

Say No to Drugs and Yes to Life



COLLEGE OF BASIC SCIENCES
CSK Himachal Pradesh Krishi Vishvavidyalaya
Palampur (H.P.)-176 062



**Annual Progress
Report 2018-19**

**COLLEGE OF BASIC SCIENCES CSK Himachal
Pradesh Krishi Vishvavidyalaya Palampur (H.P.)-
176 062**

ANNUAL REPORT

(For the year 2018-2019)

COLLEGE OF BASIC SCIENCES
CSK HP KRISHI VISHVAVIDYALAYA
PALAMPUR – 176 062

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Preface

Basic Science is the mother of all inventions and it is now being given its due importance at ICAR and National level. The faculty of College of Basic Sciences, CSKHPKV Palampur is striving hard to fulfill the mandate through quality education with research and extension support in the University and to generate good human resources to help the rural masses of the State.

During the period under report i.e. 2018-19, the College of Basic Science offered 532 credit hours of teaching to the Undergraduates and 236 credit hours to the Postgraduate Students of all the constituent colleges of the university during the period of report. Ninety four undergraduate and eleven post graduate students completed their degrees during the academic year 2018-2019. Merit scholarships were awarded to 25 students and three students were awarded Amar Shaheed Captain Saurabh Kalia scholarship. Educational tour of 2nd year students was successfully conducted to North India. An income of Rs.4,44,904/- was generated by various departments of the College.

Teachers of the College were actively involved in various research activities. Seven research projects funded by different agencies were in operation and four new projects were submitted during the period under report. Numerous research papers were published and presented in National/International Conferences during the period under report. Students and staff actively participated in Swachhta Pakhwara (01.08.2018 to 15.08.2018), Independence Day (15.08.2018) at University level, Sadbhawana Diwas (20.08.2018), National Nutrition Month (01-09-2018 to 30-09-2018), Literacy Day (07-09-2018), Prakram Parv Celebrations (28-09-2018), Communal Harmony Day (02.10.2018), Communal Harmony Week (19.11.2018 to 25.11.2018), World AIDS Day (01.12.2018), Celebration of National Youth Day (12-01-2019), Republic Day at the University level (26.01.2019), Martyr's Day (30.01.2019), International Women's Day (08-03-2019), World TB Day (23-03-2019), Blood Donation Camp (28-03-2019), Awareness programme for First Time Voters (29-03-2019) etc. Staff of the college rendered their duties in the Lok Sabha Elections – 2019.

The guidance, facilities and continued encouragement provided by the Hon'ble Vice Chancellor, Professor Ashok Kumar Sarial in various activities of the college are gratefully acknowledged. I express my sincere thanks to the Director of Research, Dr. DK Vatsa and Director of Extension Education, Dr.YP Thakur for providing valuable guidance and taking keen interest in the various research and extension activities at the College. This college receives its financial assistance through various agencies in the form of short/long term projects and I thankfully acknowledge the financial assistance provided by them.

Dr.(Mrs.) Sharda Singh, Professor & Programme Director, Sh. Vaibhav Kalia, Assistant Professor of Centre for Geoinformatics Research and Training and Dr. Rishi Mahajan, Assistant Professor Department of Microbiology deserve appreciation for meticulous work of compilation and shaping this report into its final and presentable form.

Palampur

**Dean
College of Basic Sciences**



Prof. A.K. Sarial
प्रो. अशोक कुमार सरयाल
 Ph.D. (Genetics). Gold Medalist, IARI
Vice-Chancellor
 and
 Member, Governing Body, ICAR



Foreword

चौ. स. कु. हिमाचल प्रदेश कृषि विश्वविद्यालय
 पालमपुर - 176 062 (हि.प्र.) भारत

CSK-Himachal Pradesh Agricultural University
 Palampur - 176 062 (HP) India

For providing teaching and research support in the disciplines of Basic Sciences to other constituent colleges of the University, the College of Basic Sciences was established in May 1991. Despite many colleges in the immediate surrounding areas offering graduate degree in basic sciences, brilliant students prefer studying in this college due to quality education and training. The College of Basic Sciences has been making consistent progress in mandated activities and doing an excellent job in furnishing the learners with multitude skills and knowledge for their bright future.

In the recent past, I have tried to strengthen faculty in this College by recruiting talented young teachers and some of them have justified their selection in short duration by bagging research projects from funding agencies. Some senior faculty members of the College have also bagged prestigious research projects for the University.

While perusing Annual Report for the year 2018-19, I am happy to know that the College of Basic Sciences has completed an eventful and successful academic year. I am sure the College will achieve many new milestones by the time it celebrates its 30 years of establishment in 2021.

I appreciate the Dean and his team for the Annual Report.

(Ashok Kumar Sarial)
 Vice-Chancellor

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1 ADMINISTRATIVE REPORT

1.1 Establishment

The College of Basic Sciences is one of the four constituent colleges of the Chaudhary Sarwan Kumar Himachal Pradesh Krishi Vishvavidyalaya, Palampur. Initially conceived as the Department of Basic Sciences and Humanities in the then College of Agriculture in 1978, it was elevated to the rank of College of Basic Sciences in May, 1991. It comprises of four departments and one Centre namely Biology and Environmental Sciences, Chemistry and Biochemistry, Physical Sciences and Languages and Microbiology, and Centre for Geoinformatics Research and Training. The College has the following mandate:

1.2 Mandate

1. To impart quality education to Under-graduate and Post-graduate students in Basic Sciences leading to B. Sc., M. Sc. and Ph.D. Degrees.
2. To provide support in teaching and basic research to other constituent colleges of the university.
3. To create trained manpower in different disciplines of Basic Sciences.
4. To carry out research work in relation to the state needs for the upliftment of rural masses of the State.

1.3 Current Degree Programmes (18-19):

1. **Undergraduate Programme**
 - i. B.Sc. Physical Sciences & Life Sciences (Three Years)
2. **Postgraduate Studies & Research (Masters Programmes)**
 - i. Master of Science in Biochemistry (Two years)
 - ii. Master of Science in Environment Sciences (Two years)
3. **Postgraduate Studies & Research (Doctorate Programmes)**
 - i. Doctorate of Philosophy in Biochemistry(Three Years)

1.4 Academic Departments/Centre

Sr. No.	Name of Department/Centre
1.	Department of Biology and Environmental Sciences
2.	Department of Chemistry and Biochemistry
3.	Department of Microbiology
4.	Department of Physical Sciences and Languages
5.	Centre for Geo-Informatics Research and Training

1.5 Department-wise Faculty position

Sr. No.	Name of the Faculty	Designation
I. DEPARTMENT OF BIOLOGY AND ENVIRONMENTAL SCIENCES		
1.	Dr.(Mrs.) Anita Singh	Professor
2.	Dr. Ramesh C. Chauhan	Professor
3.	Dr.Virendra Singh	Principal Scientist
4.	Dr.(Mrs.) Usha Rana	Assistant Professor
5.	Dr Radhika Sharma	Asstt. Professor (joined 31.1.2019 on contract basis)
6.	Dr Rakesh Kumar	Asstt. Professor (joined 31.1.2019 on contract basis)
II. DEPARTMENT OF CHEMISTRY AND BIOCHEMISTRY		
1.	Dr.(Mrs.) Neelam Sharma	Professor and Head
2.	Dr. Kamal Mohini	Associate Professor
3.	Dr. Suman Sharma	Assistant Professor
4.	Dr. Nageswer Singh	Assistant Professor (Ad-hoc)
5.	Dr Manish Kumar	Asstt. Professor (joined 28.1.2019 on contract basis)
III. DEPARTMENT OF MICROBIOLOGY		
1.	Dr. S.S. Kanwar	Professor Emeritus(ICAR)
2.	Dr Rishi Mahan	Assistant Professor(joined 28.1.2019 on contract basis)
3.	Dr Abhishek Walia	Assistant Professor(joined 28.1.2019 on contract basis)
IV. DEPARTMENT OF PHYSICAL SCIENCES AND LANGUAGES		
1.	Dr. Manoj Bhargava	Professor and Head
2.	Dr. Kamlesh Singh	Professor Emeritus(ICAR)
3.	Dr.(Mrs.) Sheela Thakur	Assistant Professor (Ad-hoc)
4.	Sh. Kapil Sharma	Assistant Professor (Computer)
5.	Dr Shweta Pathania	Assistant Professor(joined 29.1.2019 on contract basis)
6.	Dr Manjula Sharma	Assistant Professor(joined 28.1.2019 on contract basis)
V. CENTRE FOR GEOINFORMATICS RESEARCH AND TRAINING		
1.	Dr. (Mrs.) Sharda Singh	Professor and Programme Director
2.	Dr. R.S. Rana	Sr. Scientist (Agronomy)
3.	Sh. Vaibhav Kalia	Assistant Professor Sr. Scale (Computer)

1.6 Department-wise staff position in the College

Sr.No	Name	Designation
DEAN OFFICE		
Ministerial Staff		
1.	Sh.Kalyan Chand	Section Officer
2.	Sh. Rajiv Kumar	Sr. Assistant (upto 14.3.2019)
3.	Sh.Sanjay Kumar	Sr. Asstt. w.e.f. 15.3.2019
4.	Sh. Vinod Kumar	Jr. Assistant (Upto 14.3.2019)
5.	Sh. Manohar Lal	Clerk
6.	Sh. Sanjeev Kumar	Clerk (w.e.f. 14.3.2019 on half days basis during 2 nd half of the day)
Class – D		
1.	Sh. Hari Singh	Peon
2.	Sh. Sansar Chand	Beldar

3.	Smt. Kamlesh Kumari	Sweepress
LAND SCAPPING SECTION (COBS)		
Class-D		
1.	Sh. Kuldeep Kumar	Beldar
BAMBOO SECTION (COBS)		
Class-D Staff		
1.	Sh. Bishamber Dass	Beldar (Retired on 30.11.2018)
DEPARTMENT OF BIOLOGY AND ENVIRONMENTAL SCIENCES		
Ministerial Staff – Nil		
Technical Staff		
Class-D Staff		
1.	Sh. Subhash Chand	Peon
2.	Sh. Anup Singh	Beldar
DEPARTMENT OF CHEMISTRY AND BIOCHEMISTRY		
Ministerial Staff- Nil		
Technical Staff		
1.	Sh. Shakti Chand	Jr. Technician
2.	Sh. Trilok Chand	Lab Attendant
DEPARTMENT OF MICROBIOLOGY		
Ministerial Staff -		
1.	Nil	
Technical Staff:		
2.	Sh. Jai Raj	Jr. Technician
Class-D Staff		
1.	Sh. Manohar Lal	Peon (Upto 14.3.2019)
DEPARTMENT OF PHYSICAL SCIENCES AND LANGUAGES		
Ministerial staff		
	-Nil-	
Technical Staff		
	Sh. Surjeet Singh	Jr. Technician
Class-D staff		
1.	Nil	
CENTRE FOR GEO-INFORMATICS RESEARCH AND TRAINING		
Ministerial staff		
	-Nil-	

1.7 Students Intake during the Academic Year 2018-19

Total number of 91 students admitted to undergraduate programme and 05 students were admitted to postgraduate programmes during the Academic Session 2018-2019 are as below:

Students Intake during 2018-19			
Programme	Boys	Girls	Total
B. Sc.(undergraduate programme)	38	53	91
M. Sc. (Biochemistry)	Nil	2	2
M. Sc. (Environment)	NIL	3	3
Ph.D. (Biochemistry)	NIL	NIL	NIL

1.8 Total Students Strength during the Academic Year 2018-19

In total 249 UG students and 19 PG students were registered during the academic year 2018-2019 and the break-up is:

Programme	Boys	Girls	Total
Total Students B. Sc.(UG)	86	163	249
Total Students M.Sc. & Ph.D(PG)	4	13	17
M. Sc. (Biochemistry)	1	9	10
Ph.D. (Biochemistry)	2	4	6
M. Sc. (Environment)	1	5	6

At present teachers from other colleges are also associated for teaching in some of the disciplines.

1.9 Students Passed Out during the Academic Year 2018-19

The degrees were awarded to 94 UG and 22 PG students as given below:

Programme	Boys	Girls	Total	First Division	%
Total B. Sc.(UG)	23	71	94	76	81%
Total M. Sc. & Ph.D.	2	9	11		
M. Sc. (Biochemistry)	1	4	5	--	--
Ph.D. (Biochemistry)	NIL	2	2		
M. Sc. (Environment)	1	3	4	--	--

1.10 Total Credit Hours offered during the Academic Year 2018-19

The faculty of the college was engaged in the following teaching programmes of Under-graduate and Post-graduate studies:

Compulsory courses were offered to the students of (i) B.Sc. (Life Sciences) (ii) B.Sc.Hons (Agri.) (iii) B.Sc. Home Science. (Hons.) and (iv) B.V.Sc. & A.H. of all the constituent colleges. Postgraduate courses: Major, minor and supporting courses were also offered to the students of M.Sc. and Ph.D. of this college and other constituent colleges. The detail of the total teaching credit hours undertaken by the faculty is given in the Table as below:

Name of the Department	Over all		COBS		COA		COHS		COVAS	
	UG	PG	UG	PG	UG	PG	UG	PG	UG	PG
Total	532	236	418	225	32	6	80	5	2	0
Biology & Environment Sciences	149	76	125	76	10	0	12	0	2	0
Chem. & Biochem	152	110	138	110	8	0	6	0	0	0
Microbiology	35	19	0	14	2	0	33	5	0	0

Physical Sciences and Languages	194	25	155	25	10	0	29	0	0	0
C.G.R.T.	2	6	0	0	2	6	0	0	0	0

Some of these courses were offered jointly for different colleges wherever it was required.

1.11 Scholarships Awarded

UG Programme:

College Merit Scholarship and **Amar Shaheed Capt. Saurabh Kalia Scholarship** were awarded to the following Undergraduate students:

B.Sc 1st year

Sr. No	Name of the student	Admission No.	Amount
1	Sonia Thakur	S-2018-04-080	Rs. 600/-per month
2	Rahul Kumar	S-2018-04-061	Rs. 600/-per month
3	Shaina	S-2018-04-072	Rs. 600/-per month
4	Akriti	S-2018-04-014	Rs. 600/-per month
5	Aditi Kumari	S-2018-04-008	Rs. 600/-per month
6	Meghna Sharma	S-2018-04-044	Rs. 600/-per month
7	Akshita Sharma	S-2018-04-015	Rs. 600/-per month
8	Rishika Mahjan	S-2018-04-063	Rs. 600/-per month
9	Nishant Netan	S-2018-04-050	Rs. 600/-per month

BSc.2nd year

Sr. No	Name of the student	Admission No.	Amount
1	Akshita Thakur	S-2017-04-013	Rs. 600/-per month
2	Ritika Gautam	S-2017-04-072	Rs. 600/-per month
3	Bishkha	S-2017-04-023	Rs. 600/-per month
4	Mukul Rana	S-2017-04-046	Rs. 600/-per month
5	Deeksha Sharma	S-2017-04-028	Rs. 600/-per month
6	Riya Soni	S-2017-04-073	Rs. 600/-per month
7	Mital Rana	S-2017-04-045	Rs. 600/-per month
8	Neha Thakur	S-2017-04-049	Rs. 600/-per month

BSc.3rd year

Sr. No	Name of the student	Admission No.	Amount
1	Taniya Sharma	S-2016-04-084	Rs. 600/-per month
2	Amanpreet Kaur	S-2016-04-010	Rs. 600/-per month
3	Samridh Sood	S-2016-04-095	Rs. 600/-per month
4	Kavita Kumari	S-2016-04-024	Rs. 600/-per month
5	Shafali	S-2016-04-056	Rs. 600/-per month
6	Shayna Sharma	S-2016-04-060	Rs. 600/-per month
7	Shailja Kumari	S-2016-04-059	Rs. 600/-per month
8	Prakshi	S-2016-04-039	Rs. 600/-per month

Amar Shaheed Capt. Saurabh Kalia Memorial Scholarship:

Sr. No	Name of the student	Admission No.	Amount
1 st year	Samriti Sharma	S-2018-04-070	Rs. 600/-per month
2 nd year	Shruti Saklani	S-2017-04-082	Rs. 600/-per month
3 rd year	Shivani Katoch	S-2016-04-065	Rs. 600/-per month

**Scholarships Awarded for Post Graduate Programme:
Department of Chemistry and Biochemistry**

Sr. No.	Name of Student	Admission No.	Period	Rate	Amount
Merit Scholarship					
M.Sc. (Biochemistry)					
1.	Ms . Sunidhi	S-2017-30-004	28.07.2018 to 27.07.2019	2000/-PM	24000.00
2.	Ms. Shamli Sharma	S-2018-30-002	27.07.2018 to 24.07.2019	2000/-PM	23871.00
Ph.D (Biochemistry)					
1.	Ms. Neerja Kharwal	S-2017-40-001	09.01.2019 To 07.01.2020	2500/-PM	29919.00
Inspire Fellowship					
			Nil		

1.12 Representation to various University Bodies from College

Academic Council	
Dr Manoj Bhargva 04.07.18 to 08.01.19 Dr Promila Kanwar 09.01.19 to 31.05.19 Dr A.K. Basandrai 01.06.19 to 30.06.19	Dean
Dr. (Mrs.) AnitaSingh	Professor & Head, Dept. of Biology & Environmental Sciences till Feb., 2016
Dr. (Mrs.) Sharda Singh	Professor (Mathematics) & Programme Director, Centre For Geo-Informatics Research and Training
Research Council	
Dr Manoj Bhargva 04.07.18 to 08.01.19 Dr Promila Kanwar 09.01.19 to 31.05.19 Dr A.K. Basandrai 01.06.19 to 30.06.19	Dean
Dr. Manoj Bhargava	Professor & Head, Physical Sciences and Languages
Dr. Anita Singh	Professor & Head, Biology and Environmental Sciences
Extension Council	
Dr Manoj Bhargva 04.07.18 to 08.01.19 Dr Promila Kanwar 09.01.19 to 31.05.19 Dr A.K. Basandrai 01.06.19 to 30.06.19	Dean
Dr. Manoj Bhargava	Professor & Head, Physical Sciences and Languages
Dr. R.C. Chauhan	Professor , Biology and Environmental Sciences

Educational and Resident Instructions Advisory Committee	
Dr Manoj Bhargva 04.07.18 to 08.01.19 Dr Promila Kanwar 09.01.19 to 31.05.19 Dr A.K. Basandrai 01.06.19 to 30.06.19	Dean
Dr. Manoj Bhargava	Professor & Head, Physical Sciences and Languages
Dr. (Mrs.) AnitaSingh	Professor & Head, Biology and Environmental Sciences

1.13 Constitution of the Board of Studies of College

Dr Manoj Bhargva 04.07.18 to 08.01.19 Dr Promila Kanwar 09.01.19 to 31.05.19 Dr A.K. Basandrai 01.06.19 to 30.06.19	Dean	Chairman
Dr. Anita Singh	HOD, Biology and Environmental Sciences	Secretary
Dr. Manoj Bhargava	HOD, Physical Sciences & Languages	Member
Dr. Manoj Bhargava	HOD, Microbiology	Member
Dr. Neelam Sharma	HOD, Chemistry & Biochemistry	Member
Dr. Sharda Singh	Programme Director, CGRT	Member
Dr. Raj Pal Sharma	Secretary, Board of Studies, COA	Member
Dr.(Mrs.) Anupam Sandal	Secretary, Board of Studies, COHS	Member

1.14 COBS-NAAC/AISHE Committees

NAAC/AISHE

Sr. No.	Activity	Team
1.	Curricular Aspects	Dr. Manoj Bhargava - Convener Dr. Sheela Thakur Dr. Shweta Pathania
2.	Teaching-Learning and Evaluation	Dr. Anita Singh- Convener Dr. Virendra Singh Dr. Radhika Sharma Dr. Rakesh Kumar
3.	Research, Consultancy and Extension	Dr. Neelam Sharma- Convener Dr. Nageswer Singh Dr. Manish Kumar
4.	Infrastructure and Learning Resources	Sh Kapil Sharma- Convener Dr. Manjula Sharma
5.	Students Support and Progression	Dr. Suman Sharma- Convener Dr. Abhishek Walia
6.	Governance, Leadership and Management	Dr. Ranbir Singh Rana- Convener Dr. Rishi Mahajan
7.	Innovation and Best Practices	Dr. R.C. Chauhan- Convener Dr Usha Rana

8.	Extended Profile Template	Dr Abhishek Walia- Convener Dr Rishi Mahajan
9.	COBS AISHE Committee	Dr Sheela Thakur- Convener Dr Manjula Sharma
10.	Technical Coordinator	Sh. Vaibhav Kalia
11.	Nodal Officer	Dr. Sharda Singh

1.15 Internal Quality Assessment Cell (IQAC)

1	Dean	Chairperson
2	Head, Department of Biology and Environmental Sciences	Member
3	Head , Department of Physical Sciences and Languages	Member
4	Head , Department of Microbiology	Member
5	Programme Director, Centre for Geo-informatics	Member
6	NAAC Nodal Officer – Dr Sharda Singh	Member
7	NAAC Technical Coordinator – Sh. Vaibhav Kalia	Member
8	IQAC Coordinator – Dr. Rishi Mahajan	Member Secretary

1.16 Grievance Redressal Committee:

Sr. No.	Name	
1.	Dr. Usha Rana	Nodal Officer
2.	Dr. Suman Sharma	Member
3.	Sh Kapil Sharma	Member

1.17 Sports, Games Cultural and Literary Committees

The in-charges for various activities were as:

1.	Teacher Incharge (Games & Sports)	Dr. R.C. Chauhan
2.	Athletic	Sh. Kapil Sharma & Dr. Nageswer Singh
3.	Football	Dr. R.C. Chauhan
4.	Basketball	Dr. Anita Singh
5.	Cricket	Sh. Vaibhav Kalia
6.	Volley-ball	Sh. Vaibhav Kalia
7.	Weight Lifting, and best physique	Dr Virendra Singh
8.	Badminton	Sh. Kapil Sharma
9.	Table-Tennis	Dr. Neelam Sharma
10.	Chess	Dr. Sharda Singh
11.	Mountaineering & Hiking	Dr. Nageswer Singh
12.	Cultural Activities	Dr Usha Rana & Dr. Sheela Thakur
13.	Literary Activities	Dr. Kamal Mohini & Dr. Suman Sharma

1.18 Anti Ragging Monitoring Committee:

The following anti ragging committee was formed to monitor anti ragging measures around the college and also ensure timely conduct of classes of first year students. (No.QSD.3-40/2018-CSKHPKV (COBS-Acad)/-1045-61Dated, 16.07.2018 Palampur

Squad No.	Name and Designation			Contact No.
Squad No. 1	1	Dr. R.C. Chauhan	Convener	9418064454
	2.	Dr. Sharda Singh	Member	94180-10737
	3	Dr. Kamal Mohini	Member	98161-85713
	4	Mr. Kapil Sharma	Member	94184-62229
Squad No. 2	1.	Dr. Virendra Singh	Member	94180-45229
		Dr. R.S. Rana	Member	94181-06167
	2.	Dr. Virendra Singh	Member	94180-45229
	3.	Dr. R.S. Rana	Member	94181-06167
	4.			
Squad No. 3	1.	Dr. R.C. Chauhan	Convener	9418064454
	2.	Dr. Kamal Mohini	Member	98161-85713
	3.	Dr. Usha Rana	Member	941884-14393

Students were also apprised by Dean COBS with regard to anti-ragging measures. All the registered students in first year were registered online to have the declaration by students and his/her parents with regard to Anti Ragging measures etc (www.amanmovement.org)

1.19 NSS & NCC Incharges of College

1.	NSS InCharge	Dr. Suman Sharma (upto Sep.30,2018) Sh Kapil Sharma
2.	NCC InCharge (University Level)	Dr Ankur Sharma

1.20 Budget for Teaching Schemes

The budget expenditure incurred during the year 2018-2019 is given below:

Sr. No.	Scheme No.	Sponsoring Agency	Total Amount (Rs)
College of Basic Sciences			
1.	APL-011-25 (Agri.)(i,ii,iii)	State Govt.	3,83,80,527/-
2.	APL-009-25 (Agri.)	-do-	62,63,684/-
3.	APL-06-25	-do-	8,46,847/-
4.	APL-19-25	-do-	13,55,670/-
5.	APL-011-27	-do-	24,65,000/-
6.	APL-043-25	-do-	42,223/-
Total			4,93,53,951/-

1.21 Courses Offered during Academic Year 2018-2019:

Following under graduate, Post Graduate and Post Graduate Minor/Supporting Courses were actually offered during the academic year 2018-19 by the College.

