Progress Report (FY 2021-2022)
DBT - Star College Scheme
for Strengthening of Science Education and Training at Undergraduate Level

Submitted to

DEPARTMENT OF BIOTECHNOLOGY
Ministry of Science & Technology
New Delhi – 110003

Submitted by

VIRUDHUNAGAR HINDU NADARS'

SENTHIKUMARA NADAR COLLEGE

(An Autonomous Institution Affiliated to Madurai Kamaraj University)
Virudhunagar - 626 001, Tamil Nadu

DEPARTMENT OF BIOTECHNOLOGY

Annual Progress Report supported under Star College Scheme

1.	**Name of the College :**	V.H.N.Senthikumara Nadar College (Autonomous), Virudhunagar
2.	**Name of Coordinator, Designation, Address, Phone No's.**	Dr. N. PRITHIVIKUMARAN, Head & Associate Professor, Department of Physics, V.H.N.Senthikumara Nadar College (Autonomous), Virudhunagar Mobile: 94866 36535 Email: prithivikumaran@vhnsnc.edu.in
3.	**Assessment Duration**	01/04/2021 to 31/03/2022 **Duration in Years: 1 Year**

4.   Details of Departments Supported

Sl. No	Name of Department	Courses (B.Sc./M.Sc./PG Diploma, certificate *etc*) offered	Regular Faculty members Total = 73	
			With Ph.D.	**Without Ph.D.**
1.	Physics	B.Sc., M.Sc., M.Phil and Ph.D	12	2
2.	Mathematics	B.Sc., M.Sc., M.Phil and Ph.D	9	3
3.	Chemistry	B.Sc., M.Sc., M.Phil and Ph.D	13	1
4.	Botany	B.Sc., M.Sc., M.Phil and Ph.D	8	1
5.	Zoology	B.Sc., M.Sc., M.Phil and Ph.D	10	2
6.	Microbiology	B.Sc. M.Sc., M.Phil and Ph.D	5	3
7.	Computer Science	B.Sc.	4	---

5.   Number & Date of Advisory committee meeting:

The Advisory committee meeting was held on 26-05-2022 (Online mode).

6.   Qualitative improvements due to DBT support. Please highlight 5 salient points

(within 500 words).

The DBT-Star college fund support has lead to the following qualitative improvements:

- Procurement of new equipment has aided in upgrading existing teaching resources and it also improved student-instrument ratio enabling students to learn better.

- New experiments could be conducted and many existing experiments were creatively extended.

- Multiple units of equipment purchased helps the students to perform experiments independently and explore beyond the syllabus.

- As most of our students are not able to afford for the costs for travel and stay, this support has made possible to organize field visits to industries and scientific research institutes for them which reinforce their theoretical knowledge gained in classroom.

- Projects done by students give them hands on training which enhances the quality of experiential learning.

- Guest lectures by experts organized for the students not only provide expertise in a topic but also adds credibility to the curriculum content.

- Experiential learning through industrial and field visits with the help of financial support from DBT.

- The additional facilities and funds available through Star College Scheme, in terms of equipment and consumables, now permits students to explore more challenging projects.

- The list of project works carried out by Undergraduate students of participating departments is listed in Annexure - A .

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

- Handling efficiency of instruments was augmented. It improved the basic research knowledge and scientific writing among students.

- The skill of entrepreneurship was developed which will improve the well-being of the students in the future.

- B.Sc. students of the Department of Botany carried out projects on the pharmacognostical and Phytochemical studies of selected medicinal plants

- Students were able to identify crude drugs with the help of Microtome.

- Hands on training was given to students to use the electric furnace to find out the ash value of crude drugs.

- The Mathematics Models lab maintained by Department of mathematics was upgraded with the addition of new models.

- For department of Computer science purchase of Arduino kit with microcontrollers, Transmitter and Receiver sensors lead to do projects on Light Level Monitoring and Temperature Monitoring by III B.Sc Computer Science Students.

- Also purchase of Hi-end computers Lead to do Projects by students in the Research Area Artificial Intelligence using the software Python and Practicals by the software Angular JS and Node JS.

8. **Lessons learnt / difficulties faced/suggestions if any, in implementation of the programme and utilization of DBT grant. (Max 3 points within 300 words).**
   Difficulties faced:
   - Due to pandemic period, the students were not available in the campus for the full period of the academic year 2021 – 2022. So it was difficult to organize more workshops / conferences / Training programmes for the students

   - The arrangement of field trips was very difficult as the permission for entry in to major industries and premier research institutes was denied citing social distancing norms.

   - As funds for grants for Second year (2021 – 2022) of Star college is yet to be released some of the proposed activities could not be carried out.

   Suggestions:
   - As our college celebrating its Platinum Jubilee (75th Year) along with Independence of India it is determined to carry out lot of curricular & co-curricular activities as part of the celebrations. In this regard the fund allotted under DBT Star College Scheme will be well utilized by the Seven science departments covered under the scheme by conducting more activities for the benefit of students. So kindly release the grant for Second year (2021 – 2022) and Third year (2022 – 2023) at the earliest.

9. Key performance indicators

S. No	Indicator	Pre-support			During /After Support			Remarks
1	No. of students admitted	**Total = 266**			**Total =241**			---
		M= 125		**F= 141**	**M=129**		**F= 112**	
		SC ST OBC G		SC ST OBC G	SC ST OBC G		SC ST OBC G	
		21 1 102 1		22 0 119 0	27 0 102 0		16 0 93 3	
2	No. of students passing out (%) Students Admitted/passing out (pass %)	Physics- 97.22% Chemistry- 97.14 % Mathematics – 100% Zoology – 92.86% Botany – 96.77% Computer Science – 100% Microbiology – 97.14%			Physics- 92.31% Chemistry- 97.56 % Mathematics – 97.96% Zoology – 91.76% Botany – 97.30% Computer Science – 95.65% Microbiology – 100%			---
3	Drop-out rates (Percentage)	Physics - 6 % Chemistry - 2 % Mathematics - 4 % Zoology - 1 % Botany - Nil Computer Science -3 % Microbiology - Nil			Physics - 5 % Chemistry - 1 % Mathematics - 3 % Zoology - 1 % Botany - 2 % Computer Science - 1 % Microbiology - Nil			---
4	No. of students opting for M.Sc	Physics - 7 Chemistry - 7 Mathematics - 12 Zoology - 0 Botany - 4 Computer Science - 3 Microbiology - 17			Physics - 13 Chemistry - 14 Mathematics - 7 Zoology - 5 Botany - 12 Microbiology - 16			---
5	Average Marks	Physics – 65 % Chemistry – 62 % Mathematics – 71 %			Physics – 76 % Chemistry – 76 % Mathematics – 79 %			---

S. No	Indicator	Pre-support	During /After Support	Remarks
		Zoology – 63 % Botany – 63 % Computer Science – 72 % Microbiology – 65 %	Zoology – 64 % Botany – 70 % Computer Science – 70 % Microbiology – 71 %	
6	No. of hands-on experiments being conducted	Zoology - 166 Botany - 81 Chemistry - 69 Computer Science - 214 Physics - 62 Micro biology - 68	Zoology - 113 Botany – 100 Chemistry - 92 Computer Science – 171 Physics - 60 Micro biology - 61	---
7	No. of new experiments introduced	Zoology - 4 Botany - 10 Chemistry - 12 Computer Science - 45 Physics – 22 Micro biology - 8	Zoology - 8 Botany - 17 Chemistry - Computer Science - Physics - 44 Micro biology - 8	---
8	Publications (Scopus Indexed) /patents, if any.	**Publications: 40** Botany – 6 Chemistry – 23 Physics – 5 Zoology – 4 Computer Science – 2 **Patent: 1** Chemistry - 1	**Publications: 58** Botany – 4 Chemistry – 22 Physics – 5 Zoology – 8 Computer Science – 6 Mathematics – 12 Microbiology - 1 **Patent: 1** Botany – 1	---
9	Training received by faculty	Zoology – 2 Mathematics - 65 Physics – 52	Mathematics - 19 Physics – 8 Micro Biology - 37	---

