Shoolini University

SHOOLINI UNIVERSITY SOLAN, HP

ANNUAL QUALITY ASSURANCE REPORT 2017-18

Annual Quality Assurance Report (AQAR)
For the Assessment Year 2017-18

Annual Quality Assurance Report (AQAR) for the Academic Year (2017-18)

The Annual Quality Assurance Report (AQAR) of the IQAC

For *the Academic Year 2017-18*

Part – A

1. Details of the Institution

1.1 Name of the Institution	**Shoolini University of Biotechnology and Management Sciences**
1.2 Address Line 1	Village Bajhol
Address Line 2	Post Office Sultanpur
City/Town	Solan
State	Himachal Pradesh
Pin Code	173229
Institution e-mail address	registrar@shooliniuniversity.com
Contact Nos.	01792- 308000
Name of the Head of the Institution:	Prof. P.K. Khosla
Tel. No. with STD Code:	01792 – 308000 (O) 01792 – 221340 (R)
Mobile:	+919816064182
Name of the IQAC Co-ordinator:	Ms. Varsha Patil
Mobile:	+919857550999
IQAC e-mail address:	iqac@shooliniuniversity.com

1.3 NAAC Track ID *(For ex. MHCOGN 18879)*	HPUNGN11360
1.4 NAAC Executive Committee No. & Date: *(For Example, EC/32/A&A/143 dated 3-5-2004. This EC no. is available in the right corner- bottom of your institution's Accreditation Certificate)*	EC(SC)/20/A & A/28.1 dated 16 Dec, 2016 (DOI 29 Nov to 01 Dec, 2016)

1.5 Website address: www.shooliniuniversity.com

Web-link of the AQAR: http://www.shooliniuniversity.com/pdf/AQAR.pdf

1.6 Accreditation Details

Sl. No.	Cycle	Grade	CGPA	Year of Accreditation	Validity Period
1	1st Cycle	B++	2.92	2016	5 yrs.

1.7 Date of Establishment of IQAC: DD/MM/YYYY 26/12/2014

1.8 AQAR for the year *(for example 2010-11)* 2017-18

1.9 Details of the previous year's AQAR submitted to NAAC after the latest Assessment and Accreditation by NAAC (*(for example AQAR 2010-11submitted to NAAC on 12-10-2011)*

i. AQAR for the year 2016-17 submitted to NAAC on 01/03/2018

ii. **1.10 Institutional Status**

University State [ ] Central [ ] Deemed [ ] Private [√]

Affiliated College Yes [ ] No [√]

Constituent College Yes [ ] No [√]

Autonomous college of UGC Yes [ ] No [√]

Regulatory Agency approved Institution Yes [√] No [ ]

(eg. AICTE, BCI, MCI, PCI, NCI)

Type of Institution Co-education [√] Men [ ] Women [ ]

Urban [ ] Rural [√] Tribal [ ]

Financial Status Grant-in-aid [ ] UGC 2(f) [√] UGC 12B [ ]

Grant-in-aid + Self Financing [ ] Totally Self-financing [√]

1.11 Type of Faculty/Programme

Arts [√] Science [√] Commerce [√] Law [√] (Phys. Edu) [ ]

TEI (Edu) [ ] Engineering [√] Health Science [√] Management [√]

Others (Specify) [ ]

1.12 Name of the Affiliating University *(for the Colleges)* NA

1.13 Special status conferred by Central/ State Government-- UGC/CSIR/DST/DBT/ICMR etc.

Autonomy by State/Central Govt. / University State

University with Potential for Excellence NO UGC-CPE NO

DST Star Scheme NO UGC-CE NO

UGC-Special Assistance Programme NO DST-FIST √

UGC-Innovative PG Programmes NO Any other (*Specify*) √

UGC-COP Programmes NO

DRDO-INMAS grant

Characterization of licensed biomedical products including hypochlorous acid, ointments for frost bite to enhance shelf life, DRDO-INMAS, Rs. 9,84,000/- (CARS/16-17/INM-07). (PI: DR. Neeraj Mahindroo; Co-investigator: Dr. Deepak N. Kapoor).

The project involves the development and evaluation of various biomedical products for DRDO-INMAS. The development is being carried out in collaboration with a pharmaceutical industry that involves utilization of their GMP facilities.

DST INSPIRE

The University takes great pride in spurring scientific creativity and innovation in school children. On behalf of the Department of Science and Technology, Government of India, the University conducts an INSPIRE program for promoting interest in basic science and approximately 7281 school students have been benefitted till now.

CCRYN (AYUSH)

Yoga and Naturopathy are an eternal part of the alternative and complementary system of India. Yoga means physical & spiritual meditation whereas Naturopathy means "Drugless", non-invasive system involving nature elements: water, steam, heat, mud, pressure; self-healing Department of AYUSH, Govt. of India made an endeavor to organized World Yoga Day and, on these guidelines, Central Council for Research in Yoga and Naturopathy (CCRYN) is working for the wide implementation of the practices and services of Yoga and Naturopathy and their acceptance among people of the country. In this connection, the CCRYN approved a 100-bed Hospital to Shoolini University, Solan as "Yogananda Medical School of Yoga & Naturopathy". The hospital will be opened as a distinct facility for the people with best of services and practices on affordable charges. It will be equipped with specialized treatment sections for male & female, residential wards for male, female and especially abled persons, diet center, recreation facility, Yoga & meditation hall, clinical pathology, library, herbal garden, conference hall, and residential area.

Funding of Rs 80 Lac. for establishing Yogananda Medical School of Yoga & Naturopathy, from CCRYN (AYUSH), New Delhi.

HP State Biodiversity Board

Trade chain, trade pattern and value chain of five RET medicinal plant namely Aconitum heterophyllous, Saussurea lappa, Inula racemosa, Picrorhiza kurroa, Pistacia integerrima" sanctioned by HP state Biodiversity Board, Shimla (letter no. HPSBB/F(16)-01/14-3528). (PI: Dr. Neeraj Mahindroo; Co-investigator: Dr. Uma Ranjan Lal; Co-PI: Y.S. Negi), Rs. 2.5 lacs.

The project on "Trade chain, trade pattern and economic valuation of Aconitum heterophyllum (Ateech), Saussurea lappa (Kuth), Inula racemosa (Pushkarmool), Picrorhiza kurroa (Kutaki) and Pistacia integerrima (Zebrawood, Kakkarsingi)l" was initiated by Himachal Pradesh State Biodiversity Board, Shimla, Himachal Pradesh. This is part of a sponsored project seeking to explore the linkages between formal and informal sectors. This has been a rather interesting project to work on. As the study progressed, it opened up several dimensions of research and inquiry. Much of it could not be explored on account of the limited time we had at our disposal. The report that is being submitted now should be seen as that of an interim phase of the inquiry. We hope we would have the opportunity to explore further some of these questions at some future point of time. One of the major stumbling blocks in carrying out this study turned out to be the difficulty we had in collecting sensible information, be it at the primary level or at the secondary level. The survey data on which some of the analysis reported in is based has utilized the household level information among others collected.

The study showed that the selected medicinal plants have different prices in different markets (inside and outside Himachal Pradesh). There are no standard rates for the medicinal plants considered in the survey. The market is far from farmers/collector that they do not know the real value of medicinal plants. Traders those who buy medicinal plants from farmers will sell them at 10 - 100% Profit. So, there is need to set a standard by the government to set the proper flow of rates of medicinal plant collected in the state so that farmers/collector get the proper prices royalty for their produce; at present collectors are unaware of market strategies of the wholesalers/dealers.

DST-FIST Facility awarded for Advanced Biological Research Facility for Proteomics (ongoing)
Patent information center awarded by HP-PIC, HIMCOSTE, Govt. of HP

UK-India Educational and Research Partnership to Develop Industrially Focused Curriculum in Advanced Manufacturing Technology Sponsored by the Royal Academy of Engineering UK

Advanced manufacturing technology is a rapidly growing industrial sector in the UK as well as in India. However, both countries lack industrial oriented and research innovation led educational curriculum to train their engineering students. Hence the goal of this project is to:

1) Development research and innovation led manufacturing technology curriculum via a strong interdisciplinary team consisting of industrial as well as academic members both from UK and India.

2) Initiate joint research projects between Industry and academia (both in UK and India).

3) Disseminate the gained knowledge to the surrounding Engineering institutes and University through hub-spoke model.

The above goals will be achieved by academic partners in Canfield (working on advanced manufacturing technology), their industrial partners namely Cambridge NanoSystems. (a world leading company in nonmaterial manufacturing), Granta Design Ltd, UK (a world leading company specializing in innovation led teaching in Material Selection Engineering Design) and Learning Sciences Ltd, UK (expert in virtual engineering based laboratory training). This grant application will be led by Shoolini University in India (top private engineering university in India) and industrial partners Cosmo Ferrite ltd. The work will be further extended to the other universes which collaborate with Shoolini University (Manav Bharti University, Chitkara University and more in the remote Himalayan region of India).

Total project cost:	Total value sought from the Academy:
£ 154,946.00	£ 49,946.00

SKILL-INDIA: PMKVY programs

Pradhan Mantri Kaushal Vikas Yojana (PMKVY) is a skill development initiative scheme of the Government of India under nationally integrated education and competency-based skill framework (NSQF) for recognition and standardization of skills. The main objective of the project is to provide skill-based training to higher secondary pass out candidates to build their career in Pharmacy practice by attaining higher order skills and living in the vicinity of College.

School of Pharmaceutical Sciences, Shoolini University, Solan has been approved for the conduct of following PMKVY programs:

1. Pharmacy Assistants
2. Lab Technician/Assistant
3. Scientific Medical Writer
4. Drug Regulatory Affairs Chemist.

Each program under PMKVY is fully funded by Central Government with a certification for employable skills from respective Sector Skill Council or agency. It is upgradation of traditional/acquired skills irrespective of any age bar with an opportunity for self-employment, entrepreneurship and 100% placement with comparatively advanced salary package.

Project funded by NMHS, MoEF&CC, Govt of India titled Post-Fire Management in the Pine Forests of Indian Himalayan Region

Indian Himalayan Region (IHR) represents about one-third of the total forest cover. One of the prominent tree vegetation of these regions is coniferous forests, which include the subtropical pine trees which very well grow in shallow soil of stress and sloppy areas and wastelands. The productivity of these forest ecosystem depends on many biotic factors which include the beneficial symbiotic microbes. The productivity of forest gets severely affected in the event of wildfires which also changes the microbial biodiversity. Wildfires burn on an average of 380 million ha/year (range 270–570 million ha/year) globally. Fire leaves behind the soil deprived of microbes, which were earlier working for the regeneration of soil humus and indirectly for agriculture.

The current project funded by NMHS, MoEF&CC, Govt of India titled Post-Fire Management in the Pine Forests of Indian Himalayan Region by studying, conserving and distributing culturable microbial biota to increase ecological succession and to revive forest productivity" deals with developing a strategy to understand the microbes of these regions, how they vary in different geographical location and, if they are lost, what are the means to again add them back. Moreover, the communities living in the surroundings need to be educated in a participative manner for the harmful effects of forest fires.

The total cost of the project is approx. Rs. 41 lakhs. The two MLE reports sent by NMHS after evaluation strongly suggest that the project is progressing very well.

HIMCOSTE Project

A project entitled "Development of cheap and safe water purification strategy using *Moringa oleifera* seeds for the rural population of Himachal Pradesh" funded by HIMCOSTE for a total of Rs. 6.8 Lakh under sanction number SCSTE/F(8)-1/2016Vol.-I-3818 with the following objectives

1. To quantify the antimicrobial potential of *Moringa oleifera* seed extract
2. To quantify biosorption of heavy metals from water by using *M. oleifera* seeds
3. Identification of active molecule responsible for antimicrobial and heavy metal biosorption capabilities
4. Development of a water purification kit using Moringa seeds to be commercialized

Achievements:

Moringa seeds (MOS) were collected from different areas viz. Mandi (H.P.), Agra, Maharashtra. Anti-bacterial activity and MIC of aqueous extract of MOS was checked. Optimum seed quantity and time period for the maximum anti-microbial activity of Moringa seeds against various pathogenic strains have been standardized. The microbes present in natural water sources were also tested and treated using MOS. A water purification kit in the form of dip bag containing MOS was developed to treat contaminated water. MOS was also used as a biosorbent for the removal of CR dye from the aqueous medium. The effect of different parameters such as initial dye concentration (20 to 100 mg L^{-1}), adsorbent dosage (5–60 mg), contact time (5–40 min), temperature (20–45 °C), and suspension pH (2-12), for the maximum removal of dye was studied. The feasibility of using MOS as biosorbent was evaluated through the calculation of equilibrium adsorption, kinetic, and thermodynamic parameters. MOS also acts as an effective adsorbent for the removal of denim dye and polyester dye.

Center of Excellence of Visionary Learning Community of India (VLCI-C)

Shoolini University has set-up a **Regional Center of Excellence of Visionary Learning Community of India (VLCI)** on 6th June 2017. This center was inaugurated by Mr. C S Patel (Mentor VLCI, Retired CEO of Anand Group). This center provides training (**the techniques to improve the production in SMEs**) to the faculty members of various institutes as well as industrial employees. The first batch is from Baddi University, Green Hills Group of institutes, L R group of Institutes, Shoolini University, and some industries like Ind. Sphinx, Parwanoo, Cosmo ferrites at Jawli. Total seventeen participants are getting training under this program. The first module was conducted at Cosmo Ferrites

Ltd. Jawli from 26-28th July 2018. These faculty members will apply this learning in their respective institutes and the industry partners will support the institutes by arranging industrial visits as well as industrial training. This will help to reduce the gap between the industries and academia.

Shoolini University faculty & delegates at VLCI Workshop

ICFL: Centre of Excellence

ICICI direct Centre for Financial Learning (ICFL) is an initiative of ICICI Securities Ltd. set up with an objective of simplifying financial knowledge and increasing financial literacy. ICFL training programmes are categorized under Investment Education Programmes and Professional Certification & Development Programmes. More than 4 lakh students, professionals, and investors have acquired practical knowledge through various ICFL programmes over the years. ICICIdirect Centre for Financial Learning has been conferred with the Award for Innovation in Learning and Best Online Learning Solution at the World Education Congress. It also won the Emerging Brand Award at CMO Asia in Singapore.

ICICI direct Centre for Financial Learning has gained industry expertise through years of practice in the domain of Financial Services. The world of Finance in general financial services, in particular, is becoming more and more specialized. This has resulted in a need of global professional industry certifications which are tailor-made with a global outlook and industry requirement. Delivery of training on these certifications by an Industry leader results in further extension of knowledge as they add to it the 'Practioner's Approach'.

The association between **Shoolini University** and ICICIdirect Centre for Financial Learning aims to offer some benefits mentioned below to the students of **Shoolini University**.

Bridge Skill Gap: Bridge gap between industry requirements and academic output by enhancing the competencies of students

Specialized Domain Skills: Acquisition of specialized skills and knowledge by students through Globally Recognized Certifications

Practical Curriculum: Training from practitioners to acquire a practitioner's outlook

Expert Faculty: Access to experienced faculty from all over India

The ICICIdirect Centre for Financial Learning (ICFL) aims to address the learning needs of students in the domain of Finance through its Professional Certification and Development Programmes that have a practical and implementable approach. These programmes are focused to create next-generation leaders by expanding the pool of qualified and certified professionals in the industry. They are also focused to provide better employment opportunities and competitive advantage over others.

The various Professional Certification and Development Programmes offered by ICFL are:

- Training for international certifications like Certified Financial Planner (CFP^{CM}) and Chartered Financial Analyst (CFA$^{®}$)
- Joint Certificate programmes in Stock Markets & Financial Markets with National Institute of Securities Markets (NISM)
- Certification programmes in Finance in association with esteemed institute's like XLRI Jamshedpur, Indian Institute of Management (IIM) Indore, Frankfurt School of Finance & Management (FS)
- Workshops on Capital Markets

Mode of Delivery: The mode of delivery of these programmes is through ICFL's Virtual Classroom(V-Class)

V- Class is ICFL's endeavor to introduce a platform that has features of real-time virtual interactions where virtual lectures are delivered by the expert faculties, industry professionals and academicians. Equipped with its numerous functionalities, V-Class provides the student flexibility to attend the program at his/ her convenience from college lab and home on any device (for e.g. desktop, laptop or a handheld device). The student has access to the recorded sessions which is subject to necessary approvals.

***Other Grants received by the university in the Academic year 2017-18 are mentioned under criterion III**

2. IQAC Composition and Activities

2.1 No. of Teachers	8
2.2 No. of Administrative/Technical staff	6
2.3 No. of students	2
2.4 No. of Management representatives	2
2.5 No. of Alumni	1
2. 6 No. of any other stakeholder and Community representatives	0
2.7 No. of Employers/ Industrialists	0
2.8 No. of other External Experts	2
2.9 Total No. of members	21
2.10 No. of IQAC meetings held	4

2.11 No. of meetings with various stakeholders: 4 No. Faculty 4

Non-Teaching Staff 3 Students 3 Alumni 1 Others 4

2.12 Has IQAC received any funding from UGC during the year? Yes [ ] No [√]

If yes, mention the amount NA

2.13 Seminars and Conferences (only quality related)

(i) No. of Seminars/Conferences/ Workshops/Symposia organized by the IQAC

Total Nos. 72 International - National 7 State 2 Institution Level 63

University has organized a total 72 events in 2017-18. All schools are proactively involved in promoting learning from leaders across various fields and walks of society. The University has a

plethora of outreach programs that include seminars, guest lectures, workshops, panel discussions, alumni talk, etc. which aims. to provide a wholesome learning environment to the students. The University has initiated **Guru Series** of talk wherein an eminent person holds a talk on a regular basis for the staff and students.

(ii) Themes

Table 1.2 GURU SERIES organized during the Academic year 2017-18

S. No.	Date	Name of the Guest Speaker	Designation / Industry	Topic
1	11/8/2017	Mr. Atul Sobti	Ex CEO of Ranbaxy	Sales and Marketing
2	1/9/2017	Mr. Sunil Thawani	International Consultant (Quality & Excellence) at United Nations	The Role of Personality in Marketing
3	8/9/2017	General Rajinder Singh (Retd.)	Retd. General of Indian Army	Indian Army & Character Building
4	13/09/2017	Mr. Vivek Atray IAS (Retd.)	Retd. IAS Officer, Motivational Speaker	Life skills for young Indians
5	27/09/2017	Ms. Manisha Kapoor	Co-founder Syybol Fitness & Entertainment	Branding and Marketing skills
6	6/10/2017	Mr. Arun Shourie	Author/Journalist	Character Building in Public Life
7	9/10/2017	Dr. Anupam Verma	Professor, Basic Sciences	The Rigours and Importance of Scientific Research
8	31/10/2017	Mr. Mohit Sardana	Rashtriya Udyog Ratan Awardee Emphasized	Rally for Rivers
9	6/11/2017	Dr. Dinesh Singh	Ex-Vice Chancellor of Delhi University	His experience as Vice Chancellor Delhi University
10	27/11/2017	Mr. Baba Grover	Banking and ITFS senior Professional, a management consultant, executive coach, and entrepreneur	Innovation

11	28/11/2017	Prof. Uday Maitra	Professor and Chairman of the organic chemistry dept. at IISC Bangalore, an IIT Kanpur	Setting up Research Infrastructure and Funding Opportunities
12	8/12/2017	Mr. Debashish Sarkar	Founder & Managing Director of Proliferator Advisory & Consulting	9 Imperatives of Change
13	12/4/2018	Brig. K.S. Chandpuri	Retd. Brigadier	Winner of the Nation
14	19/04/2018	Mr. Sofi Zahoor	Sr. Director, GTML	Importance of Communication Skills
15	12th & 13th February 2018	Mr. Dipra Jha	Associate Professor of Practice Hospitality, Restaurant and Tourism Management. University of Nebraska, Lincoln	Innovation in Tourism & Hospitality
16	4/13/2018	Captain Vishnu Sharma	Director, Applied Research International, Panchkula	Career Guidance for Cruiselines

"Padma Shri Dr. Dinesh Singh", Ex-Vice of Delhi University

"Mr. Sunil Thawani" giving a lecture on "The Role of Personality in Marketing"

Table 1.3 Conferences/Workshops/Seminars/Symposia organized in the academic year 2017-18 within the campus

S. No.	Date of the Event	Theme
1	16th March 2017	Workshop on IPR and GI to promote awareness on IPR amongst students and faculty members
2	22nd March 2017	Workshop on Criminal Procedure Code
3	June, 2017	National Conference on Environment and Natural Resource Management
4	12th July 2017	One day Lab training program in Biotechnology for lecturers/ PGT of Biology, SCERT, Solan
5	6th September 2017	Workshop on skills enhancement by Mr. Gaurav Singh, Senior Director PricewaterhouseCoopers
6	16th September 2017	Workshop on Visionary Learning Community India
7	26th 27th October 2017	Writing Seminar-Workshop for MBA

8	8th Oct 2017	1st National Moot Court Competition on Criminal Law
9	24th Nov 2017	Workshop on Legal Aid Camp
10	27th to 28th November 2017	Workshop in innovation by to Mr. Bawa Grover
11	4th to 6th December 2017	HPLC & 2D Workshop in DST-FIST lab for research scholars
12	19th Jan 2018	Workshop on Bio-nanotechnology and its applications for research
13	12th February 2018	Workshop on pedagogy by Mr. Dipra Jha from University of Nebraska-Lincoln, United States
14	19th Feb 2018	Workshop on the role of Nanotechnology in Science
15	8th March 2018	Symposia on Women Empowerment
16	6th April 2018	Seminar on Skills required by Corporates by Ms. Ratna Singh, HR-Flipkart
17	12th April 2018	Workshop on Entrepreneurship by Sandeep Jain - Strategy Consultant and Leadership Coach, Value Unlocked
18	12th to 13th April 2018	3rd National Conference on Contemporary Food Processing & Preservation Technologies
19	7th June 2018	FDP on Business strategy Simulations – Mr. Maninder Singh, LearnBiz Solutions LLP
20	8th to 9th August 2018	Induction Workshop for MBA Quad 1 students
21	10th August 2018	Workshop on Positive Psychology by Mr. Barinder Aluwalia

"Brig. Kuldeep Chandpuri" giving a lecture on "Winner of the Nation"

In addition to the above events, **SPRINT** (Skills Progression through Rapid Intensive and Innovative Training) workshops are also organized regularly on various themes for students of all streams.

SPRINT was initiated to provide accelerated learning to rural and semi-urban youth – with the intent of raising their employable threshold.

This program was developed as a blend of Soft and Technical Skills and patterned on the lines of Stanford University's Mini MBA. SPRINT has been phenomenally successful in creating employment as well as the personal and Professional growth of students and has become one of our biggest strengths. Started as a pilot project for MBA students, the program has now been expanded to all Schools across the University. SPRINT has the potential to be extended beyond the campus – both as an extension and consultancy.

The success story of this program is a feather in the University's cap. The pioneering program adopts a multi-pronged approach of adding, supplementing, updating, and reinforcing formal learning that students have acquired in their regular courses.

Table 1.4 SPRINT Workshops organized during the Academic year 2017-18

S. No.	Theme	Date
1	Sprint workshop for MBA Quad 1 on Induction	14th Aug 2017 to 19th Aug 2017
2	Sprint workshop for MBA Quad 5 on Business Plan	20th Aug 2017 to 24th Aug 2017
3	Sprint workshop for B.Sc Sem 3 & Sem 5 on Business Plan on Improving Communication	29th Aug 2017 to 30th Aug 2017
4	Sprint workshop for B.Tech (Foodtech, Computer Science Engineering, Biotech, Electrical & Communication Engineering, Mechanical Engineering, Mechanical Engineering – Auto, Electrical Engineering, Civil Engineering) & B.Sc Foodtech on Business Plan on Improving Communication Skills	11th Sept 2017 to 14th Sept 2017
5	Sprint workshop for Undergraduate Faculty of Management Sciences & Liberal Arts on Communication Skills	27th Sept 2017 to 29th Sept 2017
6	Sprint workshop for B.Pharma Sem 7 & M.Pharma 2nd Year on Interview Skills	9th Oct 2017 to 12th Oct 2017
7	Sprint workshop for MBA Quad 6 on Leadership Skills	26th Oct 2017 to 28th Oct 2017
8	Sprint workshop for MBA Quad 2 on Transformation	30th Oct 2017 to 4th Nov 2017
9	Sprint workshop for BBA, B.Com & BA Economics on Leadership	13th Nov 2017 to 15th Nov 2017

10	Sprint workshop for B.Pharma Sem 1 on Communication Skills	16th Nov 2017 to 17th Nov 2017
11	Sprint workshop for all Undergraduates Sem 1 on Improving Communication Skills	20th Nov 2017 to 25th Nov 2017
12	Sprint workshop for B.Tech (Biotech + Foodtech) Sem 5 & B.Sc (Microbiology + Biotech) Sem 3 on Professionalism	27th Nov, 2017 to 28th Nov, 2017
13	Sprint workshop for B.Tech Sem 7 on Technical & Industrial Session	29th Nov 2017 to 1st Dec 2017
14	Sprint workshop for B.Tech Sem 5 on Improving Communication Skills	4th Dec 2017 to 5th Dec 2017
15	Sprint workshop for MBA Quad 4 on Selling Skills	22nd Jan 2018 to 24th Jan 2018
16	Sprint workshop for B.Tech Biotech/Foodtech & B.Sc Micro/Biotech – Sem 4 on Leadership	31st Jan 2018 to 2nd Feb 2018
17	Sprint workshop for B.Tech Computer Science Engineering/Bioinformatics/ Electrical Engineering Sem 8 & B.Tech Electrical & Communication Engineering, Mechanical Engineering / Mechanical Engineering AUTO Sem 8 on Pre-Placement	5th Feb 2018 to 9th Feb 2018
18	Sprint workshop for B.Tech Civil Engineering /Biotech /Foodtech Sem 8 on Pre-Placement	12th Feb 2018 to 16th Feb 2018
19	Sprint workshop for MBA Quad 7 on Pre-Placement	19th Feb 2018 to 28th Feb 2018
20	Sprint workshop for SILB students on Improving Communications Skills	5th March 2018 to 7th March 2018
21	Sprint workshop for B.Tech Sem 4 Civil Engineering /Electrical & Communication Engineering/ Mechanical Engineering / Electrical Engineering /B.Sc Maths on Personality Development	2nd April 2018 to 3rd April 2018
22	Sprint workshop for M.Sc Sem 4 on Placements	4th April 2018 to 5th April 2018
23	Sprint workshop for B.Tech Sem 6 on Leadership	6th April 2018 to 7th April 2018
24	Sprint workshop for Undergraduate Sem 4 on Confidence Building	9th April 2018 to 11th April 2018
25	Sprint workshop for Undergraduate Sem 6 on Interview Skills	12th April 2018 to 14th April 2018
26	Sprint workshop for B.Tech Biotech/Foodtech Sem 6 on Confidence Building	16th April 2018 to 17th April 2018

27	Sprint workshop for Undergraduate Sem 2 on Presentation Skills	23rd April 2018 to 24th April 2018
28	Sprint workshop for Undergraduate Sem 2 on Presentation Skills	25th April 2018 to 26th April 2018
29	Sprint workshop for B.Tech Sem 2 (Mechanical Engineering, Civil Engineering, Computer Science Engineering, Electrical Engineering, Electrical & Communication Engineering, IT) & B.Sc (Physics & Maths) Sem 2 on Presentation Skills	2nd May 2018 to 3rd May 2018
30	Sprint workshop for B.Sc (Physics, Chemistry, Zoology, Botany) Sem 4 on Presentation Skills	4th May 2018
31	Sprint workshop for MBA 1st Year on Internship	7th May 2018 to 11th May 2018

Mr. Jaijit Bhattacharya giving a lecture on "Technology Sovereignty"

DST INSPIRE SCIENCE CAMP

The University takes great pride in spurring scientific creativity and innovation in school children. On behalf of the Department of Science and Technology, Government of India, the University conducts an INSPIRE program for promoting interest in basic science and approximately 7281 school students have been benefitted till now.

Thirty-One INSPIRE Science Internship Programs. conducted until June 2018 out of which four were conducted in 2017 -18.

Prof. H.C. Sharma, Vice Chancellor of University of Horticulture and Forestry, Nauni addressing in 28th INSPIRE Science Camp

2.14 Significant Activities and contributions made by IQAC

The following significant activities and contributions were made by University as well as Institutional IQAC in the year 2017-18:

(a) Academic Planning and Strategy

i) Academic and teaching-learning strategies (Course Modifications wherever required were implemented).

ii) Emphasis on Syllabi integrated between Theory & Practical learnings delivered through Periodic Industrial Visits & Familiarization Trips.

iii) A Six-month Internship in four Core Areas of Hotel Operations i.e. front office, housekeeping, food production & food and beverage service by the students of Hospitality & Hotel Management.

iv) A Final Semester Project Dissertation on how to set up a Green Field Hotel Project for the students of Hospitality & Hotel Management.

(b) Resource Planning

i. Human Resource – Teaching & Non-Teaching Staff Planning including Visiting Faculty
ii. Lab /Equipment/ Software requirements.
iii. Learning Resources Planning
iv. Teaching aids requirements.
v. Budgeting

(c) Research & Innovation Planning

i. Faculty Annual Target
ii. Research Projects, Collaborations, and Patent targets
iii. Research Guidance
iv. Seminar, Workshops & Conferences
v. Club Committee Activities

(d) Industry Interaction and Placement Planning

i. Planning of Events, Corporate Meetings, etc.
ii. Internship Planning
iii. Pre Placement Talks
iv. Placement Grooming Activities
v. Placement Calendar

(e) Internationalization Planning

i. Tie-ups
ii. Collaborations
iii. Faculty/Student Exchange Programmes
iv. Study Abroad Programme/Scholarship for students

(f) Other Activities

i. To review the suitability, adequacy, and effectiveness of the University Quality Management Systems.
ii. To assess opportunities for improvement.
iii. Examine the need for changes in policies and objectives.

iv. Results of the audits, analysis, corrective actions taken and gaps identified in the feedback from various stakeholders.
v. Recommendations for improvement in systems and processes.

(g) Student Development Activities Planning

i. Involvement of students through in-house projects pertaining to the refinement of the academic process, Environment safety, energy saving, and Food safety and social projects.

ii. Monitoring and Review of Teaching – learning process through University intranet (myShoolini) and by taking periodic reports on various processes like:

- Tracking of classes held
- Monitoring of Academic Planning Worksheets.
- Implementation of Time Table.
- Conduct of event as per the calendar approved by the Academic Council.
- Overview of the conduct of classes as per the plan.
- The implementation of Outcome-Based Education.
- Ranking of Institutions and Accreditation.

iii. IQAC at University level ensured that all the Institutions have defined their Graduate Attributes in alignment with the Attributes defined at the University Level.

Shoolini Newsletter

Shoolini University Newsletter is a campus newspaper which was conceived by IQAC and started in November 2017. It was proposed to come out bi-monthly with the provision to postpone publication of some of the editions in view of examinations and vacation in the University.
The idea behind bringing out the Newsletter is broadly two-fold:

- It is aimed at providing practical training in producing a newspaper for the students of Bachelors of Journalism and Mass Communication (BJMC)
- To share news happenings related to the campus and the University. Besides students of journalism, the Newsletter is open for contributions by students from all other departments.

As a practical lab for journalism students, the Newsletter involves them in the skills of news and features writing, the art of interviewing, bringing out special stories, photography, editing and production.

Under the mentorship of senior journalist and former Editor of The Indian Express, Vipin Pubby, who has an experience spread over 40 years in the field of journalism, student editors were appointed to lead the team. Faculty members too were appointed editors to guide and train the students.

While initially, the faculty members guided them on reporting and editing, the students took over the charge in a few weeks. They were soon reporting as well as editing stories written by fellow students. Some of the regular columns relate to achievements of alumni, experience of University students when they go abroad under Exchange programmes, interviews with senior visitors, coverage of Guru series of Talks by experts in various fields, experiences of foreign students studying in the University besides interviews of student achievers who win contests or sports events representing the University.

The Newsletter had also been running a series on "Ideas from Shoolini" on various patents filed and granted to the faculty and students of the University. It also takes note of the various research achievements and other laurels won by the students and faculty of the University.

The student-reporters regularly report on the activities in the campus like quiz contests, cultural programmes, inter-departmental competitions and views of students on various topical and social issues. There is also a regular column on an extensive interview in Question-Answer format with one of the senior faculty members in each issue of the Newsletter.

It thus helps in informing the students and staff of the developments relating to the University. It also reports on the forthcoming events and informs the readers about the venue and time for such events. One full page in the 4-page all-color newspaper sizes Newsletter is devoted to life@shoolini which depicts the various aspects of campus life in photographs. A student from all departments are encouraged to contribute photographs and the best two photographs in every edition are given vouchers which can be used at eating joints in the campus. To involve more students and let their creative juices flow, a photo caption contest is also organized. The best three entries are also given vouchers which can be exchanged for eatables in particular food joints who sponsor the caption contest.

The circulation of the Newsletter has been varying from 10,000 printed copies to 1,00,000 copies. It is distributed free with regular newspapers in various towns of Himachal Pradesh besides the campus. Also, its soft copy is sent out to thousands of Alumni and others.

Sixteen editions of Newsletter have been published till the end of November 2018. One more has so far been published in December 2018.

Vol. 1 | Issue- 3 Download Epaper at : www.shooliniuniversity.com/epaper Follow us : Wednesday, December 6, 2017

Shoolini University NEWSLETTER

My amazing voyage for Discovery of India

Padmavati movie must be released, say students

In Briefs

Filing of patents: close to a century

With the filing of 5 patents during the month of November, the total number of patents filed so far by the students and faculty of Shoolini University has gone up to 98. Names of the first author of these five patents are Er. Sanjay Garg (Civil Engineering), Dr. Varun Sharma (Mechanical Engineering), Er. Sumit Mhelwal (Mechanical Engineering), Mr. Karthik Chauhan (Bio-Engineering and Food Technology) and Sampy Duggal (Bio-Engineering and Food Technology)

Univ organises trip to Govt School

Shoolini University organized a trip on Saturday to a primary school in Dagshai. This was carried out by the university's social projects group under Prof Poonam Nanda as the projects head. Students from different departments volunteered for the visit. The groups were welcomed by cheerful children and teachers.

World AIDS Day

Shoolini University organised a rally on the World AIDS Day

Contests mark Science Day on the campus

Shaina Chauhan

Shoolini University, known for its high standards and research in sciences, celebrated November 23 as the Shoolini Science Day. Organised by the School of Bio-engineering and Food Technology, the Science Day also attracted students from Solan and Shimla districts. Competitions in Declamation and Poster Making were also organised on the occasion.

Dr Dinesh Kumar, the Dean of Bioengineering, while addressing the students, talked about the challenges in India such as lacking public funding. "The direct benefits of science and technology are not reflected in the financial growth of India." Therefore, he said, we need strategies to find solution to tackle with them. He said especially science and technology plays a major role for sustainable development. Giving a brief view about the school of Biotechnology and Food technology which at present offers undergraduate, postgraduate and doctoral courses, he added that the Union ministry of food processing has also selected it to set up food testing lab in the campus.

This was followed by the lighting of the lamp by the Vice Chancellor Dr. Prem Kumar Khosla and students. He recalled the Green Revolution and famine which happened in 1965 in India and how it was prevented. "And now we stand as a surplus nation". He shared his thoughts with the students and pointed out that "India is known globally for two things one is Green Revolution and other is Yoga." He stressed that Yoga is a science and it's just not about spirituality.

A presentation was delivered by Dr. Saurabh Kulshrestha, co coordinator of Summit Research Programme where he shared the objectives of the programme. He also displayed a small video clip to ignite one's imagination towards life as a researcher.

The first cash prize of Rs 10,000/ with a memento and a certificate, in declamation contest was bagged by Yashika from Gurukul International School Solan. The second prize of Rs 5,000 was won by Divya along with a memento and certificate. Third prize winner was Arushi who received a certificate and memento from Durga Public School Solan.

Continued on Page 2

New courses to be introduced from next session : VC

Prof P K Khosla, the Vice Chancellor of Shoolini University, as well and its founder and trustee, has the distinction of remaining Vice Chancellor of Himachal Pradesh Agriculture University as well as Advisor to the Government of Himachal Pradesh. He turned an educationist-entrepreneur at the age of 65 and founded this University. In an interview with **KHAYAATI SHARMA** he talks about the new programmes planned and his vision for the University. Excerpts from the interview :

How much pressure and responsibility do you face as the VC of the University?

Shoolini has emerged as a renowned university and I'm proud to be at its helm. I'm responsible for whatever happens here and I'm totally involved in its development and growth. It is good to see that the University has evolved into an institution that can match the best of universities, both in public and private sectors, which were established around the same time as our University.

Can you elaborate on your vision for research in the university?

Shoolini University is focusing on research and major part of the time is spent on how to strengthen research and generate funds for research. The vision remains same for us all: to be a top 200 global university by 2022. It is a

Interview

tough task as none of the Indian university is currently in that list. I strongly believe that if you have to go up, you cannot go with the routine matters. You have to do something different from others and that can be done by strengthening research and it contributes to the international global ranking up to the level of 70 per cent. And if research improves, teaching will definitely improve.

What are the main strengths of Shoolini University?

Firstly, it is the faculty which matters the most. Be it research, education, placements, industrial tieups, whatever it is, faculty is the prime mover. Shoolini has experienced professors from other universities as well as those who had taught abroad. Research and faculty are interlinked. If the faculty is good, automatically the quality of research improves. We also place a lot of emphasis on linkages with universities abroad besides tie-ups with other institutions and industry. Likewise, placements are equally important. And lastly, it is the governance: clear, neat, clean and greed-free governance would lead you to the success.

What do you consider to be the main challenges faced by Shoolini?

The biggest challenge is to change the work culture. Most teachers tend to leave their cabins at 5.30 pm even though we arrange a bus at 7.00 pm. Even most research guides have not been able to convince their own PhD students to stay.

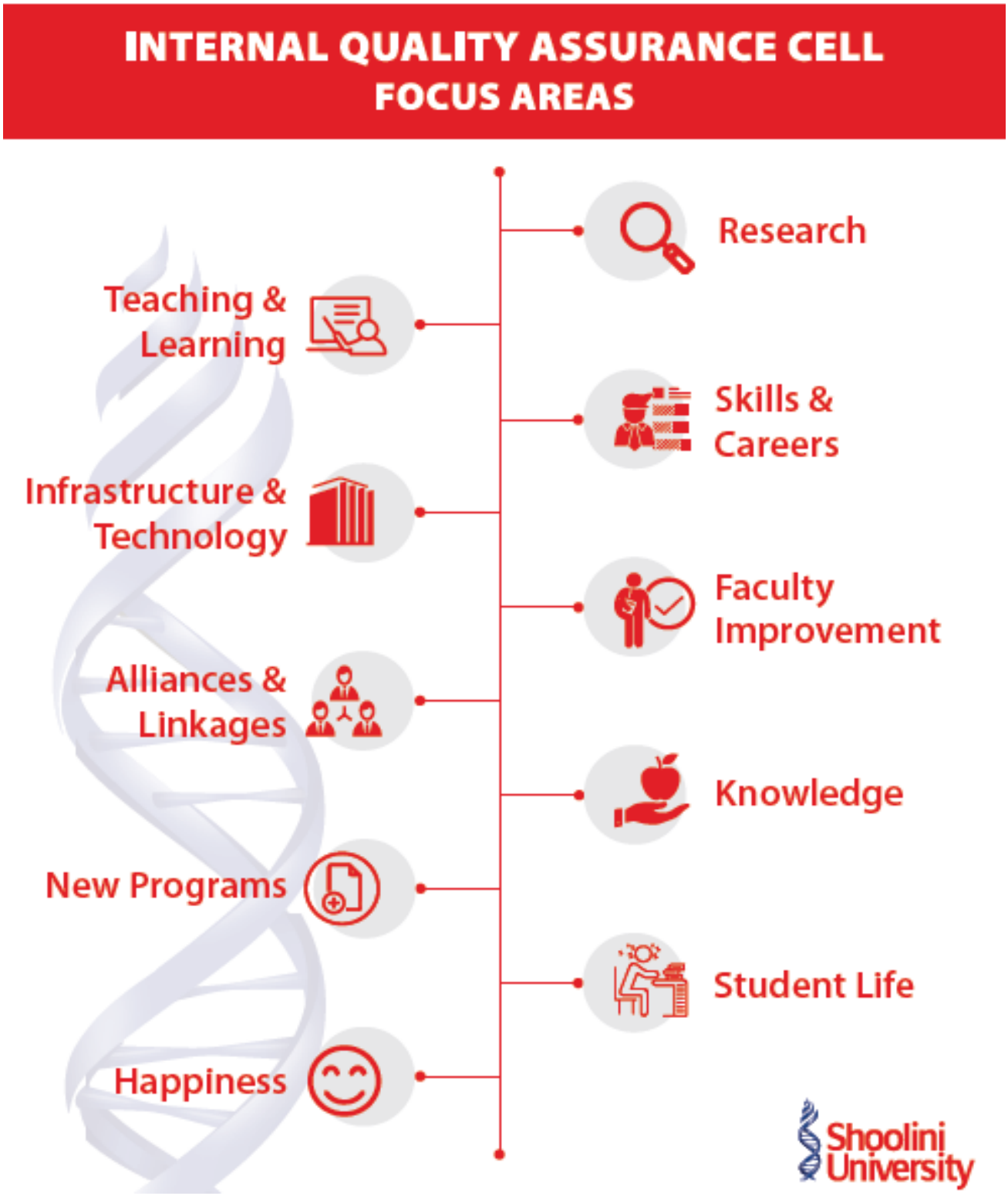
I think that is the biggest challenge. University would mean when it is open 24X7 for all the students doing research day and night. For this, there are few things to be done : We have to increase the number of the houses for the faculty on the campus.