Semester I of Academic Year 2018-2019 (UG courses)

Courses for B.Sc. Programme			
Chemistry, Physics and Mathematics Combination)			
Course No.	Title	Cr. Hrs	Name of Teacher
B.Sc. Physical Sciences Ist Year			
Phys. 111	Mechanics	4+2	Dr. Sheela Thakur
Math.111	Differential Calculus	5+1*	Dr. (Mrs) Sharda Singh
Chem112	Atomic Structure, Bonding, General Organic Chemistry & Aliphatic Hydrocarbons	4+2	Mrs. S. K. Angiras & Mr. M.S. Thakur
Eng.111	English communication	2+0	Ms. Sunita Sood
Ort.111	Orientation	1+0(NC)	Dr. Virendera Singh
NCC/NSS	National Cadet Corps/National Service Scheme	0+2(NC)	NCC Officer/NSS Programmer Officer
Total		20+3(NC)	
B. Sc. II year			
Chem.212	Solutions, phase Equilibrium, Conductance, Electrochemistry & Functional Group organic Chemistry-II	4+2	Dr. Suman Sharma & Dr. Vishal Priya
Phys.211	Thermal Physics and Statistical Machanics	4+2	Dr. (Mrs) Suveda Aarya
Math.211	Real Analysis	5+1*	Ms. Anjali Sharma
Comp. 211	Computer Application	2+1	Sh. Vaibhav Kalia/ Sh. Kapil Sharma
NCC/NSS	National Cadet Corps/National Service Scheme	0+2(NC)	NCC Officer/NSS Programmer Officer
Total		21+2(NC)	
B.Sc. III year (Physical Sciences)			
Chem.313	Chemistry of Main Group Elements, theories of Acids and Bases	4+2	Mrs. S.K. Angiras & Dr. Vishal Priya
Chem.315	Chemistry of Cosmetics and Perfumes	2+1	Mrs. S.K. Angiras
Phys.312	Elements of Modern Physics	4+2	Ms. Geetanjali Sharma
Math.311	Matrices	5+1*	Sh. V.P.Sood
NCC/NSS	National Cadet Corps/National Service Scheme	0+2(NC)	NCC Officer/NSS Programmer Officer
Total		21+2(NC)	
Course No.	Title	Cr. Hrs	Name of Teacher
(Chemistry, Botany and Zoology Combination)			
B.Sc. Life Sciences Ist Year			
Bot.111	Biodiversity (Microbes, Algae, Fungi and Archegoniate)	4+2	Dr. Usha Rana , Dr. Suman Kumar, Rajinder Kumar, Shiwani & Dr. Anita Singh
Zoo.111	Animal Diversity	4+2	Dr. Meenakshi & Dr. Anupam Sharma

Chem.111	Conceptual Organic Chemistry	4+2	Dr. (Mrs.) Suman Sharma Dr. Vishal Priya
Eng.111	English communication	2+0	Ms. Sunita Sood
Ort.111	Orientation	1+0(NC)	Dr. Virendera Singh
NCC/NSS	National Cadet Corps/National Service Scheme	0+2(NC)	NCC Officer/NSS Programmer Officer
Total		20+3(NC)	
B. Sc. II year			
Chem.211	Chemical Bonding, Transition Metal & Coordination Chemistry	4+2	Mrs. S. K. Angiras & Mr. M.S. Thakur
Bot.211	Plant Anatomy and Embryology	4+2	Dr. Usha Rana
Zoo.211	Physiology and Biochemistry	4+2	Dr. Madhu Sharma & Dr. Nageswer Singh
Comp. 211	Computer Application	2+1	Sh. Vaibhav Kalia/ Sh. Kapil Sharma
NCC/NSS	National Cadet Corps/National Service Scheme	0+2(NC)	NCC Officer/NSS Programmer Officer
Total		21+2(NC)	
B. Sc. III year (Medical)			
Chem.311	Analytical Methods in Chemistry	4+2	Dr. Vishal Priya & Mr. M.S. Thakur
Bot. 312	Cell and Molecular Biology	4+2	Dr. Anita Singh, Dr. Usha Rana & Dr. R.G. Upadhayay
Zoo. 311	Applied Zoology	4+2	Dr. Madhuri Mehta
NCC/NSS	National Cadet Corps/National Service Scheme	0+2(NC)	NCC Officer/NSS Programmer Officer
Total		20+0(NC)	
Courses for other undergraduate programmes			
Course No.	Title	Cr. Hrs	Name of Teacher
College of Agriculture			
Eng.111	Comprehension and Communication Skills in English	1+1	Ms. Sunita Sood
Math. 111	Elementary Mathematics	2+0	Sh. V.P. Sood
Stat. 231	Statistical Methods	1+1	Dr. Satvinder Kaur
Bio. 111	Introductory Biology	1+1	Dr. Madhu Sharma
Env. 111	Environmental Studies & Disaster Management	2+1	Dr. R.Uppal
Crop. Physiol 231	Crop Physiology	1+1	Dr. R.G. Upadhayay
Stat.351	Statistics	1+1	Dr. Satvinder Kaur
Biochem.351	Biochemistry	2+1	Dr. Nageswer Singh
GIS/Agron.358	Geo-informatics, Nano-technology and Precision Farming	1+1	Dr. R.S. Rana, Sh. Vaibhav Kalia & Dr. Sanjay Sharma
College of Home Science			
Comp.115(For B.Sc.(HHA))	Application of Computers	2+2	Sh. Kapil Sharma
Micro. 231	Fundamental of Food Microbiology	2+1	Dr. S.S. Kanwar
Env. 111	Introduction to Environmental Sciences	2+0	Dr. R.C.Chauhan
B.Sc. Hons. Community Sciences			

Env. 111	Environmental Studies & Disaster Management	2+1	Dr.Virendera Singh
Stat.231	Elementary Statistics	2+1	Sh. V.P.Sood
Stat.231(old)	Elementary Statistics	1+1	Dr. Satvinder Kaur
Eng.111	General English	1+1	Ms. Sunita Sood
Zoo. 111	Human Physiology	2+1	Dr. Madhuri Mehta
Comp.111	Computer Science	1+2	Sh. Kapil Sharma
Biochem.111	Biochemistry	2+1	Dr. Kamal Mohini
B. Tech. (Food Technology)			
FST 353	Food Biotechnology	2+1	Dr. Shivani
FST 358	Food Safety and Microbial Standards	2+1	Sh. Rajinder Kumar
FST.111	Biochemistry	2+1	Dr. Kamal Mohini
FT-112	General Microbiology	2+1	Dr. Rajinder Kumar
FT-111	English Language	1+1	Ms. Sunita Sood
FT-233	Industrial Microbiology	2+1	Dr. Shivani
FT 238	Environmental Sciences & Disaster Management	1+1	Dr. Virendera Singh
FST.123	Food Microbiology	2+1	Dr. Rajinder Kumar
FT.237	Statistical Methods and Numerical Methods	1+1	Dr. Satvinder Kaur
Old Syllabus/Repeat Courses			
Phys. 111	Mechanics and Theory of Relativity	4+0	Dr. Sheela Thakur
Phys. 112	Current Electricity and Magnetism-1	2+1	Dr. Sheela Thakur
Phys.211	Optics and Laser	4+0	Dr. Sheela Thakur
Phys.311	Nuclear Physics	3+0	Dr. Sheela Thakur
Phys.312	Electronics-I	2+1	Dr. Sheela Thakur
Phys.121 (Odd)	Statistical Physics and Thermodynamics	3+0	Dr. Sheela Thakur
Phys.122 (Odd)	Current Electricity & Magnetism-II	2+1	Dr. Sheela Thakur
Phys. 222 (Odd)	Electrodynamics	2+1	Dr. Sheela Thakur
Math. 111	Algebra and Trigonometry	3+0	Ms. Anjali Sharma
Math 112	Calculus	3+0	Dr. Sharda Singh
Math.211	Advanced Calculus	3+0	Ms. Anjali Sharma
Math. 212	Mechanics	4+0	Sh. V.P. Sood
Comp.121 (Odd)	Principles of Computer-II	1+1	Sh. Vaibhav Kalia
Eng. 111	Communicative and Functional English	2+0	Ms. Sunita Sood
Math.121(Odd)	Ordinary Differential Equations and Vector Analysis	3+0	Dr. Sharda Singh
Math. 322 (Odd)	Numerical Analysis	3+1	Dr. Sharda Singh & Vaibhav Kalia
Stat. 321 (Odd)	Introductions to Statistics	2+1	Dr. Satvinder Kaur
Chem. 111	States of Matter, Colloids & Chemical Kinetics	3+0	Dr. Suman Sharma
Chem.112	Basic Principles of Inorganic Chemistry Representative Elements & Noble Gases	3+0	Dr. Neelam Sharma

Chem. 212	Transition, Inner transition Elements, Coordination Chemistry and Non aqueous Solvents	3+0	Dr. Neelam Sharma
Chem. 213	Chemistry of functional group	2+1	Mrs. S.K.Angiras
Chem.313	Natural Products, Synthetic Polymers and Dyes	3+0	Dr. Suman Sharma
Chem. 121 (Odd.)	Thermodynamics, Electrochemistry and Equilibrium	3+1	Dr. Suman Sharma
Chem. 123 (Odd.)	Physical Organic Chemistry, Hydrocarbons and Organic Halides	3+0	Dr. Suman Sharma
Chem. 221(Odd.)	Quantum Mechanics and Photochemistry	3+0	Dr. Vishal Priya
Chem.322 (Odd)	Advanced Inorganic Chemistry-II	3+0	Mr. M.S. Thakur
Chem. 323 (Odd.)	Hetrocyclics, Polynuclear Hydrocarbons and Spectroscopy	2+1	Dr. Suman Sharma
Bot. 111	Phycology & Microbiology	2+1	Dr.Usha Rana
Bot. 112	Bryophytes & Pteritophytes	2+1	Dr.Anita Singh
Bot.211	Gymnosperms	2+1	Dr. Anita Singh
Bot.313	Biotechnology	1+1	Dr. R. K. Chahota
Zoo. 111	Invertebrates –I	3+1	Dr. Meenakshi Sharma
Zoo.112	Cell Biology	1+1	Dr. Madhuri Mehta
Zoo. 211	Chordata-1	3+1	Dr. Meenakshi Sharma & Dr. Anupam Sharma
Zoo.212	Biochemistry	2+1	Dr. Nageswer Singh
Zoo.311	Mammalian Physiology-I	2+1	Dr. Anupam Sharma
Env. 311	Introduction to Environmental	2+0	Dr. R.C. Chauhan

Semester II of Academic Year 2018-2019 (UG Courses)

B.Sc. Physical Sciences (First year)			
Course No	Title	Cr. Hrs.	Name of Teacher
Phys. 121	Electricity and Magnetism	4+2	Dr. Sheela Thakur
Math.121	Differential Equations	5+1	Dr. Sharda Singh and Dr. Shweta Pathania
Chem122	Chemical Energetics, Equilibria & Functional Group Organic Chemistry-I	4+2	Dr. Suman Sharma
Env. 121	Environmental Studies	3+0	Dr. Virendera Singh
NCC/NSS	National Cadet Corps/National Service Scheme	0+2(NC)	NCC Officer/NSS Programmer Officer
Total		21+2(NC)	
B.Sc. Physical Sciences (Second Year)			
Chem.222	Transition Metal & Coordination Chemistry, States of Matter and Chemical Kinetics	4+2	Dr. Suman Sharma and Dr. Manish Kumar
Phys.221	Waves and Optics	4+2	Dr. Manjula Sharma
Math.221	Algebra	5+1*	Dr. Shweta Pathania
Comp.222	Computer Programming using C Language	2+1	Sh. Vaibhav Kalia

NCC/NSS	National Cadet Corps/National Service Scheme	0+2(NC)	NCC Officer/NSS Programmer Officer
Total	21+2(NC)		
<u>B.Sc. Physical Sciences (Third Year)</u>			
Phys.321	Nuclear and Particle Physics	5+1*	Dr. Sheela Thakur and Dr. Manjula Sharma
Math.321	Numerical Methods	5+1*	Dr. Sharda Singh and Dr. Shweta Pathania
Chem. 323	Organometallics, Bioinorganic Chemistry Polynuclear Hydrocarbons and UV,IR Spectroscopy	4+2	Dr. Manish Kumar
NCC/NSS	National Cadet Corps/National Service Scheme	0+2 (NC)	NCC Officer/NSS Programmer Officer
Any one of the following			
Chem.325	Analytical Clinical Biochemistry	2+1	Dr. Nageswer Singh
Math.323	Vector Calculus	3+0	Sh. V.P.Sood
	Total	21+2(NC)	
<u>B.Sc. Life Sciences (First year)</u>			
Bot.121	Plant Ecology and Taxonomy	4+2	Dr. Virendera Singh and Dr. Usha Rana
Zoo.121	Comparative Anatomy and Developmental Biology of Vertebrates	4+2	Dr. Rakesh Kumar
Chem.121	Molecules of Life	4+2	Mrs. Shashi Kiran Angiras
Env. 121	Environmental Studies	3+0	Dr. Virendera Singh
NCC/NSS	National Cadet Corps/National Service Scheme	0+2(NC)	NCC Officer/NSS Programmer Officer
Total		21+2(NC)	
<u>B.Sc. Life Sciences Second year</u>			
Chem.221	Physical Chemistry for the Biosciences	4+2	Dr. Manish Kumar
Bot.221	Plant Physiology and Metabolism	4+2	Dr. Usha Rana and Dr. R.G. Upadhyay
Zoo.221	Genetics and Evolutionary Biology	4+2	Dr. Rakesh Kumar, Dr. R.K. Mittal and Swaran Lata
Comp.221	Database with AS access	2+1	Sh. Kapil Sharma
NCC/NSS	National Cadet Corps/National Service Scheme	0+2(NC)	NCC Officer/NSS Programmer Officer
Total	21+2(NC)		
<u>B.Sc. Life Sciences Third year</u>			
Bot. 322	Economic Botany and Biotechnology	4+2	Dr. Anita Singh, Dr. Radhika Sharma and Dr. R.K Chahota
Zoo. 321	Immunology	4+2	Dr. Radhika Sharma and Dr. Madhu Sharma
Chem.325	Analytical Clinical Biochemistry	2+1	Dr. Nageswer Singh

Chem. 321	Bioinorganic and Environmental Chemistry	4+2	Mrs. Shashi Kiran Angiras
NCC/NSS	National Cadet Corps/National Service Scheme	0+2 (NC)	NCC Officer/NSS Programmer Officer
Total		21+2(NC)	
Courses for other undergraduate programmes			
Course No.	Title	Cr. Hrs	Name of Teacher
College of Agriculture			
PB. 121	Plant Biochemistry	1+1	Dr. Nageswer Singh
Eng.111	Comprehension and Communication Skills in English	1+1	Ms. Sunita Sud
Ag. Micro-121	Agricultural Microbiology	1+1	Dr. Abhishek Walia
Cr. Physiol 241	Crop. Physiology	2+1	Dr. Usha Rana
Comp. 241	Introduction to Computer Applications	1+1	Sh. Kapil Sharma
Biochem.351 (o)	Biochemistry	2+1	Dr. Nageswer Singh
College of Veterinary and Animal Sciences			
Env.321	Introduction to Environmental Sciences	2+0(NC)	Dr. R. C. Chauhan
College of Home Science			
Biochem.121	Principles of Biochemistry	2+1	Dr. Kamal Mohini
FT.122	Food Microbiology	2+1	Dr. Rishi Mahajan
FT-124	Computer Programming & Data Structure	2+1	Sh. Vaibhav kalia and Sh. Kapil Sharma
Comp. 121	Agricultural Informatics	1+2	Sh. Kapil Sharma
Env. 311 (B. Tech.F.T)	Introduction to Environmental Sciences	2+0	Dr. Virendera Singh
FST. 123	Food Microbiology	2+1	Dr. S.S. Kanwar
FST. 246	Food Biotechnology	2+1	Dr. Rishi Mahajan
Eng. 121	English and Technical Writing	1+1	Ms. Sunita Sud
Comp. 115(Odd. Course) (H.H.A)	Application of Computers	2+2	Sh. Vaibhav Kalia
Odd/Repeat Courses			
Chem. 121	Thermodynamics, Electrochemistry and Equilibrium	3+1	Dr. Manish Kumar
Chem. 123	Physical organic Chemistry, Hydrocarbons and Organic Halides	3+0	Dr. Manish Kumar
Chem. 221	Quantum Mechanics and Photochemistry	3+0	Dr. Suman Sharma
Chem. 222	Advanced Inorganic Chemistry	2+1	Mrs. Shashi Kiran Angiras
Chem.323	Heterocyclic Polynuclear Hydrocarbons and Spectroscopy	2+1	Dr. Manish Kumar
Phys. 121	Statistical Physics and Thermodynamics	3+0	Dr. Sheela Thakur
Phys.122	Current Electricity and Magnetism-II	2+1	Dr. Sheela Thakur
Phys. 221	Quantum Mechanics and Spectroscopy	3+0	Dr. Manjula Sharma
Phys.322	Electronics-II	2+1	Dr. Manjula Sharma
Math.112	Calculus	3+0	Dr. Sharda Singh

Math. 121	Ordinary Differential Equations and Vector Analysis	3+0	Dr. Shweta Pathania
Math.221	Partial Differential Equations	3+0	Dr. (Mrs.) Sharda Singh
Stat.221	Elements of Statistics	2+0	Dr. Manoj Bhargava
Stat. 321	Introduction to Statistics	2+1	Sh. V.P. Sood
Comp. 121	Principles of Computers-II	1+1	Sh. Vaibhav Kalia
Comp.211	Computer Application	2+1	Sh. Kapil Sharma
Eng.121	Comprehension Composition and Translation	2+0	Ms. Sunita Sud
Bot. 313	Biotechnology	1+1	Dr. R.K. Chahota
Bot. 221	Morphology & Anatomy of Plants	2+1	Dr. Anita Singh
Zoo.312	Applied Zoology	2+1	Dr. Rakesh Kumar
Zoo.311	Mammalian Physiology-1	2+1	Dr. Rakesh Kumar
Zoo. 222	Environmental Biology	2+1	Dr. Radhika Sharma
Zoo.221	Chordata-II	3+1	Dr. Rakesh Kumar
Zoo. 121	Invertebrates-II	3+1	Radhika Sharma
Env. 311	Introduction to Environmental Sciences	2+0	Dr. R.C. Chauhan

1.22 Department-wise Faculty and Staff

1.22.1 Teaching Faculty

I. Department of Biology and Environmental Sciences

Sr.No.	Name	Designation	Scheme	Remarks
1	Dr.(Mrs.) Anita Singh	Professor and Head		
2	Dr. Ramesh C Chauhan	Professor		
3	Dr. Virendra Singh	Principal Scientist		
4	Dr.(Mrs.) Usha Rana	Associate Professor		
5	Dr. Rakesh Kumar	Assistant Professor		
6	Dr. Radhika Sharma	Assistant Professor		

II. Department of Chemistry and Biochemistry

Sr.No.	Name	Designation	Scheme	Remarks
1	Dr. (Mrs.) Neelam Sharma	Professor and Head		
2	Dr. Nageswer Singh	Assistant Professor		
3	Dr. (Mrs.) Suman Sharma	Assistant Professor		
4	Dr. Manish Kumar	Assistant Professor		

III. Department of Microbiology

Sr.No.	Name	Designation	Scheme	Remarks
1.	Dr. S.S. Kanwar	ICAR-Emeritus Professor	ICAR	-
2.	Dr. Rishi Mahajan	Asstt. Prof.	APL-011-25(1)251	
3.	Dr. Abhishek Walia	Asstt. Prof.	APL-011-25(1)251	

4.	Sh. Rajinder Kumar	Asstt. Prof.	ACRIP on EAAI	Posted in Agricultural Engineering
5.	Vacant	Asstt. Prof.	APL-011-25(1)251	Transferred to Discipline of Statistics in the Department of PSL vide letter number QSD.5 103/2017-CSKHPKV-Estt./-10589-688 dated 07 March 2019

IV. Department of Physical Sciences and Languages

Sr.No.	Name	Designation	Scheme	Remarks
Statistics				
1.	Dr Manoj Bhargava	Prof. & Head	APL-011-25	
2.	Vacant	Asstt. Prof.	APL-011-25	
3.	Vacant	Asstt. Prof.	APL-011-25	
Mathematics				
4.	Dr (Mrs) Sharda Singh	Professor	APL-011-25	Redeployed in CGRT
5.	Dr (Mrs) Shweta Pathania	Asstt. Prof.	APL-011-25(1)251	Joined on 29.01.2019
6.	Vacant	Asstt. Prof.	APL-011-25	
Physics				
7.	Dr(Mrs) Sheela Thakur	Asstt. Prof.	APL-011-25	Ad-hoc appointment
8.	Dr (Mrs) Manjula Sharma	Asstt. Prof.	APL-011-25(1)251	Joined on 28.01.2019
9.	Vacant	Asstt. Prof.	APL-011-25	
Computer Application				
10.	Sh Vaibhav Kalia	Asstt. Prof	APL-009-25	Redeployed in CGRT
11.	Sh Kapil Sharma	Asstt. Prof	APL-009-25	

V. Centre for Geoinformatics

Sr.No.	Name	Designation	Scheme	Remarks
1.	Dr (Mrs) Sharda Singh	Professor (Mathematics)	APL-011-25	
2.	Dr. Ranbir Singh Rana	Scientist (Agronomy)		
3.	Sh Vaibhav Kalia	Asstt. Prof	APL-009-25	

1.22.2 Technical

I. Department of Biology and Environmental Sciences

II. Department of Chemistry and Biochemistry

III. Department of Microbiology

Sr.No.	Name	Designation	Scheme	Remarks
1.	Sh. Jai Raj	Jr. Technician	APL-011-25	
2.	Vacant	Lab. Assistant		

IV. Department of Physical Sciences and Languages

Sr.No.	Name	Designation	Scheme	Remarks
1.	Sh Surjit Singh	Lab. Assistant	APL-011-25	
2.	Vacant	Lab. Assistant	APL-011-25	
3.	Vacant	Lab. Assistant	APL-011-25	

V. Centre for Geoinformatics

Project Staff

- Mr. Kunal Sood (GIS/MIS Expert)
- Mr. Arun Kaushal (GIS/MIS Operator)
- Mr. Manish Kaundal (SRF)
- Ms. Tanu Kumari (JRF)
- Mr. Shashi Kumar (Field Investigator)
- Mr. Rajan Kumar (Project Assistant)
- Mr. Sandeep Barwal (Project Assistant)

1.22.3 Ministerial and Supporting

I. Department of Biology and Environmental Sciences

II. Department of Chemistry and Biochemistry

III. Department of Microbiology

Sr.No.	Name	Designation	Scheme	Remarks
1.	Vacant	Peon		
2.	Vacant	Clerk		

IV. Department of Physical Sciences and Languages

Sr.No.	Name	Designation	Scheme	Remarks
1.	Vacant	Jr. Assistant	APL-011-25	
2.	Sh. Manohar Lal	Peon	APL-009-25	Upto 07.03.2019

V. Centre for Geoinformatics

Sr.No.	Name	Designation	Scheme	Remarks
1.	Vacant	Clerk	APL-011-25	

1.23 Summary Statistics of Publications

a.	Total Nos of publications (only Published)	49
i)	Research Publication (Nos)	31

ii)	Extension Publications (Nos)	02
iii)	Other Publications (Nos)	10
b.	Book	Nil

1.24 Summary of Visits Abroad, VIP Visits, Workshop etc. organised

S.No	Particulars	
1	Name of faculty members/employees who visited abroad	Nil
2	Name of VIP Visitors (with date and purpose)	<ul style="list-style-type: none"> • 13.12.2018 Mr Subroto Talukdar, Principal Development Specialist, JICA India, New Delhi, & Officials of HPCDP, Hamirpur visited • 25.03.2019 Prof. Sanju Karol, Director Population Research Centre, H.P University, Shimla-171005 visited to acquaint herself with GIS & RS technologies • 13.03.2019 Mr. Yoshiyuki Ishizaki, Chief Advisor, TCP visited the Centre for exploring GIS based inputs for Phase II JICA Project in HP • 03.05 2019 Dr Desh Raj Sharma, Director Agriculture, DOA, Govt of HP along with his team of officials from Directorate of Agriculture visited Centre for exploring Geo-spatial services for DOA under Chairmanship of Hon'ble Vice Chancellor, CSKHPKV-Palampur
3	Name of faculty members/employee who has brought honour to the University in the form of awards and honours	Nil
4	Success Story, if any	Nil
5	Workshop/Seminar/Symposia/Conference Organized	Two

2 TEACHING

2.1 Courses Offered

Following UG and PG courses were offered by the various departments:

Department of Biology and Environmental Sciences

Sr. No.	Course No.	Course title	Credit Hours	Name of Instructor
Semester-I				
A. Undergraduate Courses				
1.	Bot.111	Biodiversity(Microbes, Algae, Fungi and Archegoniate)	4+2	Dr. Usha Rana , Course co-ordinator Drs. Suman Kumar , Rajinder Kumar, Shiwani & Anita Singh
2.	Bot.211	Plant Anatomy and Embryology	4+2	Dr Usha Rana
3.	Bot.312	Cell and Molecular Biology	4+2	Dr Anita Singh Course co-ordinator Drs Usha Rana & R G Upadhayay
4.	Bot.111	Phycology & Microbiology	2+1	Dr Usha Rana
5.	Bot.112	Bryophytes & Pteritophytes	2+1	Dr Anita Singh
6.	Bot.211 (attendance required)	Gymnosperms	2+1	Dr Anita Singh
7.	Bot.313	Biotechnology	1+1	Dr R K Chahota
8.	Zoo.111	Animal Diversity	4+2	Drs Meenakshi & Anupam Sharma
9.	Zoo.211	Physiology and Biochemistry	4+2	Drs Madhu Sharma & Nageswer Singh
10.	Zoo.311	Applied Zoology	4+2	Dr Madhuri Mehta
11.	Zoo.111	Invertebrates-I	3+1	Dr. Meenakshi Sharma
12.	Zoo.112	Cell Biology	1+1	Dr Madhuri Mehta
13.	Zoo.211 (attendance required)	Chordata-I	3+1	Drs Meenakshi & Anupam Sharma
14.	Zoo.311	Mammalian Physiology-I	2+1	Dr.Anupam Sharma
15.	ENV.311	Introduction to Environmental Sciences	2+0	Dr. R. C. Chauhan
B.Sc. Agriculture				
16.	Crop Physiol. 231	Crop Physiology	1+1	Dr R G Upadhayay
17.	Bio.111	Introductory Biology	1+1	Dr Madhu Sharma