S. No	Indicator	Pre-support	During /After Support	Remarks
		Micro Biology - 42	Chemistry – 17 Botany – 1 Computer Science – 3	
10	Exhibitions/seminars /training courses conducted	Zoology – 3 Botany – 1 Chemistry – 6 Computer Science – 4 Physics – 2 Micro biology – 5 Mathematics - 1	Zoology – 2 Botany – 2 Chemistry – 1 Physics – 1 Micro biology – 4 Mathematics - 2	---
11	Books/journals subscribed from grants	**Books purchased :** Chemistry – 27 Zoology - 3 **Journals subscribed:** Zoology – 3 Micro biology – 1	**Journals subscribed:** Zoology – 3 Micro biology – 1	---
12	Outreach activities (Popular lectures)	Botany – 1 Mathematics – 1 Zoology – 1	Zoology – 5 Botany – 1 Chemistry – 3 Physics – 3 Micro biology – 2	---
13	Colleges mentored to apply for DBT Star College grants	---	Mentored **St. John College, Bangalore** and **Sri Vidhya Manthir College, Krishnagiri** to apply for DBT Star college grants	---
14	Invited lectures	Physics – 7 Mathematics – 3 Botany – 2 Zoology – 1	Physics – 5 Mathematics – 3 Botany – 1 Zoology – 1	---

S. No	Indicator	Pre-support	During /After Support	Remarks
		Chemistry – 2 Micro Biology – 1	Chemistry – 2 Micro Biology – 3 Computer Science - 8	

10. Self-evaluation

Department	*Objective (as stated in proposal)	% achieved	Reasons for underachievement / If achieved, state in quantitative metrics
Mathematics	• Purchase of proposed equipments	100%	
	• To Prepare Mathematical Models and Charts to expose the techniques involved	100%	
	• To offer Mini-Projects to the UG students	100%	
Zoology	• To conduct practical experiments involving handling of microscopes	100%	
	• To offer Project works to the UG students	100%	
	• Purchase of proposed equipments	100%	
	• To enhance the diagnostic skills of students, the curriculum will be designed in such a way that the common infectious diseases can be discerned from patient's serum samples	100%	---
	• Field trips for the students	100%	
	• Project works for the final year students	100%	
Computer Science	• Introducing new Courses	100%	
	• Project works for the final year students	100%	

Department	*Objective (as stated in proposal)	% achieved	Reasons for underachievement / If achieved, state in quantitative metrics
Chemistry	• Bench skills of students, project work, summer training & industrial training	100%	
	• Involving visiting faculties	100%	
	• Purchase of proposed equipments	100%	
Physics	• Invited lectures	100%	
	• Field trips	100%	
	• Projects for UG Physics students	100%	---
	• Purchase of proposed equipments	100%	
Micro biology	• Industrial visit	100%	
	• Seminars regarding Modern techniques in microbiology	100%	
	• Purchase of proposed equipments	100%	
	• Visiting Lectures by Alumni of the department	100%	

*For quantitative analysis you may fix five objectives (max) each having 2 marks and accordingly can calculate the matrix.

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6. Number of hands-on experiments being conducted

Department of Physics	60
Department of Chemistry	92
Department of Botany	100
Department of Zoology	113
Department of Micro biology	61
Department of Computer Science	171

7. Number of New experiments introduced

Department of Zoology
Core Lab: Invertebrata and Chordata (U4ZYC2P)
INVERTEBRATA MOUNTINGS - Paramecium: Wet mounting, Prawn: Appendages, DISSECTIONS - Fish (Tilapia) – Digestive system, Chick – Digestive system (Demonstration only)
CHORDATA MOUNTINGS - Fish (Tilapia): Gill Lamella and Air Bladder Birds: Quill feather-Barbs, Barbules and booklets SPOTTERS - Flightless birds-Ostrich, Kiwi

Department of Botany
Skill Based I Lab: Horticulture (U22BYSP11)
1. Study of garden tools and implements. 2. Preparation of seed bed /nursery bed. 3. Study of pots, potting, depotting and repotting. 4. Study on propagation of horticultural plants by cutting. 5. Study on propagation by horticultural plants by layering. 6. Study on propagation of horticultural plants by grafting. 7. Study on propagation of horticultural plants by budding. 8. Study on the layout of orchard 9. Preparation of hanging pots for vertical garden. 10. Preparation of farm-yard manure. 11. Study of Indoor plants. 12. Raising the kitchen garden. 13. Study of Bonsai plants.

Department of Chemistry
Core I – LAB: Semi-micro inorganic qualitative analysis (U22CHCP21)
Analysis of a mixture containing two anions (of which one is an interfering anion) and two cations.
Anions: Carbonate, sulphate, nitrate, fluoride, chloride, bromide, iodide, oxalate, borate, phosphate and chromate.
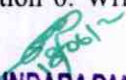**Cations:** Lead, bismuth, copper, cadmium, iron (II and III), aluminium, chromium, zinc, manganese, cobalt, nickel, barium, strontium, magnesium and ammonium.

Department of Computer Science
Core Lab: Programming in C (U22CSCP11/ U3CSC1P)
I. Simple Programs 1. Write C programs to find average of three marks, Generate EB Bill, Generate Mark Statement. 2. Write C programs to find greatest of three numbers, Display Multiplication Table for any number. 3. Write C programs to find a number is odd or even, a number is positive or negative. 4. Write C programs to print day of the week, to do four arithmetic operations, and roots of a quadratic equation using switch () statement. 5. Write C programs to generate Fibonacci numbers, find Prime numbers in the range of numbers. 6. Write C programs to find value for SIN, COS series, to check a number is adam or not, check a number is Armstrong or not. 7. Write C programs to find sum of digits of a number, reverse a number, check a number is palindrome or not. **II. Programs Using Arrays** 1. Write C program to find sum of data in an array and its average 2. Write C program to find biggest and smallest number in an array 3. Write C program to sort the numbers in an array 4. Write a C program to do linear search in an array 5. Write C programs to find number of positive and negative numbers and to find number of odd and even numbers in an array 6. Write C program to add two matrices, subtract two matrices, Transpose of a Matrix. 7. Write C program to multiply two matrices if possible. **III. Programs Using Strings and Functions** 1. Write a C program to count number of vowels, consonants and words 2. Write a C program to reverse a string without using built-in function 3. Write a C program to compare two strings, concatenate two strings, copy a string. 4. Write a C program to find smallest of three numbers – Use user defined function 5. Write a C program to find NcR – Use function 6. Write a C

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program to find nth Fibonacci number using user defined function 7. Write a C program to search a number in an array – use user defined function 8. Write C programs to find factorial, GCD, nth Fibonacci using recursive function 9. Write C program to find string is palindrome or not using User defined function

Core Lab: Advanced Programming in C (U22CSCP21/ U3CSC2P)

Cycle I: Structure Concepts 1. Write a program to process students marks in an examination – use structure array 2. Write a program to process employee salary – Use structure array 3. Write a program to process inventory of a book shop – Use Structure array 4. Write a program to add two complex numbers - Use structure array 5. Write a program to increment the Time by one second – Use structure

Cycle II: Pointer Concepts 1. Write a program to sum all data in array – use pointer 2. Write a program to find length of a string and reverse the string using pointer 3. Write a program using function to swap two numbers using pointers 4. Write a program using function to compare two integer arrays to find whether they are identical 5. Write a program for a set of students to process exam marks using structure pointer. **Cycle III: File Concepts** 1. Write a C program to identify odd and even numbers and kept in a separate files.2. Write a C program to prepare electricity bill – use FILE 3. Write a C program to prepare inventory report of a book shop - Use FILE 4. Write a program to prepare student mark sheet – Use FILE 5. Write a program to prepare EB bill of consumers – Use FILE **Cycle IV: Dynamic Memory Allocation and Bit Level Programming Concepts** 1. Write a C program to store string in a memory buffer and to modify the original buffer size to store large size string – Use Dynamic memory allocation 2. Write a C program to create linked list for storing vowels and to find number of vowels in it 3. Write a C program for insert and delete a number in a linked list which is having numbers in sorted order 4. Write a C program to test a number is odd or even using bitwise AND operator 5. Write a C program to perform addition and multiplication using bitwise operator

