



# NIRMALA COLLEGE MUVATTUPUZHA

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**FOURTH CYCLE NAAC ACCREDITATION 2019**

## CRITERION 3

### RESEARCH, INNOVATIONS AND EXTENSION

3.2.1. Institution has created an ecosystem for innovations including Incubation centre and other initiatives for creation and transfer of knowledge

*Submitted to*



THE NATIONAL ASSESSMENT AND ACCREDITATION COUNCIL

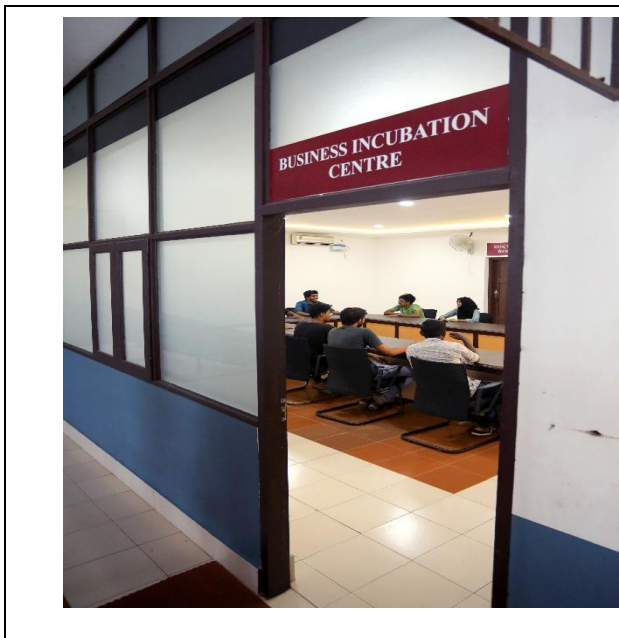
**CRITERION 3**  
**RESEARCH, INNOVATIONS AND  
EXTENSION**

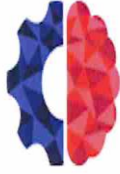
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## 1. INSTITUTION INNOVATION COUNCIL

Nirmala College has created an ecosystem for innovation and cultivation of ideas among students and faculties. The college has a MHRD recognized Institution Innovation Council (IIC) which functions as per the norms of the Government of India. After its establishment in 2018, the activities of **ED Club**, **Idea Lab** and **IPR Cell** were brought under the ambit of IIC. The College also provides platform for interaction between various stakeholders like local communities, industries and other academic institutions. The objective of the IIC is to provide common facilities for incubation of ideas through office and technical support. The IIC provides training, counselling and mentoring for setting up of enterprises and business planning. The IIC also act as a nodal agency to co-ordinate the activities of Idea Lab, ED Club and IPR Cell. The council also conducts programs such as workshops, seminars for entrepreneurship development and facilitates tools for technology development and its implementation. The IIC invites industry partners and successful entrepreneurs for regular interaction with the associated communities. IIC motivates and facilitates student participation in young innovator's programs. The council also provides infrastructural and technical support for establishment of start-ups.





MIC



## CERTIFICATE

This is Certify that

**Nirmala College, Muvattupuzha**

has established Institution Innovation Council (IIC) as per the Norms of  
Innovation Cell, Ministry of HRD, Govt. of India  
on 21st November, 2018.

**Prof. Anil D. Sahasrabudhe**  
Chairman, AICTE

**Shri. R. Subrahmanyam**  
Secretary, MHRD

**Dr. Abhay Jere**  
CIO, MHRD, Innovation Cell

## 1.1. IDEA LAB

The college has an **Idea Lab** which functions under the guidelines and purview of IIC and it acts as a **Social Laboratory** for the purpose of generation of ideas and **Social Entrepreneurship**. The idea lab works in close coordination with other clubs and forums. A number of initiatives have already been mooted from Idea Lab including **Organic Farming, Grow Bags, Online Boutiques and Development of Mobile Applications**. The ideas presented in the idea labs have been taken up at different levels for implementation by different departments, clubs and forums. The ideas like online Boutique and Mobile application got support for associated departments and are now in open domains. Some of the projects that were introduced in the Idea Lab got presented for external funding in the **Young Innovators Programme** organised by the **Kerala Development and Innovation Strategic Council (KDISC)**.

### 1.1.1. YOUNG INNOVATOR'S PROGRAM

The young innovators program is a specially designed programmed under the Kerala Development and Innovation Strategic Council (K-DISC) the programme aims to empower future innovator to innovate new products services or models to meet emerging requirements, unarticulated need or existing market needs of society more effectively through an innovative challenge. The college had submitted three proposals for the year 2019. One team from the department of physics lead by Dr. Thomas Varghese was selected for the State level selections after successfully clearing district selections. The idea to use innovative nanotechnology tools to make a TiO<sub>2</sub> induced environmentally friendly paints an innovation with the help of nanotechnology.

The other ideas submitted by the Department of botany with Dr. Shubin Mohanan as the advisor submitted a proposal on methods of psychological evaluation and support of teens. The team comprised of four students from the final year degree botany. Another Idea was submitted by the first-year degree students of Zoology with Ms Anu Abin of Department of Commerce.

The idea was to analyze and assess neuropsychiatric problems in youth especially college going students.



STRATEGIC ADVISOR

**Dr. P.V Unnikrishnan**  
Former Member, Kerala State Planning Board

off: +91 471 233 4472  
strategicadvisor@kdisc.kerala.gov.in  
mob: +91 944 777 2818  
pvunni31@gmail.com

Notification No. 2 /YIP-2019 dated 17/12/2019

Dear Dr. Thomas Varghese,

Ref: Idea ID No: IDEA/2019/76 (Visible light absorbed TiO<sub>2</sub>)

The State Level Evaluation for the Theme/Sub Theme Business model innovation shall be held at SCMS Cochin School of Business, Prathap Nagar, Muttom, Alwaye, Cochin - 683106, Kerala on 26/12/2019 Request your kind participation. Please see the state level Pitch Deck Instructions. Requests for including additional members in the group shall be entertained based on certification from institution heads only. Since this is a state level evaluation you are intimated that there won't be a second chance. If you don't participate in the selection process you lose your chance for the YIP 2019 challenge. Accommodation would be available to participants only on prior intimation and confirmation. Communication in this regards shall be made to Ms Arunima A, Programme Executive, K-DISC, Mob. No. +91 9188617431 email: [arunima24.kdisc@gmail.com](mailto:arunima24.kdisc@gmail.com) and Mr Dhanaj KM, Mob. No. +91 9400573632.