18.	ENV.111	Environmental Studies & Disaster Management	2+1	Dr. R Uppal
B.Sc. Home Science				
19.	Zoo.111	Human Physiology	2+1	Dr Madhuri Mehta
20.	ENV.111	Introduction to Environmental Sciences	2+0	Dr. R C Chauhan
21.	FT.238	Environmental Sciences & Disaster Management	1+1	Dr. V. Singh
22.	ENV.111	Environmental Studies & Disaster Management	2+1	Dr. V. Singh
B. Postgraduate Courses				
1.	Env.501	Definitions and Concepts in Environmental Sciences	2+0	Dr. R. C. Chauhan
2.	Env.503	Environmental Pollution	2+1	Dr. R. C. Chauhan
3.	Env.504	Environmental Impact Assessment	2+1	Dr. R. C. Chauhan
4.	Env.506	Global Climate Change	2+0	Dr. V. Singh
5.	ENV.591	Master's Seminar	1+0	Dr. V. Singh
6.	Env.599	Master's Research	1+20	Respective Advisors
7.	PP-502/Biotech-552	Plant Developmental Biology- Physiological & Molecular Basis	2+0	Dr U Rana
8.	PP-503	Physiological & Molecular Responses of Plants to Abiotic Stresses	2+1	Dr R G Upadhyay
Semester-II				
A. Undergraduate Courses				
1.	Bot. 121	Plant Ecology & Taxonomy	4+2	Drs.V. Singh & U.Rana
2.	Bot.221	Plant Physiology and Metabolism	4+2	Drs. U. Rana & R. G. Upadhyay
3.	Bot.322	Economic Botany & Biotechnology	4+2	Dr. Anita Singh & Dr Radhika Sharma
4.	Bot.313(O)	Biotechnology	1+1	Dr. R. K. Chahota
5.	Bot .221(O)	Morphology & Anatomy of Plants	2+1	Dr. Anita Singh
6.	Zoo.121	Comparative Anatomy & Developmental Biology of Vertebrates	4+2	Dr. Rakesh Kumar
7.	Zoo.221	Genetics and Evolutionary Biology	4+2	Drs. Rakesh Kumar, R. K. Mittal & Swaran Lata
8.	Zoo.311(O)	Mammalian Physiology-I	2+1	Dr. Rakesh Kumar
9.	Zoo.312(O)	Applied Zoology	2+1	Dr. Rakesh Kumar
10.	Zoo-321	Immunology	4+2	Dr. Radhika Sharma & Dr. Madhu
11.	Zoo-121(o)	Invertebrates-II	3+1	Dr. Radhika Sharma
12.	Zoo.221 (O)	Chordata-II	3+1	Dr. Rakesh Kumar

13.	ZOO 222(o)	Environmental Biology	2+1	Dr. Radhika Sharma
14.	Env.121	Environmental Studies	3+0	Dr.Virendra Singh
15.	Env. 311	Introduction to Environmental Sciences	2+0	Dr. R.C. Chauhan
B.Sc. Agriculture				
16..	Crop Phy.241(O)	Crop Physiology	2+1	Dr Usha Rana
B.Sc. Home Science				
17..	Env. 311 (B. Tech F. T.)	Introduction to Environmental Sciences	2+0	Dr.Virendra Singh
B.V.Sc.				
18..	Env. 321	Introduction to Environmental Sciences	2+0	Dr. R.C. Chauhan
B. Postgraduate Courses				
1.	ENV.505	Environmental Chemistry	2+1	Dr. R.C. Chauhan
2.	ENV.509	Pesticide and Environment	2+1	Dr. R.C. Chauhan
3.	ENV.510	Environmental Conservation	2+0	Dr.Virendra Singh
4.	ENV.512	Biodiversity/Wildlife Conservation and Himalayan Eco systems	2+0	Dr. R.C. Chauhan
5.	ENV. 599	Master's Research	1-20	Resp Advisors
6.	Bio.507	Taxonomy & Economic Botany	2+1	Dr Anita Singh
7.	Bio.533/PP.504	Hormonal Regulation of Plant Growth & Development	2+1	Dr R G Upadhyay
8.	Bio.536/PP.506	Physiology of Crop Plants-Specific Case Studies	2+0	Dr R G Upadhyay

Department of Chemistry and Biochemistry

Sr. No.	Course No.	Course title	Credit Hours	Name of Instructor
Semester-I				
C. Undergraduate Courses				
1.	Chem-111 (CBCS)	Conceptual Organic Chemistry	2+1 2+1	Dr.Suman Sharma Dr. Vishal Priya
2.	Chem-112 (CBCS)	Atomic Structure, Bonding, General Organic Chemistry & Aliphatic Hydrocarbons	2+1 2+1	Mrs. S.K.Angiras Mr. M. S. Thakur
3.	Chem-211 (CBCS)	Chemical Bonding, Transition Metal & Coordination Chemistry	2+1 2+1	Mrs. S.K.Angiras Mr. M. S. Thakur
4.	Chem-212 (CBCS)	Solutions, Phase, Equilibrium, Conductance,	2+1 2+1	Dr.Suman Sharma Dr. Vishal Priya

		Electrochemistry and Functional group Organic Chemistry –II		
5.	Chem-311 (CBCS)	Analytical Methods in Chemistry	2+0 2+1 0+1	Dr. Vishal Priya Mr. M. S. Thakur Dr. Nageswer Singh
6.	Chem-313 (CBCS)	Chemistry of Main Group Elements, Theories of Acids and Bases	2+1 2+1	Mrs. S.K.Angiras Dr. Vishal Priya
7.	Chem-315 (CBCS)	Chemistry of Cosmetics and Perfumes	2+1	Mrs. S.K.Angiras
8.	Chem-111 (O)	States of Matter, Colloids and Chemical Kinetics	3+0	Dr. Suman Sharma
9.	Chem-112 (O)	Basic Principles of Inorganic Chemistry Representative Elements & Noble Gases	3+1	Dr. Neelam Sharma
10.	Chem-212(O)	Transition, Inner Transition Elements, Coordination Chemistry and Non Aqueous Solvents	3+0	Dr. Neelam Sharma
11.	Chem-213(O)	Chemistry of Functional Groups	2+1	Mrs. S.K.Angiras
12.	Chem-313 (O)	Natural Products, Synthetic Polymers & Dyes	3+0	Dr. Suman Sharma
13.	Zoo-211 (CBCS)	Physiology and Biochemistry	2+1	Dr. Nageswer Singh
14.	Zoo/Bio chem-212	Biochemistry	2+1	Dr. Nageswer Singh
Odd Semester courses (only Examination)				
15.	Chem-121*	Thermodynamics, Electrochemistry and Equilibrium	3+1	Dr. Suman Sharma
16.	Chem-123*	Physical Organic Chemistry, Hydrocarbons and Organic Halides	3+0	Dr. Suman Sharma
17.	Chem-221*	Quantum Mechanics Photochemistry	3+0	Dr. Vishal Priya
18.	Chem-322*	Advanced Inorganic Chemistry-II	3+0	Mr. M. S. Thakur
19.	Chem-323*	Heterocyclics, Polynuclear Hydrocarbons and Spectroscopy	2+1	Dr. Suman Sharma
College of Home Sciences				
20.	Biochem-111(o)	Biochemistry	2+1	Dr. Kamal Mohini
College of Agriculture				
21.	Biochem-351 (o)	Biochemistry	2+1	Dr. Nageswer Singh
D. Postgraduate Courses				
1.	Biochem-501	Basic Biochemistry	3+1	Dr. Kamal Mohini
2.	Biochem-503	Human Biochemistry	3+0	Dr. RajanKatoch

3.	Biochem-541	Immunochemistry	2+0	Dr.M.K.Acharya
4.	Biochem-551	Techniques in Biochemistry	1+3	Dr. Nageswer Singh
5.	Biochem-591	Master's Seminar	1+0	Dr. Kamal Mohini
6.	Biochem-601	Biochemistry of Biotic and Abiotic Stress	3+0	Dr. RajanKatoch
7.	Biochem-603	Biomembrane	2+0	Dr. Kamal Mohini
8.	Biochem-621	Genomics, Proteomics and Metabolomics	2+0	Dr.M.K.Acharya
9.	Biochem-693	Special Problem in Ph.D.	0+1	Respective Advisor
Semester-II				
C. Undergraduate Courses				
1.	Chem-121	Molecules of Life	4+2	Mrs. S.K. Angiras
2.	Chem-122	Chemical Energetics, Equilibrium & Functional Organic Chemistry-I	4+2	Dr. Suman Sharma
3.	Chem-221	Physical Chemistry for Biosciences	4+2	Dr. Manish Kumar
4.	Chem-222	Transition Metal & Coordination Chemistry, States of Matter & Chemical Kinetics	2+1 2+1	Dr. Suman Sharma/ Dr. Manish Kumar
5.	Chem-321	Bioinorganic & Environmental Chemistry	4+2	Mrs. S.K. Angiras
6.	Chem.-323	Organometallics, Bioinorganic Chemistry, Polynuclear Hydrocarbons and UV, Spectroscopy	4+2	Dr. Manish Kumar
7.	Chem-325	Analytical Clinical Biochemistry	2+1	Dr. Nageswer Singh
Old Syllabus				
8.	Chem-121	Thermodynamics, Electrochemistry and Equilibrium	3+1	Dr. Manish Kumar
9.	Chem-123	Physical Organic Chemistry Hydrocarbons and Organic Halides	3+0	Dr. Manish Kumar
10.	Chem-221	Quantum Mechanics Photochemistry	3+0	Dr. Suman Sharma
11.	Chem-222	Advanced Inorganic Chemistry	2+1	Mrs. S.K. Angiras
12.	Chem-323	Heterocyclics, Polynuclear Hydrocarbons and Spectroscopy	2+1	Dr. Manish Kumar
*Odd Semester Course				
13.	Chem-211(CBCS)	Chemical Bonding, Transition Metal & Coordination Chemistry	4+2	Dr. Suman Sharma
College of Agriculture (for B.Sc.(Ag.) 1st year) (Hons.) Agriculture				

14	PB-121	Plant Biochemistry	1+1	Dr. Nageswer Singh
15.	Biochem-351(old)	Biochemistry (*Odd Semester Course)	2+1	Dr. Nageswer Singh
College of Home Sciences				
16.	Biochem-121	Principles of Biochemistry	2+1	Dr. Kamal Mohini
D. Postgraduate Courses				
1.	Chem-512	Analytical Chemistry	2+1	Dr.(Mrs.) Neelam Sharma
2.	Chem-521	Electronic Spectroscopy	1+1	Dr. Suman Sharma
3.	Biochem-502	Plant Biochemistry	3+0	Dr. Kamal Mohini
4.	Biochem-504	Enzymology	2+1	Dr. RajanKatoch
5.	Biochem-505	Intermediary Metabolism	3+0	Dr. Kamal Mohini
6.	Biochem-521	Food & Nutritional Biochemistry	2+1	Dr. Nageswer Singh
7.	Biochem-591	M.Sc. Seminar	1+0	Dr.(Mrs.) Neelam Sharma
8.	Biochem-599	Master's Research	0+20	Respective Advisor
9.	Biochem-602	Advanced Molecular Biology	3+0	Dr.RajanKatoch
10.	Biochem-691	Doctoral Seminar	1+0	Dr. Nageswer Singh
11.	Biochem-693	Special Problem in Ph.D.	0+1	Respective Advisor
12.	Biochem-699	Doctoral Research	0+45	Respective Advisor

Department of Microbiology

Sr. No.	Course No.	Course title	Credit Hours	Name of Instructor
Semester-I				
A. Undergraduate Courses				
1	Micro-231	Fundamentals of Food Microbiology	2+1	Dr. S.S. Kanwar
2.	FT-112	General Microbiology	2+1	Sh. Rajinder Kumar
3.	FT-233	Fundamentals of Microbiology	2+1	Dr. Shivani
4.	FST-353	Food Biotechnology	2+1	Dr. Shivani
5.	FST-358	Food Safety and Microbial Standards	2+1	Sh. Rajinder Kumar
6.	FST-123 (Old)	Food Microbiology	2+1	Sh. Rajinder Kumar
7.	BOT-111	Biodiversity (Microbes, Agale, Fungi and Archegoniate)	4+2	Sh. Rajinder Kumar (Sharing)
B. Postgraduate Courses				
1.	Micro-501	Principles of Microbiology	2+1	Dr. S.S.Kanwar
2.	Micro-505	Techniques in Microbiology	0+2	Dr. S.S.Kanwar
3.	Micro-511	Soil Microbiology	2+1	Sh. Rajinder Kumar
4.	GP-508	Cell Biology and Molecular Genetics	2+1	Sh. Rajinder Kumar (Sharing)
5.	Micro-531	Food Microbiology	2+1	Dr. Shivani
Semester-II				

A. Undergraduate Courses				
1.	FT-122	Food Microbiology	2+1	Dr.Rishi Mahajan
2.	FT-246	Food Biotechnology	2+1	Dr.Rishi Mahajan
3.	FST-123	Food Microbiology	2+1	Dr.S.S.Kanwar
4.	Ag.Micro-121	Agricultural Microbiology	1+1	Dr.Abhishek Walia
B. Postgraduate Courses				
1.	Micro-532	Dairy Microbiology	2+1	Dr.Abhishek Walia
2.	Micro-591	Master's Seminar	1+0	Dr.S.S.Kanwar
3.	Micro-691	Doctoral Semianar	1+0	Dr.S.S.Kanwar

Department of Physical Sciences and Languages

Sr. No.	Course No.	Course title	Credit Hours	Name of Instructor & Co-Instructors
Semester-I				
A. Undergraduate Courses				
B.Sc. 1st year (under CBCS)				
1	Phys 111	Mechanics	4+2	Dr (Mrs) Sheela Thakur
2	Math 111	Differential Calculus	5+1*	Dr (Mrs) Sharda Singh
3	Eng 111	English Communication	2+0	Mrs Sunita Sud
Old syllabus				
1	Phys 111	Mechanics & Theory of Relativity	4+0	Dr (Mrs) Sheela Thakur
2	Phys 112	Current Electricity and Magnetism- I	2+1	Dr (Mrs) Sheela Thakur
3	Math 111	Algebra and Trigonometry	3+0	Ms. Anjali Sharma
4	Math 112	Calculus	3+0	Dr (Mrs) Sharda Singh
5	Eng 111	Communicative and Functional English	2+0	Mrs Sunita Sud
B.Sc. 2nd year (CBCS)				
1	Phys 211	Thermal Physics and Statistical Mechanics	4+2	Dr (Mrs) Suveda Aarya
2	Math 211	Real Analysis	5+1*	Ms Anjali Sharma
3	Comp 211	Computer Application	2+1	Sh Vaibhav Kalia/ Sh Kapil Sharma
Old Syllabus				
1	Phys 211	Optics and Lasers	4+0	Dr (Mrs) Sheela Thakur
2	Math 211	Advanced Calculus (Repeat)	3+0	Ms Anjali Sharma
3	Math 212	Mechanics (Repeat)	4+0	Sh. V. P. Sood
B.Sc. 3rd year (CBCS)				
1	Phys 312	Elements of Modern Physics	4+2	Dr (Mrs) Geetanjali Sharma
2	Math 311	Matrices	5+1*	Sh. V. P. Sood
Old syllabus				
1	Phys 311	Nuclear Physics	3+0	Dr (Mrs) Sheela Thakur
2	Phys 312	Electronics-I	2+1	Dr (Mrs) Sheela Thakur
B.Sc. (Hons.) Agriculture				
1	Stat 351	Statistics	1+1	Dr Satvinder Kaur
2	Stat 231	Statistical Methods	1+1	Dr Satvinder Kaur
3	Math 111	Elementary Mathematics	2+0	Sh V P Sood
B.Sc. (Hons.) Community Science				

1	Eng 111	General English	1+1	Mrs Sunita Sud
2	Comp 111	Computer Science (Repeat)	1+2	Sh Kapil Sharma
2	Stat 231	Elementary Statistics	1+1	Sh V P Sood
3	Stat 231	Elementary Statistics (Old)	1+1	Dr Satvinder Kaur
B.Sc. (Hospitality and Hotel Management)				
1	Comp 115	Application of Computers	2+2	Sh Kapil Sharma
B.Tech. (Food Technology)				
1	FT-111	English Language	1+1	Mrs Sunita Sud
2	FT 237	Statistical Methods and Numerical Methods	1+1	Dr Satvinder Kaur
Odd semester courses**				
1	Phys 121	Statistical Physics and Thermodynamics	3+0	Dr (Mrs) Sheela Thakur
2	Phys 122	Current Electricity and magnetism – II	2+1	Dr (Mrs) Sheela Thakur
3	Math 121	Ordinary Differential Equations and Vector Analysis	3+0	Dr (Mrs) Sharda Singh
4	Math 322	Numerical Analysis	3+1	Dr (Mrs) Sharda Singh/ Sh Vaibhav Kalia
5	Comp 121	Principles of Computer – II	1+1	Sh Vaibhav Kalia
6	Stat 321	Introduction to Statistics	2+1	Dr Satvinder Kaur
7	Phys 222	Electrodynamics	2+1	Dr (Mrs) Sheela Thakur
B. Postgraduate Courses				
1	Stat 491	Introduction to Statistics	1+1	Dr Satvinder Kaur
2	Stat 511	Statistical Methods for Applied Sciences	3+1	Dr Kamlesh Singh
3	Stat 542	Statistical Inference	3+0	Dr Kamlesh Singh
4	Comp 501	Computer Fundamental and Programming	2+1	Sh Kapil Sharma
5	Stat 513	Sampling Techniques	2+1	Dr Satvinder Kaur
Semester-I				
A. Undergraduate Courses				
B.Sc. 1st year (under CBCS)				
1	Phys 121	Electricity and Magnetism	4+2	Dr (Mrs) Sheela Thakur
2	Math 121	Differential Equations	5+1*	Dr Sharda Singh/ Dr Shweta Pathania
Old syllabus				
1	Phys 121	Statistical Physics and Thermodynamics	3+0	Dr (Mrs) Sheela Thakur
2	Phys 122	Current Electricity and Magnetism - II	2+1	Dr (Mrs) Sheela Thakur
3	Comp 121	Principles of Computers-II	1+1	Sh Vaibhav Kalia
4	Math 121	Ordinary Differential Equations and Vector Analysis	3+0	Dr Shweta Pathania
B.Sc. 2nd year (under CBCS)				
1	Phys 221	Waves and Optics	4+2	Dr Manjula Sharma
2	Math 221	Algebra	5+1*	Dr Shweta Pathania
3	Comp 221	Databases with MS Access	2+1	Sh Kapil Sharma
4	Comp 222	Computer Programming using C Language	2+1	Sh Vaibhav Kalia

5	Stat 221	Elements of Statistics	2+1	Dr Manoj Bhargava
Old syllabus				
1	Phys 221	Quantum Mechanics and Spectroscopy	3+0	Dr Manjula Sharma
2	Math 221	Partial Differential Equations	3+0	Dr Sharda Singh
B.Sc. 3rd year (under CBCS)				
1	Phys 321	Nuclear and Particle Physics	5+1*	Dr Sheela Thakur/ Dr Manjula Sharma
2	Math 321	Numerical Methods	5+1*	Dr Sharda Singh/ Dr Shweta Pathania
3	Math 323	Vector Calculus	3+0	Sh V P Sood
Old syllabus				
1	Phys 322	Electronics-II	2+1	Dr Manjula Sharma
2	Stat 321	Introduction to Statistics	2+1	Sh V P Sood
B.Sc. (Hons.) Agriculture				
1	Comp 241	Introduction to Computer Application	1+1	Sh Kapil Sharma
2.	Ag.Info.361	Agricultural Informatics	1+1	Sh Vaibhav Kalia/ Sh Kapil Sharma
B.Sc. (Hons.) Community Science				
1	Comp 121	Agricultural Informatics	1+2	Sh Kapil Sharma
2	Eng-121	English and Technical Writing	1+1	Mrs Sunita Sud
B.Tech. (Food Technology)				
1	FT 124	Computer Programming & Data Structure	2+1	Sh Vaibhav Kalia/ Sh Kapil Sharma
Odd Semester Course**				
1	Math.112	Calculus	3+0	Dr (Mrs) Sharda Singh
2	Comp.211	Computer Application	2+1	Sh Kapil Sharma
B.Sc. (Hons.) Agriculture				
1	Eng 111	Comprehension and Communication Skills in English	1+1	Ms Sunita Sud
B.Sc. (H.H.A.)				
1	Comp.115	Application of Computers	2+2	Sh Vaibhav Kalia
B. Postgraduate Courses				
1	Stat 511	Statistical Methods for Applied Sciences	3+1	Dr Kamlesh Singh
2	Stat 541	Mathematical Statistics	2+1	Dr Kamlesh Singh
3	Comp 501	Computer Fundamental and Programming	2+1	Sh Kapil Sharma

* Course with Tutorial

Course No. Ag.Info.361 was offered by Dean, College of Agriculture and taught by the faculty of this department under the directions of the Dean, College of Basic Sciences.

Centre for Geo-informatics

Sr. No.	Course No.	Course title	Credit Hours	Name of Instructor
Semester-I				
A. Undergraduate Courses				
1.	GIS-351	Geo-informatics, Nano-technology and Precision Farming	1+1	Dr. R.S. Rana / Sh. Vaibhav Kalia/

Dr Sanjay Sharma				
B. Postgraduate Courses				
1.	GIS-501	Geographic Information System and its Applications	2+1	Dr. R.S. Rana / Sh. Vaibhav Kalia
Semester-II				
A. Postgraduate Courses				
1.	GIS-501	Geographic Information System and its Applications	2+1	Dr. R.S. Rana / Sh. Vaibhav Kalia

2.2 Thesis Completed

Department of Biology and Environmental Sciences

M. Sc. (Environmental Sciences)

Sr. No.	Name of student & Admission No.	Title of Thesis	Name of Major Advisor
1.	Hazrat Mohammad Samimi.	Effect of local environmental conditions on the growth of seabuckthorn(<i>Hippophae rhamnoides</i> ssp. <i>mongolica</i>) varieties in Lahaul valley, Hiamchal Pradesh (2017-19).	Dr. Verandra Singh

Department of Chemistry and Biochemistry

M.Sc. (Biochemistry)

Sr. No.	Name of student & Admission No.	Title of Thesis	Name of Major Advisor
1.	Ms. Apoorva S-2016-30-001	Evaluation of quality and digestibility of stover from maize (<i>Zea mays</i>) genotypes grown in Himachal Pradesh	Dr. Rajan Katoch
2.	Mr. Shivanshu Garg S-2016-30-002	Silencing of F-Box kelch gene for virus resistance studies in model plant <i>Nicotiana benthamiana</i>	Dr. Nageswer Singh
3.	Ms. Surbhi Sood S-2016-30-003	Studies on the lignin biosynthetic gene of Tall fescue (<i>Festuca arundinacea</i> Schreb.)	Dr. Rajan Katoch
4.	Ms. Sureshna Devi S-2016-30-004	Fate of bispyribac sodium in soil and its effect on rice quality	Dr. Neelam Sharma
5.	Ms. Ushma Devi S-2016-30-005	Evaluation of biochemical constituents in promising soybean (<i>Glycine max</i>) genotypes developed in Himachal Pradesh	Dr. Kamal Mohini

Ph. D. (Biochemistry)

Sr. No.	Name of student & Admission No.	Title of Thesis	Name of Major Advisor
1.	Ms. Ritu S-2012-40-003	Antioxidant properties and molecular diversity of Meethi Neem (<i>Murraya Koenigii</i> (L.) Spreng)	Dr. Nageswer Singh
2	Ms. Neha Banta S-2014-40-001	Biochemical profiling of potential genotypes of North West Himalayan Cereals, Pulses and oilseeds	Dr. Kamal Mohini

Department of Microbiology

-Nil-

Department of Physical Sciences and Languages

This department does not have any post-graduation programme. However, faculty in the discipline of Statistics is involved in guiding the post-graduate students (Master and Doctoral programme) in their research projects as member on their advisory committees. During the period under report, faculty, as minor advisor, has guided more than 18 Masters' and 5 Doctoral level students.

