

CHILDREN'S EDUCATION SOCIETY (REGD.)

## THE OXFORD COLLEGE OF SCIENCE



# ANNUAL REPORT

2019-20

#### CHILDREN'S EDUCATION SOCIETY (REGD.)

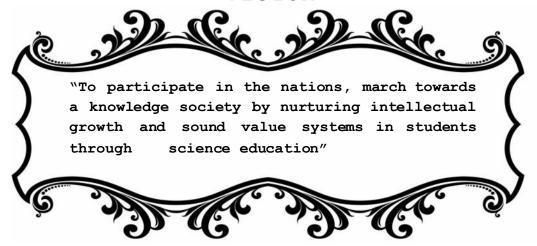


#### "VIDYA SARVATRA SHOBHATE"

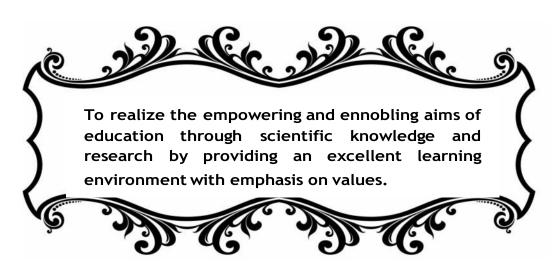
The logo statement envisions the knowledge to one and all for better future. The Institution stresses the importance of nourishing young minds with enough food for thought, sensitizing them to the socio economic realities thereby energizing them to work for bright and prosperous tomorrow.

Goddess Saraswathi the repository of knowledge or "Vidya" stands for the overall development of the student's personality that results from an ideal combination of values, knowledge and skills.





#### **MISSION**



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Founder Chairman

Late Sri S. Narasa Raju (05.06.1941-16.05.2016)



#### "Coming together is a beginning; keeping together is progress; working together is success".

The Oxford College of Science has adopted a dynamic creative and the communicative approach in education research and development. Since science converse the broad field of knowledge that deals with observed facts and relationships among these facts, faculty aims at facilitating the opportunities for the students and helps them to explore the world of these facts and their relationships. Keeping Abstract of modern developments, the college is constantly restructuring itself and renovating its physical infrastructure as well as research and education facilities. Our aim is to motivate and empower the students to be learners and critical thinkers throughout their lives. It gives me immense pleasure to release the Annual Report of 2019-20.



#### Sri S.N.V.L Narasimha Raju Chairman, The Oxford Educational Institutions

#### "Education is not the filling of a pail, but the lighting of a fire".

Purpose of our institution is to transfer knowledge and prepare young generation to participate in the nation's march. The Oxford College of Science in its long journey cherishes the effort laid by the management, faculty and students to achieve exemplary credits in the annals of education. The institution is committed to provide quality education in an enviable environment built with diligence, perseverance and excellence. The Annual College Report is humble step towards showcasing the earnest efforts of the management, faculty and the students during the academic year. I wish all the success to the faculty and the students in their future prospects.



Dr. R. Kavyashree Principal, The Oxford college of Science



#### **COLLEGE PROFILE**

















#### **RECOGNITION:**

- Accredited with A grade by NAAC in Cycle II Recognized by IAO
- Recognized by UGC -2(f) and 12(B) status Bangalore University Permanent Affiliation Approved by AICTE
- Accredited by LSSSDC

#### **ACCOMPLISHMENTS:**

- Supported by DST under FIST program
- Recognized Centre of Biotechnology Skill Enhancement Program
- Recognized as Research Centre by Bangalore University
- Received Fund to strengthen Research facility DST, GOI
- Women Scientists Scheme (WoS-A), DST, GoI
- Centre of Innovative Science Education (CISE)
- Karnataka Fund for Infrastructure in Science & Technology (K-FIST)
- Seed Money for Young Scientist Research (SMYSR)
- Small Projects in College Education (SPiCE)
- Ranked No. 7 in Karnataka MDRA survey- India Today
- Ranked No. 6 in Karnataka Hansa Research survey- The Week
- Dept of Biotechnology ranked No. 1 in Karnataka by Biospectrum





