I am glad to know that ISTAR is bringing out Second Issue of College Magazine INSPIRE at the end of this year. This is yet another milestone embodies curricular and co-curricular activities and praiseworthy achievements of the institute. I hope that 2nd issue will surely inculcate creative and hidden talents of students and faculty of the institute. I convey Happy New Year Wishes to students and staff of ISTAR for prosperous coming year (2019).

Er. Bhikhubhai B. Patel
Chairman, CVM
ACTIVITIES & ACHIEVEMENTS OF ISTAR

- **19th Annual Day** of ISTAR was celebrated on 5th March, 2018 and Dr. Rathnam, Managing Director, AMUL Dairy, Anand, was invited as a Chief Guest.
- Annual Alumni Meet & Alumni Felicitation Program was organized on the Annual day.
- 5th June was celebrated as “World Environmental Day” by conducting Tree Plantation Program by Respected Manish S. Patel Sir, Vice-President, CVM, and Shri Vishal Patel, Hon. Jt. Secretary, CVM.
- Independence Day was jointly celebrated on 15th August, 2018 with SICART and RN Patel Ipcowala School of Law and Justice.
- “Janmashthami” and “Teachers Day” were celebrated on 5th September, 2018.
- “Ratri Before Navratri” was celebrated on 8th October, 2018.
- All Departments arranged Open House, Student Counseling, and Industrial Visits.

**CVM IAS Academy** conducted an interactive Session on UPSC and GPSC Civil Services Examination Awareness at ISTAR on 5.7.18

**Yoga Training Program** in association with Art of Living Organization, Anand Chapter, on 19-21.6.18
Celebration of World Environment Day & Distribution of Eco-friendly Bags @ ISTAR on 5.6.18

Aarti on Ratri Before Navratri

Dahi Handi (Matki Fod) on 5.9.18

ISTAR Team in SPU Inter College Kho-Kho Tournament

Poster & Slogan Competition on Teacher’s Day
**STUDENTS CENTRIC PROGRAMS**

<table>
<thead>
<tr>
<th>Programs</th>
<th>Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conferences/Seminars/Workshops</td>
<td>11</td>
</tr>
<tr>
<td>Expert Lectures</td>
<td>24</td>
</tr>
<tr>
<td>Training Programs</td>
<td>02</td>
</tr>
<tr>
<td>Short Term / Certificate Courses</td>
<td>07</td>
</tr>
<tr>
<td>Skill Development Program</td>
<td>01</td>
</tr>
<tr>
<td>Entrepreneurship</td>
<td>01</td>
</tr>
<tr>
<td>Industrial / Field Visits</td>
<td>21</td>
</tr>
<tr>
<td>Guest Faculty Members Support</td>
<td>43 hrs./Week</td>
</tr>
<tr>
<td>No. of Students Graduated</td>
<td>335/343</td>
</tr>
</tbody>
</table>

**INSTITUTIONAL ACHIEVEMENTS**

- **High Record of Placements** in almost all subjects through On-Campus and Off-Campus interviews.
- **Nine Students** received Gold Medals during S.P. University Convocation held on 17th December, 2018.
- Dr. Suchita Patel, Dr. Niky Jain, Er. Rupesh Shah, Dr. Himanshu Kapse, Mr. Baiju Verghese, and Dr. Hiren B. Soni attended Indo-UK Program “IFDP – International Faculty Development Program” (Phase-I & II) at MHRD-SPU, in the month of August & September, 2018.
- Three Faculty Members (Dr. Niky Jain - IT; Dr. Dhruti S. Patel – EST; and Dr. Suchita Patel - IT) received Ph.D. Degree.
- **Prof. Nirmal Kumar J.I.** received Gold Medal Award of “Bharat Ratna Dr. Sarvepalli Radhakrishnan” on 22nd September, 2018 in the field of Education and Research by Global Education Progress and Research Association (GEPRA), Chennai.
- Two Ph.D. Students (Ms. Dipa Lalwani & Ms. Pooja Thaker) under Prof. Nirmal Kumar, J.I, pursuing research work at free of cost (worth Rs. 6,00,000/-) in AIST,
Japan for Three years. Both students visited Japan from May to November, 2018, and will visit AIST from May, 2019 again to pursue further research.