The day we conquer it, we will increase the number of publications and we can match with any international university in the research output.

Continued on Page 2

Shoolini University Newsletter, Volume 1

2.15 Plan of Action by IQAC/Outcome



** Academic Calendar of the year 2017-18 is attached as **Annexure I***

The plan of action for the academic year is chalked out by the IQAC in the beginning of the year towards quality enhancement, below mentioned are few activities that were achieved in the academic year 2017-18.

- Started entrepreneurship unit with name "Shoolini Food Processing Unit" with FSSAI Registration No. 20918011000527 by the Bio-engineering & Food Technology to impart entrepreneurship training to internal students and rural community.
- Planned to introduce Artificial Intelligence and Data Sciences as online courses.
- Sprint Program for career counseling, placement cell and guidance for higher education, are integrated for student progression.
- Training Simulation Hotel to be established within the campus which Hospitality & Hotel Management students would run on their own for prior experience before they touch the Industry providing them real-time development.
- An academic center of excellence is planned to be developed where researchers of different expertise enjoy working together on inter-disciplinary topics i.e. solar, wind, hydro, biomass, automobiles, design etc. under the Mechanical & Civil Engineering department.
- Industrial visit of students planned and executed in all programs.
- Research projects have been started with industry collaboration.
- Commercialization of patents.
- ICFL – Centre of Excellence started
- **Regional Centre of Excellence for VLCI** (Visionary Learning Community India) in north India developed.
- Research projects were submitted to different funding agencies such as HIMCOSTE & DST. Introduction of the undergraduate program in Biotechnology (B.Tech.) Summit Research Program, where highly motivated and aspiring students are recruited from all India level. The selection was based on two rounds of interview apart from other minimum eligibility criteria. The students are grilled by the expert committee members and only a limited number of students are selected every year who are able to defend their research idea at the time of interview. The program was started from 2016 batch and in 2018 third batch was admitted to the program. The students are to undertake research projects in the area of their interest and it is on top of all the essential courses which are required for being eligible to get B.Tech. degree.

Introduction of MOOC – Massive Open Online Courses

A massive open online course (MOOC) is a model for delivering learning content online to any person who wants to take a course, with no limit on attendance.

In the last three years, over 25 million people from around the world have enrolled in Massive Open Online Courses (MOOCs) offered by Coursera, EdX, and other platforms.

Looking after the great success of MOOC courses throughout the world Shoolini University has also introduced these in its curriculum from the academic year 2018. These Courses provide a great opportunity to students for thinking out of box & expand their learning curve with additional knowledge. Latest research demonstrates that among learners who complete courses, MOOCs do have a real impact: 72% of survey respondents reported career benefits & 61% reported educational benefits.

Some of the findings suggest that people from developing countries more frequently report benefits from taking MOOCs and, also in developing countries, people with lower socioeconomic status and with less education are more likely to report benefits. It appears that MOOCs are tangibly helping people who take the time and effort to complete courses.

Students in the university have successfully completed the courses within the time and with the increasing demand among the students, the university is planning to launch more courses in future for the betterment.

Courses that were introduced in this semester are as follows -

S. No.	Department	Course Name
1	Physics and Chemistry	Research Methodology
2	CSE	Data Science
		Artificial Intelligence
3	Electricals	Artificial Intelligence
		Circuit Applications
4	Food Tech	Functional Foods: Concept, Technology and Health Benefits
5	Civil	Tsunami and Storm surges: Introduction to coastal disasters
		Water Management
6	Mechanical	Introduction to the internet of things (IoT)
		Electric Cars: Introduction
7	Management	Poetry in America/Modernism

Yogananda Ville – Abode of Spiritual and Literary Awakening

Shoolini University, which hosts two dozen disciples of Yogoda Satsanga Society (YSS), established Yogananda Ville in order to create an institute of Kriya yoga research and spiritual pursuits. This will provide a platform for the researchers, scholars, teachers, scientists, doctors, and other professionals to spend their sabbatical or vacations in a sylvan environment of pine forests for generating scientific data and information to meet the quests arising in the minds of westerners and easterners. The Ville is located adjacent to Shoolini University.

The Yogananda Ville will encompass an international hostel, a meditation hall, an academic block, meditation huts and caves, and recreational facilities. It is envisaged that the Ville will be an ideal place for spiritual growth and academic pursuits for YSS and Self-Realization Fellowship (SRF) devotees and all others who are interested to study and research on the age-old Indian heritage of meditational yoga in general and *kriya yoga* in particular.

The Ville will provide the eastern look and feel with Western facilities so that Yogananda's dream, which was passed to him by his revered Guru Sri Yukteshwar ji on the prophesized instructions of Mahavtar Baba Ji in 1894 at *Kumbh Mela* in Allahabad, is fulfilled in narrowing down the gap between the two civilizations. It will, therefore, be a spiritual institute wherein scholars from both East and West will jointly investigate the principles of Kriya Yoga by the application of modern physical tools for its acceptance as the supreme science for leading a balanced life.

The Yogananda Ville was inaugurated on International Yoga Day i.e. 21st June 2017.

Yogananda Ville Foundation Stone Ceremony

Yogananda Ville

2.16 Whether the AQAR was placed in statutory body Yes [√] No [ ]

Management [√] Syndicate [ ] Any other body [ ]

Provide the details of the action taken

**As per the plan of action decided at the beginning of year action as mentioned above under point no. 2.15 was taken.

Part – B
Criterion – I

1. Curricular Aspects

1.1 Details about Academic Programmes

Level of the Programme	Number of Existing Programmes	Number of Programmes added during the year	Number of Self-financing Programmes	Number of value added / Career Oriented Programmes
Ph.D	11	0	11	11
PG	27 (21 PG + 6 M.Phil)	7(1 PG + 6 M.Phil)	27	27
UG	27	5 (BALLB, LLB, B.Sc Yoga, B.Tech IT & B.Sc Hospitality & Hotel Administration)	27	27
PG Diploma	1	1 (PGDBM)	1	1
Advanced Diploma	0	0	0	0
Diploma	0	0	0	0
Certificate	0	0	0	0
Others	0	0	0	0
Total	**65**	**13**	**65**	**65**

Interdisciplinary	The syllabus is reviewed at regular intervals as shown under point no 2.9 of this report thus most of the programmes taught are interdisciplinary and innovative in nature
Innovative	

1.2 (i) Flexibility of the Curriculum: **Choice Based Credit System with Open electives**
(ii) Pattern of programmes:

Pattern	Number of programmes
Semester	64
Trimester	Nil
Annual	Nil
Quadmester	01 (MBA)

1.3 Feedback from stakeholders* Alumni [√] Parents [√] Employers [√] Students [√]
(On all aspects)

Mode of feedback: Online [√] Manual [√] Co-operating schools (for PEI) [ ]

Please provide an analysis of the feedback in the Annexure
(ANNEXURE II Feedback Form)

1.4 Whether there is any revision/update of regulation or syllabi, if yes, mention their salient aspects.

- The curriculum for various programs was modified keeping in mind the industry requirements and inputs that came from Academic and Research experts. Course syllabi were revised accordingly.
- More focus was laid on a research project and Industrial visits.
- Many practical courses like Discrete Mathematics and Artificial Intelligence in B.Tech CSE 4th Semester and Software Engineering and Testing and Multimedia and Graphics in B.Tech CSE 6th Semester were introduced. Computer Architecture and Distributed Data Base Management Systems. shifted from B.Tech CSE 5th to B.Tech CSE 4th semester. Introduced Advanced Cloud Computing, Big Data and Machine Learning in M. Tech CSE.

1.5 Any new Department/Centre introduced during the year. If yes, give details. YES

Under the Faculty of Management Sciences & Liberal Arts, following new programs were started:

Hospitality & Hotel Management

Hospitality & Hotel Management aims to enable overall development of students with the right theoretical and practical experience, to turn them into employable Professionals with the hands-on learning experience. This is made possible by faculty that has a background of working for leading hotel chains of India, including Oberoi Hotels, Carlson Rezidor, ITC Welcomgroup, Leela Group & Hyatt.

Program Offered in the Academic Year 2017-18 | B.Sc Hospitality & Hotel Administration |

Yoga

Yoga and Naturopathy have evolved successfully in August 2017. Currently, we are conducting Postgraduate and Undergraduate programs. An exclusive outreach program to Indo-China Collage has already become a center point of mutual academic expansion and exploration in the research issues of Yoga & Naturopathy. In a Close recognition and recommendation of the Ministry of AYUSH, Govt. of

India. Shoolini University has been instrumental in promoting the awareness of Yoga and its allied sciences in the local schools. It will be acting as a catalyst by the time the forthcoming Hospital of Yoga & Naturopathy will be actively operating both out patent department (OPD) and Indoor patient department (IPD). The department itself is self-content with Professional both in Yoga and allied sciences. Two of our distinguished Ph.D. Doctors Dr. Mala Tripathi and Dr. Subodh Saurabh Singh with Dr. Vinod Kumar (HOS) and experienced and eminent Yoga Instructor Ms. Anupama Chandel are putting sincere efforts to take the department to the new height of achievement. Very recently we have already seen the glimpses of promising talent and dedication of the young Yoga student who has constantly stolen the exhibited programs. both at the University level and at respective invited places.

Program Offered in the Academic Year 2017-18 | B.Sc Yoga |

Inauguration of "Yogananda Centre of Yogic Sciences" by Swami Krishnananda Giri

Faculty of Legal Sciences

School of Law

School of law at Shoolini university offers unique programs which focus on niche areas like IPRs, Cyberlaw, International Business Transaction law, Health care, Environmental laws, and Dharma and law. Research Oriented teaching with rich curricula, students are also exposed to hands-on practical knowledge. Moot court for regular hands-on practical experience, National Moot Court Competition conducted every year. Court Visits, Jail visits, Forensic Lab visit are organized on regular basis. School is working hand in hand with DSLA (District Legal Services Authority), Solan, H.P. Internship for every student every year in reputed Law firms, Litigation Associates, People Union for Civil Liberties, International Youth Forum. A techno-driven research culture, skill enhancement programs, field visits, internationalization, qualified teaching staff, world acclaimed teaching pedagogies, industry-interface, well designed and execute community outreach and extension programs and the like, makes School of Law a preferred destination for students. Apart from the litigation, a law graduate has various opportunities in the corporate sector as General Counsel and Legal Advisors. They can even opt for civil services, judicial services, JAG, policy making, academia. A legal aspirant also has endless opportunities in public and private organizations such as **UNO, WHO, WTO, ILO, ICC, ICA, FICCI etc.**

Program Offered in the Academic Year 2017-18 | BALLB & LLB |

Justice R.S. Thakur congratulating winners in "National Moot Court Competition" at Shoolini University

Criterion – II

2. Teaching, Learning, and Evaluation

2.1 Total No. of permanent faculty (* for Academic Year 2017-18)

Total	Assistant Professors	Associate Professors	Professors	Others
212	137	23	45	7

2.2 No. of permanent faculty with Ph.D. 106

2.3 No. of Faculty Positions Recruited (R) and Vacant (V) during the year

Asst. Professors		Associate Professors		Professors		Others		Total	
R	V	R	V	R	V	R	V	R	V
31	7	03	21	06	02	01	--	41	30

2.4 No. of Guest and Visiting faculty and Temporary faculty 91 | 25 | 0

2.5 Faculty participation in conferences and symposia:

No. of Faculty	International level	National level	State level
Attended Seminars	15	83	15
Presented Papers	17	12	0
Resource Persons	2	30	1

Table 2.1A Faculty Participation in Conferences and Symposia Outside Campus

S. No.	Faculty member	Details of the conference and paper
1	Dr. Aniruddha Mitra	Poster presentation titled "Hymenoptera of Solan district, Himachal Pradesh" at International Conference in Zoological Sciences, held at Punjabi University, Patiala, October 26-28, 2017.
		Invited talk titled "Hymenoptera – why they matter and what we can learn from them" at Capacity Building
		Workshop on Long-Term Monitoring of Himalayan Biodiversity, held at Zoological Survey of India, Solan, March 23 – 24, 2018.

2	Dr. Mamta Sharma (Botany)	Capacity building workshop on long-term monitoring of Himalayan Biodiversity
3	Dr. Shankharoop Ghoshal (Environment Science)	Capacity building workshop on long-term monitoring of Himalayan Biodiversity
4	Dr. Neeraj Gupta	CFOS – IIT Roorkee in Dec 2008
		Potential Application of Nanocarbon Materials in Catalysis and Electrochemical Sensing"
5	Dr. Dipankar Sharma	The Fourth International ERPBSS Conference held at Dubai on 16th Jan 2018
6	Dr. Rajesh Sharma	International Conference on Science: Emerging Scenario and Challenges on 1st and 2nd July 2018 at Atal Bihari Mountaineering Institute, Manali (H.P.)
		National Conference on Climate Change, Societal Consequences and Mitigation: Future Vision on 26th and 27th April, 2018 at Central University Jammu.
7	Dr. Saurabh Kulshrestha	Attended University Immersion Program organized by Sichuan University as Foreign Faculty and delivered a 16 hr course on Genetically Modified Organisms around us
		Resource Person for a training program to school lecturers, organized by SCERT, Solan
		2nd Himachal Science Congress, Nov 20-21, 2017
		Attended University Immersion program organized by Sichuan University PR China from July 8-21 in Chengdu, China as foreign faculty and delivered a course on Genetically Modified Organisms around us
8	Dr. Somesh Sharma	1. Second Himachal Pradesh Science Congress: Science & Technology for sustainable livelihood in India Himalayan Region held on 20-21st November by Himachal Pradesh Council for Science and Technology & Environment (HIMCOSTE), Shimla.

		2. NABARD sponsored third National conference on Contemporary Food Processing and Preservation technologies, 12-13th April 2018 held at Shoolini University, Solan.
		3. NABARD sponsored third National conference on Contemporary Food Processing and Preservation technologies, 12-13th April 2018 held at Shoolini University, Solan.
		International conference 1. International Conference on Food and Beverages held on 06-07th August at Tokyo, Japan by meetings International Pte Ltd., Singapore. (As keynote speaker)
		2. International Conference on Food and Beverages held on 06-07th August at Tokyo, Japan by meetings International Pte Ltd., Singapore. (as a speaker)
9	Dr. Dinesh Kumar	1. NABARD sponsored third National conference on Contemporary Food Processing and Preservation technologies, 12-13th April 2018 held at Shoolini University, Solan
		2. NABARD sponsored third National conference on Contemporary Food Processing and Preservation technologies, 12-13th April 2018 held at Shoolini University, Solan
		3. Rani, R., Guleria S and Kumar D (2018). Application of zein (a valuable maize protein) isolated from corn meal and corn gluten meal in the food and pharmaceutical industry. NABARD sponsored third National conference on Contemporary Food Processing and Preservation technologies, 12-13th April 2018 held at Shoolini University, Solan.
10	Dr. Rahul Thory	Development, quality evaluation and shelf life studies on wheatgrass fortified rice drink.
		National Seminar on Technological Interventions in Food Processing and Preservation, Amity University Rajasthan, Jaipur, 17th November 2017.
11	Ms. Shagun Gupta	**International Conference** Nanosensor for early detection of celiac disease in human based on quantification of anti-tissue transglutaminase at NANOBIOTECK 2017 held at KTDC- Samudra, Triven drum

		from 6th-8th Dec 2017
12	Dr. Pankaj Chauhan	**International Conference** Attended NANOBIOTECK 2017 held at KTDC- Samudra, Triven drum from 6th-8th Dec 2017
13	Dr. Ashok Pathera	National Seminar on Technological Interventions in Food Processing and Preservation, Amity University Rajasthan, Jaipur, 17th November 2017.
		Title of paper- Effect of ingredients level and cooking methods on quality characteristics of chicken nuggets using response surface methodology.
14	Dr. Amit Seth	1) National Symposium on "Pteridological Studies in India: Perspectives and Modern approaches in relation to Environment & Climate Change". Oral presentation: Green Synthesis of Iron nanoparticles from Christella dentata and Cheilanthes bicolor Venue of Conference: Itanagar, Arunachal Pradesh Organized by: Botanical Survey of India and Indian Fern Society Date: February 22- 23, 2018 Awards: S.S.Bir Gold Medal in Pteridology
		2) Industry-Academia Meet on "Opportunities and Challenges in Fermentation Based Industrial Processes" (IAMF-2018) September 13-14, 2018 at CSIR-IIIM, Jammu Oral Presentation: Enzymatic synthesis of lactamide and R-mandelic acid by mesophilic and thermophilic nitrile degrading enzymes Resource Person: Served as Session Chair in the Conference
15	Er. Mukul Kumar	**International Conference** Mukul Kumar, Samiti Guleria, Azhar Khan and Ravinder Kaushik (2018). In a vitro anti-obesity study of Himalayan herbs formulation. International Conference on Science: Emerging Scenario & Future Challenges (SESFC-2018)

		National Conference 1) Mukul Kumar and Ravinder Kaushik (2017) Herbal Formulation for anti-obesity from Himalayan herbs. NABARD sponsored third National conference on Contemporary Food Processing and Preservation technologies, 12-13th April 2018 held at Shoolini University, Solan
		2) Mukul Kumar and Ravinder Kaushik (2018) Herbal Formulation for anti-obesity from Himalayan herbs. NABARD sponsored third National conference on Contemporary Food Processing and Preservation technologies, 12-13th April 2018 held at Shoolini University, Solan
		3) Mukul Kumar, Somesh Sharma, Vikas Bansal (2018). Impact of conventional technique on quality attributes of whiskey. NABARD sponsored third National conference on Contemporary Food Processing and Preservation technologies, 12-13th April 2018 held at Shoolini University, Solan.
		4) Prince Chawla, Mukul Kumar, Ravinder Kaushik and Naveen Kumar (2018) Advance chromatographic techniques for the detection of organophosphorus insecticides from food. NABARD sponsored third National conference on Contemporary Food Processing and Preservation technologies, 12-13th April 2018 held at Shoolini University, Solan
		5) Swapnil Gupta, Aanchal Agarwal, Mukul Kumar and Ravinder Kaushik (2018). Therapeutic importance of Cucumis callosus.
16	Dr. Adesh Saini	IMI-conference in Mizoram
17	Dr. Varun Jaiswal	The 11th International Symposium on Pneumococci and Pneumococcal Diseases (ISPPD) Melbourne, Australia, 15-19 April 2018.
		Conference on Artificial intelligence: Potential Applications in Himachal Pradesh 15th May 2018
		International Conference Malaria parasite biology: strategies for Drug and vaccine development" at ICGEB, New Delhi, India, on 29 November - 1 December 2017

18	Mr. Pankaj Vaidya	Conference on Artificial intelligence: Potential Applications in Himachal Pradesh 15th May 2018
		International Conference on Recent Innovations in Electrical, Electronics & Communication Engineering - (ICRIEECE), 2018
19	Ms. Minakshi Nayyer	International Conference on Recent Innovations in Electrical, Electronics & Communication Engineering - (ICRIEECE), 2018
20	Ms. Namita Gandotra	6th International Conference on Smart Computing and Communications, ICSCC 2017, 7-8 December 2017, Kurukshetra, India
21	Dr. Raj Kumar	3rd International conference on Science, Technology & Management (ICSTM-2017)
		Electrical Discharge Machining of Tungsten Carbide Composite Alloy: Experimental And Numerical Simulation By Taguchi Method.
22	Prof. P.L. Goel	Himachal Pradesh Science Congress on Science & Technology for Sustainable Livelihood in Himalayan Region November 20-21, 2017
		"Studies of Glass Fiber Reinforced Concrete Composition".
23	Mr. Chander Mohan Gupta	"Noise Pollution: A study of Legal Control in India" presented in National Conference on Law and Social Transformation In India organized by University School of Law, Rayat – Bahara University.
		"GST: An Innovative step towards Economic Growth." Presented paper in National Conference on Emerging Trends In Management, Law, And Tourism: Issue And Challenges In Sustainable Development held in Bahara University Shimla Hills in Feb 2018.
		"Online Human Trafficking", Technology in its Grim Picture. In 3rd National Conference on Human Rights and Gender Justice 2018 held on 23rd June at Indian Law Institute, New Delhi.
24	Mr. Chander Mohan Gupta and Dr. Pooja Verma	"Online Human Trafficking", Technology in its Grim Picture. In 3rd National Conference on Human Rights and Gender Justice 2018 held on 23rd June at Indian Law Institute, New Delhi.

25	Ms. Prachi Kapil	Conference: Entrepreneurship for the XXI Century- Images and Perspectives, Faculty of Management, University of Warsaw, Poland, Nov 16-17, 2017
		Paper: A Conceptual Investigation of Entrepreneurship Education: The Road Travelled and the Journey Ahead
26	Ms. Ranjna Thakur	Presented paper 'Global politics of climate change and the emerging states: Growth vs global commitments', in an International Seminar on Sustainable Development, Gandhian Legacy and 21st Century Challenges sponsored by ICSSR organized by the Dept. of Gandhian and Peace Studies Panjab University, Chandigarh on 9-10 March 2018
		Presented paper 'Harnessing Media Power to promote Peace and Harmony through Tourism', in a national conference on Innovations, Creativity, and Sustainability in Tourism, Aviation & Hospitality Industry, organized by UITHM Chandigarh University, Mohali, Punjab on 6-7 April 2018
27	Dr. Purnima Bali	Authored and presented a paper titled "Literature & Media: A Study of Stoning of Soraya M." at National Conference organized by Department of Management & Humanities, NIT Hamirpur, Himachal Pradesh on 14th & 15th July 2017.
28	Dr. Supriya Srivastava	A Sociological Review on Urbanization and The Environment in National Conference
		Women Empowerment Through Political Participation in Indian Society – International Conference
		History of Indian Caste System: Continuity and Changes – in International Conference
29	Prof. Atul Khosla	Event: Director's Club training program for Non-Executive and Independent Directors Date: 15/11/2017 to 17/11/2017 Venue: Mumbai
		Event: HP State Council Meeting Date: 19/12/2017 Venue: CII Northern region
		Event: Invite for Session on Family Business Network Date: 16/01/2018

		Venue: CII Chandigarh
		Event: Participated in TedX Date: 21/01/2018 Venue: Chandigarh
		Event: McKinsey India Meet Date: 06/02/2018 Venue: Taj Palace, Delhi
		Event: Invitation to Nostalgia 2018 and Verification of Batch Files for Directory Date: 03/03/2018 Venue: Mumbai
		Event: India Conference on Innovation, Intellectual Property and Competition Date: 30/03/2018 Venue: Delhi
		Event: Vibrant Networking Forum Date: 5/05/2018 Venue: Chandigarh
		Event: Invited talk "6th Higher Education Technology Conference 2018" Date: 21/06/2018 Venue: Delhi
		Event: EW India Higher Education Rankings Awards Nite 2018-19 Date: 23/06/2018 Venue: Bangalore
		Event: CII Education Summit Date: 29/06/2018 Venue: Delhi
		Event: Leadership summit by Shoolini University Date: 20/07/2018 Venue: Chandigarh
		Event: World Education Summit 2018 Date: 09/08/2018 to 10/08/2018 Venue: New Delhi
30	Ms. Chandresh Kumari	National XIII Agricultural Science Congress at University of Agricultural Sciences, Bengaluru on 21st to 24th Feb 2017)
31	Dr. Ashwani Kumar	New Horizons in Human Health and Nutrition-2017, 2-3 March 2017, Shoolini University

32	Dr. Reena V. Saini	Bioactive compounds from Datura stramonium enhance human immune cells mediated cytotoxicity towards cancer cells. Annual Conference of Indian Immunology Society Conference: IMMUNOCON-2016" held at GITAM University, Visakhapatnam, 16th-18th Feb 2017.
		National Conference on Environment and Natural Resource Management, by SERB, DST; Dept. of Tourism and aviation, Shimla; Center of research on Himalayan sustainability and development, Shoolini University; HIM Science Congress Association, HP; held at Shoolini University from 23-24th Feb 2017.
33	Amanpreet Kaur Virk, Chandresh Kumari, Tanvi Gupta/Saurabh Kulshrestha	XIII Agricultural Science Congress organized by University of Agricultural Sciences, Bengaluru and National Academy of Agricultural Sciences New Delhi on 21st to 24th February 2017
34	Amanpreet Kaur Virk, Chandresh Kumari	Workshop on Intellectual Property Rights (IPR) and Geographical Indications (GI) organized by Shoolini University, Solan on 16th March 2017
35	Amanpreet Kaur Virk, Chandresh Kumari, Abhishek Bhardwaj	National seminar cum workshop on Advanced Scientific Techniques organized by Shoolini University, Solan on 23rd to 25th May 2017
36	Abhishek Bhardwaj & Saurabh Kulshrestha	"VIROCON 2017"- 26th National conference of Indian Virological Society organized by NITTE University, Mangaluru on 7th to 9th December 2017
37	Dr. Astha Tripathi	Workshop on IPR and Geographical indications on 9th March 2017 organized by JP University, Waknaghat
38	Dr. Anuradha Sourirajan & Rajni Vaid	International level: HarGobind Khorana Memorial Symposium, Chandigarh, Dec 3-5, 2017/ Poster presentation Title: Identification of substrates of budding yeast PLK, Cdc5 during pachytene exit in meiosis
39	Dr. Kamal Dev & Sonum Sharma	HarGobind Khorana Memorial Symposium, Chandigarh, Dec 3-5, 2017 /Poster presentation
		Title: S. cerevisiae Emc4 and Tan1 plays a crucial role in eIF2B mediated translation regulation and survival under stress conditions

40	Dr. Kamal Dev	Delegate in Biocon Academy conference on Medicinal chemistry and Drug discovery & development, Feb 14-18, 2017
		HIMCOST Science Congress, Nov 20-21, 2017
41	Neha Chauhan, Umar Farooq & Azhar Khan	Therapeutic efficacy of western Himalayan medicinal plants against human pathogens, abstract presented at the Second National Conference on 'New Horizons in Human Health and Nutrition" organized by School of Bioengineering and Food Technology Shoolini University, Solan, 2-3rd March-2017
		"Combined Efficacy of Antibiotics in Synergism to Medicinal Plants against MDR Salmonella typhi Strains". 2nd Himachal Pradesh Science Congress organized by HP council for Science, Technology, and Environment (HIMCOSTE) at Shimla under the theme "Science and Technology for Sustainable Livelihood in Indian Himalayan Region", 20-21 November 2017
42	Neha Chauhan, Meentu Prakash, Umar Farooq, Azhar Khan	The Antibacterial effect of a few medicinal plants found in the western Himalayas of Himachal Pradesh, Abstract presented at National Seminar on " Innovations & Challenges in Basic & Applied Sciences" organized by Maharaja Agrasen University, Baddi Solan, 4th March-2017 and Won best poster presentation
43	Neha Chauhan, Pradeep Kumar, Umar Farooq, and Azhar Khan	"Efficacy of Medicinal Plants against Biofilm Forming Bacteria; Playing Important Role in Multidrug Resistance" (Accepted). Will be held in February 2018. National Conference organized by Shoolini University Solan, HP in collaboration with Society for Conservation and Resource Development of Medicinal Plants (SMP), New Delhi under the theme "Current Status of Preventing Extinction and Sustainable Utilization of Endangered Himalayan Medicinal Plants".
44	Dr. Nitika	Workshop on IPR and GI, SU, Solan
		DST-SEED Workshop, Shimla, 2017
45	Dr. Abhishek	Workshop on IPR and GI, SU, Solan.
		Workshop in Baddi
46	Ms. Shruti Sharma	Workshop on IPR and GI, SU, Solan
47	Dr. Chandrika	Workshop on IPR and GI, SU, Solan
48	Dr. Deepak Kumar	1. 2nd International Conference on Innovations in Pharmaceutical Sciences (ICIPS-2017), Hyderabad, Telangana, India.

		2. Chairperson and Scientific Poster Evaluator- International Conference "Challenges for Global Competitiveness of AYUSH and Natural Products" IASTAM -2018, February 2-4, 2018. Delhi Pharmaceutical Research University (DPSRU), New Delhi, India.
		3. Invited as Expert Speaker in "World Congress on Drug Discovery and Development – 2017'' September 20 - 22, 2017, Kolkotta, India
		4. Speaker- Indo-Caribbean Conference "Development & Optimization of methods for the analysis of Pharmaceuticals" February 18-19 July 2018.SRGOC, Gwalior, India.
		5. Invited for an invited talk in SERB, ICMR & AKTU Sponsored National Conference on Emerging Trends in Computational Drug Discovery (ETCDD-2018) 16th and 17th August 2018; GHAZIABAD – 201 206 (U.P.)
49	Dr. Rohit Goyal	1. Paper presented at World Congress of Neurology, WFN, Kyoto, Japan, Sept. 2017.
		2. 69th Indian Pharmaceutical Congress, Member LOC, Dec. 2017.
		3. Session Chair at PHYTOCON-2018 organized at Lovely Professional University, Jalandhar, 14 April 2018.
		4. Guest Lecture for a conference organized at Bahara University, Summer-Hills, Shimla, March 2018.
		5. Session Chair, Third National Conference on Contemporary Food processing and Preservation Technologies, April 2018 at Shoolini University, Solan.
50	Ms. Hemlata Kaurav	2nd Himachal Pradesh Science Congress, 20-21 Nov. 2017.
51	Dr. Raveen Chauhan	KSTA National Conference on Science and Technology Education, 21-22 July, 2017
52	Dr. Neeraj Mahindroo	Resource person, UGC Networking Resource Centre, UIPS, Panjab University, Chandigarh, 20-25 Feb 2018
		Speaker, Conclave on Industry Academia Partnership, Chandigarh, 7 July 2017
		The Sixth China-South Asia Cultural Forum held in China on 16th December, 2017

53	Dr. Poonam Negi	International conference on challenges for global competitiveness of Ayush and Natural Products and IASTAM oration and award function, 2-4 Feb 2018
54	Dr. Nandan Sharma & Mr. Chander Mohan Gupta	International Conference on Multidisciplinary Research, Practices and Studies (ICMRPS-2018) held on 23rd to 24th Feb, 2018
55	Dr. Devesh Kumar	Conference: Entrepreneurship for the XXI Century- Images and Perspectives, Faculty of Management, University of Warsaw, Poland, Nov 16-17, 2017

Table 2.1B Faculty Participation in Conferences and Symposia within Campus

S. No.	Date of Event	Sponsoring Agency	Type of event (Conferences /Workshops/Seminars/Symposia)	Total Participation
1	16th March 2017	HPPIC, SCSTE, Himachal Pradesh	Workshop on IPR and GI to promote awareness on IPR amongst students and faculty members	225
	12th July 2017	Shoolini University/ SCERT, Solan	One day lab training program in Biotechnology for lecturers/ PGT of Biology, SCERT, Solan	40
	4th to 6th Dec 2017	Wipro GE	Workshop in DST-FIST lab for research scholars	25
2	June 2017	Shoolini University	National Conference on Environment and Natural Resource Management	25
	6th Sept 2017	Shoolini University	Workshop on pedagogy by Mr. Gaurav Singh, Senior Director PricewaterhouseCoopers	180
	26th to 27th Oct 2017	Shoolini University	Writing Seminar-Workshop for MBA	190
	27th to 28th Nov 2017	Shoolini University	Workshop on innovation by Mr. Bawa Grover	170
	6th April 2018	Shoolini University	Skills required by Corporates by Ms. Ratna Singh, HR- Flipkart	180
	12th April 2018	Shoolini University	Workshop on Entrepreneurship by Sandeep Jain - Strategy Consultant and Leadership Coach, Value Unlocked	180

	8th to 9th August 2018	Shoolini University	Induction Workshop for MBA Quad 1 students	180
	10th August 2018	Shoolini University	Workshop on Positive Psychology by Mr. Barinder Aluwalia	165
3	19th Feb 2018	Shoolini University	Workshop on Role of Nanotechnology in Science	60
	19th Jan 2018	Shoolini University	One day workshop on Bio-nanotechnology and its applications for research	50
4	22nd March 2017	Shoolini University	Workshop on Criminal Procedure Code	20
	8th Oct 2017	Shoolini University & H&S Law Firm	1st National Moot Court Competition	80
	24th Nov 2017	GSSS, Kehlog, Solan	Legal Aid Camp	60
	8th March 2018	Shoolini University	Symposia on Women Empowerment	25
5	12th to 13th April 2018	Shoolini University and NABARD	3rd National Conference on contemporary Food Processing and Preservation Technologies	251
6	12th Feb 2018	Shoolini University	Workshop on pedagogy by Mr. Dipra Jha from University of Nabraska-Lincoln, United States	215
	13th April 2018	Shoolini University	Career Guidance for Cruiselines by Captain Vishnu Sharma	23
7	25th to 29th September 2017	Department of Science and Technology, Govt. of India	DST INSPIRE Science Camp XXVIII	15

2.6 Innovative processes adopted by the institution in Teaching and Learning:

The University believes in continuous quality improvement. The following innovative measures are taken to cater to the changing requirements of the students and improving teaching methodology:

Emphasis has also been laid in the past few years to provide Lecture Schedules at the beginning of the semester, to incorporate more case studies, projects, workshops, seminars, video conferencing and group discussions in the curricula to enhance the skills of the students.

University is committed to excellence in all aspects of learning, transmission of knowledge and developing skills and most importantly, to encourage free thinking of students to address complex challenges. In order to do this, the University focuses on the following:

1. Online support for teaching and evaluation is being used. eUniv; Shoolini's online academic portal based on Moodle is fully operational.
2. PPT, Videos, Research papers, EBSCO database are made available online.
3. Fully operational online examination system that incorporates - MCQ, short and descriptive questions, quiz, assignment etc.
4. Online discussion forums started to have any time anywhere dialogue between faculty members and students.
5. Complete and incognito student course feedback system introduced.
6. Yogananda Knowledge Center (YKC), the Central Library is made operational round the clock.
7. Students can use the practical labs round the clock.
8. Expert lecture sessions by the name of "Guru Series" are operational.
9. Faculty Development Program by "Managing partner- Proliferator Advisory & Consulting" firm was organized.
10. Preparation of daily lecture taken report and monitoring by Pro VC/Dean- Academics/Associate Dean Academics.
11. Biometric attendance system for students in hostels introduced.
12. In situ monitoring of students during their internships and research projects in industry.
13. Five Professional clubs for co-curricular and extra-curricular activities for students are in place.
14. MOOCS courses started under SWAYAM portal. Details are given under point no 2.15 of this report
15. Enhancing employability through skill enhancement, outcome Driven curriculum and modern pedagogy.
16. Shoolini's online learning initiative (eUniv) has innovated continuous learning delivery
17. For functional and soft skills, the SPRINT workshops are a regular and continuous activity in the campus. SPRINT has the potential to be a role model for functional and soft skills training.
18. Personal development of students through different modules, such as tutorials, mentorship, computer literacy, meditation, communication and language Proficiency etc.

19. Progressively shift to online examination and evaluation.
20. Faculty development programs.
21. Industry linkages and collaborations strengthened.
22. Strengthening of the mentorship program.
23. Outer world exposure to faculty and students.

Buddy system has been developed and introduced wherein each new student is allotted a buddy (who is an existing student) and the buddy not only supports the new student in the entire process of admission but also takes care of him/ her emotionally. Almost 200 buddies are trained for their roles and carry out this responsibility very effectively. The most crucial role played by the buddies in this 10-day induction program and MOKSH (cultural fest) Considering 5,000 students boys and girls to look after in MOKSH which includes external guests. The buddy team is highly effective. Their strongest role is in the discipline & hospitality committee. It is due to the strong support provided by the buddies that this high energy volatile program goes through smoothly.

Buddies during Induction Programme

Introduction of **Young Leaders of India Program (YLIP), a Postgraduate Diploma in Business Management (PGDBM)** is a comprehensive business program that explores the issues of management in the global business environment in a variety of contexts. It combines academic study of the latest management practices and strategies, intensive practical experience and on-the-job work experience. This specially designed one-year business management program is for creating talent to cater to Indian and global MNCs, and it involves experiential learning from industry experts and key opinion leaders. Equipped with a flexible, comprehensive and pragmatic curriculum, the program adopts a practice-based approach to learning using innovative teaching

techniques like blended learning, flipped learning, and live case studies. The curriculum also integrates an intensive internship program of 10-12-week duration.

New programs in Yoga, hospitality, and Law were also started during the academic year, details of the same are available on the official website of the university.

The quality of teaching and learning is continuously assessed on the basis of feedback from students. School level Academic Committees and Board of Studies are other means to ensure the accountability of the Schools / Faculty.

2.7 Total No. of actual teaching days during this academic year | 191 days |

2.8 Examination/ Evaluation Reforms initiated by the Institution (for example Open Book Examination, Bar Coding, Double Valuation, Photocopy, Online Multiple Choice Questions) | All in practice other than open book examination |

A strong room having standalone computers were provided to the Controller of Examinations (COE), in which no memory devices are permitted. Three papers are set, out of which, one was selected by the COE. Printouts of the selected question paper are then printed in the same room.

COE has a centralized 'Control Room' to keep sealed question papers, answer books and exam related the material to maintain confidentiality. Examination halls are prepared in advance and seating plans are prominently displayed.

Answer books are dispatched by the school superintendent (Examination) to the COE on a day to day basis. These are processed for evaluation. The compilation of the result is examined by the concerned faculty Dean.

Following are the major initiatives taken during the academic year 2017-18

1. Online Moodle enabled tests comprising MCQ, short answer and descriptive answer type questions have been introduced in the select course.

2. Tests are taken in 'safe browser' mode so that no unfair means can take place.

3. Online assignments, quizzes and viva voce introduced in few courses.

5. All evaluated answer sheets are shown to students for any redressal if at all.

6. Hybrid pedagogy of online teaching through LMS blended with contact classes is in place for all courses across the university.