Yours Sincerely,

**Dr P V Unnikrishnan**

To

Dr. Thomas Varghese

### 1.1.2. ZERO HOUR

The need to acquaint and sensitize the students about the topics that are socially relevant and those of current affairs led to the novel initiative in the year 2018-19, “**THE ZERO HOUR**”. Departments were assigned specific slots according to a pre-set time schedule. The departments had the freedom and flexibility to select relevant topics. The crux of the selected topic is communicated to the entire college community through a short presentation through the public address system. The selected topic is designed and presented in such a way that everyone irrespective of the background is able to understand the topic. The time scheduled for the programme is 2.30 pm every Wednesday. The topics incorporated in zero hour includes most relevant issues of various disciplines, it enables the students to be apprised with socially relevant and hot topic during that period of time. This will also help in developing their understanding and insight into those cross-cutting issues and topics. The programme was inaugurated on July 11,2018 by the Principal DR.T.M Joseph. The audio recorded are uploaded in the google classroom.



SL. NO	DEPARTMENT	TOPIC	NAME OF THE STUDENT	MODE	LINK
1.	Commerce	Religious Harmony	Sara Gigi	Simplex	<a href="https://classroom.google.com/c/ODc4MTc5MjY4M1pa/p/MTk5MzY5MTQ5NTNa/details">https://classroom.google.com/c/ODc4MTc5MjY4M1pa/p/MTk5MzY5MTQ5NTNa/details</a>
		Tax Reforms	Abel Babu and Afsia Salim	Discussion	
2.	Zoology	World Ozone day	Bency Elsa Babu	Simplex	<a href="https://classroom.google.com/c/ODc4MTc5MjY4M1pa/p/MTY5MzU2MzIxMjNa/details">https://classroom.google.com/c/ODc4MTc5MjY4M1pa/p/MTY5MzU2MzIxMjNa/details</a>
		Beauty Products	Ashna Augustin	Simplex	<a href="https://classroom.google.com/c/ODc4MTc5MjY4M1pa/p/MTk4ODI2NDgxOTFa/details">https://classroom.google.com/c/ODc4MTc5MjY4M1pa/p/MTk4ODI2NDgxOTFa/details</a>
3	Physics	Climate change and its consequences	Sethu Lakshmi & Greeshma Saju	Discussion	<a href="https://classroom.google.com/c/ODc4MTc5MjY4M1pa/p/MTk2MTI3NjY5NzVa/details">https://classroom.google.com/c/ODc4MTc5MjY4M1pa/p/MTk2MTI3NjY5NzVa/details</a>
		Awareness of energy conservation	Ruksana	Simplex	
4	English	Common Errors in English	Catherin Santhosh and Manna Christa	Discussion	<a href="https://classroom.google.com/c/ODc4MTc5MjY4M1pa/p/MTk1NTQ1Mjg3Mzha/details">https://classroom.google.com/c/ODc4MTc5MjY4M1pa/p/MTk1NTQ1Mjg3Mzha/details</a>
		Homonyms	Aleena Mathew	Simplex	
		Currency Depreciation and Its consequences	Jagan Varghese	Simplex	<a href="https://classroom.google.com/c/ODc4MTc5MjY4M1pa/p/MTk1NTYwMTk0NDda/details">https://classroom.google.com/c/ODc4MTc5MjY4M1pa/p/MTk1NTYwMTk0NDda/details</a>



5	Economics	Rohingya Muslims	Parvathy Jayakumar	Simplex	
6	MTTM	World Tourism Day	Albert M	Simplex	<a href="https://classroom.google.com/c/ODc4MTc5MjY4M1pa/p/MTk1NTU4NDMyOTJa/details">https://classroom.google.com/c/ODc4MTc5MjY4M1pa/p/MTk1NTU4NDMyOTJa/details</a>
7	Communicative English	Media Jargons	Anna and Christa	Discussion	<a href="https://classroom.google.com/c/ODc4MTc5MjY4M1pa/p/MTcxNTY0MjY4MjJa/details">https://classroom.google.com/c/ODc4MTc5MjY4M1pa/p/MTcxNTY0MjY4MjJa/details</a>
		Cleanlines	Atira James	Simplex	<a href="https://classroom.google.com/c/ODc4MTc5MjY4M1pa/p/MTY5MTc4MDU1MTRa/details">https://classroom.google.com/c/ODc4MTc5MjY4M1pa/p/MTY5MTc4MDU1MTRa/details</a>
8	NCC	NCC	Athulya T	Simplex	<a href="https://classroom.google.com/c/ODc4MTc5MjY4M1pa/p/MTcwMzcyNDk1NzRa/details">https://classroom.google.com/c/ODc4MTc5MjY4M1pa/p/MTcwMzcyNDk1NzRa/details</a>
9	Zoology	World Ozone day	Bency Elsa Babu	Simplex	<a href="https://classroom.google.com/c/ODc4MTc5MjY4M1pa/p/MTY5MzU2MzIxMjNa/details">https://classroom.google.com/c/ODc4MTc5MjY4M1pa/p/MTY5MzU2MzIxMjNa/details</a>
		Beauty Products	Ashna Augustin	Simplex	<a href="https://classroom.google.com/c/ODc4MTc5MjY4M1pa/p/MTk4ODI2NDgxOTFa/details">https://classroom.google.com/c/ODc4MTc5MjY4M1pa/p/MTk4ODI2NDgxOTFa/details</a>
10	Chemistry	Plastic pollution	Devika Hari and Sini mol Sunny	Discussion	<a href="https://classroom.google.com/c/ODc4MTc5MjY4M1pa/p/MTY4ODM0OTk0NjBa/details">https://classroom.google.com/c/ODc4MTc5MjY4M1pa/p/MTY4ODM0OTk0NjBa/details</a>
		Green House Effect	Mable Maria Baby	Simplex	
11	Library	Role of Library	Dr Vasudevan Namboothiri	Simplex	<a href="https://classroom.google.com/c/ODc4MTc5MjY4M1pa/p/MTY4ODIzODM0Mzha/details">https://classroom.google.com/c/ODc4MTc5MjY4M1pa/p/MTY4ODIzODM0Mzha/details</a>
12	BCA	Google Class Room	Gayathri NS	Simplex	<a href="https://classroom.google.com/c/ODc4MTc5MjY4M1pa/p/MTY4ODM1NzU4MzVa/details">https://classroom.google.com/c/ODc4MTc5MjY4M1pa/p/MTY4ODM1NzU4MzVa/details</a>
13	NSS	Objectives and concepts of NSS	Diya and Gopika	Discussion	<a href="https://classroom.google.com/c/ODc4MTc5MjY4M1pa/p/MTY4ODM0MDUyNjVa/details">https://classroom.google.com/c/ODc4MTc5MjY4M1pa/p/MTY4ODM0MDUyNjVa/details</a>

