

NIRMALA COLLEGE FOR WOMEN (AUTONOMOUS)
Redfields, Coimbatore – 641 018, Tamil Nadu, India

SUCCESS OF THE STAR COLLEGE SCHEME, DBT

I DBT Star College Scheme in Nirmala College for Women

2012	Inception of 3 departments- Botany, Chemistry, Zoology
2015	Awarded continued status for all 3 departments
2017	Awarded star status to the college Addition of 3 more departments- Mathematics, Geography & Computer Science
2020	Awarded continued status Departments of Mathematics, Geography & Computer Science

II Department Details

Department	No. of regular faculty	With PhD	Programmes offered
Zoology	10	10	B.Sc., Zoology M.Sc., Zoology M. Phil Zoology Ph. D Zoology COP in Vermitechnology – (UGC Funded)
Botany	9	9	B.Sc., Botany M.Sc., Botany M. Phil Botany Ph. D Botany COP in Medicinal Botany COP in Floriculture & Bonsai – (UGC Funded)
Chemistry	9	6	B.Sc., Chemistry M.Sc., Chemistry M. Phil Chemistry Ph. D Chemistry
Mathematics	10	9	B.Sc., Mathematics M.Sc., Mathematics M. Phil Mathematics Ph. D Mathematics PGDOR

Geography	4	1	B.Sc. Geography M. Phil Geography Ph.D. Geography
Computer Science	18	3	B.Sc., Computer Science M.Sc., Computer Science BCA B.Sc., Information Technology PGDCA

III Activities carried out under the Star College Scheme

a)

Departments	Guest Lectures	Fieldtrips	Industrial visits	Institutional visits
Zoology	107	38	8	11
Botany	93	29	5	17
Chemistry	91	4	23	4
Mathematics	24	1	4	1
Geography	34	19	1	6
Computer Science	31	1	4	1 (virtual visit)

b)

Departments	Workshops	Hands on training	Training programmes for faculty/ students	Internships/ No. of students	Training for lab assistants
Zoology	24	12	6	5 industries- 39 students	2
Botany	20	10	5	3 Industries -54 Students	2
Chemistry	15	16	5	16 Industries/ Companies- 29 Students	3
Mathematics	22	21	4	24 companies - 37 students	1
Geography	14	5	1	10 Research institutions & companies - 42 students	-
Computer Science	12	9	6	4 Industries 120 students	-

c)

Departments	Projects	Paper presentation	Paper publications	Publication in book chapter
Zoology	85 group projects	2	7	6
Botany	65 Group projects	-	9	-
Chemistry	87 Group Projects	47	7	42
Mathematics	110group projects	-	-	-
Geography	35 individual and 9 group projects	-	-	-
Computer Science	64 group Projects	10	62	-

d)

Departments	Seminars/conferences organized	Symposium	Lecture workshop/
Zoology	7	4	2
Botany	11	-	3
Chemistry	12	1	1
Mathematics	6	5	2
Geography	-	4	7
Computer Science	4	1	-

e)

Departments	No. of Books purchased	Laboratory manuals prepared	SOPs prepared
Zoology	200	3	1
Botany	108	3	1
Chemistry	85	1	1
Mathematics	62	1	-
Geography	140	5	-
Computer Science	38	6	-

f) International Seminars/ Webinars organized

Departments	Details
Zoology	<p>29.07.2021- Seminar on Green technology; Building a sustainable future.</p> <p>Resource person:</p> <ol style="list-style-type: none"> 1. Khalifa University of Science & Technology, Abu Dhabi, UAE. 2. Korean Advanced Institute of Science & Technology, Republic of Korea. 3. Sunchon National university, South Korea

	<p>19.08.2019- Symposium on “Emerging technologies that transform Life Sciences” Resource person:</p> <ol style="list-style-type: none"> 1. University of Texas Health, Texas, USA 2. Guangzhou University, Guangzhou, China 3. China National GeneBank, BGI Research, Shenzhen, China <p>22.10.2021 - Webinar on “Poisoning Prevention in Wild Animals” Resource person:</p> <ol style="list-style-type: none"> 1. NGO Wildlife, Poisoning, Prevention and Conflict Resolution, South Africa.
<p>Botany</p>	<p>12.07.2021 to 17.07.2021 - International virtual training on Women Entrepreneur and Women Empowerment Resource person:</p> <ol style="list-style-type: none"> 1. Director (Quantity Surveyor) Northern Consultants, Pvt Ltd, Sri Lanka. <p>12.11.2021- International Webinar “RNAi for Plant Biotechnology” Resource person:</p> <ol style="list-style-type: none"> 1. Genetics and Molecular Biology, Institute of Biological Sciences, Faculty of Science, University of Malaya, Kuala Lumpur, Malaysia <p>23.02.2022 to 24.02.2022 - International Seminar on “Plant Sciences in the present Scenario” Resource person:</p> <ol style="list-style-type: none"> 1. School of Biological Sciences and Biotechnology, College of Natural and Computational Sciences, Haramaya University, Ethiopia. <p>14.05.2020 - International Webinar “Plant Molecular Biology in space” Resource person:</p> <ol style="list-style-type: none"> 1. Tubitak- Guest Scientist, Department of Molecular Biology and Genetics, Istanbul University, Istanbul, Turkey. <p>27.02.2021 - International Webinar - Biotechnological applications of Microalgae Resource person:</p> <ol style="list-style-type: none"> 1. Auxiliary Investigator, MED-Mediterranean Institute for Agriculture, Environment and Development, Faculty of Sciences and Technology, University of Algarve, Campus de Gambelas, Portugal. <p>27.09.2019 - International Video Conference on “Current Scenario in Plant Sciences” Resource person:</p> <ol style="list-style-type: none"> 1. Director, Centre for Research in Biotechnology for Agriculture, University of Malaya Genetics and Molecular Biology, Institute of

