03.2026.
15.		Workshop on Domestic Electrical Appliances Servicing. The session was conducted by Dr. R. R. Saravanan, Assistant Professor of Physics, Bon Secours College for Women, Thanjavur. All students of Physics participated. 08.04.2026

16.		A guest lecture on Classical Mechanics was conducted on 12.12.2025 by Ms. A. Vivetha, Assistant Professor, Department of Physics, Bon Secours College for Women, Thanjavur.
17.		A seminar on Next Generation Solutions for Energy Conservation was conducted on 15.12.2025 in observance of World Energy Conservation Day. The session was led by Dr. D. V. Siva Krishna Rao K, Assistant Professor, Department of Energy & Environment, National Institute of Technology, Tiruchirappalli. 45 participants attended,
18.		A hands-on training programme on Semiconductor Devices, Materials, Fabrication Techniques, Testing and Quality Control was offered by New Technology Mobile Service and Training Institution, Coimbatore, for 283 students of Computer Studies, covering II BCA, B.Sc. Computer Science, B.Sc. Information Technology, and B.Sc. Artificial Intelligence & Machine Learning and Data Science. The programme provided students with practical exposure to semiconductor technologies, fabrication processes, testing methods, and quality control practices. 06.01.2026
19.		On the occasion of World Energy Conservation Day, organized a Seminar on "Empowering the Future: Innovations in Energy Conservation" on 25.01.2025. The session was delivered by Dr. M. Premalatha, Professor, Department of Energy and Environment, NIT Trichy, as the esteemed resource person. A total of 50 students benefited from the programme.

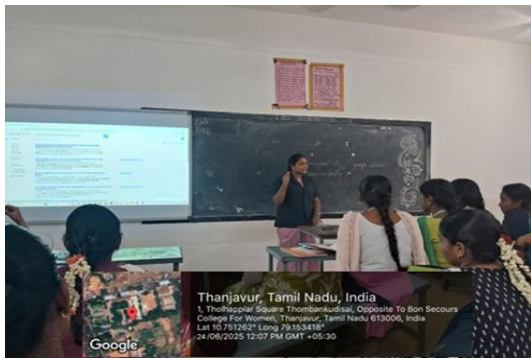
20.		On 18.02.2025, organized a “Hands-on Training Programme on Embedded Systems” in the Physics Laboratory. The session was facilitated by Mr. M. Madhankumar, Managing Director, Power Integrated Solutions, Trichy. A total of 33 students benefited from the programme.
21.		On 05.03.2025, organized a “Capacity Building Programme on Material Science” through online mode. Dr. Asisi Janifer, Assistant Professor of Physics, Stella Maris College, Chennai, served as the resource person.
22.		On 25th March 2025, organized an online Comprehensive Career Guidance in Physics 360°. Dr. Muthu Senthil Pandian, Ph.D., FASCh, Vice-President of the Indian Association of Crystal Growth (IACG), Research Coordinator at SSN Research Centre, and Senior Grade III Research Scientist at SSN Institutions (Autonomous), Chennai was resource person. 50 students were benefited by the programme.
Industrial visit		
23.		On 27th September 2025, the students of department of Physics visited the Central Electrochemical Research Institute (CECRI), Karaikudi. The visit provided an opportunity to observe advanced research in electrochemical science and technology. Students gained practical insights into research methodologies, interacted with experts, and were inspired by the institute’s innovations. The visit enhanced their understanding of scientific applications and motivated them toward future careers in

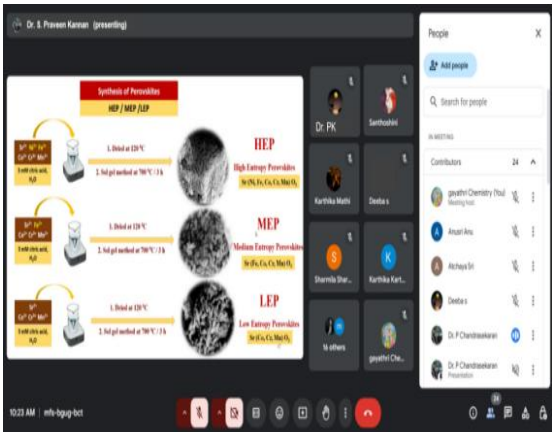
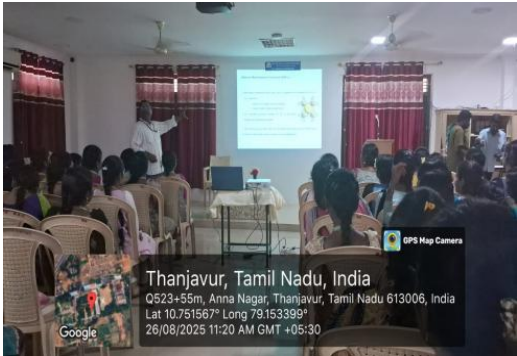
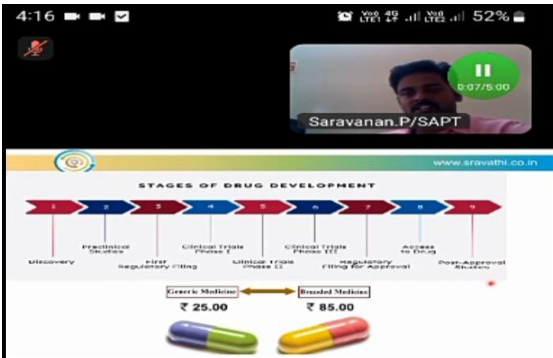
		research and development.
Faculty Development Programme & Training Programmes		
24.		A hands-on training on UV-Visible Spectrometer Handling for faculty was conducted on 12.08.2025, led by Mr. P. Radhakrishnan, Engineer, Star Lab Technologies, Pudukkottai. 20 faculty members participated.
25.		A National Level Faculty Development Programme on Experimental and Computational Physics was conducted from 06.10.2025 to 10.10.2025 by the Department of Physics, Bon Secours College for Women under the DBT Star College Scheme. The programme, was attended by 135 active participants from across India, including faculty members and research scholars. Sessions were delivered by experts Dr. S. Athimoolam (Anna University, Tirunelveli), Dr. R. Baskar (IIT Madras), Dr. Logu Thirumalaisamy (G.T.N. Arts College, Dindigul), Dr. Antony Stalin (University of Electronic Science and Technology of China), and Dr. Gorthala Guruprasad (Amrita Vishwa Vidyapeetham, Chennai).
Students Participation & Presentation in Co-curricular Activities and its outcomes		
26.		Thirteen Students from II M.Sc., Physics attended and present the paper in the "International Conference on Advanced Materials and Computational Physics (ICAMCP-2025)" organized by the Department of Plasma Physics, Institute of Science and Humanities, SIMATS Engineering, Saveetha Institute of Medical and Technical Sciences, Thandalam, Chennai, on 08.08.2025