## 1.2. ENTREPRENEURSHIP DEVELOPMENT CLUB

The College encourages entrepreneurial thinking and promote business knowledge, and instil confidence in entrepreneurship in every student of Nirmala College through the activities of ED Club.

### Mission

- To encourage entrepreneurial thinking and activity, business knowledge, and commercial awareness.
- To instil confidence, inspire and build momentum among the entire student body.
- To stimulate participation and interaction between students, entrepreneurs, alumni, faculty and prominent individuals in the world.

### Objectives

- To encourage first generation entrepreneurs from among the students who do not have any business background.
- To develop and strengthen the entrepreneurial competency among the prospective student entrepreneurs.
- To provide possible help and assistance in identification and formulation of viable projects.
- To impart training in managerial understanding and skills to potential student entrepreneurs.
- To empower and train potential women entrepreneurs.

**A few selected ideas taken up and materialized by the ED club is listed below.**

### 1.2.1. STUDENT ENTREPRENEURS

#### **1. ASIYA AYOOB, BCA (2015-2018) – *Online Boutique “Lyrah”***

Asiya, a BCA student of Nirmala College, Muvattupuzha launched a women’s online fashion boutique called “Lyrah” in November 2017. It takes root from the incubation center of the college. She has nearly 2000 followers on her page. This online boutique has garnered much interest among the college community and general public.





**2. GEORGEKUTTY, MHRM – *Natural Organic Honey Manufacturing business.*** One of the management students who had actively participated in the Apiculture workshops and training sessions started his own venture in production of organic honey.

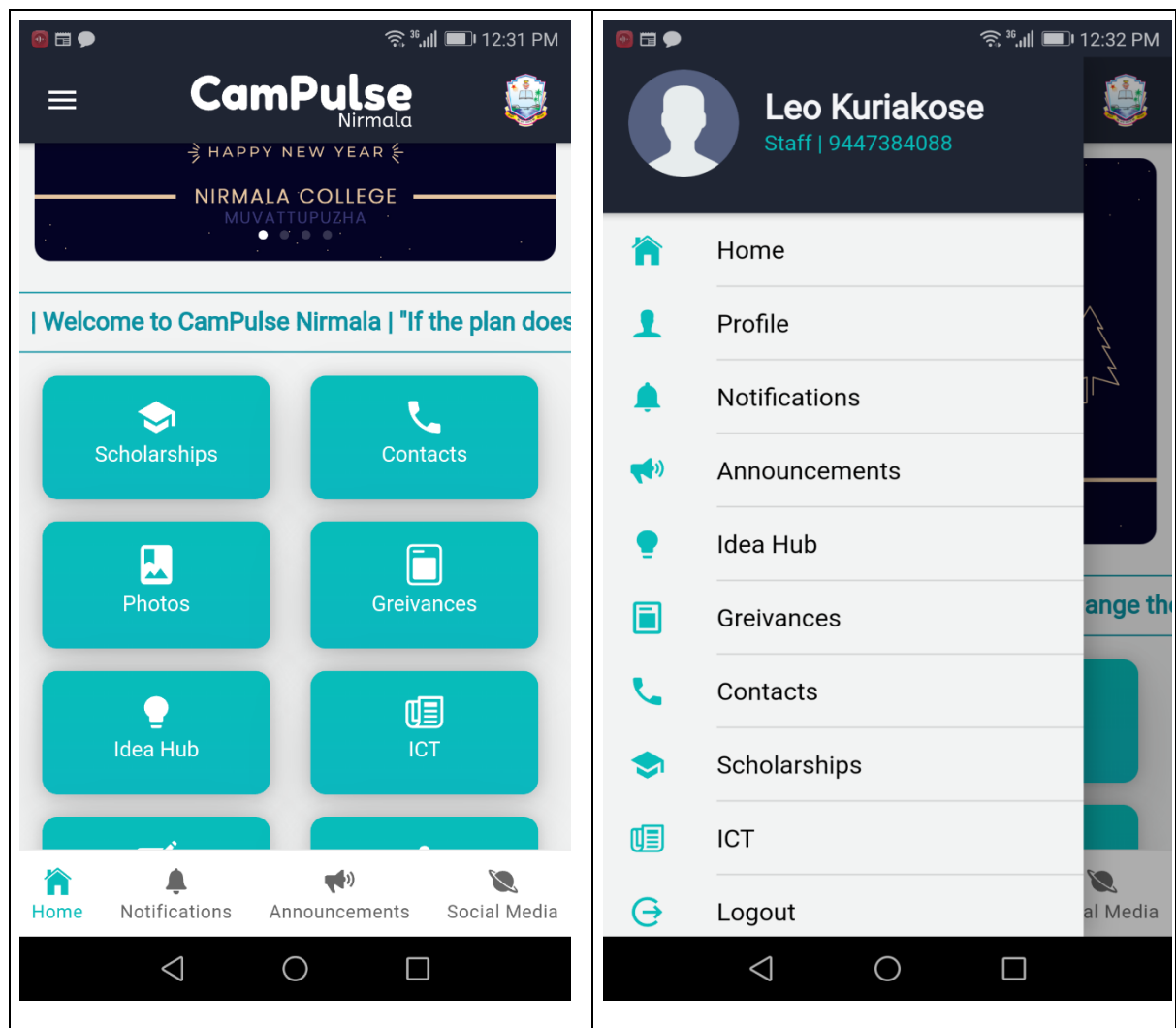


A video on Georgekutty who started natural organic honey manufacturing

<https://youtu.be/naS-atrwHxY>

### 3. SANDEEP, BCA, *CamPulse Student App*

Sandeep, a BCA student developed a mobile app “CamPulse” for the students. Faculty and students can get access to the announcements in the college from anywhere. The idea to develop mobile application for a more connected college was mooted in the idea lab this was encouraged and taken up by the entrepreneurship development club. With the help of the faculty of the Department of Statistics and Computer Applications the first mobile app **CamPulse** was designed for effective communication within the college community.