- **International Seminar of Hygiene and Safety** was organized in Hotel Novatel, Pune, from 22nd to 24th January, 2018 funded by CIHA, USA.
- **National Seminar** was conducted on “Advancements in Chemical Technology - A Green Perspective”, by IC Department, on 20th January, 2018, funded by Transpek Industries, Vadodara, Aether Industries, Sachin.
- **National Seminar** was held on 30th January, 2018, on “Environment, Pollution and Climate Change”, jointly organized by P.G. Department of Environmental Science & Technology and Department of Biological and Environmental Science, NV Patel College, funded by Gujarat Ecology Commission (GEC), Gandhinagar.
- **National Conference** was held on 17th February, 2018 on “Paradigm Shift in Valuation Profession”, funded by CVSRTA – Alumni Association of Valuation Department of ISTAR & BVM.
- Bagged 1st Prize in 'Women and Environment' Symposium, Organized by Vidyanagar Nature Club (VNC) and CVM Women Development Cell on 5th October, 2018.
- Won SP University Championship in the Table Tennis Tournament for the year 2018.

### STUDENTS SCHOLARSHIPS

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Department</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Industrial Chemistry</td>
<td>Rs. 30,000/- (Lupin Ltd. For Topper)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Rs. 20,000/- (MISA for 2 students)</td>
</tr>
<tr>
<td>2.</td>
<td>Surface Coating Technology</td>
<td>Rs. 2,59,000/- (Asian Paints Charitable Trust for 5 students)</td>
</tr>
<tr>
<td>3.</td>
<td>Environmental Science and Technology</td>
<td>Rs. 1,00,000/- towards Ph.D. Term fees, and Free-ship worth Rs. 6,00,000/- for stay, food, etc. to Two Ph.D. Students by Dr. Nobuyoshi Yamashita, Chief Senior Research Scientist, AIST, Tsukuba, Japan</td>
</tr>
</tbody>
</table>

### NSS ACTIVITIES @ ISTAR

- **NSS Unit** has been officially approved by SP University at ISTAR.
- NSS Unit of ISTAR adopted Lambhvel Village on 3rd December, 2018 for next Three (3) Years.
- Conducted "Yoga Training Program" from 19th to 21st June, 2018, associated with Art of Living Organization, Anand Chapter, to all Staff Members.
- "NSS Orientation Program" for First Year Students was conducted on 2nd August, 2018, by Dr. Jagruti Suvera (SPU), and Dr. Yogesh Patel (In-Charge, Non-Academic Forum, CVM).
Thalassemia Check-up & Blood Donation Awareness Sessions were conducted by Dr. Isha Desai, NVPAS, on 6th September, 2018.

‘Blood Donation Camp & Thalassamia Check-up’ was organized in association with Indian Red Cross Society & Lioness Club of Anand on 7th September 2018.

‘Swachta Abhiyan Pakhvadiu’ was celebrated from 15th September to 2nd September 2018.

Banner Making Competition was held on the theme of ‘Swachchhta Abhiyan’ on NSS Day (24th September, 2018).

Expert Talk on ‘Swachchhta Abhiyan’ on NSS Day (24th September, 2018) was delivered by Dr. M.G. Mansoori, Head, Psychology Department, Nalini Arvind & T.V. Patel Arts College, Vallabhbhidyanagar.

Thalassemia Check-up Camp at ISTAR, One Day NSS Camp at Amod Village, Medical Check-up Camp at Amod Village by NSS Unit of ISTAR

SPORTS ACTIVITIES @ ISTAR

Achievements in Sports Competitions

1. Kashyap Goswami secured 1st Position in Judo (90 kg Category): in the Inter-Collegiate SPU Tournament.
2. Sweta Chauhan & Team won Championship in Kabaddi in Khel Mahakumbh - 2018 from Anand District and at State Level against Tapi District.

Inspire 1 (2): 5

Selection of ISTAR Students in SPU Team for Inter University Tournament

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Name of Player</th>
<th>Event</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Kashyap Goswami</td>
<td>Judo</td>
<td>Selected for National Events</td>
</tr>
<tr>
<td>2.</td>
<td>Rushabh Shah</td>
<td>Table Tennis</td>
<td>Selected for Sardar Patel University team</td>
</tr>
<tr>
<td>3.</td>
<td>Satpal Baria, Lalu Sharma</td>
<td>Kho-Kho</td>
<td>Primary Selection for Sardar Patel University Team</td>
</tr>
</tbody>
</table>

NEW INITIATIVES OF ISTAR

- Green Audit Cell, CVM, has been initiated, and audited 34 Institutions of CVM.
- My Campus – Clean Campus Drive by NSS Wing.
- Institutional Data was uploaded to KCG and NIRF to MHRD, New Delhi, on 30th November, 2018, by Dr. Hiren B. Soni (EST).
- Institutional E-Magazine “INSPIRE” started, and edited by Dr. Hiren B. Soni, Dr. Niraj Patela, Mr. Rupesh Shah, Dr. Himanshu Kapse, and Dr. Nirmal Patel.
DEPARTMENTAL ACTIVITIES AT A GLANCE

