Annual Quality Assurance Report (AQAR)

of

CHITKARA UNIVERSITY
HIMACHAL PRADESH

Submitted to

राष्ट्रीय मूल्यांकन एवं प्रत्यायन परिषद्

विश्वविद्यालय अनुदान आयोग का स्वायत्त संस्थान

NATIONAL ASSESSMENT AND ACCREDITATION COUNCIL
An Autonomous Institution of the University Grants Commission
P. O. Box. No. 1075, Opp: NLSIU, Nagarbhavi, Bangalore - 560 072 India

The Annual Quality Assurance Report (AQAR) of the IQAC

Part – A

1. Details of the Institution

1.1 Name of the Institution

Chitkara University

1.2 Address Line 1

Atal Shiksha Kunj, Atal Nagar

Address Line 2

Barotiwala

City/Town

District Solan

State

Himachal Pradesh

Pin Code

174103

Institution e-mail address

info@chitkarauniversity.edu.in

Contact Nos.

+91-1795-661011

Name of the Head of the Institution:

Brig. (Dr) R.S. Grewal, VSM (Retd)

Tel. No. with STD Code:

+91-1795-661011

Mobile

+91-9779450703

Name of the IQAC Co-ordinator:

Dr. Rohit Verma

Mobile:

+91-1795-661011

IQAC e-mail address:

coordiqac@chitkarauniversity.edu.in

1.3 NAAC Track ID *(For ex. MHCOGN 18879)*

HPUNGN 11244

1.4 NAAC Executive Committee No. & Date**:**

EC(SC)/15/A&A/87.1   Dated 25/05/2015

1.5 Website address:

www.chitkarauniversity.edu.in

Web-link of the AQAR:

http://www.chitkarauniversity.edu.in/pdf/2017/AQAR-2016-17.pdf

1.6 Accreditation Details

Sl. No.	Cycle	Grade	CGPA	Year of Accreditation	Validity Period
1	1st Cycle	B	2.71	2016	5 Years
2	2nd Cycle				
3	3rd Cycle				
4	4th Cycle				

1.7 Date of Establishment of IQAC :   DD/MM/YYYY   01/07/2013

1.8 AQAR for the year

2016-2017

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

1.10 Institutional Status

University   State ✓ Central [ ] Deemed [ ] Private [ ]

Affiliated College   Yes [ ] No ✓

Constituent College   Yes [ ] No ✓

Autonomous college of UGC   Yes [ ] No ✓

Regulatory Agency approved Institution Yes ✓ No [ ]

Type of Institution   Co-education ✓   Men ☐   Women ☐

Urban ☐   Rural ✓   Tribal ☐

Financial Status   Grant-in-aid ☐   UGC 2(f) ✓   UGC 12B ☐

Grant-in-aid + Self Financing ☐   Totally Self-financing ✓

1.11 Type of Faculty/Programme

Arts ☐   Science ☐   Commerce ☐   Law ☐   PEI (Phys Edu) ☐

TEI (Edu) ☐   Engineering ✓   Health Science ☐   Management ☐

Others   (Specify)   .

1.12 Name of the Affiliating University *(for the Colleges)*   Not Applicable

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

Autonomy by State/Central Govt. / University

University with Potential for Excellence   UGC-CPE

DST Star Scheme   UGC-CE

UGC-Special Assistance Programme   DST-FIST

UGC-Innovative PG programmes   Any other (*Specify*)

UGC-COP Programmes

2. IQAC Composition and Activities

2.1 No. of Teachers   8

2.2 No. of Administrative/Technical staff   3

2.3 No. of students   4

2.4 No. of Management representatives   1

2.5 No. of Alumni   3

2. 6 No. of any other stakeholder and   1

   community representatives

2.7 No. of Employers/ Industrialists   3

2.8 No. of other External Experts   3

2.9 Total No. of members   26

2.10 No. of IQAC meetings held: 8

2.11 No. of meetings with various stakeholders: No. [42]   Faculty [22]

   Non-Teaching Staff [2]   Students [12]   Alumni [5]   Others [1]

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

2.13 Seminars and Conferences (only quality related)

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

   Total Nos. [1]   International [0]   National [0]   State [0]   Institution Level [1]

Sr. No.	Choose one: Seminar/ Conference/ Workshop/ Symposia	Name of Event	Level	Date	No. of Participants	Names of Experts with affiliation
1.	Workshop	Orientation programme for newly recruited faculty	Institute	$4^{th} - 6^{th}$ July 2016	25	Dr Sangeeta Pant, Dr Varinder S Kanwar, Dr Shaily Jain, Ms Lipika Gupta and Dr Anshu Tomar
2.	Workshop	Plan of action of IQAC for 1st semester of academic year 2016-17	Institute	16th July 2016	176	Dr Varinder S Kanwar, Dr Shaily Jain, Ms Lipika Gupta, Col Kulwant Singh and Dr Anshu Tomar

3.	Workshop	Curriculum Design and Enrichment	Institute	25th to 29th July, 2016	69	Prof. (Dr.) Archna Mantri Pro-Vice Chancellor, Chitkara University
4.	Workshop	Plan of action of IQAC for 2nd semester of academic year 2016-17	Institute	26th December 2016	156	Dr Varinder S Kanwar, Dr Shaily Jain, Ms Lipika Gupta, Dr Rohit Verma, Col Kulwant Singh and Dr Anshu Tomar
5.	Conference	Best practices and awards of excellence	Institute	29th April 2017	220	Dr Ashok K Chitkara, Dr Madhu Chitkara, Brig (Dr) R.S. Grewal

(ii) Themes

- Orientation programme for newly recruited faculty
- Plan of action of IQAC for 1st semester of academic year 2016-17
- Curriculum Design and Enrichment
- Plan of action of IQAC for 2nd semester of academic year 2016-17
- Best practices and awards of excellence

2.14 Significant Activities and contributions made by IQAC

i. To check the quality and create awareness towards quality in teaching and allied domains.

ii. IQAC monitors the implementation of suggestions and approvals from Academic Council from time to time and collection of data on quarterly basis from all departments for further analysis.

iii. University has initiated a mechanism of rewarding the departments based on their overall performances in research, teaching, results and other vital contributions in continuation of existing practice of awarding the best faculty. IQAC plays important role in it by contributing in data analysis provided by the departments.

iv. Other than these, some other significant areas of contribution of IQAC includes:

- To suggest research and innovation based learning
- To monitor academic performance regularly
- To suggest industry-institute interaction programmes
  (like guest lectures, student workshops and industrial visits)
- To suggest faculty development programmes
- To suggest MOOC courses that can be integrated in curriculum
- To suggest the formation of Entrepreneurship Cell in the University

2.15 Plan of Action by IQAC

The plan of action chalked out by the IQAC in the beginning of the year towards Quality

Enhancement and the outcome achieved by the end of the year

Plan of Action

- Scheduled Academic Monitoring
- Recommendations for Industrial Visits
- Invited Talks in courses
- Motivating Faculty for Research
- Recommendation for blended learning
- 24X7 Learning Processes
- Research and Innovation
- Implementation of Industry feedback in the curriculum
- Making the staff and students' socially responsible

ACADEMIC CALENDAR

July 2016						
Mon	Tue	Wed	Thu	Fri	Sat	Sun
				1	2 CONVOCATION Batch 2012 — Non teaching working day for all staff members	3
4 Registration followed by start of class work	5	6	7	8 Training Session on Hackerrank by Mr Girish Rao	9 Off day for teaching and non teaching	10
11	12	13	14	15	16 Working Teaching	17
18	19	20	21	22	23 Off day for faculty members & working day for non-teaching staff members	24
25	26	27	28	29	30 Working Teaching — Day with Chancellor for faculty	31
Notes:						

August 2016

Mon	Tue	Wed	Thu	Fri	Sat	Sun
1	2	3	4	5	6 Working Teaching	7
8	9	10	11	12	13 Off day for faculty members & working day for non-teaching staff members	14
15 Independence Day	16	17	18	19 ICI Workshop by CE Deptt.	20 Teaching working End term for GED Fresher Party	21
22	23 Blood Donation Camp	24 GTQ by CIVIENGS	25 Janmashtami Off Day for all staff members	26	27 Off Day for all staff members	28
29 ST-1 Batch 2014 & 2015 Cross Country	30 ST-1 Batch 2014 & 2015	31 ST-1 Batch 2014 & 2015	Notes:			

September 2016

Mon	Tue	Wed	Thu	Fri	Sat	Sun
			1 ST-1 Batch 2014 & 2015	2 ST-1 Batch 2014 & 2015	3 Teaching working FDP by CSE & ECE Faculty Members	4
5 IETE Seminar on Latest Trends in ECE Teachers' Day	6 CIVIENGS Activity	7	8	9	10 Off Day for all staff members	11
12 ST-1 Batch 2016 & 2013	13 ST-1 Batch 2016 & 2013	14 ST-1 Batch 2016 & 2013	15 ST-1 Batch 2016 & 2013	16 ST-1 Batch 2016 & 2013	17 Teaching Working	18
19	20	21	22	23 Algorythm	24 Algorythm	25
26	27	28 MX Road Wrokshop by CE Deptt.	29 MX Road Wrokshop by CE Deptt.	30	Notes:	

October 2016

Mon	Tue	Wed	Thu	Fri	Sat	Sun
					1 Off day for faculty members & working day for non-teaching staff members	2 Mahatma Gandhi Jayanti
3 Seminar on Big Data and Hadoop	4	5	6 Guest Lecture on Bentley System	7 Industrial Visit for Batch 2015 (CE)	8 Teaching Working Industrial Visit for Batch 2015 (CE)	9
10	11 Dussehra	12	13	14 Industrial Visit for Batch 2014 (CE)	15 WECON Industrial Visit for Batch 2014 (CE)	16 WECON
17 ACC Cement Workshop by CE Deptt.	18	19	20	21 Scrap it by CIVINGS	22 FDP by CE, CSE & ECE Faculty Members	23
24	25	26	27	28 Diwali Break	29 Diwali Break	30 Diwali/Deepavali
31	Notes:					

November 2016

Mon	Tue	Wed	Thu	Fri	Sat	Sun
	1	2 ST-2 All Batches	3 ST-2 All Batches	4 ST-2 All Batches	5 ST-2 All Batches In lieu of 28-10-2016	6
7	8	9	10	11	12 Off Day for all staff members	13
14 Guru Nanak Jayanti	15	16	17	18	19 Teaching working FDP by CSE & ECE Faculty Members	20
21 ST-3 All Batches	22 ST-3 All Batches	23 ST-3 All Batches	24 ST-3 All Batches	25 ST-3 All Batches	26 Off day for faculty members & working day for non-teaching staff members	27
28 End Term Lab Exams	29 End Term Lab Exams	30 End Term Lab Exams				

December 2016

Mon	Tue	Wed	Thu	Fri	Sat	Sun
			1 End Term Lab Exams	2 End Term Lab Exams	3 Off Day for all staff members	4
5 End Term Exams	6 End Term Exams	7 End Term Exams	8 End Term Exams	9 End Term Exams	10 End Term Exams	11
12 End Term Exams	13 End Term Exams	14 End Term Exams	15 End Term Exams	16 End Term Exams	17 End Term Exams	18
19 End Term Exams	20 End Term Exams	21 End Term Exams	22 End Term Exams	23 End Term Exams	24 End Term Exams	25 Christmas
26 Winter Break	27 Winter Break	28 Winter Break	29 Winter Break	30 Winter Break	31	Notes:

January 2017

Mon	Tue	Wed	Thu	Fri	Sat	Sun
						1
2 Registration followed by start of class work	3	4	5	6	7 Off Day for all staff members	8
9	10	11	12	13	14 Teaching Working	15
16	17	18	19	20	21 Off Day for all staff members	22
23	24	25	26 Republic Day	27	28 Teaching Working	29
30	31	Notes:				

February 2017

Mon	Tue	Wed	Thu	Fri	Sat	Sun
		1	2	3	4 Off day for faculty members & working day for non-teaching staff members	5
6	7	8 Normal Working Day For CU-HP only North Zone Inter University (Table Tennis Tournament)	9 Normal Working Day For CU-HP only North Zone Inter University (Table Tennis Tournament)	10 Normal Working Day Workshop on FPGA by ECE Deptt. For CU-HP only North Zone Inter University (Table Tennis Tournament)	11 Normal Working Day Workshop on FPGA by ECE Deptt. For CU-HP only North Zone Inter University (Table Tennis Tournament)	12
13 Normal Working Day For CU-HP only All India Inter University (Table Tennis Tournament)	14 Normal Working Day For CU-HP only All India Inter University (Table Tennis Tournament)	15 Normal Working Day For CU-HP only All India Inter University (Table Tennis Tournament)	16 Normal Working Day For CU-HP only All India Inter University (Table Tennis Tournament)	17 Normal Working Day For CU-HP only All India Inter University (Table Tennis Tournament)	18 ST-1	19
20 ST-1	21 ST-1	22 ST-1	23 ST-1	24 Maha Shivratri	25 Off Day for all staff members	26
27 Normal Working Day Global Engineeing Week for students of Batch 2015	28 Normal Working Day Global Engineeing Week for students of Batch 2015	Notes:				

March 2017

Mon	Tue	Wed	Thu	Fri	Sat	Sun
		1 Normal Working Day Global Engineeing Week for students of Batch 2015	2 Normal Working Day Global Engineeing Week for students of Batch 2015 Conference of Civil Engg. Department	3 Normal Working Day Global Engineeing Week for students of Batch 2015 Conference of Civil Engg. Department	4 Teaching Working	5
6	7	8	9	10	11 Holi Vacations	12 Holi Vacations
13	14	15	16	17	18 Teaching Working	19
20	21	22	23	24	25 Off day for faculty members & working day for non-teaching staff members	26
27	28	29	30	31	Notes:	

April 2017

Mon	Tue	Wed	Thu	Fri	Sat	Sun
					1 ST-2	2
3 Off Day for all staff members	4 Ram Navami	5 ST-2	6 ST-2	7 ST-2	8 ST-2	9
10	11	12	13	14 Workshop on Analog Layout Design	15 Teaching working Workshop on Analog Layout Design	16
17	18	19	20	21	22 Off day for faculty members & working day for non-teaching staff members	23
24	25	26	27	28	29 Teaching working	30

Notes:

May 2017

Mon	Tue	Wed	Thu	Fri	Sat	Sun
1	2	3	4	5	6	7
8	9	10	11 Lab Exams	12 Lab Exams	13 Lab Exams	14
15 End Term Exams	16 End Term Exams	17 End Term Exams	18 End Term Exams	19 End Term Exams	20 End Term Exams	21
22 End Term Exams	23 End Term Exams	24 End Term Exams	25 End Term Exams	26 End Term Exams	27 End Term Exams	28
29 End Term Exams	30 End Term Exams	31 End Term Exams	Notes:			

June 2017

Mon	Tue	Wed	Thu	Fri	Sat	Sun
			1 End Term Exams	2 End Term Exams	3 End Term Exams	4
5 Copy Correction Day	6 Copy Correction Day	7 Copy Correction Day	8 Copy Correction Day	9 Copy Correction Day	10 Copy Correction Day	11 Summer Vacations
12 Summer Vacations	13 Summer Vacations	14 Summer Vacations	15 Summer Vacations	16 Summer Vacations	17 Summer Vacations	18 Summer Vacations
19 Summer Vacations	20 Summer Vacations	21 Summer Vacations	22 Summer Vacations	23 Summer Vacations	24 Summer Vacations	25 Summer Vacations
26 University reopens for all staff members	27	28	29	30	Notes:	

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

Management [✓]   Syndicate [ ]   Any other body [ ]

Provide the details of the action taken | Approved |

Part – B

Criterion – I

1. Curricular Aspects

1.1 Details about Academic Programmes

Level of the Programme	Number of existing Programmes	Number of programmes added during the year	Number of self-financing programmes	Number of value added / Career Oriented programmes
PhD	1	0	1	0
PG	3	0	3	0
UG	3	0	3	0
Total	7	0	7	0

Interdisciplinary	0	0	0	0
Innovative				

1.2 (i) Flexibility of the Curriculum:

CBCS/Core/Elective option

(ii) Pattern of programmes:

Pattern	Number of programmes
Semester	Yes
Trimester	
Annual	

1.3 Feedback from stakeholders*   Alumni ✓   Parents ✓   Employers ✓ Students ✓
   (On all aspects)

   Mode of feedback   :   Online ✓ Manual ✓ Co-operating schools (for PEI) ☐

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

Yes, there ought to make some minor changes in course curriculum on yearly basis based on the feedback received from the stakeholders. Changes agreed upon in the departmental meeting were presented to the Board of Studies (BOS) and further got approved by the Academic Council after due deliberations.