#### HIGHLIGHTS

- 11 University ranks with 80% graduation rate
- 693 students provided with The Oxford Merit Scholarship
- 799 students provided with The Oxford Unnati Scholarship
- 11 International placement with overall 70% Placement and progression rate
- 91 faculty members were provided with financial support under Research promotion scheme
- 108 faculty members attended various Professional Development Programs
- 27 non-teaching staff participated in Staff Training Program
- Best Teacher Award for the faculty for outstanding contribution in the field of teaching
- Best Employee Award for excellent performance
- 6 MoUs/Collaborations were signed and executed



#### GLIMPSES OF ACADEMIC EVENTS 2019-20

- National Conference on "National Conference on "Recent advances in Biotechnology" in association with CSIR
- TOJSR journal had contributions from researchers across the state and published 14 original research articles in Volume 2, Issue 1, October 2019
- International e-Conference on "Multidisciplinary Innovations in Science and Technology-2020" (MIST-2020), organized by R & D cell TOCS
- Best out of waste themed 'Paper Origami' Workshop was conducted on 14.9.2019
- National Pollution Day-2019 was celebrated on 2.12.2019 to spread the awareness among students to take up measures to control pollution
- To avoid the stressors of navigating rush hour traffic Public Transport and Vehicle Pooling Day was celebrated on 11.01.2020
- To provide knowledge on research with usage of medicinal plants against illness an Awareness Program on Medicinal Plants was conducted on 9.10.2020
- Cultural Club Inauguration entitled KALADHAMANI was celebrated on 4.10.2019

#### STUDENT ACHEIVERS



Children's Education Society ( Regd.)

#### THE OXFORD COLLEGE OF SCIENCE

(Recognised by the Govt. of Karnataka, Permanently Affiliated to Bangalore University & Approved by AICTE. New Delhi)

Accredited by NAAC with 'A' Grade in II Cycle & International Accreditation Organization (IAO)

Recognised by UGC under section 2(f) & 12(B)

## **RANK LIST 2019-20**





ANKITA ROY MICROBIOLOGY





SNEHA SAHA MICROBIOLOGY





YUMKHUM SHELINA DEVI GENETICS





RITWIKA CHAUHAN BIOCHEMISTRY





ARADITA RAIKAR



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#### SPORTS ACHIEVEMENTS

- Abhishek K won Gold Medal in Intercollegiate Competition conducted by Sports Department of TOCS
- Chinmayi Bhat won Gold Medal in Intercollegiate Competition conducted by Sports Department of TOCS
- Ektha K and Team won II place in International level
- Inchara P was awarded a Gold Medal in University Level Cultural Competition
- Gowtham S won Silver medal in University level Cultural Competition
- Shripathi Shankar K was awarded Silver medal in University level Cultural Competition
- Neha S was awarded Silver medal in University level Cultural Competition
- Surendra Kumar was awarded Bronze medal in University level Cultural Competition
- Bhuvan L and Team won III place in State level sports competition
- Sandeep R and Team won III place in State level sports competition
- Gagan M and Team won III place in State level sports competition
- Sandeep R and Team won II place in State level sports competition



## **Department of Biochemistry**

#### **About the Department**

The Department of Biochemistry was established in the year 2001 with combinations Biochemistry - Zoology - Microbiology, the PG course in Biochemistry was invented in the year 2001. Biochemistry includes both chemical & biological disciplines with exponential increase in information and understanding in the field of Life Science.