Centre for Geo-informatics

Sr. No.	Name of student & Admission No.	Title of Thesis	Name of Major Advisor
1.	Sahil Salaria	Mapping the present and futuristic crop water requirement using FAO-CROPWAT for wheat crop under sub-temperate climate of North-Western Himalaya Completed Vide letter no QSD-A-2016-30-020/CSKHPKV/ACAD.4728288 dated 25.9.2017	Dr Ranbir Singh Rana

2.3 Member of Students' Advisory Committee (PG Programme)

Department of Biology and Environmental Sciences

Sr. No.	Name of Member of the Students' Advisory Committee	Name of the Student	Admission No.
1	Dr Anita Singh	Shalvi Thakur	A-2017-30-015
		Jevanjot kaur	A-2017-30-050
		Neha Awasthi	S-2018-03-003
		Diksha Sharma	H-2018-03-001
		Divya Bhandari	A-2018-30-063
		Pooja	A-2018-30-022

		Neha Banta	S-2014-04-001
		Ankit Rana	A-2016-30-012
		Reetu	S-2012-40-003
		Nivedhika Rai Vaid	H-2017-40-001
2	Dr. Usha Rana	Aparajita	A-2018-40-013

Department of Chemistry and Biochemistry

Sr. No.	Name of Member of the Students' Advisory Committee	Name of the Student	Admission No.
	Dr Neelam Sharma As Major Advisor	Ms. Sureshna Devi	(S-2016-30-004)
		Ms. Sunidhi	(S-2017-30-004)
		Ms. Shaila Sapehia	(S-2017-30-002)
		Mrs. Shipra Singh	(S-2016-40-001)
	As Minor Advisor	Mr. Shivanshu Garg	(S-2016-30-002)
		Ms. Deepshika	(H-2015-30-003)
		Ms. Garima Thakur	(A-2016-30-051)
		Mr. Akhil Sharma	(A-2017-30-042)
		Ms. Mohini Sharma	(A-2017-30-007)
		Mr. Rahul Sharma	(A-2018-30-023)
		Ms. Shamili	(S-2018-30-002)
		Ms. Shivani Sharma	(S-2017-30-003)
		Mr. Anuj Sharma	(A-2017-30-020)
		Ms. Pooja	(A-2018-30-018)
		Ms. Kanik	(S-2018-30-001)
		Ms. Samridhi Thakur	(H-2018-30-)
		Ms. Mamta	(H-2018-30-)
		Ms. Rekha	(H-2015-40-001)
		Mr. Gourav	(A-2016-40-020)
		Mr. Gurpreet Singh	(A-2016-40-004)
		Mr. Ajay	(A-2016-40-018)
		Ms. Anju Rani	(H-2016-40-004)
		Ms. Abha Anand	(H-2016-40-002)
		Mr. Rajneesh	(A-2016-40-021)
		Mr. Sachin Kumar	(A-2017-40-010)
		Ms. Anjali	(A-2017-40-022)
		Mr. Praveen Thakur	(A-2017-40-024)
		Mr. Siddhartha Singh	(S-2017-40-002)
		Ms. Deepika Suri	(S-2018-40-027)
		Ms. Divyanshi Baghla	(S-2018-40-028)
		Mrs. Neha Chauhan	(S-2018-40-029)
		Ms. Parita	(A-2018-40-006)
Sr. No.	Name of Member of the Students' Advisory Committee	Name of the Student	Admission No.
	Dr Nageswer Singh As Major Advisor	Mr. Shivansu Garg	S-2016-30-002
		Ms. Shivani Sharma	S-2017-30-003
		Ms. Shamli Sharma	S-2018-30-002

		Ms. Neerja Kharwal	S-2017-40-001
	As Minor Advisor	Bitan Biswas	A-2017-30-003
		Kinjal Mondal	A-2017-30-006
		Ankita	A-2017-30-001
		Bhawna Kumari Mishra	A-2017-30.002
		Mohini Sharma	A-2017-30-007
		Rushikesh Sanjay Mane	A-2016-30-005
		Bhallan Singh Sekhon	A-2016-40-022
		Samridhi Thakur	H-2018-30-003
		Rohit Kumar	A-2018-30-002
		Sourav Rai	A-2018-30-003
		Prabhudatt Samal	A-2016-30-007
		Ushma Devi	S-2016-30-005
		Smitesh Dangat	A-2017-30-004
		Shaila Sapehia	S-2027-30-002
		Manshi Mehta	S-2017-30-007
		Shivani Thakur	A-2016-30-006
		Jadhav Ishwar Babanrao	A-2017-30-005
		Hazrat Mohammad Samimi	S-2017-30-006
		Khushbu Verma	H-2016-40-001
		Vishra Deepak Chaturvedi	
		Arjun Kumar	A-2016-40-00-11
		Vandana Thakur	
		Sunny Chaudhary	A-2017-40-002
		Gurpreet singh	A-2016-40-004
		Bheem Prarekh	A-2017-40-007
		Dinesh Gaikwad	S-2016-30-002
		Akhil Sharma	A-2017-30-042
		Ravinder Kamkble	A-2016-30-004

Department of Microbiology

-Nil-

Department of Physical Sciences and Languages

During the period under report, faculty, as minor advisor, has guided more than 18 Masters' and 5 Doctoral level students.

Centre for Geo-informatics

Sr. No.	Name of Member of the Students' Advisory Committee	Name of the Student	Admission No.
1.	Dr. Sharda Singh	Mr. Navjot Singh Dhillon	A-2016-40-023
		Mr. Abhishek Rana	A-2016-40-007#
		Ms. Manju Chottani	A-2017-40-003#
		Ms. Shivalika Sood	A-2017-40-005#
		Ms. Ankita	S-2017-30-001
		Mr Arun Thakur	A-2017-30-045

	Ms. Nikita	A-2018-30-064
	Ms. Mamta	Fresh Student
	Ms. Oshin	A-2016-30-032*
	Ms. Madhavi Sharma	A-2016-30-031*
	Ms. Heena Sharma	A-2016-30-029*
	Mr. Pavitra Singh	A-2016-30-033*
	Ms. Rashmi	A-2016-30-034*
	Ms. Arati Priyadarshini	A-2016-30-026*
	Ms. Deeksha Kumari	A-2016-30-027*
	Ms. Diksha Sethi	A-2016-30-028*
<p>* Nominated in place of Dr. Manoj Bhargva, Prof (Stat) vide letter No. QSD.11-10/CSKHPKV/Acad /-31372 dated 4th July 2018 & dated 17.07.18, 19.07.18, 16.02.19 and others</p> <p># Nominated in place of Dr. Manoj Bhargva, Prof (Stat) vide letter No. QSD/A-2016-30-007/CSKHPKV/DPGS/Acad/-1847-48</p>		

2.4 Short Trainings

-Nil-

2.5 Laboratory Manual

Department of Chemistry and Biochemistry

- Practical Manual Chemistry for B.Sc. 1st year Life Sciences students – 2018 by Neelam Sharma, Suman Sharma, Mayanka and Sushila. Published by Department of Chemistry and Biochemistry, COBS ,CSKHPKV,Palampur
- Practical Manual Chemistry for B.Sc. 2nd year Life Sciences students – 2018 by Neelam Sharma, Suman Sharma and Mayanka. Published by Department of Chemistry and Biochemistry, COBS, CSKHPKV, Palampur
- Laboratory Manual on Principles and Techniques in Biochemistry Vol.1 -2019 by RajanKatoch. Published by Department of Chemistry and Biochemistry ,COBS,CSKHPKV,Palampur
- Laboratory Manual on Principles and Techniques in Biochemistry and Molecular Biology Vol.2 -2019 by RajanKatoch. Published by Department of Chemistry and Biochemistry,COBS,CSKHPKV,Palampur

2.6 National Eligibility Test (NET)

Department of Chemistry and Biochemistry

- Mr. Ankur Tripathi (S-2015-40-001), Ph.D. student, Department of Chemistry and Biochemistry.
- Ms. Shipra Singh (S-2016-40-001), Ph.D. student, Department of Chemistry and Biochemistry.

2.7 Scholarships/Fellowships

INSPIRE FELLOWSHIP

Department of Chemistry and Biochemistry

- Ms. Surbhi Sood (S-2016-30-003), M.Sc. Student, Department of Chemistry and Biochemistry.

ICAR - SRF

-Nil-

2.8 Awards

I. Department of Biology and Environmental Sciences

1. Prof. Virendra Singh received appreciation letter from president, seabuckthorn association of india for successfully organizing National Conference on Seabuckthorn held on Oct. 23-24, 2018 at Shimla.
2. Prof. Virendra Singh received Dr. A. P.J. Abdul Kalam Scientist Award of The Society of Tropical Agriculture during the '9TH INTERNATIONAL CONFERENCE ON AGRICULTURE, HORTICULTURE AND PLANT SCIENCE, 27-28 JUNE 2019: ANGEL'S INN RESORT, DHARAMSHALA, (H.P.).

3 RESEARCH

3.1 Ongoing Research Projects

Department of Biology and Environmental Sciences

Sr. No.	P.I./Co-P.I.	Title of the Project	Budget outlay (in lakhs)	Funding Agency	Duration of the Project
1.	Dr. Radhika Sharma	Termites as prospective solution for solid waste management.	7.5 lakhs	Department of Environmental Science and Technology	2 Years

Department of Chemistry and Biochemistry

Sr. No.	P.I./Co-P.I.	Title of the Project	Budget outlay (in lakhs)	Funding Agency	Duration of the Project
1.	Dr. Na geswer Singh P.I	Evaluation of nutritionally important biochemical constituents of promising adzuki bean, Buckwheat and Chenopod genotypes	1.00	ICAR	One year
2.	Dr. Neelam Sharma P.I	Bio-efficacy and Phytotoxicity analysis of WCPL29 and OAH 56 on tea crop against target weeds	8.10	Willowood Chemicals Pvt Ltd, Mumbai	Two years
3.	Dr. Neelam Sharma Co-P.I.	Efficacy evaluation of Ethalfluralin 36% EC against Weeds in Potato	5.00	SarswatiAgro Chemicals India Pvt Ltd	Two years
4.	Dr. Neelam Sharma Co-P.I.	Bio-efficacy and Phytotoxicity of 'GPH 315' against weed flora of tea	5.80	UPL, Limited, Mumbai	Two years
5.	Dr. Neelam Sharma Co-P.I.	Studies on bio efficacy and phytotoxicity of Godrej Bountee (Homobrassinoloide 0.04%EC w/w) in Tea	4.10	M/s Godrej Agrovet Ltd, Mumbai	Two years
6.	Dr. Neelam Sharma Co-P.I.	Bio-efficacy of Glufosinate Ammonium 13.5% SL against major weeds of Tea	4.05	Dhanukaagritech Limited	Two years
7.	Dr. Neelam Sharma Co-P.I.	Bio-efficacy evaluation of UPH 1118 herbicide against weed flora in Tea	5.5	UPL, Limited, Mumbai	Two years
8.	Dr. Neelam Sharma Co-P.I.	Doubling farm income through remunerative and eco-friendly production systems in farmers' participatory approach in the rainfed ecosystems of Himachal Pradesh	30.00	RKVY	Two years
9.	Dr. Neelam Sharma Co-P.I.	Cross-sectional Studies on Determination of Antibiotic Residues in Bovine milk and Assessment of Potential Risks to Public Health in H.P.	11.00	RKVY	Two years

10.	Dr. Neelam Sharma Co-P.I.	Studies on bio-efficacy on Non Crop area and residue effects of GOD-H007 43% SG	4.10	M/s Godrej Agrovat Ltd, Mumbai	Two years
11.	Dr. RajanKatoch P.I.	Genetic enhancement of Minor Pulses: Characterization, evaluation, genetic enhancement and generation of genomic resources for accelerated utilization and improvement	80.0	DBT, GOI	Three Years

Centre for Geo-informatics

Sr. No.	P.I./Co-P.I.	Title of the Project	Budget outlay (in lakhs)	Funding Agency	Duration of the Project
1.	Dr. Sharda Singh Dr. Ranbir Singh Rana Sh. Vaibhav Kalia	Establishment of GIS & MIS and Monitoring System –HP Crop Diversification Project, JICA, ODA	69.04	JICA- HPCDP	June 2012- March 2020
2.	Dr. Sharda Singh Dr. Sanjay Sharma Dr. Ranbir Singh Rana Sh. Vaibhav Kalia	Development of framework for Networking Programme on Village Information System (VIS) under NRDMS	31.61	NRDMS -DST, New Delhi	March 2016- March 2019
3.	Dr. Sanjeev Sandal Dr. Ranbir Singh Rana Dr. Sharda Singh Sh. Vaibhav Kalia	Networking Project on Revival of Village Ponds through scientific Interventions	16.91		March 2017- March 2020
4.	Dr. Ranbir Singh Rana Dr. Sharda Singh Sh. Vaibhav Kalia	Climate Change Impact on Productivity of Food grain and Plantation crops in North Western Himalaya funded by ISRO through IIRS Dehradun	39.45	IIRS,Dehradun	2014-
5.	Dr. Ranbir Singh Rana Dr. Sharda Singh Sh. Vaibhav Kalia	Mapping of Geographical distribution and identification of new invasive spp. of insects pest and diseases, simulated futuristic crop water footprints scenarios for major crops in Himachal Pradesh	51.57	DST ,New Delhi	March 2019

3.2 Research Projects Sanctioned

Department of Biology and Environmental Sciences

Sr. No.	P.I./Co-P.I.	Title of the Project	Budget outlay (in lakhs)	Funding Agency
1.	Dr. Virendera Singh	<i>Adhoc research project "Characterization and Performance Trials of</i>	9.88/-	DRDO

		Russian Seabuckthorn varieties in Cold desert Himalayas”.		
2.	Dr. Virendera Singh	Adhoc research project on “Mass propagation and cultivation of high yielding sea buckthorn cultivars for livelihood improvement in tribal areas of Himachal Pradesh” .	36,74,960/-	DST

Department of Chemistry and Biochemistry

Sr. No.	P.I./Co-P.I.	Title of the Project	Budget outlay (in lakhs)	Funding Agency
1.	Dr. Neelam Sharma Co-P.I.	Enhancing farm income through the ecological restoration of farmers’ resource base by managing obnoxious vegetation in participatory mode in Himachal Pradesh	21.50	RKVY
2.	Dr. Nageswer Singh P.I.	Evaluation of nutritionally important biochemical constituents of promising Adzuki bean, Buckwheat, and Chenopod genotypes	1.00	ICAR

Centre for Geo-informatics

Sr. No.	P.I./Co-P.I.	Title of the Project	Budget outlay (in lakhs)	Funding Agency
1.	Dr. Ranbir Singh Rana Dr. Sharda Singh Sh. Vaibhav Kalia	Mapping of Geographical distribution and identification of new invasive spp. of insects pest and diseases, simulated futuristic crop water footprints scenarios for major crops in Himachal Pradesh	51.57	DST, New Delhi

3.3 Research Projects Completed

Department of Chemistry and Biochemistry

Sr. No.	P.I./Co-P.I.	Title of the Project	Budget outlay (in lakhs)	Funding Agency
1.	Dr Neelam Sharma PI	Training Programme	0.60	CU-Chandigarh

Centre for Geo-informatics

Sr. No.	P.I./Co-P.I.	Title of the Project	Budget outlay (in lakhs)	Funding Agency
1.	Dr. Sharda Singh Dr. Sanjay Sharma Dr. Ranbir Singh Rana Sh. Vaibhav Kalia	Development of framework for Networking Programme on Village Information System (VIS) under NRDMS	31.61	NRDMS-DST

3.4 Research Projects Submitted

Department of Biology and Environmental Sciences

Sr.No.	P.I./Co-P.I.	Title of the project	Budget outlay Lakhs	Funding Agency
1.	Dr. Virendera Singh	<i>Submitted project Proposal on "Centre of Excellence on Seabuckthorn".</i>	396.84	DST

Department of Chemistry and Biochemistry

Sr.No.	P.I./Co-P.I.	Title of the project	Budget outlay Lakhs	Funding Agency
2.	Dr Neelam Sharma Co-P.I.	Evaluation of glyphosate salt formulations for their weed control efficacy/residue in tea	5.50	Monsanto India Limited, New Delhi

Proposal for revolving fund:

Head, Department of Chemistry & Biochemistry, COBS	Creation of revolving fund scheme "For imparting training and sale of study material/analytic work"
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Centre for Geo-informatics

Sr.No.	P.I./Co-P.I.	Title of the project	Budget outlay Lakhs	Funding Agency
1.	Dr. Sharda Singh	Geospatial Technology based services for various schemes of Department of Agriculture, Himachal Pradesh	16.00	Department of Agriculture, Himachal Pradesh

3.5 Research Highlights

Department of Biology and Environmental Sciences

RESEARCH HIGHLIGHT-1:

Studies were carried out on evaluation of 5 Russian seabuckthorn varieties under field conditions at University Research Farm, Kukumseri (2750 m asl) and under farmers field conditions at higher altitude (3200-3300 m asl) in Lahaul. The exotic NX-1 showed the maximum 82% survival rate, closely followed by NX-6 (80%) and other forms and

control (Drilbu). A significant variation in the height of plants of various seabuckthorn exotics was observed. Exotic NX-6 showed the maximum height of 107 cm, followed by NX-3 (103 cm), which were significantly ($P<0.05$) higher than other varieties. The maximum canopy spread in east direction was observed in NX3 (34.1 cm), which was significantly ($P<0.05$) higher than other forms and a minimum canopy spread in NX6 (19.0 cm). The variation in the canopy spread of various seabuckthorn exotics was also observed. NX-2 showed the maximum canopy spread of 24.2 cm, followed by NX1 (22.2 cm) and others and a minimum value of 15.8 cm in NX5, significantly ($P<0.05$) lesser than other forms. A significant variation was observed in the length of leaves of exotics. The maximum leaf length was observed in NX-1 (5.7 cm), followed by NX-3 (5.5 cm) and others. The maximum leaf width was observed in NX1 (8.2 mm), which was significantly ($P<0.05\%$) higher than other forms (7.2-6.6 mm), being minimum in NX 5 (6.6 mm). All the growth parameters decreased in these varieties under farmers fields conditions at higher altitude. All the forms are thornless at this stage of growth. Over all, NX1 and NX6 showed better survival and growth parameters; however, further studies are required at fruiting stage to select best Russian seabuckthorn varieties.

Department of Chemistry and Biochemistry

Research highlight-1

Fifteen wild *Meethi Neem* leaf samples collected at three stages *viz.* pre-flowering, flowering and fruiting stages from different locations of Kangra and Mandi district of Himachal Pradesh were analyzed to evaluate phytochemical constituents and to identify the genetic diversity. The range of variation for phytochemical constituents at three stages varied significantly. All parameters showed highest value at flowering stage except ascorbic acid and polyphenol oxidase activity. Clustering analysis with respect to biochemical constituents revealed that the geographically distinct collections of *Meethi Neem* were clustered together. For molecular characterization by ISSR, a total of 120 highly reproducible bands were obtained out of which 74 were polymorphic. The polymorphism ranged from 12.5 to 100 per cent. Dendrogram generated using UPGMA separated 10 collections into 2 major clusters with 46 to 100 per cent similarity. The overall analysis revealed that *Meethi Neem* collections from the same geographical location were genetically and biochemically diverse.

Research highlight-2

The mature seeds of four potentially superior genotypes/varieties each of the nine selected crops *viz.* barley, oats, wheat (cereals); linseed, sesame, soybean (oilseeds) and kidney bean, horsegram, moth bean (pulses) were evaluated for relevant biochemical constituents by following standard procedures. Significant statistical differences were observed for the biochemical constituents in the four genotypes each of all crops and the three crops of each group. Differences among the three groups were also apparent. The results from this study were utilized for carrying out the cumulative grading based on desirable quality parameters for identifying the best genotype in each crop *i.e.* Dolma/VLB-118 in barley, TP-40 in oats, Saptdhara in wheat, Himani in linseed, Nurpur in sesame, Hara Soya in soybean, Mandi in horsegram, Kanchan in kidney bean and Jadia in moth bean. The potentially superior genotypes/varieties thus identified can be used for further developmental research

by the plant breeders and cultivation on a large scale by the farmers of H.P and others. The information regarding the identification of best crop for nutritionally important individual quality parameter will prove highly beneficial for the consumers.

Research highlight-3

In present investigation entitled "Fate of bispyribac sodium in soil and its effect on rice quality", a field experiment consisting of four treatments viz. bispyribac sodium 10g/ha, 20g/ha, 40g/ha and control was laid out in randomized block design (RBD) in the Department of Agronomy, Forages and Grassland Management, CSK HPKV, Palampur during *kharif* 2017. For residue and biochemical studies, soil and rice plant samples were collected at different time intervals after herbicide application and rice grain samples at crop harvest. Bispyribac sodium at three application rates i.e. 10g/ha, 20g/ha and 40g/ha persisted in soil upto 10, 15 and 45 days after herbicide spray, respectively. The degradation data generated indicated that more than 75 per cent of applied bispyribac sodium dissipated within 7 days of herbicide application. The logarithmic plots of herbicide concentration of different doses vs time fitted first order kinetics decay curve. Terminal residues of bispyribac sodium in rice grain were below detectable level ($\leq 0.025 \mu\text{g/g}$). A significant decrease over control in biochemical attributes of rice leaves i.e. ALS activity and total carotenoids was observed upto 10 and 30 days respectively after bispyribac sodium application and thereafter the ALS activity and total carotenoids values were not influenced conspicuously. Whereas, total chlorophyll and total sugar content in rice leaves increased significantly with maximum increase noticed in treatment bispyribac sodium 20g/ha. Quality parameters i.e. total protein, total sugars and starch content were not influenced very distinctively with applied bispyribac sodium treatments. The data on residues and biochemical studies of bispyribac sodium in rice suggest that use of bispyribac sodium at three rates of application in rice crop is safe both in terms of crop quality and food safety point view. It can also be inferred from the above findings that effect of bispyribac on ALS and total carotenoids was temporary and recovered with passage of time.

Research highlight-4

Tall fescue is one of the important forage crops of Himalayan region. The crop holds remarkable potential for high biomass production, but the poor palatability limits its efficient utilization in livestock feeding. Lignin is a major contributing factor responsible for low palatability and digestibility of Tall fescue. The present investigation entitled "Studies on the lignin biosynthetic gene of Tall fescue (*Festuca arundinacea* Schreb.) was carried out to clone and partially sequence the gene encoding Cinnamoyl-CoA-reductase (CCR) responsible for the catalyzation of the step committed to monolignol biosynthesis. Four Tall fescue varieties viz., Hima-1, Hima-4, Hima-5 and EC-178182 were evaluated for nutritional composition and digestibility. The grading of Tall fescue varieties revealed nutritional superiority of variety EC-178182 over others with 12.81 per cent CP, 8.01 per cent ash, 13.34 per cent total carbohydrates, low tannins (0.39%) and oxalates (1.26%) but with high lignin content (7.50%). The molecular study for gene cloning was carried out in variety EC-178182. An amplicon of approximately 207 bp of CCR gene was cloned and sequenced. The

sequence analysis (BLASTn) revealed 96 per cent similarity of isolated gene fragment with perennial rye grass (*Lolium perenne*). In phylogenetic analysis, Tall fescue and ryegrass showed a very close evolutionary relationship by sharing same sub branch of monocotyledons clade. The sequencing of gene involved in lignin biosynthesis including CCR in Tall fescue would be helpful in designing strategies for altering the level of lignin in major forage species with advanced metabolic engineering approaches.

Research highlight-5

In the present investigation, stover from 24 maize genotypes was evaluated for their nutritive value. Different treatments (physical, chemical and biological) were investigated for their effect on nutritional quality and digestibility. The study revealed that treatment with *T. viride* and *P. fluorescens* were useful for improving the nutritive value and digestibility of maize stover. All the treatments exhibited variable effects on nutritive quality and digestibility of maize stover. Among different genotypes studied, the best response to the treatments was observed in PalamShankar Makka.

Research highlight-6

In the present investigation entitled “**Silencing of F-Box kelch gene for virus resistance studies in model plant *Nicotiana benthamiana***”, construct has been prepared for generating the silent lines of the mentioned plant. F-Box kelch is an important protein that associates with the viral proteins and that the protein is an important factor that helps in the establishment of viral infection. A conserved portion of the gene was amplified in sense and antisense orientation and in a sequential manner it was cloned into the silencing vector pSAT4. The construct development was ascertained with the help of restriction digestion and sequence determination. The construct is ready to be transformed into plants. For the biochemical analysis, purified Cucumber mosaic virus (CMV) was inoculated at their 3-4 leaf stage and infection was confined by symptom development. Both infected and healthy plants were subjected to biochemical analysis of the phenolic compounds (total phenols, simple phenols, Ortho-dihydric phenols and bound phenols), alkaloids and total chlorophyll and carotenoids. It was observed that the total phenol content was increased in the infected plant in comparison to the healthy leaves. However, total chlorophyll and carotenoids were reduced in infected plants as compared to healthy leaves.

Research highlight-7

Herbicide residues and environmental quality

Herbicide residues in conservation agriculture:

- Residues of isoproturon and 2,4-D at the time of harvest in soil and wheat grain samples under different tillage and residue management techniques estimated spectrophotometrically were found to be below detectable limits. HPLC analysis of soil and maize collected from atrazine applied treatments, under different tillage and residue management techniques were observed below detectable limits (<0.05 µg/g) at the time of harvest. Similarly, pendimethalin residues in soil and soybean under

different tillage and residue management techniques were also found below detectable limits (<0.05 µg/g) at the time of harvest.

Herbicide residues in Organic Production System:

- In the organic maize – garlic production system, HPLC analysis of soil samples and crop produce from chemical treatment of recommended herbicide (pendimethalin in garlic and atrazine in maize respectively) after the harvest of garlic crop in Rabi 2017-18 and maize crop in *kharif* 2018, revealed that atrazine (>0.01 µg/g) and pendimethalin (>0.01 µg/g) residues in soil and crop produce were below detectable levels.

Persistence of herbicides tested in the farmer's field (soil and crop produce):

- Soil and grain samples were collected from the treated fields of farmers of Kangra district at the harvest of the crop were estimated by analytical methods. The residues of bispyribac sodium and butachlor were not detected in rice grain and soil. Similarly, no residues of 2,4-D and clodinafop propagryl were detected in any of the matrices tested (wheat and soil). Concentration of residues of atrazine in soil and crop produce (maize grain) were below 0.01 ppm. This showed that herbicides used in farmer field have degraded from the soil at the harvest of the crop when it was applied at recommended level.

Degradation of tembotrione:

- Degradation studies revealed that in all three tembotrione treatments *i.e.* 60g/ha, 120g/ha and 240g/ha, more than 70% applied herbicide in soil dissipated within 15 days after herbicide application.

Adsorption of temdotrione:

- In general, amount of tembotrione adsorbed per gram of soil increased with increasing concentration of herbicide from 1- 50 µg/ml. The data obtained for studied soils revealed that the order of adsorption was: silty clay loam > silt loam > sandy loam. 'S' type isotherms were observed for adsorption of tembotrione indicating a strong initial competition of water molecules to the adsorbent as compared to the herbicide. Adsorption data fitted well with Freundlich equation.