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

No

Criterion – II

2. Teaching, Learning and Evaluation

2.1 Total No. of
permanent faculty

Total	Asst. Professors	Associate Professors	Professors	Others
151	104	31	16	0

2.2 No. of permanent faculty with Ph.D.

33

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

Asst. Professors		Associate Professors		Professors		Others		Total	
R	V	R	V	R	V	R	V	R	V
15	0	2	3	2	5	0	0	19	8

2.4 No. of Guest and Visiting faculty and Temporary faculty

Guest Faculty: 18   Visiting Faulty: 10

2.5 Faculty participation in conferences and symposia:

No. of Faculty	International level	National level
Attended Seminar /Workshops and Presented papers	9	19
Resource Persons	2	4

Resource Persons

1. Mr. Ravi Datt served as an expert in SCERT workshop held at Solan on 19, September, 2016.
2. Dr. Varinder S Kanwar was invited as resource person to deliver a talk on Sustainable Campus Development for Higher Educational Institute at IIT BHU Varanasi on September 23, 2016.
3. Ms. Pooja Dhiman served as expert in SJPP, DAMLA held at Yamuna Nagar on 21, October, 2016.
4. Dr. Rohit Verma served as a chairperson in ISTE National Seminar, 2016 held at Rayat Bahra Ropar Campus from November 4, 2016 to November 5, 2016.

5. Dr. Varinder S Kanwar was invited as resource person to deliver a talk on Strategies for Enhancing Employability of Graduates from Technical Institutions on November 15, 2016 by NITTTR Chandigarh.

6. Dr. C. Prakasam was invited as a resource person in the conference/symposia / Winter School on Geospatial Technology held at HP University, Shimla on 21st November, 2016.

7. Dr. C. Prakasam was a resource person in the conference/symposia / Winter School on Geospatial Technology held at HP University, Shimla on 24th November, 2016.

8. Dr Varinder Kanwar, Registrar was invited by the University Institute of Technology in civil engineering, La Rochelle, France, and Lycée Emile Combes, Pons, France, to deliver expert talk on problem of holding structures and buildings in seismic situations and on road system in India. He had sessions with students and staff of these institutions in November 2016.

9. Mr. Sagar Juneja served as a resource person in a one day workshop on 'Analog System Design using ASLK Pro kits from Texas Instruments held at Texas Instruments Bangalore on March 18, 2017.

10. Dr Rajnish Sharma, Dean (Research), Chitkara University, was invited to participate in "Global Engineering Education Leader Conference" held at Shenzhen (China). Dr Sharma made a presentation on "Educational Innovations at Chitkara University, India" and also participated in a panel discussion on similar theme as one of the panellists.

Attended Seminar /Workshops and Presented Paper

International Level:

1. Dr. Sita Ram and Mr. Ravi Datt presented a paper titled "Maximum and minimum values of power means for continuous probability distribution" in the International conference Science: Emerging Scenario and Future Challenges held at Dharamshala, from 11th to 12th July 2016.

2. Dr. Vanita presented a paper titled "A Framework to Identify Influencers in Signed Social Networks" in the Fifth International Conference on Advances in Computing, Communications and Informatics ICACCI 2016 held at LNMIIT, Jaipur from 21st to 24th September 2016.

3. Ms. Aashima presented a paper titled "A Hybrid pattern based text mining approach for malware detection using DBScan" in the 3rd International Conference on Recent Developments in sciences, Engineering and technology (REDSET 2016)held at G.D. Goenka University, Gurgaon from 21st to 22nd October, 2016.

4. Dr. Hitakshi Dutta presented a paper titled, " Trends of Employee Engagement in Indian Banking Industry" in the International Conference on Banking and Finance held at Chitkara University, Punjab from December 10-11, 2016.

5. Dr. Anshu Tomar attended the conference/symposia International Conference on Sustainable Civil Engineering Practices held at NITTTR & PEC university, Chandigarh from 2nd to 3rd March, 2017.

6. Mr. Abhishek Kanoungo et.al. presented a paper titled "Off-Grid Infrastructure "Bio-House"" in the International Conference on Sustainable Civil Engineering Practices held at NITTTR & PEC University, Chandigarh from 2nd to 3rd March, 2017.

7. Dr. C. Prakasam attended the conference/symposia International Conference on Sustainable Civil Engineering Practices held at NITTTR & PEC university, Chandigarh from 2nd to 3rd March, 2017.

8. Ms. Upasana Grover presented a paper titled "Guidelines for School Construction in Kangra district by Rapid Visual screening- A Case Study" in the International Conference on Sustainable Civil Engineering Practices held at NITTTR & PEC University , Chandigarh from 2nd to 3rd March, 2017.

National Level:

1. Mr. Amit Monga presented a paper titled "Li-Fi: An alternative to Wi-Fi for Smart cities" in the National Symposium on Modern Information and Communication Technologies for Digital India, MICTDI 2016, held at CSIR-CSIO, Chandigarh on 9th -10th April 2016.

2. Mr. Neeraj Kumar presented a paper titled "Implementation of Smart home using Bluetooth" in the National Symposium on Modern Information and Communication Technologies for Digital India, MICTDI 2016, held at CSIR-CSIO, sector-30-C, Chandigarh on 9th -10th April 2016.

3. Mr. Amit Monga presented a paper titled "Smart Innovation: An Effective Air Pollution Filter for Smart cities" in the National Symposium on Modern Information and Communication Technologies for Digital India, MICTDI 2016, held at CSIR-CSIO, Chandigarh on 9th -10th April 2016.

4. Ms. Ashu Taneja presented a paper titled "A step towards Efficient Green Communication" in the National Symposium on Modern Information and Communication Technologies for Digital India, MICTDI 2016, held at CSIR-CSIO, Chandigarh on 9th -10th April 2016.

5. Mr. Neeraj Kumar presented a paper titled "Implementation of helping-hand at home using Arduino Pro-mini ATmega 328P" in the National Symposium on Modern Information and Communication Technologies for Digital India, MICTDI 2016, held at CSIR-CSIO, sector-30-C, Chandigarh on 9th -10th April 2016.

6. Mr. Neeraj Kumar presented a paper titled "Punjabi to Hindi Transliteration Using Android Smartphone" in the National Symposium on Modern Information and Communication

Technologies for Digital India, MICTDI 2016, held at CSIR-CSIO, Chandigarh on 9th -10th April 2016.

7. Mr. Sartajvir Singh presented a paper titled "A comparative analysis of different topographic corrections over North Indian Himalayan" in the conference held at WECON 2016 at Chitkara University, Punjab from 15th to 16th October 2016

8. Dr. Shaily Jain and Ms. Bharti presented a paper titled "Gurumukhi Text Hiding using Steganography in Video" in the ISTE Section Annual Faculty Convention on theme: Trends & Innovations In Management, Engineering, Education And Sciences (Time2s-2016) held at Rayat Institute of Engineering & Information Technology, Railmajra from 4th to 5th November, 2016.

9. Mr. Sukhraj Singh, Mr. Sartajvir Singh, Mr. Neeraj Kumar presented a paper titled "A Comparative Study on Different Applications of National Instrument ELVIS Lab View in automation" in the conference held at Rayat Institute of Engineering 7 Information Technology, Ropar on 4th -5th November 2016.

10. Dr. Rohit Verma delivered an invited talk on "How To Write A Scientific Research Paper" in the ISTE National Seminar, 2016 held at Rayat Bahra Ropar Campus from 4th to 5th November, 2016.

11. Mr. Sartajvir Singh presented a paper titled "Forecasting of natural hazards with topographically corrected CVA as change detection algorithm" in the conference held at Rayat Institute of Engineering 7 Information Technology, Ropar on 4th -5th November 2016.

12. Mr. Neeraj Kansal presented a paper titled "A Comparative Study on Offline Handwritten Gurmukhi Character Recognition" in the conference held at Rayat Institute of Engineering 7 Information Technology, Ropar on 4th -5th November 2016.

13. Dr. Rohit Verma was a resource person (session chair) in the ISTE National Seminar, 2016 held at Rayat Bahra Ropar Campus from 4th -5th November 2016.

14. Dr. C. Prakasam was a resource person in the conference/symposia / Winter School on Geospatial Technology held at HP University, Shimla from 8th Nov 2016 to 28th Nov 2016.

15. Dr. C. Prakasam was a resource person in the conference/symposia / Winter School on Geospatial Technology held at MD University, Rohtak, Haryana from 24th Nov 2016 to 14th Dec 2016.

16. Dr. Sapna Saxena presented a paper titled "CUDA implementation of Parallel Digital Signatures in the conference/GTCx2016", Mumbai held at IIT Mumbai, 6th Dec 2016.

17. Mr. Manish Randhawa and Mr. Ravi Datt attended Seminar titled "Renewable energy: Sustaining green future" held at Hotel Holiday Home, Shimla, Himachal Pradesh from 23 March, 23 March, 2017.

18. Dr. Varinder S Kanwar participated in National Workshop on popularization of remote sensing based maps and geo spatial information.

19. Mr. Neeraj Kumar submitted an abstract titled "Correction of Discontinuities in offline Handwritten Gurmukhi Characters using various morphological operations and Deep learning" in the National Symposium on Computing, Analytics and Networks, NCAN 2017, held at Chitkara University, Himachal Pradesh, on 15th April 2017.

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

- More addition to the MOOCs.

- Industry oriented learning through courses like JAVA, HTML, PHYTHON, RAPTOR etc. from first year onwards.

- Blended class room learning.

- Technology Innovation Industrial Workshops on Digital Marketing, Financial Marketing, Animation and Gaming, 3D Printing and scanning, CAN/SAT, Mobile App developments, Aircraft and Quarator Design, Robotic Design, Entrepreneurship, Logic building and Animation and Design Thinking introduced from the first year.

- Outcome based activities like Group Discussions, Educational visits, Quiz, Poster Making, Industrial Visits, Guest and Invited Talks

- Training of students by industry professionals through specially designed programme like University Coding Academy (UCA) and other professional skill development modules in the industry sponsored labs. The classes include formal training, hands-on, projects, advanced coding tests, etc. to reinforce the coding capabilities of students.

- Udacity "Nano degree programme" offered to the computer science and engineering students under the Integrated Project course.

- Industry based workshops on BIM, MxRoad and Mixed Design conducted for Civil engineering students.

- Industry based workshops conducted for electronics and communication engineering students in liaison with ZTE Services: Core Networks 1G-5G, RAN, IP, TxPP, Cloud Computing

- Industry based courses offered on Digital Design using FPGA by Tech Aditya Limited and Analog Layout Design by NXP Semiconductors.

- Office of Patent Facilitation & Licensing Consultancy (OPFLC) Cell of the University conducts regular events like IPR sensitization seminars, patent filing competitions, IPR workshops to spread IPR awareness among students & faculty. It also assist the budding innovators through services of Patent Attorney.

- In order to acquaint the students with latest technologies and innovations the University organizes regular visits in Industries and R&D laboratories.

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

| 180 |

2.8 Examination/ Evaluation Reforms initiated by
the Institution (for example: Open Book Examination, Bar Coding,
Double Valuation, Photocopy, Online Multiple Choice Questions)

- Bar Code secrecy
- Online Examinations

2.9 No. of faculty members involved in curriculum
restructuring/revision/syllabus development
as member of Board of Study/Faculty/Curriculum Development workshop
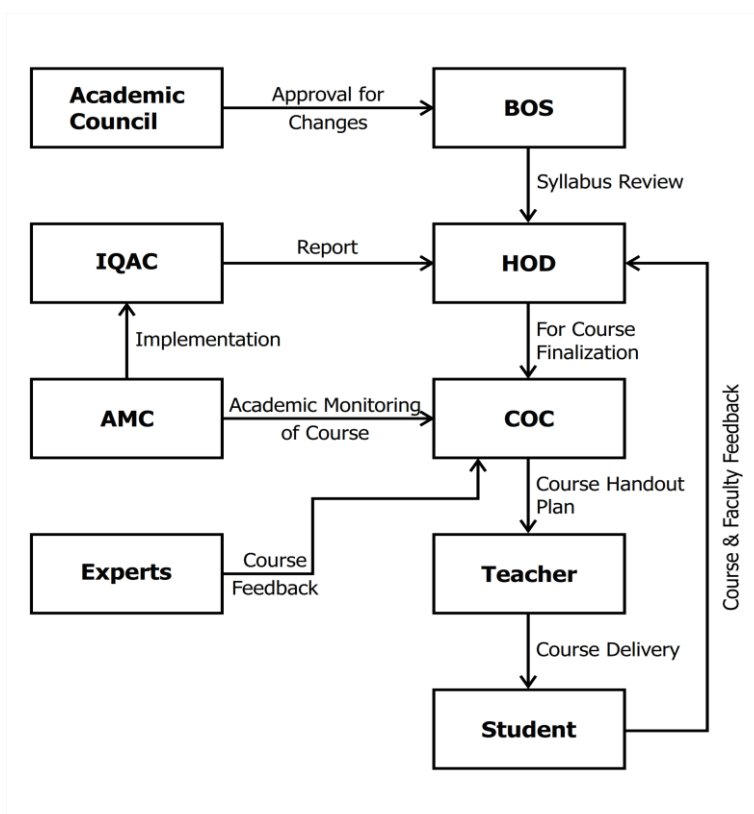
14	44	29

2.10 Average percentage of attendance of students

>75%

2.11 Course/Programme wise distribution of pass percentage :

Title of the Programme	Total no. of students appeared	Total no. of students passed	CGPA Ranges					
			9 -10	8 - 8.99	7 - 7.99	6 - 6.99	5 - 5.99	4.5 - 4.99
BE (CSE)	376	351	Nil	42	205	104	Nil	Nil
BE (ECE)	120	110	Nil	8	50	52	Nil	Nil
BE (CE)	120	109	1	5	38	60	5	Nil

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

BOS: Board of Studies   IQAC: Internal Quality Assurance Committee

HOD: Head of Department   AMC: Academic Monitoring Committee

COC: Course Coordinator

- IQAC ensures overall quality improvement in all the processes by monitoring and evaluating the teaching learning process. University and departmental level monitoring committees are setup that regularly gather the required information, analyse it and then submit the final report to IQAC. IQAC takes further action and forward the suggestions to the concerned departments for changes where required.