7. More and more application based question papers are encouraged.

8. More and more focus given to student participation in the classroom, presentation, viva voce etc.

9. Encryption and decryption of roll no done to avoid student identity.

10. Double valuation check introduced to ensure that no question is left out and the total is correct.

11. The centralized evaluation system is already in place.

12. The result is declared within 1-2 weeks.

13. Plans to introduce a barcoding system is in place. Very shortly it will be introduced.

2.9 No. of faculty members involved in curriculum Restructuring/revision/syllabus development as a member of the Board of Study/Faculty/Curriculum Development workshop

Almost 90% of the faculty members

Every faculty member of the University is involved directly or indirectly in the curriculum design and development process which is detailed below:

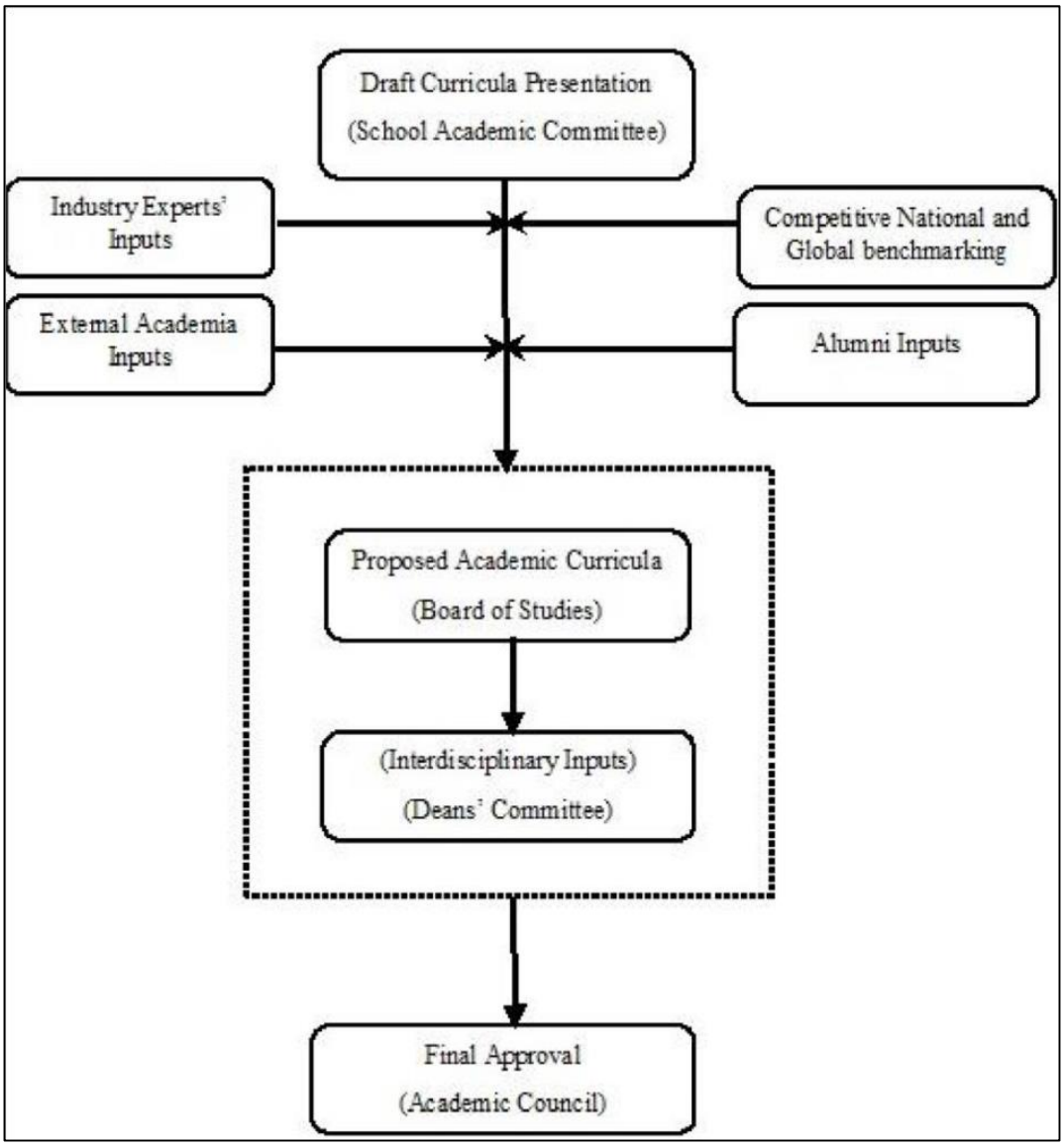
Curriculum Design and Development Process

The current curriculum design involves a two-step process:

Step-1: The draft curricula of the different Schools prepared by respective committees incorporate the views and suggestions of industry, alumni, prominent external academicians, and potential employers. This is then competitively benchmarked nationally and globally.

Step-2: The modified curriculum is then presented before the Board of Studies (BoS), constituted for each faculty. The BoS is headed by the respective Dean and comprises of faculty, industry experts, and noted academics as members. The concerned BoS then recommends for approval, to the Academic Council, the detailed curriculum - syllabi with skill and learning outcomes, pedagogy, the scheme of examination, lecture schedules and evaluation mechanism.

The process flowchart is given in figure 1.1 on the following page.


Draft Curricula Presentation
(School Academic Committee)
Industry Experts' Inputs
Competitive National and Global benchmarking
External Academia Inputs
Alumni Inputs
Proposed Academic Curricula
(Board of Studies)
(Interdisciplinary Inputs)
(Deans' Committee)
Final Approval
(Academic Council)

2.10 Average percentage of attendance of students 76%

2.11 Course/Programme wise distribution of pass percentage:

Table showing final degrees awarded by the University for the Academic year 2017-18, semester wise result is uploaded on the University's website.

Table 2.2 Final Degrees Awarded in the Academic Year 2017 -18

Title of the Program		Total no. of students appeared	Division	%age
B.Pharma	B.Pharm	60	Shoolini University follows relative grading system in which based on the performance, each student is awarded letter grades O, A+, A, B+, B, C, P and F by the concerned teacher (which corresponds to 10,9,8,7,6,5,4,0 grade points respectively). The relative grading is based on the distribution of marks obtained by all students. Grade points in a course multiplied by credit constitute the credits points of the course. Cumulative credit points in all the courses divided by total credit hours of the courses becomes the grade point average in a semester i.e GPA. The cumulative credits point average in all the courses from the first semester till the last semester divided by cumulative credits hours into all the courses is the overall grade points average i.e OGPA. The students obtaining F grades are considered, failed and is required to Re-appear.	88.34
B.Tech	BI	3		100
	BT	37		91.89
	CE	34		82.36
	CE Leet	18		88.89
	CSE	18		94.45
	CSE Leet	6		100
	ECE	11		100
	ECE Leet	2		100
	EE	13		92.31
	EE Leet	8		62.5
	FT	42		92.86
	FT Leet	1		100
	ME	38		76.32
	ME Leet	6		83.34
	ME (Auto)	19		100
B.Sc	Chemistry	12		91.67
	Physics	5		80
	Botany	2		100
	Zoology	9		88.89
	Biotechnology	38		89.95
	Microbiology	24		87.5
BBA		17		100
B.Com		53		84.91
M.Sc	Chemistry	79		94.94
	Physics	38		78.95
	Botany	43		86.05
	Zoology	43		83.73
	Biotechnology	39		87.18

	Microbiology	24		96.67
	Food Tech	14		92.86
M.Tech	Biotechnology	5		80
	Civil Engg	8		30
	ME	6		
	CSE	4		100
	ECE	2		50
	FT	9		88.89
M.Pharma	P'ceutics	14		92.86
	P'cology	10		90
	P'chemistry	4		25
MBA		112		91.97
M.Phil	BT	18		83.34
	Microbiology			
	Chemistry			
	Botany			
	Zoology			
Ph.D	Management	57 Ph.D. Degrees were awarded in the academic year 2017-18		
	Chemistry			
	Botany			
	Biotechnology			
	Microbiology			
	Physics			
	Pharma			

2.12 How does IQAC Contribute/Monitor/Evaluate the Teaching & Learning processes:

The Institutional IQAC members along with Deans and HOS monitor the following activities of Teaching-Learning processes:

i. Students class attendance on Monthly & Semester basis.
ii. Time-Tabling activities to be planned and uploaded to the intranet for the information of students & all stakeholders.
iii. Results of the students, programme wise, course wise.
iv. Results shared with parents
v. Students Feedback twice a semester.

The following contributions are evident through the monitoring of the above processes by IQAC:

i. The gaps are identified in the conduct of the process.
ii. The corrective and preventive actions are taken immediately.

iii. The Progress on implementation of the action plans according to the target dates is monitored through IQAC.
iv. Monitoring of class attendance has enabled the Institutions in sending a timely warning of low attendance to students and their parent/guardians.
v. Every month and mid-semester, the IQAC analyses the classes conducted vs. planned through a prescribed format given by the University for each Programme and course. This has helped the HOS/faculty in knowing the gaps in the classes conducted and rectification measures are taken immediately.
vi. Through the result analysis, weak students are identified who are then mentored/ counseled and are given extra classes, if required.
vii. Analysis of feedback on faculty from students enables to identify the faculty with low score who are then suitably counseled and guided.

All the above activities are discussed during the IQAC meetings. After the review University monitors and evaluates the conduct of above processes through Academics Office who gives the report to the Management and follows up with the Institution till the points are closed based on the corrective/preventive action taken by the Institutions.

2.13 Initiatives undertaken towards faculty development

The University is proactive in developing its faculty members in order to meet the requirements of a modern curriculum through various Faculty Development Programs, training sessions, workshops, conferences, and visits to other institutes and frequent interactions with the experts from various fields of specialization.

In view of the vision and aspirations of the University, the following benchmarks in terms of faculty development are planned:

i. Enhance institutional support for the promotion of qualification and international exposure.
ii. Increase the quantum and extend the geographical outreach of the faculty exchange program.
iii. Revision of leave policy to facilitate academic leaves and encourage faculty attendance for national/international conferences and workshops, etc.
iv. To introduce a series of awards for faculty for teaching, research etc.
v. Increase the number of MoU's with international universities focusing on the United States, European Union, and East Asia.
vi. Increase cooperation and provide faculty to neighboring East Asian countries.
vii. Broad base and enhance faculty-industry interaction with the aim to translate this in the form of consultancies and sponsored research.

Professional development approaches of the University are illustrated below:

Professional Development Approaches

The formal faculty development training program was also initiated in the Academic year 2017-18.

The program works under the aegis of IMPACT (Integrated Management Program for Professional Advancement and Career Transformation) and is dedicated to analyzing the training needs, design and develop the content, deliver and evaluate the program. This Program enables new faculty to acclimatize with the university's processes, people, while for existing faculty to continually evolve them to address the developments which are taking place globally in terms of teaching pedagogy and research. Below are the details of the programmes organized during 2017-18:

Faculty / Staff Development Programmes	***Number of faculties benefitted***
Refresher courses	92
UGC – Faculty Improvement Programme	---
HRD programmes	---
Orientation programmes	41
Faculty exchange programme	13
Staff training conducted by the university	123
Staff training conducted by other institutions	55
Summer / Winter schools, Workshops, etc.	All (details are given in Table 2.1B)
Others	1

Table 2.3 Faculty Development Programmes for the Academic Year 2017-18

S. No.	School	Date	Title/Theme of the Programme	Eminent Speakers	No. of Faculty Participants
1	Mechanical & Civil Engineering	16th Sept. 2017	Visionary Learning Community of India	Prof. Jayant K Kittur, Mr. C.S. Patel, Mr. T.S. Rana	8
		26-28th July 2018	Observation Skills	Mr. C.S. Patel (Ex CEO, Anand Group), Mr. Takeyuki Furuhashi & Mr. T. S. Rana (Gabriel India Ltd.)	4
		19-23 Feb. 2018	Retrofitting and Rehabilitation of Structure	Dr. Sanjay Sharma (Head, Civil Engineering Dept.) NITTTR Chandigarh. Dr. Hemant Sood Sharma (Civil Engineering Dept.) NITTTR Chandigarh.	9

		19-23 March 2018	Environment Pollution	Professor Dr. Sanjay Sharma (Head, Civil Engineering Department) NITTTR Chandigarh. Professor Dr. Hemant Sood Sharma (Civil Engineering Department) NITTTR Chandigarh.	9
2	Law	22nd Sept 2017	National Conference on Law and Social Transformation In India held at Vigyan Bhawan, New Delhi	Mr. Ram Nath Kovind, Justice Dr. B.S. Chauhan, Shri PP Chaudhary, Smt. Sumitra Mahajan, Justice Shri Dipak Misra & Shri Amitabh Kant	1
		23rd June 2018	3rd National Conference on Human Rights and Gender Justice 2018	----	1
		8th Oct 2017	Criminal Law	Justice SS Thakur (HP High Court)	3
3	Electrical and Computer Engineering	Feb 2018	R Programming	Dr. Gaurav Kumar	2
		15th to 19th, Jan 2018	Network Security and Firewalls	Mr. Vipin Gupta	1
4	Management Sciences & Liberal Arts	3rd March 2017	Politics, Society & Culture in South Asia	Dr. Sujata Patel	1
		March 2018	Caste, Politics, and Changes	Dr. T.N. Madan	1
		December, 2017	Neoliberalism and Neo Marxism	Dr. D.R. Shau	1
		24th Feb 2018	National Conference on Emerging Trends in Management, Law & Tourism: Issue & Challenges in Sustainable Development	----	1
		7th June 2018	Business strategy Simulations – LearnBiz Solutions LLP	Mr. Maninder Singh	18

5	Pharmaceutical Sciences	10th May 2018	Workshop on Healthcare Financing in India	Prof. Pramil Tiwary, Head, Pharmacy Practice, NIPER, Mohali	1
		1st Nov 2017	Pathways to Institutional Advancement through Research	Mr. David Pendlebury, Expert, Bibliometric Analysis, Clarivate Analytics	1
6	Bioengineering & Food Technology	1st June 2018 to 15th June 2018	Orientation Program at Biocon Academy, Bengaluru	----	1
6	Foreign Exchange & Foreign Visits		**Faculty Exchange** Amit Kumar & Gaurav Sharma - Shenzhen University Sourbh - Kaunas University of Technology	----	13
			Foreign Visits Dr. Suneel Dutt, Dr. Atul Thakur, Dr. Ram Prakash Dwivedi, Dr. Rohit Goyal, Dr. Neeraj Mahindroo, Shaila Khah, Prachi Kapil, Dr. Devesh Kumar, Dr. Dipankar Sharma & Dr. Rosey Dhanta		

2.14 Details of Administrative and Technical staff

Category	Number of Permanent Employees	Number of Vacant Positions	Number of permanent positions filled during the Year	Number of positions filled temporarily
Administrative Staff	116	24	16	0
Technical Staff	47	35	08	0

Criterion – III

3. Research, Consultancy, and Extension

3.1 Initiatives of the IQAC in Sensitizing/Promoting Research Climate in the institution

University was set up with a quest for creating a center of knowledge and innovation at par with internationally reckoned centers of research and education. University, therefore, adopted a research-driven model that seeks to blend expertise in life sciences, engineering and social sciences with the principles and practices of business management to generate innovative technologies and exceptionally skilled human capital. A trans-disciplinary research model unifying expertise from all five faculties of the University viz. Applied Sciences and Biotechnology, Basic Sciences, Engineering and Technology, Management Sciences and Liberal Arts, and Pharmaceutical Sciences helped the university to leverage the meager resources to the maximum. This model helped in achieving the tangible research outputs that are better or comparable to any of the university/institute (public or private) established in India in the last nine years (since 2009).

IQAC has taken the proactive initiative to sensitize and promote research climate in the Institution. SUMMIT Research Program with generous funding from University in Faculty of Applied Sciences & Biotechnology is one such initiative where research program was initiated at the undergraduate level. Students with an inclination for research and out-of-box thinking have been selected from across the country and have been provided a platform for doing research on contemporary areas of their choice. The rotation through different labs in university followed by a selection of the mentor gave students the freedom to work in their area of interest. To ensure holistic development of the students, the opportunities were created for roundtable discussions with best scientific minds in the country and visits to labs and industry besides focus training on soft skills. This pilot program will be expanded to other Faculties also and students are being exposed to interdisciplinary areas.

The research output of the university from 2013 to 2017 measured in terms of the tangible research parameters (field-weighted citation index, citations per publication, international collaborations, % Publications in top 10% most cited worldwide, and % Publications in top 1% most cited worldwide) is better than or similar to the Indian Universities/Institutes ranked in top 500 by QS in 2018.. University has higher field-weighted citation index (1.42), citations per publication (7.9), international collaborations (35%), and % Publications in top 10% most cited worldwide (26.2%) than any of the Indian Institutions ranked in QS 2018 rankings.

Similarly, a comparison of Shoolini University with selected universities ANNEXURE III from Asia in top 200 QS ranks (Table 2) shows that Shoolini University parameters are in similar range as top Asian universities in terms of field-weighted citation index (1.42), citations per publication (7.9), international collaborations (35%), and % Publications in top 10% most cited worldwide (26.2%).

Shoolini University has h-index of 42 and has filed 215 patents. University has won competitive research grants from Indian and International funding agencies. It has hosted international faculty including Fulbright Specialists. The exchange programs with international universities is a regular feature.

IQAC has taken a major initiative to ensure that Intellectual Property generated by the researchers of the University is protected and commercialized. University has filed over 215 patents till date and few were transferred to industry for commercialization. A culture of innovation is being promoted right from undergraduate level to faculty members.

University has conducted seminars and workshops on scientific writing and project writing. Dr. Uday Maitra, Senior Professor from IISC Bangalore and Prof. Stevenson from the University of Arkansas conducted two such programs to guide faculty and students on research lab setup and funding opportunities. Writing Seminar, a course to enhance the scientific writing skill, is now part of the curriculum for all programs in the University.

The lab safety seminars are conducted across the programs to make students aware of the safety aspects in the lab and strict adherence to the norms is ensured by the lab safety committee of the university.

Planned for 2018 is to introduce research awards for appreciating and acknowledging the researchers.

3.2 Details regarding major projects during the year 2017-18

	Completed	Ongoing	Sanctioned	Submitted
Number	6	14	4	29
Total Amount Received	4.27 Lakhs	82.81 Lakhs	19.84 Lakhs	-
Total Amount Sanctioned	130.24 Lakhs	604.48 Lakhs	36.02 Lakhs	-

Table 3.1 Major Projects (Completed) during the year 2017-18

Sr. No.	Name of Faculty (Principal Investigator)	Name of the Funding agency	Title of the Project	Sanctioned order no.	Sanctioned date	Amount Received (In Rupees)
1	Dr. Somesh Sharma (PI) & Dr. Pankaj Kumar Chauhan (Co-PI)	DST	Utilization of Wild Himalayan Fig for the sustainable livelihood of weaker sections of the society in the mid-hill region of Himachal Pradesh	SEED/SARTHI/ HP/015/2012.	19//5/2014	1,50,000
2	Dr. Suneel Dutt	DST	Search for physics beyond standard model at hadron colliders using DZERO and compact muon solenoid (CMS) detectors	SB/FTP/PS-002/2014	17/03/2015	0
3	Dr. Rajesh Kumar	DRDO	Development of Lead-free piezoelectric nanofibers via Electrospinning for piezoelectric energy harvesting	ERIP/ER/1303129 /M/01/1564	4/03/2015	0
4	Dr. Suneel Dutt	DST	Compact Muon Solenoid (CMS) Upgrade, Operation	No.SR/MF/PS-02/2014-SU	16/09/2016	0

5	Dr. Kalpana Chauhan	SCSTE	Design and application of new green adsorbents-cum-sensor for water application from the industrial area of Himachal Pradesh.	SCSTE/F(8)-1/2016-Vol.-1-5586	19/10/2016	2,77,550
6	Dr. Ranchan Chauhan (PI), Dr. Bhaskar Goyal (Co-PI), Dr. Raj Kumar (Co-PI)	MNRE	Development of Green campus under MNRE Scheme on Development of Solar Cities	5/4/2013-14/SC	30/3/2016	0

Table 3.2 Major Projects (Ongoing) for the year 2017-18

Sr. No.	Name of Faculty (Principal Investigator)	Name of the Funding agency	Title of the Project	Sanctioned order no.	Sanctioned date	Amount Received (In Rupees)
1	Dr. Reena Saini (PI), Dr. Neeraj Mahindroo (Co-PI)	DBT	Evaluation of withanolide lactones as immunomodulators to induce granulysin expression in immune cells conferring cytotoxicity towards cancerous	6242-P83/RGCB/PMD/DBT/RNVS/2015	29/07/2015	4,50,000

2	Dr. Dinesh Kumar	MoFPI	Setting up of New Food Testing Laboratory	A Eng.17(45)/2011-AE-Part-VII	21/09/2016	0
3	Dr. Adesh Saini	NMHS	Post-Fire Management in the Pine Forests of Indian Himalayan Region by studying, conserving and distributing culturable microbial biota to increase ecological succession and to revive forest productivity	NMHS/SG-2016/019/382	31/03/2016	7,36,200
4	Dr. Neeraj Mahindroo (Pi), Dr. Sameer Sapra (Co-PI), Ms. Swati Pundir (Co-PI)	ICMR	Quality Standards of Indian Medicinal Plants and Preparation of Monographs Thereon	MPD/TF/HD-Monog/42/2016	13/07/2016	4,91,624
5	Dr. Kamal Dev	DST FIST	Establishment of Advanced Biological Research Facility	No.SR/FST/LSI-633/2015©	16/08/2016	0
6	Dr. Neeraj Mahindroo, Dr. Deepak N. Kapoor (Co-PI)	DRDO	Characterization of licensed biomedical products including hypochlorous acid, ointments for frostbite to enhance shelf life	INM/TC/2519/2017	5/3/2017	6,00,000

7	PI-Ankur Kaushal, Co-PI-Dr. Dinesh Kumar, Co-PI-Dr. Sunill Sethi	ICMR, Delhi	DNA biosensor for the diagnosis of Leptospirosis	2012-2479	21/03/2017	12,39,000
8	Ms. Neha	DST INSPIRE	Role of Th-17 and T regulatory cells in pathogenesis and immunity in *Salmonella typhii* infection	DST/INSPIRE Fellowship/2014	3/15/2014	3,89,000
9	Ms. Tanvi Gupta	DST INSPIRE	Identification and characterization of mycoviruses capable of inducing hypovirulence in isolates of *Sclerotinia sclerotiorum*	DST/INSPIRE Fellowship/2014	10/15/2014	4,05,272
10	Ms. Menaka	DST INSPIRE	Abiotic stress alleviation using Plant Growth Promoting Rhizobacteria (PGPR) in medicinal plants of North-Western Himalaya	DST/INSPIRE Fellowship/2015/IF150370	1/8/2016	3,50,000
11	Dr.Sourabh Kulshreshtha	HIMCOSTE	Development of cheap and safe water purification strategy using Moringa oleifera seeds for the rural population of H.P.	SCSTE/F(8)-1/2016-Vol.-1-3818	12/10/2017	340,000

12	Prof. Neeraj Mahindroo	HPSBB	Trade chain, trade pattern and value chain of 5 RET medicinal plant species namely Aconitum heterophyllum (Ateech), Saussurea lappa (Kuth), Inula racemosa (Pushkarmool), Picrorhiza kurra (Kutaki) and Pistacia integerrima (Zebrawood, Kakkarsingi)"	HPSBB/F(16)-01/14-3528	23/12/2017	1,25,000
13	Dr. Pankaj Thakur	Royal Academy of Engineering	UK-India Educational and Research Partnership to Develop Industrially Focused Curriculum in Advanced Manufacturing Technology	IAPPI/33	15/04/2017	2,875,507
14	Dr.Sourabh Kulshreshtha	MICROALGAE DEVELOPMENT ENERGY INDIA PVT. LTD.	Standardization of growth and astaxanthin content by Haematoccoous and Standardization of a microalgae-based method for the improvement of air quality	-	5/6/2018	2,80,000

Table 3.3 Major Projects (Submitted) in the year 2017-18

Sr. No.	Name of Faculty (Principal Investigator)	Name of the Funding agency	Title of the Project	Grant (In Rupees)
1	Coordinator: Dr. Saurabh Kulshrestha; Co-Coordinator: Dr. Pradeep Kumar; Dr. Praveen Rahi	DBT	Exploration and Preservation of Microbial Diversity of Himachal Pradesh for Future Industrial and Therapeutic Applications.	Up to 5 corers
2	PI: Dr. Saurabh Kulshrestha CO-PI: DrAsthaTripathi	DST	A mycovirus based biocontrol strategy for efficient control of *Sclerotiniasclerotiorum* infection amongst major cash crops	81.25 Lakhs
3	Varun Jaiswal	DST	Development of Android Assistive application for Alzheimer Patients and Caregivers	25 Lakhs
4	Varun Jaiswal	DST	Development of a novel computational tool for live attenuated vaccine design for Protozoan pathogens focusing on malaria	24.34 Lakhs
5	Dr. Manoj Kumar and Dr. Shikha Srivastava	DBT	Epigenetic regulation of Vitamin D receptor (VDR) expression and Vitamin D level in HPV induced cervical precancer, cancer and therapeutic application of epigenetic enzyme modulators	45 Lakhs

6	Dr. Manoj Kumar	SERB	Role of Aurora kinases (A, B and C) in Gallbladder cancer metastasis and maintenance of cancer stem-like a cell: implication in chemo-resistance	15 Lakhs
7	Dr. Manoj Kumar and Dr. Shikha Srivastava	DST	Cross-talk between HPV oncoproteins E6/E7 and Base Excision repair pathway in cervical cancer progression and maintenance of cancer stem cell phenotype: Implication in chemoresistance and tumor relapse	49 Lakhs
8	Dr. Manoj Kumar	SERB	Studies on the role of epigenetic alteration in gallbladder cancer progression and maintenance of cancer stem cell phenotype	49.8 Lakhs
9	Dr. Shikha Srivastava	DBT-BioCare	Studies on the role of DNA damage response and DNA repair pathway genes in cervical cancer: therapeutic implication in tumor relapse	59.9 Lakhs
10	Dr. Azhar Khan	DST	Bioactivity Guided Fractionations of Medicinal Plants in Himalayan Region for Anti-Typhoidal Activity	41.78 Lakh
11	PI: Dr. Pradeep Kumar, Co-PI: Dr. Deepak Pandey, Dr. Sourabh Kulshrestha	DST	Bioprocess development for production and purification of an anti-cancerous L-glutaminase from thermal springs of the Himalayan region	48.11 Lakhs

12	Dr. Deepak Kumar; Dr. Rohit Goyal	DST	Design and application of quinazolinones clubbed 1,2,3 triazoles as multitargeting agent for Alzheimer's disease	26. 75 Lakhs
13	Dr. Deepak Kumar	DST	Design, Green Synthesis and Nanoparticles Development of Novel Coumarin Fused Amino Heterocycles as Anti-Alzheimer Agent	15.75 Lakhs
14	Dr. Rohit Goyal, Dr. Deepak Kumar	SERB	Modulation of RANK-OPG-TGF signaling of the novel (+)-catechin derivatives for postmenopausal osteoporosis	14.24 Lakhs
15	Dr. Deepak Kumar	DST	EGFR targeted synthesis, molecular docking and mechanistic studies of novel 1, 2, 3-triazole-based Quinazoline derivatives as potential anticancer agents	16.20 Lakhs
16	PI: Dr. Meenu Thakur, Co-PI: Dr. Wamik Azmi and Dr. Pradeep Kumar	DBT-BioCare	Bench-scale cost-effective production of Bioplastics by microbial isolate using agro-industrial waste: An alternative for reducing plastic use in Himachal Pradesh.	60 Lakhs
17	PI: Dr. Deepak N Kapoor; Co-investigator: DR. Raman Preet Singh	DST	Nose-to-Brain Delivery of cRGD Conjugated Chitosan Nanoparticles Loaded with Carboplatin for Treatment of Glioblastoma	40 Lakhs

18	Dr. Rohit Goyal	SERB	Impact of Circadian Rhythm disruption on mental ailment: Alzheimer's Disease	47.80 Lakhs
19	Dr. Rohit Goyal	SERB	Modern lifestyle associated circadian misalignment causes severe pathology of Alzheimer's disease	35.94 Lakhs
20	PI: Dr. Deepak N Kapoor; Dr. Uma RanjanLal	DBT	Development and evaluation of colon targeted microsponge--matrix tablet containing chebulinic acid isolated from Terminaliachebula pericarp	38.14 Lakhs
21	PI: Dr. Deepak N Kapoor; Co-PI Prof. Bhuvnesh Gupta	DST	Biopolymer Based Nanocomposites for Drug Delivery Systems (Wound Care Systems)	17 Lakhs
22	Dr. Deepak Kumar	Uttarakhand Council for Science & Technology	Novel 1,2,3-Triazole based phenothiazines derivate as potential anticancer agents: design, synthesis, molecular docking, and mechanistic studies	30 Lakhs
23	PI: Dr. Saurabh Kulshrestha CO-PI: Mr. Chader Mohan Gupta	Department of Environment, Science & Technology, H.P.	Ecological restoration of Parwanoo – Dharmpur stretch of national highway by the plantation of Moringaoliefera trees	10 Lakhs
24	Dr. Shikha Srivastava	HIMCOSTE	Screening for HPV in local	5 Lakhs

			asymptomatic and cervical cancer patients in Himachal Pradesh	
25	PI: Dr. Pradeep Kumar Co-PI: Mr. Sankhajit Pramanik	HIMCOSTE	Designing and development of microalgae-based prototype for the improvement of air quality in the industrial areas of H.P	10 Lakhs
26	PI: DR. Neeraj Mahindroo; Co-investigator: DR. Uma Ranjan Lal; Co-PI: Y.S. Negi	HPSBB	Trade chain, trade pattern and value chain of fifteen RET valuable medicinal plant species.	5 Lakhs
27	PI: DR. Neeraj Mahindroo; Co-investigator: DR. Uma Ranjan Lal	HPSBB	Sustainable harvest and value addition protocols for five bulk traded and high-value medicinal species. Concept note submitted to Himachal Pradesh State Biodiversity Board.	2.5 Lakhs
28	Dr. Raveen Chauhan, Dr. Deepak N Kapoor, Dr. Deepak Kumar	HIMCOSTE	Prevalence of waterborne disease related to self-medication and awareness among the population of various regions of Himachal Pradesh,	5.38 Lakhs
29	Dr. Rajesh Kumar	HIMCOSTE	Effective Improvement packed bed solar thermal energy storage using different fin shapes on absorber plates in solar air collector	9.94 Lakhs

Table 3.4 Major Projects (Sanctioned) in the year 2017-18

S. No.	Name of Faculty (Principal Investigator)	Name of Funding agency	Title of the Project	Sanctioned order no.	Sanctioned date	Grant Sanctioned (In Rupees)
1	PI-Ankur Kaushal, Co-PI-Dr. Dinesh Kumar, Co-PI-Dr. Sunill Sethi	ICMR, Delhi	DNA biosensor for the diagnosis of Leptospirosis	2012-2479	3/08/2017	19,00,000
2	Prof. Neeraj Mahindroo	HPSBB	Trade chain, trade pattern and value chain of 5 RET medicinal plant species namely Aconitum heterophyllum (Ateech), Saussurea lappa (Kuth), Inula racemosa (Pushkarmool), Picrorhiza kurra (Kutaki) and Pistacia integerrima (Zebrawood, Kakkarsingi)"- Reg.	No.HPSBB/ F(16)-01/14-3528	23/12/2017	2,50,000
3	HIMCOSTE	Dr. Sourabh Kulshreshtha	Development of cheap and safe water purification strategy using Moringa oleifera seeds for the rural population of H.P.	SCSTE/F(8)-1/2016-Vol.-1-3818	10/12/2017	6,80,000

4	MICROALGAE DEVELOPMENT ENERGY INDIA PVT. LTD.	Dr. Sourabh Kulshreshtha	Standardization of growth and astaxanthin content by Haematoccoous and Standardization of microalgae based method for the improvement of air quality	-	5/06/2018	7,72,000

3.4 Details on research publications in the year 2017 (calendar year)

	International	**National**	**Others**
Peer Review Journals	138	15	0
Non-Peer Review Journals	*		0
e-Journals			0
Conference proceedings	2	0	0

*** As a policy, University doesn't capture publications in** non-peer review journals

3.5 Details on the Impact factor of publication

Range 0.21 to 8.92 Average 2.58 h-index 42 Nos. in SCOPUS 156

As per Google Scholar University has 1450 publications out of which publication in SCOPUS is 783 as on December 19, 2018. These numbers are very dynamic and keep changing every day. Shoolini has emerged as one of the leading research universities within a short span.

See Annexure IV for Publications by faculty

3.6 Research funds sanctioned and received from various funding agencies, industry and other organizations

Nature of the Project	Duration Year	Name of the funding Agency	Total grant sanctioned (In Rs.)	Received (In Rs.)
Major Projects	2017-2018	ICMR	63,34,492	17,30,624
		DST	1,57,34,600	1,50,000
		BRNS	-	-
		DBT	25,00,000	4,50,000
		NMHS	40,26,000	7,36,200
		MoFPI	2,85,39,000	
		DRDO	36,74,000	6,00,000
		SCSTE	15,30,000	7,42,550
		MNRE	5,00,000	0
Minor Projects	2017-2018	0		
Interdisciplinary Projects	Most of the projects are Interdisciplinary in nature. Details are mentioned under table 3.1 to 3.4			
Industry-sponsored	Details are given under point 3.10 of this report			
Projects sponsored by the University/ College	2017-2018	Shoolini University	2,50,000	1,00,000
Students research projects *(other than compulsory by the University)*	2017-2018	DST INSPIRE	51,00,000	11,44,272
		UGC-RGNF	-	-
Any other (Specify)	2017-2018	Royal Academy of Engineering	47,62,982	28,75,507
		Microalgae Development Energy India Pvt. Ltd.	7,72,000	2,80,000
Total (In Rs.)			737,23,074	88,09,153

3.7 No. of books published i) With ISBN No. 3 Chapters in Edited Books 30

ii) Without ISBN No. 0

Books with ISBN No.

S. No.	Name of the faculty	Details of the Publication	Scopus Source title
1	Kalia, V.C., Saini, A.K.	Metabolic engineering for bioactive compounds: Strategies and processes	Metabolic Engineering for Bioactive Compounds: Strategies and Processes
2	Pathania, D., Sharma, G., Kumar, A.	Modified biopolymers: Challenges and opportunities	Modified Biopolymers: Challenges and Opportunities
3	Rai, R.	Smart materials for smart living	Smart Materials for Smart Living

Chapters in Edited Books

S. No.	Name of the faculty	Details of the Publication	Scopus Source title
1	Oswal, P., Rana, A., Veses, R.C., Kumar, A., Kumar, A.	Waste derived biochar based bio nanocomposites: Recent progress in utilization and innovations	Modified Biopolymers: Challenges and Opportunities
2	Naushad, M., Alfadul, S.M., Al-Muhtaseb, A.H., Sharma, G., Ponnusamy, S.K., ALOthman, Z.A., Bushra, R.	Progress from composite materials to biocomposite materials and their applications	Modified Biopolymers: Challenges and Opportunities
3	Saini, A.K., Gupta, H., Poswal, A.M., Kumari, R., Kumar, R., Saini, R.V.	Biological traits of nanocomposites: Nanofertilizers, nano pesticides, anticancer and antimicrobials	Modified Biopolymers: Challenges and Opportunities
4	Torino, E., Jamwal, D., Sood, K., Singh, V.P.,	Bio-inspired polymer composites: Robust biomedical	Modified Biopolymers: Challenges and

	Singh, P., Thakur, P.	application podium	Opportunities
5	Bhattacharya, S., Puri, S., Kumar, A.	Naturally occurring biodegradable polymers	Modified Biopolymers: Challenges and Opportunities
6	Sharma, S., Sharma, G., Inamuddin, , Al-Romaizan, A.N., Asiri, A.M.	Biobased-nanocomposites for food packaging applications	Modified Biopolymers: Challenges and Opportunities
7	Siddiqi, Z.M., Gupta, D.	Biopolymer drove hydrogels and their diverse applications: A review	Modified Biopolymers: Challenges and Opportunities
8	Ahmad, N., Sharma, A., Rai, R.	Biodiversity and sustainable development	Smart Materials for Smart Living
9	Lal, M., Shandilya, M., Sharma, S., Rai, R.	Smart material nanofibers for day to day life	Smart Materials for Smart Living
10	Rai, R., Sharma, A., Bdikin, I., Valente, M.A., Sharma, S.	Ferroelectric and ferromagnetic properties of BI1-X-YDYXCYFE1-YTIYO3solid solution	Smart Materials for Smart Living
11	Singh, V.P., Kumar, G., Dwivedi, R., Battoo, K.M., Kotnala, R.K., Singh, M.	M-type barium nano hexaferrite material: A novel entrant for storage enrichment and high-frequency applications	Smart Materials for Smart Living
12	Thakur, S., Shandilya, M., Rai, R.	Development of double perovskite electroceramics	Smart Materials for Smart Living
13	Kumari, P., Shandilya, M., Lal, M., Rai, R.	High dielectric materials for supercapacitors	Smart Materials for Smart Living
14	Shandilya, M., Thakur, S., Rai, R., Singh, J.	Dielectric relaxation in BATIO3-based perovskite	Smart Materials for Smart Living
15	Sharma, A., Lal, M., Ahmad, N., Rai, R.	Possible applications of zinc and titanium in modern life	Smart Materials for Smart Living

16	Gupta, A.	Hyperspectral imaging: A brief introduction for beginners	Smart Materials for Smart Living
17	Thakur, S., Thakur, S., Shandilya, M., Lal, M., Rai, R.	Biosynthesis of nanoparticles using plant extracts	Smart Materials for Smart Living
18	Kumari, P., Lal, M., Rai, S.P., Rai, R.	Piezoelectric electroceramic perovskites and their applications	Smart Materials for Smart Living
19	Kashyap, A.S., Thakur, N.	Problems and prospects of lychee cultivation in India	Lychee Disease Management
20	Thakur, N.	An integrated approach for the management of differential patterns of diseases and pest incidence in lychee	Lychee Disease Management
21	Thakur, N.	Organic farming, food quality, and human health: A trisection of sustainability and a move from pesticides to eco-friendly biofertilizers	Probiotics in Agroecosystem
22	Thakur, N.	Increased soil-microbial-eco-physiological interactions and microbial food safety in tomato under organic strategies	Probiotics and Plant Health
23	Sharma, A., Sood, S., Pathania, D.	Remedial role of nanocomposite as photocatalysts, adsorbents, and disinfectants in an aqueous system and their biomedical applications	Metabolic Engineering for Bioactive Compounds: Strategies and Processes
24	Poswal, A.M., Saini, A.K.	Yeast as a model system to study human diseases	Metabolic Engineering for Bioactive Compounds: Strategies and Processes
25	Saini, R.V., Kumari, R.	Nanomaterial-enabled	Metabolic Engineering for Bioactive Compounds:

		immunotherapeutic applications	Strategies and Processes
26	Phougat, N., Kumar, M., Saini, R.V., Chhillar, A.K.	Green chemistry approach towards nanoparticle synthesis	Metabolic Engineering for Bioactive Compounds: Strategies and Processes
27	Khatri, S., Saini, R.V., Chhillar, A.K.	The molecular farming approach towards bioactive compounds	Metabolic Engineering for Bioactive Compounds: Strategies and Processes
28	Saini, A.K., Kalia, V.C.	Potential challenges and alternative approaches in metabolic engineering of bioactive compounds in an industrial setup	Metabolic Engineering for Bioactive Compounds: Strategies and Processes
29	Guleria, S., Kumar, A., Sharma, S., Kulshrestha, S., Chauhan, A.	Metagenomics of fermented foods: Implications on probiotic development	Mining of Microbial Wealth and MetaGenomics
30	Chawla, P., Bhandari, L., Dhull, S.B., Sadh, P.K., Sandhu, S.P., Kaushik, R., Navnidhi	Biotechnological aspects for enhancement of mineral bioavailability from cereals and legumes	Plant Biotechnology: Recent Advancements and Developments

3.8 No. of University Departments receiving funds from

UGC-SAP [NIL] CAS [NIL] DST-FIST [1]

DPE [NIL] DBT Scheme/funds [NIL] INSPIRE [√]

3.9 For colleges

Autonomy [ ] CPE [ ] DBT Star Scheme [ ]

INSPIRE [ ] CE [ ] Any Other (specify) [ ]

By adopting a Research-Driven Model from the time the university was set up, the focus has been on quality research. It is a result of this that within a short span, the university has not only been declared 2nd in the country in the sphere of bio-sciences but there the university has been able to attain an 'h-index of 42 and 215 patents, which is likely to increase in future. Many researchers have their own Government aided projects. In addition, the university has been awarded government grants for making two Centres of Excellence in the fields of Food

Technology and Himalayan Sustainability. Details of the research project are given under point no 3.2, 3.3 and 1.13 of this report

3.10 Revenue generated through consultancy 82,84,283

Shoolini University promotes and supports consultancy projects as an official policy. It encourages its faculty to undertake consultancy assignments with industry, institutions, and organizations. These consulting projects typically entail providing innovative solutions to the industry for improving their products and processes, requiring Professional expertise of the faculty and utilization of the infrastructural facilities available with the University. Having faculty with a blend of industry experience and academic excellence coupled with well-equipped research labs helps the University to attract consultancy projects. The Consultancy offered by the University typically entails providing innovative solutions to the industry for improving their products and processes, availing Professional expertise of the faculty and utilization of the infrastructural facilities available within the University.