Centre for Geo-informatics

Research highlight-1: Development of framework for Networking Programme on Village Information System (VIS) under NRDMS

The Village Information System (VIS) evolved as a network programme 'Development of framework for Networking Programme on Village Information System (VIS) under NRDMS' under the aegis of NRDMS, Department of Science & Technology, Government of India has taken up the task to prepare digital base maps at village level involving ten States of India of which CGRT, CSKHPKV is partner from the state of Himachal Pradesh. The Project has been completed successfully meeting the objectives of the Project. For the dissemination of VIS outputs, one Portal at State level on web link http://14.139.224.135:6090/cgrtgis/vis_hp/ and one at National level have been launched by DST on the Web link <http://14.142.106.212:9090/VIS/map.do#> wherein all information related to village starting from base map, natural resources, assets and infrastructure, soil parameters, water characteristics have been mapped and attribute data along with analysed data and recommendations have been made available. Department of Science & Technology, New Delhi is of the view that this model work initiated by DST would be of great help for replicating the technology/methodology in other villages of the state and in this process the concept of good governance would be

realized. Subsequently, State Govt. will be benefitted with this programme in better management of resources at village level and lead to quick decision making when available at a click away anywhere anytime by the highest administrator to village Pradhan/Secretary/individual (aam adami).

Research highlight-2: Establishment of GIS & MIS and Monitoring System

Himachal Pradesh Crop Diversification Project (HPCDP, JICA) started with the objective of improvement of agricultural infrastructure, such as irrigation facilities and access farm roads which, along with technical guidance to farmers on vegetable cultivation, are expected to improve farm income. In order to bring transparency and monitoring over the years as what is where and what is done, Web GIS Portal for Himachal Pradesh Crop Diversification Project (HPCDP, JICA) developed by CGRT, CSKHPKV-Palampur which contains spatial and attribute information of the 1st phase projects. The spatial data of all the DPRs (Detailed Project Reports) of 210 project sub-sites and 135 PCRs (Project Completion Reports) have been uploaded on the portal as services. The web Portal link is <http://14.139.224.135:6090/myapp/cgirtjica>. The whole spatial data along with attribute data is dynamically available on this web Portal making it accessible to the funding agency and the stake holders. In addition to this, An Atlas consisting of all the DPRs (Detailed Project Reports) of 210 project sub-sites and 135 PCRs (Project Completion Reports) containing actual assets constructed on the ground has been prepared and submitted to the funding agency.

Research highlight-3: GRAMIN KRISHI MAUSAM SEWA at Palampur in H.P

- The five days forecasts on different weather parameters viz. rainfall, temperature, cloud cover, relative humidity and weekly cumulative rainfall for our study districts (Chamba, Kangra, Hamirpur and Una) were validated and weather based agro-advisory prepared
- Published The total 92*4=368 in English and in Hindi prepared and 368 published IMD website (92 AAS Bulletins, during July 1, 2018 to June 30th, 2019 for Chamba, Una, Hamirpur and Kangra districts of H.P. and published in university website www.hillagric.ac.in/ kisan ke leye and www.imdagrimet.gov.in. Kisan Portal (www.farmers.gov.in; www.weathershimla.gov.in and mkisan.gov.in and www.cropweatheroutlook.com of CRIDA (ICAR) websites. Agro-advisory bulletins and weather information were published in local news papers punjab kesari/ Amar Ujala etc. (40 newspaper clippings)
- 23 SMS to 2.79 lakhs registered farmers during June 18 to June 2019 as per quota were sent to farmers of Chamba, Una , Hamirpur and Kangra through MKisan Portal of MOA, GOI , New Delhi and 23 sms delivered to farmers totalling about 55. 10167 lakhs farmers. About 2.78093 lakhs farmers from four districts (Chamba, Una, Kangra and Hamirpur) have been registered in the portal.
- The total reads/hits of Agro-advisory bulletins in IMD website for July, 2018 to June 25, 2018 are 31837 (As per website report)

Research highlight-4: Forecasting Agricultural Output Using Space, Agro Meteorology and Land based Observations (FASAL)

Wheat & Maize

- The genetic coefficients for InfoCrop and DSSAT models were developed from the fields experiments conducted for maize and wheat. In wheat crop, range of values of Genetic Coefficient derived varied between P1V (0t0), P1D (5.36-5.40,G1 (1.85 to 1.9), G210.1 to 10.2), G3 3.6 to 4.0) and PHINT (75 to 78) for Palampur agro-climatic conditions for both varieties HPW-42 and HPW-155. Similarly, for maize crop , P1, P2 and P5 Varied between 202 to 220, 1.20 to 2.05 and 635.4 to 680.40 respectively, whereas G@, G# and PHINT values were 934 to 760, 8.55 to 8.78 and 38.4 to 39.8 respectively. The crop coefficients were used for developing crop yields forecast at two stages. The info crop results indicated higher simulated crop yield both for wheat and maize with inputs farmers inputs level. The inputs data of farmers were collected from sample farmers and same database was used for developing crop yield forecast of wheat and maize for Kangra districts during for 2018-19.

Research highlight-5: Climate Change Impact on Productivity of Food grain and Plantation crops” within the umbrella project of “Mountain Ecosystem Processes and Services in North Western Himalaya

- **Rice Field Experiment:** A field experiment was conducted during *Kharif* season of 2018-19 (IInd yr) entitled , “Modeling and forecasting yield of rice for Kangra district of Himachal Pradesh” at the experimental farm of Rice and Wheat Research Centre, Malan. The treatment consisted of three cultivars viz, HPR 1068, HPR 2880 and HPR 2143 with five dates of transplanting viz, 15th June, 25th June, 5th July, 15th July and 25th July in randomized block design (RBD). Among all the cultivars grain yield for cv. HPR 2143 (5110 kg/ha and 4895 kg/ha) was found highest during both the years followed by HPR 1068 (4780 kg/ha and 4584 kg/ha) and HPR 2880 (4134 kg/ha and 3853 kg/ha). Among date of transplanting 15th June (5855 kg/ha and 5571 kg/ha) registered significantly higher grain yield than others and with with subsequent delay in transplanting there is decrease in yield in both the years.
- Data recorded from Eddy covariance system on carbon dioxide, water vapour, PAR, soil heat flux, soil moisture, soil temperature, Rh, precipitation, wind speed, wind direction and rainfall. The carbon dioxide concentration was higher in the morning and evening and lower in the afternoon.
- The Leaf areas and dry matter of Maize and Wheat of different sites were collected. The observation recorded with Eddy Covariance on carbon fluxes would be used as inputs for fine tuning of the crop simulation models

3.6 Research Publications

Summary Statistics of Publications

Department of Biology and Environmental Sciences		
a.	Total Nos of publications (only Published)	07
i)	Research Publication (Nos)	07
ii)	Extension Publications (Nos)	-
iii)	Other Publications (Nos)	-
b.	Book Published (only book)	-
i)	Name of Book	-
ii)	Name of Author	-
iii)	Name of Publishers	-

Department of Chemistry and Biochemistry		
a.	Total Nos of publications (only Published)	24
i)	Research Publication (Nos)	15
ii)	Extension Publications (Nos)	01
iii)	Other Publications (Nos)	08
b.	Book Published (only book)	NIL
i)	Name of Book	
ii)	Name of Author	
iii)	Name of Publishers	

Department of Microbiology		
a.	Total Nos of publications (only Published)	5
i)	Research Publication (Nos)	3
ii)	Extension Publications (Nos)	0
iii)	Other Publications (Nos)	2
b.	Book Published (only book)	0
i)	Name of Book	-
ii)	Name of Author	-
iii)	Name of Publishers	-

Department of Physical Sciences and Languages		
a.	Total Nos of publications (only Published)	3
i)	Research Publication (Nos)	1
ii)	Extension Publications (Nos)	0
iii)	Other Publications (Nos)	2
b.	Book Published (only book)	-
i)	Name of Book	-
ii)	Name of Author	-
iii)	Name of Publishers	-

Centre for Geo-informatics, Research & Training		
a.	Total Nos of publications (only Published)	10
i)	Research Publication (Nos)	5
ii)	Extension Publications (Nos)	1
iii)	Other Publications (Nos)	4

b.	Book Published (only book)	0
i)	Name of Book	-
ii)	Name of Author	-
iii)	Name of Publishers	-

3.6.1 Paper Published Department of Biology and Environmental Sciences

- **Singh, A.**, Singh, R. .K. and V. Singh 2018. Cultivation, production and Utilization of Aloe-A wonder plant in mid hill conditions of Himachal Pradesh. *HortFlora Research Spectrum* 7(2): 121-125.
- Devi, P., **Singh, A.** and R.G. Upadhyay 2018. Effect of organic manures on growth parameters and chlorophyll content in jalneem (*Bacopa monnieri* L.) grown under mid hill conditions of Himachal Pradesh. *HortFlora Research Spectrum* 7(2): 162-164.
- **Singh, V.**, Sharma, V.K., Tyagi, S.P., Dhaliwal, Y.S. and M. Sharma 2019. Seabuckthorn (*Hippophae* L.) technologies for environmental conservation and development of value chain in Himachal Pradesh. *Progressive Horticulture* 50 (1& 2): 92-1-7.
- Kumar, P., **Singh, V.** and A. Singh 2018. Seabuckthorn ((*Hippophae* Spp.) conserve plant diversity in the fragile mountain ecosystems of Cold Desert Himalayas. *J. Biodiversity* 9 (1-2): 53-68.
- Rana, D., **Singh, V.** and Gourav 2019. Depth wise assessment of soil fertility in seabuckthorn in comparison to willow and poplar in cold arid Himalayas. *Ind. J. Ecology* 46 (1): 104-110.
- Sharma, A. and **V. Singh** 2018 Effect of altitude and seabuckthorn (*Hippophae rhamnoides*) on soil properties in dry temperate region of Himachal Pradesh. *Journal of Applied and Natural Science* 9 (4): 2228 – 2234.
- Sharma, A., **Singh, V.**, Sharma A. and N. Negi 2019 Seabuckthorn a new approach in ecological restoration of Himalayan Ecosystem: A review. *International Journal of Chemical Studies* 7(1): 1219-1226.

Department of Chemistry and Biochemistry

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- **Sharma Neelam**, Angrias NN, Kumar Suresh, Rana SS, Chopra Pankaj and Sunidhi. 2019. Studies on bioefficacy, phytotoxicity of atrazine and its residues in maize under North Western Himalayas Conditions. *International journal of Chemical Studies*. 7(3):1196-1201
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Department of Microbiology

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Department of Physical Sciences and Languages

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Centre for Geo-informatics, Research & Training

- Rana R.S., Kaundal M., Katoch A., Singh S. and Sood K. 2019. Mapping Indigenous climate resilience practices in animal disease management and feed storage protection in Himachal Himalayas. *Indian Journal of Animal Sciences* 89 (3): 324-328 /Article, NAAS rating_2019: 6.28
- Ranbir Singh Rana, Munish Kaundal, Vaibhav Kalia, Ranu Pathania and Anup Katoch. 2018. Indigenous traditional knowledge in agricultural activities vis-a-vis

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- Ranbir Singh Rana, Sanjay Kumar Sharma, Ranu Pathania, Ramesh and S.S. Rana.2018. Study on maize production under changed climatic scenarios in western Himalaya of India. MAUSAM, 69, 2, 323-330. (NAAS Rating _2018:6.40)
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- Ranu Pathania, Rajendra Prasad, Ranbir Singh Rana, Sudhir Mishra and Saurav Sharma. 2018. Growth and yield of wheat as influenced by dates of sowing and varieties in north western Himalayas. Journal of Pharmacognosy and Phytochemistry 2018; 7(6): 517-520. (NAAS Rating _2019: 5.21)

3.6.2 Papers Presented in Conferences and Workshops

Department of Biology and Environmental Sciences

-Nil-

Department of Chemistry and Biochemistry

Invited Guest Lecture:

- **Sharma*Neelam** and Kumar Manish 2019 “An overview on Pesticides Use in Agriculture and Potential Hazards” in National Seminar on “Interface between Basic Science Research, Modern Technology and Environmental Sustainability” held on 3rd May, 2019 at Sri Sai University, Palampur
- Soni Atul, Kumar Sunil, Kaushal Deepika, Sharotri Nidhi, **Kumar Manish** presented paper on topic “Synthesis, Characterization and Applications of Bare and Doped Copper oxide nanoparticles” in National Seminar on “Interface between Basic Science Research, Modern Technology and Environmental Sustainability” to be held on 3rd May, 2019 at Sri Sai University, Palampur.
- Sunidhi and **Sharma Neelam**. 2019. Nutritional quality of organic & conventional products: An overview National Conference on "Organic and Natural Farming - A Tool for Sustainable Agriculture and Economic Development" at CSK H.P. Agriculture University, Palampur held on 28-29 May,2019
- Rana S.S., Kumar Suresh, Kumar Sachin, **Sharma Neelam** and Manuja Sandeep 2018.Weed floristic diversity of the agro-ecosystems of Himachal Pradesh. ISWS International Golden Jubilee Conference, Weeds and Society- Challenges and Opportunities, 21-24 November 2018, ICAR-DWR, Jabalpur, India. P-11
- Sharma Rahul, Sharma G.D., Rana S.S, **Sharma Neelam**, Kumar Suresh, Rana M.C. 2018. Weed management in organic maize-garlic production system. ISWS International Golden Jubilee Conference, Weeds and Society- Challenges and Opportunities, 21-24 November 2018, ICAR-DWR, Jabalpur, India. P-50

- Singh Gurpreet, Kumar Suresh, Rana S.S., **Sharma Neelam** and Manuja Sandeep. 2018. Long-term effect of herbicides on weed shifts in wheat in rice-wheat cropping system. ISWS International Golden Jubilee Conference, Weeds and Society- Challenges and Opportunities, 21-24 November 2018, ICAR-DWR, Jabalpur, India. P-135
- Kumar Sachin, Rana S.S, Ba diyala D, Kumar Suresh and **Sharma Neelam**. 2018. Bioefficacy of Markclodina, a brand of clodinafop against weeds in wheat. ISWS International Golden Jubilee Conference, Weeds and Society- Challenges and Opportunities, 21-24 November 2018, ICAR-DWR, Jabalpur, India. P-160
- **Sharma Neelam**, Sharma Vipasha, Kumar Suresh, Rana S.S and Sunidhi. 2018. Evaluation of potential risk of sulfosulfuron residues in wheat. ISWS International Golden Jubilee Conference, Weeds and Society- Challenges and Opportunities, 21-24 November 2018, ICAR-DWR, Jabalpur, India. P-262

Department of Microbiology

-Nil-

Department of Physical Sciences and Languages

1. Dr (Mrs) Manjula Sharma presented research paper entitled “The Effect of Carbon Nanotubes Addition on the thermite Reaction of Aluminum Based Energetic Nanomaterials” on 3rd May, 2019 in National Seminar on ‘**Interface between Basic Science Research, Modern Technology and Environmental sustainability**’ at Sri Sai University, Palampur.
2. Dr (Mrs) Shweta Pathania presented research paper entitled “Effect of varying temperature on vibration of plates in contact with liquid” on 3rd May, 2019 in National Seminar on ‘**Interface between Basic Science Research, Modern Technology and Environmental sustainability**’ at Sri Sai University, Palampur.

Centre for Geo-informatics

- Thakur S., Rana R.S., Parekh B., Singh S. and Manuja S. 2019. Simulating Impact of Climate Change on Late Sown Wheat Production in Himachal Pradesh. Presented under theme ‘Impact of climate change on adoption and sustainable production In 4th International Group Meeting on Wheat Productivity Enhancement through Climate Smart Practices’ held on 14-16th February, 2019 and organised by IWBR, Karnal, Abstract pg 160
- Ranbir Singh Rana, Sanjeev Kumar, Vaibhav Kalia, Sahil Salaria and Bheem Parekh. 2019 . Assessment of crop water requirement and irrigation scheduling of potato using weather models under sub temperate climatic condition of north-western Himalaya. Abstracts paper published in Abstract volume of International Symposium on “ADVANCES IN AGROMETEOROLOGY FOR MANAGING CLIMATIC RISKS OF FARMERS” (INAGMET-2019), 11-13 February 2019 at JNU, New Delhi page:46

- Sahil Salaria, Ranbir Singh Rana, Sanjeev Kumar Sandal, Vaibhav Kalia, and Bheem Parekh. 2019. Simulating crop water requirement of wheat under limited irrigation in North-Western Himalaya. Abstracts paper published in Abstract volume of International Symposium on “ADVANCES IN AGROMETEOROLOGY FOR MANAGING CLIMATIC RISKS OF FARMERS” (INAGMET-2019), 11-13 February 2019 at JNU, New Delhi page:130
- Ranu Pathania, Rajendra Prasad, Ranbir Singh Rana, Sudhir Kumar Mishra and Saurav Sharma. 2019. Calibration and validation of CERES-Wheat model for north Western Himalayas Abstracts paper published in Abstract volume of International Symposium on “ADVANCES IN AGROMETEOROLOGY FOR MANAGING CLIMATIC RISKS OF FARMERS” (INAGMET-2019), 11-13 February 2019 at JNU, New Delhi page:118

3.6.3 Books/ Book Chapters

Department of Microbiology

- Kanwar, S. S. and Bhushan, K. (2019) Ethnic fermented food and beverages of Himachal Pradesh, India. In: History, Culture and Science of Ethnic Fermented Food and Beverages of India. Eds. Jyoti Prakash Tamang. Springer Nature, Singapore (In Press).
- Kapoor, R., & Kanwar, S. S. (2019). Plant Growth Promoting Bacterial Life at High Salt Concentration: Genetic variability. In: Plant Biotic Interactions-State of the Art. Eds. Ajit Verma, Swati Tripathi and Ram Prasad. Springer Nature, Switzerland AG (In Press).
- Mahajan, R., Chandel. S & Chatterjee. S. (2019). Environmental fate of organophosphate residues from agricultural soils to fresh farm produce: Microbial interventions for sustainable bioremediation strategies. In: Microbes and enzymes in soil health & Bioremediation. Springer Series on Microbes for sustainability (In Press).
- Walia, A., & Sharma, S. (2019). A Renewable Source of Hydrocarbons and High Value Co-Products from Algal Biomass. In: Liquid Biofuel Production, 35-72. Scrivener Publishing LLC.
- Under the guidance of Dr. S.S. Kanwar, ICAR-Emeritus Professor, Department of Microbiology, a booklet with the theme of “Science for the People and the People for Science” was prepared and thereafter published by Dr. Rishi Mahajan and Dr. Abshishek Walia, Assistant Professor’s Microbiology. The booklet was released by Prof. A.K. Sarial, Vice Chancellor, CSK Himachal Pradesh Agriculture University on 2nd March, 2019.

Department of Chemistry and Biochemistry

- **Book Chapter: Sharma Neelam, Rana SS, Kumar Rajender, SondhiaShobha.** Herbicide Residues in Rice–Wheat System under North–Western Mid-Hill Conditions in **Herbicide Residue Research in India**Eds.Sondhia Shobha, Choudhury P P, Sharma A R. Springer, Singapore volume 12: 261-276,

Centre for Geo-informatics

(Lead Lecture in Compendium of National Symposium)

- Lead Lecture on “Climate change vis-a-vis Organic and Natural Farming” National Conference on Organic and natural Farming –A tool for sustainable agriculture and Economic Development, organized by Department of Organic Agriculture, CSKHPKV, Palampur and Organic Agricultural Society of India at CSKHPKV, Palampur dated: 28-29 May, 2019

3.6.4 Extended Summary/Abstract Published in Compendium

Centre for Geo-informatics

- Ranbir Singh Rana, Sanjeev Kumar, Vaibhav Kalia, Sahil Salaria and Bheem Parekh. 2019 . Assessment of crop water requirement and irrigation scheduling of potato using weather models under sub temperate climatic condition of north-western Himalaya. Abstracts paper published in Abstract volume of International Symposium on “ADVANCES IN AGROMETEOROLOGY FOR MANAGING CLIMATIC RISKS OF FARMERS” (INAGMET-2019), 11-13 February 2019 at JNU, New Delhi page:46
- Sahil Salaria, Ranbir Singh Rana, Sanjeev Kumar Sandal, Vaibhav Kalia, and Bheem Parekh. 2019. Simulating crop water requirement of wheat under limited irrigation in North-Western Himalaya. Abstracts paper published in Abstract volume of International Symposium on “ADVANCES IN AGROMETEOROLOGY FOR MANAGING CLIMATIC RISKS OF FARMERS” (INAGMET-2019), 11-13 February 2019 at JNU, New Delhi page:130
- Ranu Pathania, Rajendra Prasad, Ranbir Singh Rana, Sudhir Kumar Mishra and Saurav Sharma. 2019. Calibration and validation of CERES-Wheat model for north Western Himalayas Abstracts paper published in Abstract volume of International Symposium on “ADVANCES IN AGROMETEOROLOGY FOR MANAGING CLIMATIC RISKS OF FARMERS” (INAGMET-2019), 11-13 February 2019 at JNU, New Delhi page:118.
- Shivani Thakur, Ranbir Singh Rana, Bheem Parekh, Sharda Singh and Sandeep Manuja, 2019. “Simulating Impact of Climate Change on Late Sown Wheat Production in Himachal Pradesh. Presented under theme “ Impact of climate change on adoption and sustainable production In 4th International Group Meeting on Wheat Productivity Enhancement through Climate Smart Practices” held on 14-16th February, 2019 and organised by IWBR, Karnal, Abstract pg 160
- Bheem Pareek, Ranbir Singh Rana, Shivani Thakur, S.K.Guatam, 2019. “Organic Agriculture -A paradigm in agriculture for mitigation and adaptation to climate change and human health. National conference on Organic and Natural Farming 28-29 May, 2019 Organized by Department of Organic Agriculture, CSKHPKV, Palampur. Abstract Souvenir pg 176.
- Lead lecture: Ranbir Singh Rana, Anjali Dhiman and Bheem Pareek. 2019. “Climate change vis-a-vis Organic and natural farming. Presented in plenary session in National conference on Organic and Natural Farming 28-29 May, 2019 Organized by Department of Organic Agriculture, CSKHPKV, Palampur. Abstract Souvenir pg 28-32.

3.6.5 Technical Reports Submitted

Department of Chemistry and Biochemistry

- Rana SS and **Sharma Neelam** 2018. Report on *Parthenium* Awareness Week (August 16-22, 2018), Department of Agronomy, Forages and Grassland Management, CSKHPKV, Palampur.
- Acharya Kumar Manoj “Utilization of Canola and Linseed cake in poultry production” contributed in Extension Bulletin No 75, KVK, Kangra Training Booklet

“Small Poultry Farmer” under Agriculture Skill Council of India (ASCI)training programme..pp31-32, February 2019

- **Singh Nageswer, Sharma Neelam** and Dhaliwal Y.S. Crude protein and Mineral content of Chenopodium quinoa genotypes, Crude protein and total phenolic content of Adzuki bean genotype and buckwheat. All India Coordinated Research Network on Potential Crops. P 256-258

Centre for Geo-informatics

- Dr Sharda Singh, Dr. RS Rana, Mr. Vaibhav Kalia, Mr Kunal Sood, Mr Arun Kaushal, submitted Technical Report in the Form of An Atlas ‘Himachal Pradesh Crop Diversification Project- A Spatial Perception’ to JICA-ODA at Hamirpur consisting of Sub-Project-wise for 135 Project Completion Reports (PCRs) & 210 for Detailed Project Reports (DPRs). Available on <http://14.139.224.135:6090/myapp/cgrtjica>
- Dr Sharda Singh, Dr. Sanjay Sharma, Dr. RS Rana, Mr. Vaibhav Kalia, Mr Kunal Sood, Mr Arun Kaushal, Ms. Tanu Bhatia: Presented Technical Reports of the Project “Development of framework for Networking Programme on Village Information System (VIS) under NRDMS” were presented in Review Meetings held on 24.09.18 at CGRT, CSKHPKV-Palampur; 18-19 January 2019 at Andhra University, Vishakhapatnam.
- Dr Sharda Singh, Dr. Sanjay Sharma, Dr. RS Rana, Mr. Vaibhav Kalia, Mr Kunal Sood, Mr Arun Kaushal, Ms. Tanu Bhatia: Village Information System –A Thematic Perception (National Atlas and State Atlas ~~consisting of about 250 pages~~) as Final Technical Output of the Project “Development of framework for Networking Programme on Village Information System (VIS) under NRDMS”
- Online publishing of Projects’ outputs on Web GIS Portal <http://14.139.224.135/myapp/cgrtportal/index.html> by CGRT
- Ranbir Singh Rana: Presented the annual report of Forecasting Agricultural Output using space, Agro meteorology and land based observations (FASAL) project during 9th ARM. As PI
- Ranbir Singh Rana: Annual progress report of project entitled “Seventh Annual Review Meeting of Integrated Agromet Advisory Services project As PI
- Ranbir Singh Rana: Annual progress report of project entitled “Climate Change Impact on productivity of Food grain and Plantation crops. Submitted to IIRS Dehradun.