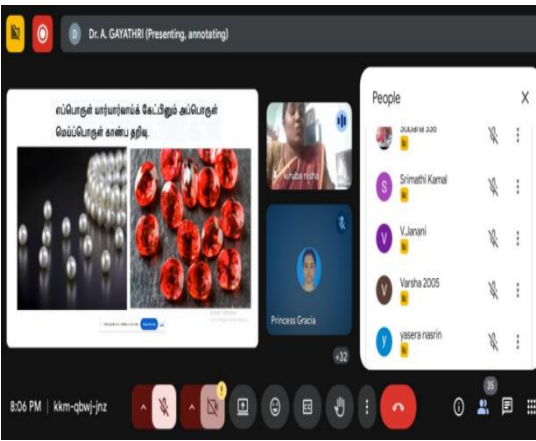
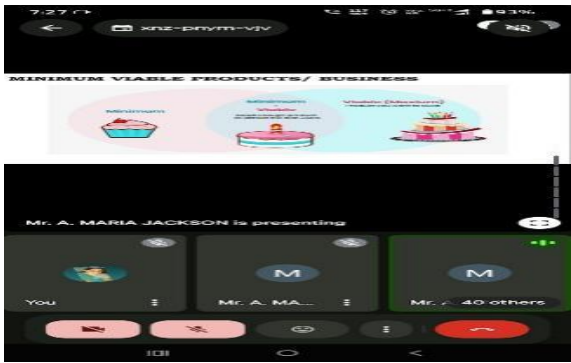
27.		Ms. Famidha Shaheen Umarfarook of I BSc Physics participated “Youth Talk” organized by Periyar Maniyammai University, Thanjavur, on 29.09.2025. She got selected in second level.
28.		Ms. R. Abinayaa participated Online Quiz on Vikshit Bharath Young Leaders Dialogue (VBYLD) 2026 on 30.09.2025
29.		Ms. R. Abinayaa of I B.Sc Physics Participated “INNOFORCE 2K25-Smart Ideas for a Sustainable Tomorrow” conducted by the Department of Management Studies in association with the IIC of Bon Secours College for Women (A), Thanjavur, on 07.10.2025.
30.		Six students from III BSc Physics attended the “Symposium on Advancement in Optics” organized by NITT SPIE & OPTICA Students Chapter, at Tiruchirappalli on 07.11.2025
31.		Ms. M. Supriya and Ms. Famidha Shaheen Umar Farook of I B.Sc Physics secured First Prize in the event “Play Smart” at “Aperion-2026,” organized by Bharathidasan University, Tiruchirappalli, and received a cash award of ₹1,000, on 20.02.2026.

32.		Ms. R. Abinayaa of I BSc physics & Ms. M. Nivetha of II MSc Physics won the first prize in Mecha-thon event and Ms. P. Santhani of I MSc Physics & Ms. G. Priyadarshini of II MSc Physics won the third prize in Draw-It-Out event organized by Holy Cross College (Autonomous), Trichy, on 29.09.2025.
33.		Department of Physics secured overall Runner up Position at SURPHY'26 organized by Bishop Heber College, Trichy, on 26.02.2026.
34.		On January 7, 2025, Ms. S. Harini, Ms. S. Nisha, and Ms. J. K. Vaishnavi from the Department of Physics actively participated and presented research papers at the "International Conference on Advanced Perspectives in Materials Science (ICAPMS-25)" organized by the PG & Research Department of Physics, Jamal Mohamed College (Autonomous), Trichy, in association with the Indian Spectrophysics Association (ISPA).
Outreach Programmes		
Schools		
35.		An HRT Programme as an extension activity for school students was conducted on 13.10.2025 at Govt. Hr. Sec. School, Thirukkarukkavur. Third-year B.Sc. Physics students conducted the programme, engaging 50 school students (7th and 8th standard) in hands-on learning activities to enhance their understanding and interest in scientific concepts.

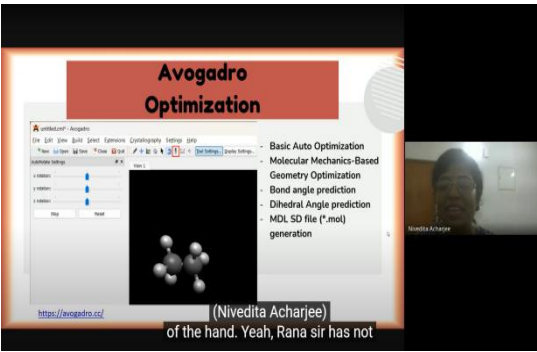
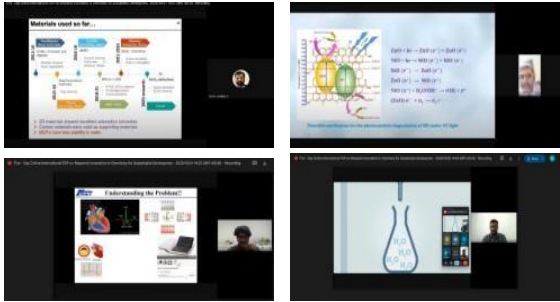
36.		An extension activity titled "Educating Programme on Exploring Nature Through Physics" was conducted at Corporation Higher Secondary School, Anna Nagar, Thanjavur. Ms. N. Thivashini, Ms. M. Diviyalakshmi (II MSc Physics) and Ms. A. Vivetha, Assistant Professor, shared insights on the importance of Physics through engaging presentations. A total of 50 students actively took part in the programme.
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6.3.1. Department of Chemistry		
S.No.	Photograph	Programme
Programme for Students, (/invited lectures, training, seminar/conference, hands-on and in-house training)		
1.		The Department of Chemistry organized a "Seminar on Research Essentials: From Defining Research Problems to Finding Information and Designing Projects" on for III B.Sc. Chemistry on 24.06.2025.
2.		Organized a "Seminar on Introduction to Molecular Spectroscopy: Electronic Transitions, Vibrational and Crystallographic Techniques Applications" on 08.07.2025 for III B.Sc. Chemistry.

3.		Organized a “Seminar on MOF-based Sensors for Environmental Pollutant Monitoring and Remediation” for III B.Sc. Chemistry and Biotechnology students on 26.07.2025. Dr. S. PraveenKannan, Post Doctoral Fellow, Amirta Viswa Vidyapeetham- DTBU, Coimbatore was the resource person. 90 students were benefitted.
4.		Organized the “Seminar on Fundamentals of Metal Organic Framework and their Electrochemical Applications” on 26.08.2025. Dr. S. Viswanathan, Associate Professor, Department of Chemistry, Alagappa University, Karaikudi was the resource person. 110 students were benefitted.
5.		Organized the organized the “Career Guidance Programme on Job Opportunities in the Pharmaceutical Industry” on 13.09.2025 for B.Sc. and M.Sc. Chemistry. Dr. Saravanan Perumal, Team Manager, Pharma Department, Saravathi Pvt. Ltd., Bangalore was the resource person. 81 students were benefitted.
6.		Conducted a “Training Programme on Dyeing Techniques and Their Applications in Textile and Food Industries” on 29.09.2025 for II B.Sc., III B.Sc., I M.Sc., and II Msc., Chemistry, Botany and Biotechnology. and Ms. Firthosh Fathima, CEO, Danai Organic, Coimbatore, was the resource person.