3.11 No. of conferences organized by the Institution

Level	International	National	State	University	College
Number	------	3	2	16	------

Table 3.5 Conferences Organized during the Academic Year 2017-18

S. No.	Date of the Event	Sponsoring Agency	Type of event (Conferences /Workshops/Seminars/Symposia)	Total Participation
1	16th March 2017	HPPIC, SCSTE, Himachal Pradesh	Workshop on IPR and GI to promote awareness on IPR amongst students and faculty members	225
	12th July 2017	Shoolini University/ SCERT, Solan	One day lab training program in Biotechnology for lecturers/ PGT of Biology, SCERT, Solan	40
	4th to 6th Dec 2017	Wipro-GE	HPLC & 2D Workshop in DST-FIST lab for research scholars	25

2	June 2017	Shoolini University	National Conference on Environment and Natural Resource Management	25
	6th Sept 2017	Shoolini University	Workshop on pedagogy by Mr. Gaurav Singh, Senior Director PricewaterhouseCoopers	180
	26th to 27th Oct 2017	Shoolini University	Writing Seminar-Workshop for MBA	190
	27th to 28th Nov 2017	Shoolini University	Workshop on innovation by Mr. Bawa Grover	170
	6th April 2018	Shoolini University	Skills required by Corporates by Ms. Ratna Singh, HR- Flipkart	180
	12th April 2018	Shoolini University	Workshop on Entrepreneurship by Sandeep Jain - Strategy Consultant and Leadership Coach, Value Unlocked	180
	8th to 9th August 2018	Shoolini University	Induction Workshop for MBA Quad 1 students	180
	10th August 2018	Shoolini University	Workshop on Positive Psychology by Mr. Barinder Aluwalia	165
3	19th Feb 2018	Shoolini University	Workshop on Role of Nanotechnology in Science	60
	19th Jan 2018	Shoolini University	One day workshop on Bio-nanotechnology and its applications for research	50
4	22nd March 2017	Shoolini University	Workshop on Criminal Procedure Code	20

	8th Oct 2017	Shoolini University & H&S Law Firm	1st National Moot Court Competition	80
	24th Nov 2017	GSSS, Kehlog, Solan	Legal Aid Camp	60
	8th March 2018	Shoolini University	Symposia on Women Empowerment	25
5	12th to 13th April 2018	Shoolini University and NABARD	3rd National Conference on contemporary food processing and preservation Technologies	251
6	12th Feb 2018	Shoolini University	Workshop on pedagogy by Mr. Dipra Jha from University of Nebraska-Lincoln, United States	215
	13th April 2018	Shoolini University	Career Guidance for Cruiselines by Captain Vishnu Sharma	23

3.12 No. of faculty served as experts, chairpersons or resource persons 17

Table 3.6 Faculty serving as experts, chairperson or resource person

S.No.	Faculty Name	Details of the board etc.
	Prof. P.K. Khosla	1. Member of the Association of Indian Universities, New Delhi 2. Member AIU Research Committee 3. Member Selection Committee meeting for the post of Joint Director (Research) at AIU, New Delhi. 4. Member Governing Council of Association of Indian Universities. 5. Member of Himalayan Universities Consortium of ICIMOD, Kathmandu, Nepal. 6. President Indian Society of Tree Scientists 7. Advisor to Yogananda Mahavidyalaya Ranchi 8. Chairman, SILB 9. Vice President of Assocham Education Group 10. Member of CIEC Zonal Committee 11. Fellow Society of Genetics and Plant Breeding, India. 12. Member of International Society of Tropical Foresters, USA 13. Technical Expert/Member: Indo-US Forestry Faculty Improvement 14. As an expert in UNDPIICAR Agro-forestry Faculty Improvement Program 15. Member of Project Advisory Committee, DST 16. Member of ICAR Panels on Agriculture and Home Science Education and Agro-Forestry. 17. Member of Research Advisory Committee, GBPIHED 18. Member of National Centre on Agroforestry, Jhansi 19. Panel discussion in Progressive Himachal Event by News-18, Punjab, Haryana, Himachal 20. Member of National Mushroom Research Centre, Solan 21. Fellow of National Academy of Agricultural Sciences, New Delhi 22. Member CII 23. VLCI (Visionary Learning Community of India) has set up First Regional Centre at Shoolini University under the Mentorship of Dr. P.K. Khosla, Vice Chancellor. 24. Member, TAAS (Trust for Advancement of Agriculture Sciences) 25. Member IMI (Integrated Mountain Initiative) 26. Member ASSOCHAM 27. Member, ABLE (Association of Biotechnology Led Enterprises) 28. Member, Association of Commonwealth Universities (ACU) 29. Member, Shimla Amateur Dramatic Club, Shimla 30. Patron, Him Science Congress
2	Dr. Amita	INSPIRE Workshop, Department of Science and Technology, Meghalaya, 24-25 June 2018.

3	Dr. Aniruddha Mitra	Guide for Summer Research Program (SRP) jointly organized by IAS, INSA, and NASI
4	Dr. Rajesh Kumar	International Conference on Science: Emerging Scenario and Challenges on 1st and 2nd July 2018 at Atal Bihari Mounteeniring Institute, Manali (HP)
		National Conference on Climate Change, Societal Consequences and Mitigation: Future Vision on 26th and 27th April 2018 at Central University Jammu
5	Dr. Dinesh Kumar	External Examiner/ paper Setter for UG/ PG programmes of Himachal Pradesh University.
6	Dr. Somesh Sharma	1) External Examiner/ paper Setter for UG/ PG programmes of Dr. Y.S. Parmar University of Horticulture and Forestry, Nauni, Solan 2) External paper setter for Food Technology programme of CSK HPKV Palampur. 3) External paper setter for Food Technology programme of Eternal University, Baru Sahib University, Sirmour 4) External paper setter for Agriculture programme of Chandigarh University, Punjab
7	Dr. Ravinder Kaushik	1) External paper setter for Food Technology programme of CSK HPKV Palampur. 2) External paper setter for Food Technology programme of Eternal University, Baru Sahib University, Sirmour
8	Er. Mukul Kumar	External paper setter for Food Technology programme of CSKV Palampur.
9	Dr. Abhilash Pathania	Resource person (VLCI Demonstrator)
10	Ms. Pooja Verma	St. Luke's (Resource Person)
11	Dr. Deepak Kumar	1. Invited as Guest Lecture, Govt College of Pharmacy, Rohru. 2. External Examiner, Delhi Pharmaceutical Research University (DPSRU), New Delhi, India. 3. External Examiner, Mizoram Central University, Aizawl, India. 4. External Examiner, Amity Institute of Pharmacy, Amity University, Noida, India. 5. Editor: Der Pharmacia Sinica, Pharmaceutical Biotechnology:

		Current Research 6. Associate Editor: Applied Science Letter 7. Editorial Board Member: Journal of Comprehensive Pharmacy, Journal of heterocyclics, Journal of Drug Design and Medicinal Chemistry.
12	Dr. Rohit Goyal	CPCSEA member (Govt of India), Ministry of Environment, forest & Climate Change for research institutions: 1. IHBT (CSIR), Palampur 2. IVRI, Palampur 3. Venus Remedies, Baddi. IGMC & Hospital, Shimla.
13	Dr. Raman Preet Singh	1. Invited Speaker in "Continuing Pharmacy Education Programme" organized by HP State Pharmacy Council held on 19 Sep 2017 in Shimla, H.P. 2. Session chair in "Third National Conference on Contemporary Food Processing and Preservation Technologies" organized by Shoolini University on 12-13 April 2018
14	Dr. Neeraj Mahindroo	Member ICMR Expert group for medicinal plant monograph, Chairman School of Pharmaceutical Sciences, Institutional Animal Ethics Committee (IAEC), Shoolini University, Chairman Board of Studies, School of Pharmaceutical Sciences; Reviewer, Computational Biology and Chemistry
15	Dr. Deepak Kapoor	Guest Speaker, Govt. College of Pharmacy, Rohru, H.P.; Editorial Board Member, American Journal of Advanced Drug Delivery, Member Secretary, Board of Studies, School of Pharmaceutical Sciences, Shoolini University, Solan
16	Dr. Abhilash Pathania	Resource person (VLCI Demonstrator)
17	Prof. Atul Khosla	1. Independent Director, Gabriel India Ltd. 2. Co-Founder AADDOO 3. Advisor of Ankur Capital Fund 4. Member HP State Council of CII (Confederation of Indian Industry)

3.13 No. of collaborations* International 99 National 44 Any other 17

MoUs with Foreign Universities has enhanced awareness and knowledge levels of our students and given them exposure to global standards. Students have benefited immensely from the exchange programs and national/international alliances.
Mentioned under is the list of the National/International alliances:

Table 3.7 *MoU's with International Universities/Institutes as on 30th June 2018

International MOUs			
S.No.	**Name of the University**	**World Ranking**	**Country**
1	Seoul National University	36	South Korea
2	Chung Yuang Christian University	801-1000	Taiwan
3	University of Ulster	601-650	Northern Ireland, UK
4	Best Team Nigeria Ltd	--	Nigeria
5	Bukovinian State Medical University Chernivist	3638	Ukraine
6	Gachon University	852	South Korea
7	The University of Suwon	3925	South Korea
8	Gwangju Institute of Science and Technology	315	South Korea
9	The Pharmacy and Poisons Board of Govt. of Kenya	--	Kenya
10	National Taiwan University - Taipei- Active	72	Taiwan
11	Lanzhou University	601-650	China
12	Sprott Shaw College	--	Canada
13	University of Arkansas	801-1000	USA
14	Fermi Research Lab	--	US
15	Sichuan University	601-650	China
16	University Alliance of Belt and Road	--	HUC members
17	British Colombia Institute of Technology	748	Canada
18	Kabul University	13114	Afghanistan
19	Eshraq University	12285	Afghanistan

20	University of La Verne	501-600 US Ranking	USA
21	Samara National Research University	701-750	Russia
22	Inha University	551-560	South Korea
23	IIB- INTECH, Buenos Aires	--	Argentina
24	Ethiopian Environment and Forest Research	--	Ethiopia
25	Hainan University	1703	China
26	Yunan Agricultural University	2301	China
27	Leshan Normal University	4836	China
28	Xihua University	2738	China
29	Yunan University	1079	China
30	Cranfield University	151-200	UK
31	KwaZulu-Natal University	751-800	South Africa
32	University of Chittagong	2593	Bangladesh
33	Agriculture & Forestry Ministry	--	Nepal
34	Hainan Tropical Ocean University	801-1000	China
35	Rana University	--	Afghanistan
36	Yunnan Minzu University	3167	China
37	Jimma University	1595	Ethiopia
38	Hawassa University	6231	Ethiopia
39	Wolkite University	--	Ethiopia
40	Zion Technology and Business College	--	Ethiopia
41	Wolaita Sodo University	--	Ethiopia
42	Wondo Genet College of Forestry Science	--	Ethiopia
43	University of Naples	472	Italy
44	APUIHEA	--	Afghanistan
45	University of Limpopo	--	South Africa
46	The University of Venda	--	South Africa
47	UFRGS	--	Brazil

S. No.	International Research Collaborations (as on 30th June 2018)
1	Tel Aviv University, Israel
2	Kyoto University, Japan
3	École Polytechnique, Université Paris-Saclay Route de Saclay
4	Department of Physics, University of Aveiro
5	Institute for Materials Research, University of Leeds, UK
6	National Cancer Institute, National Institutes of Health, USA
7	Department of Food Science and Nutrition, University of Minnesota, St. Paul, USA
8	Kyoto Prefectural University, Japan
9	MRC Laboratory of Molecular Biology, Cambridge, United Kingdom
10	National Institute of Child Health and Human Development, National Institutes of Health, Bethesda, Maryland, USA.
11	National Institute of Child Health and Human Development
12	National Institutes of Health, Department of Health Technology and Informatics,
13	The Hong Kong Polytechnic University, Hong Kong
14	Special Administrative Region, People's Republic of China.
15	Institution de Biomedicina de Valencia (IBV-CSIC), Valencia, Spain.
16	Centre for Free Radical Research, Department of Pathology and Biomedical Science, University of Otago, Christchurch, New Zealand.
17	King Saud University
18	University of Newcastle
19	University of Technology Sydney
20	Shenzhen University
21	King Abdulaziz University
22	Sultan Qaboos University
23	University of KwaZulu-Natal
24	New University of Lisbon
25	Taif University
26	Universidade de Sao Paulo

27	University of Aveiro
28	University of Johannesburg
29	CNRS
30	International Medical University
31	Norwegian University of Science and Technology
32	Prince of Songkla University
33	Universidade Federal do Rio Grande do Sul
34	University of Bath
35	University of the West Indies St. Augustine
36	Aix Marseille Universite
37	Dongguk University
38	Konkuk University
39	Korea Institute of Industrial Technology Evaluation and Planning
40	La Trobe University
41	Lappeenranta University of Technology
42	Observatoire de la Cote d'Azur
43	Shanghai Jiao Tong University
44	Temple University
45	Universidade Federal do Rio de Janeiro
46	Universite de Bretagne Occidentale
47	Universite de Bretagne-Sud
48	University Malaysia Pahang
49	University of Eastern Finland
50	University of Lisbon
51	University of South Africa
52	University of Tasmania

Table 3.8 Research Collaborations with National Universities/Institutes:

S. No.	National Research Collaborations (as on 30th June 2018)
1	PGIMER, Chandigarh
2	RMRC, ICMR, Port Blair
3	MMU, Solan
4	AMITY University, Jaipur
5	Council of Scientific and Industrial Research-Institute of Microbial Technology, Chandigarh, India
6	Centre for Cellular and Molecular Platforms, National Centre for Biological Sciences, Tata Institute of Fundamental Research, Bangalore, India.
7	Molecular Reproduction, Development and Genetics (MRDG), Biological Sciences Building, Indian Institute of Science, Bangalore, India
8	Delhi Pharmaceutical Research University (DPSRU), New Delhi, India.
9	Kumaun University, Haldwani campus, Nainital
10	Department of Pharmacology, IHBT (CSIR), Palampur, HP
11	IIT, Delhi
12	CMS Collaboration
14	Wadia Institute of Geology, Dehradun (Uttrakhand)
15	Department of Environment Sciences, Central University of Jammu
16	Department of Physics, HPU, Shimla (HP)
18	The Central University of Himachal Pradesh, Dharamshala (HP)
19	NIT Hamirpur (HP)
20	Department of Physics, A N College, Patna 800013, Patna India
21	Department of Botany , GB Pant Institute (Kullu).
22	Department of Botany, HFRI.
23	IISER, Pune
24	NCCS, Pune
25	Department of Zoology , IISER Bhopal
26	IISc, Bangalore
27	University of Delhi
28	National Dairy Research Institute India
29	Jaypee University of Information Technology
30	Maharshi Dayanand University
31	Panjab University
32	Chaudhary Devi Lal University, Sirsa
33	Dr. Yashwant Singh Parmar University of Horticulture and Forestry
34	Patna University
35	All India Institute of Medical Sciences
36	CSIR - Indian Institute of Chemical Technology
37	Central University of Rajasthan
38	Guru Nanak Dev University

39	Indian Institute of Technology Roorkee
40	Jamia Millia Islamia
41	Mahatma Gandhi University
42	Punjabi University
43	Postgraduate Institute of Medical Education and Research
44	Sant Longowal Institute of Engineering and Technology

Table 3.9 Collaborations with recognized bodies:

S. No.	Institution/Agency	Country
1	GENPACT	India
2	Tirupati Medicare Ltd.	India
3	Meridian Medicare Pvt. Ltd.	India
4	Anand Automotive Ltd.	India
5	Ferrites India Ltd.	India
6	Dron Defence Sez Pvt. Ltd	India
7	Nutra Helix Biotech Pvt. Ltd	India
8	Reliance Jio	India
9	DAMCO solutions Ltd.	UK
10	Cyberoam	India
11	Venus Remedies Limited	India
12	Xcleris Labs, Ahmedabad	India
13	CSIR - Industry and Standards	India
14	CSIR - Biomedicine and Agriculture	India
15	Tata Consultancy Services	India
16	Bhabha Atomic Research Centre	India
17	Defence Research and Development Organisation, India	India

Vice-Chancellor Prof. P.K. Khosla signed MoU with Yunan Minzu University, China

3.14 No. of linkages created during this year: 15

3.15 Total budget for research for a current year in lakhs:

From Funding agency 240 From Management of University/College 10

Total 250

3.16 No. of patents received this year (2017-18)* financial year

Type of Patent		Number
National	Applied	82
	Granted	0
International	Applied	1
	Granted	0
Commercialized	Applied	0
	Granted	0

Table 3.10 INDIAN PATENTS FILED BY SHOOLINI UNIVERSITY as on 30th June 2018

S.No.	Title of the patent	Inventors	Patent filing no	Date of filing
1.	Compound for enhancing the activity of antibiotic compositions and overcoming Drug resistance.	Umar Farooq, Tanuja Rana, Navroop Kaur	1229/DEL/2015 (Published for pre-grant approval)	04/05/2015
2.	Novel peptide sequence for developing diagnostic agents for malaria detection.	Umar Farooq, Nazam Khan, Shakti Pal Singh Chauhan	1228/DEL/2015 (Published for pre-grant approval)	02/05/2015
3.	Terpenoids from Colebrookeaoppositifolia as activity enhancers of antibiotic compositions and extraction method thereof.	Kamal Dev, Anuradha Sourirajan, Vipasha Sharma	1326/DEL/2015 (Published for pre-grant approval)	12/05/2015
4.	Compounds for enhancing the activity of antibiotic compositions against drug sensitive and drug-resistant bacteria.	Kamal Dev and Kazal Pathania	1429/DEL/2015	20/05/2015
5.	Compounds from *vitexnigundo* for enhancing antibiotic activity and overcoming drug resistance.	Kamal Dev, Anuradha Sourirajan, Sonika Gupta	1464/2015/DEL	23/05/2015
6.	Novel peptide sequences for developing anti-malaria vaccines and therapeutic compositions.	Umar Farooq, Nazam Khan, Shakti Pal Singh Chauhan	1465/DEL/2015	23/05/2015

7.	Nanocomposite for removal of dye-based water pollutants	Deepak Pathania and Rishu Katwal	1537/DEL/2015	28/05/2015
8.	Novel nanographene based composite for water treatment application and method of synthesis thereof.	Pradeep Singh, Pankaj Raizada, Pooja Shandilya	1819/DEL/2015	18/06/2015
9.	A novel microbe producing extracellular β-galactosidase and method of enzyme production thereof.	Kamal Dev and Tarun Kumar	1895/DEL/2015	25/06/2015
10.	Novel microbe producing xylanase and method of enzyme production thereof.	Amit Seth, Shweta Chauhan, Chandrika Attri Seth, Varun Jaiswal	1846/DEL/2015	22/06/2015
11.	Nanocomposite for antimicrobial treatment of drinking water.	Deepak Pathania, Rishu Katwal and Gaurav Sharma	1897/DEL/2015	25/06/2015
12.	Chitosan-g-poly(acrylamide)/copper nanocomposite for controlled drug delivery.	Deepak Pathania and Divya Gupta	1875/DEL/2015	24/06/2015
13.	Novel herbal anticancer compound and method of production thereof	Afroze Alam and KL Dhar	1913/DEL/2015	27/06/2015
14.	Novel benzothiazole derivatives with enhanced biological activity.	Kalpana Chauhan and Bhawana Kumari	2484/DEL/2015	12/08/2015
15.	Improved persimmon wine with enhanced antioxidant activity and standardized method of production thereof.	Somesh Sharma, Kiran Mahant	3884/DEL/2015	28/11/2015
16.	Microbially produced antifreeze protein(s) and method of production thereof	Kamal Dev, Anuradha Sourirajan, Ranjana Suman	3886/DEL/2015	28/11/2015
17.	Novel peptide from plasmodium falciparum for anti-malarial vaccine.	Umar Farooq, Shakti Pal Chauhan, Nazam Khan	3887/DEL/2015 (Published for pre-grant approval)	28/11/2015
18.	Novel peptide sequences from the parasite *Echinococcusgranulosus* for producing anti- cystic echinococcosis vaccine	Umar Farooq, Varun Chauhan, Azhar Khan	4116/DEL/2015	18/12/2015
19.	Novel peptides for diagnosis of cystic echinococcosis.	Umar Farooq, Varun Chauhan	4198/DEL/2015 (Published for pre-grant approval)	21/12/2015
20.	Novel chitosan-based nanocomposite with antibacterial activity for water treatment and production method thereof.	Deepak Pathania, Divya Gupta, Swadeep Sood	4255/DEL/2015	23/12/2015

21.	Novel compounds possessing anti-echinococcal activity.	Umar Farooq, Varun Chauhan	Application no. 201611004817	10/02/2016
22.	Flying Chair (Design patent).	Shoolini University and Sorabh Aggarwal.	Design application number 280329 **(Granted)**	11/02/2016
23.	Novel nanocomposite for treatment of effluents containing dyes and method thereof.	Deepak Pathania, Divya Gupta, Amit Kumar	Application no. 201611011100	30/03/2016
24.	Nano ferrite substrate and its process of production for use in large bandwidth miniaturized antenna.	Atul Thakur and Preeti Thakur	Application no. 201611013315	16/04/2016
25.	Magneto-dielectric substrate for miniaturized microstrip patch antenna for use in high bandwidth in UHF band.	Atul Thakur and Preeti Thakur	Application No. 201611018053	25/05/2016
26.	Nanocomposites material with enhanced magnetic properties.	Atul Thakur, Preeti Thakur, Kush Rana	Application No. 201611022599	30/06/2016
27.	Novel anti-Leishmaniasis compound and method of production thereof.	Afroze Alam and K.L Dhar	Application No. 201611022602	30/06/2016
28.	System for safe overtaking and method of use thereof.	Adit Rana	Application no 201611023982	13/07/2016
29.	Novel alcohol-free process for extraction of zein and xanthophylls.	Dinesh Kumar and Sampy Duggal	Application no 201611031746	17/09/2016
30.	Nanocomposite gel for oil spill remediation and method thereof.	Amit Kumar, Ajay Kumar, Gaurav Sharma	Application no 201611036282	24/10/2016
31.	Nano cobalt iron biochar for recycling of used/waste oil and method thereof.	Amit Kumar, Ajay Kumar Gaurav Sharma, Deepak Pathania, Sunil Kumar	Application no 201611037781	04/11/2016
32.	A novel anticancer compound isolated from *Brugmansia suaveolen* sand method thereof.	Neeraj Mahindroo, Sunil Kumar, AditiGupta, Reena Saini, K.L. Dhar	Application no 201611040684	29/11/2016
33.	An isolate from the seed oil of *Pongamiapinnata* with anti-osteoporotic activity and method thereof.	Afroze Alam and Aditya Shiven	Application no 201611043705	21/12/2016
34.	Improved vesicular formulation of thymoquinone for the treatment of dermal inflammatory disorders and	Poonam Negi, Charul Rathore, Ishita Sharma	Application no 201711002485	23/01/2017

	method thereof.			
35.	Synergistic graphene sand nanocomposites for antibiotic degradation in wastewater and method thereof.	Pankaj Raizada, Pooja Shandilya, Rashi Dhiman, Pradeep Singh	Application number: 201711004067	03/02/2017
36.	Novel nanocomposite for therapeutic use as immunostimulator and method thereof.	Reena Vohra Saini, Adesh Kumar Saini, Indu Hira, Amit Kumar.	Application number: 201611007222	01/03/2017
37.	Novel microbe for assessing in vivo antioxidant status of foods and method thereof.	Adesh Kumar Saini, Christine Coe Winterbourn, Vikas Kumar, Reena Vohra Saini, Rakesh Kumar, Ashu Poswal.	Application number: 201711007132	28/02/2017
38.	Improved Antibiotic composition for the treatment of Typhoid and Gastro infections caused by Salmonella".	Kamal Dev, Jyoti Mehta and Urmila	Application no. 2017110115714	04/05/2017
39.	Novel Anti-Cancer compound.	Kamna Sharma, Sameer Sapra, and K.L. Dhar	Application no. 201711015752	04/05/2017
40.	Nano-composite based Electronic sensor for detection of lead".	Deepak Pathania and Manita Thakur	Application no. 201711015779	04/05/2017
41.	Improved antibiotic composition for the treatment of infections caused by *Staphylococcus aureus.*	Kamal Dev, Urmila, Jyoti Mehta	Application no.: 201711017988	23/05/2017
42.	Gene expressing novel microbial protein for engineering salt tolerance in plants and method thereof.	Anuradha Sourirajan, Shivani Vaidya, Kamal Dev	Application no.: 201711018003	23/05/2017
43.	Novel nanocomposite based immunosensor for detection of celiac disease and method thereof.	Shagun Gupta, Dinesh Kumar, Ankur Kaushal	patent filing number: 201711019443	02/06/2017
44.	Semi-tubular solar air dryer.	Adit Rana and Ranchan Chauhan	patent filing number: 201711019471	02/06/2017

45.	A machine for calculating cutting force and methods thereof.	Sashank Thapa, Akshay Pathania, Sorabh Aggarwal, Arjun Patial	patent number 201711020456	12/06/2017
46.	Mobile cover.	Sorabh Aggarwal, Akshay Pathania, Sashank Thapa, Bhaskar Goel	Application number 294633	02/06/2017
47.	Novel anticancer nanocomposite.	Reena Vohra Saini, Adesh Kumar Saini, Indu Hira and Amit Kumar	Patent filing number: 201711021290	17/06/2017
48.	A system for blockage detection of the air flow line.	Abhilash Pathania, Bhaskar Goel, Haseem	201711021817	21/06/2017
49.	Productivity Improvement by modification in the fixture.	Bhaskar Goel Abhilash Pathania Sorabh Aggarwal	201711021818	21/06/2017
50.	Cooling pad for mobile.	Sorabh Aggarwal, Akshay Pathania Sashank Thapa, Bhaskar Goel, Raj kumar	294956	21/06/2017
51.	Novel nanohydrogel for activity enhancement and controlled release of antimicrobial drug and method.	Deepak Pathania, Poonam Negi, Chetna Verma	(Application no. 201711024051)	07/ 07/2017
52.	Sensible steering assists due to intoxication and emergency conditions.	Adit Rana Ranchan Chauhan Bhaskar Goel	201711024722	12/07/2017
53.	Energy efficient impinging jet solar food dryer.	Ranchan Chauhan Adit Rana, Raj kumar	201711024743	13/07/2017
54.	Smart fuel injection system against alcoholic drivers, teenagers and an anti-theft system for intruders.	Adit Rana, Ranchan Chauhan	201711024744	13/07/2017
55.	Herbal extract formulation for the treatment of Yersiniosis.	Anju Bala, Ravinder Kaushik, Prince Chawla	Application no. 201711024705	12/07/2017
56.	Herbal extract based formulation for the treatment of Salmonellosis.	Anju Bala, Ravinder Kaushik, Naveen Kumar, and Somesh Sharma	Application no: 201711025878	20/07/2017

57.	Stair Climbing Stretcher.	Amar Raj Singh, Anil Kumar, Sorabh Aggarwal	296068	24/07/2017
58.	SMS based power control switch system.	Sanjay Bhardwaj, Suman Bhardwaj	201711026295	24/07/2017
59.	Automatic ac mains cut off system on LPG gas leakage using Arduino.	Brijbhushan, Pankaj Vaidya	201711026909	28/07/2017
60.	Silt Erosion Test Rig.	Robin Thakur, Anil Kumar	296389	03/08/2017
61.	Herbal pharmaceutical excipient for enhancing antifungal and antibacterial properties of existing drugs	Kamal Dev, Vikas Kumar, Rajan Rolta, Akash Sharma	Application No:201711028454	10/08/2017
62.	Herbal composition from *Stephaniaelegans*for breast cancer treatment	Reena Saini, Ravin Sharma, Gourav Chandan, Anterpreet Chahal	Application No:: 201711028932	15/08/2017
63.	Novel gene coding a thermostable-glutaminase enzyme	Kamal Dev, Dewanshu Sharma, Anuradha Sourirajan, Sonam Sharma	Application No 201711028931	15/08/2017
64.	Motion Simulation of stairs climbing Robot	Sorabh Aggarwal, Bhaskar Goel	Diary Number: 10760/2017CO/SW	18/07/2017
65.	A Rolling and Adjustable Notice Board.	Randhir Bhandari, Varun Jaiswal, Gaurav Gupta, Manoj Gaur, Pankaj Vaidya	201711030962	28/08/2017
66.	Identification of Obscured Images using Machine Learning.	Preeti Kanish, Gaurav Gupta, Ankit Gupta	Diary Number: 12773/2017CO/SW	31/08/2017
67.	Semi Rotary Compressor.	Robin Thakur, NitinRana, Anil Kumar, Amar Raj Singh	297124	29/08/2017

68.	Flying Strecher.	Anil Kumar, Amar Raj Singh, Sorabh Aggarwal, Robin Thakur	297125	29/08/2017
69.	Fixture with multiloading of components.	Bhaskar Goel, Sorabh Aggarwal	297126	29/08/2017
70.	Nanocomposite for photodegradation of water polluting methyl orange.	Deepak Pathania, Manita Thakur, Arush Sharma	Application no.201711029421	19/08/2017
71.	Low-cost production of canthaxanthin and xanthophyll pigments using *micrococcus luteus*and brewer's spent grain.	Kanchan Heer and Somesh Sharma	Application no. 201711031489	06/09/2017
72.	Nanocomposite for removal of metal ions from wastewater and method thereof.	Deepak Pathania, Manita Thakur, Pankaj Thakur	Application no.201711032662	14/09/2017
73.	A Grinding Machine and Methods Thereof.	Sanjay Bhardwaj, Suman Bhardwaj, Pankaj Vaidya	201711033174	19/9/2017
74.	Thermostable antimicrobial peptides and method thereof.	Kamal Dev, Dewanshu Sharma, Sonum Sharma, Anuradha Sourirajan	Application number: 201711034173	26/09/2017
75.	Process for economical and fast production of pure walnut wine from de-oiled walnut kernels.	Neha, Ravinder Kaushik, Somesh Sharma, Naveen Kumar	Application number: 201711034223	27/09/2017
76.	Hexaferrites nanomaterial and microwave applications thereof.	Virender Pratap Singh, Gagan Bhargava, R.K Kotnala, Mahavir Singh	201711034816	9/29/2017
77.	Geometric Device for making Hexagon.	Ankit Thakur, Sumit Mehlwal, Anshil Sehgal, Varun Sharma	298052	02/10/2017

78.	Combined mix of cement mortar dust and fly ash as filler in bituminous concrete mix and methods thereof	Er. P.L. Goel, Er. Sanjay Garg	201711034819	30/09/2017
79.	Advanced polyhouse structure for water harvesting and grow two different seasonal crops at the same time	Kartik Chauhan, Rupak Nagraik	201711034820	30/09/2017
80.	Stator and Rotor of Three-Phase Squirrel Cage Induction Motor.	Raj Kumar Saini DrNeeraj Gandotra Ms. Namita Saini Sashank Thapa	298051	02/10/2017
81.	Compact and portable herbal water purifier for drinking water.	Amanpreet Kaur, Chandresh Kumari, Swati, Tanvi Gupta, Abhishek Bhardwaj, Saurabh Kulshrestha	Patent filing number: 201711037586	24/10/2017
82.	Eco-friendly process for faster production of therapeutic fruit vinegar from wild apricots.	Priyanka Chauhan, Somesh Sharma	Patent filing number: 201711037589	24/10/2017
83.	Combinational compact air compressor.	Robin Thakur, Nitin Rana, Anil Kumar, Ankit Thakur, Dinesh Kumar	Patent filing number: 2017110	30/10/2017
84.	A Method Of Recovery Of Silver From Waste X-Ray Films By The Use Of Thermostable Alkaline Protease E.	Neha Thakur, Dinesh Kumar	201711039167	02/11/2017
85.	Model of Customer Complaining Behaviour In Banks.	Kuldeep Chand Rojhe	Diary Number: 15502/2017CO/L	02/11/2017
86.	A Method And Composition Of Pumpkin Wine Using Oak (QuercusLeucotrichophora) Wood Chips.	Aman Deep Thakur, Dr. Somesh Sharma	201711038776	31/10/2017

87.	Solar Tracking System.	Sorabh Aggarwal, Bhaskar Goel, Neeraj Gandotra	298908	30/10/2017
88.	Piezoelectric Signal Generator To Prohibit Unauthorized Red Light Crossing Using A High Tensile Magnetic Hooks Unit.	Adit Rana, Ranchan Chauhan	201711038575	31/10/2017
89.	A Composition And Method Of Manufacturing Of Clay Bricks Using Wood Saw Dust Ash.	Er. P.L. Goel, Er. Sanjay Garg	201711039331	03/11/2017
90.	Product Based Temperature Control System For Solar Dryer To Prevent Overheating And Improve Competence.	Ranchan Chauhan, Adit Rana, Raj Kumar	201711038576	31/10/2017
91.	A System Of Automotive Assistance For Minimize The Fuel Metering Tolerance	Abhilash Pathania, Adit Rana	201711039168	02/11/2017
92.	Cooking Stove	Sorabh Aggarwal, Ankit Thakur, Raj Kumar, Sashank Thapa, Bhaskar Goel	298909	30/10/2017
93.	Surface Grinding Of Multi-Connecting Rods On Horizontal Surface Grinding Machine.	Bhaskar Goel, Sashank Thapa, Sorabh Aggarwal	298910	30/10/2017
94.	Bitumen concrete mixture with polythene for the construction of pavement and method thereof.	Sanjay Garg, P. L Goel	201711042303	24/11/2017
95.	Polyhouse structure.	Kartik Chauhan, Rupak Nagraik	299678	24/11/2017
96.	Pen for OMR sheets.	Sumit Mehlwal, Ankit Thakur, Varun Sharma, Adit Rana, Anshul Sehgal	299679	24/11/2017

97.	Hexapod Robot.	Sorabh Aggarwal, Akshay Pathania, Bhaskar Goel	299680	24/11/2017
98.	Pick and Place Robot.	Sorabh Aggarwal, Bhaskar Goel	299681	24/11/2017
99.	Automatic cartridge type electrode holder for arc welding machines.	Varun Sharma, Adit Rana, Anshul Sehgal, Suneel Dutt, Sumit Mehlwal	201711043038	30/11/2017
100.	Zein Film Composition With Plasticizer For Coating Of Food Products.	Sampy Duggal, Somesh Sharma, Dinesh Kumar	201711043005	30/11/2017
101.	Improved bio-process for the synthesis of Lactamide.	Amit Seth, Poonam Singh, Ansu Kumari, Kalpana Chauhan, ChandrikaAttri	201711043219	01/12/2017
102.	Improved Process for Production Of Thermostable Pigments From Monascus Purpureus	Preeti Dogra, Dr. Dinesh Kumar	201711045550	19/12/2017
103.	Nano biosensor based handheld device for early and accurate diagnosis of celiac disease	Shagun Gupte, Dinesh Kumar, Ankur Kaushal	201811002327	19/01/2018
104.	Process for the synthesis of nanoparticles possessing anti-cancer activity from *pinusroxburghii*bioactive fraction	Reena Saini, Adesh Kumar, Reena Kumari	201811002588	23/01/2018
105.	A system for drunken driver detection and indication in vehicles and methods thereof	Brij Bhushan	201811005532	14/2/2018
106.	DNA based electrochemical biosensor kit and uses thereof	Rupak Nagraik, Dinesh Kumar, Ankur Kaushal, Shagun Gupta, Suneel Sethi	201811005529	14/2/2018

107.	A method for surface modification of low carbon steel and uses thereof	Akshay Pathania, Vishal, Sorabh Aggarwal, Sashank Thapa	201811005531	14/2/2018
108.	Anti-dandruff hair styling composition and method of preparation thereof	Shalabh Bansal, Deepak Nand Kishore Kapoor, Navneet Kumar Upadhyay	201811007045	24/02/2018
109.	Enzymatic method for synthesis of the precursor of the bioactive peptide	Neha Thakur, Dinesh Kumar	201811007618	28/02/2018
110.	A method for biodegradation of synthetic dyes by mycelia of Trametes elegans	Astha Tripathi, Sukrit Sagar	201811007619	28/02/2018
111.	Development and evaluation of Sea Buckthorn (Hippophaerhamnoides l.) seed oil nanoemulsion gel for wound healing.	Tanu Rajvir Kaur, Deepak Nand Kishore Kapoor	201811008389	07/03/2018
112.	Trademarks application (Shoolini University Logo)	Shoolini University	Temp. Ref. No: 2162198	12/03/2018
113.	Photocatalyst for removing biotic and abiotic pollutant present in water	Pardeep Singh, Adesh K. Saini, Pankaj Raizada, Pooja Shandilya, Divya Mittal	201811010039	19/03/2018
114.	Automatic rainwater harvesting tank for domestic applications	Adit Rana, Ranchan Chauhan, Raj Kumar, Nitin Kumar, Bhaskar Goel	201811010038	19/03/2018
115.	An indirect solar dryer system and uses thereof	A K Bhardwaj, Ranchan Chauhan, Raj Kumar, Adit Rana	201811010040	19/03/2018
116.	Improved apparatus for rapid and good quality vinegar production and	Somesh Sharma, Vivek Sharma	201811009973	19/03/2018

	method thereof			
117.	Therapeutic wine prepared by synergistic fermentation of whole beetroot pulp and apple juice concentrate	Somesh Sharma, Shubham Pathak	201811010514	22/03/2018
118.	Thermostable bacteriocin and method thereof	Somesh Sharma, Kajal Kumari	201811010522	22/03/2018
119.	Rapid process for the synthesis of biodegradable starch films from non-edible starch sources	Rahul Thorey, Kawaljit Singh Sandhu, Archana Sinhmar	201811010846	23/03/2018
120.	Nano biosensor based handheld device for quick diagnosis of rheumatic heart disease and method thereof	Ankur Kaushal, Dinesh Chatanta	201811013029	05/04/2018
121.	Composition for enhancing the content of bioactive molecules in Gentiana kurro and method thereof	Chandrika Attri	201811014450	16/04/2018
122.	An apparatus for sterilization and incubation	Kartik Chauhan, Rupak Nagraik	201811017743	20/4/2018
123.	Fluorine-doped graphene-based slurry type photocatalytic system for water purification	Pardeep Singh, Adesh K. Saini, Pooja Shandilya, Pankaj Raizada, Divya Mittal	201811017744	20/4/2018
124.	Conversion of graphene into photocatalyst for wastewater treatment	Pardeep Singh, Adesh K. Saini, Pooja Shandilya, Pankaj Raizada, Divya Mittal	201811017745	20/4/2018
125.	Anti-leishmaniasis extract from Ajuga bracteosa and method thereof	Swati Pundir, Neeraj Mahindroo, Raman Preet Singh, Poonam Negi	201811016144	28/04/2018
126.	Anti-leishmaniasis extract from the	Swati Pundir, Neeraj	201811016145	28/04/2018

	root of Asparagus officinalis and method thereof	Mahindroo, Raman Preet Singh, Poonam Negi		
127.	Induction based apparatus for chemical synthesis	Dr. Deepak Kumar, Dr. Raman Preet Singh	305216	11/5/18
128.	Screw turbine efficiency measuring instrument	Kamal Kashyap, Robin Thakur, Anil Kumar, Nitin Kumar	305215	11/5/18
129.	Air-impingement jets	Nitin Kumar, Anil Kumar, Ankit Thakur, Robin Thakur	305217	11/5/18
130.	A method for extraction of essential oil extract from pleurospermum brunonis and uses thereof	Dr. Anuradha Sourirajan, Dr. Kamal Dev, Prakriti Nidhi, Rajan Rolta	201811018065	14/5/2018
131.	Green synthesized process for zinc oxide nanoparticles using a plant extract of murraya koeingii and its antibacterial efficacy thereof	Avinash, Pankaj Kumar Chauhan, Rupak Nagraik, Somesh Sharma	201811018237	15/5/2018
132.	Structure for hydrodynamic and thermal performance of blockage arrangements roughened solar air passage	Anil Kumar, Robin Thakur, Amar Raj Singh Suri, Raj Kumar	201811018235	15/5/2018
133.	A method for purification and characterization of versatile peroxidase (hybrid peroxidase) from wild trametes Versicolor	Dr. Astha Tripathi, Neha Thakur	201811018377	16/5/2018
134.	A gene encoding dual enzyme aminopeptidase/endoglucanase from thermophilic bacterium Bacillus sp. Pw2 (ku711838)	Dr Anuradha Sourirajan, Divyanshi Sharma, Dr Kamal Dev	201811018382	16/5/2018
135.	A psychro-halophilic rhodonellum psychrophilum strain gl8 and	Dr Kamal Dev,Garima Bisht, Dr Anuradha Sourirajan, Dr Vikas	201811018597	18/5/2018

	pigments thereof	Kumar		
136.	Natural liquid herbicide and method thereof	Mamta Sharma, Saurabh Kulshreshtha, Sheetal Choudhary, Shriya	201811019023	21/05/2018
137.	A method to identify potential angiotensin converting enzyme-inhibitory (ace inhibitors) compounds of Moringa oleifera and uses thereof	Azhar Khan, Huma Khan, Varun Jaiswal	201811018239	22/5/2018
138.	Synthesis of magnetically separable graphitic carbon nitride based photocatalyst and methods thereof	Pankaj Raizada, Anita Sudhaik, Adesh K. Saini, Pradeep Singh	201811018238	22/5/2018
139.	Hydraulic load carrier	Ankit Thakur, Selam Lokanath, Sandeep Sharma, Mayuri Vasmatkar, B.S.R. Sai Vithal, C.Narasimha Reddy	306243	22/5/2018
140.	Energy efficient process for extraction of cellulose from pine needles bio-waste	Neeraj Gupta	201811019305	23/05/2018
141.	Fin-solar energy-storage	Anil Kumar, Amar Raj Singh Suri, Robin Thakur, Chaduvula Narasimha Reddy, Boddu Satya Rama Sai Vithal	306244	23/05/2018
142.	Round tube heat-exchanger	Anil Kumar, Robin Thakur, Ravi Dutt, Amar Raj Singh Suri	306245	23/05/2018
143.	Low cost and eco-friendly process for the production of biodiesel from biowaste	Saurabh Kulshreshtha, Sunny Bindra	201811019763	26/05/2018