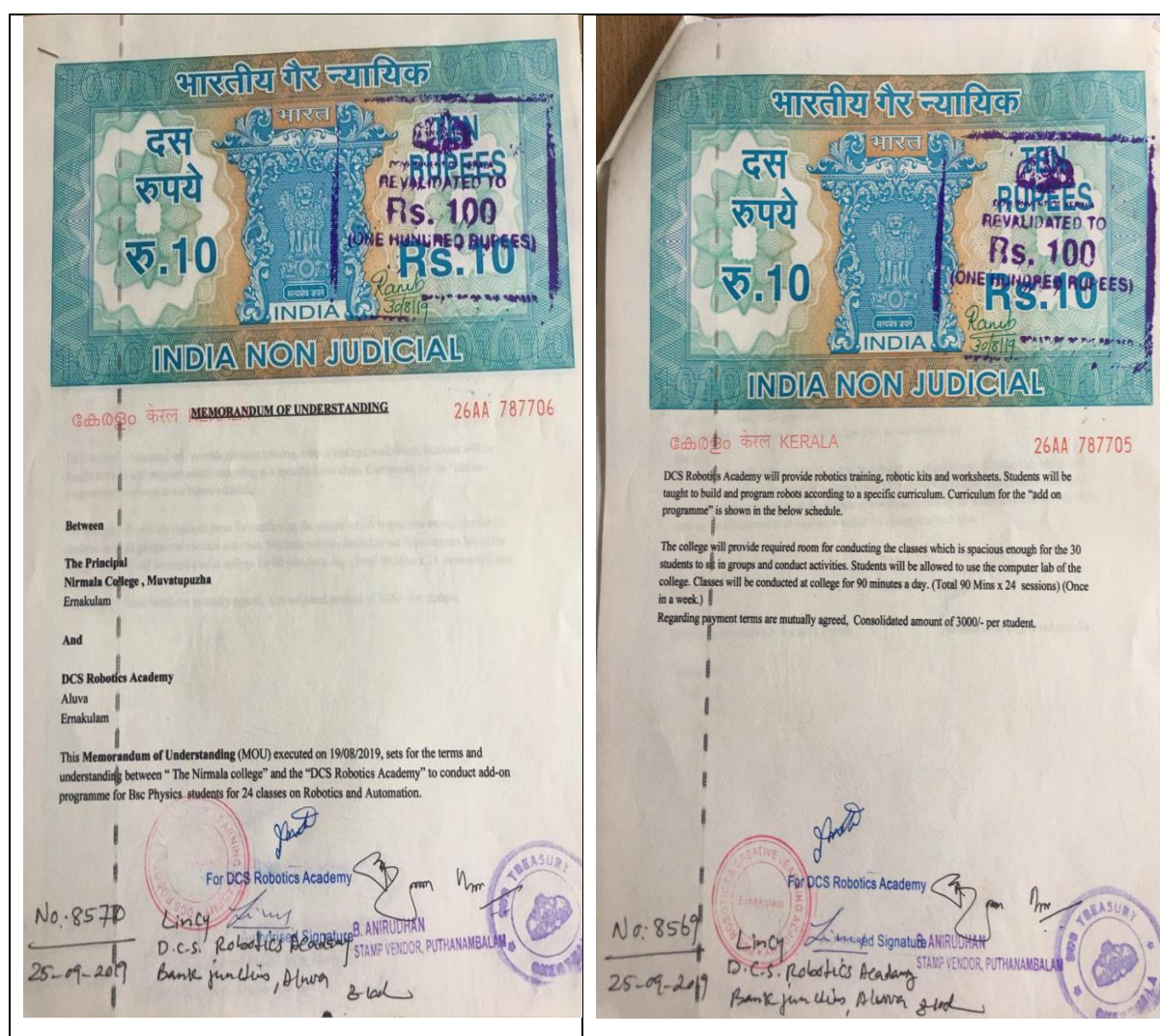


## 1.2.2. TRAINING ON ADVANCED TOPICS

During various sessions and meeting of the idea lab, the need for training and workshops to acquaint the students with latest technologies and techniques in STEM (Science, Technology, Engineering and Mathematics) were highlighted. This was taken up by the authorities of ED Club and led to issuing of instructions to department to forge alliances and associations with different agencies and firms are to conduct programmes in advanced topics such as Artificial Intelligence and Robotics, Data Science.