M.Sc. Industrial Chemistry

- Expert Talk on Entrepreneurship Opportunities and Possibilities by Dr. Rajibhd Ratod, Professor, MBA Department, S.P. University, VV Nagar, on 17.9.18
- Industrial Visit to Aarti Industries Ltd., Vapi, on 23.8.18
- Industrial Visit to C.J. Gelatine Products Ltd., Mandideep, on 16.8.18
- Expert Talk on Destiny by Design by Dr. Rajabhai Rathod, Professor, MBA Department, S.P. University, VV Nagar, on 14.8.18
- Expert Talk on Process Development in Chemical Industries by Dr. Hemendra Panmodi, General Manager, Deepak Nitrite Ltd., Mandor, on 4.8.18
- Expert Talk on Chemical Engineering - An Extra Edge for an Industrial Chemist by Dr. Tejul Patel, Associate Professor, GH Patel College of Engineering & Technology (GCIET), Vashi, on 21.7.18
M.Sc. Surface Coating Technology

Activities with MoU Partners

- Dr. Kalpesh Patel contributed an Article on Resins & Binders for ABCD Paint News (Magazine by Indian Small Scale Paint Association (ISSPA - Gujarat Region)
- Dr. Tejas Shah (Visiting Faculty), contributed an Article on Pigments & Extender for ABCD Paint News

Scholarships

Asian Paints Charitable Trust Scholarship was received by Five Students of 1st Semester, worth Rs. 51,800/- each.

1. Homi Sachivekumar Mody
2. Vaibhav Bharatbhai Rabadiya
3. Rameshchandra M Purohit
4. Anand Mineshbhai Adeshara
5. Tusharkumar Pravinbhai Patel
M.Sc. Organic Chemistry

Industrial Visit to Piramal Pharma Solutions, Ahmedabad, on 19.18

M.Sc. Polymer Science & Technology

Expert Talk on Introduction to Polymer Science by Dr. Nain Bhate, Associate Professor, Faculty Engineering & Technology, on 19.18

Industrial Visit by Polymer Science & Technology Students
M.Sc. Environmental Science & Technology

Prof. Nirmal Kumar J.B. is a recipient of Gold Medal Award of Bharat Ratna Dr. Sarvepalli Radhakrishnan on 22nd September, 2018 in the field of Education and Research by Global Education Progress and Research Association (GERPA), Chennai.

Dr. Hiren B. Soni has been awarded as Reviewer of the Month in International Journal - Biosciences Biotechnology Research Asia (BBRA), India, September, 2018.

Ph.D. Viva of Dr. Bharati S. Patel under the guidance of Prof. Nirmal Kumar J.B.

Ph.D. Viva of Dr. Kavita Thakur under the guidance of Dr. Hiren B. Soni

Expert Talk on Biodiversity & Conservation in Aerial Ecosystem by Dr. Pankaj M. Joshi, Executive Director, Sashastra, Ilham on 3.1.21

SHORT TERM TRAINING PROGRAM ON "ENVIRONMENTAL POLLUTION MONITORING" in collaboration with Namdevi Industries Association (NIA)

Inspire 1 (2): 10
Activities with MoU Partners

- All Three Faculty Members of EST Department involved in **GREEN AUDIT CELL, CVM, CORE TEAM.**

- **Dr. Nobuyoshi Yamashita**, Chief Senior Scientist, AIST, Japan, provided Freeship to Two PhD Scholars (Ms. Deepa Lalwani, Ms. Pooja Thaker) to carry out research work at AIST, Tsukuba, Japan, including free-of-cost research facilities, fieldwork, analytical services, airfare, accommodation, and food for Two Years.

- **Nandesari Industrial Association (NIA)** imparted training, internships and on-hand techniques to EST students at industrial scale, along with helping students in their Dissertation / Project Work and Placement in thrust areas of Environmental Science.

- **Gujarat Institute of Desert Ecology (GUIDE),** Bhu-Kachchh, helped EST students in Dissertation / Project Work, Training and Placement.
M.Sc. Industrial Hygiene & Safety

Rushabh R. Shah was selected in Sardar Patel University Team of Table Tennis, and played Inter University Tournament at Nanded (Maharashtra)

M.Sc. (Real Estate Valuation) & (Plant & Machinery Valuation)
Best Out of Waste Competition by M.Sc. Valuation Students

M.Sc. Instrumentation & Control

Seminars / Workshops Attended
1. Dr. H.N. Kapse attended Online Workshop on Geospatial Technologies and Sendai Framework for Disaster Risk Reduction on 10.7.18, and KIA Workshops of CVM, on 31.8.18 & 26.9.18
2. Ms. Radhika Shah attended Workshop on Woman Empowerment on 23.6.18
M.Sc. Geoinformatics