3.6.6 Workshops/Conference/ Seminars/ Training Programmes Attended

Department of Chemistry and Biochemistry

Sr. No.	Name of Faculty Member/Team	Name of the Event Date Place	Title of the Event
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1.	Dr. Nageswer Singh	Workshop held on June 20, 2019 at INASC Complex, Pusa Campus New Delhi	"Brain Storming Meeting on Improvement of Potential Crops and Development of Value Chain"
2.	Dr. Nageswer Singh	Workshop held on June 21, 2019 at INASC Complex, Pusa Campus New Delhi.	"XXIX Annual Group Meet (Kharif) of All India Coordinated Research Network on Potential Crops"
3.	Dr Manish Kumar	CSHPKV, Palampur 30 March,19	2 nd IPR workshop on "Policy Guidelines and operational Mechanism"
4.	Dr Neelam Sharma	CSHPKV, Palampur 30 March,19	2 nd IPR workshop on "Policy Guidelines and operational Mechanism"
5.	Dr. Manoj Kumar Acharya	Training[September 5-14, 2018] at Department of Biochemistry, College of Basic Sciences and Humanities, Punjab Agricultural University, Ludhiana-141004, India	Proteomics and its Applications in Agriculture

Department of Microbiology

Sr. No.	Name of Faculty Member/Team	Name of the Event Date Place	Title of the Event
1.	Sh. Rajinder Kumar	<i>Annual Workshop 10-12 December, 2018 at Raichur, Karnataka</i>	<i>Attended XXII Annual Workshop of ICAR-AICRP on Energy from Agriculture and Agro Industry (EAAI).</i>
2.	Dr. Rishi Mahajan	<i>Training programmes 22/04/2019 to 26/04/2019 National Institute of Plant Health Management (NIPHM) Hyderabad</i>	<i>"Production Protocol for Microbial Bio pesticides"</i>

Department of Physical Sciences and Languages

Sr. No.	Name of Faculty Member/Team	Name of the Event Date Place	Title of the Event
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1.	Dr (Mrs) Manjula Sharma	National Seminar on 3rd May 2019 organised by Sri Sai University, Palampur	Interface between Basic Science Research, Modern Technology and Environmental sustainability
2.	Dr (Mrs) Shweta Pathania	National Seminar on 3rd May 2019 organised by Sri Sai University, Palampur	Interface between Basic Science Research, Modern Technology and Environmental sustainability

Centre for Geo-informatics

Sr. No.	Name of Faculty Member/Team	Name of the Event Date Place	Title of the Event
1.	Dr Sharda Singh Dr. R.S. Rana Mr. Vaibhav Kalia	Review Meeting on 24-25 September 2019 at CSK HPKV-Palampur	National level Review Meeting of a Networking Project 'Development of framework for Networking Programme on Village Information System (VIS) under NRDMS, DST, New Delhi'
2.	Dr Sharda Singh	Review Meeting on 18-19 January 2019 at Andhra University, Vishakhapatnam	National level Review Meeting of a Networking Project 'Development of framework for Networking Programme on Village Information System (VIS) under NRDMS, DST, New Delhi'
3.	Dr Ranbir Singh Rana	12th Annual Review Meeting (ARM) of Gramin Krishi Mausam Sewa (GKMS) 3rd to 5th (Forenoon) December, 2018 at RARS, ANGRAU, Tirupati (Telangana).	12th Annual Review Meeting (ARM) of Gramin Krishi Mausam Sewa (GKMS)
4.	Dr Ranbir Singh Rana	9th ARM of FASAL on 5(AN)-6th (afternoon) December, 2018 at RARS, ANGRAU, Tirupati (Telangana).	9th ARM of FASAL
5.	Dr Ranbir Singh Rana	Sensitization workshop of National Agricultural Higher Education Project attended on 22.12.2018 at NASC, Complex, New Delhi	Sensitization workshop of National Agricultural Higher Education Project
6.	Dr Ranbir Singh Rana	One day workshop on Climate Change and Sustainable Development on 24th November,	One day workshop on Climate Change and Sustainable Development

		2018 jointly organised by Centre for Environment Education, Northern Regional Cell (CEE North and Himalaya Initiatives) Lucknow, GIZ, MOEFCC, New Delhi, DEST, Shimla at CSKHPKV, Palampur. (93 participants) Also chaired the session	
7.	Dr Ranbir Singh Rana	One day workshop on Capacity Building Programme Under Climate Change Adaptation in Rural areas of India (CCA-RAI) Himachal Pradesh jointly organised by MOEFCC GOI , Department of Environment , Science and Technology ,Shimla and GIZ, Embassy of Germany at CSIR-IHBT, Palampur on 15th December, 2018 jointly organised (Acted as Guest of Honour)	One day workshop on Capacity Building Programme Under Climate Change Adaptation in Rural areas of India (CCA-RAI) Himachal Pradesh
8.	Dr Ranbir Singh Rana	Two day AHEPC (Technical) Meeting of Institutional Development Plan and CAAST projects on 12th and 13th at NASC complex , New Delhi for Final Presentations of CAAST and IDP	Two day AHEPC (Technical) Meeting of Institutional Development Plan and CAAST projects
9.	Dr Ranbir Singh Rana	Two day COST committee and ESP&EAP Meeting of CAAST project on 1st July, 2019 at NASC complex , New Delhi	Two day COST committee and ESP&EAP Meeting of CAAST project
10.	Dr Ranbir Singh Rana	Research advisory group meeting of HIMALAYAN FOREST RESEARCH INSTITUTE, Conifer Campus Panthaghati, Shimla-171013 on 9th October, 2018 as Expert member for research projects evaluation.	Research advisory group meeting of HIMALAYAN FOREST RESEARCH INSTITUTE, Conifer Campus Panthaghati, Shimla-171013
11.	Dr Ranbir Singh Rana	International Symposium on 11-13 February 2019, JNU, New Delhi and presented the paper on “ Assessment of crop water requirement and irrigation scheduling of potato using weather models under sub temperate climatic condition of north-western Himalaya”	“ADVANCES IN AGROMETEOROLOGY FOR MANAGING CLIMATIC RISKS OF FARMERS” (INAGMET-2019),
12.	Dr Ranbir Singh Rana	INTERNATIONAL GROUP MEETING on 4-16 February, 2019 at CSK HPKV, Palampur, Himachal Pradesh, India	WHEAT PRODUCTIVITY ENHANCEMENT THROUGH CLIMATE SMART PRACTICES

3.6.7 Conferences/Workshops/ Colloquiums/ Short Courses/ Project Review Meets Organized

Department of Biology and Environmental Sciences

Sr. No.	Name of Faculty Member/Team	Name of the Event Date Place	Title of the Event	No. of Participants
1.	Dr. Virendra Singh (Organizing Secretary)	Oct. 23-24, 2018 at Shimla.	2 nd National Conference of Seabuckthorn Association of India "Seabuckthorn-Technology for Cultivation, Environmental Conservation, Nutritional Security and Health Protection"	100

Centre for Geo-informatics

Sr. No.	Name of Faculty Member/Team	Name of the Event Date Place	Title of the Event	No. of Participants
1.	Dr Sharda Singh Dr Sanjay Sharma Dr Ranbir Singh Rana Sh Vaibhav Kalia Mr. Kunal Sood Mr. Arun Kumar Ms Tanu Bhatia	Review Meeting on 24-25 September 2019 at CSK HPKV-Palampur	7 th Review Meeting of the Project 'Development of framework for Networking Programme on Village Information System (VIS) under NRDMS'	19 participants participated including DST Officials, National Coordinator, & PIs from Ten States of India

4 EXTENSION

4.1 Extension projects

-Nil-

4.2 Popular Articles

Department of Chemistry and Biochemistry

- Sondhia Shobha and Sharma Neelam 2018 Herbicide residue in food chain and environment: impact on society and management ,Indian Farming ,[Vol 68, No 11 \(2018\)](#)

Centre of Geoinformatics

Dr Ranbir Singh Rana

रणबीर सिंह राणा, मुनीश, रानू पठानिया, शिवानी ठाकुर और उषा राणा. 2019 जलवायु परिवर्तन के कृषि प्रभाव को कम करने में उपयोगी पारंपरिक ज्ञान .भूगोलिक सूचना अनुसन्धान एवं प्रशिक्षण केन्द्र भूगोलिक सूचना अनुसन्धान एवं प्रशिक्षण केन्द्र .हि 0प्र .0खेती जून, 2019 (*जलवायु परिवर्तन विशेषांक ICAR (नई देहली*

4.3 Organization of Extension Activity/One day Awareness programme etc.

Department of Chemistry and Biochemistry

Sr. No.	Name of programme	Period		No. of lectures delivered	No. of trainees/ participants
		From	To		
As Organiser <i>Parthenium</i> Awareness week August 15-21,2019					
1	Exhibition, lecture, practical demonstration on uprooting, rally and video film was organized for farmers at village Tada	15.08.2018		1	158
2	Exhibition, lecture, practical demonstration on uprooting, rally and video film was organized for farmers at village Sehal	16.08.2018		1	111
3	Exhibition, lecture, practical demonstration and video film was organized for the students and staff at Govt. school Kukaina	16.08.2018		1	43
4	Exhibition, lecture, video film show and practical demonstration on uprooting was organized for the farmers at kalholi.	17.08.2018		1	76
5	Exhibition, video film show in English/Hindi, lecture, practical demonstration on uprooting was organized at Govt. sen. Sec. School Banuri	21.08.2018		1	159

6	Organized lecture, video film show and rally on uprooting of Parthenium, by the students of Agronomy CSK HPKV , Palampur.	21.08.2018	1	35
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4.4 Lectures delivered by the Faculty Members

Department of Chemistry and Biochemistry

1. Dr. Manoj Acharya delivered Lecture on “Utilization of Canola and Linseed cake in poultry production” in 240 hrs training on “Small Poultry Farmer” under Agriculture Skill Council of India at KVK, Kangra
2. Dr. Manoj Acharya delivered Lecture on “Quality parameters in cereal, pulse and oilseed crops” in six days training programme on “Integrated Agriculture for the Farmers of District Kangra sponsored by SJVN, Shimla on at KVK, Kangra on 13.2.19.

Department of Microbiology

Prof S.S.Kanwar (ICAR-Emeritus Professor)

- Himachal Pradesh University, Shimla on 30th July 2018 and November 24th, 2018.
- D.A.V. College, Amritsar on 6th October, 2018
- Laureate Institute of Pharmacy, Kathog, Jawalamukhi, Kangra-177101 on 26th December, 2018.
- Hemwati Nandan Bahuguna University (Central University), Garhwal, Uttarakhand on 2nd February, 2019
- Shanti Devi Arya Mahila College, Dinanagar (Punjab) on November 18th, 2018.

Centre for Geo-informatics

Dr Ranbir Singh Rana

- Key lecture on “Climate Change implications in NW Himalayan region , mitigation & adaptation measures for sustainable livelihood at CSKHPKV Palampur on 24th November, 2018 jointly organized by Centre for Environment Education ,Northern Regional Cell (CEE North and Himalaya Initiatives) Lucknow, GIZ, MOEFCC, New Delhi, DEST, Shimla at CSKHPKV, Palampur. (93 participants)
- Key lecture on “Climate Change adaptation & mitigation options in Mountain Agriculture delivered in Capacity Building Programme Under Climate Change Adaptation in Rural areas of India (CCA-RAI) Himachal Pradesh jointly organized by MOEFCC GOI , Department of Environment , Science and Technology , Shimla and GIZ, Embassy of Germany at CSIR-IHBT, Palampur on 15th December, 2018 jointly organized . (65 participants)
- Consolidated presentation on North Western Himalayan (HP,J&K and Uttarakhand (11 Centres) of Gramin Krishi Mausam Sewa: Presentation of North Western Himalayan region Coordinator in 12th Annual Review Meeting (ARM) of Gramin Krishi

Mausam Sewa (GKMS) held during 3rd to 5th (Forenoon) December, 2018 at RARS, ANGRAU, Tirupati (Telangana)

- Key lecture on Modelling irrigation water scheduling to reduce water foot prints in short training course on Advances in Micro irrigation for enhancing crop and water productivity in water scarce areas on 11.12.2018 (Vide letter no QSD/SS/Tarinings/1928-73 dated 5.11.18)
- Expert lecture in brainstorming meeting on 'Enhancing weather and climate applications on risk reduction in agriculture and water management' organized in association with Ministry of Earth Sciences New Delhi during February 18-19, 2019 at RARI, Durgapur, Jaipur on Requirements/Customization of Agrometeorological Products for western Himalayan region on 19.2.2019
- Lead Lecture on "Climate change vis-a-vis Organic and Natural Farming" Presented in Theme IV (Organic/Natural Farming and Climate Change) National Conference on Organic and natural Farming –A tool for sustainable agriculture and Economic Development, organized by Department of Organic Agriculture, CSKHPKV, Palampur and Organic Agricultural Society of India at CSKHPKV, Palampur dated: 28-29 May, 2019

4.5 Pamphlets prepared

Nil

5 MISCELLANEOUS ACTIVITIES

5.1 Income Generation

Department	Income Generated (approx.)
Department of Biology & Environmental Sciences	Rs. 1,50,000
Department of Chemistry and Biochemistry	Rs. 60000/-
Department of Physical Sciences and Languages	Rs. 7,500
Centre for Geoinformatics Research and Training	Rs. 2,27,404

5.2 Paper setter/evaluator/external examiner

Department of Biology and Environmental Sciences

	Faculty Name	Institution Name
1.	Dr.(Mrs.) Anita Singh	i. C S Azad University of Agriculture & Technology, Kanpur ii. Punjab agriculture University, Ludhiana iii. Dr Y S Parmar University of Horticulture & Forestry, Nauni, Solan iv. Dr Y S Parmar University of Horticulture & Forestry, Neri, Hamirpur v. UP Public Service Commission, Prayag Raj vi. Central University, Dharamshala vii.
2.	Dr. (Mrs.) Usha Rana	i. Acted as paper setter for course BSB-311, College of Horticulture & Forestry, Dr YS Parmar UHF, Neri, Distt.Hamirpur. ii. Dr Y S Parmar UHF, Nauni, Solan.

Department of Chemistry and Biochemistry

	Faculty Name	Institution Name
1.	Dr. Nageswer Singh	i. Dr. Y. S. Parmar University of Horticulture & Forestry, Solan (H.P.) ii. Baddi University of Emerging Sciences and Technologies School of Agricultural Sciences, Makhnumajra, Baddi, Solan, Himachal Pradesh iii. Sher-e-Kashmir University of Agricultural Sciences and Technology of Jammu University
2.	Dr.Manish Kumar	i. Maharaja Agrasen University, Atal Shiksha kunj

3.	Dr Neelam Sharma	i. G.B Pant University of Agri. & Tech., Pantnagar ii. HPU, Shimla iii. Central University, Dharamshala, SKAUST, Jammu iv. PG Thakur College, Dhaliara, Gautam colleges Hamirpur, Sri Sai University, Palampur, PAU, Ludhiana
4.	Dr Suman Sharma	i. Sri Sai University, Palampur.

Department of Microbiology

Faculty Name	Institution Name
1. Dr. S.S. Kanwar	Paper setter i. Himachal Pradesh University, Shimla External Evaluator i. Dr Y.S.Parmar University of Horticulture and Forestry, Nauni, Solan (HP) Thesis Evaluator <u>Ph.D. Thesis --- 6</u> i. Himachal Pradesh University, Shimla ii. Punjab Agricultural University, Ludhiana iii. Panjab University, Chandigarh <u>M.Sc. Thesis---4</u> i. Punjab Agricultural University, Ludhiana ii. Dr Y.S.Parmar University of Horticulture and Forestry, Nauni, Solan (HP)
2. Dr. Rishi Mahajan	Paper setter i. Central University of Himachal Pradesh External examiner i. Central University of Himachal Pradesh External Evaluator i. Central University of Himachal Pradesh

Centre for Geoinformatics

Faculty Name	Institution Name
1. Dr. Ranbir Singh Rana	<ul style="list-style-type: none"> • SKUAST Jammu UG Course • Master and Ph.D Thesis evaluations- 1 Each • Thesis evaluation entitled "Ph.D thesis entitled "STUDY ON MICROCLIMATE OF WHEAT CROP AND VALIDATION OF DSSAT UNDER DIFFERENT SOWING ENVIRONMENTS" Submitted by PREMDEEP (Registration No. : 2014A63D), Division of Agricultural Meteorology, College of Agriculture, CCS Haryana Agricultural University, Hisar Haryana", submitted for the award of Master of Science in Agricultural Meteorology
2. Mr. Vaibhav Kalia	Internal Evaluation

	<ul style="list-style-type: none"> • Comp.115{COHS} • Comp.121 {COHS} • Comp.241(old syllabus) {COA} <p>External Evaluator</p> <ul style="list-style-type: none"> • HPU, Practical Examination of BCA 1st, 3rd, 5th Sem. At GGSDS College Rajpur (November 2018)
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5.3 Faculty as referee/reviewer for Scientific Journals

Faculty Name		Details
1	Dr Anita Singh	i. Journal of Scientific & Applied Research
	Dr. S.S. Kanwar	i. Future Microbiology ii. Asian Journal of Biotechnology and Bioresource Technology iii. BMC Microbiology
	Dr. Rishi Mahajan	i. Archives of Microbiology ii. Springer Series: "Polymer and Composite Materials". Book: Lignin, Biosynthesis, and Transformation for Industrial Applications
	Dr. Abshishek Walia	i. Journal of Applied Microbiology ii. Brazilian Archives of Biology and Technology
	Dr Neelam Sharma	i. Indian J of weed Science ii. Pesticide Research journal
	Dr Ranbir Singh Rana	i. Journal of Agrometeorology for 2018-19 ii. Mausam for 2018-19 iii. Acted as Editor in Souvenir & Abstracts Conference on Doubling Farmers' Income: Challenges and Strategies iv. Member of Indian Society of Agro-meteorologist. v. Member of Meteorologist Society of India vi. Member of GIS Development vii. Member of Himachal Journal of Agricultural Society viii. Member of Indian Society of Agro-physics.

5.4 Other Activities of Faculty

Department of Biology and Environmental Sciences

Dr. Anita Singh

- Member Academic Council

- Member Research Council
- Member Educational and Resident Instruction committee
- Member Secretary Board of Studies, College of Basic Sciences
- Member Academic Equivalence Committee of the university
- Member Committee for Compiling University Report for 14th convocation.
- Member, University level Committee for organizing Van Mahotsava
- Member Steering Committee/Task –Force Committee constituted by the Dean COBS for preparing institutional self-study report of the College.
- Member, Screening Committee for hiring persons on contact hour basis for teaching
- Monitoring/Verifying Committee at Institution level for checking/verify the scholarship applications at institution level to check scholarship irregularities
- Member, Selection Committee for the post of Asstt. Professor/ Equivalent (Zoology)
- Member, Committee to draft University report of 15th Convocation
- Member, Screening Committee to determine eligibility for promotion of teachers to the next higher rank of professor/equivalent under CAS in Plant Physiology
- Member, Admission Committee for admission to B Sc Life Sciences/Physical Sciences for the Academic year 2018-19
- Conveener, Anti ragging squad of COBS
- Incharge Basket ball of COBS

Dr. Virendra Singh

- Attended Election duty as “Election Officer” of Lok sabha election at Dhera on 17.5.2019-20.5.2019.

Dr. Usha Rana

- Member of the internal complaint committee **(ICI)**
- Member of the committee constituted for checking and scrutinizing the original document.
- Complied annual report of the Department for the year 2017-18.
- Incharge for web page update of the department.
- Incharge UG laboratory
- Member report writing committee of the Department.
- Member for store verification committee CGRT
- Member for store verification committee Department of Biology & Env. Sciences.
- Member of procurement/distribution committee for the 15th convocation
- Member of the committee for Draft of the Degrees for the 15th convocation
- Member of the Committee for preparing Time Table of the College
- Member in the Committee for sale/purchase

- Member of the inspection committee for the purchase of store articles COBS
- Member of declamation contest organizing committee during Science day celebrations 2018-19
- Member for College Accreditation Committee from ICAR
- Member for College Accreditation Committee from NAAC
- Performed the duty of NSS Programme Officer in the absence of NSS Programme Officer of the College.
- Incharge of cultural activities of COBS
- Convener of the Basic Night organized in National Science Day celebration

Dr. Radhika Sharma

- Undergraduate Laboratory incharge
- Incharge for Departmental Web Page
- Member for departmental report writing committee
- Member for College Accreditation Committee (Teaching learning and Evaluation)
- Member of quiz organizing committee during Science day celebrations 2018-19
- Stage secretary, Science day celebrations 2018-19
- Incharge literary activities COBS

Dr. Rakesh Kumar

- Secretary, College Alumni Association of Basic Sciences (CAABS)
- Incharge postgraduate Laboratory
- Incharge weight lifting, power lifting and best physique
- Member for departmental report writing committee
- Member for College Accreditation Committee (Teaching learning and Evaluation)
- Member of quiz organizing committee during Science day celebrations 2018-19
- Member store verification committee, Deptt. of Chemistry & Biochemistry, COBS
- Performed ET-2019 duty at DAV school Hamirpur on

Department of Chemistry and Biochemistry

Dr Neelam Sharma

- In charge of Table tennis (COBS) for 2018-19
- Selection committee member for Teams-- XIX All India Inter Agricultural Universities Sports & Games Meet 2018-19.
- Member, Anti-ragging cum-Disciplinary Committee of the College of Basic Sciences (2018-19), CSKHPKV, Palampur.
- Member, Anti-Ragging Committees in the case of Postgraduate Programme (2018-19), CSKHPKV, Palampur.
- Convener, Invitation & registration Committee. 10th Brain storming session on 'Indian Council of Agricultural Research (ICAR) Model Act Revision' at CSK Himachal Pradesh Agriculture University, Palampur on June 28-29,2019

- External examiner for oral comprehensive examination of Ph.D. student at SKAUST, Jammu on June 7, 2019.
- Member, selection committee for Research Associate at CSIR-IHBT, Palampur.
- Judge for musical events in Inter college youth festival on January 16 -17,2019 at CSKHPKV, Palampur
- Member of reception, seating arrangement and procession committee of 15th convocation of CSKHPKV, Palampur
- Member Board of Studies, College of Basic Sciences, CSKHPKV, Palampur
- Convener, Research, Consultancy and Extension to prepare the college accreditation report, COBS, CSKHPKV, Palampur.
- Member, Necessary amendments and correction in the merit-based prospectus of College of Basic Sciences for the year 2019-20.
- Member, Checking and scrutinizing committee for Admission to B.Sc. Programme, COBS CSKHPKV, Palampur.
- Member, Flying squad during the End Term Examination for the 1st semester, COA, CSKHPKV, Palampur.
- Acted as Coordinator of 45 day summer training held from 25 May to 10 July 2019 in Department of Chemistry and Biochemistry, COBS, CSKHPKV, Palampur.

Dr. Suman Sharma

- Acted as **Programme Officer, NSS(COBS)** till Sep.30,2018.
- As **Incharge, Literary Activities** carried out screening and then selected teams for various events held during the last year.
- **Secretary of Science Club.**
- Involved in **registration of Alumni Association of COBS as President.**
- **Delivered Lecture** in Three day training programme of Technical Staff of TOT organized by Tea Husbandry and Technology.
- **Organised Hostel Night in Parvati Girls' Hostel** while being its Warden.
- Worked as Warden, Parvati girls' Hostel till 4th Feb.2019 then Warden, Vageeshwari UG Girls' Hostel till date.
- **Member of Grievance-redress Committee** of COBS.
- **Incharge of UG Laboratory (Chemistry).**
- **Incharge College Library.**
- Member of committee related to the physical verification of store articles in the Department of Chemistry & Biochemistry.
- Member of committee related to the physical verification of store articles in the Department of Tea Husbandry and Technology.
- Member of committee constituted by The Students' Welfare Officer related to the physical verification of store articles.
- Member of committee constituted by The Students' Welfare Officer for auction of unserviceable store articles of Vageeshwari PG Girls' Hostel.
- Organized clean room competition in Parvati girls' Hostel.
- Accompanied the fresh students of B.Sc. I on their exposure visit to the University library.
- Prepared Date sheet of Re-examination, Midterm and End term Examination of Sem. II of 2018-19.
- Prepared seating plan for examinations of Sem. II of 2018-19.

- Assisted The Head, Department of Chemistry and Biochemistry in work related to ISO.
- Involved as Convener for Criterion 5 in Committee for NAAC registration of COBS.
- Involved in committees related to Celebration of National Science Day-2019.
- Member of committee for rechecking / re totaling of answer books for End term Examination.
- Member of committee for assisting admission in UG classes at College level.
- **Member of anti-ragging committee** at Hostel level.
- **Member of Discipline committee as Hostel Warden** in various events organized in the University.

Dr Nageswer Singh

- Prepared Date sheet and Seating Plan of UG Classes of College for Midterm and End term Exam
- Member of Research, Consultancy and Extension for NAAC Committee of the College
- Modified of Biochem -121 (2+1) course titled "Principles of Biochemistry" for B.Sc. (Hons.) 1st year Community Science, COHS, CSKHPKV, Palampur H.P.
- Treasurer, ISAB, Palampur
- Incharge - Store of the department.
- Incharge- Athletics of COBS, CSK HPKV, Palampur
- Incharge- Athletics of COBS, CSK HPKV, Palampur.
- Member of Physical Verification Committee of Store for Department of Microbiology, COBS, CSKHPKV, Palampur.
- Elected Executive committee Member, Indian Society of Agricultural Biochemists
- Member of Research, consultancy and Extension committee for NAAC accreditation.
- Member of Physical Verification Committee of Store for Department of Chemistry and Biochemistry, COBS, CSKHPKV, Palampur.