#### Department Achievements

Bagged one university rank in the year 2019-2020

## **Departmental Activities**

Add On Program

Problem Based Learning Guest Lecture 1

Workshop 3

Sl.NO.	AOP
1.	Industrial Toxicants In Human Health
2.	Characterization Of Bioactive Compounds
3.	Food Additives And Toxins In Food
4.	Polymorphism In Plants
	Problem Based Learning
5.	How can stem cell be used in Parkinson Disease treatment?
6.	How do you propose a therapy of "SCID" by using Stem cells?
7.	DMD and steam cell therapy How is it possible?
	Guest Lecture
8.	Clinical research
	Workshop and Enrichment Program
9.	Laboratory methods of Herbal Soap Preparation
10.	Antioxidants & antimicrobial activity of moringa oleifera leaf extract
11.	Posttranscriptional gene regulation by RNA interference



## **Department of Biotechnology**

#### **About the Department**

The Department of Biotechnology at the Oxford College of Science was established in the year 1998 to nurture young minds and to generate a pool of skilled manpower to cater to the ever-growing demands of this sector.

#### **Department Achievements**

Bagged three university ranks in the year 2018-2019

## **Department Activities**

Add On Program 1 Guest Lecture 10 Industrial Visit 12 Workshop &
Enrichment program
4

Problem Based Learning

Sl.NO.	AOP
1.	Apoptotic assays
	Guest Lecture
1	Epigenomic regulation of gene expression in human biology
2.	Recent trends in cellular and molecular diagnostics
3.	Quality assurance and quality control in the industrial point of view
4.	IPR, confidentiality and plagiarism
5.	The Role of Regulatory T-cells
6.	Regenerative medicine and their applications
7.	Sanger sequencing
8.	Unlocking the power of Omics
9.	Next generation sequencing
10.	Bench to beside and back-A cancer research lab experience
	Workshop and Enrichment program
1	Skill development workshop on HPLC program
2	Skill development workshop on "HPLC in quality control"
3	Workshop on Biophysical techniques in Cellular and Molecular biology

4 Hands on training in modern Biotechnology



	Industrial Visit
1	Swachagrahakalika Kendra a solid waste management park and agara lake,
2	SwachagrahaKalika Kendra
3	IIHR,BANGALORE
4	Industrial Visit to Viveshwaraya Rain Harvesting Park
5	Vipragen Biosciences, Mysore.
6	Karnataka soap and detergent limited, Mysore.
7	Defense food research laboratory (dfrl), Mysore.
8	CSIR-National institute of oceanography, Goa.
9	Sir.M.Visveshvarayya Rain Water Harvesting Theme Park
10	Kadu Winery Channapattana
11.	Center of Excellence, Mysore University
12.	Wipragen Bioscience
Conference	
1	National Conference on Recent Advances in Biotechnology
	Webinar
1	International Webinar on Recent Trends in Biotechnology – A carrier Guidance Series-I



## **Department of Chemistry**

#### **About the Department**

The Chemistry Department of The Oxford College of Science started in 1994 with B.Sc. [CZBt, CGtBt, CZMb] combinations and M.Sc., Organic Chemistry in 2009 and has evolved in terms of academics, co-curricular and extracurricular activities.

## **Department Activities**

Add On Program 3

Workshop &
Enrichment program
1

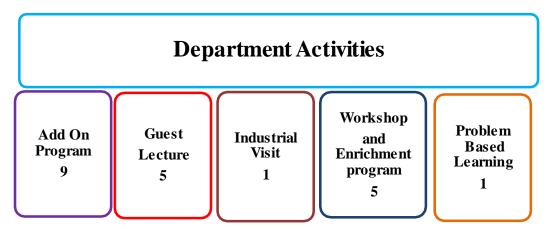
Sl.NO.	AOP
1.	Renewable and Sustainable Energy
2.	Manufacture of Soaps
3.	Modern Chromatographic Techniques
	Workshop
1.	PERIDOX 2019



### **Department of Computer Science and Applications**

#### **About the Department**

Computer science department was incepted in 1995, now offers both UG and PG courses BCA, B. Sc (CS), M. Sc (CS) and MCA. The courses are eloquently carried to the student community such that it bridges the gap between IT industry requirements and the university curriculum. The department strives and provides industry ready professionals. The courses are delivered through lectures with excellent qualified faculty, (who are experienced both in academics and has hands on in industry), Practical sessions, Projects, Add-on courses and workshops. Course modules are assessed with assignments, presentations, and examinations.