On Field Training Program on Application of Total Station & GPS in Surveying, Organized by Water & Land Management Institute (WALMI), Anand, Gujarat Irrigation Department, on 27-29.9.18

Experts Talk on IRS-1D, VERIS & MODIS Projects - Application Information by IRS Scientist - 92: Dr. Hiren Ukaik, on 19.9.19

Industrial Visit to Institute of Seismological Research, Gandhinagar, on 11.9.18

37th IIRS Program on Global Navigation Satellite System and Geographical Information System Module-1, on 17-26.9.18

Expert Talk on Web GIS – Geo Server by Mr. Koyal Sar, on 12.9.18

36th IIRS Outreach Program on Remote Sensing & Digital Image Analysis on 4-24.9.18

Workshop on Python Programming on 10-11.8-18 (Expert Talk by Mr. Aki Surti)

Expert Talk on Geographical Information System by Mr. Aki Surti on 27.9.18

Inspire 1 (2): 14
M.Sc. Information Technology

M.Sc. (IT) program gives career in Programming, Software project development, computer networks, information and network security etc. IT Department have well-equipped laboratories comprising Laptops with latest configuration, dedicated smart class rooms and Seminar hall.

Faculty Achievements

Two Faculty Members (Dr. Niky Jain & Dr. Suchita Patel) received Ph.D. Degree in Computer Science.

Results & Placement

✓ 100% University Results, More First Class & Distinction Every Year.
✓ Many renowned alumni of the department are either holding respectable positions in industries or have opted for higher studies across the globe. Last batch students were placed in companies e.g. Proact-II Pvt. Ltd., Adweb Solutions, Mass Shivduti Science, Tiny ERP etc.
Inspire 1 (2): 16

- Visit with Red Hat India Pvt. Ltd. for Short Term Courses, Expert Talks, Seminars, and Placement of Students
- One Week Bridge Course with Expert Talks on Latest Technology, Group Discussion, and IT Quiz, on 3-7-18
- Industrial Visit to STREEBO Solutions Pvt. Ltd., TOPS Technology
- Expert Talk on Introduction about Linux Red Hat Academy
- Workshop on Microsoft Office – 2010 for Class III Employees of ISTAR on 30-1-12-18
- Short Term Certificate Course on Python Programming on Machine Learning from 15 December, 2018
We are very much familiar with LED. It stands for Light emitting diode and has applications in varied fields such as traffic signals, automotive headlamps, advertising, general lighting, aviation lighting, camera flashes, lighted wallpaper, and medical devices etc. The technological advancement in this device is Organic Light Emitting Diode, in short known as OLED. It is a flat light emitting technology, made by placing a series of organic thin films between two conductors. When electrical current is applied, a bright light is emitted. OLEDs do not require a backlight and are thinner and more efficient than LCD displays. OLEDs are organic because they are made from carbon and hydrogen and do not contain any bad metals - so it's a real green technology. OLEDs are an emerging technology in today's electronic display industry.

**OLED Components:**

- **Substrate** - It supports the OLED. It can be clear plastic, glass, or foil.
- **Anode** - The anode removes electrons when a current flows through the device.
- **Organic layer** - This layer is made of organic molecules or polymers.
- **Conducting layer** - This layer is made of organic plastic molecules that transport "holes" from the anode. One conducting polymer used in OLEDs is polyaniline.
- **Emissive layer** - This layer is made of organic plastic molecules (different ones from the conducting layer) that transport electrons from the cathode; this is where light is made. One polymer used in the emissive layer is polyfluorene.
- **Cathode** - The cathode injects electrons when a current flows through the device.

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*Fig. 1. OLED Structure (Source: [http://www.circuitstoday.com](http://www.circuitstoday.com))*
How OLED is fabricated?

The important part of manufacturing OLEDs is applying the organic layers to the substrate. This can be done in three ways:

- **Vacuum thermal evaporation (VTE)** - In a vacuum chamber, the organic molecules are gently evaporated and allowed to condense as thin films onto cooled substrates.
- **Organic vapor phase deposition (OVPD)** - In a low-pressure, hot-walled reactor chamber, a carrier gas transports evaporated organic molecules onto cooled substrates, where they condense into thin films. Using a carrier gas increases the efficiency and reduces the cost of making OLEDs.
- **Inkjet printing** – With inkjet technology, OLEDs are sprayed onto substrates just like inks are sprayed onto paper during printing. Inkjet technology greatly reduces the cost of OLED manufacturing and allows OLEDs to be printed onto very large film for large displays like 80-inch TV screens or electronic billboards.

How OLED Works?