Department of Physics

1. Determination of Young's Modulus by Non-Uniform bending (Optic lever) method. 2. Determination of Rigidity Modulus and Moment of inertia using Torsion pendulum with loads. 3. Determination of Frequency of AC mains using Sonometer. 4. Verification of laws of vibration using Sonometer. 5. Determination of Frequency of Tuning fork using Melde's String. 6. Determination of 'g' using Compound pendulum. 7. Determination of Thermal conductivity of bad conductor using Lee's disc method. 8. Calibration of low range voltmeter using Potentiometer. 9. Calibration of Ammeter using Potentiometer. 10. Determination of Refractive index of glass Prism using Spectrometer. 11. Determination of f, R and μ using convex lens. 12. Determination of Resistance & Specific Resistance using Carey Foster Bridge 13. Determination of number of lines per meter of the grating (N) and wavelength of prominent lines of the mercury spectrum (λ) using Spectrometer. 14. Determination of refractive index of the prism by i-d curve method using Spectrometer. 15. Determination of dispersive power of a prism using Spectrometer 16. Determination of Radius of curvature of convex lens using Newton's rings. 17. Comparison of Capacitances of Capacitors using Spot galvanometer. 18. Comparison of Charge sensitiveness using Spot galvanometer. 19. Comparison of EMF's using Spot galvanometer. 20. Comparison of EMF's using Potentiometer. 21. Determination of Refractive Index of the given Small angled prism using Spectrometer. 22. Determination of Refractive Index of the given prism by I – I' curve method using Spectrometer. 23. Determination of number of lines per meter of the grating (N) and wavelength (λ) of prominent lines of the mercury spectrum by minimum deviation method using Spectrometer. 24. Determination of Resolving Power of a grating using Spectrometer. 25. Determination of the wavelength (λ) of prominent lines of the mercury spectrum using Hartmann's interpolation using Spectrometer. 26. Study the frequency current relationship of a Series LCR circuit. 27. Study the frequency current relationship of a Parallel LCR circuit. 28. Determination of Impedance & Power factor using LR circuit. 29. Determination of Impedance & Power factor using CR circuit. 30. Determination of Mutual Inductance of the given coils using Spot Galvanometer. 31. Comparison of Mutual Inductance between two coils using Spot Galvanometer. 32. Determination of High Resistance by leakage method using Spot Galvanometer. 33. Characteristics of Zener diode. 34. Characteristics of Transistor (CE mode). 35. Construction and study of Single Stage Amplifier. 36. Construction and study of Hartley Oscillator. 37. Verification of De Morgan's Laws. 38. NOR gate as a universal building block. 39. NAND gate as a universal building block. 40. Construction and study of Integrator and Differentiator circuits using IC 741. 41. Construction and study of Adder and Subtractor circuits using IC 741. 42.

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Construction and study of R-S & J-K flip flop using gates. 43. Study of I-V characteristics of Solar Photovoltaic Module with varying radiations. 44. Study of I-V characteristics of Solar Photovoltaic Panels in (i) Series Connection and (ii) Parallel Connection.

Department of Micro biology
Core 2 - Lab: General Microbiology (U22MBCP11)
1. Sterilization techniques – Dry Heat (Hot air oven), Moist Heat (Autoclave) 2. Microbiological Culture Media Preparation – Nutrient agar, Nutrient Broth and peptone broth 3. Enumeration of bacteria from soil sample. 4. Microscopic observation of bacteria (Gram positve Bacilli and cocci, Gram negative Bacilli and cocci). Cyanobacteria (Nostoc, Spirulina), algae (Chlamydomonas, Diatoms), and fungi (Saccharomyces, Rhizopus, Aspergillus, Mucor). 5. Diagrammatic observation of TMV, HIV and T4 phage.

Core 2 – Lab: Microbial Physiology (U22MBCP21)
1.Effect of pH and temperature on bacterial growth

8. Publications (Scopus indexed) /patents, if any.

- **Patent Published:**
  Patent Application No. 202241007582 (04-03-2022) - *Method for manufacturing biodegradable polymeric Nanoparticle*, Dr. Sandip Sen, Dr. Laith Hamza Samein, Dr. Iizhar Ahmed Syed, Dr. R. Hariharan, Mr. B. Deepan Kumar, Ms.K.Indira, Dr.V. Jeyasimga, Mrs. Sinthia Ganesan, **Dr. P. Mehalingam**, Mr. Santosh Ramchandra Kshirsagar

- **List of Publications:**

Department of Botany

Sl. No.	Year	Authors Name	Title of Paper	Name of journal	Vol
1	2021	Sinthia Ganesan, Palanichamy Mehalingam, Govindan Sadasivam Selvam	Biosynthesis and characterization of silver nanoparticles using ginger spent and their antibacterial activity		12
2	2021	Nikkitha, P Suresh, S Kameshwaran, M Rekha, G Mahendra Perumal and V Shanmugaiah.	Bioactive metabolites from ethyl acetate extract of leaves of Melia dubia L., against human and plant microbial pathogens	Journal of Research in Microbiology	2(1)
3	2022	Rameshkumar Ganesan, Palpandian Prema and Palanichamy Mehalingam	Pharmacological evaluation of analgesic, anti-inflammatory and antidiarrheal activities of methanolic extract of Neolitsea sericea (Blume) Koidz	International Journal of Botany Studies	7(2)
4	2022	Kumari Sunita, Shobhit, Nirmal Kumar N and Karuppasamy P.M.	Biodiversity in Ramgarh Area of Gorakhpur Eastern Uttarpradesh, U.P.	World journal of pharmacy and pharmaceutical and medical research	8(3)

Department of Chemistry

Sl. No.	Year	Authors Name	Title of Paper	Name of journal	Vol
1.	2021	M. Samuel and N. Raman	Comprehensive biological evaluation (DNA-binding, cleavage, and antimicrobial activity) of β-diketimine Schiff base ligands and their Cu(II) and Zn(II) complexes	J. Coord. Chem	74

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2.	2021	R. Rajasekar, M.Samuel, T. N. J. I. Edison and N. Raman	Sustainable synthesis of silver nanoparticles using Alstonia scholaris for enhanced catalytic degradation of methylene blue	J. Mol. Struct	1246
3.	2021	N.Raman and T. Chandrasekar	Metallonucleases encompassing curcumin, 2-aminobenzothiazole and o-phenylene- diamine: a search for new metallonucleases	Inorg. Nanomet Chem	
4.	2021	K. Palpandi and N. Raman	Hydrothermally synthesized a pyrochlore-type bismuth stannate (Bi2Sn2O7):Efficient electrochemical detection of nitroxoline	J. Electroanal. Chem.,	899
5.	2021	Jayaram Mari Selvi, Mariappan Murugalakshmi1, and Ponnusamy Sami	Synthesis and Characterization of Nano-TiO2 using Aqueous Extract of Erythrina variegata Leaves	Asian Journal of Chemistry	33
6.	2021	Prasanna Antony Mut hu, Kumaresan Murugan, Swaminathan Meena kshisundaram & Sami Ponnusamy	Keggin-type heteropoly-11-molybdo-1-vanadoph osphoric acid supported montmorillonite K-10 clay-catalysed one-pot multi-component synthesis of chromeno[2,3-b] indoles	Research on Chemical Intermediates	47
7.	2021	Parvathi, L.T., Arunpandian, M., Sivaganesh, D., Nagarajan, E.R., Karuthapandian, S	Visible light–driven photodegradation of Noxious methyl orange dye by Pd @ WO3 nanocomposite catalysts in aqueous solution	International Journal of Environmental Analytical Chemistry	
8.	2021	J. Sherin, P. Senthil Kumar, S. Karuthapandian	Leaf Extract Arbitrated Biogenic Synthesis of Silver Nanospheres by a Medicinal Plant from the Western Ghats with Enhanced Antimicrobial Property	Photochem	1(2)
9.	2021	Prakash, K., Karuthapandian, S	Construction of Novel Metal-Free Graphene Oxide/Graphitic Carbon Nitride Nanohybrids: A 2D–2D Amalgamation for the Effective Dedyeing of Waste Water	Journal of Inorganic and Organometallic Polymers and Materials	31(2)
10.	2021	Parvathi, L.T., Arunpandian, M., Arunachalam, S., Karuthapandian, S.	Visible-light-driven Pd doped β-Bi2O3 nanocomposite: an affordable and an efficient catalyst for mitigation of noxious pollutant	Applied Physics A: Materials Science and Processing	127(7)
11.	2021	Prakash, K., Selvam, V., Babu, S.G., Meena, S., Karuthapandian, S	Rational design of novel 3D flower-like praseodymium molybdate anchored graphitic carbon Nitride: An efficient and sustainable photocatalyst for mitigation of carcinogenic pollutants	Applied Surface Science	569
12.	2022	Parvathi, L.T., Arunpandian, M., Sivaganesh, D., Nagarajan, E.R.,	Flower decorated rod-like Pd @ MnO2 nanocomposite: Focus on photocatalysis, Rietveld refinement analysis and electron density	Condensed Matter	625