	<p>Biological Sciences, University of Malaya Honorary Visiting Fellow, Department of Genetics and Biology, University of Leicester, UK.</p> <ol style="list-style-type: none"> 2. Head of the Department Research and Development, Microforestry, Ghana limited, Agogo, The Republic of Ghana, South Africa. 3. Post Doctoral Researcher, Key Laboratory of Molecular Epigenetics North East Normal University, Changchun, China. 4. Visiting Professor and Post Doctoral Researcher, Department of Pharmacy, Federal University of Sergipe, Sao Cristovao, Sergipe, Brazil. <p>30.07.2018 Guest lecture: “Molecular markers in plant genetic Engineering” Resource person:</p> <ol style="list-style-type: none"> 1. Associate Prof.in Biotechnology, 2. Addis Ababa Science and Technology, 3. University of Ethiopia.
Chemistry	<p>18.12.2019- Sustainable Innovations and Empowerment in Chemistry Resource persons:</p> <ol style="list-style-type: none"> 1. Kuwait National Petroleum Company, 2. Kuwait Asian University for Women, Chittagong, Bangladesh 3. Khalifa University, Abu Dhabi, UAE. <p>10.02.2020- Contemporary Horizons in Chemical Sciences (CHCS 2020) Resource persons:</p> <ol style="list-style-type: none"> 1. University of Abertay, Dundee, United Kingdom, 2. Saraswathi Narayan College, Perungudi, Madurai 3. Manonmaniam Sundaranar University, Kanyakumari <p>10.03.2021- Panoramic View of Futuristic Trends in Chemical Sciences Resource persons:</p> <ol style="list-style-type: none"> 1. Sungkyunkwan University (SKKU), South Korea, 2. National Institute of Technology, Tiruchirappalli 3. Pachaiyappa’s College for Men, Kanchipuram <p>19.07.2021 & 20.07.2021- International Conference on Smart & Sustainable Developments in Material & Medicinal Chemistry Resource persons:</p> <ol style="list-style-type: none"> 1. PSG Institute of Technology and Applied Research, Coimbatore. 2. National Taiwan Normal University, Taipei, Tiwan 3. Eherhard-Karls-University of Tuebingen, Germany <p>25.08.2021 & 26.08.2021- International Conference on “Accelerating Research on DNA: Current Trends & Future Directions” Resource persons:</p> <ol style="list-style-type: none"> 1. Kyoto University Institute for Advanced Study Kyoto, Japan 2. Bharathiar university, Coimbatore

	<p>23.10.2021- International Webinar on "Nanomaterials - Small Science; Big Hopes"</p> <p>Resource persons:</p> <ol style="list-style-type: none"> 1. Gyeonggi Academy of Foreign Languages, South Korea <p>24.01.2022 & 25.01.2022- International Conference on Pioneering Emerging Opportunities & Exploring New Realm in Chemical Sciences</p> <p>Resource persons:</p> <ol style="list-style-type: none"> 1. Saveetha Institute of Medical & Technical Sciences, Thandalam, 2. Chennai, Chungnam National University, Daehak-ro yuseong-gu, Daejeon, South Korea, 3. Central University of Tamil Nadu, Thiruvavur 4. Birmingham West Midlands, England, United Kingdom
Mathematics	<p>28.01.2022-International Seminar on “Recent trends in Pure and Applied Mathematics”</p> <p>Resource Person:</p> <ol style="list-style-type: none"> 1. National Institute of Technology, Trichy 2. Asia Pacific University of Technology and Innovation, Kuala Lumpur, Malaysia 3. St.Joseph’s College, Trichy
Geography	<p>22.05.2020 - Webinar on “Disaster Management in Times of Covid-19”</p> <p>Resource Person:</p> <ol style="list-style-type: none"> 1. National Disaster Management Authority (NDMA), Government of India Senior Advisor, Sphere India- National Coalition of Humanitarian Agencies. 2. CMEI, Ministry of Public Works & Transport, Royal Government of Cambodia, Cambodia. <p>04.06.2020 - Webinar lecture series Episode 1: “GIS And Remote Sensing Solutions for Post Covid -19 New World Order”</p> <p>Keynote Speaker:</p> <ol style="list-style-type: none"> 1. Department Of Geography, University of Madras & Professor, Col Colin Mackenzie Chair, IRS, Anna University, Chennai. <p>Resource person:</p> <ol style="list-style-type: none"> 1. Resource Analysis Division, National Center for Earth Science Studies, Thiruvananthapuram. 2. Department of Geography, University of Madras, Chennai. 3. Director- International Business Development, Smart Bee Technologies LLC, Dubai, United Arab Emirates (UAE)