7.		Organized a “Seminar on Fundamentals of Toxicology: Principles, Mechanisms, and Risk Assessments for I, II, III B.Sc., I and II M.Sc., on 25.10.2025 and Ms. D. Arputha Kiruba Nisha, Junior Scientific Officer, Regional Forensic Science Laboratory, Madurai, served as the resource person. 81 students were participated.
8.		Conducted a “Workshop on Expanding Horizons in Product Innovation, Patents, and Intellectual Property for Budding Chemists” on 03.12.2025 for B.Sc. and M.Sc. Chemistry. Dr. A. Maria Jackson, Mechanical Engineer, Founder@CIFER - Incubation Catalyst, Business Model Speaker was the resource person. 81 students were benefitted.
9.		Organized an “Seminar on Nano Architectures: From Design to Environmental Protection, Smart Healthcare, Clean Energy applications” for I, II, III B.Sc., I and II M.Sc. Chemistry and Biotechnology students on 10.02.2026. Dr. Tharmaraj Vairaperumal, Research Scientist, Institute of Clinical Medicine, College of Medicine, National Cheng Kung University, Taiwan. 84 students were benefitted.
10.		Conducted an “Hand-on training in Preparation of Biopolymer” for III B.Sc., Chemistry students on 07.04.2026. Dr. A. Gayathri, Assistant Professor of Chemistry was the resource person. 28 students were participated.

11.		The Department of Chemistry conducted an "Intra Department Competition" for B.Sc. and M.Sc. Chemistry students on 19.01.2026. The competition included various individual and group events such as "Trash to Treasure – Art from Waste," "TeachChem Excellence – Chemistry Teaching Demo," "ChemSnap – Photography," and "Chem Adz – Advertisement Making".
12.		The Department of Chemistry organized "Chemathon" for all students of Deanery of Science on 20.01.2026.
13.		The Department of Chemistry organized "Periodic Pixels: Decode the Chemistry" in commemoration of National Periodic Table Day for B.Sc. and M.Sc. Chemistry students on 09.02.2026.
Industrial visit		
14.		Students of II B.Sc., III B.Sc. and II M.Sc. Chemistry The South India Textile Research Association, Coimbatore on 12.09.2025. 51 was benefitted.
Faculty Training Programmes		

15.	 (Nivedita Acharjee) of the hand. Yeah, Rana sir has not	Organized the “Two-day Virtual Workshop on Computational Chemistry” on 25.08.2025 & 26.08.2025. Dr. Nivedita Acharjee, Associate Professor, Department of Chemistry, Durgapur Government College, West Bengal was the resource person. 110 faculties were benefitted.
16.		The Department of Chemistry organized a Faculty Development Programme on Research Innovations in Chemistry for Sustainable Development for faculty members on 27.10.2025-31.10.2025 and Dr. S. MuthuPrabhu, Dr. Arun Velumani, Dr. N. Riswana Barveen, Dr. T. Adinaveen, Dr. Arul Kashmir Arulraj were the resource person.
17.		Dr. A. Gayathri and Ms. G. Porselvi had an instrumentation training in the South India Textile Research Association, Coimbatore on 12.09.2025.
18.		Dr. A. Gayathri participated in the training on “Basics to Technology: Electrochemical Studies” organized by the Institute for Modern Materials and Devices (IMMD), Chennai on 25.04.2026.

Students Participation & Presentation in Co-curricular Activities and its outcomes

19.



T. Sobana, II B.Sc. Chemistry presented an idea entitled "Eco-Safe Herbal Biofloculant for Effective Removal of Turbidity from Water"

G. Sabarisha, II B.Sc. Chemistry presented an idea entitled "Fabrication of Natural Colorimetric Indicator Films Using Seaweed Polymers and Beetroot Extract for Smart Food Packaging".

B. Gayathiri, II B.Sc. Chemistry presented an idea entitled "Biobased Smart Bandage with pH Responsive Colour Change" in the ChemSpark'25 - Chemistry Innovation Challenge hosted by VIT Andhra Pradesh from 14.07.2025 to 18.07.2025.

20.



Paper Presentation: Undergraduate students presented their research outcomes in an International Academia-Industry-Innovation Conclave (AIIC-2025) organized by the Department of Chemistry, Lady Doak College (Autonomous), Madurai from 27.11.2025 to 29.11.2025.

21.



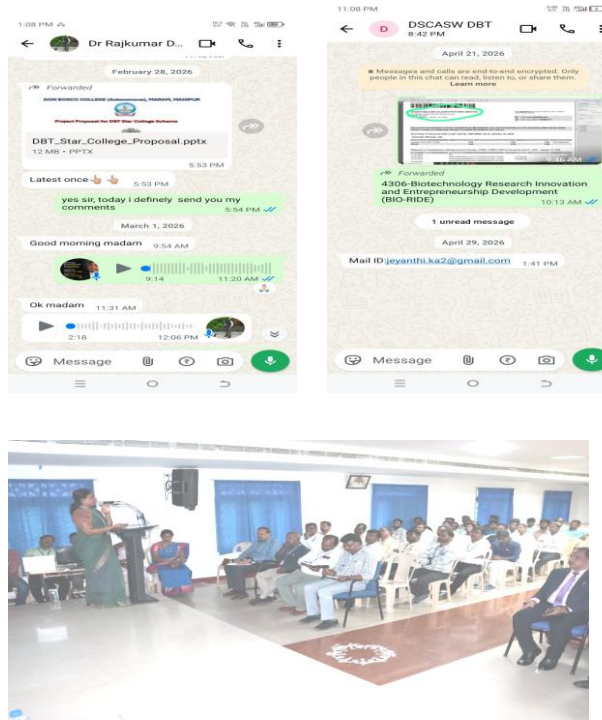
Ms. G. Sabarisha of II B.Sc. Chemistry won III prize in "Chem Draw" in an Inter-Collegiate Competition Chem-Aura 2025 at Seethalakshmi Ramaswami College (Autonomous), Tiruchirappalli on 19.08.2025.

22.



V. Sakthipriya of II B.Sc. Chemistry won II prize in "Chem Rangoli" in the Inter Collegiate Competition Chem-Aura 2025 at Seethalakshmi Ramaswami College (Autonomous), Tiruchirappalli on 19.08.2025.

Outreach Programmes

Other institutions - College		
23.		On 24.02.2026-25.02.2026, offered training in Natural dye preparation, Socially useful products preparation to students from Arul Anandar College (A), Madurai
Schools		
24.		On August 23, 2025, the Department of Chemistry organized an Outreach Programme on "Experiential Learning in Coordination Chemistry" under the DBT Star College Programme at Sir Siva Swami Balavidhyalaiya Higher Secondary School, Thirukkattupalli. Dr. A. Gayathri and two III B.Sc. Chemistry students participated in the programme and demonstrated various concepts related to coordination chemistry to the school students.
Mentoring Support		
		Mentoring Activities: Guidance and Orientation on DBT Star College Programme was extended to Thanthai Hans Roever College, Perambalur, Dhanalakshmi Srinivasan College of Arts and Science for Women (Autonomous), Perambalur and Don Bosco College Autonomous, Maram, Manipur.



Collaborations extended through DBT Star College Programme

1. Dr. C. Dhanush, Post Doctoral Fellow, Integrated Laboratory of Bioproducts (iLab), Research Centre for Biomass and Bioproducts, Badan Riset dan Inovasi Nasional (BRIN), Indonesia collaborated for Research activities.
2. Dr. S. PraveenKannan, Post Doctoral Fellow, Department of Chemistry, Amrita Vishwa Vidyapeetham (DTBU), Coimbatore collaborated for Research activities. Outcome: Publication under progress.
3. Dr. S. Viswanathan, Associate Professor, Department of Chemistry, Alagappa University, Karaikudi collaborated for Research and faculty and students training programmes Outcome: Publication under progress.