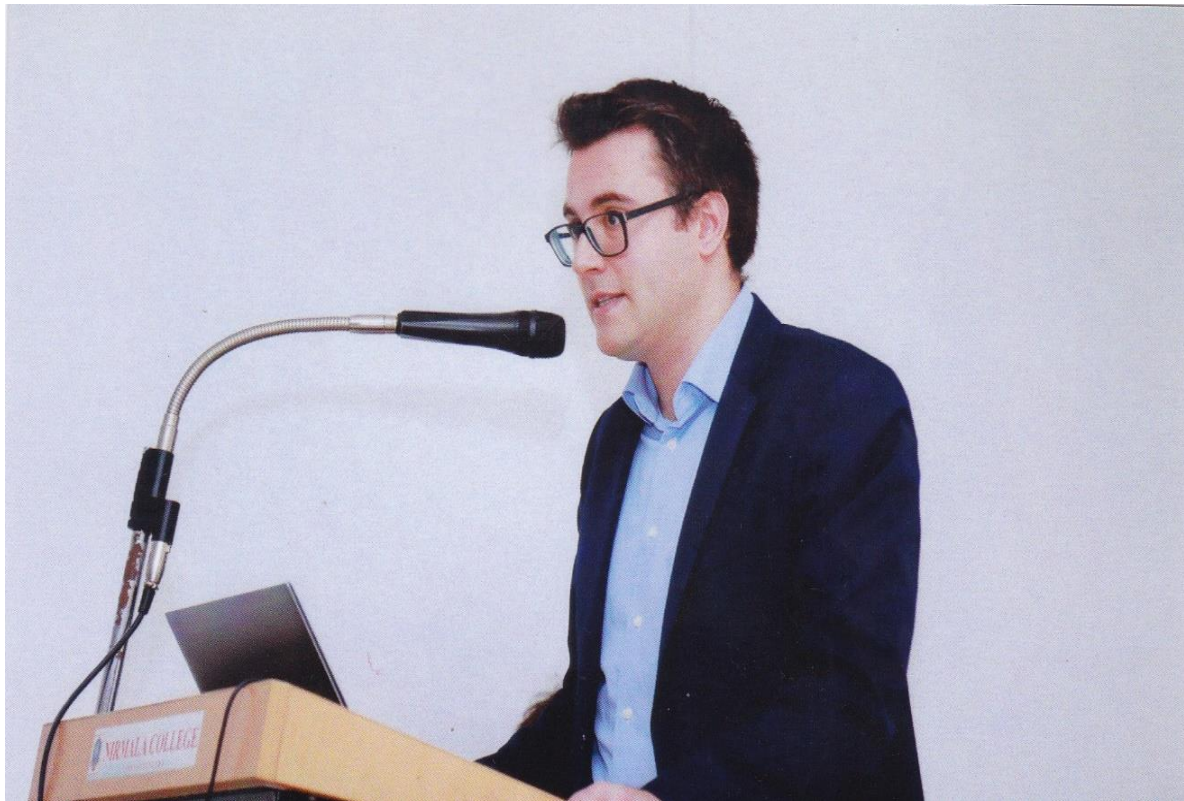
### 1.2.2.1. Add on programme in Robotics and Automation

An MoU was signed by Department of Physics and DCS Robotics Academy to conduct an add on programme in Robotics and Automation. The course is being offered in the academic year 2019-2020 and thirty students have enrolled in the course.



**a) National Workshop on Data Science (From Data to Knowledge)  
in Association with DataCamp**

Data Scientists are most sought after professionals in Big Data Analytics and IT Industry. Each and every domain of science, technology, arts, and economics are inclined more towards analytics which needs a massive amount of data collected for a long period of time. Shortage of skilled professionals in a world which is increasingly turning to data for decision making has also led to the huge demand for Data Scientists in start-ups as well as well-established companies. Besides business analytics, Data Scientists are also involved in building data products and software platforms, along with developing visualizations and machine learning algorithms. Thus the knowledge in the field of Data Science opens several high demand career paths. With an objective to give exposure to the students in the advanced topic of Data Science and artificial intelligence, the Post Graduate and Research Department of Statistics Department of Statistics conducted a **National Workshop on Data Science (From Data to Knowledge) in association with the Data Camp**, a US based online “data science” learning platform offering tutorials and courses in data science. The company focus on the technology R, used for Big **Data, data** visualization, and programming with R and offer courses on interactive R, Python, Sheets, SQL and shell courses. The workshop was organised by the, Nirmala College, Muvattupuzha on 8-9 February 2019. Nicola Stalder, Consultant, IAZI, Switzerland & Mathias Ambühl, Senior Consultant and Managing Director, IAZI, Switzerland were the Chief Guests of the programme. Softwares developed by IAZI have already been used for applications such as core banking solutions, credit applications, web clients etc. The programme was inaugurated on 8<sup>th</sup> February 2019 at 09.30 am. The topics covered were, Review of basic R programing, Introduction to *Tidyverse*, Dates and Times in R with *lubridate*, Data manipulation in R with *dplyr*, Data visualisation with *ggplot*, New trends in data science, Cluster analysis, Supervised learning, Classification and Unsupervised learning. Students from various institutions in Kerala had participated in the Workshop. The training was well appreciated by the participants as it helped them to gain insight in the field of Data Science.





## 2. STUDENT PROJECTS - SPYTiS

Students are encouraged to apply for projects funded by KSCSTE (Kerala State Council for Science Technology and Environment) with the guidance from faculty members from respective departments. The SPYTiS scheme allows the students to gain a first hand experience in research. The students who come up with innovative ideas are encouraged to write full fledged projects and apply for funding. These usually will become part of their under graduate dissertation. During the fore said period the college has received financial support for over 10 projects.

**KERALA STATE COUNCIL FOR SCIENCE, TECHNOLOGY AND ENVIRONMENT**  
An Autonomous body of the Government of Kerala

KSCSTE – SPYTiS Project – 2015-'16- release of financial assistance - Sanctioned - Orders issued  
Council (P) Order No.1091/2015/KSCSTE Thiruvananthapuram, Dated: 29.02.2016

Ref: (1) SPYTiS application submitted Dr. Gigi K Joseph, Assistant Professor, Dept of Zoology,  
Nirmala College, Muvattupuzha  
(2) Minutes of the Project Evaluation Committee meeting for SPYTiS-2015-'16  
(3) File No. 47/SPYTiS II/2015/KSCSTE

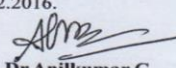
**ORDER**

Kerala State Council for Science, Technology and Environment (KSCSTE) is operating a programme to nurture young talents among school and college students to carry out science projects. Under this category, a project titled **“Invertebrate diversity of Santhukad Sacred Grove in Idukki District with special reference to the association of religio cultural values and conservation significance”** was submitted by Dr. Gigi K Joseph Assistant Professor, Dept of Zoology, Nirmala College, Muvattupuzha as the teacher supervisor and Ms. Aswathy Raj as student investigator(s). The Project Evaluation Committee for SPYTiS-2015-'16 during the meeting held on October 14, 2015 approved the project and recommended **₹10000/- (Rupees ten thousand only)** towards financial assistance to conduct the project.

KSCSTE is pleased to accord sanction to release the approved amount of **₹10000/- (Rupees ten thousand only)** as account payee cheque in favour of The Principal, Nirmala College, Muvattupuzha. The expenditure in this regard will be met from the Council Budget under the Head of Account (III) Schemes and Programmes of KSCSTE- **“Scheme for Promoting Young Talents in Science (SPYTiS) and Nurturing Excellence in Science Teaching (NEST)”**.