Sl.NO.	AOP
1.	Node And Angular Js
2.	Block Chain
3.	Ai And Deep Learning
4.	Grid Computing
5.	Sql Stored Procedures
6.	Bootstrap And Framework
7.	AI In 5G Network
8.	SAP
9.	SQL Fast
	Guest Lecture
1	Big Data Analytics
2	Cloud Computing
3	5G Technologies
4	Software Testing
5	Challenges in Cyber Security



	Industrial Visit
1	Industrial Visit to Viveswaraya Rain Harvesting Park

	WORKSHOP AND ENRICHMENT PROGRAM
1	Enrichment Program on Future in Data Science
2	Enrichment Program on Mobile Computing using Android OS
3	Workshop on Algorithm and Data Structures
4	Workshop on Data Science and Machine Analytics
5	Enrichment Program on Latest Trends & Development in IT Industry
	nnr
	PBL
1	PBL on Object Oriented Analysis and Design



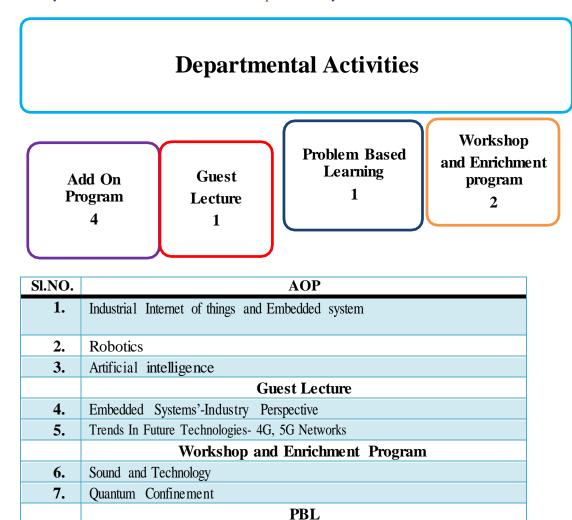
## **Department of Electronics**

#### **About the Department**

8.

Materials suitable for PCB plating

The Department of Electronics was established in the year 1994 with combinations Physics, Mathematics and Electronics (PME). A second combination of Electronics, Mathematics & Computer Science (EMCs) started in the year 2000. The PG course in was incepted in the year 2010.





## **Department of Fashion & Apparel Design**

#### **About the Department**

The Department of Fashion and Apparel Design was established in the year 1999, it is affiliated to Bangalore University. It is a 3-year full term undergraduate Fashion Designing course, where it covers the study of specialized field in the area of fashion costume designing, accessory and jewelry design, fashion illustrations, Textile designing, etc.

#### Department achievement

Bagged a rank in university examination for the year 2019-20



Sl.NO.	AOP
1.	Tatting
	Workshop
2.	Tatting
	Guest Lecture
3.	Awareness about digital multimedia Industry



## **Department of Languages**

#### **About the Department**

The Department of Languages of The Oxford College of Science was started in the year 1994. The Staff of the Languages Department has taken keen interest in training students for intercollegiate competitions and regular conduct of assembly in the college. Counseling in academic and emotional matters and involving in administrative work of the college are the other responsibilities of the Department. Research pursuits, membership to professional bodies, participation as resource persons at National/ International Seminars and conferences, participation in various literacy programs are the other activities of the department. Another addition to the Department of English is the Language Lab, which is functioning in full swing to hone the student's communication skills.



## **Department of Mathematics & Statistics**

#### **About the Department:**

The Department of Mathematics started in the year 1994. The UG course was started in the year 1994 and PG course in the year 2010. The Department of Statistics was incepted in the year 2005 in order to prepare professionals in statistics. The UG course was started in the year 2005 and PG course in the year 2010.