6.5 Extension of Infrastructure and Outreach Activities

The laboratory infrastructure and facilities established under the DBT Star College Programme have been purposefully extended beyond the institution to serve a wider academic community. Recognising the transformative potential of quality science education, the Departments of Biotechnology, Botany, Physics, and Chemistry opened their DBT-supported laboratories to students from neighbouring institutions including Raja Serfoji Government College, Kunthavai Naacchiyaar Government Arts College for Women, A.V.V.M. Sri Pushpam College, and Annai College of Arts and Science, Kumbakonam, by offering training in phytochemical analysis and molecular docking on

18.12.2025. On 27.01.2026, a training in STEM was conducted to the students of Biotechnology, Thanthai Hans Roever College (Autonomous), Perambalur.

A Student Exchange Programme was organised for students of Arul Anandar College (Autonomous), Madurai, from February 24 to 28, 2026, providing hands-on exposure to fermented foods and beverages preparation, natural dye extraction and its application in fabrics, and solar lamp kit assembly during February 24–25, 2026.

The DBT-supported infrastructure also served as the backbone for outreach initiatives targeting school students, thereby promoting science as a preferred choice for higher studies. Specialised sessions on Food Adulteration, Microbiological Techniques, and Microgreen Technology were conducted for students of

Kalyana Sundaram Higher Secondary School and Gnanam Matriculation Higher Secondary School, Thanjavur. An interactive programme on "Science in Focus: Microscope and Herbarium in Action" was delivered to 54 students of St. Joseph's Higher Secondary School on 14.10.2025, and a hands-on learning programme under the HRT initiative was conducted on 13.10.2025 for 50 students of Standards VII and VIII at Government Higher Secondary School, Thirukkarukkavur.

Furthermore, a Physics-based educational programme titled "Exploring Nature Through Physics" was conducted for students of Corporation Higher Secondary School, Anna Nagar, Thanjavur. These outreach activities collectively demonstrate that the infrastructure and knowledge ecosystem built through the DBT Star College Programme has transcended institutional boundaries, fostering scientific curiosity, practical engagement, and a culture of inclusive science education among college and school students of the Thanjavur region.

National Science Day – Mega Expo: The Departments of Biotechnology, Botany, Physics and Chemistry organized a National Science Day – Science EXPO on 28.02.2026, Dr. V. Sukumaran, Professor of Practice, School of Lifesciences, Periyar Maniammani Institute of Science and Technology, Deemed to be University, Thanjavur was the chief guest. Students from 12 different colleges participated, presented their ideas and research, and won several prizes.

The Department of Biotechnology conducted BioUtsav 2026, an intercollegiate competition held on 22.01.2026, in which students from 10 Colleges, 104 participants participated and won prizes. The Department of Chemistry conducted Chemathon 2026 on 20.01.2026. at the interdepartmental level, wherein students from the Departments of Botany, Biotechnology, Physics, and Computer Studies presented their ideas and won prizes.

Common Programmes:

1. Participation in 5th Task Force Meeting -Review of Progress and learning sharing to participating departments:

Participated in the 5th Meeting of the Task Force under Star College Programme, held during 1st- 3rd July, 2025 at Hindu College, University of Delhi, New Delhi, for reviewing the completion reports. The learning from the 5th meeting of the task force under star college programme was shared to the faculty members of the participating departments on 9th July, 2025. And academic planner with programmes with curriculum revision, new experiments, equipment, chemicals and glassware requirements, faculty and lab assistants training, students training, outreach, students research projects in smart protein, renewal

energy, polymers, green chemistry, AMR etc. were discussed on 10th July, 2025.



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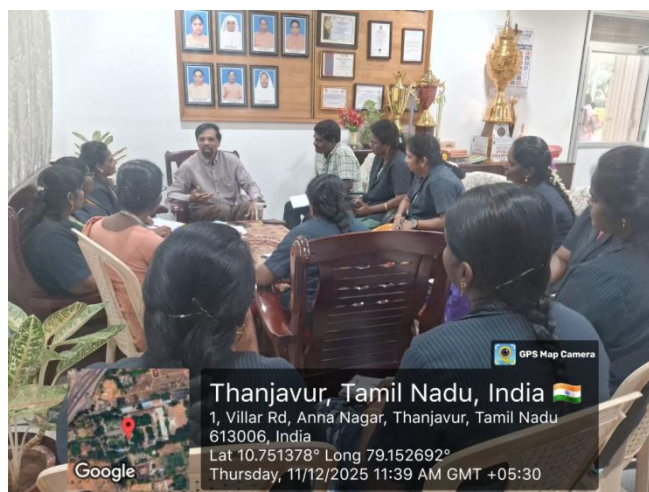
2. Learning about PFMS-TSA:

From 15.07.2025 to 16.07.2025, Dr. R. R. Saravanan, Assistant Professor of Physics, participated in the National Level Capacity Development Programme on "Innovations in Treasury Management: TSA and Hybrid Approaches in PFMS," conducted by G.T.N. Arts College (Autonomous), Dindigul.



3. Discussion Forum on research emergence for Eco conservation

A discussion forum on student research related to environmental conservation, climate change, carbon mitigation, renewable energy, and related themes was conducted with the faculty members of all four departments on 11 December 2025. Dr. A. Elangovan served as the expert speaker. His specialization is in Environmental Science, and he has secured a UKIERI project worth Rs. 2 Crores titled "Access to Land: Implication of Customary and Private Land Rights for Food Security." He shared insights on environmental marketing, climate change, and the know-how required to design student research projects on environmental conservation practices at inter/multi-disciplinary level.



4. National Science Day-Mega Expo

The Departments of Biotechnology, Botany, Physics and Chemistry organized a National Science Day – Mega Science EXPO on 28.02.2026. Dr. V. Sukumaran, Professor of Practice, School of Lifesciences, Periyar Maniammani Institute of Science and Technology, Deemed to be University, Thanjavur was the chief guest. Students from 12 different colleges participated, presented their ideas and research, and won several prizes.



5. Visit of Eminent Experts in Academic/research/innovation due to the support of DBT Star College Programme:

S. No.	Date	Resource Person	Name of the Event
1.	02.07.2025	Dr. G. LAKSHMANAN Guest Lecturer CAS in Botany University of Madras Chennai	Invited Lecture on Sustainable Agriculture and Biofertilizers
2.	25.08.2025	Dr. S VIJAYKUMAR Post Doctoral Research Fellow College of Material Science and Engineering, Science Huaqiao University, China	Seminar on Biotechnological Solution for Human Health Care
3.	28.08.2025	Dr. A Saranya Research Scholar Department of Bioinformatics Bharathidasan University Tiruchirappalli	Capacity Building Programme on Molecular Phylogenetic Analysis
4.	12.08.2025	Dr. V.B Mary Prescilla Consultant General Surgery Our Lady of Health Multispecialty Hospital Thanjavur	Invited lecture on Microbial Dialogues – Gut Brain Axis
5.	25.09.2025	Dr. S. Vignesh Professor Food Safety and Quality Assurance National Institute of Food Technology, Entrepreneurship and Management (NIFTEM), Thanjavur	Seminar on Microbial Polymer in Food Products
6.	30.09.2025	Dr. P. Balaji Professor Department of Pharmacology Vels Institute of Science, Technology and Advance Studies Chennai	Seminar on Passport to Pharma and Biotech Placements
9.	01.12.2025	Mr. Er. Parthiban Kannan CEO, Advise wise Solution, Chennai	Career Guidance Programme on Higher Studies in Abroad
10.	17.12.2025	Dr. R Arunkumar Assistant Professor of Biotechnology Research Development Cell PRIST (Deemed to be University) Thanjavur	From Innovation to Market: Leveraging Design Patents for Growth
11,	22.01.2026	Dr. K. Susil Kumar Chief Executive Officer (Director, NIT-Trichy) Centre For Entrepreneurship Development And Incubation (CEDI), NIT-Trichy	BIOUTSAV – 2K26 an Intercollegiate meet