Sl. No.	Year	Authors Name	Title of Paper	Name of journal	Vol
		Karuthapandian, S.Physica B	distribution analysis		
13.	2022	M. Murugalakshmi, Karunamoorthy Saravanakumar, Chang Min Park,Velluchamy Muthuraj.,	Efficient photocatalytic degradation of sulfasalazine and reduction of hexavalent chromium over robust In2S3/Nd2O3 heterojunction under visible light	J. Water Process Engineering	45
14.	2022	K. Saravanakumar, M. Abinaya, S. Mehnath,V. Shanmuga Priya, M. Jeyaraj, S. Al-Rashed, V. Muthuraj	Nano Ag@bioactive microspheres from marine sponge Clathria frondifera: Fabrication, fortification, characterization, anticancer and antibacterial potential evaluation	Environmental Research	206
15.	2022	M. Murugalakshmi, G. Mamba, Sajid Ali Ansari, V. Muthuraj	Ultrasonic assisted anchoring of Yb2O3 nanorods on In2S3 nanoflowers for norfloxacin degradation and Cr(VI) reduction in water: Kinetics and degradation pathway	Colloids and Surfaces A: Physicochemical and Engineering Aspects	634
16.	2022	K.Saravanakumara, V. Maheskumar, Y.Yea, Y. Yoon, V. Muthuraj, Chang Min Park	2D/2D nitrogen-rich graphitic carbon nitride coupled Bi2WO6 S-scheme heterojunction for boosting photodegradation of tetracycline: Influencing factors, intermediates, and insights into the mechanism	Composites Part B	234
17.	2022	G. Mamba, P.J. Mafa, V. Muthuraj, A. Mashayekh-Salehi, S. Royer, T.I.T. Nkambule, S. Rtimi	Heterogeneous advanced oxidation processes over stoichiometric ABO3 perovskite nanostructures	Materials Today Nano	18
18.	2022	M. Samuel, R.Rajasekar, J. Porkodi , M.Selvaganapathy, V. Muniyandi and N. Raman	DNA interaction perspectives of sulphur containing Knoevenagel condensed copper(II) complexes: Molecular docking, DFT, anti-biogram and insilico assessment	Inorg.Chim Acta	533

Department of Physics

Sl. No.	Year	Authors Name	Title of Paper	Name of journal	Vol
1.	2021	P.Pandaram, K.B.Jashi, V.Sathisha, A.Saranya, S.Jothi, B.Lawrence, N.Prithivikumaran, N.Jeyakumaran	Disparate structural changes in the titanium dioxide thin film coated on the p-type Si and porous silicon textures after gamma irradiation	Materials Science and Engineering	267
2.	2021	M. Siva Sankari, S. Vivekanandhan, M. Misra, A. K. Mohanty	Oil Cakes as Sustainable Agro-Industrial Feedstock for Biocarbon Materials	ChemBioEng Reviews	9(1)

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Tamilnadu

Sl. No.	Year	Authors Name	Title of Paper	Name of journal	Vol
3.	2021	Sivashunmugam Sankaranarayanan, Duraikkannu Shanthana Lakshmi, Singaravelu Vivekanandhan, Chawalit Ngamcharussrivichai	Biocarbons as emerging and sustainable hydrophobic/oleophilic sorbent materials for oil/water separation	Sustainable Materials and Technologies	28
4.	2021	Muruganandham Hariram, Arunachalam Rahul, Mahesh Kumar Siva Sankari, Singaravelu Vivekanandhan, Sankaralingam Muthuramkumar, Manjusri Misra, Amar Kumar Mohanty	Novel puffball (Lycoperdon Sp.) spores derived hierarchical nanostructured Biocarbon: A preliminary investigation on thermochemical conversion and characterization for supercapacitor applications	Materials Letters	291
5.	2022	Sivashunmugam Sankaranarayanan, Muruganandham Hariram, Singaravelu Vivekanandhan, Chawalit Ngamcharussrivichai	Biosynthesized transition metal oxide nanostructures for photocatalytic degradation of organic dyes	Green Functionalized Nanomaterials for Environmental Applications	

Department of Mathematics

Sl. No.	Year	Authors Name	Title of Paper	Name of journal	Vol
1.	2021	A.Rizwana	Non-neighbour Harmonic Index of Glued network	Journal of computational science	11 (9)
2.	2021	A.Rizwana	Non-neighbour Topological Indices of Generalized Prism Network	GIS Science Journal	8 (10)
3.	2021	A. Selvam and M. Bhuvaneshwari	R- number of some families of graphs	International journal of Aquatic Science	12 (2)
4.	2021	A. Selvam and M. Bhuvaneshwari	An application of Max – Radial number of Graphs in game theory	International journal of aquatic Science	12 (2)
5.	2021	A. Selvam and M. Bhuvaneshwari	A note on degree partition number of a graph	Journal of emerging technologies and innovative research	8 (7)
6.	2021	M.Annalakshmi	L-Fuzzy connected on L-Fuzzy Supratopological TM-Systems	Recent advances in Arts, Science and Social sciences	
7.	2021	M.Annalakshmi	An Intuitionistic L-Fuzzy Topological TM-systems	Journal of Information and Computational Science	12 (1)
8.	2021	M.Annalakshmi	An Intuitionistic Fuzzy Topological	International	9 (1)

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Sl. No.	Year	Authors Name	Title of Paper	Name of journal	Vol
			TM-Subsystems	Journal of Research and Analytical Reviews	
9.	2021	M.Annalakshmi	An Intuitionistic L-Fuzzy Topological TM-Subsystems	International Journal of All Research Education and Scientific Methods	10 (2)
10.	2022	T.Nithya	A Mathematical Analysis of a chemical reaction on a MHD micropolar fluid flow	GIS Science Journal	9 (3)
11.	2022	T.Nithya	A Mathematical study of a MHD asymmetric flow between two parallel porous disks using Homotopy analysis method	Journal of Information and Computational Science	12 (2)
12.	2022	Raja Kumar Ruba Kumar, Chinna Raman Ganesan	Fractional Hartley Transform on G-Boehmian Space	Bol.Soc.Paran.Mat	40 (3)

Department of Microbiology

Sl. No.	Year	Authors Name	Title of Paper	Name of journal	Vol
1.	2022	R.Boominathan, Sandhanasamy Devanesan, Mohamad S,Alsalhi, **A.Balasubramanian**, Isam Zuhair Alkhalid, Parameswari Paul, A.J.A.Ranjit Singh	Quorum quenching action of marine red alga Halemenia durvillei on biofilm forming Gram negative bacterial isolates from contact lens	Algal Research	64

Department of Zoology

Sl. No.	Year	Authors Name	Title of Paper	Name of journal	Vol
1.	2021	Arumugavel S, Selvarani J, Babila Jasmine J, Annalakshmi T, Xavier innocent B	Hemocytes during different stages of life cycle in Bombyx mori(L.)	International Journal of Pure App. Bio.Sci.	9 (4)
2.	2021	Priya Subramani, Jai Anand Kannayen, Jothi Ramalingam Raja Bathar, Prema Palpandian, Rameshkumar Kamatchi, Balaji Paulraj, Hamad A. Al-lohedan, and Veeramanikandan Veeramani	Issolation, Expansion and Characterization of Placenta originated decidua Basalis- derived Mesenchymal stromal cells	ACS OMEGA	6

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Sl. No.	Year	Authors Name	Title of Paper	Name of journal	Vol
3.	2022	P.Prema, T.Boopalan, A.Arun,K.Ramesh Kumar, R.Suresh Babu, B.Veeramanikandan, VAN-Huy Nguyen, P.Balaji	Green Tea extract mediatoed biogenic synthesis of gold nano particles with potent anti-prolifrative effect- against PC-3 human prostate cancer cells	Materials Letters	306
4.	2022	P.Prema,B.Veeraman ikandan K.Ramesh Kumar, Mansoure K. Gadasheh	Statistical optimization of silver nano particle synthesis by Green tea extract and its efficacy on Colorimetrics deduction of mercury from industrial waste water	Environmental Research	204
5.	2022	Prema Palpandiyan, Ibrahim Sulaikal Beevi, Beena Somanath, Ramesh Kumar, Balaji Paulraj, Caterina Faggio	Impact of Camellia Sinensis Iron Oxide Nano Particle on growth, Hemito BioChemical and anti-Oxidant capacity of blue gourami(Tricho Gaster TriChopterus) fingerlings	Biological Trace Element Research	-
6.	2022	K.Chinnadurai, P.Prema, B.Veeramanikandan, K.RameshKumar, Van-Huy Nguyen, Najat Marraiki, Nouf S.S. Zaghyoul, P.Balaji	Toxicity Evaluation and Oxidative stress response of fumaronitrile, a persistent orgonic polutent(POP) of industrial wate water on tilapia fish(OREOCHROMIS MOSSAN BICES)	Environmental Research	204
7.	2022	P.Prema, Suba Ranjani S, K.Ramesh Kumar,B.Veeramanik andan, N.Mathiazhahan, Van-Huy Nguyen, P.Balaji	Microbial Synthesis of silver nano particles using lactobacillus plantarum for anti-oxidant, anti-bacterial activities	Inorganic Chemistry Communications	136
8.	2022	P.Prema, Van-Huy Nguyen, Karthikeyan Venkatachalam, J.M Murugan, Hayssan M.Ali, Mohamed ZmSalem, Balasubramanian Ravindran, P.Balaji	Hexavalent Chromium removal from aqueous solution using biogenic nano particles: Kinetics and Equalibrium Studies	Environmental Research	205