	<p>Moderator:</p> <ol style="list-style-type: none"> 1. Ministry of Public Works & Transport, Royal Government of Cambodia, Cambodia. <p>27.06.2020 - Webinar lecture series Episode 5: “Evolving Urban World: Environment, Informed Decision Making, Governance and Sustainable Resilience”</p> <p>Distinguished Speakers:</p> <ol style="list-style-type: none"> 1. Urban Governance and DRR Specialist, Nepal 2. Assistant Assessment and Accreditation Council, Bengaluru, India <p>25.03.2021 - Lecture Workshop on Surveying-A paradigm shift</p> <p>Resource Person:</p> <p>University of technology and Applied sciences, Muscat Oman.</p> <p>26.05.2021 - Lecture Workshop:” Current Trends and Prospects of Research Using GIS in Geography”</p> <ol style="list-style-type: none"> 1. MS in Geospatial Analysis, University of Dublin, Ireland <p>24.08.2021 to 27.08.21 - International Workshop: “Excel for Absolute Beginners”</p> <p>Resource person:</p> <ol style="list-style-type: none"> 1. Solution Architect, Credability, Manchester, UK.
<p>Computer Science</p>	<p>02.06.2021 - Webinar - Entrepreneurship Beyond Career Building.</p> <p>Resource person:</p> <ol style="list-style-type: none"> 1. Edupreneur, Founder and MD,NimbleQ,USA <p>22.07.2021- Webinar - Marching with Hope</p> <p>Resource person:</p> <ol style="list-style-type: none"> 1. Tax Assistant, Charolette, North Carolina. <p>06.04.2022- Seminar- Artificial Intelligence in Digital Era</p> <p>Resource person:</p> <ol style="list-style-type: none"> 1. IT Analyst, Tata Consultancy Services, Canada. <p>08.04.2022- International Seminar ON “Business Model Development and Prototype”</p> <p>Resource person:</p> <ol style="list-style-type: none"> 1. Dreamguys Technology Pvt Ltd, United Kingdom. <p>19.05.2021- International seminar in “Cyber Security”.</p> <p>Resource person:</p> <ol style="list-style-type: none"> 1. Solution Architect, Sofigate Business Technologies, Finland. 2. Lecturer,Skyline University, Nigeria. <p>22.05.2020- International online live webinar: Cloud Computing and Data Analytics in Covid-19.</p> <p>Resource person:</p> <ol style="list-style-type: none"> 1. Technical Business Analyst, Pulse Software,Sydney, Australia.

	<p>2. EY Data and Analytics, Sydney, Australia.</p> <p>31.07.2020 - International online live webinar -Covid-19 Challenges in the Indian IT Industry.</p> <p>Resource person:</p> <ol style="list-style-type: none"> 1. Credability, Manchester, U.K. <p>20.09.2019- Video Conference - Technology Trends in BioImage Informatics & Cognitive Technology for Data Science.</p> <p>Resource person:</p> <ol style="list-style-type: none"> 1. Dean and Associate Professor of Information System, College of Economics Management and Information System, University of Nizwa, Oman. 2. Senior Lecturer, Computing Department, Muscat College, Sultanate of Oman. 3. Director, Sports Academy & Professor, Department of Communication Technology & Networks, University Putra Malaysia. <p>25.09.2019- Online Video Conferencing: International Symposium on Innovative Thinking in Machine Oriented Applications and Security Management.</p> <p>Resource person:</p> <ol style="list-style-type: none"> 1. Technical Business Analyst, Pulse Software, Sydney, Australia. 2. IoT Full Stack Developer, South Africa. 3. Regional Lead, Parametric Technologies, North Europe. <p>17.09.2019 - International Symposium on Trending Technologies (Video Conference)</p> <p>Resource person:</p> <ol style="list-style-type: none"> 1. Vice President, Siemens Healthineers USA. 2. Senior Developer, Credability, Manchester, U.K. 3. Senior Consultants, HCL Technologies, U.K.
--	--

g) Innovative activities

Departments	
Zoology	<ol style="list-style-type: none"> 1. The Department has established a Vermicompost unit which consists of 3 tanks- Heap, Earth and Tank. Three species of earthworms are cultured- <i>Eisenia foetida</i>, <i>Perionyx excavatus</i> and <i>Eudrilus eugeniae</i>. An average of 1200 kgs of vermicompost is produced each year and sold to farmers, public and faculty. 2. An apiary unit consisting of 6 boxes is maintained by the department. The bees used in the Apiary is <i>Apis cerena indica</i>. Honey production has not been commercialized, but have been utilized by the faculty and students of the department.