- Feedback is obtained from the students, faculty and alumni on each of the courses offered and the same is analysed along with the inputs that we receive from the industry. Senior faculty members of the department review the feedback and provide their individual opinion on the courses taught. This feedback becomes the backbone for framing the new courses, making necessary changes in the existing ones. Also the academic results of each of the courses act as a feedback for incorporating further changes in the course curriculum. Certain courses for which the failure rate is on the higher side goes through critical analysis to find what needs to be done in the teaching learning process to improve the pass percentage. A proposal for changes is submitted to Board of Studies for further discussion and its recommendations are sent to the Academic Council for approval. Internal Quality and Assessment Cell ensures proper functioning of teaching processes in all departments.

- The lecture-wise break-up of the syllabus along with the evaluation scheme, course objectives, outcomes and resource material are made available in the form of course handouts to all students at the beginning of each semester. The academic results for mid-term exams as well as ETE exams are analysed using bar charts. A course showing higher failure rate is put under the scanner for necessary corrective actions required. Academic Monitoring Committee (AMC) meetings are conducted in each semester on regular basis to monitor the student performance in each course, syllabus covered and teaching methodology.

2.13 Initiatives undertaken towards faculty development

Faculty / Staff Development Programmes	*Number of faculty benefitted*
Refresher Courses	150
HRD Programmes	10
Orientation Programmes	18
Faculty exchange Programme	20
Staff training conducted by the University	394
Summer / Winter Schools, Workshops, etc.	267
Others	84

2.14 Details of Administrative and Technical staff

Category	Number of Permanent Employees	Number of Vacant Positions	Number of permanent positions filled during the Year	Number of positions filled temporarily
Administrative Staff	90	0	5	0
Technical Staff	30	0	1	0

Criterion – III

3. Research, Consultancy and Extension

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

- The departments are encouraged to organize conferences, seminars, symposia, workshops etc. in various fields of research under the intimation of IQAC.

- IQAC keeps a check on the Research activities in the University and keeps on motivating the faculty members to submit projects to the funding agencies like DST, UGC etc. This initiative of IQAC helped the University to obtain research funding to the tune of about 1 crore.

- IQAC is closely working with the Office of Patent Facilitation & Licensing Consultancy (OPFLC), where a full time patent attorney visits the University every fortnight to meet the budding inventors (students) and explore the potential of their ideas in filing patents. OPFLC conducts regular events like IPR sensitization seminars, patent filing competitions, IPR workshops to spread IPR awareness among students & faculty.

- IQAC is also working in synchronisation with the academic departments by laying down the foundation for taking challenges in research work. Students are involved in integrated projects from the first year of their programme. These projects are usually interdisciplinary where they work in a team / group and allocated a project under the guidance of a faculty member. Every week, 2 hours have been allocated for students to interact and update their guide about the progress of their project. Weekly or fortnightly evaluation of each student is done and they are appraised about what is still required at their end. The faculty also provides them the necessary resource material. At the end of the semester students produce the complete project/prototype which is evaluated and these projects are further enhanced in their subsequent years of their graduation.

- IQAC took the initiative to establish an Entrepreneurship Development Cell (CUCEED) that imbibes the rhythm of igniting young minds to nurture the Nation's vision of STARTUP INDIA-STAND UP INDIA. With a dynamic team of start up-minded scholars, the entire system at Chitkara University promotes a vibrant ethos, that is shaped to encourage truly disruptive products. Whether it is an early-stage start-up or a wannabe founder, there's a dedicated team of experts to facilitate all your entrepreneurial needs, starting from filing patents to preparing them for investor pitches. Under the aegis of EDC several events like Start-up Day & Start-up OPD are aimed at mentoring the student start-ups on campus.

3.2   Details regarding major projects

	Completed	Ongoing	Sanctioned	Submitted
Number	5	5	8	19
Outlay in Rs. Lakhs	48.86	63.76	112.62	981.17

Major Research Projects Completed				
Sr. No.	Name of the Project	Principal Investigator	Name of Funding Agency	Grant Received (INR: Lakhs)
1.	Investigations aimed at producing Diamond like Carbon (DLC) films with broad range of dielectric constant and extremely low stress values.	Dr. Rajnish Sharma D/O Electronics and Communication Engineering.	Department of Science and Technology, New Delhi	10.92
2.	A Systematic Investigation of Fusion-Fission Reactions and Decay Properties of Compound Nucleus	Dr. Sushil Kumar D/O Applied Sciences (Physics)	Department of Science and Technology, New Delhi	6 .00
3.	Analytical Parameterization of Fusion Barriers and Cross Sections Using Various Microscopic / Macroscopic Approaches and Experimental Data as a Guideline	Dr. Ishwar Dutt D/O Applied Sciences (Physics)	SERB , Department of Science and Technology, New Delhi	11.94

Summer / Winter School Completed				
Sr. No.	Name of the Project	Principal Investigator	Name of Funding Agency	Grant Received (INR: Lakhs)
1.	Winter School on Geo-Spatial Technologies – A Training Programmee on Remote Sensing and GIS Application	Dr. C. Prakasam D/O Civil Engineering	Department of Science and Technology, New Delhi	10
2.	Summer School on Geo-Spatial Technologies under Natural Resources Disaster Management System	Dr. C. Prakasam D/O Civil Engineering	Department of Science and Technology, New Delhi	10

Major Research Projects –Ongoing				
Sr. No.	Name of the Project	Principal Investigator & Co- Investigator	Name of Funding Agency	Budget Sanctioned (INR: Lakhs)
1	Study the effects of multiple ionization and nuclear spin in x-ray production cross sections of high-z elements by heavy ions	Dr. Sunil Kumar D/O Applied Sciences (Physics)	SERB , Department of Science and Technology, New Delhi	14.99
2	Study the effects of parallel hashing algorithms and the use of digital footprints for security and fast digital forensic investigations.	Dr. Neha Kishore D/O Computer Science and Engineering	SERB , Department of Science & Technology New Delhi	14 .87
3	Fermion Mixing, CP violation and mass matrices in flavour physics	Dr. Rohit Verma	SERB-DST	5.40
4	Lanslide Prone area mapping Geospatial Approach: A case study of Shimla District, Himachal Pradesh	Dr. C. Prakasam Dr. Varinder Kanwar Dr. B. Nagrajan	DST	22.25
5	Alternative construction material made from industry sludge containing CaCo3 and a method to prepare the same	Dr. Varinder Kanwar D/O Civil Engineering	HP State Council of Science Technology and Environment	6.25

Major Research Projects Submitted				
Sr. No.	Name of the Project	Principal Investigator and Co- Investigator	Name of Funding Agency	Proposed Budget (INR : Lakhs)
1.	A Neutron Beam Line for Radiation Hardness and Detector Testing	Dr. Sushil Kumar, Dr Ajay Sharma, Dr. Sunil Kumar, Dr. Ishwar Dutt	Indo-Italian Executive Programme of Cooperation in Scientific & Technological Cooperation	42.59
2.	Study and Tool Formulation for Investigating GPUs used in Mobile Devices for Digital Forensics Process	Rinku Saini, Dr. Neha Kishore	Scheme for Young Scientists and Technologists of Department of Science and Technology	9.32
3.	Monitoring of seasonal snow cover variation over north Indian Himalayas using change detection analysis, Himachal Pradesh	Mr. Sartajvir Singh	State Council for Science, Technology & Environment, Himachal Pradesh	9.77
4.	A novel passive sensor based real time water flow and quality monitoring pilot project for Delhi and Haryana	Dr. Bhisham Sharma	Interdisciplinary Cyber Physical Systems (ICPS) , Department of Science and Technology	352
5.	Intelligent Cattle health monitoring system based on wireless sensor network for early detection of diseases	Dr. Bhisham Sharma, Dr. Deepika Koundal	Interdisciplinary Cyber Physical Systems (ICPS) , Department of Science and Technology	53.93

6.	Health monitoring of structures made up with brick masonary damaged due to earth movement	Dr. Varinder Kanwar	Ministry of Earth Sciences, New Delhi	48.25
7.	Project under fast scheme: Center for new construction material research	Dr. Varinder Kanwar	MHRD, New Delhi	80.00
8.	Design an heterogeneous MPSoC (Multiprocessor System on a chip) system with a new replacement policy and low energy consumption for specialized embedded system applications	Dr. Shaily Jain	Department of Science & Technology New Delhi	14.47
9	Design and development of big data forensics framework for cyber crime detection for violence against women based on the data captured from IOT devices	Dr. Sapna Saxena	Interdisciplinary Cyber Physical Systems (ICPS) , Department of Science and Technology	19.80
10.	Design & development of biomedical devices by using different technologies (Embedded System , Android etc.)	Dr. Tanu Sharma	Department of Science & Technology New Delhi	16. 51
11.	Design and development of energy-efficient parallel public Key instructions based security algorithms on battery operated mobile devices	Dr. Sapna Saxena	Department of Science & Technology New Delhi	14.76
12.	An energy efficient Parallel Security algorithm for mobile and handheld devices	Dr. Disha Handa	Department of Science & Technology New Delhi	15.94
13.	Water resource planning and management for water stressed & drought prone areas: A Geoengineering model: case study of UNA district of HP	Dr. C Parkasam	Department of Science & Technology New Delhi	37.48
14.	New generations of Amplifier-Antennas for future Wireless Communications in collaboration with Prof. Constant Niemann, ESIGELEC France	Dr. Rajnish Sharma	Department of Science & Technology New Delhi	47.20
15.	To find out material from waste (industry sludge) and its use in armed force	Dr. Varinder Kanwar	Department of Science & Technology New Delhi	35.40
16.	Smart Vehicle driver remote monitoring & skill assessment operator	Mr. Karan Bajaj	Department of Electronics & IT, New Delhi	6.7
17.	Seismic Retrofitting: A Study Based on Multi-criteria decision making techniques	Dr. Varinder Kanwar	Ministry of Earth Sciences, New Delhi	59.63
18.	Assessment of seasonal snow cover changes using proposed change vector analysis (CVA) based change detection algorithm over topographically corrected north Indian Himalayan	Mr. Sartajvir Singh	Indian Space Research Organization, ISRO, Bangalore	23.23
19.	Rural Woman Technology Park Gram Panchayat Kalujhanda, Block Dharampur, Distt. Solan, Himachal Pradesh.	Dr. Varinder Kanwar Dr. Sudhir Mahajan	Department of Science & Technology New Delhi	89.59
20.	Enhanced rural education pedagogy using touch sense based smart projector	Mr. Manik Gupta D/O Computer Science and Engineering	Department of Electronics & IT, New Delhi	4.6

3.3   Details regarding minor projects

	Completed	Ongoing	Sanctioned	Submitted
Number	0	0	0	0
Outlay in Rs. Lakhs	-	-	-	-

3.4   Details on research publications

	International	National	Others
Peer Review Journals	15	2	0
Non-Peer Review Journals	0	0	0
Conference proceedings	5	5	0

Publications in Journals

International

1. Dr. Shefali Batra, Associate Professor in Department of Applied Sciences published a research paper titled "Asso Cost-Benefit and Performance Analysis of a Stochastic Model on Printed Circuit Boards Manufacturing Process" in **International** Journal of Mathematics in Operation Research, ISSN: 1757-5869, Volume 8(4), 2016, pp. 490-508.

2. Dr. Shefali Batra, Associate Professor in Department of Applied Sciences published a research paper titled "Stochastic Analysis of Printed Circuit Boards Manufacturing System Considering Repairs by Internal/External Engineers and Arbitrary Arrival Time of External Engineers" in International Journal of Pure and Applied Mathematics, Vol. 106, No. 1, 2016, pp. 59-74.

3. Dr Sunil Kumar, Associate Professor in Department of Applied Sciences published a research paper titled "Measurement of multinucleon transfer cross sections in ^{58}Ni, ^{56}Fe(^{12}C, x);^{13,11}C, ^{11,10}B,^{10,9,7}Be, ^{8}Be $_{g.s.}$ and ^{7,6}Li at E(^{12}C)=60MeV", in Pramana-Journal of Physics, SPRINGER Vol. 86, No. 1, January 2016, pp. 97-108.

4. Ms. Ashu Taneja, Assistant Professor in Department of ECE, published a research paper titled "MU-MIMO OFDM channel Estimation using Precoding and Adaptive least square technique'' in IOSR Journal of Electronics and Communication Engineering (IOSR-JECE), vol. 11, Issue 3, Ver 1V , PP 762, ISSN : 2278-2834.

5. Mr. Neeraj Kansal, Assistant Professor in Department of ECE, published a research paper titled "Offline Handwritten Gurmukhi Character Recognition: A Review" in International Journal of Software Engineering and Its Applications, Vol. 10, No. 5 (2016), pp. 77-86, ISSN1738-9984.

6. Dr Neha Kishore, Associate Professor in department of CSE published a research paper titled "Attacks on and Advances in Secure Hash Algorithms" in International Journal of Computer Science published by IAENG with ISSN:1819-9224 (2016).

7. Dr Rohit Verma, Associate Professor in Department of Applied Sciences published a research paper titled "Implications of δ_{CP}=270° and θ_{23}=45° for texture specific lepton mass matrices and $0\nu\beta\beta$ decays" in Journal entitled Advances in High Energy Physics published by Hindawi Publishers, ITALY ISSN: 1687-7357 (print) 1687-7365 (web), (2016).

8. Ms Garima Nanda, Assistant Professor in department of CSE published a research paper titled "Review: Hindi Question Answering System Using Machine Learning Approach" in Journal IJLTET published by SN Educational Society with ISSN:2319-3778, (2016).

9. Ms. Harsimran Kaur and Mani Sahore, Assistant Professor in department of CSE published a research paper titled "Attacks A survey on wireless sensor network (WSN) security using AI methods" in International Journal of Latest Trends in Engineering and Technology published by SN Educational Society with ISSN:2319-3778, (2016).

10. Mr Mukesh Kumar, Assistant Professor in department of CSE published a research paper titled "Recognition of Slow Learners Using Classification Data Mining Techniques" in International Journal of Interdisciplinary Research published by with ISSN:2454-1362 , in Dec 2016.

11. Mr. Ajaypal Singh Dhillon, Assistant Professor in Department of ECE, published a research paper titled "Surface modification of textured Dielectrics and their wetting behaviour'' in Journal of Materials and Engineering Performance, Springer, ISSN 1059-9495, Jan 2017.

12. Ms. Hitakshi Dutta and Dr Sandhir Sharma, published a research paper titled "Trends of Employee Engagement in Indian Banking Industry", in Journal: International Journal of Applied Business and Economic Research" Volume 15 (2017), Issue 9, pp. 137-144 in Jan 2017.