The teacher supervisor should submit the final technical report, utilization certificate and statement of expenditure duly signed by the Head of the Institution within one month of completion of the project.

The above sanction has been issued under the delegated powers of the Council, with the approval of the Director, KSCSTE vide sanction No1014/DIR/2015-2016/KSCSTE dated, 29.02.2016.

  
**Dr. Anilkumar C**  
Scientist EII & Head  
Science Education Division, KSCSTE

To  
Dr. Gigi K Joseph Assistant Professor, Dept of Zoology, Nirmala College,  
Muvattupuzha

Copy to:  
1. The Principal, Dr. Nirmala College, Muvattupuzha  
2. Ms. Aswathy Raj, Student(s), Nirmala College, Muvattupuzha

The Cash Section to disburse the amount through a/c payee cheque Administrative Officer,  
Finance Officer, PS to Executive Vice President, PA to Member Secretary, PA to Director, PA to  
Controller of Administration, Auditors File, Stock File/Office Copy



**KERALA STATE COUNCIL FOR SCIENCE, TECHNOLOGY AND ENVIRONMENT**  
**An Autonomous body of the Government of Kerala**

KSCSTE – SPYTiS Project – 2015-'16- release of financial assistance - Sanctioned - Orders issued  
Council (P) Order No.1119/2015/KSCSTE Thiruvananthapuram, Dated: 29.02.2016

- Ref: (1) SPYTiS application submitted Prof. Dilmol Varghese, Associate Professor, Dept. of Zoology,  
Nirmala College, Muvattupuzha  
(2) Minutes of the Project Evaluation Committee meeting for SPYTiS-2015-'16  
(3) File No. 48/SPYTiS II/2015/KSCSTE

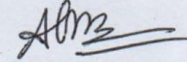
**ORDER**

Kerala State Council for Science, Technology and Environment (KSCSTE) is operating a programme to nurture young talents among school and college students to carry out science projects. Under this category, a project titled **“A study on the prevalence of banana pests in Kerala agro ecosystems affecting productivity with special reference to their control strategies and management”** was submitted by Prof. Dilmol Varghese, Associate Professor, Dept. of Zoology, Nirmala College, Muvattupuzha as the teacher supervisor and Ms. Alfina P K as student investigator(s). The Project Evaluation Committee for SPYTiS-2015-'16 during the meeting held on October 14, 2015 approved the project and recommended **₹-10000 (Rupees ten thousand only)** towards financial assistance to conduct the project.

KSCSTE is pleased to accord sanction to release the approved amount of **₹10000/- (Rupees ten thousand only)** as account payee cheque in favour of The Principal, Nirmala College, Muvattupuzha. The expenditure in this regard will be met from the Council Budget under the Head of Account **(III) Schemes and Programmes of KSCSTE- “Scheme for Promoting Young Talents in Science (SPYTiS) and Nurturing Excellence in Science Teaching (NEST)”**.

The teacher supervisor should submit the final technical report, utilization certificate and statement of expenditure duly signed by the Head of the Institution within one month of completion of the project.

The above sanction has been issued under the delegated powers of the Council, with the approval of the Director, KSCSTE vide sanction No1042/DIR/2015-2016/KSCSTE dated, 29.02.2016.



**Dr. Anilkumar C**  
**Scientist EII & Head**  
**Science Education Division, KSCSTE**

To  
Prof. Dilmol Varghese, Associate Professor, Dept. of Zoology, Nirmala College,  
Muvattupuzha

Copy to:

1. The Principal, Nirmala College, Muvattupuzha
2. Ms. Alfina PK, Student Nirmala College, Muvattupuzha

The Cash Section to disburse the amount through a/c payee cheque Administrative Officer,  
Finance Officer, PS to Executive Vice President, PA to Member Secretary, PA to Director, PA to  
Controller of Administration, Auditors File, Stock File/Office Copy



## Kerala State Council for Science, Technology and Environment

Dr. Anilkumar C  
Scientist EII & Head  
Science Education Division

28.11.2015

44/SPYTiS II/2015/KSCSTE

Dear Sir/ Madam,

*Sub:-* Your project entitled "**A comparative study on the effect of organic farming and inorganic farming on soil fertility, yield and quality of Ananas comosus**" – Sanctioning the project-reg.

*Ref:-* Decision of the Project Evaluation Committee of SPYTiS II held on 14/10/2015

This is to invite your attention to the reference cited and to inform that the project proposal entitled "**A comparative study on the effect of organic farming and inorganic farming on soil fertility, yield and quality of Ananas comosus**" submitted by **Mrs. Jisha Jacob, Asst. Professor, Dept of Zoology, Nirmala College, Muvattupuzha** as PI and Ms. Meenu Babu as student investigator(s) has been approved. An amount of **₹10000/-** (Rupees ten thousand only) is sanctioned by the Council.

The maximum number of student investigators for a single project should not exceed five and the time frame for completion of projects under SPYTiS II will be six months. The Principal Investigator (PI) has to submit the following documents to the undersigned at the earliest for the issuance of the formal sanction order.

1. A copy of the Terms and Conditions (attached with this letter) duly signed by the PI and counter signed by the Head of the Institution.
2. The date of start of the project shall be intimated to the Council.

Thanking You,

Yours sincerely,

Anilkumar C

To,

Mrs. Jisha Jacob, Asst. Professor, Dept of Zoology, Nirmala College,  
Muvattupuzha Pincode 686661

Copy to:

The Principal, Nirmala College, Muvattupuzha Pincode 686661

Sasthra Bhavan, Pattom P.O., Thiruvananthapuram - 695 004, Kerala State, India  
Tel : 0471 - 2548200-09, EVP - 2543557, 2548222, MS - 2534605, 2548220, CoA - 2543556, 2548248  
Fax : 0471 - 2540085, 2534605 e-mail : kscste@gmail.com, www.kscste.kerala.gov.in



## Kerala State Council for Science, Technology and Environment

Dr. Anilkumar C  
Scientist EII & Head  
Science Education Division

28.11.2015

46/SPYTiS II/2015/KSCSTE

Dear Sir/ Madam,

**Sub:-** Your project entitled " **A comparative study on the Air pollution tolerance index of indigenous plants at various sites in Muvattupuzha, Ernakulam district**– Sanctioning the project-reg.