The battery or power supply of the device containing the OLED applies a voltage across the OLED. An electrical current flows from the cathode to the anode through the organic layers. The cathode gives electrons to the emissive layer of organic molecules. The anode removes electrons from the conductive layer of organic molecules. At the boundary between the emissive and the conductive layers, electrons find electron holes. When an electron finds an electron hole, the electron fills the hole. When this happens, the electron gives up energy in the form of a photon of light. OLED emits light. The color of the light depends on the type of organic molecule in the emissive layer. Manufacturers place several types of organic films on the same OLED to make color displays. The intensity or brightness of the light depends on the amount of electrical current applied: the more current, the brighter the light.

Advantages of OLED Displays:

- Improved image quality - better contrast, higher brightness, fuller viewing angle, a wider color range and much faster refresh rates.
- Lower power consumption.
- Simpler design that enables ultra-thin, flexible, foldable and transparent displays
- Better durability - OLEDs are very durable and can operate in a broader temperature range.

Disadvantages of OLED Displays:

- At present it costs more to produce an OLED than it does to produce an LCD.
- OLEDs can also be problematic in direct sunlight, because of their emissive nature.
- The red and green OLED films have longer lifetimes compared to blue organics.
- Water can easily damage OLEDs.

OLED displays are not just thin and efficient - they provide the best image quality ever and they can also be made transparent, flexible, foldable and even rollable and stretchable in the future. OLEDs represent the future of display technology!
Background

Environment statistics is the application of statistical methods to environmental science. It covers procedures for dealing with questions concerning both the natural environment in its undisturbed state and the interaction of humanity with the environment. Thus weather, climate, air and water quality are included, as are studies of plant and animal populations.

Environment statistics covers a number of types of study such as (i) Baseline studies to document the present state of an environment to provide background in case of unknown changes in the future; (ii) Targeted studies to describe the likely impact of changes being planned or of accidental occurrences; and (iii) Regular monitoring to attempt to detect changes in the environment.

Need of Environmental Statistics

The environment statistics framework (i) marks out the scope of Environment Statistics; (ii) facilitates a synthesized presentation of data from various subject areas and sources; (iii) simplifies the complexity of the environment appropriately so that it can be measured more easily; (iv) helps to identify the range of statistics relevant to societal decision-making regarding the environment; (v) is consistent with statistical frameworks already used in other domains to facilitate the integration of Environment Statistics; and (vi) is conceptually based.

Objective of Environment Statistics

The objective of Environment Statistics is to provide information about the environment, its most important changes over time and across locations and the main factors that influence them. Environment statistics seek to provide high-quality statistical information to improve knowledge of the environment, support evidence-based policy and decision-making, and provide information for the general public and specific user groups.

Scope of Environment Statistics

The scope of environment statistics covers biophysical aspects of the environment and those aspects of the socioeconomic system that directly influence and interact with the environment. The scope of environment, social and economic statistics overlap. It is not easy—or necessary— to draw a clear line dividing these areas. Social and economic statistics that describe processes or activities with a direct impact on or direct interaction with, the environment are used widely in environment statistics. They are
within the scope of the FDES. Other relevant social and economic statistics, which are not part of environment statistics, are also required to place environmental issues in context and facilitate the integrated analysis of environmental, social, and economic processes. The use of consistent definitions and classifications among these fields supports their integration. When properly integrated, data and other inputs from social and economic domains enrich the analysis of environment statistics.

Users of Environment Statistics
Environment Statistics serve a variety of users, including but not limited to (i) Policy and decision makers at all levels; (ii) The general public, including media and civil society; (iii) Analysts, researchers and academia; and (iv) International agencies.

Environmental Information, Data, Statistics and Indicators
Environmental data are large amounts of unprocessed observations and measurements about the environment and related processes. They may be collected or compiled via statistical surveys (censuses or sample surveys) by the national statistical system or may originate from administrative records, geographic databases, registers, inventories, monitoring networks, thematic mapping, remote sensing, scientific research and field studies.

Environment Statistics are environmental data that have been structured, synthesized, and aggregated according to statistical methods, standards, and procedures. The role of environment statistics is to process environmental and other data into meaningful statistics that describe the state of and trends in the environment and the main processes affecting them. Not all environmental data are used to produce environment statistics. The FDES provides a framework that identifies environmental and other data that fall within its scope and then contributes to structuring, synthesizing, and aggregating the data into statistical series and indicators.

Environmental indices are composite or more complex measures that combine and synthesize more than one environmental indicator or statistic and are weighted according to different methods. An index can provide a valuable summary measure to communicate important messages in an accessible way and, thus, raise awareness. However, they often raise questions regarding their proper interpretation, methodological soundness, subjectivity of the weighting, and the quality of the underlying statistics.