144.	Novel neuroprotective molecule	Poonam Kumari, Rohit Goyal, Vikas Sharma, Kl Dhar	201811019919	28/05/2018
145.	A nanocomposite electrochemical biosensor system and uses thereof	Rupak Nagraik, Dinesh Kumar, Ankur Kaushal, Shagun Gupta	201811020547	29/05/2018
146.	An improved process for the production of oligosaccharides from agar using novel psychrophilic bacteria isolated from the Himalayas.	Dr Kamal Dev, Mukesh, K Dogra, Sonum Sharma, Dr Anuradha Sourirajan,	201811020479	31/05/2018
147.	A system of car cabin suffocation remover and methods thereof	Nipun Batis, Koushik Das Sarma, Bhaskar Goel	201811020548	31/05/2018
148.	Biological decaffeination of coffee by hyper thermo alkaliphile para geobacillus toebii strain sm1 and method thereof	Dr. Kamal Dev, Saptarshi Mandal, Dr. Anuradha Sourirajan, Garima Bisht	201811020673	01/06/2018
149.	The modified stator and rotor design of three-phase synchronous motor	Raj Kumar Saini, Dr. Neeraj Gandotra, Namita Saini, Sushank Thapa	306246	05/06/2018
150.	Hidden hydraulic runway and methods thereof	Mohit Kapoor, Dipansh Kandoria, Akansh, Chandan Panwar, Sorabh Aggarwal, Bhaskar Goel	201811020549	05/06/2018
151.	Power exo-skeleton	Robin Thakur, Nitin Rana, Anil Kumar, Varun Bhola, Nabin Kumar Sheet, Vikrant, Emini Bezawada, Sunil Kumar Singh	306242	06/05/2018
152.	A strict-halophilic salinicoccus roseus strain gl34 and pigments thereof	Dr Kamal Dev,Dr Anuradha Sourirajan, Garima Bisht	201811021212	06/06/2018

153.	Bamboo Reinforced Concrete Material And Uses Thereof	Bhupender Kumar, P L Goel	201811021413	07/06/2018
154.	A Drug delivery system of carboxymethyl cellulose-cl-poly(lactic acidco-itaconic acid)/ZnO-Ag nanocomposite and methods thereof	Adesh K. Saini, Deepak Pathania, Swadeep Sood, Rakesh Kumar, Sarita Kumari	201811021414	07/06/2018
155.	Automatic Floor-cleaner	Robin Thakur, Anil Kumar, Nitin Kumar, Saikat Ghosh, Arshdeep Singh, Chandershekhar Aazad, Raj Kumar Sharma, Prashant Katuwal, Yadhuveer Singh Thakur	306410	07/06/2018
156.	A Method To Develop Non-Cereal Starch Based Extruded Snacks	Dr. Ravinder Kaushik, Anuj Saklani	201811022737	13/06/2018
157.	Bioanalytical method for simultaneous estimation of Saxagliptin and Glimepiride in biological fluids	Navneet Kumar Upadhyay, Poonam Negi, Sameer Sapra	201811022580	16/06/2018
158.	Rapid process for the synthesis of 5-hydroxymethylfurfural	Neeraj Gupta	201811022583	16/06/2018
159.	Rhizome Extract Of Bistortamacrophylla Enhanced the Antifungal Activity of Fluconazole and Amphotericin B and method thereof	Anjali Kashyap, Shivani Shukla, Rajan Rolta, Dr. Vikas Kumar, Prof. Anuradha Sourirajan, Prof. Kamal Dev	201811022736	18/06/2018
160.	Smoke And Temperature Sensor System For Control Exhaust Fan And Kitchen Chimney Using Arduino	Brij Bhushan	201811022929	19/06/2018
161.	A System of Power Supply For Computer Desktop CPU With	Brij Bhushan	201811022930	19/06/2018

	Backup			
162.	Automatic AC Mains Cut Off System On LPG Gas Leakage Using Arduino with SMS Alert to the Users	Brij Bhushan, Pankaj Vaidya	201811022928	19/06/2018
163.	Graphitic Carbon Nitride Based Metal Free Nanocomposites For Pesticide Degradation And Bacterial Disinfection	Pankaj Raizada, Anita Sudhaik, Adesh K Saini, Pardeep Singh	201811023694	26/06/2018

Table 3.11 PCT FILED BY SHOOLINI UNIVERSITY

1	Compound for enhancing the activity of antibiotic compositions and overcoming drug resistance	Umar Farooq, Tanuja Rana, Navroop Kaur	International Application No. PCT/IN2016/000115 (Published for pre-grant approval at WIPO)
2	Compounds from *Vitex nigundo* for enhancing antibiotic activity and overcoming drug resistance	Kamal Dev, Anuradha Sourirajan, Sonika Gupta	International Application No. PCT/IN2016/000129
3	Novel benzothiazole derivatives with enhanced biological activity	Kalpana Chauhan and Bhawana Kumari	International Application No. PCT/IN2016/000207
4	Improved vesicular formulation of thymoquinone for the treatment of dermal inflammatory disorders and method thereof	Poonam Negi, Charul Rathore, Ishita Sharma.	PCT/IN2018/050035

3.17 No. of research awards/ recognitions received by faculty and research fellows of the institute in the year

Total	International	National	State	University	District	College
22	5	13	-	4	-	-

Table 3.12 Research awards/ recognitions received by faculty and research fellows of the institute in the year 2017 -18

S. No.	Faculty Name	Event	State/National /International	Date
1.	Dr. Anirudha Mittra	Young Scientist (6th Academic Brilliance Awards – 18, held at Noida) Agency: EET CRS – Research wing for excellence in Professional education & industry	National	Date: 28th January 2018
2.	Rajan Rolta, M.Tech Biotechnology student	Best Poster award in Himscience Congress on Science: Emerging Scenario and Future Challenges, NIT Hamirpur, HP	International	08-09 September 2018
3.	Amanpreet Kaur Virk (Guide: Dr. Saurabh Kulshrestha)	Best poster prize in a session on "Theme: Innovations" in 2nd Himachal Pradesh Science Congress organized by Himachal Pradesh Council for Science, Technology, and Environment (HIMCOSTE)	National	20-21 November 2017
4.	Dr. Rajni Vaid, Ph.D. scholar (guide Anuradha Sourirajan)	Best Poster award in Hargobind Khurana Memorial Symposium, Chandigarh, Title: Identification of substrates of budding yeast PLK, Cdc5 during pachytene exit in meiosis	National	Dec 3-5, 2017
5.	Dr. Amit Seth	National Symposium on "Pteridological Studies in India: Perspectives and Modern approaches in relation to Environment & Climate Change". Organized by: Botanical Survey of India and Indian Fern Society at Itanagar, Arunachal Pradesh	National (S.S.Bir Gold Medal in Pteridology)	February 22-23, 2018

6.	Dr. Rahul Thory	National Seminar on Technological Interventions in Food Processing and Preservation, Amity University Rajasthan, Jaipur, 17th November 2017. Title of paper- Development, quality evaluation and shelf life studies on wheatgrass fortified rice drink.	National (1st Prize in Poster Presentation)	17th November 2017
7.	Dr. Ashok Pathera	National Seminar on Technological Interventions in Food Processing and Preservation, Amity University Rajasthan, Jaipur, 17th November 2017. Title of paper- Effect of ingredients level and cooking methods on quality characteristics of chicken nuggets using response surface methodology.	National (2nd Prize in an oral presentation)	17th November 2017
8.	Dr. Varun Jaiswal (Faculty)	Travel Grant Award for The 11th International Symposium on Pneumococci and Pneumococcal Diseases (ISPPD) Melbourne, Australia.	International	15-19 April 2018.
9.	Prof. Bhaskar Goel	Patent Filing	University	11th Dec 2017
10.	Mr. Akshay Pathania	Demonstrator (VLCI)	International	12 March, 2018
11.	Mr. Sorabh Aggarwal	Patent Filing	University	11th Dec 2017
12.	Dr. Ranchan Chauhan	Max. Publications	University	11th Dec 2017
13.	Dr Abhilash Pathania	Demonstrator (VLCI)	International	12 March, 2018

14.	Dr. Purnima Bali	"I2OR – Bright Educator Award" for the contribution in the field of English & Communication Skills by International Institute of Organized Research in 2017.	National	January 2017
15.	Amanpreet Kaur Virk, Chandresh Kumari, Tanvi Gupta, Swati, Abhishek Bhardwaj (Guide: Dr. Saurabh Kulshrestha)	Selected in top 20 teams in ABLE-BEST INDIA 2016 Entrepreneurship Workshop organized by Department of Biotechnology, Govt. of India at Manesar, National Capital Region.	National	19-23 February 2017
16.	Amanpreet Kaur Virk, Chandresh Kumari, Tanvi Gupta (Guide: Dr. Saurabh Kulshrestha)	First Prize in 'Startup Manthan 2017' (Business Plan Competition for Students of Technical/Management Institutes of Northern Region) organized by NITTTR, Chandigarh.	National	20 April 2017
17.	Amanpreet Kaur Virk (Guide: Dr. Saurabh Kulshrestha)	Best poster prize in a session on "Theme: Innovations" in 2nd Himachal Pradesh Science Congress organized by Himachal Pradesh Council for Science, Technology, and Environment (HIMCOSTE)	National	20-21 November 2017
18.	Dr. Rajni Vaid, Ph.D. scholar (guide Anuradha Sourirajan)	Best Poster award in Hargobind Khurana Memorial Symposium, Chandigarh, Title: Identification of substrates of budding yeast PLK, Cdc5 during pachytene exit in meiosis	National	Dec 3-5, 2017
19.	Dr. Kamal Dev	Patent filing award by Shoolini University	National	11 Dec 2017
20.	Neha Chauhan, Meentu Prakash, Umar Farooq,	Best Poster Award at National Seminar on " Innovations &	National	4th March-2017

	Azhar Khan	Challenges in Basic & Applied Sciences" organized by Maharaja Agrasen University, Baddi Solan		
21.	Dr. Rohit Goyal	World Federation of Neurology for Kyoto, Japan	International	Sept. 2017
22.	Dr. Rohit Goyal	Shoolini University, Solan for participation in World Federation of Neurology for Kyoto, Japan	University Level	Sept. 2017

3.18 No. of faculty from the Institution who are Ph. D. Guides 92

3.19 No. of Ph.D. awarded by faculty from the Institution 57

3.20 No. of Research scholars receiving the Fellowships (Newly enrolled + existing ones)

JRF 4 SRF 1 Project Fellows 13 Any other 21

Table 3.13 Research Scholars/Fellows as of July 2018

S. No.	Name of the Research Scholar	Details of the Fellowship
1	Menka	INSPIRE, DST (Ph.D. Botany)
2	Priyanka Thakur	INSPIRE, DST (Ph.D. Zoology)
3	Kajal	INSPIRE, DST (For M.Sc)
4	Kshipra Sen	HIMCOSTE Project Fellow
5	Monika Bharti	DST Project Fellowship
6	Madan Lal	DRDO Project Fellowship
7	Divya Mittal	JRF in NMHS project of Dr. Adesh Saini, June 2016 - present
8	Tanvi Gupta	Inspire Fellow working with Dr. Saurabh Kulshrestha 2014 – present
9	Amanpreet Kaur	Project Fellow in a HIMCOSTE funded project with Dr. Saurabh Kulshrestha

10	Keshav	Project Fellow in a MicroAlgae Development Energy India (P) Ltd funded Project with Dr. Saurabh Kulshrestha and Dr. Pradeep Kumar
11	Pratibha Thakur	Project Fellow in a MicroAlgae Development Energy India (P) Ltd funded Project with Dr. Saurabh Kulshrestha and Dr. Pradeep Kumar
12	Deepak Kala	JRF in DST sponsored project
13	Mehndi Goyal	JRF in ICMR sponsored project
14	Neha	DST INSPIRE
15	Priya Mittal	Project Fellow Project funded by NHMS.
16	Gajender Singh	Project Fellow Project funded by ICMR.
17	Vivek Verma	JRF
18	Charul Rathore	SRF

3.21 No. of students Participated in NSS events:

University level	1500	State level	50
National level		International level	

3.22 No. of students participated in NCC events:

University level	53	State level	13
National level		International level	

3.23 No. of Awards won in NSS:

University level		State level	
National level		International level	

3.24 No. of Awards won in NCC:

University level		State level	9
National level		International level	

3.25 No. of Extension activities organized

University forum	39	College forum			
NCC	3	NSS	4	Any other*	9

*** Details are given under tables 5.4 and 5.5**

3.26 Major Activities during the year in the sphere of extension activities and Institutional Social Responsibility

The University strongly believes that teaching, research, and extension are an integral part of higher education for enhancing the employability of its graduates.

The task of Institutional Social Responsibility is sensitized among students by holding workshops, interactions, field activities through Natural Social Service Scheme under the patronage of Dean of Extension Education and Dean Students Welfare. It played its role in societal responsibility (CSR) by organizing a host of activities in uplifting and awakening the surrounding population to bring them into the natural stream.

NCC Students

Marathon 2017

Candle March 2018

The following is the list of activities done on regular basis:

i. Blood donation camps
ii. Tree plantation
iii. AIDS Awareness Program
iv. Sexual Harassment Prevention Programs.
v. Cleaning of local springs in the neighborhood
vi. Campus on use of Solar Energy for cooking
vii. Painting competitions on an environmental issue
viii. Distribution of fruit and forest saplings to farmers for helping them to raise their earning and conservation of the environment
ix. Practical Training to local village women in food processing
x. Organization of Spring Flower Festival
xi. Village adoption for social upliftment
xii. Upgradation of a primary school in the neighborhood
xiii. A celebration of International Days-World Environment Day, World Forestry Day, World Population Day, World Women Day, World AIDS Day
xiv. Organize INSPIRE activities of Schools in the University campus

YouWeCan - Association started in 2016 for Cancer Awareness. Formal MOU was signed in 2017.Close to two dozen camps organized by HP, Chandigarh, and Punjab more than 2000 people are already screened for breast and oral cancer. Doctor teams. are sent from YWC and the volunteer students from Shoolini Campaigns against drug abuse and tobacco cessation have also been organized. Free health check-ups of housekeeping staff and women of Barog have been done.

Care and Share group visits various places like IAMD hospital which had a regular inflow of patients with muscular dystrophy. Students help to boost the morale of the patients and families and also support documentation and other requirements at the hospital. They also make regular visits to the local orphanage and leprosy home to spend quality time. They also have a very close association with the senior citizens of Solan where the students spend time with the aged people trying to help them to become tech-savvy. Recently, the students collected 300 kgs of old clothes during the **Week of Giving** and sent them to Delhi.

Prayas group which lays focus on children especially the underprivileged ones. This includes adopting the primary school in the vicinity. Students devote regular hours helping the children with their curriculum, extracurricular activities, health and hygiene, technical skills etc. The children celebrate several occasions together eg Children's Day Christmas Independence Day etc. Students have helped the needy children with books shoes warm clothing provision of fans etc.

Women Empowerment works to help the local community. The housekeeping staff is supported by this group. They also have regular programs on drug awareness domestic violence health and hygiene. A few fundraising campaigns were organized for women in need. Free medical and legal services are provided to them. Several programs for entertainment and motivating them are held.

Details of extension activities undertaken during the year are given under table 5.5 of this report.

Criterion – IV

4. Infrastructure and Learning Resources

4.1 Details of increase in infrastructure facilities:

Facilities	Existing	Newly created	Source of Fund	Total
Campus area	20.1 acres	----	-------	20.1 acres
Classrooms	30		_____	30
Laboratories	59	29	Fee & Research Grants	88
Seminar Halls	15	3	Fee	18
No. of important equipment's purchased (≥ 1-0 lakh) during the current year.				
Value of the equipment purchased during the year (Rs. in Lakhs)	199.74		Fee & Research Grants	
Others Open Air Theatre	1		_____	1
Adventure Camp	1		_____	1
Cineplex	1		_____	1
Indoor Sports Complex	1		_____	1
Faculty Club	1		_____	1
Daffodils (Guest House)	1		_____	1
Playgrounds	Basketball. Volley Ball, Badminton and Cricket pitch.			
Gymnasium	Central gymnasium in the indoor Stadium; an additional facility for boys and girls hostel			

4.2 Computerization of administration and library

The Yogananda Library of Shoolini University and all administrative functions are fully automated.

The library has evolved as a Multidimensional learning facility and transformed itself as a Knowledge Center, in keeping with the vision of the University.

The five-story building that houses the Knowledge Center is a state-of-the-art, architectural marvel using 'green' technology. With a naturally-lit central atrium, wooden interiors, spacious layout, topped by a designer lawn, the Yogananda Knowledge Center is an icon of the Shoolini University which can concurrently accommodate 300 students.

i. The library services use 'Pearl plus MySQL' based on KOHA software.
ii. The webpage including holdings, booking, and queries can be accessed through the University intranet
iii. Access to centrally subscribed research sites and other libraries can be accessed through a password generated access system.

Recent digital initiatives taken in the library are enumerated:

1. Full automation of library services with digital access referencing system
2. Digital linking of the Central Library and School libraries.
3. Electronic Access Control System and CC TV Coverage.
4. Creation of Analytics and Language Lab.
5. Introduction of E-newspapers and magazines.
6. Self Check-in/Checkout of Books.

Each school also maintains a library, which is an adjunct the main Library. In view of the central location of the Central Library, school libraries have been created as Wi-Fi Hot Spots, transforming them as 'Virtual Libraries' with access to various resources including LMS and KMS resources through the central repository. Notwithstanding, these libraries have essential reference material, copies of dissertations, theses, papers, and domain-specific projects.

Library Automation. Though the entire Library is Wi-Fi enabled, following are provided:

Total number of computers for public access	: 24
Total number of printers for public access	: 2
Intranet bandwidth for library	: 100 Mbps
Institutional repository	: Through Intranet

Participation in resource sharing networks/consortia: eUniv, EBSCO, DELNET, and Open Sources.

The list of Licensed Software is as follows:

Office Automation/ Application Software

i. Tally 9.0
ii. MS-Exchange Server 2007
iii. MS-Exchange Server 2000
iv. Exchange Server CAL OLP NIAE 2000
v. Microsoft FrontPage 2002 AE
vi. MS-Office 2016, 2013, 2010, 2007, 2003 & XP
vii. MS Access 2010
viii. MS Project 2010
ix. MS Outlook 2010

Operating System/ System Software

i. Windows Server 2008 R2 and 2003 R2
ii. Windows 7, 8.1 & XP
iii. MS- Windows 2012 server
iv. MS-Windows NT 4.0 Server
v. MS- Windows NT 4.0 workstation

Anti-Virus Scanners. Trend Micro Antivirus

A number of nodes/ computers with internet facility: 100 % with internet facility.

Any other. The University has connected all blocks and hostels by OFC to concurrently broadcast lectures, motivational movies etc.

Apart from the above, the institution has deployed the following IT facilities

i. Mail, Messaging (Microsoft/Gmail cloud for students and faculty)
ii. Web content filtering & caching proxy
iii. Gateway security & anti-spam

iv. Application servers on Linux and windows

v. DHCP and RADIUS protocols

vi. Library management services and online web catalog

vii. Many to Many Video-conferencing

viii. Helpdesk services

ix. Network security

x. Key management services and DNS

xi. Wi-Fi campus on 802.11n with fault tolerance and load balancing

xii. Open source Learning Management System - eUniv

xiii. Anti-plagiarism system

xiv. Virtual classroom and eUniv

Planned for future

i. Directory-based Authentication

ii. Timetable optimizer & smartcard-based real-time attendance management system

iii. Services & parent-services

iv. ERP system – Enterprise portal for student/ employees

v. Implementation of Open source tool for network management system

vi. Backup and Data Recovery

vii. IP Camera Surveillance

viii. Database services

ix. Endpoint enterprise antivirus

x. Asset and Inventory Control

4.3 Library services:

Particulars	Existing		Newly added		Total	
	No.	Value	No.	Value	No.	Value
Text Books	37128	59.62 Lac	2339	9.48 Lac	37128	69.10 Lac
Reference Books	3169		200		5169	
e-Books	150000		-		150000	
Journals*	9000	*	1000	*	10000	*
e-Journals		*15.09 lac is the recurring expenditure spend on newspapers /library journals/e-journals and magazines annually				
Digital Database	4	-	-	-	4	-
CD & Video	1800	-	-	-	1800	-
Others – Magazines	25	-	5	-	30	-
Newspapers	21	-	1	-	22	-

4.4 Technology up gradation (overall)

Particulars	Total Computers	Computer Labs	Internet	Browsing Centres	Computer Centres	Office	Depart ments	Others
Existing	363	6 Labs	105 mbps	21	60	40	60 (all)	
Added	10	---	395 mbps	-	-	4		
Total	373**	6	500 mpbs	21	60	44	60	

** As a policy every faculty member uses laptops for teaching and research – no's above are exclusive.

4.5 Computer, Internet access, training for teachers and students and any other programme for technology Upgradation (Networking, e-Governance etc.)

i. Online Library on "moodels"
ii. LMS system for Students and teachers
iii. myShoolini app for Android and IOS for faculty & Students
iv. Online attendance system for students and faculty

4.6 Amount spent on maintenance in lakhs: 1088.48

i) ICT	30.49
ii) Campus Infrastructure and facilities	433.64
iii) Equipment	199.74
iv) Others	424.61
Total:	1088.48

Criterion – V

5. Student Support and Progression

5.1 Contribution of IQAC in enhancing awareness about Student Support Services

The information about Student Support Services, available in the University, is given to students and all stakeholders through the University website.

The IQAC enhances the awareness about the Student Support Services through a multi-level system that focuses on overall development of students in a holistic way.

Orientation program

This is conducted for all the new students before the formal commencement of classes. The University has three levels of well-defined orientation system as depicted in Fig. 5.1

University Level

i. Introduction to the academic rules and regulations of the University.

ii. The issue of Identity cum ERP Smart Cards and explanation on its, multi-purpose usage.

iii. Personnel of the Anti-ragging and grievances redressal committees are introduced. Dean Student Welfare complimented by Dean Resident students supports the students in extra-curricular development through NSS, sports, cultural, social and extension activities etc.

iv. Introduction to hobby clubs.

v. Foreign students are provided with all the basic facilities and support to adjust to the new environment. They are assigned a faculty as well as a student mentor.

vi. Meditation and PT classes for physical and mental fitness of the students.

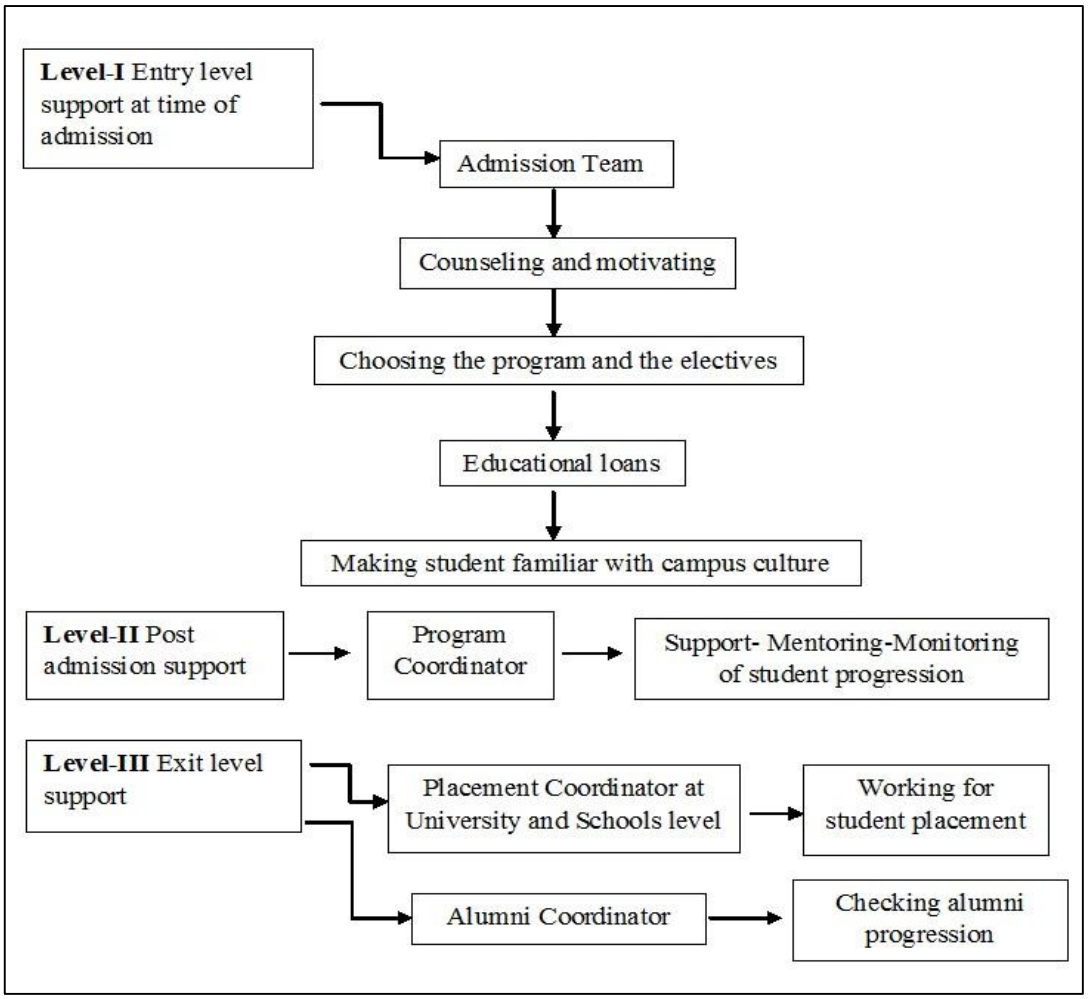


Fig. 5.1 Student Support System

Student Support at School Level

i. Introduction to all faculty members.
ii. The administrative staff helps students with registration formalities.
iii. The team also provides the day to day information on a timetable, examinations, guest lectures, special events and holidays etc.
iv. Faculty mentor is assigned to each student. Mentors supervise academic performance and provide psychological support.
v. Mentors also guide the students to take up the research projects and other initiatives like organizing events and participation in extracurricular activities etc.

Hostel Level

i. Introduction to the hostel rules and regulations of the University.
ii. Hostel students are also provided all support by the wardens to adjust to the new environment.

Placement and Career Development Cell

i. This has been established in the University where students get guidance on job opportunities. The following are ensured.

Placement Drives: Facilitates 'on campus' placements.

Placement opportunities: The students are offered placement opportunities for two years after their completion of the degree.

Alumni Association: Regular interactions with students.

Health Care

There is a well-equipped health center with two full-time doctors, to provide basic health care services. Apart from healthcare services, doctors have been counseling students on physical and mental fitness. The Lady Doctor is part of the counseling cell to address the social and psychological aspects.

5.2 Efforts made by the institution for tracking the progression

Guidance and monitoring of the students' progress are performed regularly through a well-defined mentor-mentee program.

The academic support structure at Shoolini University begins as soon as students are admitted and continue throughout their stay at the University and even beyond. The entry-level support system involves a team of trained counselors and members of the faculty who help the students

get acquainted with the academic structure and expectations. The support system at the post-admission phase is monitored by respective program coordinators and deans; other faculty members contributing to the process. There is a placement team headed by Director Placements that provide exit level support. Post exit, the Alumni Coordinator keeps a track of the Professional progression of Shoolini's students.

The offices of the Dean Student Welfare and the Dean Resident Students provide students with all forms of infrastructural support they require for their non- academic pursuits. Adequate opportunities are provided to the students to hone soft skills and develop different facets of their personality. Regular sessions are conducted by experts to help students practice Yoga and meditation. Physical Training and Meditation being mandatory for first year UG students of the Engineering streams.

5.3 (a) Total Number of students

UG	PG	Ph. D.	Others
535	497	141*	18 M.Phil.

*Total number of scholars pursuing Ph.D. as on 30th June 2018

(b) No. of students outside the state 244

(c) No. of international students 10

No	%
564	50.72

Men

No	%
548	49.29

Women

Last Year (2016-17)						This Year (2017-18)					
General	SC	ST	OBC	Physically Challenged	Total	General	SC	ST	OBC	Physically Challenged	Total
905	100	64	84	0	1153	891	82	63	76	0	1112

Demand ratio 1.1.5 Dropout % Less than 1%

5.4 Details of the student support mechanism for coaching for competitive examinations (If any)

University has incorporated many courses in the regular curriculum like courses on Personality Enhancement, Aptitude and analytical skills, NET/ GPAT/ GATE, AMFI (Association of Mutual Funds in India) Certification, IRDA (Insurance Regulatory and Development Authority) Certification etc. which has helped many students to clear competitive exams.

The Shoolini Study Circle is a common platform for every student to know about competitive examination and discussion etc.

Coaching classes are also offered for NET/SET, GATE and GPAT and guidance is provided for competitive examinations. Following steps have been taken in this regard:

1. Curriculum: It is designed to meet the requirements of NET/SET/GATE/GPAT and other competitive examinations.
2. Coaching classes: Coaching classes for NET examination and other competitive tests like banking and insurance etc. are conducted as a result many students have cleared various competitive exams.
3. Value-added Courses: Current Affairs, General Awareness, and Aptitude Development have been incorporated into the curriculum of some programs like MBA, B. Com (Hons), BBA and B.Tech.
4. Online study material: Course material is thereafter put on the University net for wider circulation.
5. No. of student's beneficiaries | 102 total |

5.5 No. of students qualified in these examinations

NET	5	SET/SLET		GATE	3	CAT	
IAS/IPS etc		State PSC		UPSC		Others	7

5.6 Details of student counseling and career guidance

Students are provided counseling and guidance at multiple levels – from the time they are admitted until they graduate from the University.

- Centralized Admission Cell guides all new students to help them familiarize with the campus facilities and University rules.
- Students get assigned to a faculty mentor in groups. The mentor provides guidance to his/her mentees in both academic and personal matters till the time individual students got placement.
- In addition, project guides are also nominated who guide the students for their project work.
- The Dean of Student Welfare, Dean of Resident Students' and Dean Academic Affairs oversee all initiatives and actions related to students' safety and welfare in the campus and hostels.
- The 'Placement and Career Development cell' provides counseling and facilitation for placement and career development of the students.

- Alumni associations and various Clubs have been formed with the active participation of ex-students and faculty for students to guide and familiarize them with the requirements and expectations of the industry and the corporate world.
- Office of International Affairs counsels and facilitates students to participate in exchange programs with global universities, and also to enroll in their internship and PG/ Doctoral programs.

Faculty mentors are appointed for every 20-30 students. Placement Coordinator for every department and a Central Placement Cell that take care of placement and career counseling of the students University has also established "Disha" counseling cell to address social and psychological aspects of the students, designated counselor visits the university every fortnight for individual and group counseling which has benefitted students. University has also started an Open Elective Introduction to Psychology which is very popular among students.

Ex-Chief Election Commissioner of India "Navin Chawla" giving a lecture

No. of students benefitted | All |

5.7 Details of campus placement

Campus placement is the most important aspect of student career progression and mainly focuses to help students identify relevant industry they aspire to build their careers with. Students are counseled regularly by expert faculties in accordance with their career aspirations in respective domains.

The Placement Cell headed by a Director Placement along with core team with representatives of individual departments executes all placement related activities like Industry visits, imparting professional training, inviting best of the class companies in the industry, joining and post joining assistance is also provided to the students.

Various departments through student representatives involved in the placement activities thus offering an impartial platform to provide the best of the opportunities to every deserving individual.

Activities like corporate ethics workshops, professional grooming, student mapping, GD/PI skills & role plays to help students understand the expectations of the industry.

Placement Session is typically divided into 'Placement Weeks' which are scheduled for November, February & March for a particular academic year. An exclusive 'Pre-Placement SPRINT' which is an intensive training workshop is also planned before the beginning of a placement week to enhance student's skill set.

University has a very firm & strong Alumni Cell who keeps a track of all alumni. It also provides better alternate available career options post placements. All placements related information are regularly updated on the website.

On Campus			***Off-Campus***
Number of Organizations Visited	Number of Students Participated	Number of Students Placed	Number of Students Placed
118	612	560	22

5.8 Details of gender sensitization programmes

The University promotes a gender-sensitive environment. In that, the following are in place:

1. Conducting gender-related lectures by counselors and legal cell of the university for students and faculty on sexual harassment and its prevention.
2. Creation of a cell to deal with issues related to sexual harassment.
3. A Sexual Harassment Prevention Committee is in place as per the direction of the Hon'ble Supreme Court.

5.9 Students Activities

5.9.1 No. of students participated in Sports, Games and other events

State/ University level | 520 | National level | 17 | International level | 2 |

No. of students participated in cultural events

State/ University level | 1940 | National level | 27 | International level | |

Participation and Achievement in Sports, extracurricular and cultural activities by students are tabulated here:

Table 5.1 Outstanding Performance of Student in Individual sports at National level

S. No.	Name	Department	Game/Sport	Venue	Event	Achievement
1	Palvinder Thakur	M.Sc Math	Korfball	Kurukshetra	Senior National	2nd Position
2	Vishal Sharma	M.Sc Math	Korfball	Kurukshetra	Senior National	2nd Position
3	Devesh	B.Tech Biotech	Body Building	Delhi	Senior National	7th position (All India)
4	Vishal Sharma	M.Sc Chem.	Korfball	Kurukshetra	Senior National	2nd Position
5	Palvinder Thakur	M.Sc Maths	Korfball	Kurukshetra	Senior National	2nd Position
6	Devesh	B.Tech Biotech	Body Building	Jammu	Mr. J & K	1st Position
7	Devesh	B.Tech Biotech	Body Building	Chandigarh	Junior National level Championship	3rd Position
8	Vibhu Shukla	B.Com	TableTennis	Solan	National level Table Tennis Boys (team event)	3rd Position

Table 5.2 Outstanding Performance of Student in Individual sports at State level

S. No.	Event /Tournament	Venue	Achievement
1	Badminton(Boys /Girls	Baddi University	WINNER
2	Table Tennis (Girls)	Baddi University	Runner-Up
3	Body Building	Jammu	WINNER

Table 5.3 Sports events organized in campus during the year 2017-18

S. No.	Event /Tournament	Date	Event
1	Mr. Shoolini University (BODY BUILDING)	March 2017	Boys
2	Inter-Department Basketball Tournament	March 2017	Boys/girls
3	Inter-Department Volleyball Tournament	April 2017	Boys
4	Inter-University Athletic meet	April 2017	Boys/girls
5	Inter-Department 5 side Football Tournament	May 2017	Boys
6	Inter-University Badminton/Table Tennis tournament	May 2018	Boys/girls
7	Inter Hostel Cricket Tournament	August 2017	Boys
8	Inter Hostel Badminton Tournament	September 2017	Boys/girls
9	Marathon 17	5th September 2017	Boys/girls
10	Inter-Department Badminton Tournament	October 2017	Boys/girls/faculty
11	Chess/Carom interdepartmental	October, 2017	Boys/girls/faculty
12	YouWeCan Cricket Tournament	February 2018	Boys/Faculty
13	Inter-Department Cricket Tournament	March 2018	Boys/Faculty
14	Inter Hostel Badminton/Table Tennis Tournament	March 2018	Boys
15	Inter Hostel chess/carom tournament	April 2018	Boys
16	National Junior /cadets Kickboxing championship	June 2018	Boys/girls
17	Induction Football tournament	August 2018	Boys/girls

18	Marathon 18	5th Sept 2018	Boys/girls
19	Inter Department Badminton Tournament	25th Sept, 2018	Boys/girls/faculty
20	Inter Department chess Tournament	21st Nov, 2018	Boys/girls/faculty

Padma Shri Awardee "Shri Yuvraj Singh" inaugurated Yuvraj Singh Cricket Stadium

Table 5.4 List of cultural events organized in the campus in 2017-18

Cultural Events		
S. No.	**Cultural Activity / Events**	**Date**
1	Shoolinis Got Talent - Dance Competition by Saksham Club	15th September 2017
2	Cultural Show by Housekeeping Staff of Shoolini by women empowerment group	19th September 2017
3	Manchtantra 2017	5th to 7th October 2017
4	Cultural Show for Alumni	7th November 2017
5	Visit Primary School by Prayas Group	25th November 2017

6	Christmas Celebration @ Shoolini	18th December 2017
7	Zumba @ Shoolini University	26th February 2018
8	Women's Day Celebration	8th March 2018
9	Flash Mob @ Solan Mall for Moksha 2018	20th March 2018
10	"Beat IT" Dance Competition by Saksham Club	1st May 2018
11	Labour Day Celebration	1st May 2018

Table 5.5 Extension activities organized in 2017-18

List of Extension Activities		
S. No.	**Cultural Activity / Events**	**Date**
1	Week of Welcome	6th August 2017
2	Quiz India (Quiz on Narendra Modi App)	15th August 2017
3	Court Martial - Drama did by Artist from Delhi	25th August 2017
4	Shoolini Swach Bharat Marathon	5th September 2017
5	Visit Poanta Hospital by YouWeCan	23rd September 2017
6	Visit Civil Hospital Manimajra by YouWeCan	24th September 2017
7	Fitness Bonanza @ Shoolini	27th September 2017
8	Week of Giving	1st to 7th October 2017
9	Swach Bharat Abhiyan on (NSS)	2nd October 2017
9	Poster Making Competition on International Day of Girlchild by Satrangi Strokes	12th October 2017
10	Rangoli Competition	13th October, 2017
11	Visit IAMD	23rd October 2017
12	Daan Utsav	3rd November 2017
13	Children's Day Celebration	14th November 2017
14	Salad, Sandwich and Chaat making competition by Cooking Club Bavele Bavarchi	17th November 2017
15	Cancer Awareness Drive on World Aids Day in Campus (NSS)	1st December 2017
16	Cancer awareness drive in Shimla (NSS)	10th December 2017
17	Visit "WeCan" in Kolkata (A Centre being run for Special Children)	4th January 2018
18	Nukkad Natak done in Solan on World Cancer Day	4th February 2018

19	Painting Exhibition in Pine Court @ Shoolini	5th February 2018
20	Yatin Kumar - a Shoolinian awarded as an outstanding Campus Ambassador at UN	17th February 2018
21	Visit & Talk by Mr. Mohit Chawla (SP Solan)	20th February 2018
22	Click & Win Photography Competition	22nd March, 2018
23	Flash Mob @ Nauni University	16th March, 2018
24	KTM Stunt Show @ University	21st March, 2018
25	Flower Fest @ Shoolini University	18th March 2018
26	Visit & Motivational Talk of Er. Rohit Thakur (Muscular Dystrophy Patient)	19th March 2018
27	Blood Stem Collection	5th April 2018
28	Cancer awareness & detection Camp in Govt. Hospital Chandigarh by YouWeCan Group	15th April 2018
29	Candle March did in Solan (Justice for ASIFA)	17th April 2018
30	Visit Primary School by Prayas group	21st April 2018
31	Blood Donation Camp (NSS)	8th May 2018
32	An Oath ceremony to Promise Safety on Roads	13th May 2018
33	Collection of Old Clothes, Shoes, Books did for poor village students	17th May to 1st June 2018
34	Visit Hospital for Muscular Dystrophy	17th May 2018
35	Visit Primary School by Prayas group	23rd May 2018
36	Rs. 1,21,160 Collection done for Mr. D.B Singh Suffering from Stomach Cancer	30th May 2018
37	Talk (Let every day be a No Tobacco Day) in PDH with University Drivers & Conductors	31st May 2018
38	Cleanliness Drive in and around Shoolini University	5th June 2018
39	Shimla International Literature Festival - Panel Discussion	23rd June, 2018
40	Annual CLS Short Story Competition	9th June 2018
41	Visit IAMD	10th June 2018
42	Spread the word campaign #Swach Shoolini #Swach Solan on Shoolini Fair	19th June 2018

Students at International Literature Festival Fest held at Shimla

Moksh

Flower Fest

Interschool Sports Competition

BizQuiz Competition

5.9.2 No. of medals /awards won by students in Sports, Games and other events

Sports: State/ University level | 3 | National level | 8 | International level | 2 |

Cultural: State/ University level | 3 | National level | 1 | International level | |

Table 5.6 Awards won by students in other events

S. No.	Student Name	Event	State/National/International
1	Mr. Vivek Soni	Awarded Gold prize in Seoul International Invention Fair 2017	International
2	Ms. Jasmine Kaur	Awarded best student in the Department of Food Science & Technology, Gachon University, South Korea	International
		Awarded Australian Scholarship to pursue Ph.D. in Griffith University, Brisbane, Australia	

5.10 Scholarships and Financial Support

Particulars	Number of students	Amount
Financial support from institution	646	1,73,91,203
Financial support from government	56	80,000 to 1,20,000 per student
Financial support from other sources	-----	-----
Number of students who received International/ National recognitions	27	Up to 15 lakh per annum per student

5.11 Student organized/ initiatives

Fairs: State/ University level | 12 | National level | | International level | |

Exhibition: State/ University level | 15 | National level | | International level | |

5.12 No. of social initiatives undertaken by the students | 9 |

The University's neighborhood student network, directed at the socio-economic welfare of stakeholders is organized by Dean Extension in collaboration with Dean Students Welfare. The focus of activity is on villagers who had sold the land to the University for the development of the campus and who subsequently constituted the labor force. In addition, the University has selected Panti village in Shimla District where fruits of the horticultural revolution in Himachal Pradesh has not reached due to the backwardness of the region. Free saplings of fruit and forest species are being provided to them along with the technology in collaboration with the University of Horticulture and Forestry. This activity that has taken place over the last four years has yielded fruit and reached the markets.