13. Dr Ishwar Dutt, Associate Professor in Department of Applied Sciences published a research paper titled "The systematic study of N/Z dependence on surface diffuseness parameter in the fusion of heavy neutron-rich colliding nuclei by using Skyrme energy density formalism" in International Journal of Pure and Applied Physics, published by Research India Publications, ISSN 0973-1776, Feb 2017.

14. Dr Sunil Kumar, Associate Professor in Department of Applied Sciences published a research paper titled "L shell x ray production in high-Z elements using 4–6 MeV/u fluorine Ions" in Journal: NIMB published by ELSEVIER, ISSN 0168-583X, March 2017.

15. Mr. Sartajvir Singh, Assistant Professor in department of ECE published a research paper titled "Response of fuzzy clustering on different threshold determination algorithms in spectral change vector analysis over western Himalaya, India" in Journal of Mountain Science, Springer, Manuscript ID: 16-4248.R3, ISSN: 1672-6316 (print version), 1993-0321 (electronic version), in June 2017.

National

1. Dr. Shefali Batra, Associate Professor in Department of Applied Sciences published a research paper titled "A New Stochastic Model for PCBs Manufacturing Process Considering PCB's Manual Repairs" in Aryabhata J. of Mathematics & informatics, ISSN:0975-7139,Volume 8(1), in 2016.

2. Dr. Neha Kumra, Associate Professor in department of Applied sciences published a research paper titled "Complexity Studies in Some Piecewise Continuous Dynamical Systems" in Mathematical Journal of Interdisciplinary Sciences, Manuscript DOI: 10.15415/mjis.2016.51003 in September 2016.

Publication in Conference Proceedings

International

1. Dr. Ashok Kumar, Associate Professor in Department of Applied Sciences published a research paper titled "Analysis of Health Conditions Using Generalized Information Measure Based ID3 Algorithm" in Proceedings of 4th Annual International Conference on Operations Research and Statistics (ORS-2016), pp. 33-37, (ISSN 2251-1938).

2. Dr Ishwar Dutt, Associate Professor in Department of Applied Sciences published a research paper titled "The systematic study of N/Z dependence on surface diffuseness parameter in the fusion of heavy neutron-rich colliding nuclei" in AIP Conference Proceedings published by AIP Publishing, ISSN : 0094-243X (print); 1551-7616 (web).

3. Ms. Hitakshi Dutta and Dr Sandhir Sharma, "Employee Engagement in Indian Banking Sector: A Review of the Literature" at International Conference on Management and Information Systems (ICMIS-16), Bangkok , September 23-24, 2016, pp. 184-195,ISBN: 978-1-943295-04-3.

4. Ms. Hitakshi Dutta and Dr Sandhir Sharma, "Trends of Employee Engagement in Indian Banking Industry" at International Conference on Banking & Finance, ICBF 2016, Chandigarh, December 10-11, 2016

5. Ms.Dhriti Duggal, Dr Rajnish Sharma and Dr Bhanu Kapoor, in Department of Electronics and Communication engineering, presented a poster titled "Quantum Confined Model for a Novel Tri-Material Gate Stack Engineered Double Gate MOSFET" at 2017 Joint International EUROSOI Workshop and International Conference on Ultimate Integration on Silicon (ULIS) held on April 3-5, 2017 at Athens in Greece.

National

1. Ms. Harpreet Kaur, Assistant Professor in Department of ECE, published a research paper titled "Smart Helmet" in IJCA Proceedings on National Symposium on Modern Information and Communication Technologies for Digital India, Vol: MICTDI 2016(2), December 2016, ISSN (Digital Library): 0975-8887, in Dec 2016.

2. Ms Lipika Gupta, Assistant Professor in Department of ECE, published a research paper titled " "Design of Current Mirror and Telescopic Ota using $0.18Âµm$ Technology" in IJCA Proceedings on National Symposium on Modern Information and Communication Technologies for Digital India, Vol: MICTDI 2016(2), ISSN (Digital library): 0975-8887, in December 2016.

3. Ms Lipika Gupta Assistant Professor in Department of ECE, published a research paper titled "Implementation of tunable Pseudo resistors using $0.18Âµm$ Technology" in IJCA Proceedings on National Symposium on Modern Information and Communication Technologies for Digital India, Vol: MICTDI 2016(2), ISSN (Digital library): 0975-8887, in December 2016.

4. Ms Dhriti Duggal Assistant Professor in Department of ECE, published a research paper titled "Delay and Power Reduction in RLC VLSI Interconnect Models" in IJCA Proceedings on National Symposium on Modern Information and Communication Technologies for Digital India, Vol: MICTDI 2016(2), ISSN (Digital library): 0975-8887, in December 2016.

5. Dr Ishwar Dutt, Associate Professor in Department of Applied Sciences published a research paper titled "Dependence of surface diffuseness parameter on N/Z ratio of colliding nuclei using Skyrme energy density formalism" in Proceedings of the DAE-BRNS Symp. on Nucl. Phys. 16 (2016) published by DAE-BRNS, ISSN: 0930-8989 (Print), 1867-4941 (Electronics), in 2016.

3.5 Details on Impact factor of publications:

Range 0-1.84   Average 0.46   H-Index 0-94   Nos. in SCOPUS 9

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

Nature of the Project	Duration Year	Name of the funding Agency	Total grant sanctioned	Received
Major projects	2017-2020	DST, New Delhi	Rs 22, 25,000	Rs 05,31,000
	2016-2017	DST, New Delhi	Rs 10,00,000	Rs 05,00,000
	2017-2020	DST, New Delhi	Rs.05,40,000	Rs.03,70,000
	2014-2017	DST, New Delhi	Rs.11,94,000	Rs.10,30,000
	2015-2018	DST, New Delhi	Rs. 14,99,000	Rs.08,40,000
	2016-2018	SCST, Govt of HP	Rs 06,25,000	Rs. 03,12,500
	2016-2019	DST, New Delhi	Rs.12,97,000	Rs. 05,04,955
	2016	DST, New Delhi	Rs.10,00,000	Rs.10,00,000
Minor Projects				
Interdisciplinary Projects				
Industry sponsored				
Projects sponsored by the University/ College				
Students research projects *(other than compulsory by the University)*				
Any other(Specify)	2016 onward	HPSCSTE	Rs. 25,000	Rs. 25,000
Total			Rs. 83,80,000	Rs. 40,87,000

* Major / Minor projects are self-financed   -

3.7 No. of books published   i) With ISBN No.   2   Chapters in Edited Books   0

ii) Without ISBN No.   0

Sr. No	Title of Book	ISSN/ISBN	Publisher	Authors	Year of Publication
1.	Spatial Analysis of Land Use Land Cover Changes Using RS and GIS	ISBN-978-3-330-32193-9	LAP- Lambert Academic Publishing, Germany	Dr. C. Prakasam	2017
2.	Objective Type Book of Civil Engineering	ISBN-978-93-85304-86-6	GJMS	Dr. Aradhana Mehta, Dr. Uma Malik, Er. Kuldip Kumar	2016

3.8 No. of University Departments receiving funds from: Not applicable

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

DPE [ ]   DBT Scheme/funds [ ]

3.9 For colleges   Autonomy [ ]   CPE [ ]   DBT Star Scheme [ ]

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

3.10 Revenue generated through consultancy   21,85,600/-

3.11 No. of conferences

Organized by the Institution

Level	International	National	State	University	College
Number	1	-	-	-	-
Sponsoring agencies	Chitkara University	-	-	-	-

Sr No.	Department	Name of Conference	Date and venue	Level	No. of internal participants	No. of external participants	Names of Experts with affiliation
1	Civil Engineering	International Conference on Sustainable Civil Engineering Practices	2&3 March, 2017,	Inter-national	12	112	Dr. Ashish Juneja IIT Mumbai Dr. R.P. Singh QCI Dr. H.K Sharma NIT Kurukshetra Dr. Kulwant Singh, Dr B.Nagarajan IIT Kanpur Dr. Umesh Sharma PEC, Chandigarh Prof. M.A. Alam PEC, Chandigarh Prof. H A Singh Sandhu PEC, Chandigarh Prof. Arshdeep Singh PEC, Chandigarh Prof. Mohit Kumar

3.12 No. of faculty served as experts, chairpersons or resource persons $\boxed{7}$

1. Mr. Ravi Datt served as a expert in SCERT workshop held at Solan on 19, September, 2016.
2. Dr. Varinder S Kanwar was invited as resource person to deliver a talk on Sustainable Campus Development for Higher Educational Institute at IIT BHU Varanasi on September 23, 2016.
3. Ms. Pooja Dhiman served as expert in SJPP, DAMLA held at Yamuna Nagar on 21, October, 2016.
4. Dr. Rohit Verma served as a chairperson in ISTE National Seminar, 2016 held at Rayat Bahra Ropar Campus from November 4, 2016 to November 5, 2016.
5. Dr. Varinder S Kanwar was invited as resource person to deliver a talk on Strategies for Enhancing Employability of Graduates from Technical Institutions on November 15, 2016 by NITTTR Chandigarh.
6. Dr. C. Prakasam was invited as a resource person in the conference/symposia / Winter School on Geospatial Technology held at HP University, Shimla on 21st November, 2016.
7. Dr. C. Prakasam was a resource person in the conference/symposia / Winter School on Geospatial Technology held at HP University, Shimla on 24th November, 2016.
8. Dr Varinder Kanwar, Registrar was invited by the University Institute of Technology in civil engineering, La Rochelle, France, and Lycée Emile Combes, Pons, France, to deliver expert talk on problem of holding structures and buildings in seismic situations and on road system in India. He had sessions with students and staff of these institutions in November 2016.
9. Mr. Sagar Juneja served as a resource person in a one day workshop on 'Analog System Design using ASLK Pro kits from Texas Instruments held at Texas Instruments Bangalore on March 18, 2017.
10. Dr Rajnish Sharma, Dean (Research), Chitkara University, was invited to participate in "Global Engineering Education Leader Conference" held at Shenzhen (China). Dr Sharma made a presentation on "Educational Innovations at Chitkara University, India" and also participated in a panel discussion on similar theme as one of the panellists.

3.13 No. of collaborations   International $\boxed{1}$ National $\boxed{2}$ Any other $\boxed{}$

MOU SIGNED IN 2016-2017

- Semiconductor complex limited (SCL, Mohali)
- Renewal of nVIDIA CTC(CUDA Teaching Center) MOU

3.14 No. of linkages created during this year $\boxed{1}$

- Institutional Membership obtained from Indian Society of Technical Education, New Delhi.

3.15 Total budget for research for current year in lakhs :

From Funding agency | Rs. 30,17,455 | From Management of University | Rs 12,00,000

Total | Rs.42,17,455

3.16 No. of patents received this year

Type of Patent		Number
National	Applied	6
	Granted	-
International	Applied	-
	Granted	-
Commercialised	Applied	-
	Granted	-

DETAILS OF PATENTS

Name Of The Inventors	Submitted the Patent Entitled	Patent Filing Number	Date of Filing
Shubham Malhotra, Lipika Gupta	Pen Type Soldering Iron	201611028712	23/08/2016
Ankush Gupta, Neeraj Kumar	Floating Safety Bag For Multiple Persons	201611029560	30/08/2016
Arjun Sharma , Neeraj Kumar	Laptop Security System	201611033440	30/09/2016
Dr. Sheifali Gupta, Satpal Singh, Sagar Juneja, Dr. Rupesh Gupta	Farmer Interactive Remotely Controlled Rice Crop Disease Detection System	201613036100	21/10/2016
Pratyaksh Joshi, Sagar Juneja	Morse Pen As A Communication Tool For Blind	201611040790	29/11/2016
Dr. Sita Ram	Stationary Box	290477TEMP/D-1/6879/2017-KOL	30/01/2017

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

Total	International	National	State	University	Dist	College
3	0	3	1	0	0	0

Awards:

1. Mr Neeraj Kansal was bestowed with Best Teacher Award for the Year 2016 for meritorious Teaching by Indian Society of technical Education at Trends and Innovations in management Education Engineering and Science on 4th November 2016.

2. Dr. Sita Ram was bestowed with award of Academic Excellence in Mathematics for the year 2016 by International Multidisciplinary Research Foundation, on 27th April 2017 at Chandigarh.

3. Dr Varinder S Kanwar was bestowed with Award for Excellent Contribution in Education Sector by AICTE and CNAI association of India in April 2017.

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

    3

and students registered under them

    8

3.19 No. of Ph.D. awarded by faculty from the Institution   6

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

JRF 4   SRF 1   Project Fellows   Any other

3.21 No. of students Participated in NSS events: 1307

University level   1104   State level   10

National level   193   International level

DETAILS OF NSS EVENTS

Sr. No.	Event /theme /activity	Type: University/ College/ Other	Date	Place	No. of participants from University	No. Of participants from outside University
1.	Blood Donation Camp	University	April 22, 2016	CUHP	93 donors+25 organizers	10
2	International Day of Yoga	University	June 21, 2016	CUHP	50	Nil
3	Sankalp	University	Regular	CUHP	15	50
4	Unnati	University	Regular	CUHP	15	50
5	Group discussion on Cleanliness	Govt. Primary School,	August 1, 2016	CUHP	15	50
6	Pledge on Cleanliness	Govt. Primary School,	August 1, 2016	CUHP	15	50
7	Shramdaan	Govt. Primary School,	August 1, 2016	CUHP	15	50

8	Cloth Distribution Drive	University	August 4, 2016	Slum area near Railway crossing, Baddi	10	50
9	Independence Day Celebration	University	August 15, 2016	CUHP	30	50
10	Tree Plantation Drive	University	August 15, 2016	Inside and outside the university	30	Nil
11	Swatchh Bharat Oath	University	August 15, 2016	CUHP	80	NIL
12	Shramdaan	University	August 18, 2016	CUHP	45	NIL
13	Door to Door Campaign on Swatchh Bharat	University	August 19, 2016	In Adopted Villages	45	NIL
14	Open Discussion on Cleanliness	University	August 22, 2016	CUHP	63	NIL
15	Blood Donation Camp	University	August 23, 2016	CUHP	78 donors + 25 Organizers	16
16	Sankalp	University	Regular	CUHP	15	50
17	Unnati	University	Regular	CUHP	15	50
18	Poster making Competition on Defecation Free INDIA	University	September 12, 2016	CUHP	30	NIL
19	Rally on Defecation Free INDIA	University	September 12, 2016	In village	20	10
20	NSS Showcase	University	September 30, 2016	CUHP	25	10
21	Sankalp	University	Regular	CUHP	15	50
22	Unnati	University	Regular	CUHP	15	50
23	NSS Adventure Camp	State	Oct 1-10, 2016	ABVIMS, Manali, H.P	10	NIL
24	Pledge on Rastriya Ekta Diwas	University	October 17, 2016	CUHP	50	NIL
25	Diwali Celebration	University	October	CUHP	30	50