12.	17.02.2026	Ms. Sushmitha Krishnan Researcher and Director of events, International Sustainability Academy, Hamburg, Germany	Training Programme on Transforming Weed into Wealth
13.	23.03.2026	Dr. Saurav Yadav Assistant Professor Department of Biotechnology Central University of Srinagar, Uttarakhand	Intellectual Property Rights (IPR) and its significance in modern biotechnology.
14.	24.03.2026	Dr. Sathya A Associate Professor School of Chemical and Biotechnology Sastra University, Thanjavur	Evolution from traditional knowledge to modern scientific applications
15.	25.03.2026	Dr. Antony Stalin Assistant Professor University of Electronic Science and Technology of China Chengdu, China	Natural herbal products for various diseases
16.	26.03.2026	Dr. S. Saranya Research Associates of Bioinformatics Bharathidasan University, Tiruchirappalli	Traditional Knowledge Database
17.	27.03.2026	Dr. Amita Gupta Associate Professor of Education Bareilly College, Bareilly Uttar Pradesh	Ethical and sustainable development in modern Biotechnology
18.	28.03.2026	Prof. Estari Mamdala Department of Zoology Kakatiya University, Warangal	Bioinformatics in exploring Indian herbal medicine

B. Department of Botany

S. No.	Date	Resource Person	Title of the Programme
1	09.07.2025	Dr. P. Prabakaran Assistant Professor, Department of Botany, M.R. Government Arts College, Mannargudi	Hands-on Training: Slide Preparation
2	09.09.2025	Dr.M.Ayyanar , Assistant Professor, Department of Botany, AVVM Sri Pushpam College, Thanjavur	Workshop on Plant Identification and Herbarium Techniques
3	29.10.2025	Dr.V.Deepika , Assistant Professor, Veterinary College and Research Institute Orathanadu	Career Guidance Programme in Animal Science
4	15.12.2025	Dr.S.Rajkumar , Associate Professor and Head, Department of Biotechnology, Don Bosco College (Autonomous) Maram, Manipur	Seminar on the Therapeutic Benefits of Culinary Herbs and Spices

5	26.02.2026	Dr. G.Gayathri , Assistant Professor, Department of Botany, Bon Secours College for Women (Autonomous), Thanjavur	Income Generation Training through Edible Fungi Cultivation
6	27.02.2026	Dr.Senthilkumar Shanmugasundram , Assistant Professor, Department of Horticulture, School of Life sciences, Central University of Tamilnadu, Neelakudi Campus, Thiruvavur-610 005, Tamilnadu, India	Next-Gen Bio-Horticulture: IPR, AI & Cultivation
7	05.03.2026	Dr.G.Premkumar , Associate professor, Department of Botany, Virudhunagar Hindu Nadars' Senthikumara Nadar College, Virudhunagar	Seminar on Recent Trends in Hydroponics
8	08.04.2026	Ms.S.Sindhuja , Assistant professor and Head, Department of Nutrition and Dietetics, Naina Mohamed College of Arts and Science, Rajendrapuram, Pudukottai	Lecture on Together for health Stand with science
9	08.04.2026	Dr.M.Ramaswamy , Assistant professor, PG & Research Department of Zoology, A.V.V.M Sri Pushpam College (Autonomous), Poondi	Computational Biology Training on Advanced Bioinformatics Applications
10	09.04.2026	Dr.S.Gomathi , Assistant professor, PG & Research Department of Botany, A.V.V.M Sri Pushpam College (Autonomous), Poondi	Lecture on Youth in Environmental Conservation

C. Department of Physics

S. No.	Date	Resource Person	Title of the Programme
1	22.07.2024	Dr. K. Ravichandran, Principal, Thanthai Hansrover College, Perambalur	Research Methodology and Project Report Writing
2	01.09.2025	Dr. Kumaran Shanmugam, Professor & Director of Innovation, IPR & Community Engagement, Periyar Maniyammai Institute of Technology, Thanjavur	Workshop on IPR and IP Management
3	06.10.2025 to 10.10.2025	1. Dr. S. Athimoolam , Assistant Professor, D1 Department of Physics, Anna University Regional Campus, Tirunelveli 2. Dr. R. Baskar Technical Officer – NMR, Department of Chemistry, IIT Madras, Chennai	A National Level Faculty Development Programme on Experimental and Computational Physics,

		3. Dr. Logu Thirumalaisamy Assistant Professor / DST-FIST Coordinator Department of Physics, G.T.N. Arts College, Dindigul 4. Dr. Antony Stalin , Institute of Fundamental and Frontier Sciences University of Electronic Science and Technology of China, Chengdu – 610054, China 5. Dr. Gorthala Guruprasad Assistant Professor, Department of ECE Amrita Vishwa Vidyapeetham, Chennai	
4	19.11.2025	Dr. N. Jabena Begum , Assistant Professor, D.K. M. College for Women, Vellore	Capacity Building Programme on Semiconductors
5	21.11.2025	Dr. N. Indumathi , Associate Professor, Sethu Institute of Technology, Virudhunagar	Career Perception Programme on Exploring Future Paths in Physics
6	21.11.2025	Ms. R. Rajalakshmi , AVP-Talent Acquisition, Covenant Consultants, Chennai	Soft Skills Training Programme
7	11.12.2025	Mr. N. Venkadesh , Mr. T. Mohammed Ibrahim, Mobile Technicians, iMount Independent iproduct Store, Thanjavur	Hands-on Training on Mobile Phone Servicing
8	13.12.2025	Er. Vinoth Natarajan , Embed Firmware Developer, FixNFly Mobile Technologies, Thanjavur	Workshop on Simple Circuits to PCB Boards
9	15.12.2025	Dr. D. V. Krishna Rao , Assistant Professor, Department of Energy & Environment, National Institute of Technology, Tiruchirappalli	Seminar on Next Generation Solutions for Energy Conservation
10	22.12.2025	Dr. B. Krishna Kumar , Founder & CEO, New Technology Institutions, Coimbatore	Motivational Session – “My Story”
11	27.01.2026	Dr. R. Nirmal Kumar , Assistant Professor of Physics, Srimad Andavar Arts and Science College, Trichirappalli	Priya Jones Maria Endowment Lecture on Material Science
12	28.02.2025	Dr. M. Selvapandiyan , Professor & Head, Center Graduate for Post Graduate and Research Studies, Dharmapuri	National Science Day Celebrations – Science Expo 2K26
13	08.04.2026	Dr. P. Pandi , Coordinator, Department of Physics, The Madura College, Madurai	Career Guidance programme for Competitive Examinations

D. Department of Chemistry

S. No.	Date	Title of the Programme	Resource Person
1	29.09.2025	Training Programme on Dyeing Techniques and Their Applications in Textile and Food Industries	Ms. Firthosh Fathima , CEO, Danai Organic, Coimbatore