Institutional social responsibility is also carried out in these adopted villages by the students and the faculty by organizing the following activities:

You We Can

This program has volunteers from all schools who support teams of the Yuvraj's NGO. You We Can is running cancer detection camps in H.P. with a team of 200 + volunteers. They also run blood donation camps on the campus regularly and so far more than 20 such camps have been organized and over 2500 people have been screened for breast and oral cancer.

Care & Share

Students are regularly visiting care & share center where senior citizens get together regularly. Our volunteers organized screening camps & yoga sessions for them apart from regular entertainment programs. They also conducted regular classes for the senior citizens to help them go digital and use social media- (Team size 25)

Muscular Dystrophy

Our Volunteers visit this center almost every day and assist the patients who are afflicted with this disease. Another significant contribution is their support in handling paperwork and correspondence for the center which they manage efficiently. (Team size 50)

Women Empowerment

This group supports the housekeeping staff and the ladies in the vicinity by holding regular medical camps and creating awareness on health issues related to women. Free legal aid, distribution of medicines, awareness on better practices in farming etc. is done regularly. Enrolling women for govt. schemes were also undertaken. (Team size 30)

Prayas

This group interacts regularly with school children of all ages. Apart from regular health, hygiene and fun activities the students do special sessions on menstrual hygiene for adolescent girls and awareness sessions on 'Good touch and bad touch' are conducted.

Swachh Shoolini

This team is actively engaged in helping to keep not only the campus but nearby areas also clean. Shopkeepers in the adjoining areas are counseled on the garbage disposal and ill effects of plastic. The team regularly conducts cleaning campaigns to ensure cleanliness in and around campus. (Team Size 250)

Adoption of neighborhood Schools Primary and Senior Secondary

Special classes by students and teachers, Cleaning the environment of the schools, Involvement of School students in the cleaning of freshwater springs, Celebration of special days, Personal hygiene awareness, organizing visits of students to the University campus, Guidance on career counseling are few activities done by the students.

Diagnose and Design the farmlands

Organization of Kisan Ghostis Meetings, Guidance for new farm technologies and quality seeds, visits of the farmers to the University and providing technical guidance on food processing.

Enhance Employment and Socio-economic Upliftment (only for those who sold their lands to the University)

Promotion spiritualization of available money for business pursuits relevant to the University- construction of a hostel for students to University; construction of paying guest accommodation and restaurant for the students. These are now operational. Free ship to all students who are eligible to seek admission to the University. Seek their participation in all socially oriented activities of the University.

5.13 Major grievances of students (if any) redressed:

Redressal of grievances is done at multiple levels – both at the central and school level:
Grievances could also be addressed directly at the University level to the Dean Student Welfare and Dean Resident Students.

At the school level, grievances from students are redressed through the medium of Mentor-Mentee system as also by direct representation to the program coordinator and Head of the School.

Students can also mail their grievance at Care@shooliniUniversity.com for the attention of the Central Student Grievance Cell. The identity of the student is kept confidential in all such cases.
Grievances cell is in place for Prevention of Sexual Harassment of Women Staff and Students.
All grievance issues of the students for the academic year 2017-18 were addressed at the School level only; no issues were reported to the grievance cell.

Criterion – VI

6. Governance, Leadership, and Management

6.1 State the Vision and Mission of the institution

Vision

'To be a top 200 global university by the year 2022'

The vision behind Shoolini University of Biotechnology and Management Sciences is to provide students with an opportunity to learn from and interact with top-most experts in their field of expertise. Efforts are made develop Shoolini University into an internationally recognized center of research and education. The University's model is to blend expertise in biosciences with the principles and practices of engineering and business management to create exceptionally skilled human resource for future leadership positions in academia and industry. Some of India's and the world's most renowned academicians, scientists and business managers are already collaborating with the institute to make this vision a reality.

In a step toward fulfilling the vision of being amongst the top 200 universities by the year 2022;

Mission

1. To provide the ideal environment for higher learning with a serene & beautiful campus, state-of-the-art facilities & a creative atmosphere conducive to excellence in pursuit of knowledge.
2. Be a knowledge leader in our selected specialties in the academia, and provide outsourcing and consultancy services to industrial/ organizational setups in this domain
3. Encourage our students to be "balanced specialists", who excel in their own field, while being well-rounded through personality- development & extra-curricular activities.
4. Develop students who will be recruited by the best employers, and who will contribute to the economic vitality of the state & country.
5. Create an environment to attract top faculty, and build a pool of academic leaders by providing the right ambiance and resources.

6.2 Does the Institution has a Management Information System

Yes, Shoolini University has a well-designed Management Information System and has developed in-house enterprise-wise information on intra-net known as myshoolini.

It is the most comprehensive source of information on academic and non-academic matters, programmes and policies of relevance to students, faculty, and staff members. Myshoolini describes the code of conduct and fundamental standards stating the expectation from all key stakeholders and interested parties. All university Regulations and Policy Guidelines are published and informed to everyone through the mail.

Few reports generated on myshoolini are Report of Enrolled Students, Registration analysis, Domain/Open Elective Courses: Students & faculty attendance, session plans and Internal/External marks. Time Table: Faculty Allotment, Consolidated timetable report, class allocations

Apart from this Shoolini University has developed eUniv portal to supplement classroom teaching wherein syllabus and lecture plans, video lectures are developed and provided to students for all courses taught in the university. Students can access this with login and password provided at the time of registration. eUniv also acts as a platform for online examinations, class discussions, case studies etc.

Feedback from various stakeholders is also taken and analyzed. The reports /analysis are disseminated horizontally and vertically and are incorporated in the institutional review, planning and decision making. Periodic reviews are conducted at the institutional domain and university level where the analyzed and interpreted data is considered for the effectiveness of the research function and the suitability and usefulness of the data generated.

The results of the analysis and audits are informed to the concerned authorities and Management through Management Review Meetings and One to one interactions periodically.

6.3 Quality improvement strategies adopted by the institution for each of the following:

6.3.1 Curriculum Development

The University takes feedback and suggestions for the curriculum development and revision process by incorporating inputs from the potential employers, scientists, alumni, and other eminent personalities who visit the campus during placement week, workshops, conferences, SPRINT program, and Guru Series talks. Boards of Studies constituted at School level include external experts from industry and academics to structure and revise the curriculum for improving the employability of students.

Lecture Schedules/Plans are prepared at the beginning of the semester and uploaded on eUniv.

Placements of the University's students have significantly improved through regular fine-tuning of the curriculum.

6.3.2 Teaching and Learning

Shoolini University is committed to excellence in all aspects of learning, transmission of knowledge and developing skills and most importantly, to encourage free thinking to address complex challenges.

There is a centralized body headed by the Dean Academic Affairs to review the teaching-learning process and conducts an academic audit on annual basis. As per the recommendations of an academic audit carried out at different levels, following initiatives have been taken by the University to improve teaching, learning, and evaluation:

1. Case study method adopted wherever applicable.
2. Enhancing employability through skill enhancement, outcome Driven curriculum and modern pedagogy.
3. Personal development of students through different modules, such as tutorials, mentorship, computer literacy, meditation, communication and language Proficiency etc.
4. Faculty development programmes
5. Preparation of detailed lecture schedules/plans
6. Online examinations started.
7. eUniv initiative for round the clock learning as a supplement to classroom teaching.
8. Feedback system developed for various stakeholders
9. Course completion undertaking by each faculty.
10. Online library services.
11. Publications in SCOPUS indexed journals and progress report.
12. Presentations in each semester to improve the quality of research.
13. Lab manuals prepared.

6.3.3 Examination and Evaluation

1. Online conduction and submission of question papers, assignments, quizzes etc.
2. Minimum attendance criteria for appearing in the end term exam is strictly adhered to.
3. Open book exam introduced
4. CBCS 10-point grading scale for examination introduced.
5. Centralized Question paper setting strong room made operational.
6. Fully automated, paperless examination form filling system introduced.
7. The format of question papers, distribution of marks and evaluation process is informed in advance to all Deans/HOS's/Program directors and students.
8. Results are declared 1-2 weeks after the exam.

9. Results are immediately uploaded to the website and "myShoolini "dashboard on the same day.

6.3.4 Research and Development

Shoolini University is located in the Himalayas which has a fragile ecosystem and has unique requirements. This aspect is given the highest importance while designing research and development policies. The University has, therefore, adopted a research-driven model which seeks to blend expertise in life sciences and engineering with the principles and practices of business management and blends it with industrial and societal needs for the sustainable development of the Himalayas. The University's research philosophy, therefore, rests upon the following verticals:

1. Develop excellence in scholarly standards with a focus to move into the club of internationally reckoned centers of research and education.
2. Harnessing Himalayan biodiversity, its conservation, and sustainable management.
3. Develop cutting-edge technologies.
4. Foster inter institutional collaborations.
5. Focus on niche areas like health care, food, energy conservation and generation, Nanotechnology etc.
6. Conduct quality research, encourage publications in journals of global repute and file patents

The University regularly conducts workshops, training and sensitization programs, to promote research culture in the University.

Steps that have been initiated for promoting research are enumerated below:

Advancing Funds for Sanctioned Projects: Many a time, there is a substantial delay in receipt of funds. Therefore, once the sanction letter from the funding agency has been received, advance funds are provided.

Providing Seed Money: At the time of its inception, research labs, instrumentation labs, workshops with basic infrastructure was set up in all Schools by the University to facilitate research. In addition, the University also provides seed money to faculty members to support research projects.

S**implification of procedures for sanctions/ purchases by investigators:** The procedure for sanction/purchase by investigators is simplified in the University.

Autonomy to the principal investigator/coordinator for utilizing overhead charges: The Principal Investigator/Coordinator is given full autonomy for utilization of overhead charges.

Timely release of grants: Funds are transferred to the project head as soon as they are received from the funding agency.

Timely auditing: Audits are done regularly on time at the end of the financial year

Submission of utilization certificate to the funding authorities: The utilization certificate is submitted timely.

6.3.5 Library, ICT, and physical infrastructure/instrumentation

In spite of being young in age, Shoolini University has a state-of-the-art infrastructure that compares favorably with some of the best institutions in India. The University's commitment towards quality education can be partly visualized if one visits any of the 105 laboratories that exist with the purpose of promoting learning through teaching, research, workshops, computing, or studio work. The University prides itself in its achievements thus far, and endeavors to march in its pursuit of providing a world-class learning environment and producing the leaders of the future.

Conventional teaching has been supplemented and augmented by the use of latest technology. ICT enabled classrooms to facilitate teachers to demonstrate problem-solving techniques. The library is well stocked with approx. 1.93 lac book titles in the physical and electronic form. The University subscribes to around 9,000 e-journals through USA based EBSCO and DELNET databases. These resources allow students and researchers to quality research resources, in their respective areas of research. The multi-functional Enterprise Resource Planning (ERP) system coupled with the enhanced Learning Management System (LMS) and planned Knowledge Management System (KMS) (developed in-house adapting freeware) has/ would provide an interface to teachers and the students to take the teaching-learning processes to a new level.

The entire University is connected through a high bandwidth enabled wireless network and auditoriums are linked through intranet as well as the internet with video- conferencing facilities. Such a technology savvy learning environment allows students to extend and explore their research interests on a 24x7 basis. The iconic Yogananda library building has been transformed into a multi-dimensional facility and it stands out, not only as an architectural splendor but also as the pulsating heart of the University, extending knowledge on a click. At Shoolini University, learning is not limited to classrooms and laboratories. The latest addition is the Dr. APJ Abdul Kalaam Seminar Complex, which has two state-of-art auditoriums and three seminar rooms, with a total capacity of over 400. In addition, there is a Cineplex with a seating capacity of 150 that offers high-quality audio and visual experience to its audience. The University offers its students excellent indoor and outdoor facilities to pursue a sport of their inclination and choice. The Open Air Theatre, auditoriums,

cafeterias, open spaces nestled within the forests and the hills offer students a sylvan experience of University life that is a hallmark of the University.

6.3.6 Human Resource Management

The University is proactive in developing its faculty members in order to meet the requirements of a modern curriculum through various Faculty Development Programs, training sessions, workshops, conferences, and visits to other institutes and frequent interactions with the experts from various fields of specialization.

Shoolini University follows a systematic process to ensure the availability of highly specialized human resources. Depending on the revision of the curriculum, requirement of knowledge domain specialist is identified at the School level which is then proposed to the registrar for approval from Vice- Chancellor and University Management. Once the requirement is approved, the recruitment process begins with advertisements of the posts in newspapers and University website giving the detailed job description and specifications. Applications received are scrutinized based on the compatibility of the candidates. Shortlisted candidates appear for a personal interview before the expert panel, including external subject experts, constituted by the University.

Initiatives taken to strengthen human resource include:

1. To have an open system of grievance handling for faculty and staff.
2. To analyze the issues raised during the exit interviews for revision in the procedures and guidelines of the university.
3. To ensure the happiness quotient among the faculties and staff.
4. To continuously have faculty development programmes to create awareness and increase the knowledge level of faculty in university regulations and guidelines.
5. To create welfare schemes for faculty and staff.
6. To periodically conduct Surveys, Faculty Attrition analysis, Exit Interviews Analysis.
7. To continuously improve the HR Practices and processes based on the feedbacks and adopting the International best practices

6.3.7 Faculty and Staff recruitment

Human Resource is an important aspect of the growth of any higher education institute. University makes special efforts for recruitment and retention of quality faculty. The desired

Profile of the faculty at all levels has clearly been defined. The positions are advertised through print and electronic media. The impact of the change has been clearly visible through larger interest among prospective faculty to join Shoolni University. A meticulous process of evaluation that includes seminar presentation and personal interviews with a carefully chosen panel of experts is adopted. To provide impetus to the effort and facilitate selection and induction of highly qualified faculty members at the entry and higher levels, w applications are entertained throughout the year. Internal promotions are also done during the annual appraisals.

6.3.8 Industry Interaction / Collaboration

Shoolini University recognizes the importance of providing international, industrial and corporate exposure to its students and faculty. Frequent industry exposure through industrial visits and lectures by industry experts are a regular practice. The development plans in this direction include:

i. Expansion of the University's network and consolidate linkages.

ii. Focus on partnership and participative cooperation.

iii. Expand the scope of consultancy to provide the industry scientific solutions for their growth.

iv. Strengthen the mentorship program through industry mentors both for students and faculty

As part of international tie-ups with various organizations, Shoolini University has an exchange program for students and the faculty to pursue studies and undertake research with universities, outside the country. However, the University plans to strengthen and collaborations and tie-ups with universities across the globe.

6.3.9 Admission of Students

The University has an Admissions Committee having representatives of each faculty under the chairmanship of the Vice-Chancellor which formulates the guidelines for admissions and reviews the admission process and Profiles of admitted students on an annual basis. The Committee has the mandate to monitor and ensure adherence to rules and regulations for admissions, as specified by regulatory bodies, both for eligibility criteria and conduct of the entrance tests. The University has put in place 'single window counseling' for prospective students and parents relating to matters concerning admissions and the facilities being made available.

On the other hand, analysis of admissions is conducted periodically so as to make changes to draw students from all sections of the society. As a result of these strategies, admissions in the University has been on the rise progressively. Amongst the sixteen private universities in the state, Shoolini University attracts the highest number of students.

In order to ensure the required publicity proper advertisements are issued in local and national newspapers, TV Channels, FM Radio, University's website, and also through handbills and inserts in newspapers and outdoor hoardings. University publishes annual prospectus (information brochure) providing details of all courses with their eligibility criteria and elaborating the admission procedure, as also the facilities available in the University. All admissions are made as per the guidelines of the Himachal Pradesh Private Educational Institutions Regulatory Commission/ PCI/ UGC/AICTE. List of all admitted students for each program is posted on the University's website and the Schools' notice boards. The University does not have any Management quota.

6.4 Welfare schemes for

Teaching	Yes
Non-teaching	Yes
Students	Yes

All employees have benefitted out of the welfare schemes as enumerated below:

i. Health insurance.
ii. Provision of medical leave and on-campus medical facilities.
iii. Exclusive facility for women in women center, including a crèche.
iv. Subsidized transportation.
v. Employees Provident Fund.
vi. Fee concession to the wards.
vii. Incentives for higher qualifications/ generating research grants.
viii. Special facilities for differently-abled being progressively built up

The Dean of Student Welfare, Dean of Resident Students' and Dean Academic Affairs oversee all initiatives and actions related to students' safety and welfare in the campus and hostels.

Dean Student Welfare complimented by Dean Resident students supports the students in extra-curricular development through NSS, sports, cultural, social and extension activities etc.

Table 6.1 Student Scholarship Schemes

Details of Scholarship			
Sr. No.	**Type of Scholarship**	**Amount**	**Remarks**
1	Single Girl Child (Income Below Rs 5 lakh)	Equivalent to 10% of Tuition Fee/Year	Scholarship to continue subject to 75% class attendance
2	Sibling Scholarship (Income Below Rs 5 lakh)	Equivalent to 10% of Tuition Fee/Year	
3	Single Parent (Mother) Child	Equivalent to 10% of Tuition Fee/Year	
4	Merit Scholarship for all Under Graduate programme based on Class XII Board exams.		
	A) All-State Education Boards 85-89% Marks 90-95% Marks 95% & above	 Equivalent to 20% of Tuition fee for one year only Equivalent to 50% of Tuition fee for one year only Equivalent to 75% of Tuition fee for one year only	
	B) National Education Boards 90-95% Marks 95% & above	 Equivalent to 50% of Tuition fee for one year only Equivalent to 75% of Tuition fee for one year only ·	
5	Merit Scholarship for Post Graduate Programme		
	A) For MBA/PGDBM/Executive MBA Programmes	For MBA total budget of Rs 5 Lakh given to Dean MBA for decision.	
	B) For other Post Graduate Programmes +85% marks	Equivalent to 15% of Tuition fee for one year only	
6	Merit-cum-Means Scholarship	To be decided by a committee of the Foundation for Life Sciences & Business Management	
7	For Ph.D. Scholars	Five University Assistantship equivalent to full fee	

*University is committed to seeking the best candidates without limitations of their financial backgrounds. Therefore, we follow a **Need-Blind admission policy**, where the University provides support, even up to full scholarship, based on each individual's specific financial need.

6.5 Total corpus fund generated 3063.59 Lakhs as on 31 March 2018

6.6 Whether annual financial audit has been done [√] Yes [ ] No

6.7 Whether Academic and Administrative Audit (AAA) has been done?

Audit Type	External		Internal	
	Yes/No	Agency	Yes/No	Authority
Academic	ISO 9001:2008	CSIO	√	IQAC & Dean Academic Affairs
Administrative	ISO 9001:2008	CSIO		

6.8 Does the University/ Autonomous College declare results within 30 days?

For UG Programmes	Yes	√	No	
For PG Programmes	Yes	√	No	

6.9 What efforts are made by the University/ Autonomous College for Examination Reforms?

i. A minimum attendance criterion for appearing in the end term exam is strictly adhered to.

ii. Online conduction and submission of question papers, assignments, quizzes etc.

iii. Open book exam introduced

iv. CBCS 10-point grading scale for examination introduced.

v. Centralized Question paper setting strong room made operational.

vi. Fully automated, paperless examination form filling system introduced.

vii. The format of question papers, distribution of marks and evaluation process is informed in advance to all Deans/HOS's/Program directors and students.

viii. Results are declared 1-2 weeks after the exam.

ix. Results are immediately uploaded to the website and "my shoolini "dashboard on the same day.

6.10 What efforts are made by the University to promote autonomy in the affiliated/constituent colleges? **Not Applicable**

6.11 Activities and support from the Alumni Association

Shoolini Alumni Association was constituted to create a platform for students who have passed out to join hands with the University to support its vision and contribute by working together. Though the platform has still to meet its objectives since the University is still new and its alumni still at junior levels. Objectives kept in mind before the constitution of Alumni Association is given; these are likely to show results in subsequent years:

i. To maintain a comprehensive database of Shoolini Alumni.
ii. To identify and promote alumni achievements and enhance the credibility and reputation of the University.
iii. To keep the Alumni involved with the University through interaction programs, events and assist in placements.
iv. To keep the Alumni engaged with the University through Social Media which helps in strengthening the association.
v. To engage them in Social activities which contribute towards the development of society and nation as well.
vi. Placement facilities further provided to all students even for two years after successful campus placements

6.12 Activities and support from the Parent – Teacher Association

Though University has no formal structure like parent-teacher association, parents are an integral an important stakeholder in enhancing the institutional performance. There is a formal procedure of obtaining parent feedback and conducting their satisfaction survey so as to involve them in decision-making processes which impact the academic experience of the students.

6.13 Development programmes for support staff

Computer Proficiency up-gradation programmes for the administrative staff to achieve the desired standards and all the staff has been trained to handle computers for the routine jobs. The non-teaching staff has been motivated and the self-development achieved can be gauged from the higher qualifications attained by its staff during the last five years. Special SPRINT (Skill Progression through Rapid Innovative and Intensive training) programmes, Orientation programmes, Effectiveness programmes are also conducted regularly by the non-teaching staff.

6.14 Initiatives taken by the institution to make the campus eco-friendly

Shoolini University's agenda is focused on harnessing, conserving and managing the Himalayan biodiversity. The University aspires to place itself as the resource pool in all fields pertaining to sustainable Himalayan development. It is with this mission that the University is a proud member of the Consortium on Himalayan Universities.

We have continued to improve the campus environment for students and staff, with new teaching research facilities, expanded students' accommodation and new study spaces. The library has been designed keeping in mind Green Building Technologies. With around 1300 solar panels, our campus is connected to a solar energy grid generating 400 kilowatts of electricity to meet our energy requirements. The most significant addition to the campus is the Yogananda library of the university. We have envisaged on developing additional high-quality sporting amenities like the indoor sports complex with badminton and table tennis facilities for improving students' stay at the university. The addition of gymnasium has provided an international look. In years to come, we expect the university to continue to prosper, making a strong and increasing contribution to the regional and national economy.

Criterion – VII

7. Innovations and Best Practices

7.1 Innovations introduced during this academic year which have created a positive impact on the functioning of the institution. Give details.

IQAC (Internal Quality Assurance Cell) has been actively involved in improving the academic Systems and processes. The IQAC prepared the Annual Quality Assurance reports and organized the academic review of the departments. Based on the report of the academic review an action plan to implement the findings of the academic review has been developed. The process covered a review of curriculum, research, staffing, infrastructure, governance, academic and administrative decision making, strategic and implementation planning encompassing much of the entire academic culture of the University. The findings report sets out a path, by means of a set of recommendations, to achieve a closing of the performance gap. There are also some observations and recommendations which are core to the contemporization process.

The following innovative measures were taken which has a positive impact on the functioning of the institution and cater to the changing requirements of the students and improving teaching methodology:

i. Online support for teaching and evaluation is being used. eUniv; Shoolini's online academic portal based on Moodle is fully operational.
ii. PPT, Videos, Research papers, EBSCO database are made available online.
iii. Fully operational online examination system that incorporates - MCQ, short and descriptive questions, quiz, assignment etc.
iv. Online discussion forums started to have any time anywhere dialogue between faculty members and students.
v. Complete and incognito student course feedback system introduced.
vi. Yogananda Knowledge Center (YKC), the Central Library is made operational round the clock.
vii. Students can use the practical labs round the clock.
viii. Expert lecture sessions by the name of "Guru Series" are operational.
ix. Faculty Development Program by "Managing partner- Proliferator Advisory & Consulting" firm was organized.
x. Preparation of daily lecture taken report and monitoring by Pro VC/Dean- Academics/ Associate Dean Academics.
xi. Biometric attendance system for students in hostels introduced.
xii. In situ monitoring of students during their internships & research projects in industry.
xiii. Professional clubs for co-curricular and extra-curricular activities for students are in place.
xiv. MOOCS courses started under SWAYAM portal.
xv. Several academic, research and industry MOU's signed with foreign Universities and corporate firms of high repute.
xvi. Each course has knowledge outcomes and skill outcomes which are in line with the objectives of the concerned program.

xvii. Each course is broken down into separate lecture schedules with clear-cut learning outcomes. These learning outcomes collectively make up to the outcome of a particular course.
xviii. All the courses in a particular program in a particular semester are compiled in the form of a booklet with syllabus, lecture schedules, practical details, problem sets, and necessary discussion caselets.
xix. Enhancing employability through skill enhancement, outcome driven curriculum and modern pedagogy.
xx. Shoolini's online learning initiative (eUniv) has innovated continuous learning delivery
xxi. For functional and soft skills, the SPRINT program has been started as a credit course for MBA students and is being rolled out to other Schools. SPRINT has the potential to be a role model for functional and soft skills training.
xxii. Progressively shift to online examination and evaluation.
xxiii. Faculty development programs.
xxiv. Industry linkages and collaborations.
xxv. Strengthening of the mentorship program.
xxvi. Outer world exposure to faculty and students.

7.2 Provide the Action Taken Report (ATR) based on the plan of action decided upon at the beginning of the year

Mentioned under Point 2.15 of the report

7.3 Give two Best Practices of the institution *(please see the format in the NAAC Self-study Manuals)*

Shoolini University of Biotechnology and Management Sciences is a young private university, which secured national recognition alongside longer-established institutions. University is ranked among top 150 universities in NIRF-Rankings-2018. Its School of Pharmacy was ranked at 30th Position and School of Business Management and Liberal Arts among top 75 management schools of the country. Shoolini has a reputation for courageous thinking and for attracting exceptional people and talented students, who are leading university towards its bold vision of to be amongst top 200 global universities by 2022.

Right from its inception in 2009, the university chose a 'Research Driven Model' – very unique to institutions in the private sector. Nested in the Mid-Himalayas and enriched by an ever-expanding research capital, be it in the spectrum of sciences, engineering or management, the university has developed intrinsic strengths to address the myriad issues that afflict ecologically fragile Himalayan Region. Its strategic location and growing expertise in the fields of research offers a unique opportunity for Shoolini to provide strategic direction and scientific-technological solutions to harness the Himalayan wealth in an eco-friendly manner.

Shoolini University has a state-of-the-art infrastructure that compares favorably with some of the best institutions in India. University's commitment towards quality education can be partly visualized if one visits any of its laboratories that exist with the purpose of promoting learning through teaching, research, workshops, computing, or studio work.

Although being one of the youngest universities in the country, Shoolini has emerged as a leading center of quality research and scholarship. Various national research funding agencies

like DST, DBT, ICMR, DRDO, etc. have taken cognizance of the university's research potential and have extended funding in excess of Rs.20 crores. This is substantiated by a growing list of patents (215) and SCOPUS listed research papers (783) with over 7,121 citations, the university is privileged to have the highest 'h' index of 42 as compared to its contemporaries in North India.

It is in keeping with these strengths that the International Center for Integrated Mountain Development (ICIMOD), Kathmandu has welcomed Shoolini University as a Fellow of the Consortium of Himalayan Universities. At the same time, we have also partnered with Chinese Hainan Tropical Ocean University, Yunnan Agriculture University, and Lanzhou University, located in the far east of the Himalayan Mountain Range. Amongst the Silk Road belt global institutions, Shoolini University is the only institute from India that has been incorporated by China.

Shoolini's campus is one of the best landscaped and rated among India's top 25 cleanest campuses in Swachhta rankings 2018 by MHRD, GOI, Its library 'Yogananda Knowledge Center' is housed in an iconic building that has received architectural awards. Facilities like an indoor stadium, adventure camp and Cineplex are assets that add value to varsity's campus.

Shoolini University follows the principle of promoting an outcome driven curriculum, which is aligned with the institutional vision of producing students with global competencies. Due importance is assigned to providing a range of choices to the students within a flexible environment; University has also adopted the choice based credit system across the board. Since the university has the distinction of being nominated as a nodal research agency by DRDO, new courses and areas of research have also evolved in the niche field of nanotechnology. A similar industry 'need-driven' course was developed as part of the MBA curriculum in active collaboration with GENPACT, a leading multinational-corporation, and automobile engineering curriculum in liaison with Anand Automotives Pvt. Ltd.

Conventional teaching has been supplemented and augmented by the use of the latest technology. ICT enabled classrooms to facilitate teachers to demonstrate problem-solving techniques. The library is well stocked with approx. 1.85 lakh book titles in the physical, electronic form. University subscribes to around 9,000 e-journals through USA based EBSCO, DELNET databases. The multi-functional Enterprise Resource Planning (ERP) system coupled with enhanced Learning Management System (LMS) and planned Knowledge Management System (KMS) provides an interface to teachers and students to take the teaching-learning processes to a new level. Through our online eUniv initiative, we supplement classroom learning by providing students with free access to all teaching material, including PPTs and video-lectures.

In our effort to promote learning from leaders across various fields and walks of society, the university has initiated "Guru-series of talks". Every fortnight, University proudly hosts an eminent person, so that the University fraternity gets first-hand exposure to their wealth of wisdom and knowledge. Notable personalities, who have delivered guru series lectures, included Nobel Laureate Robert Huber; NGT Chairman Justice Swatanter Kumar; KS Bawa, FRS London; Davide Taliente, Managing Director Oliver Wyman; Kiran Bedi,Navin

Chawla, former CEC; Padma Shri Shoji Shiba, Breakthrough Management Guru; Steve L Stephenson, Fulbright Fellow; Howarth Bouis, World Food Prize Laureate; Peter Raven, noted international environmentalist; Sunil Thawani, Member Board American Society for Quality; Sandeep Bakhshi, CEO ICICI Prudential; Padma Shri Yuvraj Singh, Indian cricket icon

University runs innovative 'The SPRINT' (Skills Progression through Rapid Intensive and Innovative Training) program to provide accelerated learning to rural and semi-urban youth – the human material in terms of Shoolini's students with the intent of raising their employable threshold. Apropos, the program was developed as a blend of Soft and Technical Skills and patterned on the lines of Stanford University's Mini MBA. SPRINT has been phenomenally successful in creating employment as well as personal and professional growth of students and has become of our biggest strengths. Started as a pilot project for MBA students, the program has now been expanded to all schools across the university. At the same time, SPRINT has the potential to be extended beyond the campus – both as an extension and consultancy.

Shoolini's Placement Cell conducts campus 'Placement Week', which is in conformity with the IIMs and other top B schools in the country. During the placement week, a large number of MNCs and leading companies visit the varsity's campus for on spot placements.

University has developed meaningful international partnerships with Seoul National University, University of Ulster, Chung Yuan Christian University, Lanzhou University, Arkansas University, to name a few. Underactive international exchange, 150-students undertook a semester study in foreign universities, and several students from countries like South Korea, Afghanistan, Taiwan, China, Ethiopia and Nepal came to Shoolini.

Best Practice – 1

Summit Research Program

1. Title: B.Tech. Biotechnology (Summit Research Program)

2. Objectives of the Practice: To inculcate research practice and attitude to the highly motivated and aspiring researchers from the undergraduate degree program (B.Tech.)

3. The Context: Shoolini University offers a unique undergraduate (B.Tech) program in biotechnology where selected students have the opportunity to pursue the Summit Research Program that provides first-hand exposure to high-quality research in state-of-the-art global research environments, experience with writing and publishing papers, and personal interaction with acclaimed research practitioners/experts from around the world.

The Summit Research Program is fully integrated with the regular engineering curriculum. The experience prepares Summit Scholars to the needs and requirements of reputed Global and Indian educational institutions, as well as leading corporate R&D departments. The scholars will be very well positioned to pursue higher studies in the world's best institutions, participate in high-tech startups, or pursue research careers in the corporate world. Throughout the four-year program, scholars are also mentored by highly qualified faculty/experts with global experience to assist and guide them in pursuing their passion.

In the first year, Summit Scholars are exposed to all research labs at the university. Students will not only learn the rationale behind on-going research but also become aware of its potential impact on society.

In years two and three, Scholars will deep dive into their assigned research projects, working and assisting the faculty/researchers with the research project lab work and analysis, contributing actively in hands-on research. Scholars will also assist in coauthoring research papers. Throughout the four-year program, Scholars will be exposed to institutional/corporate lab visits and interactions with acclaimed research practitioners to increase their exposure to current research best practices and innovations. Summit Scholars will each be assigned a mentor who will be available to them during the entire program for research and career guidance.

In the final year, mentors and faculty will also guide Scholars to prepare for admission applications such as for standardized test preparation i.e. GATE/GRE and selecting suitable Universities and Institutions. Scholars may get an opportunity to spend their final semester at a reputed foreign institution as an exchange student, for global lab research experience and exposure.

The research exposure and overall Summit Research Program experience will provide scholars with the USP required for selection for higher studies at reputed foreign institutions. It will also leave scholars better positioned to participate in start-ups, or pursue research careers in the corporate world.

4. The Practice: We have introduced an undergraduate program in Biotechnology (B.Tech.) Summit Research Program, where highly motivated and aspiring students are recruited from all India level. The selection was based on two rounds of interview apart from other minimum eligibility criteria. The students are grilled by the expert committee members and only a limited number of students are selected every year who are able to defend their research idea at the time of interview. The program was started from 2016 batch and in 2018 third batch was admitted to the program. The students are to undertake research projects in

the area of their interest and it is on top of all the essential courses which are required for being eligible to get B.Tech. degree.

The uniqueness about Summit Research Program is given below:

- Opportunity to work directly with faculty and Ph.D. students on live research projects
- Participate in cutting-edge research in areas such as anti-cancer treatment, gene manipulation for improved crop yields, and etiology of human diseases
- Visit and explore some of the best life-sciences research laboratories in the world
- Option to take courses or conduct lab work in premiere universities abroad
- Get mentored by reputed academics and teachers
- Opportunity to co-author a paper in a reputed Indian and International journal

Summit Scholars will each be assigned a mentor who will be available to them during the entire program for research and career guidance.

Summit Research Program Faculty include:

DR. ANURADHA SURIRAJAN
Professor-cum-Dean Biotechnology
Ph.D., IISc Bangalore Post-doctorate, National Cancer Institute, National Institutes of Health (NIH), USA

DR. KAMAL DEV
Associate Professor-School of Biotechnology
Ph.D., IISc Bangalore Postdoctoral Research Fellowship, National Institutes of Health (NIH), Govt. of USA

DR. NEERAJ MAHINDROO
Professor cum Dean Pharmaceutical Sciences
Post-Doctoral Research Associate, St. Jude Children's Research Hospital, Memphis, USA

DR. SAURABH KULSHRESTHA
Program Director, Summit Research Program
Post-Doc, Dept. of Plant Pathology, University of Kentucky, USA

Shoolini University also arranges for guests to educate and motivate the students on current trends and best practices in the field of life sciences.

Exposure to institutional/corporate labs through visits, and interactions with acclaimed research and practitioners to increase their exposure to current research best practices and innovations.

The few examples of foreign research labs where a student may go for the final semester of the Summer Research Program:

• **University of New Hampshire, USA:** Prof. Subash Minocha's Lab is working on genetic manipulation of plant metabolism and stress response in plants; cloning and characterization of genes involved in polyamine biosynthesis; and cloning and characterization of genes in marine algae for genetic manipulation.

• **University of Arkansas, USA:** Prof. Steve L. Stephenson's Lab is mainly working on two different subject areas: (1) the ecology of upland forest communities in the mid-Appalachian region of eastern North America and (2) the distribution and ecology of myxomycetes (plasmodial slime molds) and other eumycetozoans in terrestrial ecosystems.

• **University of Massachusetts, Boston USA:** Dr. Kamaljit Singh Bawa is a Fellow of the prestigious Royal Society, London. Prof. Bawa is an evolutionary ecologist, conservation biologist and a Distinguished Professor of Biology at the University of Massachusetts, Boston. Prof. Bawa is also on the global advisory committee of Shoolini University.

• **School of Life Sciences, Lanzhou University, PR China:** Prof. Xiangnkai Li is a well-known Professor and Mentor at Lanzhou University, His lab works on the interaction between pollution and microbial communities and microbial remediations of environmental contaminations.

• **University of Otago Christchurch, New Zealand:** Prof. Christine Winterbourn is a research collaborator of Shoolini University. Professor Winterbourn's lab focus is on understanding mechanisms of reactive oxidant production, the biochemistry of biological damage and the consequences for disease pathology. Her current interests include the production of reactive oxidants by neutrophils and their involvement in microbial killing and inflammation, how neutrophils form extracellular traps (NETs), how thiol proteins contribute to antioxidant defense and redox-regulated cell signaling, biochemistry and cellular functions of mammalian peroxiredoxins, mechanisms of oxidative protein crosslinking and oxidant-antioxidant interactions in red blood cells.

5. Evidence of Success: The number of students who aspire to join the SRP program is increasing year by year, which showed immediate success to this program. In addition to that, the first and second batch students who have already made significant progress in their research projects have started writing and communicating their research findings in the form of research publications. The SRP students have been widely accepted in the first place for any summer or winter internship they apply. In the past summer break (July 2018) six of our first batch students have been invited by Sichuan University, PR China to attend two weeks University Immersion Program in Chengdu. The wider acceptability of our SRP students is clearly the evidence of the success of this program.

Shoolini University's B.Tech Biotechnology graduates are already pursuing Masters programs at some of the most reputed universities in the world, including:

- Stanford University, USA
- University of Bonn, Germany
- University of Windsor, Canada
- Gachon University, South Korea
- University of Tokyo, Japan
- Wageningen University, Netherlands

Summit Research Program Advisory Board Members include:

Dr. Kamaljit Singh Bawa

Prof. of Biology, University of Massachusetts, Boston, USA.
Fellow of the Royal Society
Evolutionary ecologist, Conservation biologist

Dr. Rajendra Singh Paroda

Former Director General, Indian Council of Agricultural Research (ICAR)
Acclaimed Indian agriculture scientist

Dr. Steven L. Stephenson

Research Professor, Department of Biological Sciences
University of Arkansas, USA
Fulbright Specialist

6. Problems Encountered and Resources Required: SRP, being a research-intensive program is offered to only a limited number of students every year in comparison to the number of applications we receive from the aspiring researchers. The biggest problem in offering the program to a larger number of students is the availability of limited resources. We aspire to first expand the resources thus expanding this program to other disciplines so that the research training can be given in all the areas.

Best Practice - 2

1. **Title:** myShoolini Application

2. **Objectives of the Practice:** The application allows performing multiple activities such as marking
   attendances, tracking bus locations, submitting assignments, timetables, learning management system etc. on a single platform.

3. **Context:** In a pioneering move, Shoolini University launched the myShoolini application, a mobile-based virtual platform which helps its users to manage activities such as online attendance and fee payments on the go. With all the features in place, the students and staff who download the app will have access to all the university services and features through a single window interface.

   myShoolini application was launched by Shoolini University Pro-Chancellor Satish Anand, this app has been jointly developed by the faculty and former students of the university. The app has launched the university towards becoming completely digital. With all the features in place, the students and staff who download the app will have access to all the university services and features through a single window interface. My Shoolini App is also available for download on the university website, Google Play & Apples store. This mobile-based virtual platform will help its users manage activities such as online attendance and fee payments on the go.

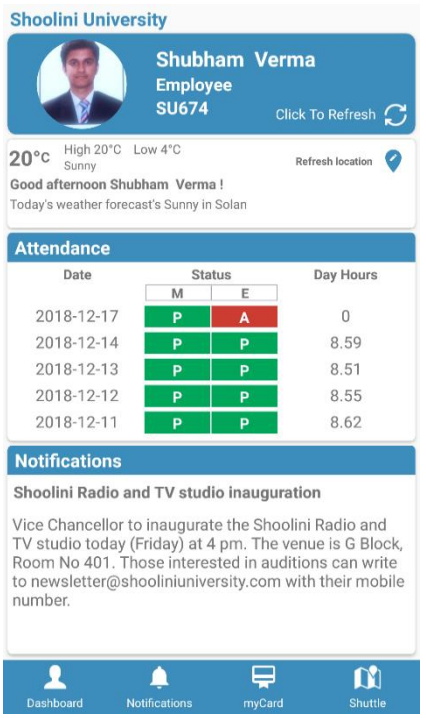
4. **Practice:** The application allows performing multiple activities such as marking attendances, tracking bus locations, submitting assignments, timetables, fee payment, learning management system etc. on a single platform.