26	Sankalp	University	Regular	CUHP	15	50
27	Unnati	University	Regular	CUHP	15	50
28	Visit to Mother Teresa Handicapped Home, Saket, Panchkula	University	November 6, 2016	Mother Teresa Handicap Home, Saket, Panchkula	25	10 (Special Children)
29	Blood Donation Camp	University	November 17, 2016	CUHP	85 donors + 25 Organizers	16 Doctor Team members
30	Training of NSS Programme Officer	National	November 17-23, 2016	IDC, Sec 38A Chandigarh	1	22
31	National Integration Camp	National	December 11-17, 2016	CUHP	11	216
32	Sankalp	University	Regular	CUHP	15	50
33	Unnati	University	Regular	CUHP	15	50
34	Cloth Distribution Drive on account of National Youth Day	University	January 12, 2017	Slum areas of Baddi-Pinjore	10	50
35	Awareness Rally on Traffic Rules and Road Safety	University	January 16, 2017	In adopted Village	20	NIL
36	Awareness Rally on the Blood Donation	University	January 24, 2017	In kalujhnada	25	10
37	Blood Donation camp	University	January 25, 2017	CUHP	Donors-107 Rejector-7 Organisers-27	10
38	Republic Day Celebration	University	January 26, 2017	CUHP and Govt. Sr. Sec. School, Nanakpur	30	50 from school
39	Campaign on Vittiya Saksharta Abhiyan (VISAKA)	University	January 28, 2017	Nanakpur and Kalujhanda	60	110

- *Ministry of Youth Affairs and Sports organised 15 days National Integration Camp for Women at Chitkara University, Himachal Pradesh from December 11th -17th 2016, where about 200 NSS women volunteers participated from all over India.*

3.22 No. of students participated in NCC events: 50

University level	34	State level	16
National level	---	International level	---

- *Himachal Pradesh, 1 HP BN NCC Solan organized 20 days NCC Camp (Combined Annual Training Camp) at Chitkara University, Himachal Pradesh from June 1st - 21st 2017, where more than 1300 NCC Cadets from different parts of Himachal Pradesh participated in it.*

3.23 No. of Awards won in NSS: 0

University level	0	State level	0
National level	0	International level	0

3.24 No. of Awards won in NCC:

University level	---	State level	
National level		International level	---

3.25 No. of Extension activities organized

University forum 65   College forum

NCC ---   NSS 33   Any other 6

DETAILS OF EXTENSION ACTIVITIES

Sr. No.	Event /Theme /Activity	Forum: Univ/ College	Date	Place	No. of participants from cu	No. of participants from outside cu	Prizes /award /achievement
1.	Chemistry Quiz	University	15/7/2016	CUHP	18	NIL	Ist – Arundhati Thakur 2nd – Parth and Rudresh
2.	Callitone	University	10/8/2016	CUHP	20	NIL	NA
3.	Freeze The Seconds	University	20/8/ 2016 to 27/8/2016	CUHP	47	NIL	Ist: Sanyam 2nd: Komal Kumra
4.	Interactive Session With The 1st Year Students	University	22/8/2016	CUHP	55	NIL	NA
5.	Auditions For TAMASHBEENZ	University	22/8/2016	CUHP	89	NIL	15 students selected

6.	Declamation	University	23/8/2016	CUHP	18	NIL	1st:Anshita 2nd: Naman
7.	Let The Music Play	University	24/08/16	CUHP	23	NIL	Kartikey, Pankaj, Arshdeep Chandraveer, Reetik Mehra, Nitish, Pratyaksh
8.	Best Campus Shots	University	30/8/2016	CUHP	23	NIL	1st-Aditya Bansal
9.	Street Art	University	1/9/2016	CUHP	22	78	Sahil, Gulzar College, Rs 10,000
10.	Talk On Artificial Intelligence	University	5/9/2016	CUHP	65	NIL	NA
11.	Interactive Session And Quiz	University	6/9/2016	CUHP	27	NIL	1st : Sarvottam Prajapati and Nishant Bansal
12.	6 On 6 Cricket	University	6/9/2016	CUHP	86	NIL	Boys Winners- J-Fam Runners Up- The Underdogs Girls Winners- Ridhi's Team Runners Up-Aparajita's Team
13.	General Technical Quiz	University	7/9/2016	CUHP	Batch 2014 Civil	NIL	1st-Rajat Bharadwaj and Rahul Garg 2nd-Aneesh Rathee and Preet kanwal
14.	Workshop On Git And Github	University	8/9/2016	CUHP	92	NIL	NA
15.	Tech Talks	University	15/9/2016	CUHP	20	NIL	NA
16.	Engineer's Day Celebration	University	15/9/2016	CUHP	8	NIL	NA
17.	Cross Country	University	16/9/2016	CUHP	180	NIL	GIRLS:1st Rochit Rajput 2nd Kritika 3rd Rashi BOYS:1st Digvijay 2nd Shubham 3rd Rajat Kanwar
18.	4 A Side Soccer	University	20/9/2016	CUHP	50	NIL	1st - Majestics FC 2nd -Yeti FC.
19.	Basic Circuit Analysis Contest	University	22/09/16 & 23/09/16	CUHP	58	NIL	1st :Gurvinder Singh & Hitesh
20.	Be My Host	University	29/9/2016	CUHP	120	NIL	NA

21.	Roadies	University	30/9/2016	CUHP	120	159	Nikhil, CUHP, Rs 10,000
22.	Falsifier	University	30/9/16	CUHP	39	171	1st Harnoor, CUHP, Rs 10,000 2nd Mayank, VGC Mandi, Rs 5,000
23.	Confrencia	University	30/9/16	CUHP	14	44	Pranav , CUPB, Rs 10,000
24.	Junk Rangoli	University	30/9/16	CUHP	48	81	Jatin, CUHP, Rs 10,000
25.	Four A Side Soccer	University	1/10/2016	CUHP	34	112	CUPB Rs 15,000
26.	8 Balls Of Fire	University	1/10/16	CUHP	23	248	Harsh Kumar,CUPB, Rs 5,000
27.	Entrevista	University	1/10/16	CUHP	40	66	Pratyash., CUHP, Rs 10,000
28.	Fifa'16	University	1/10/16	CUHP	42	139	Rayat & Bahra college, Rs 15,000
29.	Impressionz	University	1/10/16	CUHP	53	118	Shivam, SPRM, Rs 10,000
30.	Counter Strike	University	1/10/16	CUHP	22	116	Ishaan, CUPB, Rs 30000
31.	Dumb charades	University	6/10/2016	CUHP	48	NIL	1st-Nisha,Nishchit,Harshita, Natasha,Mahima
32.	Solve The Unsolved	University	Round 1: 13/10/2016 Round 2: 17/10/2016	CUHP	81	NIL	1st :Amritpal Singh, Harinderpreet 2nd :Anuj,Sarvotam
33.	Mr. & Ms. Photogenic	University	13/10/2016 to 20/10/2016	CUHP	20	NIL	Mr Photogenic: Japarsh Singh Ms Photogenic: Pallavi Saini
34.	Chitkara University Premier League	University	13/10/2016	CUHP	18 teams	NIL	Winners-Roaring Rivals Runners Up-Royal Strikers
35.	Volley Ball Premier League	University	14/10/2016	CUHP	56	NIL	1st -Team Ball Busters. 2nd -Team Flames.
36.	Karva Night	University	19/10/2016	CUHP	52	NIL	1st : Gauri
37.	Graphic Designing Workshop	University	20/10/2016	CUHP	83	NIL	NA
38.	Scrap It	University	20/10/2016	CUHP	36	NIL	1st-Kareena and Aastha 2nd-Rashee and Neha

39.	Startup Day	Chitkara University	21/10/2016	CUHP	80	Nl	1st Prize: Rs. 50,000/- and 12 months working space Team: CU Researchers Concept: Making a heat seeker portable mobile charger of 20,000 mah 2nd Prize: Rs. 30,000/- and 6 months working space Team: Change Sphere Concept: Smart Inverters 3rd Prize: Rs. 20,000/- and 6 months working space Team: Let's Change The World Concept: Anti-collision, ultrasonic sensors for railways This is just the start of their journey into entrepreneurship.
40.	Workshop On Multisim	University	21/10/2016 to 22/10/2016	CUHP	40	NIL	NA
41.	Multisim Design Contest	University	21/10/16 & 22/10/16	CUHP	15	NIL	NA
42.	Online Competition	University	24/10/2016	CUHP	4	NIL	1st :Atul
43.	Online Singing	University	06/11/16 to 08/11/16	CUHP	7	NIL	1st:Jayant 2nd:Arshdeep Singh 3rd :Pankaj
44.	Workshop On PHP, HTML	University	9/11/2016 to 11/11/2016	CUHP	70	NIL	NA
45.	Vedic Mathematics Workshop	University	15/11/2016	CUHP	39	NIL	NA
46.	Friend's Chat	University	16/11/2016	CUHP	18	NIL	Ist – Nischay Mehta 2nd – Avneet Singh

47.	Antakshari	University	18/11/16	CUHP	21	NIL	1st: Natasha Aggarwal, Kritika Gupta, Mahima, Prashakhika
48.	Protohack	Chitkara University	25/11/2016	Chitkara Innovation Incubator	10	35	-
49.	Lohri Celebration	University	13/01/2017	CUHP	Open	NIL	Fun Event
50.	Lohri Celebration	University	13/1/2017	CUHP	67	NIL	NA
51.	Photo Walk	University	21/1/2017	CUHP	27	NIL	1st-Keshav Gyasra 2nd-Mr.Manjeet Saravar
52.	Poetry Competition	University	24/1/2017	CUHP	10	NIL	1st:Devesh 2nd:Parth
53.	Electro-Hunt	University	28/1/2017	CUHP	27	NIL	1st - Ayush Thakur& Arman Sharma 2nd : Akash Rana& Anant Garg
54.	Talk On Data Protection	University	28/1/2017	CUHP	20	NIL	NA
55.	Fitness Challenge	University	28/1/2017	CUHP	40	NIL	Sumit,Paras,Abhinandan, Arun,Ankit Sanghwan, Himanshu,Mirnal Ankit
56.	Kite Flying	University	30/01/2017	CUHP	8	NIL	Fun Event
57.	Ganit Erreur'17	University	Round 1: 1/2/2017 Round 2 : 28/2/2017	CUHP	96	NIL	NA
58.	Patriotic Singing Quiz	University	03/02/17	CUHP	53	NIL	1st:Sawan, Nikhil, Pankaj 2nd : Pareena, Manvi, Niharika
58.	Bollywood Quiz	University	08/02/2017	CUHP	32	NIL	Saurav , Pranav
59.	Tambola	University	08/02/2017	CUHP	40	NIL	Chirag, Aastha ,Priyanka
60.	Dream House	University	9/2/2017	CUHP	54	NIL	2014 batch winners:- 1st-Shubham Jindal,Prateek Yadav and Vinay Chaudhary 2nd-Chirag, Devender and

							Harnoor 3rd- Sanchit,Shubham and Pawan 2015 batch winners:- 1st-Kartavya and Ashish Pathania 2nd-Binod, Dipesh and Avishek 2016 batch winners:- 1st-Anushka, Ishani and Ashu 2nd-Arpit, Chitraksh and Manas
61.	Digital Design On FPGA Using Xilinx	University	17/02/17 & 18/02/17	CUHP	36	NIL	NA
62.	Science Quiz Competition	University	28/2/2017	CUHP	32	NIL	Ist – Deepak, Armaan, Anmol 2nd – Gurinder, Jeevan, Sujan 3rd – Aman Bansal, Aishwarya, Anant
63.	Poster Making Competition	University	28/2/2017	CUHP	32	NIL	Ist – Paramjit Singh 2nd – Parul, Pooja 3rd – Damini, Amneet Singh
64.	Staccatos Stage Choreos	University	1/3/2017	CUHP	13	NIL	NA
65.	Counter Strike	University	02/03/2017	CUHP	93	NIL	Tarun and Team
66.	Tech GD	University	9/3/2017	CUHP	13	NIL	1st :Reya Jain 2nd :Pritish Jha
67.	Uninflux Global Hackathon Connect2Effect	Chitkara University	10/03/2017 to 12/03/2017	Chitkara International School	78	15	-

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

- National Science Day, Feb 28, 2017 celebrated. Poster Competition, Technical Competition, Quizzes and Expert Talk organized in collaboration with ISTE.
- National Integration Camp from Dec 11-17, 2016: In the National Integration camp 193 students and 22 NSS Programme Officers from 16 states participated and the theme of the camp was sharing of regional dance, song, culture, traditions, food and languages. The camp was sponsored by Ministry of Youth affairs and Sports, government of India.
- Establishment of Sewing and Adult literacy Center at University Campus.
- Organized various activities in village Kalu Jhanda adopted by the University.
- Organized ZED Awareness program for MSMEs located in Baddi, Himachal Pradesh in collaboration with Quality Council of India, New Delhi
- Organized startup OPD every Friday in the campus for mentoring and sensitizing the students about entrepreneurship and also conducting competition for students to pitch their idea and awarding the winners.
- Organized Entrepreneurship Knowledge series program for sharing new ideas as well as knowing all about the progress and development of already shared ideas with the mentoring team
- The University has set up an IPR Cell in its campus under the sponsorship of Himachal Pradesh State Council of Science, Technology and Environment.

Criterion – IV
4. Infrastructure and Learning Resources

4.1 Details of increase in infrastructure facilities:

Facilities	Existing	Newly created	Source of Fund	Total
Campus area	17 Acres	-	Self Financed	17 Acres
Class rooms	50	-		50
Laboratories	34	-		34
Seminar Halls	5	-		5
No. of important equipments purchased (≥ 1-0 lakh) during the current year.	28	02		30
Value of the equipment purchased during the year (Rs. in Lakhs)	Rs. 732.57	Rs. 53.21		Rs. 785.78
Others IPR Cell		1	HPSCSTE	25000

4.2 Computerization of administration and library

Administration – The University has been shortlisted for presenting its digital initiative to the higher educational institution by Government of India. Few of the digital initiative taken by the University are;

- All process starting from admission to degree granting are digitalised
- Free Wi-Fi
- University's own ERP
- Maintaining daily MIS of University Administrative Processes
- Adoption of National Academic Depository (NAD) and Digi locker for academic verification and virtual depositary of the records

Library – The University's Library's resources and services are fully automated. It has its own website and uses Koha software: Integrated Library Systems. The main features of the library are;

- Digital Section: to access Internet and online learning resources.
- Free Wi-Fi availability: to provide access to library resources.
- Online Public Access Catalogue (OPAC): is available 24 x 7 to access information regarding library collection and to use other informational resources.
- Website & IR: Library has its independent website and institutional repository.

- Free online courses and lectures from reputed institutions like MIT (USA), Amrita University and NPTEL etc. have been downloaded and made available in the University library for the benefit of faculty and the students.

- Library subscribes IEEE and DELNET databases

- EBooks package with perpetual access.

- Library offers E-books available free of cost on web to supplement text books to the users through LAN.

- Computerised in and out records of library users.

4.3   Library services:

	Existing		Newly added		Total	
	No.	Value	No.	Value	No.	Value
Text Books	30237	7466762	473	182363	30710	7649125
Reference Books	302	93510	2	1150	304	94660
e-Books	10262	Nil	234	41467	10496	41467
Journals	95	84455	Nil	-	69	77453
e-Journals	10677	1206906	Nil	-	5169+backfiles	778450
Digital Database	1	11500	Nil	Nil	1	11500
CD & Video		Nil		Nil	1573	Nil
Others (specify) Newspapers	14	32518	2	5094	16	37612

4.4 Technology up gradation (overall)

	Total Computers	Computer Labs	Internet	Browsing Centres	Computer Centres	Office	Deptt.	Others
Existing	770	19	300MbPS BSNL 100 Mbps Vodafone 50Mbps Tata	18	2	40	5	3 Servers
Added								1 Server
Total	770	19		18	2	40	5	4 Servers

4.5 Computer, Internet access, training to teachers and students and any other programme for technology up gradation (Networking, e-Governance etc.)
- The University has a dedicated office of Information Technology, wherein a team of IT professionals are providing the requisite IT support to whole University and maintaining it.