Department of Computer Science

Sl. No.	Year	Authors Name	Title of Paper	Name of journal	Vol
1.	2021	A.Suriya Priyanka, T.Kathirvalavakumar	Type 2 Diabetes Prediction from weighted data	Springer LNAI Series	in Print
2.	2021	M.Ragunathan, T.Kathirvalavakumar	Enhanced Group Key Distribution Protocol for Intra-group and Inter-group Communication Using Access Control Polynomial	Springer LNAI Series	in Print

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Sl. No.	Year	Authors Name	Title of Paper	Name of journal	Vol
3.	2021	S.Alagukumar, T.Kathirvalavakumar	Compact Associative Classification for Up and Down Regulated Genes using Supervised Discretization and Clustering	Springer LNAI Series	in Print
4.	2021	Vasanthi Ramasamy, Christopher Duriraj Daniel Dharmaraj	Prediction of Changes in Land Cover Land Use Region Using Parallel Processing Method	Design Engineering	51
5.	2022	S.Alagukumar, T.Kathirvalavakumar	Classifying microarray gene expression cancer data using statistical feature selection and machine learning	Lecture Notes on Data Engineering and Communication Technologies, Springer Nature	in Print
6.	2022	S.Karthikeyan, T.Kathirvalavakumar	Modified Leader algorithm for undersampling the imbalanced data set for classification	Intelligent sustainable systems, LNNS	1 213
7.	2022	S.Karthikeyan, T.Kathirvalavakumar	Statistical Inference through variable adaptive threshold algorithm in oversampling the imbalanced data distribution problem	Advances in Intelligent systems and computing	1404

9. Training received by faculty

Sl.No	Faculty Name & Department	Training Program attended
1.	Dr.A.Annalakshmi Assistant Professor of Mathematics	2
2.	Dr.A.Rizwana, Assistant Professor of Mathematics	4
3.	Dr.P.Mahalakshmi Assistant Professor of Mathematics	3
4.	Dr.N.Prithivikumaran Associate Professor of Physics	1
5.	Dr.N.Jeyakumaran Associate Professor of Physics	2
6.	Dr. J.Pandiarajan, Assistant Professor of Physics	2
7.	Mrs. A Alagulakshmi, Assistant Professor of Physics	3
8.	Dr. B.Lawrence, Assistant Professor of Physics	2
9.	Dr. M.Anitha, Assistant Professor of Physics	3
10.	Dr. N.Raman, Associate Professor of Chemistry	7
11.	Dr. P.Sami, Associate Professor of Chemistry	2
12.	Dr. R.Paul Pandian, Associate Professor of Chemistry	4
13.	Dr. M.Anitha, Assistant Professor of Physics	3
14.	Dr. A.Arunsunaikumar, Assistant Professor of Chemistry	1
15.	Dr. N.Nirmal Kumar, Assistant Professor of Botany	1

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Sl.No	Faculty Name & Department	Training Program attended
16.	Dr. A. Balasubramanian, Head & Assistant Professor of Microbiology	11
17.	Dr. V. Siva, Assistant Professor of Microbiology	2
18.	Dr. B. Harinathan Assistant Professor of Microbiology	11
19.	Dr.B.Govindarajan Assistant Professor of Botany	15

10. Exhibitions/seminars/training courses conducted

Sl.No	Department	Programs conducted
1.	Zoology	1. One Day Workshop on Identification and Observation of Butterflies and Birds 2. One day Hands on Training in Silk Cocoon Handicrafts
2.	Botany	1. Two Day Training Programme on Palm Craft, Cooking with Love Baking with Heart & Herbal Products 2. National Conference on Recent Innovations, Trends and Challenges in Plant Science and Research
3.	Chemistry	1. Seminar on Frontiers in NMR & Biomaterial Science
4.	Physics	1. Seminar on Applied Physics
6.	Micro biology	1. National Webinar on Mucor mycosis 2. International Conference on Modern Trends in Microbiology 3. Intradepartmental Symposium on Microbiome – II 4. Intradepartmental Symposium on Microbiome
7.	Mathematics	1. State Level Intercollegiate Meet on Zeta Quest 2022 2. International Webinar on Should Teachers and Students Be Friends on Social Media?

11. Books/journals subscribed from grants

Department	Journals subscribed
Microbiology	1. Indian Journal of Experimental biology

12. Outreach activities

Department	Activities
Physics	1. B.Sc. Physics Mannar Thirumalai Naicker College, Madurai visited the Research laboratories and the Renewable Energy facilities on 11.03.2022 2. Students of Kshathriya Girls Higher Secondary School, Virudhunagar –Students visited the Renewable Energy facilities on 15-03-2022 3. Students of Kshatriya Vidhyasala Matriculation Higher Secondary School, Virudhunagar visited the Renewable Energy facilities on 17-03-2022
Zoology	1. Department of Zoology organized e-Quiz on World Environment day on 04.06.2021 & 05.06.2021 2. Department of Zoology organized e-Quiz on "World Population day on 09.07.2021 3. II B.Sc Zoology students and staff members are visited Sericulture Industrial unit & Tamilnadu Silkworm rearing unit on 16.05.2022 4. I B.Sc Zoology students and staff members are visited Central Marine Fisheries Research Institute & Zoological Museum, Mandapam, Rameswaram on 19.05.2022 5. III B.Sc Zoology students and staff members are visited Natural History Museum, Thiruvananthapuram on 19.05.2022
Chemistry	1. Department of Chemistry and Uman Charitable Trust jointly organized one day Self-Employment Training Camp for Women's Self-Help Group on 11.03.2022

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Department	Activities
	2. III B.Sc Chemistry students and six staff members are visited water treatment plant at cochin on 06.05.2022. 3. II B.Sc. Chemistry students and five staff members are visited water treatment plant at cochin on 13.05.2022
Microbiology	1. Department of Microbiology Organized Anemia detection camp on 16.04.2022 to 19.04.2022 2. III B.Sc Microbiology Students visited Pasteur Institute, Coonoor on 22.04.2022
Botany	1. III B.Sc Botany students and staff members are visited Jawaharlal Nehru Tropical Botanic Garden & Research Institute on 27.04.2022 & 28.04.2022

13. Invited Lectures

Department	Invited lectures
Physics	1. Lecture on Physics of Nanomaterials and Magnetic Materials 2. Lecture on Evolution of Science and Technology in India 3. Lecture on Introduction to Spectroscopic Techniques 4. Lecture on Win Over Yourself 5. Lecture on Fill the Vacuum - Lack of technical expertise in industries
Mathematics	1. Lecture on ∞ - A Notion Hard to Perceive 2. Lecture on Can you be part of IT? 3. Lecture on Progress on Entrepreneurs
Botany	1. Lecture Series on The Power of Self
Zoology	1. Lecture on Ornamental fish culture tanks, Apiculture & Vermiculture
Chemistry	1. Lecture on Potential of Metalloenzymes in Biocatalysis Reactions 2. Lecture on Fact Findings from Academic Research and Crime Scene Investigation
Micro Biology	1. Lecture on PGPR Trraits From Mangrove *Rhizobacteria* 2. Lecture on *Actinobacteria* - Isolation and its Applications 3. Lecture on Carbon dots and its applications
Computer Science	1. Lecture on Goal Setting 2. Lecture on Rest API & Spring Boot 3. Lecture on Low Code No Code 4. Lecture on ANGULAR JS 5. Lecture on Global Digital Marketing 6. Lecture on Natural Language Processing 7. Lecture on Harnessing Big Data 8. Lecture on REACT to the Change