   Some of the key features of the app include the My Knowledge Hub which deals with research thesis and the Geo Selfie GPS enabled attendance system. This attendance system allows the staff to mark their attendance by clicking a selfie in the university campus. GPS enabled bus-tracking system allows students to track all the university buses for convenience.

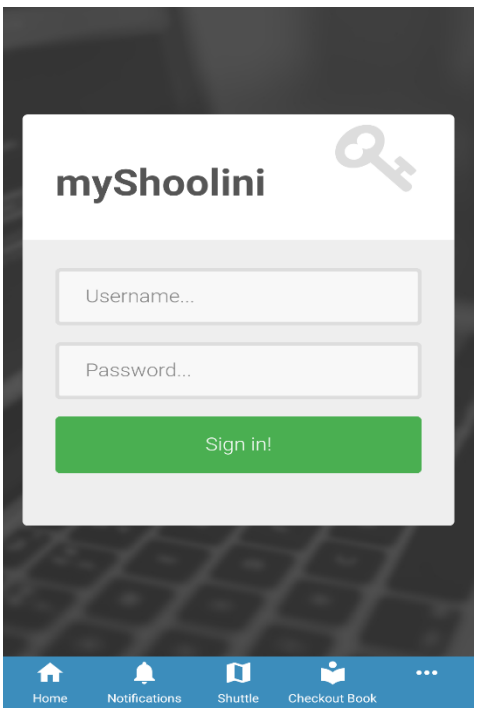
5. **Evidence of Success**
   - **Geo selfie attendance:** Employee in campus takes selfie attendance on the cell phone.
   - **GPS enabled vehicle tracking system:** Student/Employee can see the location of bus/ car by logging in to the myShoolini application.
   - **Digital library:** EBSCO platform provides a wide range of books to read ebooks.
   - **Self-issue of books:** Books can be issued to the library by just scanning the barcode of any book.
   - **Self-return of books:** Books can be returned to the library by scanning the barcode of any book.
   - **Robust individual timetable:** Any student/employee can see the timetable under the menu to see their time & room number of their respective classes.
   - **Extensive notification system:** Any notification to be communicated to shoolinian is shown on myShoolini app.

- **Used by over 1,000+ people:** As lots of features are available in the app, it has more than 1000 users.

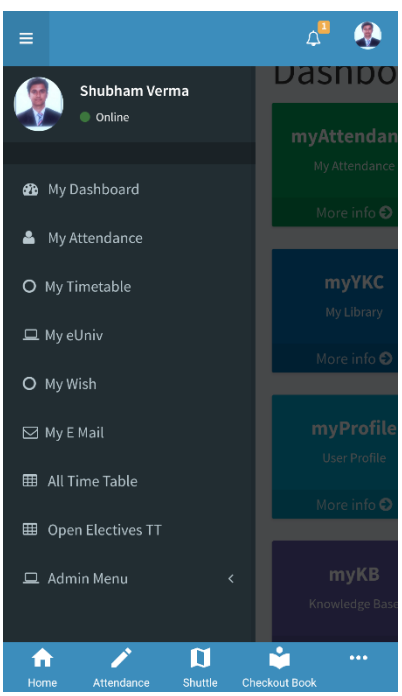
myShoolini app



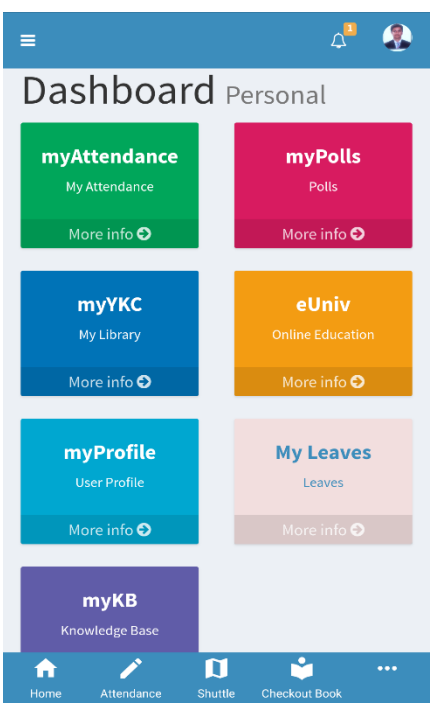
Interface



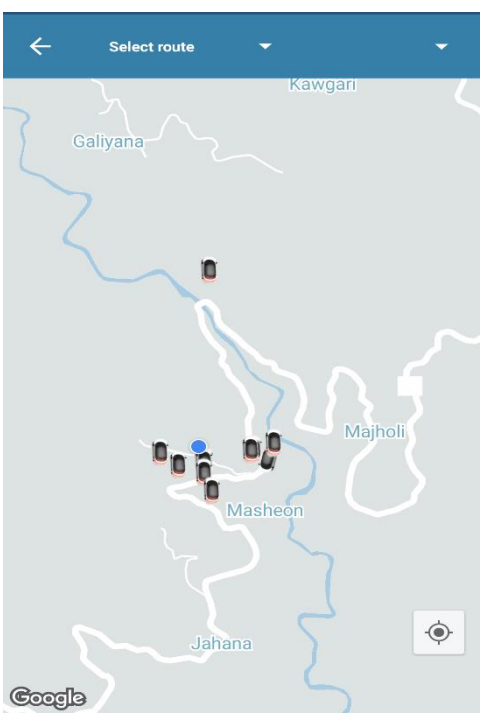
Login Credentials



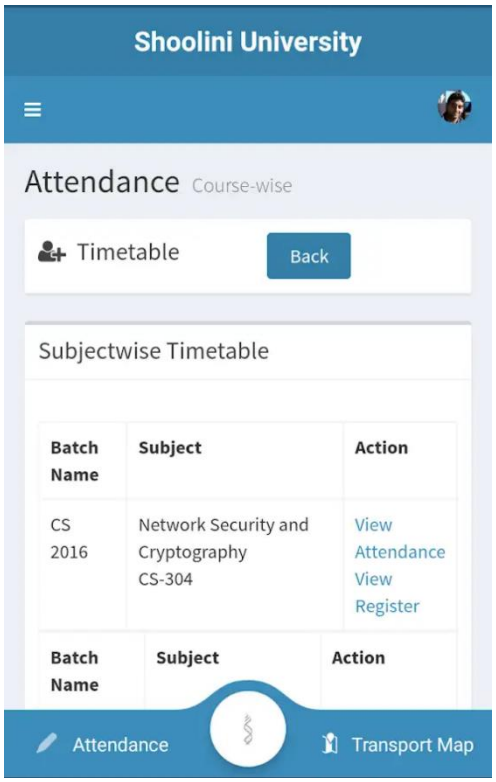
Menu



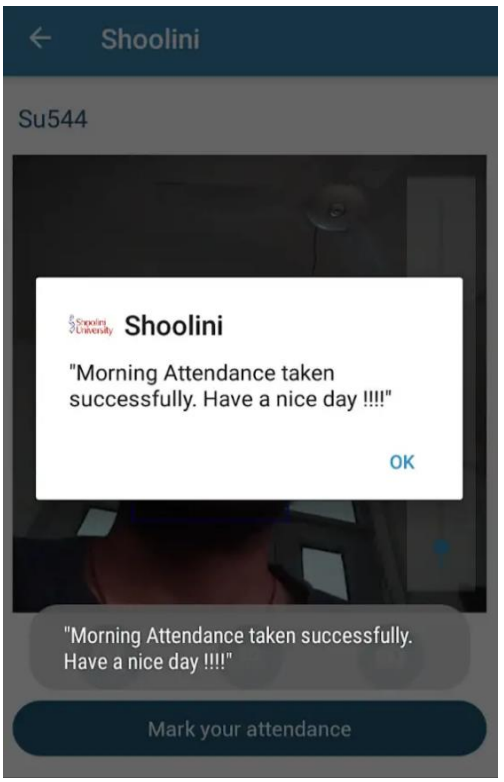
Dashboard



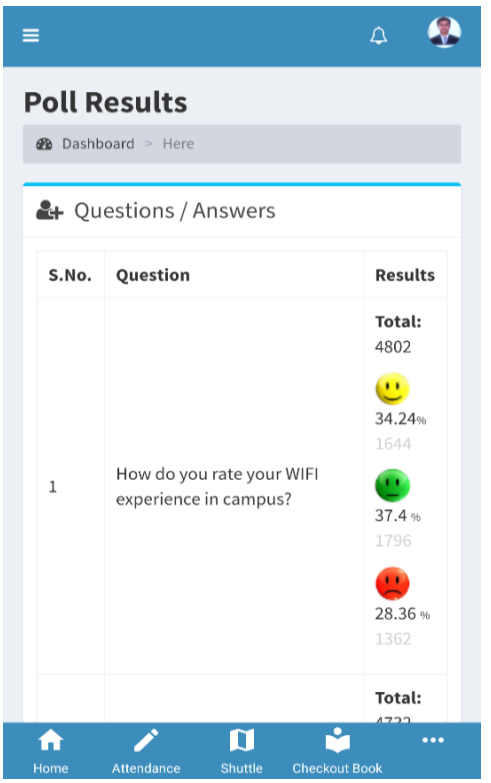
Bus/Car GPS location



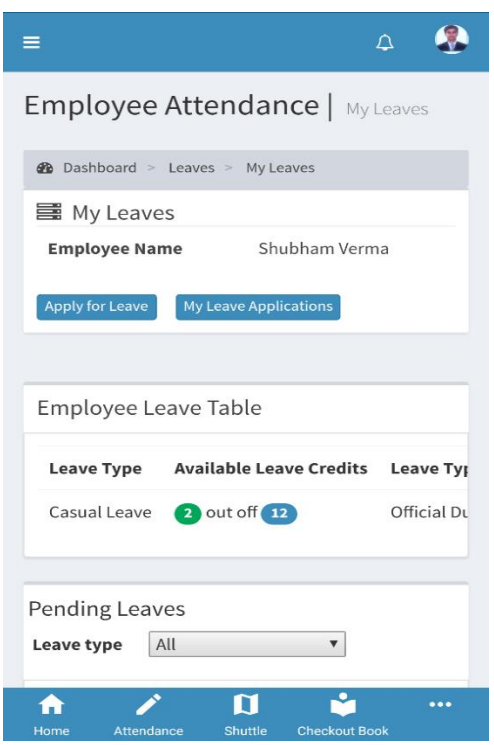
Timetable



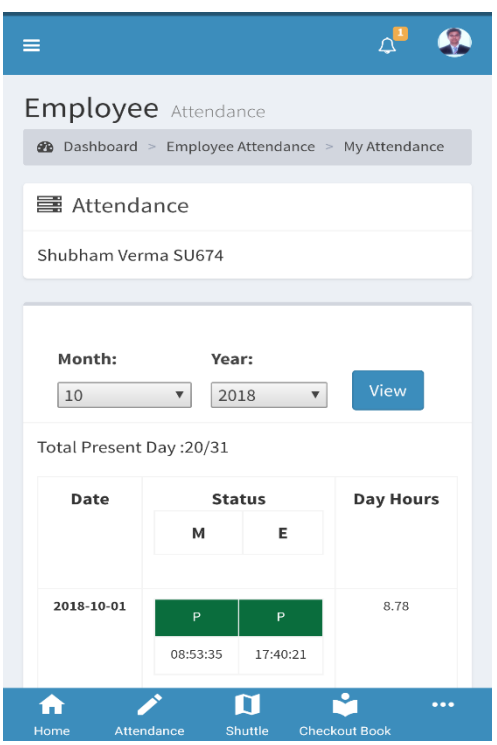
Selfie Attendance



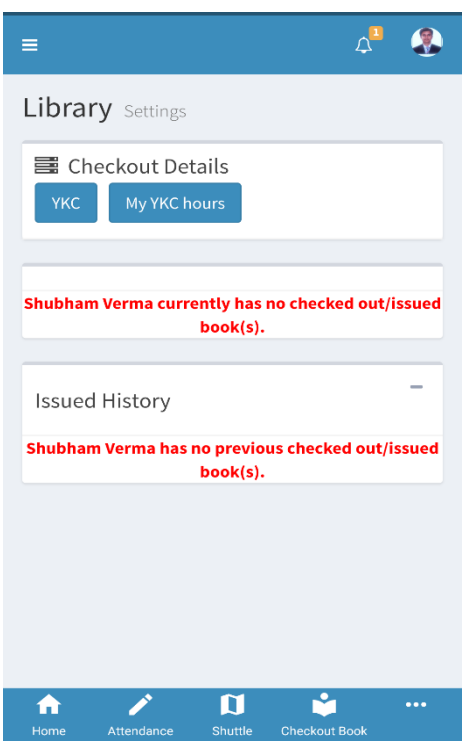
Poll Results



Leave Portal



Employee Attendance Record



Library Checkout

6. Problems encountered & resources required: Earlier the connectivity of myShoolini app was hosted in-house only, however, now it is hosted on Amazon web server which has now full connectivity up to 100%.

7.4 Contribution to environmental awareness/protection

Since sustainability of the Himalayan eco-system is a thrust area for Shoolini University, it is incumbent that the focus is directed on the environment, especially since the University is nested in the Mid Himalayas. This includes taking up eco-preservation in an institutionalized manner and focused research for the rejuvenation of the eco-system.

It was for this purpose that the University started an 'Eco Club, in early 2012, with the aim of creating a 'Clean and Green Consciousness' on campus, and progressively extending to the immediate neighborhood and the larger Himalayan Region. It was in pursuance with this aim that the University not only takes pride in being a 'neat and litter free' campus but being a part of the Prime Minister's 'Swach Bharat Abhiyan' and undertaking research on Himalayan sustainability, individually and as part of the consortia of Himalayan Universities.

Students and faculty members of the university have been actively participating in Swachh Bharat Abhiyan started by the Prime Minister of India. On 2nd Oct 2016, the students and staff took the initiative of cleaning solan town. The university also installed dustbins at various places in the city. Similarly, on 2nd Oct 2017, the university's students and staff held a candle march to spread awareness about the Swachh Bharat Abhiyan of the Government. In addition, the students and staff of the university have regularly been involved in plantation activities.

The Shoolini university has always been concerned about the economic plight of marginal hill farmers. In partnership with the Yogananda Satsanga Society of India and University of Horticulture and Forestry, Nauni, Solan, the university has adopted the Panthi Village in Shimla District, HP, for plantation of fruit trees- with the objective of creating ecological conservation as well as creating a secondary source of income for farmers in this dry and arid region. On February 8, 2015, several plants were distributed to villagers. Since the adoption of the village, over seven thousand saplings have been distributed free of cost to the farmers. The survival of these plants and aftercare is monitored.

7.5 Whether environmental audit was conducted? Yes [ ] No [√]

7.6 Any other relevant information the institution wishes to add. (For example SWOT Analysis)

Shoolini's biggest Strength emanates from its determination to excel in academic repute and outshine in the quality of research, and by so doing, be counted in the elite club of Premier Institutes globally. Adding objectivity to this ambitious vision is the defined timeline of 2022. The fact that this vision is shared by the Trustees, Management and more importantly, by faculty and staff who are the life and blood of this institution, remains major support.

Shoolini's focus on research and development across Schools and its success to date is its second biggest strength.

In the short journey of the University thus far, there has been an infusion of substantial government funds for research. With (funded) labs, over two hundred patents and an 'h' factor of 42, Shoolini has emerged as a leading contender in the list of 'Most Admired Science Universities,' a distinction that places it heads above its contemporaries in India.

8. Plans of the institution for next year

In the current scenario of globalization, academic institutions and universities cannot work in isolation. Institutions and universities are running against time to be on top and excellence in research and teaching will be key to success. It's only the institutes of national importance like Indian Institute of Science, Indian Institute of Technology and some very well established Universities which are keeping the Indian flag being seen in the globally recognized Institutions. India being a hub of academics needs to improve the mindset first followed by understanding the world top-ranked academic institutions and then the ranking mechanism. Innovative and out of the box ideas need to be implemented in the Indian education system, only then the participation of Indian Institutions in the global platform is going to increase. Like anywhere in the world, Private educational institutions like Shoolini University have better chances to be on top of the world provided proper support and recognition is given to us from the Government of India.

We have established Shoolini University with a vision to be on the top 200 global Universities by 2022 and every step has been taken to realize and to fulfil this dream. Shoolini University is one amongst very few private Universities, who are established a giving prime emphasis on research. We believe that learning cannot be possible if it is not done in an innovative way, we at Shoolini has inculcated research into our day to day learning and academic practices and as a result of that, we are able to make our mark in the area of research and development in Biotechnology and related areas. Based on the latest data on research (from SciVal) Shoolini University has outclassed some of the top-ranked Indian Universities in number of research parameters (like field-weighted citation impact, international and national collaborations, paper published in the top 1% and top 10% journals) and we are now aiming to be in the league of global Universities in the years to come. Not only research we have also done innovation in teaching pedagogy and by starting new and innovative research-based undergraduate programs (like B.Tech. Biotechnology Summit Research Program). We at Shoolini are committed to our vision and every day, all the employees (teaching and non-teaching), students and University Management are living this dream to make Shoolini a globally recognized center of learning.

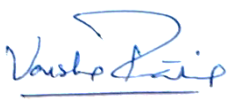
We at Shoolini University are now aiming to commercialize some of the notable patents along with filing more national and international patents and discussions for the same is underway. In our endeavor to become globally recognized University, we are now planning to

expand our national and international collaborations and planning to submit more joint projects at national and international level. Our research and academic credentials have already started making a mark and we are getting endowment of Rs. 1 crore to establish Raj Khosla cancer center at Shoolini University, in addition, a grant of Rs. 5 crores was also committed to establish the center for research on yoga and naturopathy.

We will further strengthen our efforts on the following points:

- To substantially increase our funding support both from Govt. agencies and from private donors as an endowment.
- Establishment of the centre of cancer research and research center for yoga and naturopathy.
- To strengthen our social outreach, so that society can be benefited at large.
- To further improve the quality of in-house faculty by motivating them to complete their doctorate degree and by recruiting new experienced faculty members.
- To finish up the NBA accreditation of pharma school and management school

Name Varsha Patil



Signature of the Coordinator, IQAC

Name Atul Khosla

Signature of the Chairperson, IQAC

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ANNEXURE I

Shoolini University
Academic Calendar – 2017-18
FOR OLD/ NEWLY ADMITTED UG, PG and Ph.D. STUDENTS

Course Title and Code to be offered	June 19, 2017
Meeting of Academic Council	June 22, 2017
Admission Call by Admission Cell	June 26-30, 2017
Allotment of courses and Notification by Deans	July 03, 2017
Course Design and Lecture Schedule	July 14, 2017
Release of Time Table by Vice Chancellor	July 28, 2017

SEMESTER (ODD)

	All old students (UG/PG / M.Phil/ Ph.D)	**Newly admitted Undergraduate Students**	**Newly admitted Postgraduate Students**	**Newly admitted M.Phil / PhD Students**
Registration	July 31, 2017 (Monday)	Aug 8-9, 2017 (Tuesday-Wednesday)	Aug 10-11, 2017 (Thursday-Friday)	Aug 16, 2017 (Wednesday)
Orientation/ Induction/ I Card Preparation/ Fee for newly admitted students	–	Aug. 09, 2017 (Compulsory to attend) (Wednesday)	Aug. 11, 2017 (Compulsory to attend) (Friday)	Aug. 16, 2017 (Compulsory to attend) (Wednesday)
Commencement of Classes	Aug 1, 2017 (Tuesday)	Aug 10, 2017 (Thursday)	Aug 14, 2017 (Monday)	Aug 17, 2017 (Thursday)
Late Registration (With late fee)	Aug 1-04, 2017 (Tuesday-Friday)	Aug 10-14, 2017 (Thursday-Monday)	Aug 12-16, 2017 (Saturday-Wednesday)	Aug 17-19, 2017 (Thursday-Saturday)
Indoor Sports Championship	Aug. 26-27, 2017 (Saturday-Sunday)	Aug. 26-27, 2017 (Saturday-Sunday)	Aug. 26-27, 2017 (Saturday-Sunday)	Aug. 26-27, 2017 (Saturday-Sunday)
Teachers Day(Marathon 2017)	Sept 5, 2017 (Tuesday)	Sept 5, 2017 (Tuesday)	Sept 5, 2017 (Tuesday)	Sept 5, 2017 (Tuesday)
I Term Examination	Sept 21 – 24, 2017 (Thursday - Sunday)	Sept 21 – 24, 2017 (Thursday - Sunday)	Sept 21 – 24, 2017 (Thursday - Sunday)	Sept 21 – 24, 2017 (Thursday - Sunday)
Intra University Cultural Competition	Sept 29-Oct. 01, 2017 (Friday-Sunday)	Sept 29-Oct. 01, 2017 (Friday-Sunday)	Sept 29-Oct. 01, 2017 (Friday-Sunday)	Sept 29-Oct. 01, 2017 (Friday-Sunday)
State Level Moot Court Competition	Oct 08, 2017 (Sunday)	Oct 08, 2017 (Sunday)	Oct 08, 2017 (Sunday)	Oct 08, 2017 (Sunday)
Diwali Vacation Student/Staff	Oct 16-20, 2017 (Monday-Friday)	Oct 16-20, 2017 (Monday-Friday)	Oct 16-20, 2017 (Monday-Friday)	Oct 16-20, 2017 (Monday-Friday)
II Term Examination	Nov 2 - Nov 5, 2017 (Thursday-Sunday)	Nov 2 - Nov 5, 2017 (Thursday-Sunday)	Nov 2 - Nov 5, 2017 (Thursday-Sunday)	Nov 2 - Nov 5, 2017 (Thursday-Sunday)

University Athletic Meet	Nov 11-12, 2017 (Saturday-Sunday)	Nov 11-12, 2017 (Saturday-Sunday)	Nov 11-12, 2017 (Saturday-Sunday)	Nov 11-12, 2017 (Saturday-Sunday)
Inter Deptt. Volley Ball/ Basketball	Nov 18-19, 2017 (Saturday-Sunday)	Nov 18-19, 2017 (Saturday-Sunday)	Nov 18-19, 2017 (Saturday-Sunday)	Nov 18-19, 2017 (Saturday-Sunday)
Payment of tuition fee/Hostel fee for next semester	Dec. 1-15, 2017 (Friday-Friday)	Dec. 1-15, 2017 (Friday-Friday)	Dec. 1-15, 2017 (Friday-Friday)	Dec. 1-15, 2017 (Friday-Friday)
Late fee payment with fine for next semester	Dec. 16-30, 2017 (Saturday-Saturday)	Dec. 16-30, 2017 (Saturday-Saturday)	Dec. 16-30, 2017 (Saturday-Saturday)	Dec. 16-30, 2017 (Saturday-Saturday)
Appraisal of staff	Dec. 11 -15, 2017 (Monday-Friday)	Dec. 11 -15, 2017 (Monday-Friday)	Dec. 11 -15, 2017 (Monday-Friday)	Dec. 11 -15, 2017 (Monday-Friday)
End Term Examination	Dec. 18-30, 2017 (Monday-Saturday)	Dec. 18-30, 2017 (Monday-Saturday)	Dec. 18-30, 2017 (Monday-Saturday)	Dec. 25-30, 2017 (Monday-Saturday)
Result Declaration	Jan. 19, 2018 (Friday)	Jan. 19, 2018 (Friday)	Jan. 19, 2018 (Friday)	Jan. 19, 2018 (Friday)
Working Days	**106 (Excluding Holidays)**	**101(Excluding Holidays)**	**100(Excluding Holidays)**	**94 (Excluding Holidays)**
Winter Vacation (Students)	Jan. 01- 21, 2018 (Monday-Sunday)	Jan. 01- 21, 2018 (Monday-Sunday)	Jan. 01- 21, 2018 (Monday-Sunday)	Jan. 01- 21, 2018 (Monday-Sunday)
Winter Vacation (Staff)	Jan. 01- 14, 2018 (Monday-Sunday)	Jan. 01- 14, 2018 (Monday-Sunday)	Jan. 01- 14, 2018 (Monday-Sunday)	Jan. 01- 14, 2018 (Monday-Sunday)

Allotment of courses and Notification by Deans	Jan. 16, 2018
Course Design and Lecture Schedule	Jan. 18, 2018
Release of Time Table by Vice Chancellor	Jan. 19, 2018
Start of next semester	Jan. 22, 2018

SEMESTER (EVEN)

Registration (Online)	Jan. 22, 2018 (Monday)	Jan. 22, 2018 (Monday)	Jan. 22, 2018 (Monday)	Jan. 22, 2018 (Monday)
Commencement of classes	Jan. 23, 2018 (Tuesday)	Jan. 23, 2018 (Tuesday)	Jan. 23, 2018 (Tuesday)	Jan. 23, 2018 (Tuesday)
Late Registration (With Late Fee)	Jan. 23 - 24, 2018 (Tuesday-Wednesday)	Jan. 23 - 24, 2018 (Tuesday-Wednesday)	Jan. 23 - 24, 2018 (Tuesday-Wednesday)	Jan. 23 - 24, 2018 (Tuesday-Wednesday)
National Level Moot Court Competition	Feb. 04, 2018 (Sunday)	Feb. 04, 2018 (Sunday)	Feb. 04, 2018 (Sunday)	Feb. 04, 2018 (Sunday)
I Term Examination	March 1-04, 2018 (Thursday-Sunday)	March 1-04, 2018 (Thursday-Sunday)	March 1-04, 2018 (Thursday-Sunday)	March 1-04, 2018 (Thursday-Sunday)

Theatre cum Musical Festival(MOKSH)	March 24-25, 2018 (Saturday-Sunday)	March 24-25, 2018 (Saturday-Sunday)	March 24-25, 2018 (Saturday-Sunday)	March 24-25, 2018 (Saturday-Sunday)
Spring cum Flower Festival	April 1, 2018 (Sunday)	April 1, 2018 (Sunday)	April 1, 2018 (Sunday)	April 1, 2018 (Sunday)
Inter Deptt. Cricket Championship	April 07-08, 2018 (Saturday-Sunday)	April 07-08, 2018 (Saturday-Sunday)	April 07-08, 2018 (Saturday-Sunday)	April 07-08, 2018 (Saturday-Sunday)
II term Examination	April 19-22, 2018 (Thursday-Sunday)	April 19-22, 2018 (Thursday-Sunday)	April 19-22, 2018 (Thursday-Sunday)	April 19-22, 2018 (Thursday-Sunday)
Payment of tuition fee/Hostel fee for next semester	May 1-15, 2018 (Tuesday-Tuesday)	May 1-15, 2018 (Tuesday-Tuesday)	May 1-15, 2018 (Tuesday-Tuesday)	May 1-15, 2018 (Tuesday-Tuesday)
Late fee payment with fine for next semester	May 16-30, 2018 (Wednesday-Wednesday)	May 16-30, 2018 (Wednesday-Wednesday)	May 16-30, 2018 (Wednesday-Wednesday)	May 16-30, 2018 (Wednesday-Wednesday)
End Term Examination	May 21-31, 2018 (Monday-Thursday)	May 21-31, 2018 (Monday-Thursday)	May 21-31, 2018 (Monday-Thursday)	May 21-31, 2018 (Monday-Thursday)
Working Days	**94 (Excluding Holidays)**	**94 (Excluding Holidays)**	**94 (Excluding Holidays)**	**94 (Excluding Holidays)**
Declaration of Result/ Graduation Day/ Parent- Teacher Interaction	June 09, 2018 (Saturday)	June 09, 2018 (Saturday)	June 09, 2018 (Saturday)	June 09, 2018 (Saturday)
Vacation (for students)	June 01–July 29, 2018 (Friday-Sunday)	June 01–July 29, 2018 (Friday-Sunday)	June 01–July 29, 2018 (Friday-Sunday)	June 01–July 29, 2018 (Friday-Sunday)

Note:

1. Quiz/Surprise test will be during class period.
2. Instructors will be giving assignments (8 for UG and 5 for PG) and after evaluation will return to the student within 4 days of submission.
3. Instructors to submit result of I, II term within 4 days of examinations to Controller of Examination through Dean Academics.

ANNEXURE II

The process to take faculty feedback

In order to keep a measure of our teaching performance, we conduct a comprehensive feedback mechanism at the end of each semester. We take it online on the Shoolini LMS (Learning Management System) **eUniv** in order to understand the students' perception of a faculty's pedagogy, knowledge of the subject and other traits like punctuality, handling the class, language/gesture, clarity of words etc. To maintain the credit-worthiness of feedback, we use the following techniques/ characteristics:

1. **Anonymity:** We keep the feedback anonymous so that no one can know the identity of the student giving the feedback. eUniv team goes to the classes and updates the students about the anonymity of the feedback through live demonstrations. We practice this in order to make students comfortable and to encourage them to give true feedback without any fear.

2. **Secrecy/ Surprise:** We take the students to feedback surprisingly so that no faculty member can influence the students' opinion before filling up the feedback.

3. **Transparency**: In our bid to maintain 100% transparency, we take feedback online on eUniv and open the feedback to the faculty members once the result of that particular semester has been declared. Faculty members then can see the student's comments and can improve themselves wherever required.

4. **Analysis and submission for review**: Once the feedback is closed, we perform an analysis of the feedback and share compiled data with the respective Head of schools / Deans and the Registrar office so that the corrective action is taken wherever required.

Manthan

Manthan is generic feedback which we take annually from the students and faculty/ staff members separately to know about their views and suggestion for overall improvement in the facilities available at the University Campus. We keep this feedback as anonymous to encourage students, faculty, and staff to write fearlessly and honestly so that management can get true feedback and they can take necessary steps to correct them. To maintain the credit-worthiness of Manthan feedback we use the following techniques/ characteristics:

1. **Anonymity:** We keep the feedback status as anonymous so that students, faculty and the staff members can give their suggestions fearlessly and we can get true feedback.

2. **Promotion of the event**: We promote this event more and more through emails, SMS and in the class rooms so that a good strength participates in this event and we can get a genuine and the majority of comments on the things which are required to be corrected.

Sample Feedback

Mode: Anonymous
There are required fields in this form marked *.

General

Regular and punctual in taking the classes.*

- ○ Strongly Disagree
- ○ Disagree
- ○ Neutral
- ○ Agree
- ○ Strongly Agree

Content

Has good subject matter knowledge/ command over the subject.*

- ○ Strongly Disagree
- ○ Disagree
- ○ Neutral
- ○ Agree
- ○ Strongly Agree

Subject or the topic is presented systematically, clearly & according to the lecture schedule.*

- ○ Strongly Disagree
- ○ Disagree
- ○ Neutral
- ○ Agree
- ○ Strongly Agree

Pedagogy

Encourage student participation and class discussions.*

- ○ Strongly Disagree
- ○ Disagree
- ○ Neutral
- ○ Agree
- ○ Strongly Agree

Use of PPT's/ audio-visual aids/ examples/ diagrams.*

- Strongly Disagree
- Disagree
- Neutral
- Agree
- Strongly Agree

Communication/Control

Easily/ comfortably manages/ handles (any misconduct/ misbehavior) the students in class.*

- Strongly Disagree
- Disagree
- Neutral
- Agree
- Strongly Agree

Language/ Words/ Gestures/ Sound is loud and clear & easily understood.*

- Strongly Disagree
- Disagree
- Neutral
- Agree
- Strongly Agree

eUniv

Course supplement on eUniv is regularly updated with sufficient content (Lecture Schedule, PPT, PDF, Student notes, Video Lectures) *

- Strongly Disagree
- Disagree
- Neutral
- Agree
- Strongly Agree

Takes tests, assignments etc. on eUniv.*

- Strongly Disagree
- Disagree
- Neutral
- Agree
- Strongly Agree

Overall Rating

Should he/she be teaching this course to the next set of students.*

- ○ Strongly Disagree
- ○ Disagree
- ○ Neutral
- ○ Agree
- ○ Strongly Agree

What is your overall rating for the teacher with respect to this course?*

- ○ 1 Star (Lowest)
- ○ 2 Star
- ○ 3 Star
- ○ 4 Star
- ○ 5 Star (Highest)

Any other suggestions or comments

Submit your answers

Cancel

ANNEXURE III

Table 1: Comparison of Shoolini University with Indian Universities in top 500 QS 2018 ranks.

Rank	QS University Ranking 2018 (Top 10 Indian Universities)	Scholarly Output	Field-Weighted Citation Impact	Citation Count	Citations per Publication	International Collaboration	%Publications in the top 10% most cited worldwide	%Publications in the top 1% most cited worldwide
172	Indian Institute of Technology Delhi	10,053	1.12	54,039	5.4	20.6	13.6	2.5
179	Indian Institute of Technology Bombay	11,077	1.13	63,046	5.7	26.9	13	2.3
190	Indian Institute of Science (IISc) Bangalore	13,090	1.1	81,627	6.2	26.8	14.1	2
264	Indian Institute of Technology Madras	9,867	1.02	48,054	4.9	24	11.9	1.8
293	Indian Institute of Technology Kanpur	7,182	1	38,817	5.4	24.9	13.5	2
308	Indian Institute of Technology Kharagpur	10,965	1.12	61,572	5.6	19.5	13.5	2.1
431 - 440	Indian Institute of Technology Roorkee	8,180	1.13	48,718	6	18.4	14.2	1.7
481 - 490	University of Delhi	11,666	1.06	67,320	5.8	21.3	12.5	1.5
	Shoolini University of Biotechnology and Management Sciences	**516**	**1.42**	**4,058**	**7.9**	**35.1**	**26.2**	**1.8**

Source: SciVal
*Time Period: [2013-2017]
Date exported: 19-June-2018

Table 2: Comparison of Shoolini University with Asian Universities in top 200 QS 2018 ranks.

Rank	QS University Ranking 2018	Country	Scholarly Output	Publications per Author	Field-Weighted Citation Impact	Citation Count	Citations per Publication	International Collaboration	%Publications in the top 10% most cited worldwide	%Publications in the top 1% most cited worldwide
25	Tsinghua University	China	66,487	1.87	1.43	525,016	7.9	29	18.8	4.9
28	The University of Tokyo	Japan	59,136	2.05	1.33	505,782	8.6	32.7	17.7	3.5
36	Kyoto University	Japan	40,457	2.00	1.3	335,963	8.3	31.2	17.6	3.3
36	Seoul National University	South Korea	48,112	1.63	1.39	403,439	8.4	27.5	16.6	3.6
40	Fudan University	China	39,419	1.17	1.36	358,677	9.1	29.5	21	3.5
56	Tokyo Institute of Technology	Japan	19,203	2.00	1.17	126,296	6.6	30.6	15	3.1
63	Osaka University	Japan	33,348	1.83	1.12	33,348	7.3	27.4	15.7	2.6
76	National Taiwan University (NTU)	Taiwan	33,249	1.49	1.33	268,837	8.1	31.5	15.9	3.8
106	Yonsei University	South Korea	27,349	1.33	1.25	213,099	7.8	24.6	15.2	3.8
114	Nanjing University	China	32,137	1.30	1.43	295,492	9.2	30.1	22.9	3.8
122	Hokkaido University	Japan	21,317	1.67	1	144,127	7	28.6	15	2.5
161	National Tsing Hua University	Taiwan	12,418	1.50	1.39	101,853	8.2	33.8	17	4.5
172	Indian Institute of Technology Delhi (IITD)	India	10,053	2.25	1.12	54,039	5.4	20.6	13.6	2.5
	Shoolini University of Biotechnology and Management Sciences	India	**516**	**1.47**	**1.42**	**4,058**	**7.9**	**35.1**	**26.2**	**1.8**

Source: SciVal
*Time Period: [2013-2017]
Date exported: 19-June-2018

Shoolini University – Quality of Research
Top 10 Overall Institutes/Universities (NIRF 2018)

Research Quality Indicators

Institution	Research Output (SCOPUS Documents)	Field-Weighted Citation Impact	Citations per Publication	% Publications in top 10% most cited worldwide	% Publications in top 1% most cited worldwide	% International Collaboration
Shoolini University* (Estb. 2009)	649	1.63	7.3	27	4.7	43.8
Top 10 Overall (NIRF 2018)	98002	1.01	4.7	12.4	1	21.4
Indian Institute of Science Bangalore	13558	1.04	5.4	14.1	1.2	27.7
Indian Institute of Technology, Bombay	11735	1.06	4.9	12.3	1.1	27.2
Indian Institute of Technology, Kharagpur	11679	1.07	4.9	13.6	0.8	19.6
Anna University	11363	0.66	3.1	7.9	0.4	10.9
Indian Institute of Technology, Delhi	10651	1.16	4.8	14	1	20.3
Indian Institute of Technology, Madras	10879	1.01	4.4	11.9	1.1	25.5
Banaras Hindu University	9856	1.05	5.2	12.9	1.2	19
Indian Institute of Technology Roorkee	8873	1.13	5.4	14.2	1.3	18.1
Indian Institute of Technology, Kanpur	7429	1.07	4.9	13.4	1	25.2
Jawaharlal Nehru University	4431	0.91	4.6	9.9	0.8	20.3

Source: SciVal
*Time Period: [2014->2018]
Date last updated: 23-Nov-2018

Shoolini University - Quality of Research
Top 10 Indian Universities (NIRF 2018)

Research Quality Indicators

Institution	Research Output (SCOPUS Documents)	Field-Weighted Citation Impact	Citations per Publication	% Publications in top 10% most cited worldwide	% Publications in top 1% most cited worldwide	% International Collaboration
Shoolini University* (Estb. 2009)	649	1.63	7.3	27	4.7	43.8
Top 10 Indian Universities (NIRF 2018)	77774	0.95	4.6	11.2	1	19.6
Indian Institute of Science Bangalore	13558	1.04	5.4	14.1	1.2	27.7
University of Delhi	12254	1.13	5.4	12.7	1.7	21.3
Anna University	11363	0.66	3.1	7.9	0.4	10.9
Banaras Hindu University	9856	1.05	5.2	12.9	1.2	19
Jadavpur University	8519	0.95	4.4	11.3	0.6	17.4
Amrita Vishwa Vidyapeetham	6369	0.92	2.7	5.3	0.7	11.1
Aligarh Muslim University	5249	1.05	5.1	14.6	1.7	32.6
Jawaharlal Nehru University	4431	0.91	4.6	9.9	0.8	20.3
University of Hyderabad	3816	0.94	5.1	12.2	1.1	19.9
Savitribai Phule Pune University	3746	1.11	6.9	11.3	1.4	20

Source: SciVal
*Time Period: [2014->2018]
Date last updated: 23-Nov-2018

Annexure IV

Publications by faculty during the Academic Year 2017

S. No.	Title	Authors	Scopus Source title	Volume	Issue	Pages	CiteScore 2017	Publication-type
1	Removal of methylene blue by adsorption onto activated carbon developed from Ficus carica bast	Pathania, D., Sharma, S., Singh, P.	Arabian Journal of Chemistry	10	-	S1445-S1451	2.39	Article
2	Fabrication and characterization of chitosan-crosslinked-poly(alginic acid) nanohydrogel for adsorptive removal of Cr(VI) metal ion from the aqueous medium	Sharma, G., Naushad, M., Al-Muhtaseb, A.H., Kumar, A., Khan, M.R., Kalia, S., Shweta, Bala, M., Sharma, A.	International Journal of Biological Macromolecules	95	-	484-493	4.11	Article
3	Facile hetero-assembly of superparamagnetic Fe3O4/BiVO4 stacked on biochar for solar photo-degradation of methylparaben and pesticide removal from soil	Kumar, A., Shalini, Sharma, G., Naushad, M., Kumar, A., Kalia, S., Guo, C., Mola, G.T.	Journal of Photochemistry and Photobiology A: Chemistry	337	-	118-131	2.76	Article
4	Efficient removal of Coomassie brilliant blue R-250 dye using starch/poly(alginic acid-cl-acrylamide) nanohydrogel	Sharma, G., Naushad, M., Kumar, A., Rana, S., Sharma, S., Bhatnagar, A., J. Stadler, F., Ghfar, A.A., Khan, M.R.	Process Safety and Environmental Protection	109	-	301-310	3.5	Article
5	Revolution from monometallic to trimetallic nanoparticle composites, various synthesis methods, and their applications: A review	Sharma, G., Kumar, D., Kumar, A., Al-Muhtaseb, A.H., Pathania, D., Naushad, M., Mola, G.T.	Materials Science and Engineering C	71	-	1216-1230	5.02	Review
6	ZnSe-WO3nano-hetero-assembly stacked on Gum ghatti for photo-degradative removal of Bisphenol A: Symbiose of adsorption and photocatalysis	Kumar, A., Naushad, M., Rana, A., Inamuddin, Preeti, Sharma, G., Ghfar, A.A.,	International Journal of Biological Macromolecules	104	-	1172-1184	4.11	Article