- University has 34 labs equipped with internet facility.

- A dedicated internet link of approximately 300MbPS from BSNL, TATA and Vodafone. This internet connection cadre to the needs of more than 1200 students residing in 6 hostels through WiFi.
- The core connectivity across different buildings through optical fibre.
- Within the buildings the connectivity has been done by CAT-6 and CAT-5e cables.
- The configurations of systems in these labs are Core2 Duo, I3 and I5 processors with 2-4GB RAM.
- 3 Industry sponsored Labs on CCNA, CUDA and Apple are operating under Academy Industry Collaboration.
- Technical Trainings are regularly provided to these IT staff and faculty by Industry and Academic Experts.

4.6 Amount spent on maintenance in lakhs :

i) ICT	Rs 44.65
ii) Campus Infrastructure and facilities	Rs. 93.53
iii) Equipments	Rs. 43.48
iv) Others	Rs. 9.39
Total	Rs. 191.05

Criterion – V

5. Student Support and Progression

5.1 Contribution of IQAC in enhancing awareness about Student Support Services

Chitkara University boast its Student Support Services. Most of the Student Support Services are available to the students digitally through our campus ERP. IQAC keeps a close watch on the delivery of these services to the student. The details about some of the services are as mentioned below:

(a) Academics: In addition to the regular teaching support provided to the students, the University also schedule the extra teaching support to the needy students as suggested by IQAC. Teaching aids like presentations, videos, assignments, MOOCs links etc. are provided to the students through campus ERP. In order to give international flavour to the students the University has a unique practice of organizing Global Engineering Week every year, wherein, the eminent academicians from different countries visit the University and teaches a credit course to the students'. It not only gives a global exposure to the student but also balances their economic status by keeping them on the same platform and providing a chance of global learning to the students who can't afford to pursue the higher education abroad.

(b) Patent Filing: An in-house Intellectual Property Rights cell has also been established where there is a dedicated Patent Attorney to assist the budding engineers who have a passion to think innovative and generate a new idea in filing their patent.

(c) Entrepreneur Skills: The Entrepreneurship Development Cell of the University inculcate a zest for becoming an employer among the students' through different initiatives such as start-up boot camps, workshops and idea generating activities and also provide them incubation space in Chitkara University Incubation Centre to work on their business ideas.

(d) Library Resources: The University has a well-established library with internet and Wi-Fi facilities. All the library services are automated to save the time of students and anytime access of resources. Library actively contribute to increase student access to library resources by creating students' awareness and working critically to provide them all required information. Library hours are flexible to meet students' needs.

Lectures are conducted for the students of all batches at the beginning of each academic year wherein the students are appraised of various library services, nomenclature of book shelves, classification schemes, e-resources and print resources, research journals, library timing and rules and regulations.

(e) Academic Monitoring Committee: IQAC works jointly with academic departments to develop programs, adapt curricula and create learning activities that expose students to information and resource discovery and provide regular & ongoing opportunities to students to actively develop their information skills by giving a regular feedback on the same.

(f) Placements : To increase the employability of the students in addition to the regular teaching processes the University provide soft skills, aptitude, domain specific trainings and other grooming facilities to the students free of cost. It has set up Inlingua cell in the University which works on the soft skills and personality development of the students' by grooming them. It helps the students to appear confidently for any interview, group discussions or other professional conducts.

(g) Grievances and Counselling: Various committees are established to safeguard the interests of the students and to solve their grievances, if any. The IQAC keep a close check on the functioning and responses of these committees. Keeping in view the privacy, sensitivity and problems of the young generation, the University has appointed a Student Counsellor who stays on campus and communicate regularly with students who need the counselling services. The Student Counsellor also take sessions with students' of all batches and use different modes such as PPTs, role plays, brainstorming sessions to sensitize them about the various issues and to motivate them to face the life with positive attitude. The students' are mapped under different mentor (faculty), who acts as a guardian for the students in the University and is responsible for their overall performance in the University.

(h) Creating a Healthy Campus Environment: In addition to the necessary infrastructure IQAC keep a check if the students are getting proper services in hostels, messes and academic system including laboratories, IT, sports, transportation etc. With the suggestion given by IQAC the University is maintaining a daily MIS where the staff and students can raise a complaint for any maintenance service and the officials are required to take necessary action on the same within minimum stipulated time.

(i) Digitalization: The digitalization of the processes has facilitated the students by providing them convenience in terms of fee deposits, ERP, teaching and examination resources etc.

(j) Co-curricular activities: The university has formed various student clubs', wherein, they can participate in different domain of their interest. These clubs organises different activities such as quizzes, workshops, expert lectures and competitions. These clubs are managed by the students under the guidance of faculty in order to inculcate the leadership skills among them. The University also organizes different cultural, technical and sports festivals every year and also has self-financed NCC and NSS wing on Campus.

5.2 Efforts made by the institution for tracking the progression

IQAC in association with the departments provides centralized services and support to ensure consistent and high-quality advice and services across the University. It has the following primary functions towards tracking the Student Progression:

Graduation

- Facilitation of the conferral of Award following successful completion of degree requirements in annual convocation of the University;
- Production of Graduation documentation including Academic Transcripts, syllabus etc.;
- Verification of past Awards;
- Strong alumni network to keep a track on the students' progression;
- Regular interaction with graduates through programs such as alumni meets, board of study meeting, IQAC meetings etc. in order to get their feedback and valuable suggestion regarding latest trends in industry and course contents they have studied.

Academic Progression

- Providing academic calendar and course handouts of each subject at the beginning of each semester;
- Monitoring of students' progression through their program in the context of the Enrolment;
- Issuing of warning and show cause notifications related to above;
- Processing of show cause related submissions and subsequent administrative actions;
- University also has Mentor cell to track the progression of each student.
- The examination system has inbuilt mechanism for monitoring the progression.
- Faculty members are required to submit the result of each of the course within 5 working days of the conduct of exam. Based on the same, the students who have scored less than 40% marks are identified.
- These students are counselled by the concerned faculty member and offered all the necessary help through extra teaching sessions beyond class hours, extra practice questions etc.
- For exceptional cases, the parents of the concerned students are all apprised of their students' progress through mentors and ERP.

Enrolment

- Provide advice to staff and students in relation to key enrolment like admission, registration in each semester etc. dates and procedures;
- Contribution to publication and distribution of enrolment guidelines;
- Issue of circulars /notices through ERP and email for keeping them updated.

5.3 (a) Total Number of students

UG	PG	Ph. D.	Others
2082	20	5	-

(b) No. of students outside the state | 1436 |

(c) No. of international students | 82 |

Men
No	%
1593	76.5

Women
No	%
489	23.5

Last Year						This Year*					
General	SC	ST	OBC	Physically Challenged	Total	General	SC	ST	OBC	Physically Challenged	Total
382	15	5	39	0	441	448	32	1	47	0	528

Demand ratio   2:1   Dropout % 1

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

- Chitkara University conducts Chitkara Placement Module (CPM) during the sixth semester of BE program along with their regular courses. The main objective of this is to prepare students to get selected in upcoming placement drives as well as in competitive examinations. These training and development modules offer background knowledge over diversified industrial topics to boost the students' performance during job placements.

- Aptitude and communication skills are a source of gateway to pass preliminary tests conducted by numerous professional partnerships. These professional organizations are hired to impart Aptitude training (on campus) to help students to crack written test as well as technical interviews.

- In addition to this, personality development classes are conducted by the Inlingua Department of Chitkara University which helps the students to improve their soft skills. The department conducts a preliminary evaluation of all students during the first year of the course and categorises the various students in different groups based on the level of training required by them.

- Regular workshops on handling job interviews, recent trends in global markets etc. are also arranged to provide adequate exposure to challenging and emerging industry requirements.

DETAILS OF EVENTS

Sr. No.	Name of event/Support activity	Department	No. of students benefitted.
1	Aptitude Development Program	CE Department	80
2	Aptitude, reasoning & mental ability classes	CE Department	80
3	Technical Classes	CE Department	90
4	Aptitude Training by Rishi Gurukul	CSE	377
		ECE	122
5	Training by Bulls Eye Classes	CSE	377
		ECE	122
6	Chitkara Placement Module under which students are trained to crack written test as well as technical interviews	CSE	377
		ECE	122
7	Personality Development classes by CSL Department	CSE	377
		ECE	122
8	Introduction to CCNA Routing and Switching	ECE	39
9	Industry oriented course (Digital Design using FPGA) to final year students of batch- 2013(ECL 4413)	ECE	123
10	Industry Expert Sessions on advance wireless communication (ECL4412) from ZTE, ZCENT programme for Final Year Students.	ECE	123
11	Hands on workshop for students on "Analog Layout Design"(ECL4414)	ECE	123
12	Expert Lecture cum Seminar on "Analog Layout Design" (ECL4414)	ECE	123
14	English and aptitude classes	Civil	120
	No. of students beneficiaries		2897

5.5 No. of students qualified in these examinations

NET	0	SET/SLET	0	GATE	17	CAT	0
IAS/IPS etc	0	State PSC	0	UPSC	0	Others	7

Details of the GATE and other Examinations qualified by the students;

1. Mr. Amitjot Kamboj, S/O Sh. K.L. Kamboj, ID B120030015, of Department of Civil Engineering, has qualified GATE-2016 exam conducted in March 2016.

2. Mr. Ashish Malik, S/O Sh. Dalbir Singh, ID B120030030, of Department of Civil Engineering, has qualified GATE-2016 exam conducted in March 2016 .

3. Mr. Lokesh Bansal, S/O Sh. Sunil Bansal, ID B120030061, of Department of Civil Engineering, has qualified GATE-2016 exam conducted in March 2016.

4. Mr. Rajat Kamboj, S/O Sh. R.C. Kamboj, ID B120030089, of Department of Civil Engineering, has qualified GATE-2016 exam conducted in March 2016.

5. Mr. Mayank Dogra, S/O Sh. R.K. Dogra, ID B120030067, of Department of Civil Engineering, has qualified GATE-2016 exam conducted in March 2016.

6. Mr. Bhupesh Sumi, S/O Sh. R K Sumi, ID B120030038, of Department of Civil Engineering, has qualified GATE-2016 exam conducted in March 2016.

7. Mr. Lakshay Jindal, S/O Sh. Kulbhushan Jindal, ID B120030060, of Department of Civil Engineering, has qualified GATE-2016 exam conducted in March 2016.

8. Mr. Nitin Kumar 2012 batch of Electronics and Communication Department qualified GATE-2016 conducted in the month of March 2016.

9. Mr. Ashish Kumar 2012 batch of Electronics and Communication Department qualified GATE-2016 conducted in the month of March 2016.

10. Mr. Gursehajbir, S/O Sh. Gurpreet Singh Kang, ID B120030050, of Department of Civil Engineering, has qualified GATE-2016 exam conducted in March 2016.

11. Mr.Vipul Madan, S/O Sh. Manoj Kumar Madan, ID B120030131, of Department of Civil Engineering, has qualified GATE-2017 exam conducted in March 2017.

12. Mr. Ankit Kumar, S/O Sh. Pawan Kumar, ID B130030032, of Department of Civil Engineering, has qualified GATE-2017 exam conducted in March 2017.

13. Mr. Abhilaksh, S/O Sh. Dharamjeet Singh, ID B130030014, of Department of Civil Engineering, has qualified GATE-2017 exam conducted in March 2017.

14. Mr. Rishabh Khurana, S/O Sh. Ram Sawrup Khurana, ID B130030085, of Department of Civil Engineering, has qualified GATE-2017 exam conducted in March 2017.

15. Mr. Chirag Rana, S/O Sh. Daya Ram Rana, ID B130030040, of Department of Civil Engineering, has qualified GATE-2017 exam conducted in March 2017.

16. Mr. Ashish Kapoor, S/O Sh. Kishen Singh, ID B130030043, of Department of Civil Engineering, has qualified GATE-2017 exam conducted in March 2017.

17. Mr. Deepak Kumar, S/O Sh. Birbhan Singh, ID B130030080, of Department of Civil Engineering, has qualified GATE-2017 exam conducted in March 2017.

18. Mr. Rachit Sood, 2011 batch of Electronics and Communication Department qualified GRE-2016 conducted in November 2016.

19. Mr. Piyush sagar, 2010 batch of Electronics and Communication Department qualified GRE-2016 conducted in November 2016.

20. Ms. Shruti Arora, IDB120010385 of Department of CSE qualified Entrance Test of Thapar University, Patiala in 2016 to pursue PG.

21. Mr. Angad Partap Singh of Electronics and Communication Department qualified IELTS with 7 band score conducted in November 2016.

22. Mr. Jivanot Singh of Electronics and Communication Department qualified IELTS with 6.5 band score conducted in November 2016.

23. Mr. Arjun Sharma of Electronics and Communication Department qualified TOEFL conducted in September 2016.

24. Ms. Gurmeet Chaudhary of Electronics and Communication Department qualified TOEFL conducted in August 2016.

5.6 Details of student counselling and career guidance

- Chitkara University, Himachal Pradesh believes that each student deserves an opportunity to make optimum use of his or her abilities. With this view in mind, our university has started the practice of mentoring in which every student has a mentor who focuses on the overall development of the student during their four years of graduation.

- There has been a special cell made in Chitkara University, named "Student Mentorship Cell" in which each Faculty member of the University becomes the mentor to the distinct group of students. The mentor is a Friend, Philosopher and Guide to a student and helps him / her to grow not only as a professional but as an overall personality.

- The "Mentorship Cell" allocates the faculty mentors to the students. This plan has helped building student – teacher relationship more interactive and reduces the communication gap. Mentorship cell allocates students to the respective mentor's at least 7 days before the start of regular class work for a semester.

- In addition to this, the University has a full time student counsellor who works in close collaboration with students, parents, teachers, mentors and management to positively influence the learning and emotional well being of students. It involves collaborating with others about learning, social and behavioural problems that students experience.

- Student's counselling system has been taking care of student's redressals and issues like stress, problem solving, self-esteem, exam anxiety, coping strategies, adjustment problems etc. Student counsellor makes sure to assist students to move in the direction of fulfilling their potential, or achieve an integration of conflicting elements within themselves.

- Different therapies and Coping Strategies are used to help the student recover from their maladaptive believes and behaviour which are considered to be the main cause of problems. This whole process helps us to know students better and helping them change positively.