## **Departmental Activities**

Guest Lecture
1

Sl.NO.	Guest Lecture
1.	Value Distribution theory



## **Department of Microbiology**

#### **About the Department:**

The Department of Microbiology since its inception in 1994 is committed to disseminating, inculcating and harvesting knowledge. Student centric approach and overall development of students are the vital strategy adopted in the department. Consistent University ranks and outstanding placement record are the key achievements. The Department is known for its constant innovations reflecting the creative potential with which the Department is well endowed.

#### **Department Achievements**

Bagged two university ranks in the year 2019-2020

## **Departmental Activities**

Add On Program Guest Lecture 1

Industrial Visit 8

Workshop and Enrichment program 4

Sl.NO.	AOP
1.	Conversion of Organic Waste to Methane
2.	Banding Techniques
3.	Mushroom Cultivation
	Guest Lecture
1	Guest lecture Career Opportunities in Life Science
	Industrial visit
1	Swatcha graha kalika kendra
2	Sir M. Vishveshwaraiah Rain Water Harvesting Theme Park
3	Kadu Winery Channapattana
4.	Center of Excellence, Mysore University



5.	Wipragen Bioscience
6.	Prosetta Chemiinformatics
7.	VerGo Pharmaceuticals Pvt.Ltd., Goa
8.	BWSSB (Bangalore WaterSupply and Sewage Board)

Workshop and Enrichment program		
1	Biofertilizers and its Assay	
2	Biogas production and analysis	
3	Workshop on Microbial techniques	
4	Molecular DNA Technology	



## **Department of Physics**

#### **About the Department:**

The Department of Physics (UG) was established in the year 1994 with Physics, Mathematics, Computer Science (PMCs) and Physics, Mathematics, Electronics (PME) combinations, the PG course in Physics was incepted in the year 2014.

## **Department Activities**

Add On Program 2

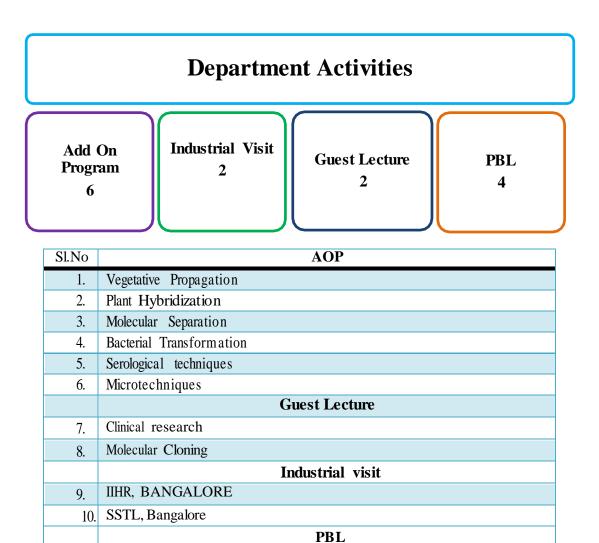
Sl.NO.	AOP
1.	Eye Power
2.	



## **Department of Zoology and Genetics**

#### **About the Department:**

The Department of Zoology was incepted in 1994 for undergraduate program, withthe aim of imparting quality education to young minds. The Department of Genetics was started with undergraduate program in the year 2000 and PG course in Applied Genetics 2003. Presently, the two departments have amalgamated into "The Department of Zoology and Genetics".



Gene therapy
 Possibilities Of Transgenic Organism Between Chimpanzee And Humans
 Relevance of bioinformatic study to fight pandemics like COVID 19



## **IQAC** Activities

#### **About IQAC:**

IQAC was established at TOCS in 2011 as a post-accreditation quality sustenance measure to channelize the efforts and measures of an institution towards academic excellence. IQAC adopts multifaceted integrated approach involving all the stakeholders for all the quality measures to fulfill the dream of achieving excellence. IQAC ensures quality literacy among all its stakeholders, prepares quality strategy for execution, conducts quality audit periodically, obtains 360°quality feedback from all the stakeholders, crafts quality policy, provides participative quality governance, delivers quality academics and performs quality research thus developing the quality culture of the institution that leads to quality quotient enhancement and thereby quality sustenance.