2	03.12.2025	Workshop on Expanding Horizons in Product Innovation, Patents, and Intellectual Property for Budding Chemists	Dr. A. Maria Jackson , Mechanical Engineer, Founder@CIFER
3	26.07.2025	Seminar on MOF-based Sensors for Environmental Pollutant Monitoring and Remediation	Dr. S. PraveenKannan , Post Doctoral Fellow, Amrita Viswa Vidyapeetham-DTBU, Coimbatore
4	26.08.2025	Seminar on Fundamentals of Metal Organic Framework and their Electrochemical Applications	Dr. S. Viswanathan , Associate Professor, Department of Chemistry, Alagappa University, Karaikudi
5	13.09.2025	Career Guidance Programme on Job Opportunities in the Pharmaceutical Industry	Dr. Saravanan Perumal , Team Manager, Pharma Department, Saravathi Pvt. Ltd., Bangalore
6	25.10.2025	Seminar on Fundamentals of Toxicology: Principles, Mechanisms, and Risk Assessments	Ms. D. Arputha Kiruba Nisha , Junior Scientific Officer, Regional Forensic Science Laboratory, Madurai
7	10.02.2026	Seminar on Nano Architectures: From Design to Environmental Protection, Smart Healthcare, Clean Energy Applications	Dr. Tharmaraj Vairaperumal , Research Scientist, Institute of Clinical Medicine, College of Medicine, National Cheng Kung University, Taiwan
8	25.08.2025 & 26.08.2025	Two-day Virtual Workshop on Computational Chemistry	Dr. Nivedita Acharjee , Associate Professor, Department of Chemistry, Durgapur Government College, West Bengal
9	27.10.2025 – 31.10.2025	Faculty Development Programme on Research Innovations in Chemistry for Sustainable Development	Day 1: Dr. S. MuthuPrabhu Assistant Professor (Sr. Gr. II) Department of Chemistry VIT-AP University, Vijayawada Day 2: Dr. Arun Velumani Post-Doctoral Fellow National Research and Innovation Agency (BRIN), Indonesia Day 3: Dr. N. Riswana Barveen Post-Doctoral Fellow Department of Chemical Engineering, Ming-Chi University of Technology, Taiwan Day 4: Dr. T. Adinaveen Assistant Professor Department of Chemistry Loyola College, Chennai. Day 5: Dr. Arul Kashmir Arulraj Scientist D Centre for Materials for Electronic Technology, Athani, Thrissur, Kerala

6. Some significant minor research projects & Research Publications by Students: List of Student minor projects have done by III B.Sc., students of all the four departments.

a. Department of Biotechnology

1. GC-MS Investigation of bioactive compounds in traditional medicinal plant samples from Sirumalai hill
2. GC-MS identification of Bioactive compounds from Latex of *Pterocarpus marsupium* collected from Sirumalai Hill
3. Microbial risk analysis of Microgreens production: from seed to consumption
4. An Eco-Friendly Development of Low-Cost Activated Carbon from Locally Sourced Charcoal.
5. Microgreen-Enriched Rice Porridge for Combating Iron–Zinc Deficiency in Early Childhood
6. Isolation of microorganisms from hand among teaching faculties
7. GC- MS Analysis of nephrotoxic compound in *Averrhoa carambola*
8. Probiotic Functionalization of Cotton Fabrics for Smart Textile Applications
9. *In silico* Molecular docking analysis of bioactive compounds from Swarna Masuri, a traditional rice variety for anti- diabetic management.
10. *In silico* molecular Docking Analysis of Bioactive Compounds from Pokkuru Samba traditional rice variety for antidiabetic management
11. A Comparative Study of Chitosan-Based Liquid and Nano formulations for Weed Control as Hyacinth-X
12. Optimization of lactic acid bacteria mediated fermentation for protein recovery from fish waste.
13. Extraction and preliminary antifungal screening of bioactive Compounds from Zebrafish (*Danio rerio*) against MUCOR
14. Synthesis of silver nanoparticles from *Mucuna pruriens*-an *in-silico* approach with its antimicrobial and antioxidant activity
15. Formulation and evaluation of multi herbal mosquito repellent cream
16. Enriched rice porridge for combating iron zinc deficiency in early childhood
17. Use of the Natural Pigments of Red Beet Root Pomace(*Beta vulgaris* L.) to Develop Mycological Stain: An eco- friendly Alternative substitute
18. Development of Herbal Bandage from *Tridax procumbens*
19. Nutritional and biochemical preparing for ripening and unripe of star fruit.
20. Comparative production and characterization of bioplastics from marine macroalgae
21. Phytochemical screening and GC-MS analysis of selected medicinal plants from sirumalai hill.
22. Investigation of Microplastic Contamination in Milk Using Ni-MOF.

b. Department of Botany

1. Developing Sachet by using antistress Medicinal aromatic plants
2. Survey of Anti-Diabetic medicinal plants and preparation of dip tea powder.
3. A study on the nutritional value and health benefits of arrowroot plant
4. Seaweed as a natural biofertilizer for plant growth
5. Ethnobotanical survey of plant species in Bon Secours College Campus Vilar, Thanjavur
6. Flower based natural Dye Preparation

c. Department of Physics

1. Synthesis and Characterization of Nickel Oxide Nanoparticles.
2. Neem-Mediated Green Synthesis of NiO₂ Nanoparticles for Antibacterial Applications.
3. Synthesis and Characterization of NiO₂ Nanoparticles using Co-Precipitation Method
4. Synthesis and Characterization of La–Zr Based Perovskite Material via Co-precipitation Method
5. Green Synthesis, Characterization, and Antibacterial Activity of Ag-Doped NiO₂ Nanoparticles Using Neem Extract.
6. Investigation of Structural and Optical Properties of SnO₂ Nanoparticles
7. Crystallographic and Molecular Docking Analysis of Pyridine Derivatives

d. Department of Chemistry

1. Synthesis and Characterization of Tannic Acid–Biochar Composite for the Absorption of Methylene Blue Dye
2. Investigation of Microplastic Contamination in Milk Samples by using MoF
3. Eco-Friendly Solid-State Synthesis of Copper Oxide Nanoparticles Using *Ficus religiosa* Bark Extract and Study of Anti-Inflammatory and Antibacterial Activity
4. Plant-Assisted Solid-State Synthesis of Copper Oxide Nanoparticles Using *Ficus racemosa* Bark Extract for anti-Inflammatory and antibacterial Applications
5. Solvent-Assisted Green Synthesis of Carbon Dots and Evaluation of their antibacterial and UV-Protective Properties
6. Green Synthesis of Ni–Cu–Zn Oxide Nanoparticles Using *Azadirachta indica* Leaf Extract and Evaluation of Methylene Blue Dye Degradation Activity
7. Phytochemical Screening, Antibacterial Activity and UV-Protective Analysis of *Cassia fistula* Extracts
8. Cu-Doped SnO₂ Nanoparticles for Opto-Electronic and Magnetic Applications
9. Bio-Inspired Synthesis of Bimetallic Co–Zn Nanostructures Using Kembang Telang Extract: Spectroscopic Characterization
10. Phytochemical-Assisted Green Synthesis of Bimetallic Co–Zn Nanostructures from *Pedalium murex* Fruit Extract: Mechanistic Insights and Characterization

7. Novel aspect introduced or planning to introduce during the Scheme duration.

7.1. Interdisciplinary Faculty Learning Platform

An interdisciplinary collaborative learning and research platform has been established to promote cross-departmental academic engagement among faculty and students.