No. of students benefitted | 2089

5.7 Details of campus placement

On campus			Off Campus
Number of Organizations Visited	Number of Students Participated	Number of Students Placed	Number of Students Placed
76	565	393	55

PLACEMENT DETAILS

Name of the Company	Number of Students Placed	Name of the Company	Number of Students Placed
Abacasys	4	OpenText	6
Abellon Clean Energy Ltd.	2	Optymyze	3
Amazon	1	Orange	5
Baker Hill	2	Prolifics	3
Belwo Services	2	Rich Infra	1
Birlasoft	19	ROVI Corp, Capgemini	1
Bitwise Global	1	Sapient	1
Calsoft (5LPA), Amazon	2	Solitaire Infosys	0
Capgemini	30	Spice Digital	3
Cisco	2	Startup Farms	3
Code Brew Labs	1	Syscom	5
Cybage	7	Tata Technologies	4
Damco TestingXperts	10	Tech Mahindra	12
Emicon	2	Tek Systems	1
Evalueserve, HPE	1	Trantor, Calsoft	1
EXL Services	1	TT Consultants	2
FICO	1	Unisys (2.4 - 3.2 LPA)	4
Finxera	2	uTrade	4
Fiserv	3	Virtusa	3
Geeks Technical Solutions	24	Webonise	2
Gemini Solutions	4	XLPAT	2
GS Lab	3	Yamaha	2
Hitachi Consulting	3	Safran Identity and Security	4
HPE	1	Exousia tech private limited	3
IBS Software	6	Informatica	3
iNautix	52	Juspay Technologies	1
Informatica	2	Newgen	2
Infosys	71	NXP Semiconductors	1
Jade Global	3	Proloifics	1

Kellton Tech	4	Robochamp	6
KONY Labs	6	Afcons	4
KPIT	4	Jindal ITF	1
LGE Soft	1	QCI	1
Liquid Hub, Damco TestingXperts	1	Rich infra Ltd.	1
Mahindra Comviva	3	Salco India	2
Novoinvent	2	Tata Projects	1
OATI	1	CHC Consulting	6
Ocwen	2	Chitkara University, Punjab	2

5.8 Details of gender sensitization programmes

Gender sensitization- means modification of behavior by raising awareness about gender equality concerns. For the same concern, session were conducted with the students with an aim to educate students about respect and dignity of fellow students and building a conducive and healthy atmosphere in the campus, keeping in mind the present scenario of problems in our country.

Activity 1

The students were distributed into smaller groups of 5-10 and were made to frame their answers about-what does gender mean in your life? Given a chance, would you like to be a woman or a man? Discuss specific roles people play in our life/home/society relating to gender. The objective of the activity was to make the students understand the fact that equality is the essence of democracy. Democracy becomes hollow in the absence of equality. Gender equality should be the battle cry of today's democratic India.

Activity 2

The children were also made to do role reversal that is, how would they feel or what would they do if they were a man/ woman? The children took a lot of time to reflect and answer on this question. However, they did come up with interesting answers and most even realized that it was difficult in being in someone else's position.

Ragging-it is a similar practice to hazing in educational institutions. It involves existing students baiting or bullying new students.

It was mainly conducted to apprise students about various anti-ragging measures taken by the government, organization to curb ragging on the campus. The program also highlighted the different forms of ragging, its implications on the victim and his/ her family members. The students were also acquainted with various punitive actions to students involved in ragging. Overall, both the sessions gained a lot of participation from the students. They were actively involved in discussion and bringing about solutions.

5.9 **Students Activities**

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

Sports:

State/ University level | 831 | National level | 10 | International level |

Cultural Events:

State/ University level | 1324 | National level | | International level |

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

Sports: State/ University level | 159 | National level | | International level |

Cultural: State/ University level | 119 | National level | | International level |

Details of Student Participation in Sports – Inter University

Sr. No.	Event / Theme / Activity	Level	Date	Place	No. of Participants	Prizes /Award /Achievements
1.	Basketball	University	22/09/2016 to 25/09/2016	IIT, Mandi	10	First
2.	Volleyball	University	22/09/2016 to 25/09/2016	IIT, Mandi	10	-
3.	Table Tennis	University	22/09/2016 to 25/09/2016	IIT, Mandi	10	-
4.	Cricket	University	01/12/2016	Meerut University	15	-
5.	Football	University	16/01/2017	Desh Bhagat University	15	-
6.	Weight Lifting	University	18/01/2017 to 20/02/2017	Panjab University	7	-
7.	North Zone Inter University Table Tennis Tournament (M&W)	University	08/02/2017 to 11/02/2017	CU, HP	10	-
8.	All India Inter University Table Tennis Tournament (M&W)	University	13/02/2017 to 16/02/2017	CU, HP	10	-
9.	Badminton	University	11/04/2017 to 13/04/2017	Baddi University	5	-
10.	Volleyball	University	11/04/2017 to 13/04/2017	Baddi University	10	First
11.	Football	University	11/04/2017 to 13/04/2017	Baddi University	10	Second

Details of Student Participation in Sports – Intra University

S.No.	Name of Club	Date of Event	Name of Event	No. of Participants	List of Winners with position
1	CU ARCS	6/9/2016	6 on 6 Cricket	86	Boys Winners- J-Fam Runners Up- The Undergogs Girls Winners- Ridhi's Team Runners Up- Aparajita's Team
2	CU ARCS	16/9/2016	Cross Country	180	GIRLS:1st Rochit Rajput 2nd Kritika 3rd Rashi BOYS:1st Digvijay 2nd Shubham 3rd Rajat Kanwar
3	CU ARCS	20/9/2016	4 A Side Soccer	50	1st - Majestics FC 2nd -Yeti FC.
4	CU ARCS	13/10/2016	Chitkara University Premier League	18 teams	Winners-Roaring Rivals Runners Up-Royal Strikers
5	CU ARCS	14/10/2016	Volley ball premier league	56	1st -Team Ball Busters. 2nd -Team Flames.
6	CU ARCS	19/11/2016	Pool, TT & Badminton Tournament for faculty	45	-
7	CU ARCS	28/1/2017	Fitness Challenge	40	Sumit,Paras,Abhinandan, Arun,Ankit Sanghwan, Himanshu,Mirnal Ankit
8	CU ARCS	4/3/2017	T-20 Cricket Tournament	14 teams	-

STUDENT CLUB ACTIVITIES

Sr. No	Name of Club	Date of Event	Name of Event	No. of Participants	List of Winners with position
1.	S.U.F.Y.	10/8/2016	CALLITONE	20	NA
2.	Maths Pirates	20/8/ 2016 to 27/8/2016	Freeze the Seconds	47	Ist: Sanyam 2nd: Komal Kumra
3.	CUT-C	22/8/2016	Interactive session with the 1st year students	55	NA
4.	CUT-C	22/8/2016	Auditions for TAMASHBEENZ	89	15 students selected
5.	S.U.F.Y.	23/8/2016	DECLAMATION	18	1st:Anshita 2nd: Naman
6.	Euphony	24/08/16	Let the Music Play	23	kartikey ,Pankaj ,Arshdeep Chandraveer,Reetik Mehra Nitish,Pratyaksh
7.	PicIt Photography Club	30/8/2016	Best Campus Shots	23	1st-Aditya Bansal
8.	CSI	5/9/2016	Talk on Artificial Intelligence	65	NA
9.	MYSTICS	6/9/2016	Interactive Session and Quiz	27	1st : Sarvottam Prajapati and Nishant Bansal
10.	CIVENGS	7/9/2016	General Technical Quiz	93	1st-Rajat Bharadwaj and Rahul Garg 2nd-Aneesh Rathee and Preet kanwal
11.	Maths Pirates	8/9/2016	Workshop on git and github	92	NA
12.	CIVENGS	15/9/2016	Engineer's Day Celebration	Batch 2014 Civil	NA
13.	3CTECH	15/9/2016	Tech Talks	20	NA
14.	3CTECH	20/10/2016	Graphic Designing Workshop	83	NA

15.	IETE	22/09/16 & 23/09/16	BASIC CIRCUIT ANALYSIS CONTEST	58	1st: Gurvinder Singh & Hitesh
16.	S.U.F.Y.	29/9/2016	BE MY HOST	120	NA
17.	CUT-C	6/10/2016	Dumb charades	48	1st-Nisha,Nishchit,Harshita, Natasha, Mahima
18.	PicIt Photography Club	13/10/2016 to 20/10/2016	Mr. & Ms. Photogenic	20	Mr Photogenic: Japarsh Singh Ms Photogenic: Pallavi Saini
19.	Maths Pirates	Round 1: 13/10/2016 Round 2: 17/10/2016	Solve The Unsolved	81	1st :Amritpal Singh, Harinderpreet 2nd :Anuj,Sarvotam
20.	CUT-C	19/10/2016	Karva night	52	1st : Gauri
21.	CIVENGS	20/10/2016	Scrap It	36	1st-Kareena and Aastha 2nd-Rashee and Neha
22.	IETE & MYSTICS	21/10/16 & 22/10/16	MULTISIM DESIGN CONTEST	15	NA
23.	IETE & MYSTICS	21/10/2016 to 22/10/2016	Workshop on Multisim	40	NA
24.	Staccatos	24/10/2016	online competition	4	1st : Atul
25.	Euphony	06/11/16 – 08/11/16	Online Singing	7	1st:Jayant 2nd:Arshdeep Singh 3rd :Pankaj
26.	CSI	9/11/2016 to 11/11/2016	Workshop on PHP, HTML	70	NA
27.	Maths Pirates	15/11/2016	Vedic Mathematics Workshop	39	NA
28.	CU Isotopes	16/11/2016	Friend's chat	18	Ist – Nischay Mehta 2nd – Avneet Singh
29.	Euphony	18/11/16	Antakshari	21	1st: Natasha Aggarwal, Kritika Gupta, Mahima,Prashakhika
30.	Hostel Committee	13/01/2017	Lohri Celebration	Open	Fun Event

31.	CUT-C	13/1/2017	Lohri Celebration	67	NA
32.	PicIt Photography Club	21/1/2017	Photo Walk	27	1st-Keshav Gyasra 2nd-Mr.Manjeet Saravar
33.	S.U.F.Y.	24/1/2017	POETRY COMPETITION	10	1st:Devesh 2nd:Parth
34.	CSI	28/1/2017	Talk on Data Protection	20	NA
35.	Hostel Committee	30/01/2017	Kite Flying	12	Fun Event
36.	Maths Pirates	Round 1: 1/2/2017 Round 2 : 28/2/2017	Ganit Erreur'17	96	1st:Akash Rana, Aman Bansal, Anant Garg 2nd : Anuj, Sarvottam, Nirmal 3rd :Jasleen , Japarsh , Akhil
37.	Euphony	03/02/17	Patriotic Singing Quiz	53	1st:Sawan, Nikhil, Pankaj 2nd : Pareena, Manvi, Niharika
38.	Hostel Committee	08/02/2017	Bollywood Quiz	8	Saurav , Pranav
39.	Hostel Committee	08/02/2017	Tambola	32	Chirag, Aastha ,Priyanka
40.	CIVENGS	9/2/2017	Dream House	54	2014 batch winners:- 1st-Shubham Jindal, Prateek Yadav and Vinay Chaudhary 2nd-Chirag, Devender and Harnoor 3rd-Sanchit,Shubham and Pawan 2015 batch winners:- 1st-Kartavya and Ashish Pathania 2nd-Binod, Dipesh and Avishek 2016 batch winners:- 1st-Anushka, Ishani and Ashu 2nd-Arpit, Chitraksh and Manas
41.	PicIt Photography Club	14/2/2017	Best Campus Shots 2	24	Aditya Bansal- First Prize
42.	CU Isotopes	15/2/2017	Chemistry Quiz	18	Ist – Arundhati Thakur 2nd – Parth and Rudresh
43.	IETE	17/02/17 & 18/02/17	Digital Design on FPGA	36	NA

Sr. No.		Date			No. of Participants	Prizes /Award /Achievements
44.	CU Isotopes	28/2/2017	Science Quiz competition	32	Ist – Deepak, Armaan, Anmol 2nd – Gurinder, Jeevan, Sujan 3rd – Aman Bansal, Aishwarya, Anant
45.	CU Isotopes	28/2/2017	Poster making competition	32	Ist – Paramjit Singh 2nd – Parul, Pooja 3rd – Damini, Amneet Singh
46.	Staccatos	1/3/2017	Staccatos Stage Choreos	13	NA
47.	Hostel Committee	02/03/2017	Counter Strike	40	Tarun and Team
48.	3CTECH	9/3/2017	Tech GD	13	1st :Reya Jain 2nd :Pritish Jha

DETAILS OF CULTURAL ACTIVITIES

Sr. No.	Event / Theme / Activity	Level	Date	Place	No. of Participants from CU	No. of Participants from Outside CU	Prizes /Award /Achievements
1.	Slam poetry	University	29/09/2016	PEC	1	0	Harnoor Singh
2.	Euphonious Fusion	University	30/9/2016	CUHP	21	90	Gaurav, Chandigarh University, Rs 10,000
3.	Abhinaya	University	30/9/2016	CUHP	17	50	Rohit, CUHP, Rs 10,000
4.	Battle of Bands	University	30/9/2016	CUHP	8	48	Team Rudra, Delhi University, Rs 40,000
5.	Theatre Chit-Chat	University	30/9/17	CUHP	8	50	Khalsa College,CHD, Rs 30,000 Thapar University, Rs 15,000
6.	Folklore	University	30/9/2016	CUHP	19	119	Bhangra Regiment, CUPB, Rs

							50,000 Jaypee University, Rs 25,000
7.	Fantastic Toe	University	1/10/2016	CUHP	13	148	Shiv & Rohit, Universal Group of College
8.	Hallabol	University	1/10/17	CUHP	27	78	PEC Rs 50,000 CUHP, Rs 25,000
9.	Vogue	University	1/10/17	CUHP	29	167	IHE, Rs 75,000 CUHP, Rs 30,000
10.	Stomp the yard	University	1/10/17	CUHP	14	130	DAV 10,CHD Rs 50,000 DWD, Rs 25000
11.	Rap It Up	University	1/10/17	CUHP	18	49	Nim, SD College Rs 10,000
12.	Mr. & Ms. Algorythm'16	University	1/10/17	CUHP	40	180	Abhishek Verma, DAV, Rs 5,000 APG shimla, Rs 5000
Total					215	1109	

5.10 Scholarships and Financial Support

	Number of students	Amount
Financial support from institution	14	Rs. 7,65,625/-
Financial support from government	06	NA
Financial support from other sources	13	Rs. 2,95,000/-
Number of students who received International/ National recognitions	0	0

5.11   Student organised / initiatives

Events   : State/ University level | 70 | National level | | International level | |

Sr. No	Organised By	Date	Event /Theme /Activity	Participants	Prizes /Award /Achievement
1.	S.U.F.Y.	10/8/2016	CALLITONE	20	NA
2.	Maths Pirates	20/8/ 2016 to 27/8/2016	Freeze the Seconds	47	Ist: Sanyam 2nd: Komal Kumra
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					2nd-Aneesh Rathee and Preet kanwal
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27.	3CTECH	20/10/2016	Graphic Designing	83	NA

			Workshop		
28.	IETE & MYSTICS	21/10/16 & 22/10/16	MULTISIM DESIGN CONTEST	15	NA
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43.	MYSTICS	28/1/2017	Electro-Hunt	27	1st - Ayush Thakur& Arman Sharma 2nd : Akash Rana& Anant Garg
44.	Hostel Committee	30/01/2017	Kite Flying	12	Fun Event
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51.	CU Isotopes	15/2/2017	Chemistry Quiz	18	Ist – Arundhati Thakur 2nd – Parth and Rudresh
52.	IETE	17/02/17 & 18/02/17	Digital Design on FPGA using Xilinx	36	NA
53.	CU	28/2/2017	Science Quiz	32	Ist – Deepak, Armaan, Anmol