Accordingly, IQAC, regularly conducts conferences, seminars, inter/intra institutional workshops on quality related themes and faculty development programs, staff training programs, professional development programs to upgrade and update the professional skills of faculty and staff. In 2021-22 IQAC organized 2 Faculty Development Program, 1 Professional Development Program, 2 Leadership Development Program and 2 Staff training Program. Altogether 82 % teaching and non-teaching staff had participated for the same. 3 Faculty had participated in UGC sponsored Refresher Course (Life Science)

Sl.No	List of FDP, PDP, LDP & STP organized during 2019-20	
Faculty Development Program		
1.	FDP on BioProcess and Permentation Technologies	
2.	FDP on HPLC	
3.	FDP on Significance of Publishing Research in Quality Journals, Indexing Analysis and Impact Factors	
	FDP On Online Internal Examination with Live Proctoring	
Professional Development Program		
4.	Professional Development Program On Different Online Teaching Platforms	
5.	Professional Developmemnt Program On Essential Etiquettes For A Faculty	
Leadership Development Program		
6.	Leadership Program On Being A Better Role Model - They Look Up To You	
Staff Training Program		
7.	Staff Training Program On Ms Office And Its Applications	
Refresher Program		
8.	Refresher Course on Newer Trends in Immunology	



## **Teaching-Learning-Evaluation**

#### HIGHLIGHTS:

- 23 Workshop & Enrichment program, 22 Guest Lectures, 23 Industrial Visits, 10
   PBL were conducted as part of Curriculum supplementing programs.
- 10 Internship programs have been attended by the students.
- 42 Add-on Programs were offered to the students.
- The Oxford Science Skill Enhancement Centre (TOSSEC) was launched through which various skill enhancement programs were offered.
- Skill Enhancement Program Entrance Test (SEPET) was introduced and The Oxford Unnati Scholarship scheme was extended to SEPET qualified students.
- Curriculum Development Board was constituted Under TOSSE Convolving Professors from University, Professionals from Industry and Senior faculty Members of the Institution to design Skill enhancement Curriculum with Industry relevant skills.
- Online Examination was introduced for soft core Paper.
- IBOE committee was framed to monitor and set question papers as per weightage
  of the syllabus and fair distribution of marks.
- Centralized evaluating for Internal examinations was introduced to maintain timely evaluation of the answer scripts.
- 5 University Ranks and 83.07% graduated from the respective courses.
- 68 In-house Student Research Projects were undertaken and completed



#### **Research-Innovation**

#### HIGHLIGHTS:

- National Conference on "National Conference on "Recent advances in Biotechnology" in association with CSIR.
- **TOJSR** journal had contributions from researchers across the state and published 14 original research articles in Volume 2, Issue 1, and October 2019.
- International e-Conference on "Multidisciplinary Innovations in Science and Technology-2020" (MIST-2020), organized by R & D cell TOCS.
- **Biogyrus** a technical symposium was organized by the students of final year Biotechnology PG students.
- 2 KSCST projects were granted for final year PG student projects
- Seminar on "Regression Analysis in Research" was organized by department of Computer science and applications and Department of Electronics.
- 4 Entrepreneurship Development Program on "Entrepreneurship opportunity using online platforms", ": Antimicrobial peptides", "The application of entrepreneurial elements in mathematics modelling" and "Hydroponics" was organized by EDP cell for faculty members and students of Life Science and physical science Departments.
  - 7 IPR Programs on "Recent patents in Robotics", "Unravelling facts on patenting genetic information", "Translating research into patents", "The Journey from idea to patent", compulsory licensing, "Intellectual property rights and Information Technology" and "Patent mapping" organized by R & D cell.
- 4 Seminars on Research methodology was conducted.
- 3 original research articles and 5 book chapters were published in peer reviewed journals.
- 6 MoUs/Collaborations have been signed for research, internships and projects.