Dr Manish Kumar

- Member of Research, consultancy and Extension committee for NAAC accreditation.
- Member of Physical Verification Committee of Store for Department of Chemistry and Biochemistry, COBS, CSKHPKV, Palampur.
- Member of Physical Verification Committee of Store for Department of Biology and Environmental sciences, COBS, CSKHPKV, Palampur.
- Vice President (faculty) of College Alumni Association of Basic Sciences (CAABS).
- Member of Declamation contest committee in National science Day 2019.
- Member of Poster presentation committee in National science Day 2019.
- Member of Prizes, Mementoes, Bouquets, Banner and Decoration committee in National science Day 2019.
- Acted as Co-coordinator of 45 day summer training held from 25 May to 10 July 2019 in Department of Chemistry and Biochemistry, COBS, CSKHPKV, Palampur.

Department of Physical Science and Languages

Dr Manoj Bhargava

Membership in Academic Bodies of the University

- Dr. Manoj Bhargava, Professor and Dean: Academic Council, Research Council, Extension Council and Educational and Resident Instructions Advisory Committee upto 08.01.2019.

Academic/Professional

- In addition to the departmental duties as Head of the Department, Dr. Manoj Bhargava has also been assigned the duties of Nodal Officer (Statistics) by the University which is being performed timely. The main responsibility of the Nodal Officer is in collecting, compiling the information related to Higher Education from various offices of the University and supplying the same to UGC, New Delhi and other Governmental organizations which is a continuous process. The major work during the period was to complete the assignments for All India Survey on Higher Education for 2018-19.
- The data analysis related to the research of five (05) postgraduate students was done using statistical software available in the department.
- Statistical helps were also provided to the postgraduate students and research scientists of the University in their research problems.

Dr.(Mrs.) Sheela Thakur

- Dr Sheela Thakur prepared the time-table for COBS during 1st and 2nd semester of 2018-19.
- Dr. Sheela Thakur has been the member of Anti-Ragging Committee at College and University level.
- Dr. Sheela Thakur has been entrusted with the duty of Warden, Parvati Girls Hostel.
- Dr. Sheela Thakur is advisor to 15 first and 20 third year undergraduate students of the College.
- Dr. Sheela Thakur is member of Cultural Committee of the College.
- Dr. Sheela Thakur is Store Incharge of the department of Physical Sciences and Languages.
- Dr Sheela Thakur has been a member of Cultural Committee of the Convocation held on 05.12.2018.
- Dr Sheela Thakur has been a member of Discipline Committee in Convocation held on 05.12.2018.
- Dr Sheela Thakur has been a member of On-Spot Committee to purchase Water Purifier, Fridge for the hostels.
- Dr Sheela Thakur has been Convener/member for the auction of unserviceable items of the Chamundeshwari and Shankar Bhawan hostels
- Dr Sheela Thakur has been a member of the Committee for the Cultural Programme in 10th Brain Storming Session on “ICAR Model Act Revision” organized by CSKHPKV and Indian Agricultural Universities Association (IAUA) held on 28-29 June, 2019.

- Dr Sheela Thakur conducted the North India education tour of B.Sc. 2nd year students of the College from 26.12.2018 to 03.01.2019.

Sh. Kapil Sharma

- Sh. Kapil Sharma is performing the duties of Incharge, Store, College of Basic Sciences.
- Sh. Kapil Sharma is carrying out the duties of N.S.S. Programme Officer of the College of Basic Sciences.
- Sh. Kapil Sharma is managing e-Resources in the University Library.
- Sh. Kapil Sharma has been looking after the work of University Network System in the absence of Mr. R.K. Chandel.
- Sh. Kapil Sharma has been entrusted with the responsibility of handling Online Application System for Admission to Entrance Test Based Admissions to the University for Academic year 2019-20.
- Sh. Kapil Sharma has been Database Administrator for post-examination processing of result of Entrance Examination-2019 for admission to Entrance test based admission for various programmes of the University.
- Sh. Kapil Sharma has been a member of Task Force for Preparation of Self Study Report of the College
- Sh. Kapil Sharma has been in-charge of College Badminton team.
- Sh. Kapil Sharma is a member of Editorial Board for up-loading e-Newsletter of the University. Wherein he is responsible for HTML/CSS based designing the eNewsletter.
- Sh. Kapil Sharma has been entrusted with the duty of updating the database to keep record of personal Information of students admitted in the College of Basic Sciences and to generate their Identity cards.
- Sh. Kapil Sharma has re-generated VBA based semester reports for the students of College of Basic Sciences newly admitted under CBCS.
- Sh. Kapil Sharma has been responsible for generating QR codes for degrees awarded during the 15th convocation of the University.
- Sh. Kapil Sharma has performed duty as Centre Supervisor at Anuradha Public School, Maranda, Palampur for the conduct of Entrance Test (ET-2019) for undergraduate courses of CSKHPKV, Palampur
- Sh. Kapil Sharma has been College Coordinator, Student Counseling & Placement.
- Sh. Kapil Sharma has been a member of Screening Committee for scrutinize the applications for the post of Junior Office Assistant (IT).
- Sh. Kapil Sharma has been a member of Canteen Management Committee of the College.
- Sh. Kapil Sharma is advisor to 26 undergraduate students of the College.
- Sh. Kapil Sharma has been a member of the Committee formed for the Assistance of College Admission Committee during counselling for admission to the UG programme of the College for the Academic Year 2018-19.

Centre for Geo-informatics

Dr. Sharda Singh

- ❖ Programme Director, Centre for Geo-informatics , Research and Training
 - Attended Meeting convened by Dean, COBS with Final Year Students under the Chairmanship of Hon'ble Vice Chancellor, CSKHPKV-Palampur on 02.05.2019.
 - Counseling Incharge for admission to B.Sc. Programme (Physical Sciences) for Academic Year 2018-19
 - Attended 'Counseling Techniques for ragging management' in University Auditorium 01.09.18 (a.n.) as well as confirmed the participation of 3rd year students to attend their respective counseling session in the forenoon of 01.09.18.
 - Attended Meeting with Director Agriculture and officials for a Project on 'Geo-Spatial Technology based Services to Department of Agriculture' on 4th of June 2019 at 10.30 am at Directorate of Agriculture, Shimla
- ❖ Member, Academic Council, CSKHPKV-Palampur
 - Attended Academic Council Meetings
- ❖ Academic Incharge, College of Basic Sciences
 - Prepared detailed presentation for Creating World Class Teaching-Learning and Academic Ambience in respect of COBS
 - Got prepared list of students of all the years of B.Sc programme for their preference of scholarship by convening number of meetings with the students in reference to letter No. QSD.3-14/2018-CSKHPKV (COBS-Acad)-6065 dated 27-11-2018) for Merit Scholarship & Amar Shaheed Captain Saurav Kalia Memorial Scholarship
 - Information/document prepared for State Innovation Award 2018
- ❖ Member, Board of Studies, College of Basic Sciences
 - Attended 48th Meeting of Board of Studies, COBS, CSKHPKV, Palampur
 - Attended 49th Meeting of Board of Studies, COBS, CSKHPKV, Palampur [Prepared and submitted Agenda Item: B.Sc. Physical Sciences (Physics, Chemistry & Mathematics) and B.Sc. Life Sciences (Botany, Zoology & Chemistry) as two separate UG programmes under CBCS (RUSA) in COBS as defined in NAAC Proforma]
 - Member College Merit Scholarship & Amar Shaheed Captain Saurav Kalia Memorial Scholarship
 - Delivered Invited Lecture "Use of geo-spatial products for water resource

management in water scarce areas” organized by Department of Soil Science , COA, CSKHPKV-Palampur

- Member Screening Committee for hiring teachers, College of Basic Sciences.
- Attended meetings and screened applications for hiring Mathematics faculty on 30th July 2018.
- Chairman/Member of Project Formulation and Screening Committee, CGRT
- Chairman/Member of Project’s work specific Interaction for SRF in research Project in Feb 2019
- Member of the Committee to ensure adherence to the constitutional legal requirements for generating awareness about legal rights of women among the students
- Attended Cultural Programme Committee Meetings convened by Students Welfare Officer in Nov 2018
- Attended 15th Convocation of CSKHPKV-Palampur on 5th December 2018 as Academic Council Member & Programme Director, CGRT.
- Checked rough sketches of degrees including QR coding and drafts of degrees after printing as Member of Committee
- Overall Incharge of Registration of B.Sc. (Physical Sciences) COBS for academic year 2018-2019
- Counseling duty to render help in Admission Committee for Walk in Interview and their registration on 10.08.18.
- Chairman for the Committee opening quotations for cutting of big oie tree
- Chairman of the Committee for rechecking/retotaling of answer book(s) of the students for End-of –Term Examination
- Nodal Officer, National Assessment & Accreditation Council (NAAC) for College of Basic Sciences
- College Nodal Officer, All India Survey of Higher Education (AISHE) for College of Basic Sciences
- Member Screening Committee for screening of Applications for the Post of Assistant Professor in the discipline of Mathematics in COBS, CSKHPKV-Palampur
- Compiled Students List and Rules/Regulations for Power Point Presentation in National Science Day Celebrations in COBS as Convener
- President, Science Club, College of Basic Sciences
- Member for necessary amendments and correction in the Merit based Prospectus of COBS for the year 19-20
- Presented COBS SSR to Peer Review Team for Accreditation of the University on 13th of September 2018 as nominated by Dean, COBS

Dr. Ranbir Singh Rana

- ZONAL REPRESENTATIVE (North Zone) of Executive Council of Association of Agro meteorologists for the term 2017-19 till March, 2019 (Journal of Agrometeorology, NAAS rating 6.40)
- Focus person in Collaboration for Research & Extension Endeavors between CSKHPKV, Palampur and State Centre on Climate Change , HP Council for Science, Technology & Environment (HIMCOSTE), Vigyan Bhawan, Near Udhog Bhawan Bamloe, Shimla-1 2018-19 and
- Appointment as Convener of Invitation committee for Inter college Youth festival 18-19 January ,2019 at CSKHPKV, Palampur (Vide letter no QSD 4-52/SWO/CSKHPKV/7950-8050 dated 12.12.2018
- Appointed and acted as Coordinator in National Science Day celebrations in COBS (Vide letter no 8391-8411 dated 11.2.2019). Conducted Inter-colleges ecevt for students of University and cultural Night
- Nominated as Expert member of RESEARCH ADVISORY GROUP of HIMALAYAN FOREST RESEARCH INSTITUTE , Conifer Campus Panthaghati, Shimla-171013 by The DIRECTOR GENERAL INDIAN COUNCIL OF FORESTRY RESEARCH & EDUCATION (ICFRE) Vide letter no 3-1 (30)nVol-XI/2018 432-433 dated 21st August , 2018
- Nominated as expert for formation of Knowledge networks among the existing knowledge institution ganged in research and development relating to climate science and facilitate data generations haring and exchange through a suitable framework and institutional mechanism in DEST Shimla (Vide letter QSD.DR-CSHPKV /2-5/Tech/2019/-12499-12505 dated 20.3.2019
- Attended brainstorming meeting on ‘Enhancing weather and climate applications on risk reduction in agriculture and water management’ organized in association with Ministry of Earth Sciences New Delhi during February 18-19, 2019 at RARI, Durgapura, Jaipur and presented expert talk on Requirements/Customization of Agrometeorological Products for western Himalayan region on 19.2.2019
- Working committee member for Group I on Preparation and Quality of Agromet Advisories
- Working Group Member on FASAL project also.
- Acted as Nodal Officer for National Agricultural Higher Education Project (NAHEP) vide letter no QSD.8-10/2014-CSKHPKV(GA)-44018-33 dated 21.8 2017
- Acting as expert for working on Artificial Intelligence in Agriculture vide letter no QSD.8-51/2017-CSKHPKV (GA)Vol.IV/-15716-18 dated March 28, 2018
- Member of NATIONAL ORGANIZING COMMITTEE (NOC) for International Symposium on ‘ Advances in Agrometeorological for Managing Climatic risks of Farmers (INAGMET-2018) held w.e.f. November, 25-28, 2018 New Delhi Organized jointly by Association of agro meteorologist (AAM) , India Meteorological Department , ICAR-Indian agricultural Research Institute (IARI).
- Member of ISO, COBS vide letter no ISO/06-CSKHPKV (COBS-Estt.)/1730-33 dated 12.7.2017- Continuing

- Member of Formulation and screening Committee of COBS, vide letter no. 2288 dated 5.8.2017- Continuing
- Examination duty 2018-19 for both semester in PG, COBS and COA midterm and Final Exam

-

Administration

- Involved as in administrative work as PIs of the Adhoc Research projects
- Involved as Nodal Officer, NAHEP (IDP and CAAST)
- Involved as Landscape Incharge of COBS (Vide Letter no. QSD2-38/2007 CSKHPKV(COBS-Estt)/-5350-62 dated 19.9.2012 and continuing

-

Member of Interview committee:

- Nominated as member of assessment committee for Senior Research fellow (Vide letter no .IHBT/2-14 (417) /17 dated 03.05.2019)
- Appointed as Member of Dir.Res. nominee for work specific interactions in the project entitled : characterization and performances trials of Russian sea buckthorn varieties in cold desert Himalayas Deptt of Biology and environments Vide letter no QSD.12-14/DR/CSKHPKV/Estt/-6664-65 dated 21.8.2018

Mr. Vaibhav Kalia

Software Development:

1. [Web-Application] Web based academic Student System for COBS

The web application and server is in maintenance mode and is worked upon as needed (creating new users, editing / updating information submitted by faculty), generating reports for use in office of Dean COBS.

2. [Utility] DSSAT WTH data to EXCEL Convertor

The Weather Data is generated from DSSAT model, and its output is spread across 2675 files. Each file contains 365 rows of data in the following format.

```
*WEATHER DATA :
@ INSI      LAT      LONG  ELEV   TAV   AMP  REFHT  WNDHT
  CLIM    32.088   75.713   268
@DATE  SRAD  TMAX  TMIN  RAIN
25001  14.6  12.6  -0.7  0.0
25002   1.2  11.4   1.4  13.1
25003  15.1  19.5   1.3   0.0
```

This utility extracted and processed this entire data, and generated an EXCEL format file in following format.

Date	LAT	LONG	ELEV	SRAD	TMAX	TMIN	RAIN
14/06/1968	32.088	75.713	268	14.6	12.6	-0.7	0
15/06/1968	32.088	75.713	268	1.2	11.4	1.4	13.1

A total of 9,76,289 rows of data from 14/06/1968 to 3/6/2032 of location 32.088N and 75.713E were generated from this software.

3. [Utility] Processing Daily Gridded Rainfall Dataset of IMD

IMD New High Spatial Resolution (0.25X0.25 degree) Long Period (1901-2015) Daily Gridded Rainfall Data Set Over India. This data product is a very high spatial resolution daily gridded rainfall data (0.25 x 0.25 degree). Data is for 115 years, 1901 to 2015. Data is arranged in 135x129 grid points. The first data in the record is at 6.5N & 66.5E, the second is at 6.5N & 66.75E, and so on. The last data record corresponds to 66.5N & 100.0E.

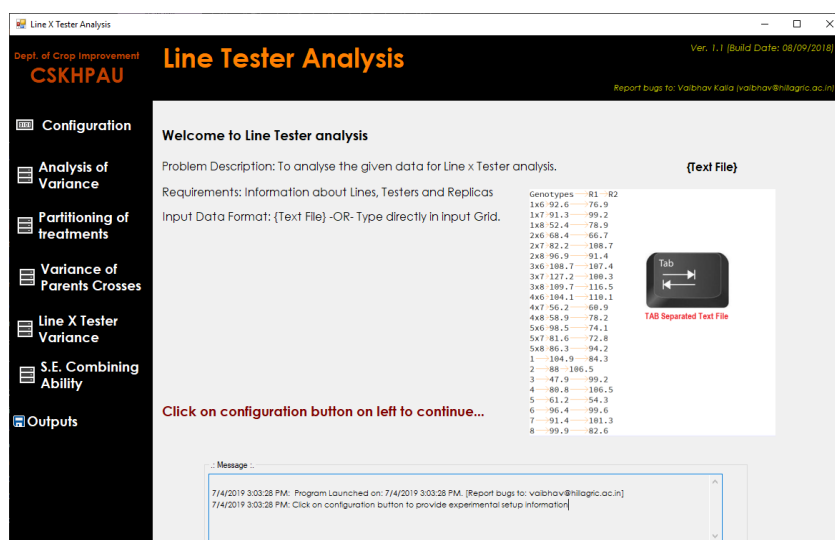
- Rainfall Data and Number of stations per grid is on daily basis (1901.01.01 to 1901.12.31), for each day there are 129 lines (corresponding to each latitude 6.50N to 38.50N). Each line contains data for 133 Longitude values (66.50E to 100.00E). Each file has 47,450 lines and there are 117 files for Rainfall. Total records = 55,51,650 x 2 = 1,11,03,300.

4. [Utility] Processing IMD High resolution 1By1 degree temperature data

IMD High resolution 1By1 degree gridded daily temperature data (1951-2016). This data is arranged in 31x31 grid points. Latitude 7.5N, 8.5N ... 36.5, 37.5 (31 Values) Long 67.5E, 68.5E ... 96.5, 97.5 (31 Values). Maximum Temperature, Minimum Temperature and Mean Temperature gridded data are in the directories viz. MaxT ,MinT and MeanT. 64 ASCII (text) data files one each for 64 years (1951-2014) containing 11680 rows of data. Total 771489x3=2314467 rows of data were processed into EXCEL format.

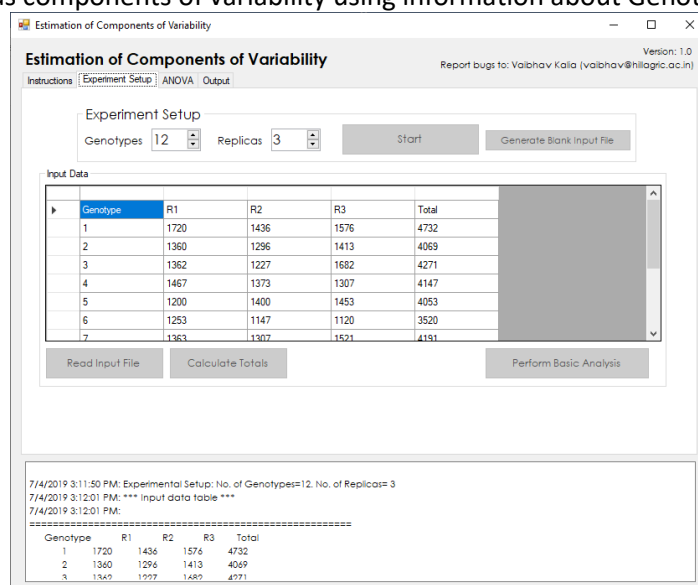
5. [Application] Line x Tester Analysis

To analyse the given data for Line x Tester analysis.



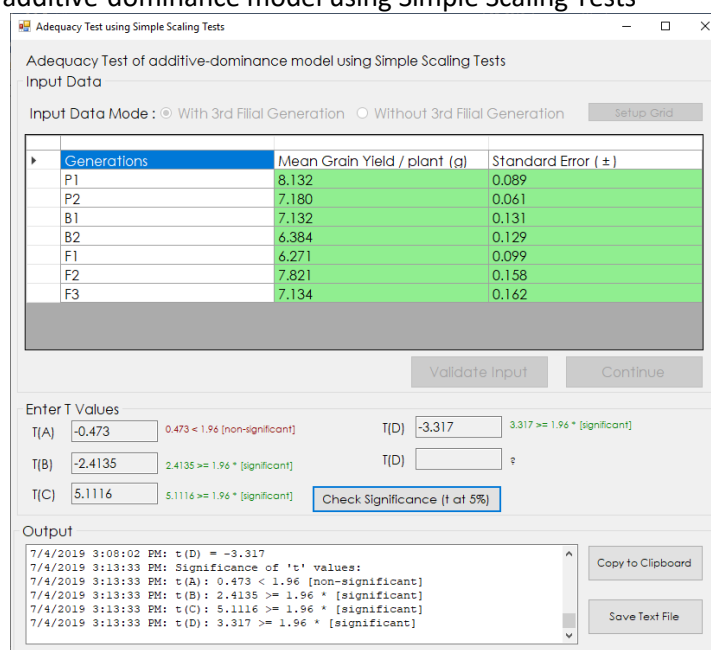
6. [Application] Estimate Components of Variability

To estimate various components of variability using information about Genotypes and Replicas



7. [Application] Adequacy Test using Simple Scaling Tests

Adequacy Test of additive-dominance model using Simple Scaling Tests



Miscellaneous activities / Responsibilities:

CSKHVKV ET-2019

Performed the following tasks:

1. Installation of server software and setting of application and database in multiple machines for practice.
2. Code walk-through for the system, to understand the system flow, and making changes for implementing Single Girl Child in the system.
3. Making SQL queries on the database for providing information as and when required by ET coordinator.
4. Worked as Centre coordinator for UG-Entrance Exam 2019 (APS Maranda).
5. Worked for Post Exam Result Processing for both UG- ET-2019 and PG ET-2019.

Others:

- Member Technical committee for CCTV Cameras in COA
- Created separate webpage for Anti-ragging for SWO
- Member of committee for Walk-in interview for admissions in COBS on 10.08.2019
- Worked for presentation of COBS Self Study Report for ICAR Peer Review Team
- Member of various committees for 7th Evaluation Meeting of VIS Project w.e.f. 24-25, 2019
- Member of committee for LS Touch Screen Kiosk in relation to RFID for University Library
- Deputed to accompany students of BSc 2nd Year to Educational Tour
- Member of committee for Tender for RFID tags, RFID Card, etc for University Library
- Worked for Clerk Post Code-692 examination in COBS
- Member of student guidance committee for 15th Convocation of University
- Member of committee for Tender for Digitization of Important Rare Books
- Deputed by Dean COBS to accompany students(who were participating in COBS Educational Tour) to PAU Ludhiana
- Member of NAAC Accreditation committee of COBS
- Nominated as Judge for Inter college Youth Festival of University on 16-17, January 2019
- Member of various committees for National Science Day 2019
- Member of Database Administrator(DBA) and Post Exam scanning and processing of candidate OMR sheets
- Created a grievance Redressal Committee COBS portal link
- Appointed Nodal Officer for National Fellowship for Higher Education for ST Students
- RKVY Data Entry on RKVY MIS National Portal (<http://rkvymis.dacnet.nic.in/>)
- Web manager COBS website.
- NKN Security Officer for University Internet & COBS LAN Segment In-charge
- NISAGNET (COBS) nodal officer.
- Uploaded data of various scholars of the University on UGC Scholarships Portal.

Lok Sabha Elections - 2019

Worked for Lok Sabha Election 2019 in the following roles in 19-AC Palampur:

- Nodal Officer Training
- Nodal Officer IT
- Nodal Officer Webcasting
- Nodal Officer Compilation of Results

5.5 National Science Day Celebrations

Under the chairmanship of Dr. (Mrs.) Promila Kanwar Dean, College of Basic Sciences, National Science Day-2019 was celebrated in the College. Dr Ranbir Singh Rana was designated the Coordinator and by Dr. Rishi Mahajan and Dr. Abshishek Walia, Assistant Professor's Microbiology were Co-cordinators for the Science Day Events. Several events were organized in which students from different colleges participated. Under the guidance of Dr. S.S. Kanwar, ICAR-Emeritus Professor, Department of Microbiology, a booklet with the theme of "Science for the People and the People for Science" was prepared and thereafter published by Dr. Rishi Mahajan and Dr. Abshishek Walia,

Assistant Professor's Microbiology. The booklet was released by Prof. A.K. Sarial, Vice Chancellor, CSK Himachal Pradesh Agriculture University.

5.6 National Service Scheme Activities

Sh. Kapil Sharma, Assistant Professor is sharing the responsibility of NSS Programme Officer, COBS Unit during the period under report.

Main activities were:

Seven days NSS camp was organized at Village Ghuggar, Tehsil Palampur Distt. Kangra by NSS (National Service Scheme) Unit of COBS, CSKHPKV, Palampur, Distt. Kangra (H.P.). 54 NSS girls' volunteers participated in the camp from 10 th June to June 16, 2018.