7.1.a. Introduction of CoLeDe (Collaborative Learning and Development) at Faculty Level

CoLeDe is a faculty colloquium initiated to foster a culture of shared learning within the institution. Under this initiative, faculty members who participate in Faculty Development Programmes (FDPs), Workshops, Training Programmes, Conferences, and Seminars at other institutions are required to disseminate the knowledge and skills acquired to their departmental and interdepartmental colleagues. Faculty members from the Departments of Biotechnology, Botany, Physics, and Chemistry actively share their expertise at the interdisciplinary level. They are also invited as resource persons for interdepartmental programmes, conducting colloquia to enrich peer learning and to strengthen the teaching of courses and the supervision of student research projects.

7.2. BioE3 Hub – Transition of idea-Product/Process-institution to society

The BioE3-Based Student Innovation and Idea Development activity was introduced under the DBT STAR College Programme to foster a culture of innovation, scientific thinking, problem-solving, and interdisciplinary collaboration among students. Under this activity, students explored innovative ideas related to healthcare, environmental sustainability, agriculture, biotechnology, and sustainable materials. They worked collaboratively to develop, refine, and communicate their ideas in Hackathon for Women in Science and Engineering "TNWISE 2026 conducted by Government of Tamil Nadu's Centre of Excellence for Advanced Manufacturing (TANCAM)". The students further participated in ChemSpark'25 – Chemistry Innovation Challenge, hosted by VIT-AP University, Andhra Pradesh.

1. Hyacinth-X: Isolation of Chitin Powder from Prawn Shell for the Treatment of Water Hyacinth
2. Eco-Safe Herbal Bio flocculant for Effective Removal of Turbidity from waste Water
3. Fabrication of Natural Colorimetric Indicator Films Using Seaweed Polymers and Beetroot Extract for Smart Food Packaging.
4. Biobased Smart Bandage with pH Responsive Colour Change
5. Silica from Rice husk and use for TLC
6. Plant based Protein etc.

List of Interdepartmental Programmes Conducted 2025–26 – CoLe-De

S.No.	Name of the Faculty	Details of Training/Programme Attended & Learning Disseminated
1.	Dr. N. Rabita, Assistant Professor, Department of Biotechnology	Participated in the ICAR-AINP Training Programme on Animal Models and their Care in Herbal Research, organised by the Department of Veterinary Pharmacology & Toxicology, Veterinary College and Research Institute, Orathanadu, from 18.11.2025 to 20.11.2025. Learning disseminated to fellow faculty members on 11.12.2025.
2.	Dr. G. Gayathri, Assistant Professor, Department of Botany	Participated in the UGC-Sponsored Interdisciplinary Refresher Course in Life Sciences, UGC MMTC, Bharathidasan University, Trichy, from 21.08.2025 to 03.09.2025. Learning outcomes shared with colleagues on 12.09.2025.
3.	Dr. A. Gayathri and Ms. J. Princess Gracia, Assistant Professors, Department of Chemistry	Participated in the UGC-Sponsored Short-Term Programme in Entrepreneurship and Skill Development” organized by UGC-Malaviya Mission Teacher Training Center from 05.01.2026 to 10.01.2026.
4.	Ms. A. Saratha, Assistant Professor, Department of Chemistry	Participated in the FDP on Good Manufacturing Practices and Quality Assurance from 09.06.2025 to 14.06.2025. Disseminated learning to all faculty members of the Departments of Physics, Chemistry, Botany, and Biotechnology on 19.06.2025.
5.	Dr. M. Renuga Devi, Assistant Professor, Department of Botany	Participated in the Faculty Development Programme on Food Safety and Quality Management on 19.06.2025. Learning shared with all faculty members on 22.06.2025.
6.	Dr. A. Sarumathi, Assistant Professor, Department of Biotechnology	Participated in the Faculty Development Programme on Medical Coding on 19.06.2025. Learning disseminated to colleagues on 22.06.2025.
7.	Dr. R. Kalaivani, Assistant Professor, Department of Biotechnology & Dr. R. R. Saravanan, Assistant Professor, Department of Physics	Participated in the Capacity Building Programme on Proposal Preparation for Research Grants, Patents, and High-Impact Publications, organised by UGC MMTC, Bharathidasan University, Trichy, on 25–26.11.2025. Learning was disseminated to all faculty members on 28.11.2025 and 29.11.2025.
8.	Ms. A. Vivetha, Assistant Professor, Department of Physics	Participated in the FDP on Idea Generation Methods, ICT Academy, from 09.09.2025 to 11.09.2025. Learning disseminated to colleagues on 29.11.2025.
9.	Dr. S. Sivaranjani & Dr. D. Sumithra, Assistant Professors, Department of Biotechnology	Visited the Bio-Innovation Centre and Zen Fold Sustainable Technologies, Bengaluru, from 30.01.2026 to 31.01.2026. Disseminated learning to all faculty members of the Departments of Botany, Biotechnology, and Chemistry on 03.02.2026.
10.	Dr. M. Karthika, Dr. N. Anuradha & Dr. R. Ananthi, Assistant Professors, Department of Physics; Dr. D. K. Usha & Ms.	Participated in the Training Programme on Bioinstrumentation and Know-how- Innovation & Start-up, organised by EDII, Anna University Regional Campus, Tiruchirappalli, on 29.01.2026.

	Shalini, Assistant Professors, Department of Biotechnology; Ms. J. Princess Gracia, Assistant Professor, Department of Chemistry	
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7.1. Faculty Training Programme: Based on feedback received during the first-year progress review held on 1st to 3rd July, 2025 and received the report on Aug 26th, 2025 as **faculty members require appropriate training to ensure their effective and accurate implementation.** Hence all faculty members from the four participating departments have been encouraged to attend relevant FDPs and training programmes. Accordingly, faculty members have actively participated in a variety of programmes suited to their disciplinary and interdisciplinary development needs.

7.3. Students-led learning outcomes

The ISI (Ignition, Skilling, and Implementation) student clubs are actively functioning at the first, second-, and third-year levels respectively. At the second-year level, students are provided a platform called **i-Hub**, wherein they explore scientific concepts, principles, and real-life applications relevant to their domain. Students present their findings and disseminate knowledge through newsletters, research compendia, and digital applications, as detailed below:

- **Biotechnology:** Drawing from the Indian Knowledge System (IKS), students have developed **Folk to Fact (F2F)**, an application that explains the science behind traditional and indigenous practices documented under IKS.
- **Botany:** Third-year B.Sc. Botany students prepared an **e-Herbarium** comprising 50 herbal specimens, documented using standard scientific techniques and subsequently digitised to create an accessible online repository. The e-Herbarium serves as a vital resource for the study, documentation, and conservation of medicinal and herbal plant species, underscoring the ecological significance of plants and their role in human well-being.
- **Physics:** All laboratory experiments have been digitalised and are accessible through the college website, ensuring wider reach and ease of reference for students.
- **Chemistry:** Students have prepared and published "**Chemistry in Daily Life**", a newsletter that connects chemical concepts with everyday applications.
- All four departments have compiled and published a **Research Compendium** serving as a record of student-led research outcomes.