#### **Carrier Guidance - Placement**

#### Highlights:

- □ Career Guidance Program on "Choosing non IT sector during Pandemic", "Preparing Interns for Industry", "Opportunities and Challenges in Clinical Research" and "Importance of Algorithm's in Data Structure in IT industry were organized. Career Guidance on "TOEFL Coaching" and" Cracking Civil Service Examinations" were conducted as part of Career Counseling Program and 1718 students were benefitted from it.
   □ Udhyog Anusandhan (Job Fair) was organized.
   □ The Oxford Common Aptitude test (TOCAT) was introduced for BCA Program.
- $\square$  26 placement drive were arranged and 53 number of companies visited
- 35 Capacity Building and Skill Enhancement Programs like soft skill training, Aptitude Training.
   ICT Training, Life Skill Training programs were conducted
- □ 76.4% overall Placement and progression rate.
- ☐ Mentoring session were conducted to support and guide students towards higher education.
- □ 4 Alumni activities and a Job fair was conducted.
- ☐ Bioinformatics Facility was established involving TOCSAA



#### **Administration**

# Highlight s:

- Awareness programs on Anti-Ragging & Anti-Sexual Harassment were organized for both UG and PG students.
- Online PROJETHON was organized to showcase the project work carried out by the PG students.
- Best out of waste themed "Paper Origami" Workshop was conducted.
- The students Participated in 16 different Sports events and 20 different Cultural Events. The College also hosted cultural events like KALAJEEVAN 2K19, GENESIS 2K19, OXITECH, SHRUSTI.
- Sports meet like Inter Class Chess Competition, and Intra Mural Shuttle Badminton competition, PG Indoor Games Competition were held as part of sports activities
- 624 students provided with The Oxford Merit Scholarship
- 742 students provided with The Oxford Unnati Scholarship.
- Faculty Development Program, Profession Development Program, for faculty and Staff Development Program for the Non-teaching staffs were organized for quality enhancement.
- 104 faculty members provided with financial support under Research promotion scheme.
- 86 faculty members participated in FDP/PDP/LDP/Refresher Programs.
- Best Teacher Award for the faculty for outstanding contribution in the field of teaching.
  - 26 Non-teaching staff participated in Staff Training Program. Best Employee Award

or excellent performance.





# Extension, Outreach, Awareness & Sensitization:

#### **Highlights:**

- 14 Extension/Outreach Programs highlighting the importance of cleanliness, environmental concerns and human values were conducted by NSS and NCC unit of the College.
- A Step towards cleanliness, Volunteering in National Disaster Relief Program, Women Empowerment, Sapling planning Drive, Voluntary Blood Donation Camp are some of the programs conducted by NSS,
- National Pollution Day-2019 was celebrated to spread the awareness amongstudents to take up measures to control pollution
- To avoid the stressors of navigating rush hour traffic, Public Transport and Vehicle Pooling Day was observed.
- To provide knowledge on research with usage of medicinal plants against illness an Awareness Program on Medicinal Plants was conducted.

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## **Quality Enhancement-Sustenance**

#### Highlight s:

- Curriculum Development Board was constituted under TOSSEC involving Professor's from University, Professional's from Industry and Senior Faculty Members of the Institution to design skill enhancement curriculum with industry relevant skills.
- Raman and Curie Comer were set up under Science Club. Online Examination was introduced for soft core paper.
- Happiness hour was introduced.
- Faculty Development Programs on using online platforms for effective curriculum delivery was introduced.
- Initiated to Participate Under NIRF Ranking.
- Ranked No. 7 in Karnataka MDRA survey- India Today
- Ranked No. 6 in Karnataka Hansa Research survey- The Week;



#### PHOTOGALLERY



National Conference on "Recent Advances International e Conference-"MIST 2020" Biotechnology"





A SOLUTION TO PLASTIC POLLUTION



**STOPCHIKUNGUNYAANDDENGUE** 



**VOLUNTARY BLOOD DONATIONCAMP** 



**Cleanliness Drive**