		Stadler, F.J., Khan, M.R.						
7	Sustainable nano-hybrids of magnetic biochar supported g-C3N4/FeVO4for solar powered degradation of noxious pollutants- Synergism of adsorption, photocatalysis & photo-ozonation	Kumar, A., Kumar, A., Sharma, G., Naushad, M., Stadler, F.J., Ghfar, A.A., Dhiman, P., Saini, R.V.	Journal of Cleaner Production	165	-	431-451	5.79	Article
8	Nano FexZn1â˜’xO as a tuneable and efficient photocatalyst for solar powered degradation of bisphenol A from the aqueous environment	Dhiman, P., Naushad, M., Batoo, K.M., Kumar, A., Sharma, G., Ghfar, A.A., Kumar, G., Singh, M.	Journal of Cleaner Production	165	-	1542-1556	5.79	Article
9	Fabrication and characterization of sodium dodecyl sulphate@ironsilicophosphate nanocomposite: Ion exchange properties and selectivity for binary metal ions	Sharma, G., Thakur, B., Naushad, M., Al-Muhtaseb, A.H., Kumar, A., Sillanpaa, M., Mola, G.T.	Materials Chemistry and Physics	193	-	129-139	2.18	Article
10	A novel development of nanoparticles to bimetallic nanoparticles and their composites: A review	Sharma, G., Kumar, A., Sharma, S., Naushad, M., Prakash Dwivedi, R., ALOthman, Z.A., Mola, G.T.	Journal of King Saud University – Science	-	-	-	3.21	Article in Press
11	Microwave-assisted fabrication of La/Cu/Zr/carbon dots trimetallic nanocomposites with their adsorptional vs photocatalytic efficiency for remediation of persistent organic pollutants	Sharma, G., Bhogal, S., Naushad, M., Inamuddin, Kumar, A., Stadler, F.J.	Journal of Photochemistry and Photobiology A: Chemistry	347	-	235-243	2.76	Article
12	Assessment of the braking performance of lapinusâ€“ wollastonite fiber reinforced friction composite materials	Singh, T., Patnaik, A., Chauhan, R., Rishiraj, A.	Journal of King Saud University - Engineering Sciences	29	2	183-190	2.48	Article
13	Efficient photocatalytic degradation of toxic dyes from the aqueous environment using gelatin-Zr(IV) phosphate nanocomposite and its antimicrobial	Thakur, M., Sharma, G., Ahmad, T., Ghfar, A.A., Pathania, D.,	Colloids and Surfaces B: Biointerfaces	157	-	456-463	4.24	Article

	activity	Naushad, M.						
14	Solar-driven photodegradation of 17-Î²-estradiol and ciprofloxacin from wastewater and CO2conversion using sustainable coal-char/polymeric-g-C3N4/RGO metal-free nano-hybrids	Kumar, A., Kumar, A., Sharma, G., Naushad, M., Veses, R.C., Ghfar, A.A., Stadler, F.J., Khan, M.R.	New Journal of Chemistry	41	18	10208-10224	3.24	Article
15	Superparamagnetic MnFe2O4 dispersed over graphitic carbon sand composite and bentonite as a magnetically recoverable photocatalyst for antibiotic mineralization	Gautam, S., Shandilya, P., Priya, B., Singh, V.P., Raizada, P., Rai, R., Valente, M.A., Singh, P.	Separation and Purification Technology	172	-	498-511	4.25	Article
16	Heat transfer enhancement of heat exchanger tube with multiple square perforated twisted tape inserts: Experimental investigation and correlation development	Suri, A.R.S., Kumar, A., Maithani, R.	Chemical Engineering and Processing - Process Intensification	116	-	76-96	3.09	Article
17	Experimental investigation and optimization of the impinging jet solar thermal collector by Taguchi method	Chauhan, R., Singh, T., Kumar, N., Patnaik, A., Thakur, N.S.	Applied Thermal Engineering	116	-	100-109	4.14	Article
18	Magnetically retrievable Bi2WO6/Fe3O4immobilized on graphene sand composite for investigation of photocatalytic mineralization of oxytetracycline and ampicillin	Raizada, P., Kumari, J., Shandilya, P., Dhiman, R., Pratap Singh, V., Singh, P.	Process Safety and Environmental Protection	106	-	104-116	3.5	Article
19	Surface-area-controlled synthesis of porous TiO2thin films for gas-sensing applications	Park, J.Y., Kim, H.-H., Rana, D., Jamwal, D., Katoch, A.	Nanotechnology	28	9	-	3.01	Article
20	Controlled release of antibiotic amoxicillin drug using carboxymethyl cellulose-cl-poly(lactic acid-co-itaconic acid) hydrogel	Sood, S., Gupta, V.K., Agarwal, S., Dev, K., Pathania, D.	International Journal of Biological Macromolecules	101	-	612-620	4.11	Article
21	Experimental study and correlation development for Nusselt number and friction factor for discretized broken V-	Kumar, R., Chauhan, R., Sethi, M., Kumar, A.	Experimental Thermal and Fluid Science	81	-	56-75	3.6	Article

	pattern baffle solar air channel							
22	Biosynthesis, characterization and antibacterial activity of silver nanoparticles using an endophytic fungal supernatant of Raphanus sativus	Singh, T., Jyoti, K., Patnaik, A., Singh, A., Chauhan, R., Chandel, S.S.	Journal of Genetic Engineering and Biotechnology	15	1	31-39	1.58	Article
23	Synthesis of polyaniline-based composite material and its analytical applications for the removal of highly toxic Hg2+metal ion: Antibacterial activity against E. coli	Bushra, R., Naushad, M., Sharma, G., Azam, A., Alothman, Z.A.	Korean Journal of Chemical Engineering	34	7	1970-1979	2.09	Article
24	Impact of solid-state fermentation (Aspergillus oryzae) on functional properties and mineral bioavailability of black-eyed pea (Vigna unguiculata) seed flour	Chawla, P., Bhandari, L., Sadh, P.K., Kaushik, R.	Cereal Chemistry	94	3	437-442	1.4	Article
25	Pharmacological evaluation of aqueous extract of syzigium cumini for its antihyperglycemic and antidyslipidemic properties in diabetic rats fed a high cholesterol dietâ€"Role of PPARÎ³ and PPARÎ±	Sharma, S., Pathak, S., Gupta, G., Sharma, S.K., Singh, L., Sharma, R.K., Mishra, A., Dua, K.	Biomedicine and Pharmacotherapy	89	-	447-453	3.39	Article
26	Investigation of structural, optical, dielectric and magnetic studies of Mn-substituted BiFeO3 multiferroics	Chandel, S., Thakur, P., Tomar, M., Gupta, V., Thakur, A.	Ceramics International	43	16	13750-13758	2.85	Article
27	Effect of square wings in multiple square perforated twisted tapes on fluid flow and heat transfer of heat exchanger tube	Singh Suri, A.R., Kumar, A., Maithani, R.	Case Studies in Thermal Engineering	10	-	28-43	3.26	Article
28	Targeting sonic hedgehog signaling in neurological disorders	Patel, S.S., Tomar, S., Sharma, D., Mahindroo, N., Udayabanu, M.	Neuroscience and Biobehavioral Reviews	74	-	76-97	8.92	Review
29	Numerical analysis of the thermal hydraulic performance of Al2O3-H2O nanofluid flowing through a protrusion obstacles square mini channel	Kumar, S., Kothiyal, A.D., Bisht, M.S., Kumar, A.	Case Studies in Thermal Engineering	9	-	108-121	3.26	Article
30	Status, supply chain and processing of cocoa - A review	Beg, M.S., Ahmad, S., Jan, K., Bashir,	Trends in Food Science and	66	-	108-116	6.67	Review

		K.	Technology					
31	Adsorptive remediation of Cu(II) and Ni(II) by microwave assisted H3PO4activated carbon	Gupta, V.K., Pathania, D., Sharma, S.	Arabian Journal of Chemistry	10	-	S2836-S2844	2.39	Article
32	Developing heat transfer and friction loss in an impingement jets solar air heater with multiple arc protrusion obstacles	Nadda, R., Kumar, A., Maithani, R.	Solar Energy	158	-	117-131	4.89	Article
33	Kinetics of photocatalytic mineralization of oxytetracycline and ampicillin using activated carbon supported ZnO/znwo4nanocomposite in simulated wastewater	Raizada, P., Kumari, J., Shandilya, P., Singh, P.	Desalination and Water Treatment	79	-	204-213	1.38	Article
34	Correlation development for Nusselt number and friction factor of a multiple type V-pattern dimpled obstacles solar air passage	Kumar, A., Kumar, R., Maithani, R., Chauhan, R., Sethi, M., Kumari, A., Kumar, S., Kumar, S.	Renewable Energy	109	-	461-479	5.38	Article
35	Hybrid entropy â€“ TOPSIS approach for energy performance prioritization in a rectangular channel employing impinging air jets	Chauhan, R., Singh, T., Tiwari, A., Patnaik, A., Thakur, N.S.	Energy	134	-	360-368	5.6	Article
36	Characterization of keratin microparticles from feather biomass with potent antioxidant and anticancer activities	Sharma, S., Gupta, A., Chik, S.M.S.T., Kee, C.G., Mistry, B.M., Kim, D.H., Sharma, G.	International Journal of Biological Macromolecules	104	-	189-196	4.11	Article
37	Delivery of Thermoresponsive-Tailored Mixed Micellar Nanogel of Lidocaine and Prilocaine with Improved Dermatokinetic Profile and Therapeutic Efficacy in Topical Anaesthesia	Sharma, G., Kamboj, S., Thakur, K., Negi, P., Raza, K., Katare, O.P.	AAPS PharmSciTech	18	3	790-802	2.59	Article
38	Alginate-Zr (IV) phosphate nanocomposite ion exchanger: Binary separation of heavy metals, photocatalysis and antimicrobial activity	Pathania, D., Thakur, M., Mishra, A.K.	Journal of Alloys and Compounds	701	-	153-162	3.66	Article
39	The niosome-based hydrogel of resveratrol for topical applications: An	Negi, P., Aggarwal, M., Sharma, G.,	Biomedicine and	88	-	480-	3.39	Article

	effective therapy for pain related disorder(s)	Rathore, C., Sharma, G., Singh, B., Katare, O.P.	Pharmacotherapy			487		
40	Optimizing discrete V obstacle parameters using a novel Entropy-VIKOR approach in a solar airflow channel	Sharma, A., Chauhan, R., Singh, T., Kumar, A., Kumar, R., Kumar, A., Sethi, M.	Renewable Energy	106	-	310-320	5.38	Article
41	Review on energy efficient protocol based on LEACH, PEGASIS, and TEEN	Chauhan, T., Nayyer, M.	2016 International Conference on Emerging Trends in Communication Technologies, ETCT 2016	-	-	-	-	Conference Paper
42	Calcitonin gene-related peptide (CGRP): A novel target for Alzheimer's disease	Singh, Y., Gupta, G., Shrivastava, B., Dahiya, R., Tiwari, J., Ashwathanarayana, M., Sharma, R.K., Agrawal, M., Mishra, A., Dua, K.	CNS Neuroscience and Therapeutics	23	6	457-461	3.14	Review
43	Evaluation of in vitro and in vivo anti-urolithiatic activity of silver nanoparticles containing aqueous leaf extract of Tragia involucrate	Velu, V., Das, M., Raj N, A.N., Dua, K., Malipeddi, H.	Drug Delivery and Translational Research	7	3	439-449	3.1	Article
44	Ethanol sensing properties and dominant sensing mechanism of NiO-decorated SnO2nanorod sensors	Sun, G.-J., Lee, J.K., Lee, W.I., Dwivedi, R.P., Lee, C., Ko, T.	Electronic Materials Letters	13	3	260-269	2.15	Article
45	Developing heat transfer and pressure loss in an air passage with multi discrete V-blockages	Kumar, A., Chauhan, R., Kumar, R., Singh, T., Sethi, M., Kumar, A., Sharma, A.	Experimental Thermal and Fluid Science	84	-	266-278	3.6	Article
46	Dual crosslinked pectinâ€“ alginate network as sustained release hydrophilic	Awasthi, R., Kulkarni, G.T.,	International Journal of	97	-	721-	4.11	Article

	matrix for repaglinide	Ramana, M.V., de Jesus Andreoli Pinto, T., Kikuchi, I.S., Molim Ghisleni, D.D., de Souza Braga, M., De Bank, P., Dua, K.	Biological Macromolecules			732		
47	Nano-Au/cMWCNT Modified speB Gene Specific Amperometric Sensor for Rapidly Detecting Streptococcus pyogenes causing Rheumatic Heart Disease	Kaushal, A., Singh, S., Kumar, A., Kumar, D.	Indian Journal of Microbiology	57	1	121-124	2.24	Article
48	Prediction and analysis of promiscuous T cell-epitopes derived from the vaccine candidate antigens of Leishmania donovani binding to MHC class-II alleles using in silico approach	Kashyap, M., Jaiswal, V., Farooq, U.	Infection, Genetics and Evolution	53	-	107-115	2.67	Article
49	Potential therapeutic activity of Phlogacanthus thyrsiformis Hardow (Mabb) flower extract and its biofabricated silver nanoparticles against chemically induced urolithiasis in male Wistar rats	Das, P., Kumar, K., Nambiraj, A., Rajan, R., Awasthi, R., Dua, K., Himaja, M.	International Journal of Biological Macromolecules	103	-	621-629	4.11	Article
50	Adsorption of polyaromatic pollutants from water system using carbon/ZnFe2O4nanocomposite: Equilibrium, the kinetic and thermodynamic mechanism	Sharma, A., Siddiqi, Z.-M., Pathania, D.	Journal of Molecular Liquids	240	-	361-371	4.26	Article
51	Influence of wollastonite shape and amount on tribo-performance of non-asbestos organic brake friction composites	Singh, T., Tiwari, A., Patnaik, A., Chauhan, R., Ali, S.	Wear	386-387	-	157-164	3.31	Article
52	A Comparison of mango kernel starch with a novel starch from litchi (Litchi chinensis) kernel: Physicochemical, morphological, pasting, and rheological properties	Thory, R., Sandhu, K.S.	International Journal of Food Properties	20	4	911-921	1.7	Article

53	Pectin-crosslinked-guar gum/SPION nanocomposite hydrogel for adsorption of m-cresol and o-chlorophenol	Sharma, G., Kumar, A., Chauhan, C., Okram, A., Sharma, S., Pathania, D., Kalia, S.	Sustainable Chemistry and Pharmacy	6	-	96-106	2.37	Article
54	Preparation and characterization of metoprolol tartrate containing matrix-type transdermal drug delivery system	Malipeddi, V.R., Awasthi, R., Ghisleni, D.D.M., de Souza Braga, M., Kikuchi, I.S., de Jesus Andreoli Pinto, T., Dua, K.	Drug Delivery and Translational Research	7	1	66-76	3.1	Article
55	Pharmacological evaluation of the recuperative effect of morusin against aluminum trichloride (AlCl3)-induced memory impairment in rats	Gupta, G., Chellappan, D.K., Agarwal, M., Ashwathanarayana, M., Nammi, S., Pabreja, K., Dua, K.	Central Nervous System Agents in Medicinal Chemistry	17	3	196-200	1.12	Article
56	In vitro assessment of bio-augmented minerals from peanut oil cakes fermented by Aspergillus oryzae through Caco-2 cells	Sadh, P.K., Chawla, P., Bhandari, L., Kaushik, R., Duhan, J.S.	Journal of Food Science and Technology	54	11	3640-3649	1.93	Article
57	Structural, magnetic and MÃ¶ssbauer studies of Nd-doped Mg-Mn ferrite nanoparticles	Somnath, Sharma, I., Kotnala, R.K., Singh, M., Kumar, A., Dhiman, P., Singh, V.P., Verma, K., Kumar, G.	Journal of Magnetism and Magnetic Materials	444	-	77-86	2.97	Article
58	Single-phase thermal and hydraulic performance analysis of a V-pattern dimpled obstacles air passage	Kumar, A., Kumar, R., Chauhan, R., Sethi, M., Kumari, A., Verma, N., Nadda, R.	Experimental Heat Transfer	30	5	393-426	1.53	Article
59	Experimental study of enhancement of heat transfer and pressure drop in a solar air channel with discretized broken V-pattern baffle	Kumar, R., Sethi, M., Chauhan, R., Kumar, A.	Renewable Energy	101	-	856-872	5.38	Article
60	Miniaturization and Bandwidth Enhancement of a Microstrip Patch	Saini, A., Thakur,	Journal of Electronic	46	3	1902-	1.59	Article

	Antenna Using Magneto-Dielectric Materials for Proximity Fuze Application	A., Thakur, P.	Materials			1907		
61	The comparative whole-transcriptome analysis in Podophyllum species identifies key transcription factors contributing to the biosynthesis of podophyllotoxin in P. hexandrum	Kumar, P., Jaiswal, V., Pal, T., Singh, J., Chauhan, R.S.	Protoplasma	254	1	217-228	2.38	Article
62	The role of epidermal growth factor receptor in the management of gastrointestinal carcinomas: Present status and future perspectives	Mahmood, M.Q., Shukla, S.D., Dua, K., Shastri, M.D.	Current Pharmaceutical Design	23	16	2314-2320	2.61	Review
63	Hydrogel-based drug delivery systems: A review with special emphasis on challenges associated with decontamination of hydrogels and biomaterials	Kikuchi, I.S., Galante, R.S.C., Dua, K., Malipeddi, V.R., Awasthi, R., Ghisleni, D.D.M., de Jesus Andreoli Pinto, T.	Current Drug Delivery	14	7	917-925	1.67	Review
64	Experimental investigation of an indirect solar dryer integrated with phase change material for drying valeriana jatamansi (medicinal herb)	Bhardwaj, A.K., Chauhan, R., Kumar, R., Sethi, M., Rana, A.	Case Studies in Thermal Engineering	10	-	302-314	3.26	Article
65	Infectious agents and neurodegenerative diseases: Exploring the links	Alam, M.Z., Alam, Q., Kamal, M.A., Jiman-Fatani, A.A., Azhar, E.I., Azhar Khan, M., Haque, A.	Current Topics in Medicinal Chemistry	17	12	1390-1399	2.73	Review
66	Lab on a paper chip integrated with Si@GNRs for electroanalysis of diazepam	Narang, J., Singhal, C., Mathur, A., Khanuja, M., Varshney, A., Garg, K., Dahiya, T., Pundir, C.S.	Analytica Chimica Acta	980	-	50-57	5.06	Article
67	Synthesis of new benzothiazole Schiff base as a selective and sensitive colorimetric sensor for arsenic on-site detection at ppb level	Chauhan, K., Singh, P., Kumari, B., Singhal, R.K.	Analytical Methods	9	11	1779-1785	2.11	Article

68	Effect of multiple arc protrusion ribs on heat transfer and fluid flow of a circular-jet impingement solar air passage	Nadda, R., Maithani, R., Kumar, A.	Chemical Engineering and Processing: Process Intensification	120	-	114-133	3.09	Article
69	Experimental study of heat transfer enhancement in a rectangular duct distributed by multi V-perforated baffle of different relative baffle width	Kumar, R., Kumar, A., Sharma, A., Chauhan, R., Sethi, M.	Heat and Mass Transfer/Waerme- und Stoffuebertragung	53	4	1289-1304	1.34	Article
70	Raman and MÃ¶ssbauer spectroscopic studies of tungsten doped Niâ€“Zn nano ferrite	Pathania, A., Rana, K., Bhalla, N., Thakur, P., Estrela, P., Mattei, J.L., Queffelec, P., Thakur, A.	Journal of Materials Science: Materials in Electronics	28	1	679-685	2.16	Article
71	Development and validation of stability indicating RP-HPLC method for determination of Î²-acetyldigoxin	Sharma, M., Mahindroo, N.	International Journal of Applied Pharmaceutics	9	1	54-59	1.35	Article
72	Ggum-poly(Itaconic Acid) Based Superabsorbents Via Two-Step Free-Radical Aqueous Polymerization for Environmental and Antibacterial Applications	Sharma, R., Kalia, S., Kaith, B.S., Kumar, A., Thakur, P., Pathania, D., Srivastava, M.K.	Journal of Polymers and the Environment	25	2	176-191	2.14	Article
73	Recent advances in cancer immunology and immunology-based anticancer therapies	Kumar, S., Saini, R.V., Mahindroo, N.	Biomedicine and Pharmacotherapy	96	-	1491-1500	3.39	Review
74	Turbulent heat transfer and nanofluid flow in a protruded ribbed square passage	Kumar, S., Kothiyal, A.D., Bisht, M.S., Kumar, A.	Results in Physics	7	-	3603-3618	2.01	Article
75	Analyzing dispersion compensation using ufbg at 100gbps over 120km using single mode fiber	Sharma, A., Sharma, S., Sharma, A., Singh, I., Bhattacharya, S.	International Journal of Mechanical Engineering and Technology	8	12	1075-1082	2.13	Article
76	Simulation and analysis of dispersion compensation using the proposed hybrid	Sharma, A., Sharma, S., Sharma,	International Journal of	8	12	600-607	2.13	Article

	model at 100gbps over 120km using SMF	A., Singh, I., Bhattacharya, S.	Mechanical Engineering and Technology					
77	New species and new records of earthworms of the genus drawida from kerala part of the western ghats biodiversity hotspot, India (Oligochaeta, moniligastridae)	Narayanan, S.P., Sathrumithra, S., Christopher, G., Julka, J.M.	ZooKeys	2017	691	Jan-18	1.09	Article
78	Structural and optical properties of inorganicâ€“ organic hybrid material of acetanilide tetrachloromercurate(II)	Singh, B., Thakur, A., Kumar, M., Verma, S.K., Jasrotia, D.	Journal of Materials Science: Materials in Electronics	28	14	10007-10011	2.16	Article
79	Expression of nitrile hydratase gene of a mutant 4D strain of Rhodococcus rhodochrous PA 34 in Pichia pastoris	Pratush, A., Seth, A., Bhalla, T.C.	Biocatalysis and Biotransformation	35	1	19-26	0.86	Article
80	A recent update on biological activities and pharmacological actions of liraglutide	Tiwari, J., Gupta, G., Dahiya, R., Pabreja, K., Sharma, R.K., Mishra, A., Dua, K.	EXCLI Journal	16	-	742-747	2.17	Letter
81	Effect of calcium and vitamin D2 fortification on physical, microbial, rheological and sensory characteristics of yogurt	Kaushik, R., Arora, S.	International Food Research Journal	24	4	1744-1752	0.76	Article
82	The anti-psychotic activity of aqueous root extract of Hemidesmus indicus: A time-bound study in rats	Madhu, A., Gupta, G., Arali, B., Chellappan, D.K., Dua, K.	Recent Patents on Drug Delivery and Formulation	11	1	36-41	1.24	Article
83	Effect of pre-milling treatments on wheat flour quality	Kaushik, R., Chawla, P., Kumar, N., Kumar, M.	Annals of the University Dunarea de Jos of Galati, Fascicle VI: Food Technology	41	2	141-152	0.27	Article
84	Effect of nitrogen source and citric acid addition on wine preparation from Japanese persimmon	Sharma, S., Mahant, K., Sharma, S., Thakur, A.D.	Journal of the Institute of Brewing	123	1	144-150	0.99	Article

85	In vitro assessment of the antileishmanial activity of natamycin and nystatin	Sidana, A., Negi, A.K., Farooq, U.	Brazilian Archives of Biology and Technology	60	-	-	0.97	Article
86	An experimental study of heat transfer enhancement in an air channel with broken multi-type V-baffles	Kumar, A., Kumar, R., Maithani, R., Chauhan, R., Kumar, S., Nadda, R.	Heat and Mass Transfer/Waerme-und Stoffuebertragung	53	12	3593-3612	1.34	Article
87	Ultrasensitive transglutaminase based nanosensor for early detection of celiac disease in human	Gupta, S., Kaushal, A., Kumar, A., Kumar, D.	International Journal of Biological Macromolecules	105	-	905-911	4.11	Article
88	Evaluation of antioxidant and anti-inflammatory properties of aqueous extract of wild mushrooms collected from Himachal Pradesh	Bains, A., Tripathi, A.	Asian Journal of Pharmaceutical and Clinical Research	10	3	467-472	0.49	Article
89	Numerical and experimental investigation of enhancement of heat transfer in dimpled rib heat exchanger tube	Kumar, A., Maithani, R., Suri, A.R.S.	Heat and Mass Transfer/Waerme-und Stoffuebertragung	53	12	3501-3516	1.34	Article
90	Synthesis of lactic acidâ€“Zr(IV) phosphate nanocomposite ion exchanger for green remediation	Pathania, D., Thakur, M., Sharma, A., Agarwal, S., Gupta, V.K.	Ionics	23	3	699-706	2.19	Article
91	Metabolic engineering for bioactive compounds: Strategies and processes	Kalia, V.C., Saini, A.K.	Metabolic Engineering for Bioactive Compounds: Strategies and Processes	-	-	1-412	-	Book
92	A Nano-Au/C-MWCNT based label-free amperometric immunosensor for the detection of capsicum chlorosis virus in bell pepper	Sharma, A., Kaushal, A., Kulshrestha, S.	Archives of Virology	162	7	2047-2052	2.25	Article
93	Biotechnological aspects for enhancement of mineral bioavailability	Chawla, P., Bhandari, L., Dhull,	Plant Biotechnology:	-	-	87-100	-	Chapter

	from cereals and legumes	S.B., Sadh, P.K., Sandhu, S.P., Kaushik, R., Navnidhi,	Recent Advancements and Developments					
94	Isolation of isoflavones from Iris kashmiriana Baker as potential anti proliferative agents targeting NF-kappaB	Alam, A., Jaiswal, V., Akhtar, S., Jayashree, B.S., Dhar, K.L.	Phytochemistry	136	-	70-80	3.2	Article
95	Effect of calcium and vitamin D2 fortification on quality characteristics of dahi	Kaushik, R., Sachdeva, B., Arora, S.	International Journal of Dairy Technology	70	2	269-276	1.2	Article
96	Photodegradation of congo red, methylene blue and methyl red dyes using electrochemically synthesized Al2O3 Nanocatalyst	Katwal, R., Kaur, R., Kaur, H.	Asian Journal of Chemistry	29	5	1095-1097	0.21	Article
97	Possible modulation of PPAR-Î³ cascade against depression caused by neuropathic pain in rats	Garg, S., Deshmukh, V.R., Prasoon, P.	Journal of Basic and Clinical Physiology and Pharmacology	28	6	593-600	1.28	Article
98	Implantable systems for drug delivery to the brain	Kaurav, H., Kapoor, D.N.	Therapeutic Delivery	8	12	1097-1107	1.79	Review
99	Biodiversity and sustainable development	Ahmad, N., Sharma, A., Rai, R.	Smart Materials for Smart Living	-	-	257-275	-	Chapter
100	Smart material nanofibers for day to day life	Lal, M., Shandilya, M., Sharma, S., Rai, R.	Smart Materials for Smart Living	-	-	Jan-66	-	Chapter
101	Ferroelectric and ferromagnetic properties of BI1-X-YDYXCYFE1-YTIYO3solid solution	Rai, R., Sharma, A., Bdikin, I., Valente, M.A., Sharma, S.	Smart Materials for Smart Living	-	-	291-302	-	Chapter
102	Smart materials for smart living	Rai, R.	Smart Materials for Smart Living	-	-	1-388	-	Book
103	M-type barium nano hexaferrite material: A novel entrant for storage enrichment and high-frequency applications	Singh, V.P., Kumar, G., Dwivedi, R., Battoo, K.M., Kotnala, R.K., Singh, M.	Smart Materials for Smart Living	-	-	303-336	-	Chapter

104	Development of double perovskite electroceramics	Thakur, S., Shandilya, M., Rai, R.	Smart Materials for Smart Living	-	-	137-172	-	Chapter
105	High dielectric materials for supercapacitors	Kumari, P., Shandilya, M., Lal, M., Rai, R.	Smart Materials for Smart Living	-	-	95-135	-	Chapter
106	Dielectric relaxation in BATIO3-based perovskite	Shandilya, M., Thakur, S., Rai, R., Singh, J.	Smart Materials for Smart Living	-	-	345-363	-	Chapter
107	Possible applications of zinc and titanium in modern life	Sharma, A., Lal, M., Ahmad, N., Rai, R.	Smart Materials for Smart Living	-	-	67-94	-	Chapter
108	Hyperspectral imaging: A brief introduction for beginners	Gupta, A.	Smart Materials for Smart Living	-	-	337-344	-	Chapter
109	Biosynthesis of nanoparticles using plant extracts	Thakur, S., Thakur, S., Shandilya, M., Lal, M., Rai, R.	Smart Materials for Smart Living	-	-	365-382	-	Chapter
110	Piezoelectric electroceramic perovskites and their applications	Kumari, P., Lal, M., Rai, S.P., Rai, R.	Smart Materials for Smart Living	-	-	205-255	-	Chapter
111	Waste derived biochar based bio nanocomposties: Recent progress in utilization and innovations	Oswal, P., Rana, A., Veses, R.C., Kumar, A., Kumar, A.	Modified Biopolymers: Challenges and Opportunities	-	-	105-	-	Chapter
112	Modified biopolymers: Challenges and opportunities	Pathania, D., Sharma, G., Kumar, A.	Modified Biopolymers: Challenges and Opportunities	-	-	1-314	-	Book
113	Progress from composite materials to biocomposite materials and their applications	Naushad, M., Alfadul, S.M., Al-Muhtaseb, A.H., Sharma, G., Ponnusamy, S.K., ALOthman, Z.A., Bushra, R.	Modified Biopolymers: Challenges and Opportunities	-	-	163-188	-	Chapter
114	Biological traits of nanocomposites: Nanofertilizers, nano pesticides, anticancer and antimicrobials	Saini, A.K., Gupta, H., Poswal, A.M., Kumari, R., Kumar,	Modified Biopolymers: Challenges and	-	-	189-206	-	Chapter

		R., Saini, R.V.	Opportunities					
115	Bio-inspired polymer composites: Robust biomedical application podium	Torino, E., Jamwal, D., Sood, K., Singh, V.P., Singh, P., Thakur, P.	Modified Biopolymers: Challenges and Opportunities	-	-	261-284	-	Chapter
116	Naturally occurring biodegradable polymers	Bhattacharya, S., Puri, S., Kumar, A.	Modified Biopolymers: Challenges and Opportunities	-	-	139-162	-	Chapter
117	Biobased-nanocomposites for food packaging applications	Sharma, S., Sharma, G., Inamuddin, Al-Romaizan, A.N., Asiri, A.M.	Modified Biopolymers: Challenges and Opportunities	-	-	207-	-	Chapter
118	Biopolymer drove hydrogels and their diverse applications: A review	Siddiqi, Z.M., Gupta, D.	Modified Biopolymers: Challenges and Opportunities	-	-	83-104	-	Chapter
119	Thiourea functionalized Î²-cyclodextrin as green reducing and stabilizing agent for silver nanocomposites with enhanced antimicrobial and antioxidant properties	Sharma, R., Singh, P., Dharela, R., Chauhan, G.S., Chauhan, K.	New Journal of Chemistry	41	21	12645-12654	3.24	Article
120	Microwave induced graft copolymerization of binary monomers onto luffa cylindrica fiber: Removal of congo red	Pathania, D., Sharma, A., Sethi, V.	Procedia Engineering	200	-	408-415	0.89	Conference Paper
121	Organic farming, food quality, and human health: A trisection of sustainability and a move from pesticides to eco-friendly biofertilizers	Thakur, N.	Probiotics in Agroecosystem	-	-	491-515	-	Chapter
122	Effect of addition of zinc ferrite on dielectric and magnetic properties of (Ba,Ca)TiO3ceramics	Shandilya, M., Rai, R., Sharma, K., Thakur, D.	Integrated Ferroelectrics	185	1	147-154	0.41	Article
123	Problems and prospects of lychee cultivation in India	Kashyap, A.S., Thakur, N.	Lychee Disease Management	-	-	139-166	-	Chapter
124	An integrated approach for the management of differential patterns of	Thakur, N.	Lychee Disease Management	-	-	265-277	-	Chapter

	diseases and pest incidence in lychee							
125	Increased soil-microbial-eco-physiological interactions and microbial food safety in tomato under organic strategies	Thakur, N.	Probiotics and Plant Health	-	-	215-232	-	Chapter
126	Modification of structural and electrical properties of Ca element on barium titanate nano-material synthesized by hydrothermal method	Shandilya, M., Rai, R., Zeb, A., Kumar, S.	Ferroelectrics	520	1	93-109	0.66	Article
127	Flavone analogs as antimicrobial agents	Naik, K.K., Thangavel, S., Alam, A., Kumar, S.	Recent Patents on Inflammation and Allergy Drug Discovery	11	1	53-63	1.23	Review
128	An immunoinformatics approach to promiscuous peptide design for the: Plasmodium falciparum erythrocyte membrane protein-1	Khan, N., Kumar, R., Chauhan, S., Farooq, U.	Molecular BioSystems	13	10	2160-2167	2.75	Article
129	Gelatin-zirconium dioxide nanocomposite as a Ni (II) selective potentiometric sensor: Heavy metal separation and photocatalysis	Pathania, D., Thakur, M., Jasrotia, S., Agarwal, S., Gupta, V.K.	International Journal of Electrochemical Science	12	9	8477-8494	1.54	Article
130	Efficacy of medicinal plants against human pathogens isolated from western Himalayas of Himachal Pradesh	Chauhan, N., Farooq, U., Khan, M.A.	Asian Journal of Pharmaceutical and Clinical Research	10	9	353-357	0.49	Article
131	Carbon catalyst derived from Himalayan pine for the C-N coupling of organic molecules leading to pyrrole formation	Gupta, N., Bhardwaj, P., Kumar, A.	Iranian Journal of Catalysis	7	2	171-179	-	Article
132	Formulation, characterization and in-vitro evaluation of fast dissolving tablets containing gliclazide hydrotropic solid dispersions	Madan, J.R., Kamate, V.J., Awasthi, R., Dua, K.	Recent Patents on Drug Delivery and Formulation	11	2	147-154	1.24	Article
133	Micropropagation and phytochemical profile analysis of tissue culture grown Plantago ovata Forsk	Sharma, M., Kumari, A., Mahant, E.	Asian Journal of Pharmaceutical and Clinical Research	10	4	202-206	0.49	Article

134	Oyster mushroom: Answer to human ailments	Anjana, S., Savita, J.	Asian Journal of Pharmaceutical and Clinical Research	10	4	24-27	0.49	Article
135	Metallophilic interactions and structure-stability relationship with secondary interactions in [ZnX]â˜ based hybrid derivatives	Singh, B., Thakur, A., Kumar, M., Jasrotia, D.	Materials Chemistry and Physics	196	-	52-61	2.18	Article
136	Value addition to agro-industrial by-products: Effect of temperature and plasticizer on various properties of pellets developed using extrusion technology	Jan, K., Riar, C.S., Saxena, D.C.	Journal of Food Processing and Preservation	41	6	-	1.39	Article
137	Improving stability and reusability of Rhodococcus pyridinivorans NIT-36 nitrilase by whole cell immobilization using chitosan	Jyoti, Bhatia, K., Chauhan, K., Attri, C., Seth, A.	International Journal of Biological Macromolecules	103	-	Aug-15	4.11	Article
138	Enzymatic modification of ramie fibers and its influence on the performance of ramie-poly(butylene succinate) biocomposites	Thakur, K., Kalia, S.	International Journal of Plastics Technology	21	1	209-226	0.95	Article
139	Role of Saccharomyces cerevisiae TAN1 (tRNA acetyltransferase) in eukaryotic initiation factor 2B (eIF2B)-mediated translation control and stress response	Sharma, S., Sourirajan, A., Dev, K.	3 Biotech	7	3	-	2.23	Article
140	Water treatment using photocatalytic and antimicrobial activities of tin oxide nanoparticles	Kumar, S., Kumar, M., Thakur, A., Patial, S.	Indian Journal of Chemical Technology	24	4	435-440	0.5	Article
141	Antiechinococcal assessment of atovaquoneâ€" an in silico and in vitro analysis	Chauhan, V., Chauhan, N., Farooq, U.	Comparative Clinical Pathology	26	6	1289-1292	0.48	Article
142	A review on pharmacognostic, phytochemical and pharmacological data of various species of Hippophae (Sea buckthorn)	Kaur, T., Singh, G., Kapoor, D.N.	International Journal of Green Pharmacy	11	1	S62-S75	0.32	Review
143	Subcellular localization based comparative study on radioresistant bacteria: A novel approach to mine	Vishambra, D., Srivastava, M., Dev, K., Jaiswal, V.	Computational Biology and Chemistry	69	-	01-Sep	1.55	Article

	proteins involve in radioresistance							
144	Simple, efficient and economical methods for isolation and estimation of novel isoflavone using RP-HPLC	Alam, A., Naik, K.K., Upadhaya, N.K., Kumar, S., Dhar, K.L.	MethodsX	4	-	128-133	1.59	Article
145	Potential challenges and alternative approaches in metabolic engineering of bioactive compounds in an industrial setup	Saini, A.K., Kalia, V.C.	Metabolic Engineering for Bioactive Compounds: Strategies and Processes	-	-	405-412	-	Chapter
146	Metagenomics of fermented foods: Implications on probiotic development	Guleria, S., Kumar, A., Sharma, S., Kulshrestha, S., Chauhan, A.	Mining of Microbial Wealth and MetaGenomics	-	-	333-355	-	Chapter
147	Remedial role of nanocomposite as photocatalysts, adsorbents, and disinfectants in an aqueous system and their biomedical applications	Sharma, A., Sood, S., Pathania, D.	Metabolic Engineering for Bioactive Compounds: Strategies and Processes	-	-	371-401	-	Chapter
148	Yeast as a model system to study human diseases	Poswal, A.M., Saini, A.K.	Metabolic Engineering for Bioactive Compounds: Strategies and Processes	-	-	209-220	-	Chapter
149	Nanomaterial-enabled immunotherapeutic applications	Saini, R.V., Kumari, R.	Metabolic Engineering for Bioactive Compounds: Strategies and Processes	-	-	319-329	-	Chapter
150	Green chemistry approach towards nanoparticle synthesis	Phougat, N., Kumar, M., Saini, R.V., Chhillar, A.K.	Metabolic Engineering for Bioactive Compounds: Strategies and	-	-	249-268	-	Chapter

			Processes					
151	The molecular farming approach towards bioactive compounds	Khatri, S., Saini, R.V., Chhillar, A.K.	Metabolic Engineering for Bioactive Compounds: Strategies and Processes	-	-	49-72	-	Chapter
152	Formation of struvite urinary stones and approaches towards the inhibitionâ€"A review	Das, P., Gupta, G., Velu, V., Awasthi, R., Dua, K., Malipeddi, H.	Biomedicine and Pharmacotherapy	96	-	361-370	3.39	Review
153	Ionic liquid N-ethylpyridinium hydrogen sulfate as an efficient catalyst for designing indole scaffolds and their antimicrobial behavior	Gupta, N., Bhardwaj, P., Sharma, G.	Iranian Journal of Catalysis	7	3	243-248	-	Article
154	Dielectric, electrical conduction and magnetic properties of multiferroic Bi0.8Tb0.1Ba0.1Fe0.9Ti0.1O3perovskite compound	Kumari, P., Rai, R., Sharma, S., Valente, M.A.	Journal of Advanced Dielectrics	7	5	-	0.87	Article
155	Recent trends in HRM: A qualitative analysis using AHP	Joshi, A., Sunny, N., Vashisht, S.	Prabandhan: Indian Journal of Management	10	10	41-52	0.6	Article
156	Algae star polymers with poly(Î³-amino acid) as arms for phosphate scale inhibition	Modgil, T., Singh, P., Chauhan, K.	Trends in Carbohydrate Research	9	1	52-63	-	Article

Abbreviations:

CAS	-	Career Advanced Scheme
CAT	-	Common Admission Test
CBCS	-	Choice Based Credit System
CE	-	Centre for Excellence
COP	-	Career Oriented Programme
CPE	-	College with Potential for Excellence
DPE	-	Department with Potential for Excellence
GATE	-	Graduate Aptitude Test
NET	-	National Eligibility Test
PEI	-	Physical Education Institution
SAP	-	Special Assistance Programme
SF	-	Self Financing
SLET	-	State Level Eligibility Test
TEI	-	Teacher Education Institution
UPE	-	University with Potential Excellence
UPSC	-	Union Public Service Commission
IQAC	-	Internal Quality Assurance Cell
VLCI	-	Visionary Learning Community of India

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