7.4.1. Establishment of a Centralized UG Research Laboratory to house the equipment procured under the DBT Star College Programme, thereby enhancing accessibility and optimising utilisation by students across departments.

7.4. Future Plan:

7.4.2. Organisation of a State-Level Student Boot Camp on Interdisciplinary Idea-to-Product/Process Development, aimed at nurturing innovation, and applied problem-solving skills among undergraduate students aligning with BIO3E.

8. Lessons learnt / difficulties faced/suggestions if any, in implementation of the programme and utilization of DBT grant. (Max 3 points within 300 words).

8.1. Lessons Learnt: Meticulous planning with a well-defined academic calendar ensures smooth implementation of programme activities and facilitates the achievement of desired outcomes under the scheme. Team spirit among students and faculty members is strengthened through diverse collaborative activities, fostering a healthy competitive spirit and driving collective effort towards 100% achievement of targeted outcomes, including research projects, patents, publications, and books.

Furthermore, interdisciplinary project engagement has broadened students' knowledge base, technical skills, critical thinking, and problem-solving abilities, reinforcing the value of cross-disciplinary learning in undergraduate science education.

8.2. Difficulties Faced: Received the Release order of Rem 1st year grant mail on Oct 6, 2025 and received amount in PFMS on 03.10.2025 And a change in institutional leadership (Principal) resulted in delays in the approval and registration of the digital signature, which temporarily impeded the processing of financial transactions through PFMS.

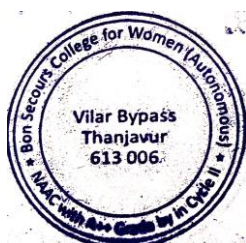
9. Budget Allocation and Standard Operation Procedure for Fund Utilization

9.1. Budget allocation: For 4 departments' viz. Biotechnology, Botany, Physics and Chemistry

- a) Grant for Creation of Capital Assets: Rs. 29,68,175.00 (Rupees Twenty-Nine Lakh Sixty-Eight Thousand One Hundred and Seventy-Five Only)
- b) Grant-in-Aid General: Rs. 11,50,000.00 (Rupees Eleven Lakh Fifty Thousand Only)
- c) Grant Released: Rs. 41,18,175.00 (Rupees Forty-One Lakh Eighteen Thousand One Hundred and Seventy-Five Only)

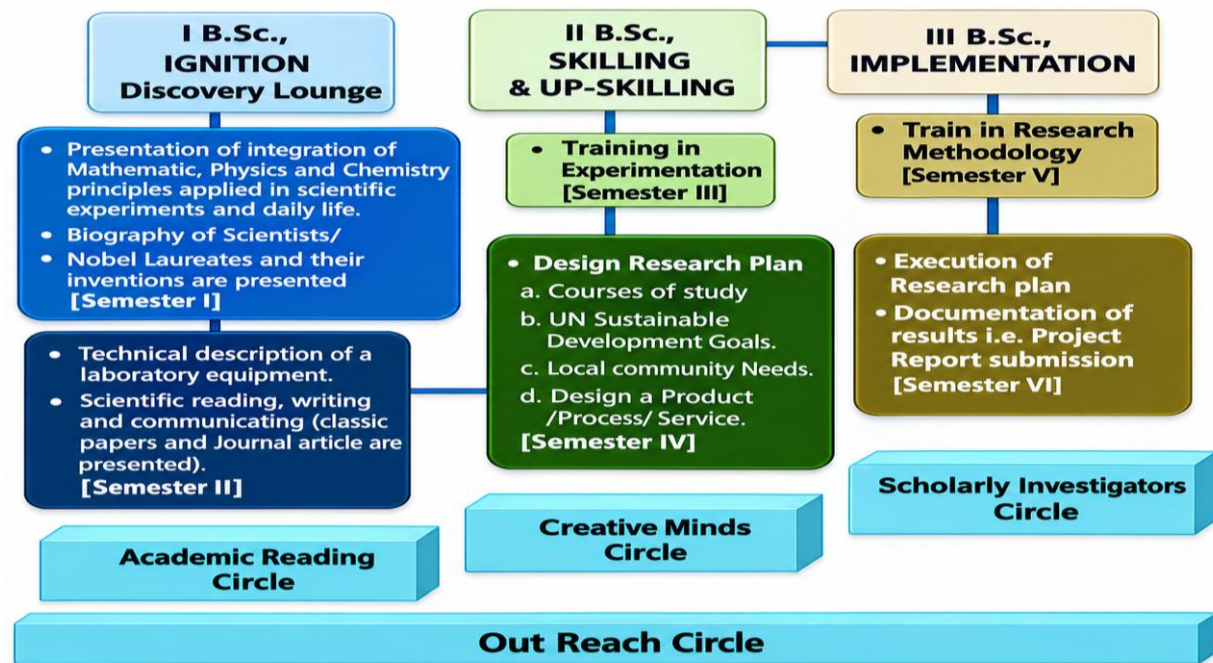
8. 2. Standard operation Procedure for fund utilization approved by the institution level advisory committee:

S.No.	Head of Expenditure	Amount / Department (₹)	Total 4 Departments (₹)
1.	Capital Asset (Equipment) As per DBT sanctioned amount for each department	As per DBT sanctioned in administrative order	29,68,175.00
2.	Grant-in-Aid - General		
2.1	Consumables (Chemicals & Glassware)	2,00,000.00	8,00,000.00
2.2.	Purchase of Books / Journals	10,000.00	40,000.00
2.3.	Common Programme by the Programme Coordinator Training on PFME / EAT modules; interdisciplinary seminars/ invited lecture programmes; organising Science Expo; Ideathon; intercollegiate competitions, and mentoring activities.	-	10,000.00
2.4.	Programmes for Students: Organising Programmes like Invited Lectures/ Seminars/ Conference /Training/ workshop covering Resource Person's Honorarium, TA & Refreshment	15,000.00	60,000.00
2.5.	Students Training / Workshop covering training kit / materials required; Expo-includes materials required for model/poster preparation; Participation and presentation in seminars / conferences covering registration amount, travel and accommodation.	10,000.00	40,000.00
2.6.	Faculty Participation - Seminar / Conference / Training / Workshop covering registration fee, Travel and accommodation	10,000.00	40,000.00
2.7.	Outreach Programmes: offering Training to school and other college students covering kit and refreshment	2500.00	10,000.00
3.	Contingency includes files, printing certificates, conference kit, medals/prizes, newspaper advertisement etc.	12,500.00	50,000.00
4.	Travel (Rs.25,000/department) Industrial visits	25,000.00	1,00,000.00
	Total - Grant-in-Aid - General		11,50,000.00
	Capital Asset		29,68,175.00
Grand Total			41,18,175.00
Grant Received (4 Departments)			₹ 41,18,175.00



[Signature]
Principal
Bon Secours College for Women
(Autonomous)
Accredited with A++ Grade by NAAC in Cycle II
Affiliated to Bharathidasan University
UGC Recognized 2(f) and 12(B) Institution
Vilar Bypass, Thanjavur - 613 006, Tamil Nadu

“Grateful to DBT for the Insights, Inspiration & Opportunities”



"Biomufacturing and Biofoundry Initiative will promote the green growth in the country, by transforming today's consumptive manufacturing paradigm to the one based on regenerative principles"

Dr. Rajesh S Gokhale
Secretary, Department of Biotechnology & Director General, BRIC