Sources of Environment Statistics
Environment statistics synthesize data originating from various types of sources. Thus, the data used to produce environment statistics are not only compiled by different collection techniques, but also by various institutions. Types of sources include (i) statistical surveys (e.g., censuses or sample surveys of population, housing, agriculture, enterprises, households, employment, and different aspects of environment management); (ii) administrative records of government and non-government agencies responsible for natural resources, as well as other ministries and authorities; (iii) remote sensing and thematic mapping (e.g., satellite imaging and mapping of land use and land cover, water bodies or forest cover); (iv) monitoring systems (e.g., field-monitoring stations for water quality, air pollution or climate); (v) scientific research and special projects undertaken to fulfil domestic or international demand.

Environment statistics rely considerably on data that are collected by direct measurements using a variety of methods, including remote sensing and field-
monitoring stations. Most countries have agencies that are primarily responsible for monitoring environmental resources and conditions. They may be entities in their own right or government agencies with other primary functions that also have departments concerned with environmental matters. These agencies typically produce two main types of data: (i) measured data (obtained by direct observation, field measurements and remote sensing); and (ii) calculated data (derived using estimates and modelling).

**Statistical Surveys**
There are two types of surveys: (i) censuses and (ii) sample surveys. A census is a survey that collects data from the entire population of interest. A sample survey is a survey carried out using a sampling method, in which data are collected from a representative portion of the population of interest and not the whole population.

Environment statistics can be collected from surveys by (i) adding environment-related questions to surveys intended primarily to collect data on other topics and (ii) using surveys intended primarily to collect environment statistics. When environmental data are collected through environment statistics surveys, the survey design reflects the objective of producing environment statistics. However, it is not always feasible or economical to conduct such surveys, so data are frequently obtained from other existing statistical surveys (e.g., social, economic and sectoral) whose primary objective differs from the production of environment statistics.

Adding environment-related questions to other surveys is less expensive than collecting data through a separate survey, the response burden is minimized and the environmental data can be directly linked to other data collected. However, the challenges of adding questions to existing surveys include the following: (i) there may be limited space available for additional questions in existing surveys, (ii) the survey frame and stratification of the population and sampling selection may not be ideal for environment statistics, (iii) the data may need to be reorganized or reclassified to be used in environment statistics and (iv) respondents may not be familiar with environmental terms or the information needed to answer environment-related questions.

Environment-specific surveys may be censuses or sample surveys. The advantages of using environment-specific surveys are that (i) the survey frame and sampling used can be selected based on the requirements of environment statistics, (ii) consistent concepts and definitions can be used in survey questions and (iii) the most suitable type of survey modes for collecting environment statistics can be selected. On the other hand, environment-specific surveys create an additional response burden and are costly in terms of finance, human resources, and time. In addition, in many cases, no suitable register, list, or map is readily available to use as a survey frame.

**Scientific Research and Special Projects**
The main advantages of using data from scientific research and special projects are that they (i) are usually available at no or low cost, (ii) minimize the response burden, (iii) can be used to address data gaps and (iv) are useful for developing coefficients for models. Disadvantages of using these sources include that (i) they often use terms and definitions that differ from those used in statistics, (ii) access to microdata may be limited, (iii) metadata may be missing, (iv) data are often available only for case examples (i.e., limited areas or industries) and (v) data are often available on a one-time basis only.
Environmental Statistician
Environmental statisticians are responsible for the analysis and interpretation of environmental data, for the design of environmental studies, and for the dissemination of statistical methods and concepts to staff working within the environmental sector. The role of an environmental statistician is typically highly interdisciplinary, and will often involve working with scientists or technical staff from a wide range of different backgrounds (environmental scientists, ecologists, chemists, physicists). It may also involve working with policy makers, managers or other decision makers. Key areas of expertise that the environmental statistician contributes are (i) an ability to synthesize and analyze data in appropriate ways, and to effectively and accurately communicate the results of these analyses to non-specialists; and (ii) an understanding of the importance of variability and uncertainty, and of the way in which these may be quantified? Environmental statisticians will typically use a wide spectrum of statistical techniques, since standard statistical methods are often inappropriate for environmental data. One of the most important roles of the job is to give a clear and defensible description of the level of uncertainty that is associated with the results of an analysis.

Role of Environmental Statistician
Environmental statisticians are often involved in supporting scientific research programs within research organization or university departments. This may involve contributing to a single research project or providing support to a range of projects. In the latter case, work may involve short-term consultancy, giving advice to scientists on the design, analysis, interpretation, or presentation of studies. Other work may be more long-term and may lead to joint publication of research findings in the form of academic papers or technical reports. Environmental problems may require the development of innovative statistical methodology, which is suitable for publication in statistics journals, and may also lead to publications in the appropriate environmental journals. There will be opportunities for attending national and international conferences to present your work and to learn from the work of fellow statisticians.