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Annexure – A
List of Projects

DEPARTMENT OF PHYSICS

Sl.No.	Name	Roll No.	Title
1.	M.Dharani	19AUPH001	Experimental Study on Solar Cooker
	T.Femena	19AUPH002	
	S.Kaleeswari	19AUPH004	
2.	P.Gayathri Devi	19AUPH003	Robotic Arm using Arduino UNO
	B. Meera	19AUPH009	
	Nagalakshmi	19AUPH010	
3.	A.Kalirathi	19AUPH005	Solar Water Desalination
	S.Malavika	19AUPH007	
	M.Manju	19AUPH008	
4.	S. Ovammal	19AUPH011	Direct Active Solar Dryer for Fruit and Vegetable
	K. Ramya	19AUPH014	
	C. Ramya Rani	19AUPH015	
	M. Suba Sangeetha	19AUPH016	
5.	A. Antony Xavier Lawrence	19AUPH017	Ultrasonic Receiver
	K. Ashok	19AUPH019	
	S.Parthiban	19AUPH030	
6.	K.Arunkumar	19AUPH018	RF Transmitter and Receiver Circuit using RF Module
	R. Jayaprakash	19AUPH023	
	S. Manojkumar	19AUPH027	
	R. Vijayabharathy	19AUPH040	
7.	A. Pooja	19AUPH012	Foot step power Generation with the help of Piezoelectric sensors using LEDs
8.	P. Chitra Devi	19AUPH041	Wireless Notice Board Using Arduino
9.	R. Kishor Kumar	19AUPH024	Smart Street Light
	V. Lawrance	19AUPH025	
	U. Mani Raj	19AUPH026	
10.	B. Raj Kumar	19AUPH032	Automatic Handwashing Machine
	R. Ramakrishnan	19AUPH033	
	G. Ranjith Kumar	19AUPH034	
11.	S. Guru Vishnu	19AUPH022	Bio-Gas Mini Plant For Home
	S. Sampath Kumar	19AUPH035	
	P. Saravanakumar	19AUPH037	
	M. Rajesh Kumar	19AUPH031	
12.	V. Saran Kumar	19AUPH036	Gas Detector
	C. Selva Pandy	19AUPH038	
13.	G. Balasubramanian	19AUPH020	Single Axis Solar Tracker
	P.Senthil Kumar	19AUPH039	
14.	S. Rajeswari	19AUPH013	Door Security Notification System

DEPARTMENT OF CHEMISTRY

S.No.	Name of the Student	Title of the Project
1.	1.A.Abirami (19AUCH001) 2.R.Mathan Raj (19AUCH0023)	Synthesis of Mg_2SnO_4 by Hydrothermal method
2	1.M.Akila (19AUCH002) 2.P.Devadharshini (19AUCH004)	Removal of Malachite green by adsorption onto charcoal prepared from neem tree bark and coconut shell
3.	1.D.Birundha(19AUCH003) 2.K.Selva Pandi (19AUCH029) 3.E.Yuvaraj (19AUCH032)	A detailed study on Co-ordination Chemistry
4.	1.C. Gayathri (19AUCH005) 2.A.Ishwarya (19AUCH007) 3.A.Karthigaiselvi (19AUCH009)	Study of electron displacement in covalent molecule
5.	1.M. Hemalatha (19AUCH006) 2.V.Marimuthu (19AUCH024) 3.S.Nagarajan (19AUCH027)	Synthesis, characterization of cadmium oxide nanosphere
6.	1.M.Kaleeswari (19AUCH008) 2.S.Uma Maheswari (19AUCH014) 3.S.Gnana Vincent (19AUCH018)	Microwave assisted synthesis of furfurylidene acetophenone
7.	1.R.Ajay (19AUCH015) 2.T.Agasthiya Kalam (19AUCH040) 3. S.Vasanthakumar (19AUCH046)	Solar photodegradation of crystal violet by bulk ZnO
8.	1.K.Arjun (19AUCH016) 2.K.Karuppasamy (19AUCH021) 3.D.Muthupandi (19AUCH026)	Biological screening of a few transition metal complexes
9.	1.D.Bala Pradeep (19AUCH017) 2.T.Meenachi (19AUCH025) 3.M.Kalima Sathiya (19AUCH042)	Quality of groundwater and the water used for drinking purpose in Virudhunagar
10.	1.M.Kalidhas (19AUCH019) 2.V.Kalidoss (19AUCH020) 3.M.Madesh Babu (19AUCH022)	Synthesis and characterization of transition metal complexes using chrysin as co-ligand
11.	1.J.Saravanaperumal (19AUCH028) 2.A.Abdul Rahman (19AUCH044)	Review on Mannich base ligand and its metal complexes
12.	1.C.Suriya Prakash (19AUCH031) 2.P.Maria Pushpam (19AUCH011) 3.V.Selvalskshmi (19AUCH013)	Docking of α,β,γ-cyclodextrin with niclosamide
13.	1.M.Nandhini (19AUCH012) 2.B.Suresh (19AUCH045)	Green synthesis of MgO nanoparticles by using black rice aquires extract(Karuppu Kavuni)
14.	1.R.Prithiyadevi(19AUCH033) 2.K.Indhuja(19AUCH041)	Synthesis, characterization and photocatalytic applications of nickel tungstate nanoparticles- A review

DEPARTMENT OF BOTANY

Sl.No	Roll No.	Student Name	Project Title
1.	19AUBY001	Anandhakani S	Cultivation And Challenge With Reference of Trellis
2.	19AUBY002	Anitha M	Cultivation And Challenge With Reference of Trellis
3.	19AUBY004	Geetha V	Cultivation And Challenge With Reference of Trellis
4.	19AUBY006	Jagadeeswari S	Cultivation And Challenges With Reference to Trellis
5.	19AUBY007	Kaleeswari B	Cultivation And Challenges With Reference to Trellis
6.	19AUBY008	Kartheeswari M	Development Of Nursery Garden Through Vegetative Propagation By Leaf Cutting, Stem Cutting And Layering.
7.	19AUBY009	Krishnasurya S	Studies On the Vegetative Propagation Techniques.
8.	19AUBY010	Maheswari M	Vegetative Propagation Methods of Tree Plants in Horticultural Techniques
9.	19AUBY011	Manimehalai M	Studies On The Vegetative Propagation Of Some Medicinal Plants.
10.	19AUBY012	Manjuladevi K	Studies On The Propagation Methods of Ornamental Plants in Horticulture Teachings
11.	19AUBY013	Muthulakshmi S	Cultivation of *Cyamopsis Tetragonoloba* In VHNSNC Campus
12.	19AUBY014	Muthusavuniya M	Cultivation of *Cyamopsis Tetragonoloba* In VHNSNC Campus
13.	19AUBY017	Saranya S	Cultivation of *Cyamopsis Tetragonoloba* In VHNSNC Campus
14.	19AUBY018	Sasikala G	Cultivation of *Cyamopsis Tetragonoloba* In VHNSNC Campus
15.	19AUBY019	Shanmuga Priya M	Cultivation of *Cyamopsis Tetragonoloba* In VHNSNC Campus
16.	19AUBY021	Udhayalakshmi A	Organic Farming Cultivation And Challenges With Reference To Kitchen Herbs
17.	19AUBY023	Veilu Vanthal V	Organic Farming Cultivation And Challenges With Reference To Vegetables (Okra)
18.	19AUBY024	Yamuna M	Organic Farming Cultivation And Challenges With Reference To Vegetables
19.	19AUBY025	Anandhakumar R	Ethnobotanical Survey Of Aruppukottai
20.	19AUBY025	Balaji A	Ethnobotanical Survey Of Aruppukottai
21.	19AUBY027	Balamurugan S	Ethnobotanical Survey Of Aruppukottai
22.	19AUBY028	Bose Praveen K	Ethnobotanical Survey Of Aruppukottai
23.	19AUBY029	Chidhambararaja S	Ethnobotanical Survey Of Aruppukottai