**Ref:-** Decision of the Project Evaluation Committee of SPYTiS II held on 14/10/2015

This is to invite your attention to the reference cited and to inform that the project proposal entitled " **A comparative study on the Air pollution tolerance index of indigenous plants at various sites in Muvattupuzha, Ernakulam district** submitted by **Mrs. Ambili Elizabeth George, Assistant Professor, Dept of Zoology, Nirmala College Muvattupuzha** as PI and Ms. Ansu K Eldhose as student investigator(s) has been approved. An amount of **₹10000/-** (Rupees ten thousand only) is sanctioned by the Council.

The maximum number of student investigators for a single project should not exceed five and the time frame for completion of projects under SPYTiS II will be six months. The Principal Investigator (PI) has to submit the following documents to the undersigned at the earliest for the issuance of the formal sanction order.

1. A copy of the Terms and Conditions (attached with this letter) duly signed by the PI and counter signed by the Head of the Institution.
2. The date of start of the project shall be intimated to the Council.

Thanking You,

Yours sincerely,

Anilkumar C

To,

✓ Mrs. Ambili Elizabeth George, Assistant Professor, Dept of Zoology, Nirmala College  
Muvattupuzha Pincode 686661

Copy to:

The Principal, Dept of Zoology, Nirmala College Muvattupuzha Pincode 686661

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Sasthra Bhavan, Pattom P.O., Thiruvananthapuram - 695 004, Kerala State, India  
Tel : 0471 - 2548200-09, EVP - 2543557, 2548222, MS - 2534605, 2548220, CoA - 2543556, 2548248  
Fax : 0471 - 2540085, 2534605 e-mail : kscste@gmail.com, www.kscste.kerala.gov.in



## Kerala State Council for Science, Technology and Environment

Dr. Anilkumar C  
Principal Scientist & Head  
Science Education Division

30.10.2017

Letter No.150/SPYTiS-II/2017/KSCSTE

Dear Sir/ Madam,

**Sub:-** Your project entitled "**Characterization and applications of Chimney soot nanoparticles**"- Sanctioning the project-reg.

**Ref:-** Decision of the Project Evaluation Committee of SPYTiS I held on 23/9/2017

This is to invite your attention to the reference cited and to inform that the project proposal entitled "**Characterization and applications of Chimney soot nanoparticles**" submitted by Dr. Thomas Varghese, Physics, Nirmala College, Muvattupuzha- 686661 as PI and Ms. Chithra Aloysius, Ms. Aveena Abee Varghese as student investigator(s) has been approved. An amount of **₹8500/-** (Rupees eight thousand five hundred only) is sanctioned by the Council.

The maximum number of student investigators for a single project should not exceed five and the time frame for completion of projects under SPYTiS I will be three months. The Principal Investigator (PI) has to submit the following documents to the undersigned at the earliest for the issuance of the formal sanction order.

1. **Official Bank Account details of the Institution**, a copy of **terms and conditions** duly signed by the PI and counter signed by the Head of the Institution. The format for terms and condition & bank account details can be downloaded from [www.kscste.kerala.gov.in](http://www.kscste.kerala.gov.in)
2. The date of start of the project shall be intimated to the Council.

Thanking You,

Yours sincerely,

Anilkumar C

To,

Dr. Thomas Varghese, Nirmala College, Muvattupuzha- 686661

Copy to:

The Principal, Nirmala College, Muvattupuzha- 686661

Ms. Chithra Aloysius, Ms. Aveena Abee Varghese, Nirmala College, Muvattupuzha- 686661

Sasthra Bhavan, Pattom P.O., Thiruvananthapuram - 695 004, Kerala State, India  
Tel : 0471 - 2548200-09, EVP - 2543557, 2548222, MS - 2534605, 2548220, CoA - 2543556, 2548248  
Fax : 0471 - 2540085, 2534605 e-mail : [kscste@gmail.com](mailto:kscste@gmail.com), [www.kscste.kerala.gov.in](http://www.kscste.kerala.gov.in)



## Kerala State Council for Science, Technology and Environment

Dr. Anilkumar C  
Principal Scientist & Head  
Science Education Division, KSCSTE

07/01/2019

556 /SPS63/2018/KSCSTE

Dear Ms.Ambily Elizebeth George,

Sub:-Financial assistance for Student Project scheme of KSCSTE reg.  
Ref:-Your application received under Student Project scheme

This is to invite your attention to the reference cited and to inform that the project proposal titled "**Diet and parasite determination through scat analysis of four primate species from Periyar Tiger Reserve, Thekkadi**" submitted by Ms.Ambily Elizebeth George as PI and Ms.Ashna Augustine as student investigator has been approved. An amount of ₹10000/- is sanctioned by the Council. The budget estimate of the project is detailed below.

SL.NO.	ITEMS	AMOUNT(₹)
1.	Consumables	5000
2.	Travel	2000
3.	Research Literature & Documentation	1000
4.	Others (for analysis)	2000
	<b>Total</b>	<b>10000</b>

The PI has to submit the signed Terms and Conditions, details of Bank Account of Head of the Institution and the date of start of the project within two weeks to the undersigned. On completion of the project you should submit one hard copy and a soft copy of the final report (in pdf to [spkscste@gmail.com](mailto:spkscste@gmail.com)), audited Statement of Expenditure and Utilization Certificate counter signed by the Head of the Institution for releasing the grant. The format for final report, SE, UC and Bank Account details can be downloaded from [www.kscste.kerala.gov.in](http://www.kscste.kerala.gov.in).