Statisticians working in this sector may tackle problems in areas such as (i) Climatology, for example assessing changes in climate patterns Oceanography, for example assessing temperature patterns in ocean currents and their effects on the weather (ii) Extreme event risk assessment, for example looking at the probabilities of floods in an area or of increasing wave heights, which may damage offshore structures (iii) Fisheries statistics such as assessing the population size and the development stage of fish stocks from landings and sparse sample measurements (iv) Environmental model assessment such as using sensitivity and uncertainty analyses on models to determine the accuracy of predicted future carbon budgets (v) Impact assessment, for instance assessing the effects of a new factory on the local environment (vi) Environmental epidemiology, for instance assessing the effects of air pollution on asthma occurrence (vii) Ecology such as modelling population changes of upland red deer (viii) Compliance issues such as framing sampling schemes to ensure that legislation protecting rivers from excessive pollution is observed (ix) Risk assessment such as assessing the risk of contamination and the likely environmental recovery from a nuclear accident.
Selected Bibliography


ISTAR @ MEDIA CORNER
આયોજના બેઠક સરકારની પૂણ અને અભિમંજન કાર્યક્રમ સાથે તેમણે શુભરચના

સરકાર પદેશ યુનિવર્સિટી આસ્ટ્રોઝન પર્ષય ૨૦૧૮-૧૯ ની આંતર પ્રેભેલં શુષ્ક્ર રૂપાંતર્યમાં આઈસ્ટરાங્ગ પ્રોજેક્ટના વિરુદ્ધ ગોલ્ફરીમાં થાના વાર ૮૮ - ૧૦ ડીવેઝિયામ વગ્ન વિભાગમાં પ્રમુખ વચન પ્રાદ ક્રમ છે. તેમાં આંતર યુનિવર્સિટી શુષ્ક્ર રૂપાંતર માટે પરસ્પર પદેશ છે. આ આંતર તેમજ સમાધાન વિધાનમાં માટે આસ્ટ્રોઝન છે. આ પણ શ્રીદેશા આંતરીમ સુરતી આંતર પ્રેભેલં પદેશ તેમજ માનવ મંડી ડી. અંસ્ટ્રક્ટ, ડ. નાટ્યા આ વિશ્વક્રમ નેના વિશ્વાસપત્ર કાર્યક્રમને અધીનસંભન આપણા હોય છે. સાથી સંસ્થાનના વગ્ન પ્રો. નિર્માંતમાં, મત્સથ સમિતિના પાસેનો પ્રેભેલં પ્રેસેંટ શ્રીલંક સાથ અને આઈસ્ટરાંઝન સ્પોટસ એંઝેનેર દ્ર. મહારા કાલાચર.
Inspire 1 (2): 26
આય્સટ કોલેજના પાંચ વિદ્યાર્થીઓને આશીર્વાદ પેંટસ કારા શિશ્વપ્રૂત્િ

આય્સટ, તા. 9
આય્સટ કોલેજના સાદેકા કોટીંગ ટેક્નોલોજી એશિટ્મેન્ટમાં આશીર્વાદ કરતા. વિદ્યાર્થીઓએ પાંચ વિદ્યાર્થીઓને આશીર્વાદ પેંટસ મેરીટલના ટ્રેસ્ટ દ્રા. વિદ્યાર્થીઓને આશીર્વાદ પેંટસ મેરીટલના ટ્રેસ્ટ દ્રા. વિશ્વવિદ્યાલય પેંટસ 3. મુદ્રા 1,400/- મની વિદ્યાર્થીઓની આશીર્વાદ સાહિતય બાર વિદ્યાર્થીઓને બેશેન્ટ નીચુઆંદ્રિમાં પટેલ, માનસસેટ્સ દ્રોઝ્ટર શુભેન્દ્ર પેટલ અને દાંતો દ્રોઝ્ટર જન્ય ઇટોડ નિપ્પોવાની જણાવવા માટે આપવામાં આવ્યો હતો.

આય્સટના સેટ્ટી મેનેજમેન્ટ
વિષય પર વાણિજ્ય ઓઝાયયું

આય્સટ, તા. 8
ચાંદ્ર સિદ્ધાંતી રૂપરેખા સંપૂર્ણ આચારોએ બાબત તારીખમાં બાદી
મેનેજમન યોજના પર ભાગ્યવાન વિષયને. જહાં શાહીનુર્જાન વિશાળ વિદ્યાર્થીઓને નીતિના અંગે વિચારી રહ્યા હતા. બાદીના બાબતમાં આપણી સેટ્ટી મેનેજમન વિષયને બાબતમાં ઉમેદવાર ધરાવતા હતા. બાબતમાં આપણી સેટ્ટી વિશાળ વિદ્યાર્થીઓને જીવન જીવાત્મક વધુ વધારે વધુ જીવાત્મક વધતા હતા.