Botany	1. Terrace Gardening (Production of Organic vegetables) - The Department have taken up the initiatives to construct the terrace garden to produce vegetables and promote greenery in the area. It gives direct access to fresh vegetables, fruits and it increases the oxygen production in air. It reduces the indoor temperature by 6 - 8 degree and can reduce air conditioning cost. Mainly terrace garden is safe, pesticide – free and we can harvest healthy green and fresh organic vegetables.
Chemistry	1. Installation of Kitchen Waste Biogas Plant- The way of Future- A Non Polluting source of energy from food waste which is used to provide heat and yields organic fertilizer as a byproduct. It is used in the Hostel for cooking purposes.
Mathematics	1. MATLAB Software was purchased and trained students for solving mathematical operations. It was also added in theory and practical's paper. 2. Hands on training and Workshops were conducted for Computer Programming Languages and R language, Machine Learning is included in the syllabus. 3. Skill enhancement programme on Digital security, statistical quality control was organized for the students.
Geography	1. The department had the opportunity to organize a number of hands on training and workshops in advanced techniques of survey, GIS and Remote sensing and workshops on advanced techniques in surveying- Total Station, DGPS and Drone Surveying with the DBT funds. GPS units have helped the students to carry out field surveys in smaller groups. 2. Certificate course in Geographical information system is carried out with the ArcGis Software purchased under DBT. 3. The students were able to survey the college campus using Total station, DGPS and drone and have mapped the entire campus. The map is published in the College website. 4. DBT funds have helped the Geography department to organize 5 weeks certificate course titled “EXCEL for Absolute beginners” for the entire college with an expert from United Kingdom.
Computer Science	1. Students developed projects in IoT, Machine learning and Published Papers etc., 2. Students have become highly talented in designing, editing videos and audios using multimedia concepts.

h)

Departments	Extension activities	Outreach		Mentoring colleges for Star College scheme
		Schools	Communities	
Zoology	22	4	7	3 1. GVG Visalakshi College, Udumalpet

				2. St. Mary's College, Tuticorin 3. Sri Vidya Mandir College, Krishnagiri
Botany	10	2	2	-
Chemistry	12		3	1 GVG Visalakshi College, Udumalpet
Mathematics	8	3	-	1 Jamal Mohammed College, Trichy
Geography	5	1	1	-
Computer Science	3	1	3	-

DBT- CTEP popular lecture series

Popular lecture series on “Basic concepts and Recent Advances in Modern Biology/ Biotechnology” was held on 27.02.2020. No of participants – 947. Resource persons were drawn from IISER, Pune, IISc, Bangalore and Bharathiar University, Coimbatore.

Science Adda programme

One day interaction programme under the aegis of Azadi Ka Amrit Mahotsav was organized on 07.02.2022. 2672 school students from 97 schools participated in the offline and online programme.

Mentoring

All the departments have Mentors from Star colleges/Universities to guide them through various programmes. Mentors meetings are conducted twice a year.

DBT Advisory meeting

Advisory Meeting has been organized every year with the chair person from DBT – Dr Suman Govil and Dr Garima Gupta and Mentors of the departments.

SUCCESS STORY OF THE STAR COLLEGE SCHEME

- The laboratories have been extensively strengthened and a number of practicals which was otherwise not possible has been introduced and sustained by the recurring grant for the purchase of chemicals and glasswares.
- It has been found over the years that 50% of our post graduate students come from our own college. The drop out rate in the II & III UG programme has come down drastically. Dropouts in the I UG is due to admission in Professional colleges.
- The number of students qualifying in competitive exams have increased – CSIR NET- 3, NET- 5, IIT GATE - 4, KTET- 13, KSET-3, CTET- 2, SLET- 8, SET -1, TNPSC-1.
- Laboratory manuals and SOPs have been compiled for all classes. This provides a good reference material and working procedure of all instruments in the lab.
- The recurring grant has helped the departments to organize a wide array of guest lectures, workshops, training programmes, seminar and conferences. Resource persons have been drawn from all over India and abroad, giving the students a platform to interact with people from diverse disciplines.
- Projects – group/ individual have increased the scientific temper in students. Some of them have presented and published their research work.