Thanking you,

Yours sincerely,

Anilkumar C

To  
✓ Ms.Ambily Elizebeth George, Assistant Professor, Department of Zoology, Nirmala College,  
Muvattupuzha, Ernakulam(Dist),-686661

Copy to:

The Principal, Nirmala College, Muvattupuzha, Ernakulam(Dist),-686661  
Ms.Ashna Augustine, student, Nirmala College, Muvattupuzha, Ernakulam(Dist),-686661

Sasthra Bhavan, Pattom P.O., Thiruvananthapuram - 695 004, Kerala State, India  
Tel : 0471 - 2548200-09, EVP - 2543557, 2548222, MS - 2534605, 2548220, CoA - 2543556, 2548248  
Fax : 0471 - 2540085, 2534605 e-mail : [kscste@gmail.com](mailto:kscste@gmail.com), [www.kscste.kerala.gov.in](http://www.kscste.kerala.gov.in)

### **3. MEET THE EXPERTS**

With the growing link between the industry and academia, it is of immense importance that the college provides an early exposure to the students to industry. The college provides an active platform through its ED club and Idea lab for the members of industry to interact with the academia. The interactions are beneficial for both as this interactive session help drive the industry oriented research and help the student understand what it takes to get employed. The programme also helps the students to get motivated to become future entrepreneurs.

#### **3.1. WORK SHOP ON APPLICATION OF IATA FARE RULES AND RESTRICTIONS**

With rapid growth in tourism industry and increase in demand for qualified individuals with crisp knowledge in this field. Knowledge of IATA related subjects will help the students secure jobs in major airlines, airports, travel companies, tour operating companies etc. This also help the student to start travel companies or organize independent paid tours. Department of Management Studies, Nirmala college, Muvattupuzha organized a one day “Work shop on application of IATA fare rules and restrictions” for the final year students of BTM. 32 students participated in this program which was conducted on 12<sup>th</sup> July, 2017. The class was handled by Miss Harsha P, Trainer, Kairos Institute, Thodupuzha. The main aim of the programme was to provide advanced training on using the IATA BSP, Global Distribution systems and other fare calculation procedures. IATA offers a wide range of fares and ticketing systems to enable to update and expand pricing skills.





Nirmala College, Muvattupuzha  
Department of Management  
Studies

*Workshop on  
Application of IATA fare  
rules and Restrictions*

*Harsha P  
Trainer, Kairos Training Institute*

————— ✈ —————  
**12th July 2017**

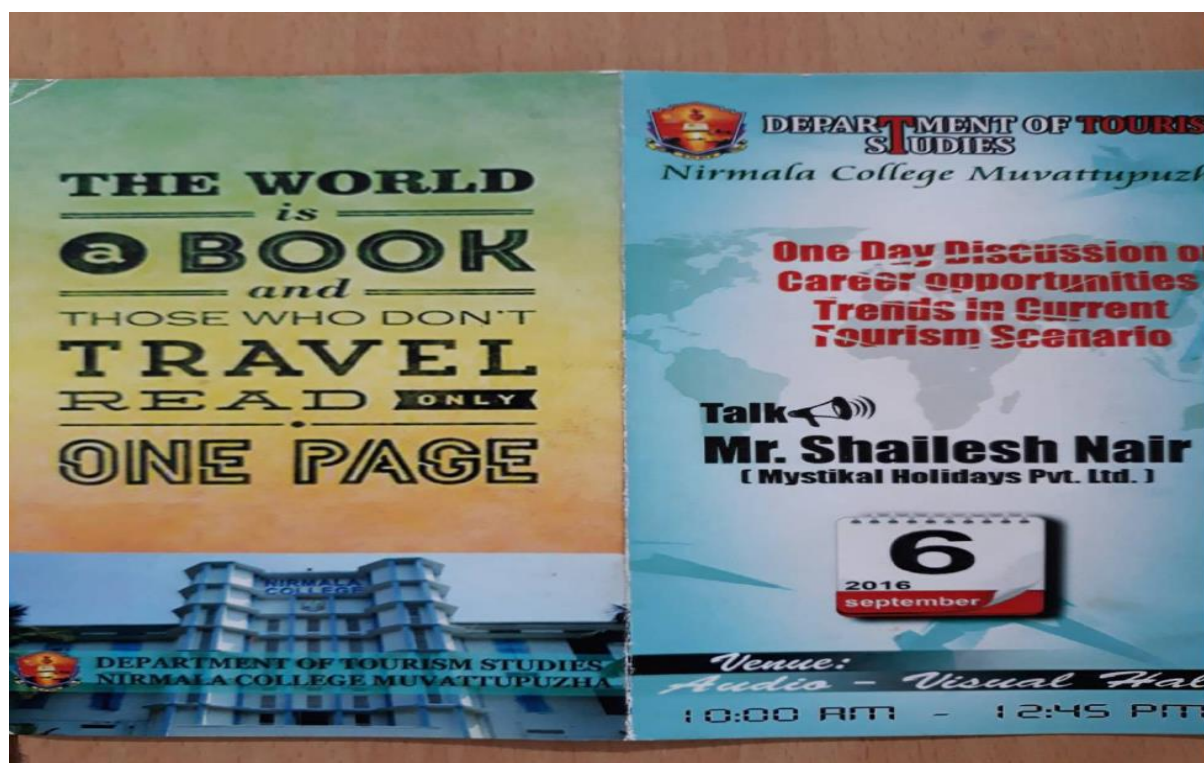
————— ✈ —————  
Venue :- Diamond Jubilee  
Block





### 3.2. SEMINAR ON CAREER OPPORTUNITIES AND RECENT TRENDS IN TOURISM INDUSTRY

The travel and tourism industry is growing fast. This is the crucial sector providing major employment opportunities for local youths. Proper training to match the infrastructure and skill sets required to meet the international standards will provide great number of career opportunities. To acquaint the students about the career opportunities and prospects in the Tourism and hospitality industry. Department of management studies organised a one-day seminar on Career Opportunities and Recent Trends in Tourism Industry on 6<sup>th</sup> September 2016. The resource person was Mr. Shailesh Nair, Mistikal Holidays a reputed travel solutions provider. The programme was aimed to introduce the diversified employment opportunities in different sectors of tourism to concerned stakeholders including, academicians, policy makers and business owners of tourism and hospitality sections. The resource person also brought to the notice of the participants that tourism can only flourish if the industry can employ qualified staff or sustainable workforce which is the heart for excellent and prompt service delivery system. Thus, this seminar provided information about challenges and opportunities of tourism and hospitality employment. The session was fruitful to the students.





#### 4. SCIENCE AND SOCIETY - JOURNAL

The College has been publishing Bi-annual Journal “Science & Society” (ISSN:0973-0206) since 2000 for the purpose of transfer of knowledge.