આય્સટ કોલેજ પાટે અંદ્રપોર્ટ
টોકનું આયોજન કરાયું

આય્સટ, તા.16
ચાંદ્ર સિદ્ધાંતી રૂપરેખા સંપૂર્ણ આચારોએ બાબત તારીખમાં બાદી
મેનેજમન યોજના પર ભાગ્યવાન વિષયને. જહાં શાહીનુર્જાન વિશાળ વિદ્યાર્થીઓને નીતિના અંગે વિચારી રહ્યા હતા. બાબતમાં આપણી સેટ્ટી વિશાળ વિદ્યાર્થીઓને જીવન જીવાત્મક વધતા હતા.
આરિસ્ટારના વિદ્યાર્થીઓ
પ્રોલિફક, પરોક્ષની મૂકાટે

આપણે, તા. 2
ખા.વ.મ.ધારણ સંયોજિત
આરિસ્ટારના ઈન્ડસ્ટ્રિયલ ઇન્સ્ટિટ્યુટ અંડર કેંટર દ્વારા વિદ્યાર્થીઓની પ્રોલિફક
સિસ્ટમ્સ, વડોદરા ભારત
શૌચિત મૂકાટ સીસ્ટમની. શેફાયી, મેટ્રોપોલિટન, સાદાવાન ઓફસલાટન
યોજના પ્રોમેશનની, જયપુર પ્રોલિફક
સિસ્ટમના ઉપયોગી મોટરીયોને તાપક અને જયપુર પ્રોલિફક
સિસ્ટમના ઉપયોગી મોટરીયોને તાપક

આપણે, તા. 17
આરિસ્ટાર કોલેજ દ્વારા દેશભૂમિત ગીત
સ્મૃતિનું આયોજન કરવાની આવયુ

આપણે, તા. 17
આરિસ્ટાર કોલેજ દ્વારા
કર્મચારી પટલેટ વાણિજ્ય સેટ અને આદિવાસી પ્રવાહ તાપક
સ્મૃતિનું આયોજન

Inspire 1 (2): 28
બિંદુદીય કેમેસ્ટ્રી ફેના (આઈસટાર) નાતે અંશાકટ રોક

સાબસા, તા. ૧૦

આઈસટાર કોલેજના બિંદુદીય કેમેસ્ટ્રી (આઈસટાર) કોલેજના નાતે અંશાકટ રોકવામાં આવવામાં આવ્યું હતું. આીસટાર મેલેટના વિદ્યાર્થીઓ અને સાંસ્કૃતિક વિદ્યાર્થીઓ ખુશ થતા હતાં. આીસટાર કોલેજના બિંદુદીય કેમેસ્ટ્રી (આઈસટાર) કોલેજના નાતે અંશાકટ રોકવામાં આવવામાં આવ્યું હતું.

વિદાનગર આર્જીસ નાતે સેલ્ફટ રોક

આર્જીસ કોલેજના વિદાનગર આર્જીસ (આર્જીસ) વિદ્યાર્થીઓ નાતે સેલ્ફટ રોકવામાં આવવામાં આવ્યું હતું. આર્જીસ કોલેજના વિદ્યાર્થીઓ ખુશ થતા હતાં. આર્જીસ કોલેજના વિદ્યાર્થીઓ મેલેટના વિદ્યાર્થીઓ ખુશ થતા હતાં.

બિંદુદીય કેમેસ્ટ્રી (આઈસટાર) ફેનાં, આઈસટાર પાઠ યોજણા મોડીegenબાણ રોક

સાબસા વિદ્યાસાગર સમાધાન આર્જીસ કોલેજના બિંદુદીય કેમેસ્ટ્રી (આઈસટાર) ફેનાં, આઈસટાર પાઠ યોજણા મોડીegenબાણ રોકવામાં આવ્યું હતું. આ પાઠ યોજણા સરળકાણ પદેશ્ય વિદ્યાર્થીઓ અંગે પ્રમાણપૂર્વક પ્રમાણાર્થ મેળવવા માટે વિદ્યાર્થીઓ માટે પ્રદાન કર્યું હતું. આ પાઠ યોજણા મેલેટના વિદ્યાર્થીઓ અંગે પ્રમાણપૂર્વક પ્રમાણાર્થ મેળવવા માટે વિદ્યાર્થીઓ માટે પ્રદાન કર્યું હતું.

િનિપ્રીતિએ સુખદ પ્રાયું.
Contact us.....

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