Sl.No	Roll No.	Student Name	Project Title
24.	19AUBY030	Gaurav G	Studies On The Plant Propagation By Stem Cutting Of *Pisonia alba* And *Annona reticulata*
25.	19AUBY031	Gopi Krishnan S	Vegetative Propagation of *Vitex negundo* and *Duranta erecta*
26.	19AUBY032	Karthikraja M	Horticulture Techniques on *Caesalpinia palcherrima* And *Ficus benjamina*
27.	19AUBY033	Manikandan P	Cultivation Of Ornamental Plants Through Horticulture Techniques
28.	19AUBY034	Rameshbabu K	Propagation of Medicinal Plants By Horticulture Techniques
29.	19AUBY035	Saranya M	Organic Farming Cultivation And Challenges With Reference To Green Leaf Spinach
30.	19AUBY036	Sineka S	Organic Farming Cultivation And Challenges With Reference To Green Leaf Spinach
31.	19AUBY037	Sivakumar K	Ethnobotanical Survey Of Virudhunagar
32.	19AUBY038	Surya S	Ethnobotanical Survey Of Virudhunagar
33.	19AUBY039	Veerangan	Ethnobotanical Survey Of Virudhunagar.
34.	19AUBY040	Vijayakumar S	Ethnobotanical Survey Of Viruthunagar

DEPARTMENT OF ZOOLOGY

Sl.No.	Student name	Project title
1 2 3	V.Amutha S.Pavarna Devi C.Sathya	Study of Different Environmental colours on growth and Colour pattern of Ornamental Fish Fanta Molly(*Poeciliasphenops*)
4 5	S.Narmatha V.Lenin Babu	Adsorption of Methylene Blue in Aqueous solution by Orange peel Powder
6 7 8	P.Pandeeswari V.Arunpandi M.Suriya	A study on analysis of Biomass, Growth rate of *Eiesniafoetida* using different leaves litter substrate
9 10 11	A.Kaliyammal B.Nandhineeswari K.Vignesh	A study on the prevalence of Internet addiction among VHNSN College students
12 13 14	R.Ananth S.K.Malathi P.Thineka	Muscle proximate composition of various Freshwater Fish species
15 16 17	K.Aarthi M.Murugeswari S.Karthik	Laboratory study on Larvicidal activity of Aqueous extracts of*Morinda tinctoria, Ocimumtentuiflorum,*and*Sesbana grandiflora* against the Malarial vector *Anopheles stepheni*
18 19 20	P.Nithya S.Priya R.Veeralakshmi	Observation of Ecological interaction of selective plants and Insects during February to May, 2022
21 22 23	A.Jeyaprakash C.Jeyapriya R.Muneeswari	Constituents of Substrates on the cultivation of *Pleurotus*spp.
24 25 26	K.Murugalakshmi M.Nirmalkumar M.Rajaguru	Screening of water-borne disease in drinking water and borewell water Virudhunagar, Tamilnadu
27 28 29	V.Subhashini M.Manipandi P.Selvakumar	Analysis of Physico chemical parameters to evaluate the drinking water quality
30 31 32	K.Aakash D.Pothumponnu S.Raghul	Microbial Bioremediation of Azo dyes

DEPARTMENT OF MICROBIOLOGY

S. No	Name of the students	Roll Number	Title of the Project
1.	P.Abitha	19SUMB001	Production of organic fertilizer from food waste and its utilization in intensive organic based vegetable production of sustaining Virudhunagar soil health and productivity
2.	D.Kavi Priya	19SUMB007	Production of organic fertilizer from food waste and its utilization in intensive organic based vegetable production of sustaining Virudhunagar soil health and productivity
3.	S.Maharajothi	19SUMB009	Production of organic fertilizer from food waste and its utilization in intensive organic based vegetable production of sustaining Virudhunagar soil health and productivity
4.	M.Mohana Priya	19SUMB010	Production of organic fertilizer from food waste and its utilization in intensive organic based vegetable production of sustaining Virudhunagar soil health and productivity
5.	C.Varshini	19SUMB017	Production of organic fertilizer from food waste and its utilization in intensive organic based vegetable production of sustaining Virudhunagar soil health and productivity
6.	S.Raj Kumar	19SUMB035	Production of organic fertilizer from food waste and its utilization in intensive organic based vegetable production of sustaining Virudhunagar soil health and productivity
7.	K. Sathiyanarayanasamy	19SUMB038	Production of organic fertilizer from food waste and its utilization in intensive organic based vegetable production of sustaining Virudhunagar soil health and productivity
8.	N.Saranya	19SUMB013	Production of organic fertilizer from food waste and its utilization in intensive organic based vegetable production of sustaining Virudhunagar soil health and productivity
9.	K.Brindha	19SUMB004	Isolation and Identification of new strains from human Pathogenic Urine Sample
10.	M.Vignesh	19SUMB040	Isolation and Identification of new strains from human Pathogenic Urine Sample
11.	P.Karthick	19SUMB025	Isolation and Identification of new strains from human Pathogenic Urine Sample
12.	A.Karthick Rajesh	19SUMB027	Isolation and Identification of new strains from human Pathogenic Urine Sample
13.	M.Porkodi	19SUMB011	Isolation and Identification of new strains from human Pathogenic Urine Sample
14.	P.Bapitha	19SUMB002	Antibacterial Activity of *Ocimum tenuifloram* and *Azardirachta indica* leaf extract against Gram positive bacteria and Gram Negative Bacteria

S. No	Name of the students	Roll Number	Title of the Project
15.	J.Ameershaferahamed	19SUMB020	Antibacterial Activity of *Ocimum tenuifloram* and *Azardirachta indica* leaf extract against Gram positive bacteria and Gram Negative Bacteria
16.	A.Anand Babu	19SUMB021	Antibacterial Activity of *Ocimum tenuifloram* and *Azardirachta indica* leaf extract against Gram positive bacteria and Gram Negative Bacteria
17.	S.Rajesh Kumar	19SUMB034	Antibacterial Activity of *Ocimum tenuifloram* and *Azardirachta indica* leaf extract against Gram positive bacteria and Gram Negative Bacteria
18.	B.Sasibala	19SUMB014	Antibacterial Activity of *Ocimum tenuifloram* and *Azardirachta indica* leaf extract against Gram positive bacteria and Gram Negative Bacteria
19.	R.Vanchinathan	19SUMB039	Development of Probioticated Coconut Water
20.	I.Marikannan	19SUMB028	Development of Probioticated Coconut Water
21.	G.Baskar	19SUMB023	Development of Probioticated Coconut Water
22.	S.Swetha	19SUMB015	Development of Probioticated Coconut Water
23.	C.Akash	19SUMB019	Development of Probioticated Coconut Water
24.	N.Annamalai	19SUMB022	Development of Probioticated Coconut Water
25.	M.Sandhiya	19SUMB012	Isolation and Identification of Enzymes producing Bacteria from Food Waste Samples
26.	P.Vaishnavi	19SUMB016	Isolation and Identification of Enzymes producing Bacteria from Food Waste Samples
27.	P.Mohammed Nabith	19SUMB031	Isolation and Identification of Enzymes producing Bacteria from Food Waste Samples
28.	S.Sridevi	19SUMB041	Isolation and Identification of Enzymes producing Bacteria from Food Waste Samples
29.	P.Singadurai	19SUMB042	Isolation and Identification of Enzymes producing Bacteria from Food Waste Samples
30.	S.Keerthana	19SUMB008	Exploratrion of Affardable microbial Degradation of Xylanase production by Amendment of Food Refuse
31.	M.Vishalini	19SUMB018	Exploratrion of Affardable microbial Degradation of Xylanase production by Amendment of Food Refuse
32.	A.Santhosh	19SUMB036	Exploratrion of Affardable microbial Degradation of Xylanase production by Amendment of Food Refuse
33.	N.Saravana Kumar	19SUMB037	Exploratrion of Affardable microbial Degradation of Xylanase production by Amendment of Food Refuse
34.	K.Murali Kumar	19SUMB032	Exploratrion of Affardable microbial Degradation of Xylanase production by Amendment of Food Refuse

S. No	Name of the students	Roll Number	Title of the Project
35.	M.Mathavan	19SUMB030	Exploratrion of Affardable microbial Degradation of Xylanase production by Amendment of Food Refuse
36.	G.Chandralakshmi	19SUMB005	Conversion of Food Waste into Useful Products and Identification of Bacteria involved in the Fermentation Process
37.	P.Bharathi	19SUMB003	Conversion of Food Waste into Useful Products and Identification of Bacteria involved in the Fermentation Process
38.	M.Karthick kumar	19SUMB026	Conversion of Food Waste into Useful Products and Identification of Bacteria involved in the Fermentation Process
39.	M.Ganesh Kumar	19SUMB024	Conversion of Food Waste into Useful Products and Identification of Bacteria involved in the Fermentation Process
40.	M.Pethuraj	19SUMB033	Conversion of Food Waste into Useful Products and Identification of Bacteria involved in the Fermentation Process
41.	C.Mariselvam	19SUMB029	Conversion of Food Waste into Useful Products and Identification of Bacteria involved in the Fermentation Process