In addition to this the following are few of the activities carried out by NSS volunteers during the report period:

- *Regular College Campus cleanliness drives under Swachh Bharat Abhiyaan.*
- *Student interactions and discussions on Women Empowerment and other current issues.*
- *Awareness of NSS volunteers of the college on social issues.*
- *Celebration/observing of various important days in NSS:*
 - *Swachhta Pakhwara observation (01.08.2018 to 15.08.2018)*
 - *Celebration of Independence Day at University level (15.08.2018)*
 - *Celebration of Sadbhawana Diwas to mark the birth anniversary of Late Sh. Rajiv Gandhi (20.08.2018)*
 - *National Nutrition Month (01-09-2018 to 30-09-2018)*
 - *Literacy Day (07-09-2018)*
 - *Prakram Parv Celebrations (28-09-2018)*
 - *Communal Harmony Day (02.10.2018)*
 - *Communal Harmony Week (19.11.2018 to 25.11.2018)*
 - *World AIDS Day (01.12.2018)*
 - *Celebration of National Youth Day (12-01-2019)*
 - *Celebration of Republic Day at University level with seven Volunteers participating in the Parade (26.01.2019)*
 - *Martyr's Day (30.01.2019) - A two-minute silence was observed on Mahatma Gandhi's Martyr's Day on 30-01-2019.*
 - *International Women's Day with active discussion on gender roles, gender parity and gender discrimination. (08-03-2019)*
 - *Celebration of World TB Day (23-03-2019)*
 - *Participation in Blood Donation Camp being organised by NCC (28-03-2019)*
 - *Awareness programme for First Time Voters (29-03-2019)*

5.7 Visits Abroad, VIP Visits, Workshop etc. organised

Department of Biology and Environmental Sciences

S.No

Particulars

1	Name of faculty members/employees who visited abroad	Nil
2	Name of VIP Visitors (with date and purpose)	Nil
3	Name of faculty members/employee who has brought honour to the University in the form of awards and honours	Nil
4	Success Story, if any	Nil
5	Workshop/Seminar/Symposia/Conference Organized	One

Department of Chemistry & BioChemistry

S.No	Particulars	
1	Name of faculty members/employees who visited abroad	Nil
2	Name of VIP Visitors (with date and purpose)	Nil
3	Name of faculty members/employee who has brought honour to the University in the form of awards and honours	Nil
4	Success Story, if any	Nil
5	Workshop/Seminar/Symposia/Conference Organized	Nil

Department of Microbiology

S.No	Particulars	
1	Name of faculty members/employees who visited abroad	Nil
2	Name of VIP Visitors (with date and purpose)	Nil
3	Name of faculty members/employee who has brought honour to the	Nil

	University in the form of awards and honours	
4	Success Story, if any	Nil
5	Workshop/Seminar/Symposia/Conference Organized	Nil

Centre for Geoinformatics, Research & Training

S.No	Particulars	
1	Name of faculty members/employees who visited abroad	Nil
2	Name of VIP Visitors (with date and purpose)	<ul style="list-style-type: none"> • 13.12.2018 Mr Subroto Talukdar, Principal Development Specialist, JICA India, New Delhi, & Officials of HPCDP, Hamirpur visited • 25.03.2019 Prof. Sanju Karol, Director Population Research Centre, H.P University, Shimla-171005 visited to acquaint herself with GIS & RS technologies • 13.03.2019 Mr. Yoshiyuki Ishizaki, Chief Advisor, TCP visited the Centre for exploring GIS based inputs for Phase II JICA Project in HP • 03.05 2019 Dr Desh Raj Sharma, Director Agriculture, DOA, Govt of HP along with his team of officials from Directorate of Agriculture visited Centre for exploring Geo-spatial services for DOA under Chairmanship of Hon'ble Vice Chancellor, CSKHPKV- Palampur
3	Name of faculty members/employee who has brought honour to the University in the form of awards and honours	Nil
4	Success Story, if any	Nil
5	Workshop/Seminar/Symposia/Conference Organized	One

GLIMPSES

RESEARCH

Department of Biology and Environmental Sciences

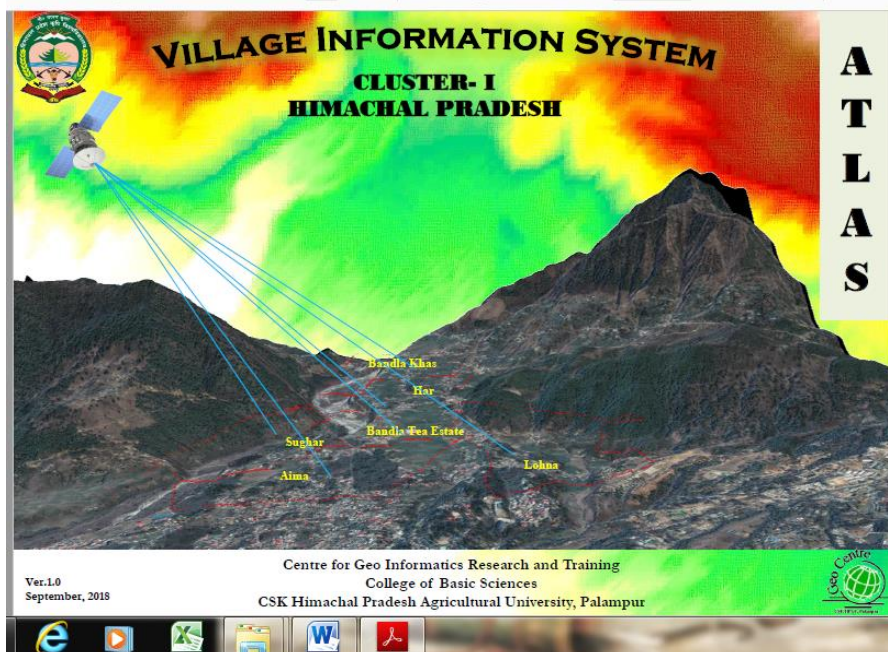


Russian seabuckthorn varieties growing at University Research Farm at Kukumseri, Lahaul

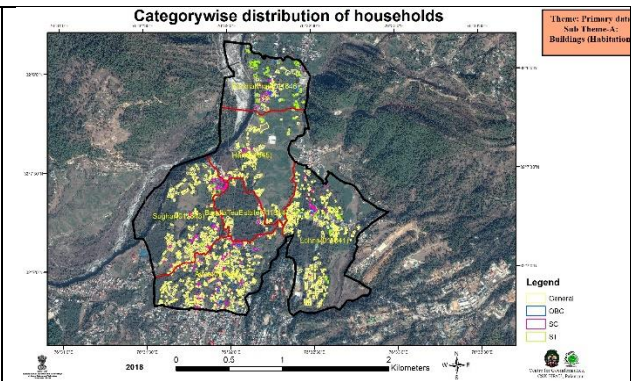
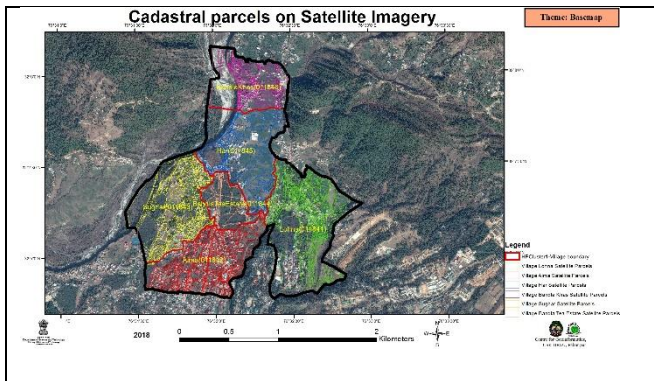


Russian seabuckthorn varieties growing at University Research Farm at Kukumseri, Lahaul

Center for Geoinformatics

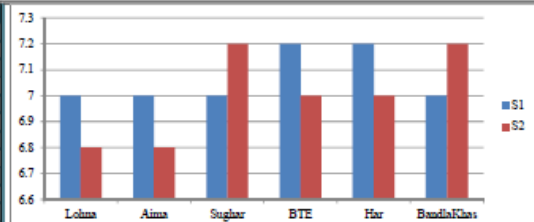


Detailed Report of VIS Project consisting of data, Analysis, thematic Maps and Recommendations



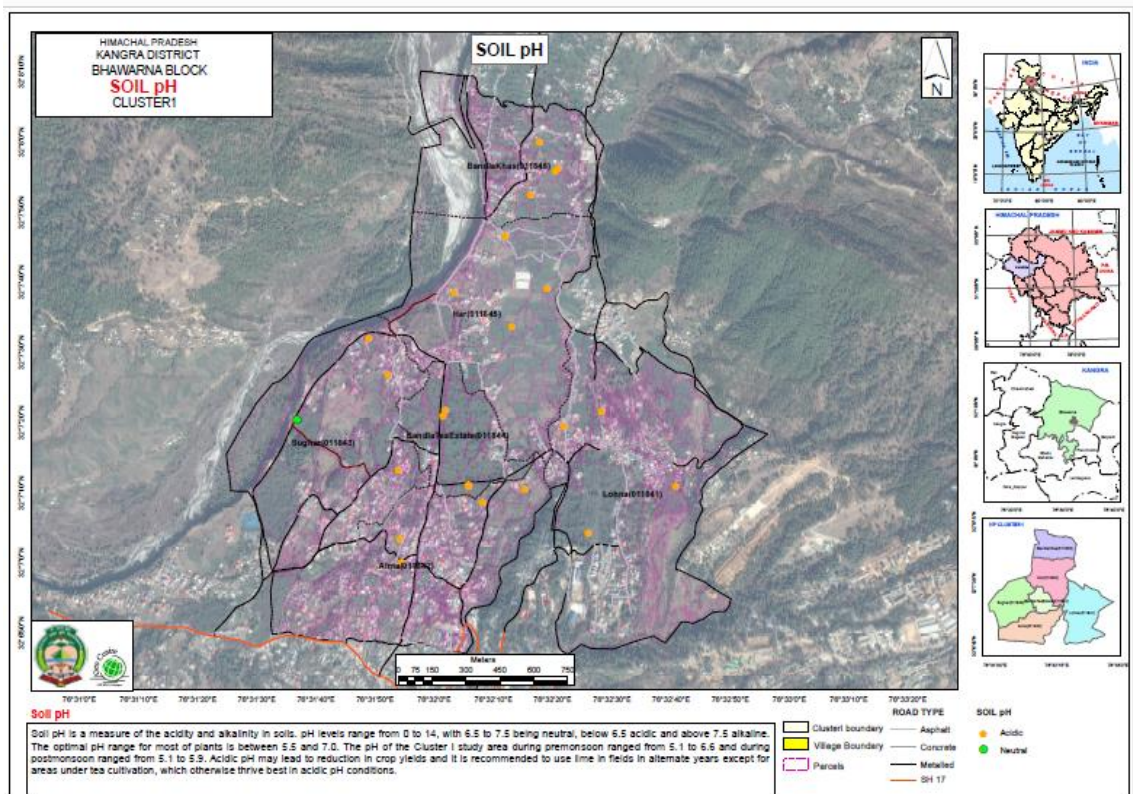
Irrigation Water pH Status

Village Name	Village Code	Sample ID	Sample location	pH	Classification
Lohna	011841	S1	Kuhl	7.0	Acceptable
Lohna	011841	S2	Kuhl	6.8	Acceptable
Aima	011842	S1	Kuhl	7.0	Acceptable
Aima	011842	S2	Kuhl	6.8	Acceptable
Sughar	011843	S1	Kuhl	7.0	Acceptable
Sughar	011843	S2	Kuhl	7.2	Acceptable
BTE	011844	S1	Kuhl	7.2	Acceptable
BTE	011844	S2	Kuhl	7.0	Acceptable
Har	011845	S1	Kuhl	7.2	Acceptable
Har	011845	S2	Kuhl	7.0	Acceptable
BandlaKhas	011846	S1	Kuhl	7.0	Acceptable
BandlaKhas	011846	S2	Kuhl	7.2	Acceptable

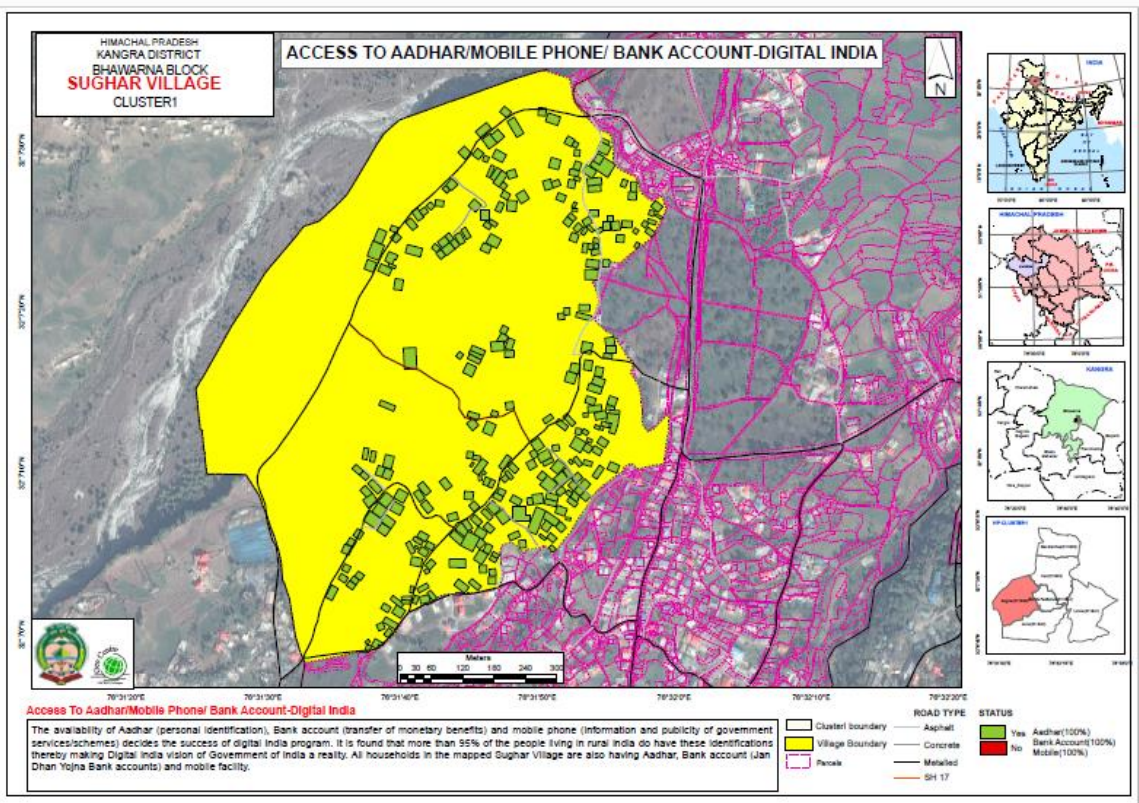


The pH is a measurement of the relative acidity or basicity of the water. The pH range is from 0 to 14. Values from 0 to 6.9 are acidic and those from 7.1 to 14 are basic or alkaline, with 7.0 being neutral. The pH scale is logarithmic, meaning that a change of 1.0 unit is a ten-fold change in either acidity or basicity. Therefore, changes of less than 1.0 unit may be significant. This characteristic of the water has a significant influence on other characteristics or reactions in the soil and water, as well as the way plants perform. A water pH between 6.0 and 7.0 is normally considered to be the most desirable for irrigation. When the pH is outside of this range, it indicates that special actions may need to be taken to improve crop performance.

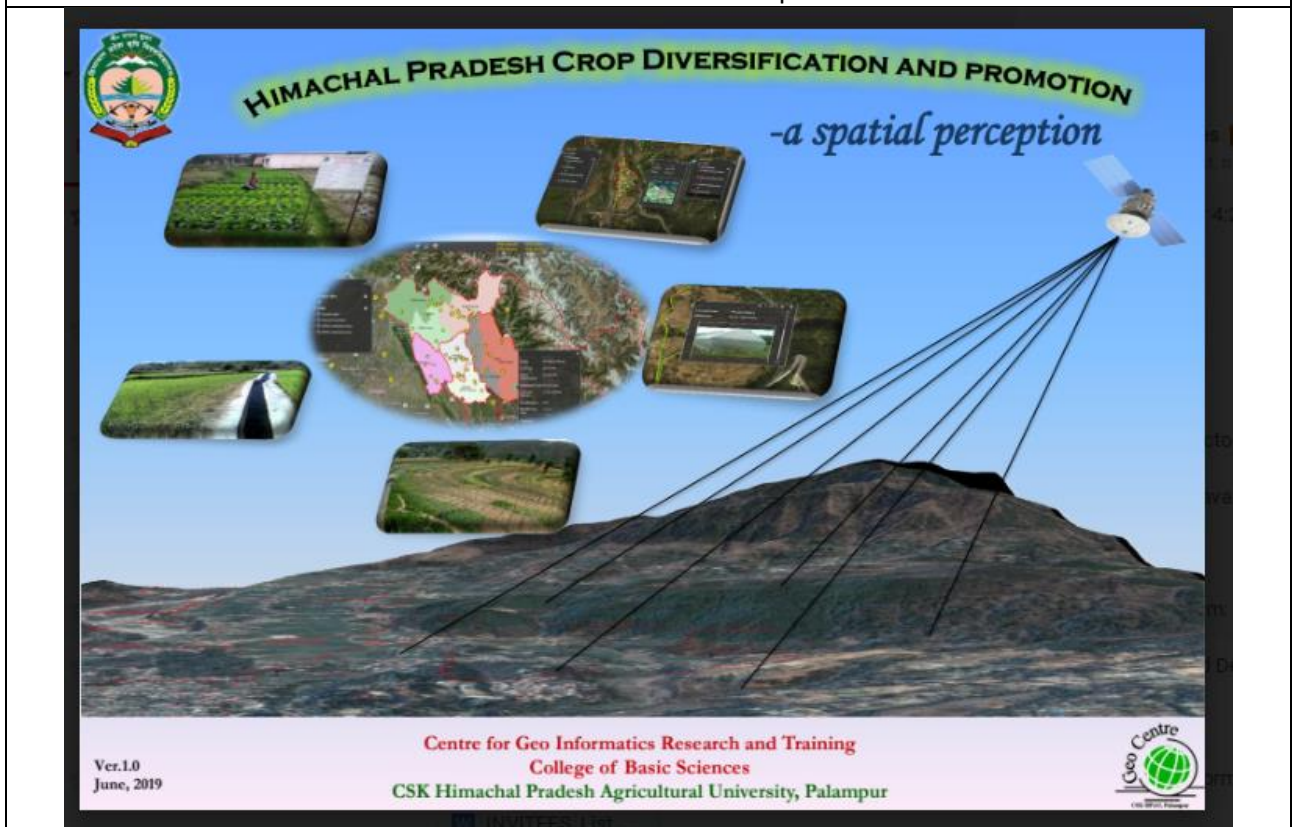
The irrigation water of cluster I of study area being near to 7 in its pH values was found to be desirable for irrigation purpose.

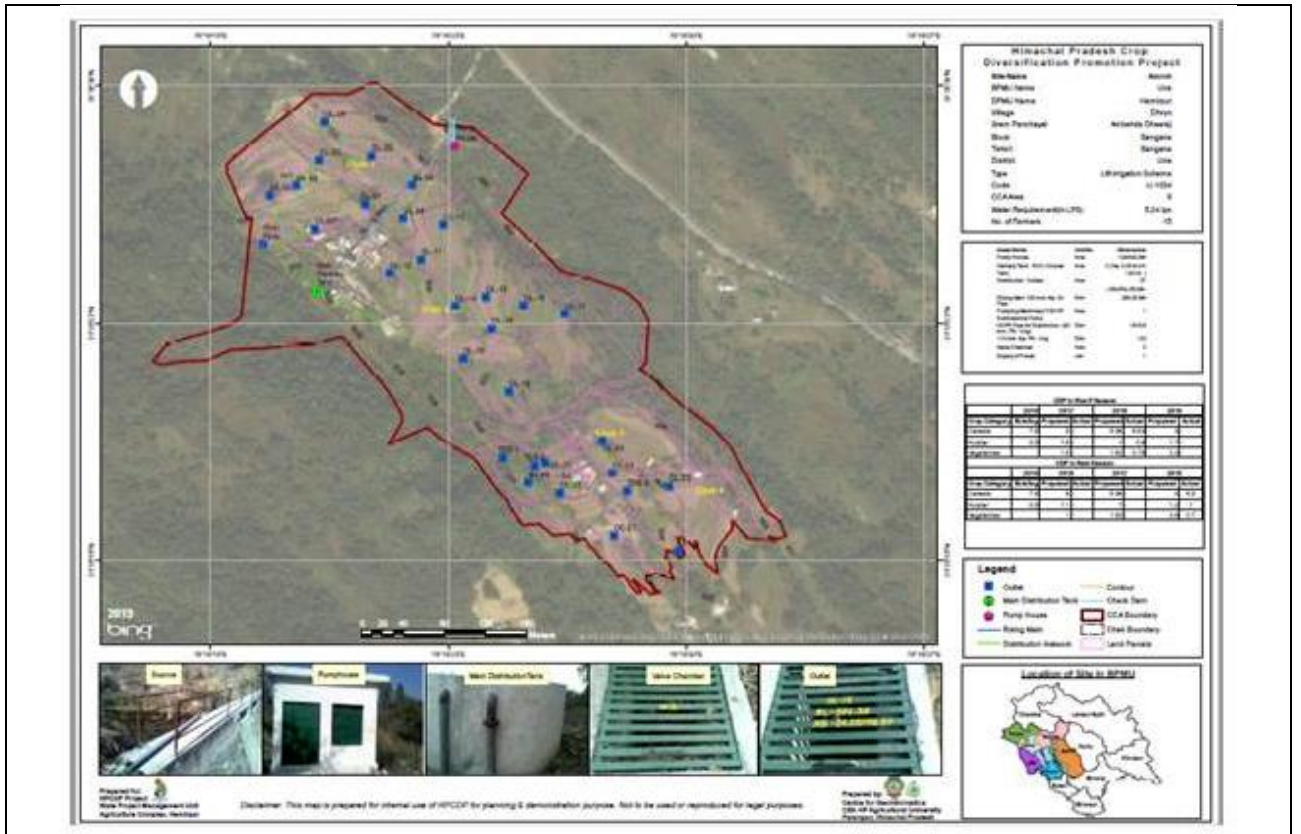


Village Information System(VIS)-A Thematic Perception (State of Himachal Pradesh)
Cluster level Themes of Soil, Water & Hydrological for National VIS Portal and VIS Report



Village Information System(VIS)-A Thematic Perception (State of Himachal Pradesh)
Village level Themes of cadastral & Assets (Buildings, Parks, Playgrounds, Infrastructure) for National VIS
Portal and National VIS Report





An Atlas of HPCDP-JICA ODA Hamirpur consisting of Sub-Project-wise For 135 Project Completion Reports (PCRs) & 210 for Detailed Project Reports (DPRs)

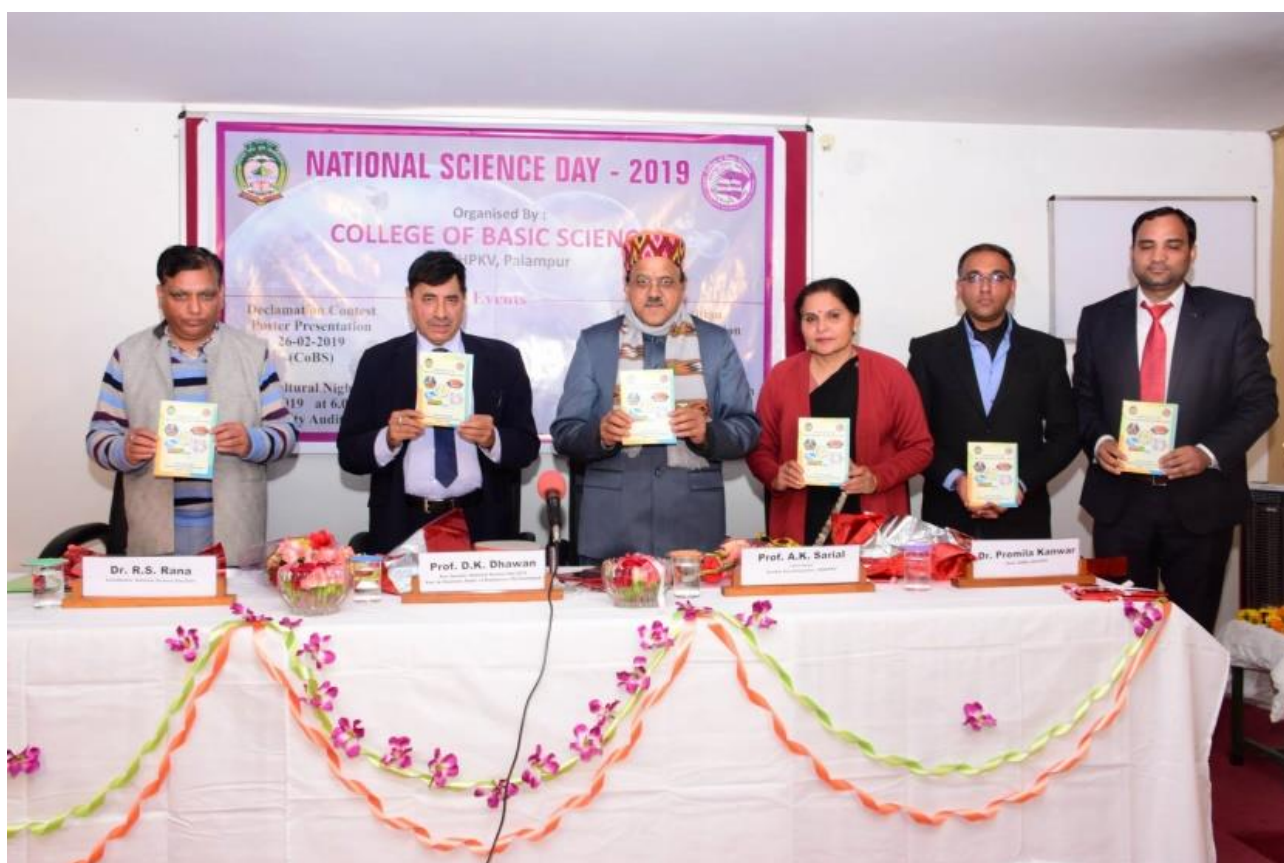
College Activities



Educational Tour - 2019



Educational Tour - 2019



National Science Day-2019

7th National level Evaluation Meeting of Development of framework for Networking Programme on Village Information System at CGRT COBS CSKHPKV on 24-25 September 2019



National Service Scheme (NSS)



NSS Volunteers during Republic Day



NSS Volunteers during debate/discussions



Shramdan by NSS Volunteers



Shramdan by NSS Volunteers



Two Minute Silence observed on 30-01-2019



Two Minute Silence observed on 30-01-2019

VISITS

Center for Geoinformatics



13.12.2018 JICA India Head visited Centre for HPCDP JICA Review meeting



25.3.2019 Prof.Sanju Karol Dir. PRC, HPU, Shimla



13.3.2019 JICA TCP Consultant Visit

Published on behalf of **DEAN COBS, CSKHPKV Palampur.**

For more information visit:

<http://hillagric.ac.in/edu/cobs/contactdean.html>