DEPARTMENT OF COMPUTER SCIENCE

Sl No.	Roll No	Student Name	Project Title
1	19AUCS001	Anbumozhi T	Performance Analysis Of Cocktail Sort And Linear Sort
2	19AUCS002	Gayathri A	Generate Avl Tree For Database Applications
3	19AUCS003	Gomathi Laskhmi B	Analysing Insertion, Deletion And Searching Operations On Sorted And Umsorted Data
4	19AUCS004	Malarvizhi K	Performance Analysis Of Linear Sort And Bubble Sort
5	19AUCS005	Manjula S	Performance Analysis Of Linear Sort And Bucket Sort
6	19AUCS006	Naveenkumar M	Construct A Minimum Spanning Tree Using Prim's Algorithm
7	19AUCS007	Nidhya R	Ordering Data Using Address Calculation
8	19AUCS008	Nisha M	Job Scheduling Based On Priority
9	19AUCS009	K.Rajapriya	Data Position Identification By Binary Search
10	19AUCS010	Samyutha N	Classification By Voting Alagorthm
11	19AUCS011	Selvalaskhmi N	Double Linked List On Phone Directory Management
12	19AUCS012	Vinitha A	Textual Encryption Using Rsa Algorithm
13	19AUCS013	Viyanni Mickyla A	Arrange Data Using Selection Sort
14	19AUCS014	Yaazhini K	Red-Black Tree Construction
15	19AUCS015	Aravinth M	Iot Enabled Touch Sensing System
16	19AUCS016	Balamurugan G	Finding Number Of Possible Subsets Using Binomal Coefficient
17	19AUCS017	Dhanabalan K	Finding A Subset With Subset Sum Equivalent To Target
18	19AUCS018	Dhanush T	Generating Bi-Subsets With Optimal Sum Difference
19	19AUCS019	Dineshkumar K	Optimizing Job Scheduling By Greedy Technique
20	19AUCS020	Duraikannan S	Performance Analysis Of Pigeonhole Sorting & Linear Sorting
21	19AUCS021	Gokulakrishnan G	Doubly Linked List In Creating Phone Directory
22	19AUCS023	Hari Prasanth Sd	Server And Client Chat
23	19AUCS024	Janarthanan R	Analyzing Binary Search And Linear Search
24	19AUCS026	Jeyasurya N	Classifying Iris Data By K-Nearest Neighbour Algorithm
25	19AUCS027	Kannan M	Shortest Path Between All Pair Of Cities Using Floyd Algorithm
26	19AUCS028	Madhankumar S	Solving 0/1 Knapsack Using Branch And Bound With Bredth First Search
27	19AUCS029	Manoj Kumar S	Iot Enabled Touch Sensing System
28	19AUCS030	Mohammed Samsuthin K	Finding A Path For Exit In A Maze
29	19AUCS031	Muthu G	Naïve Bayes In Predicting Feasibility Of Tennis Tournament On Date
30	19AUCS032	Muthu Murugan M	Arrange Data By Mergesort Using Divide And

			Conquer Technique
31	19AUCS033	Pathamuthu K	Evaluating Postfix Arithmetic Expression Using Stack
32	19AUCS034	Rambabu S	Finding Shortest Path To All Cities From A Source City Using Dijikstra's Algorithm
33	19AUCS035	Ratheeshwar R	Solving The Puzzle Game Sudoku
34	19AUCS036	Saravanakumar K	Performance Analysis Of Bubble Sort And Shell Sort
35	19AUCS 037	Shanmugasundhari M	Knight's Tour On A Chess Board
36	19AUCS038	Sivabalan M	Playing The Game Tic-Tac-Toe
37	19AUCS039	Sivaganesh S	Arranging Data By Topological Method
38	19AUCS040	Siva Kumar V	Computing Efficiency In Linear Search
39	19AUCS041	Soundra Pandian P	Data Arrangement By Radix Sort
40	19AUCS042	Surya Prakash S	Arrange Data By Quicksort Using Divide And Conquer Technique
41	19AUCS043	Thanga Guru Bharathi M	Identifying Hamiltonian Graph By Backtracking Algorithm
42	19AUCS044	Varatharajperumal A	Optimizing Basic Operation On Chained Matrix Multiplication
43	19AUCS045	Vignesh Vs	Iot Enabled Flame Detection System
44	19AUCS046	Vijayarahavan K	Iot Enabled Flame Detection System

DEPARTMENT OF MATHEMATICS

S. No	Roll Number	Student Name	Title of the Project
1	19AUMA001	Anisiya Devi M	Partial Differential Equation in Physical Science
2	19AUMA002	Athishtalakshmi M	Matrix Decomposition
3	19AUMA003	R.Birundha	Application of Fuzzy network graph in hospital
4	19AUMA004	Chithra S	Planarity
5	19AUMA005	Divya Prabha T	Financial Mathematics
6	19AUMA006	Divya S	Combinatorics
7	19AUMA007	Girija M L	Cryptography
8	19AUMA008	Hemalatha M	Application of Fuzzy network graph in hospital
9	19AUMA009	Jasmine J	Applications of Graph Theory
10	19AUMA010	Jothi Lakshmi S	Optimization and assignment problems in graph theory
11	19AUMA011	Kalaiselvi V	Partial Differential Equation in Physical Science
12	19AUMA012	Keerthana S	Matrix Decomposition
13	19AUMA013	V.Kirthika	Application of Fuzzy network graph in hospital
14	19AUMA014	Lakshmi Priya S	Applications of Graph Theory
15	19AUMA015	Lavanya K	Financial Mathematics
16	19AUMA016	Madhumitha R	Combinatorics
17	19AUMA017	Mahalakshmi P	Cryptography
18	19AUMA018	Maheswari S	An Application of fuzzy graph in accidental prone zone to reduce the traffic congestion
19	19AUMA019	A.Maria Vinchy	Planarity
20	19AUMA020	Mariya Thiresa Rani A	Fibonacci Numbers and its applications
21	19AUMA021	Mariyammal S	Partial Differential Equation in Physical Science
22	19AUMA022	Mohana M	Cryptography
23	19AUMA023	Muthumari S	An Application of fuzzy graph in accidental prone zone to reduce the traffic congestion
24	19AUMA024	Muthupandiselvi S	Definite Matrices
25	19AUMA025	Nirmaladevi S	Basic Concepts of Abstract Algebra
26	19AUMA026	Pandi Selvi R	Project Management by PERT
27	19AUMA027	Prema S	Rough Set Theory
28	19AUMA028	Radha A	An Application of fuzzy graph in accidental prone zone to reduce the traffic congestion
29	19AUMA029	Sangavi S	Planarity
30	19AUMA030	Saraswathi S	Fibonacci Numbers and its applications
31	19AUMA031	Sathya Lakshmi S	Combinatorics
32	19AUMA032	Siva Ranjani P	Matrix Decomposition

S. No	Roll Number	Student Name	Title of the Project
33	19AUMA033	Subitharani J	Novel Application of Fuzzy graph in image segmentation
34	19AUMA034	Suvetha P	Definite Matrices
35	19AUMA035	Tamilselvi B	Optimization and assignment problems in graph theory
36	19AUMA036	Ulakeswari M	Project Management by PERT
37	19AUMA037	Vasundhara K	Rough Set Theory
38	19AUMA039	Vinodameena R	Novel Application of Fuzzy graph in image segmentation
39	19AUMA040	Vishnupriya R	Definite Matrices
40	19AUMA043	Gowri Shankar N	Optimization and assignment problems in graph theory
41	19AUMA044	Guru Prasath M	Project Management by PERT
42	19AUMA047	Murugan M	Rough Set Theory
43	19AUMA049	Porselvan S	Biostatistics
44	19AUMA050	Raghuraman M	Basic Concepts of Abstract Algebra
45	19AUMA051	Sanjay Kumar P	Financial Mathematics
46	19AUMA052	Saran J	Basic Concepts of Abstract Algebra
47	19AUMA053	Saravanakumar N	Fibonacci Numbers and its applications
48	19AUMA054	Siranjeevi P R	Biostatistics