	Isotopes		competition		2nd – Gurinder, Jeevan, Sujan 3rd – Aman Bansal, Aishwarya, Anant
54.	CU Isotopes	28/2/2017	Poster making competition	32	I st – Paramjit Singh 2nd – Parul, Pooja 3rd – Damini, Amneet Singh
55.	Staccatos	1/3/2017	Staccatos Stage Choreos	13	NA
56.	3CTECH	9/3/2017	Tech GD	13	1st :Reya Jain 2nd :Pritish Jha
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3.	Abhinaya	University	30/9/2016	CUHP	17	50	Rohit, CUHP, Rs 10,000
4.	Battle of Bands	University	30/9/2016	CUHP	8	48	Team Rudra, Delhi University, Rs 40,000
5.	Folklore	University	30/9/2016	CUHP	19	119	Bhangra Regiment, CUPB, Rs 50,000 Jaypee University, Rs 25,000

6.	Theatre Chit-Chat	University	30/9/17	CUHP	8	50	Khalsa College,CHD, Rs 30,000 Thapar University, Rs 15,000
7.	Fantastic Toe	University	1/10/2016	CUHP	13	148	Shiv & Rohit, Universal Group of College
8.	Hallabol	University	1/10/17	CUHP	27	78	PEC Rs 50,000 CUHP, Rs 25,000
9.	Vogue	University	1/10/17	CUHP	29	167	IHE, Rs 75,000 CUHP, Rs 30,000
10.	Stomp the yard	University	1/10/17	CUHP	14	130	DAV 10,CHD Rs 50,000 DWD, Rs 25000
11.	Rap It Up	University	1/10/17	CUHP	18	49	Nim, SD College Rs 10,000
12.	Mr. & Ms. Algorythm'16	University	1/10/17	CUHP	40	180	Abhishek Verma, DAV, Rs 5,000 APG shimla, Rs 5000

5.12   No. of social initiatives undertaken by the students   39

The two major social initiatives undertaken by the students are as under;

Sankalp: The NSS Volunteers gathers children from the nearby villages to Chitkara University and provide them education and basic hygienic instruction and provide various platforms to develop their skills. These classes remain regular during the semester except exam days, holidays and refreshment is given to these children.

Unnati: It is an initiative in which the NSS Volunteers provide basic computer education to the children of surrounding village on every Tuesday and Friday from 4:30 pm to 6:00 pm. Students are also shown motivation autobiographies of National Freedom Fighters and leaders such as Mother Teresa, Swami Vivekananda etc.

In addition to these two, the university organizes the following activities at regular interval too;

Sr. No.	Event /theme /activity	Date
1.	Blood Donation Camp	April 22, 2016
2	International Day of Yoga	June 21, 2016
3	Sankalp	Regular
4	Unnati	Regular
5	Group discussion on Cleanliness	August 1, 2016
6	Pledge on Cleanliness	August 1, 2016
7	Shramdaan	August 1, 2016
8	Cloth Distribution Drive	August 4, 2016
9	Independence Day Celebration	August 15, 2016
10	Tree Plantation Drive	August 15, 2016
11	Swatchh Bharat Oath	August 15, 2016
12	Shramdaan	August 18, 2016
13	Door to Door Campaign on Swatchh Bharat	August 19, 2016
14	*Open Discussion on Cleanliness*	August 22, 2016
15	Blood Donation Camp	August 23, 2016
16	Sankalp	Regular
17	Unnati	Regular
18	Poster making Competition on Defecation Free INDIA	September 12, 2016
19	Rally on Defecation Free INDIA	September 12, 2016
20	NSS Showcase	September 30, 2016
21	Sankalp	Regular
22	Unnati	Regular
23	NSS Adventure Camp	Oct 1-10, 2016
24	Pledge on Rastriya Ekta Diwas	October 17, 2016
25	Diwali Celebration	November 2016
26	Sankalp	Regular
27	Unnati	Regular
28	Visit to Mother Teresa Handicapped Home, Saket, Panchkula	November 6, 2016
29	Blood Donation Camp	November 17, 2016

30	Training of NSS Programme Officer	November 17-23, 2016
31	National Integration Camp	December 11-17, 2016
32	Sankalp	Regular
33	Unnati	Regular
34	Cloth Distribution Drive on account of National Youth Day	January 12, 2017
35	Awareness Rally on Traffic Rules and Road Safety	January 16, 2017
36	Awareness Rally on the Blood Donation	January 24, 2017
37	Blood Donation camp	January 25, 2016
38	Republic Day Celebration	January 26, 2017
39	Campaign on Vittiya Saksharta Abhiyan (VISAKA)	January 28, 2017

5.13 Major grievances of students (if any) redressed:

The University has formed a grievance redressal cell to handle all type of complaints. In addition to this it also has a women safety committee, anti-ragging committee, ombudsman and grievance redressal committee, committee to prevent cast based discrimination and University disciplinary committee. No serious grievance was reported and the University Committees has provided a suitable resolution to the grievance it has received.

Criterion – VI

6. Governance, Leadership and Management

6.1 State the Vision and Mission of the institution

VISION

To contribute in building a knowledge society through innovation and academic excellence

MISSION

To be amongst the top 10 private universities in the country by the Year 2020.

6.2 Does the Institution has a Management Information System

Yes

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

6.3.1 **Curriculum Development**

The University has a systematic and institutionalized process of design and development of curriculum and involves Board of Studies (B.O.S.) that includes internal and external expert members. The departments have coordinator of courses to develop, revise or update the curriculum of their respective courses as approved by Academic Council to incorporate latest knowledge development. Most of the departments have included the guest lectures and industrial visits in the curriculum for providing industrial exposures to the students. The MOOCs are also supplementing the regular teaching.

6.3.2 Teaching and Learning

➢ Teaching and learning has been organized through the academic calendar of the University.

➢ Industry oriented learning through courses like JAVA/HTML/PHP/PYTHON/RAPTOR to students as part of ongoing "Integrated Projects".

➢ Blended learning through e-resources. Lecture recording facility available which provides innovative video enabled learning solutions that drive better outcomes in the higher education sector. Learning through MOOCs and Industrial visits for the academic exposure of the students.

- Enrichment of learning experiences through application oriented assignments and integrated projects in majority of the courses.
- Learning through various student oriented activities like group discussion, educational tours, quiz competitions, declamation contests, project making and poster making competitions.
- Students are encouraged to participate in the in workshops /conferences etc.
- Student centric learning through extensive use of Information and Communication Technologies.
- Library equipped with e-resources. Fostering the culture of knowledge acquisition through wider self-exposure to latest knowledge through on-line subscribed books and journals.
- Concretization and enrichment of learning experiences through mandatory assignments, seminar presentations, and project work.
- Ensuring team teaching by deputing teachers to teach the specialised topics in their expertize areas. Strong policy of train the teacher, organizing refresher courses and participating in conferences / seminars / workshops is adopted.

10.3.3 Examination and Evaluation

Examinations

The university examinations have two segments;

Internal Assessment: It comprises of quiz tests, seminars, class participation and Mid Semester Examination and any other component of evaluation to be decided by the faculty.

External End Semester Examination: It is conducted at the end of each semester. There are three Sessional Tests namely, Sessional Test 1, Sessional Test 2 and Sessional Test 3. Results of best two Sessional Tests are taken in to account to calculate the Grade Point Average. The dates of Examination(s) are as specified in the Academic Calendar.

Evaluation

Evaluation is carried out under the supervision of Controller of Examination (COE), at time and place earmarked for the same. Secrecy series are provided to all answer sheets before the central evaluation starts. The time, date and place of evaluation is pre notified to the concerned examiners. All answer scripts are marked at a place centrally designated by the COE. Marks are entered on inside pages of the answer book, for each question. Award list is filled by examiner with hand, indicating marks secured in words and figures, and signed clearly. The internal marks are made available to the students on ERP portal of the University on their individual logins. Marks for each course are compiled for the whole course and converted to letter grades. The grades then are converted into Semester Grade Point Average (SGPA) and Cumulative Grade Point Average (CGPA) for each student and final results are

prepared by the Examinations Branch. The results is declared within the time schedule fixed by the Examinations Committee and Grade Card prepared for each student. A student is entitled to apply for re-evaluation on payment of prescribed fee for each subject within 15 (fifteen) days of the date of publication of result. The Controller of Examinations gets re-evaluation done to ascertain whether the marks awarded to various answers have been correctly added and whether the examiner has evaluated answers to all the questions written by the examinee. In case the variation of marks in first and second evaluation is more than 10 % then the answer sheet is evaluated by the third examiner and after that the average of closest two evaluations is considered as the final result.

6.3.4   Research and Development

- Chitkara University is known for its strategic, multidisciplinary research. The university has been continuously augmenting infrastructure for facilitating research on the campus through an extensive network by its researchers, staff and students, who work across disciplines to extend the boundaries of knowledge.

- At CURIN various research centres build and sustain Chitkara University's competitive advantage through leadership. These centres and institutes are the locus of research for collaborative groups of investigators pushing the frontiers of knowledge forward. They are involved in cutting edge research, exploring new technologies to create highly efficient solar devices, developing ever-smarter applications, creating new materials and using wireless sensors networks that improve the country's infrastructure and safety — and contributing to society through many other discoveries and innovations.

- The university has submitted more than 25 patents over a period of last 3 years and continues in this area of promoting research and innovation among faculty and students.

- In order to boost faculty to pursue research, the university provides adequate research infrastructure to each faculty members and access to research labs, several e-resources of the library.

- The university supports the departments financially to organize conferences/ symposia/ workshops of National and International levels. It also provides seed money and research allowances to the faculty to undertake the research in various areas including patents.

- The university provides financial support to every faculty members to participate in conferences/symposia/workshops organized in the country and abroad.

- Office of Patent Facilitation & Licensing Consultancy (OPFLC), Chitkara University has an easy patent policy under which all the expenses related to government fee of patent filing, fee of patent attorneys etc are borne by the university and 90% of the commercials rights of the patents rest with the inventors

- The University has a strong industry academia collaboration with several MNCs which are helping our research scholars to perform lab experiments.

6.3.5 Library, ICT and physical infrastructure / instrumentation

Automation

➢ The University is fully automated with WiFi campus. All its processes like admission, hiring of staff, purchase, mess, fee collection etc. are digitalized. It also in houses a well-established digital library with different softwares like KOHA, DSPACE, JOOMLA.

➢ Circulation of resources fully computerised and accessible online anytime, anywhere through University ERP system

Digital Library

➢ Fully equipped Separate digital library section for students to access library resources and services round the clock.

➢ Independent library website for online access to journals, eBooks and learning resources

➢ Access to the latest computing equipment – facility is available to telecast NPTEL and other lectures

Infrastructure

➢ Independent multi- story buildings to develop contemporary, attractive, flexible and accessible spaces that engage students and provide opportunities for meaningful learning experiences.

➢ Technology-enriched spaces are incorporated into laboratories to facilitate both individual and collaborative learning. Laboratories are well equipped with state of the art infrastructure.

➢ The University regularly solicits suggestions from students and staff to improve services, facilities and infrastructure and shares it with the concerned departments and IQAC.

➢ Industry sponsored laboratories are established.

➢ Clean and hygienic living areas are provided to the staff and students.

➢ Fully secured campus under the surveillance of 120 CCTV cameras. Fully equipped wellness center where round the clock availability of doctor is ensured. Indoor and outdoor sports facilities and gymnasium facility is also available.

6.3.6 Human Resource Management

The university has an adequate pool of qualified human resources in the form of regular full time faculty, adjunct faculty, visiting faculty to take care of its requirements. Considering the prevailing environment in the country the faculty members of the University are suitably qualified and are regularly provided opportunities to enhance their skills.

The process of curriculum designing in the University has already been explained. However, it is to be mentioned again that the qualified pool of human resource in the University works hand in hand with other scholars and experts invited from the other universities and industry at the state and national level. If any short fall is identified in any part of the qualified pool of human resource, the services of experts outside the university is availed. Short fall, if any, is supplemented by appointing part time / temporary faculty in different areas as well as utilizing the services of qualified administrative staff.

6.3.7 Faculty and Staff recruitment

The vacancies are positions are approved, and advertised for seeking profiles of suitable candidates. The medium used for such advertisement includes print media, job postings on Chitkara University website, postings on job portals, internal circulation in the University for referrals, recruitment consultants etc. From the pool of CVs that is generated, they are then screened as per the recruitment guidelines as laid down by regulatory authorities and short listing criteria.

On short listing, the candidates are then contacted telephonically and through email to understand their inclination in the open position as identified and to attend an interview. A copy of their latest resume is also sought at this time. With the lining up of candidates, process of selection begins. A CV of the candidate is sent to the HODs/Dean and a selection panel for interview is formed. Such panel is called a Selection Committee in the University and generally comprises of Vice Chancellor, Dean Academic, HODs (as per relevant position) and subject matter experts. An invite is sent across to the Selection committee members seeking their participation to finalize convenient interview dates. On finalization of the date and location of Selection Committee, the candidates already shortlisted are informed and interaction takes place.

6.3.8 Industry Interaction / Collaboration

- Regular industrial visits bridges the gap between theoretical training and practical learning in a real-life environment and help students to gain hands-on experience of how industry operations are executed.
- Industry oriented learning through courses like JAVA/HTML/PHP/PYTHON/RAPTOR to CSE students as part of ongoing "Integrated Projects".
- The University also organizes workshops and training and awareness programmes where experts from industries are involved.

- Industry academia collaboration with NVIDIA under which it has a set a dedicated lab for parallel and distributed computing. Students work on enhancing their programming skills wherein the coding is done on the CUDA platform offered by NVIDIA. The course has a huge potential of research work and 2 of faculty members are actively engaged in research on parallel computing in cyber security. This collaboration helps the researcher to get a DST sponsored project in parallel and distributed computing.

- Under collaboration with Infosys Limited, the industry-institute academic alliance offers several training programs to faculty members and research scholars.

- Under Industry Institute Interaction the workshops on latest technologies like Python has been offered as course in the current academic year. The course is being conducted according to the contents and guidelines provided by Infosys.

- In order to have continuous and sustained engagement between large corporate and innovative technology ventures, the University connects the startup to industry leaders for better exposure and knowledge to build their business. Few of the industry partners are: JAARVIS Accelerator, Chandigarh Angel Network, Xovian, IndianWeb2, Yellow Cursor, etc.

6.3.9 Admission of Students

The University ensures wide publicity to the admission process through notification and advertisements in local and national newspapers as well as on the University website. Admission notifications along with the eligibility criteria are circulated through newspapers. These notifications are also placed on the University website. The process is implemented by the Admission Cell. The Admission Cell is entrusted with the responsibilities like the preparation of admission notification, course directory and identification of centres for entrance examinations, if required. There is separate admission procedure for M. E. and Ph. D. courses administered through Post Graduate Admission Cell and Departmental Research Committees.

6.4 Welfare schemes for

Teaching	Yes
Non teaching	Yes
Students	Yes

6.5 Total corpus fund generated

Rs 3 Crore.

The same is deposited with Government of Himachal Pradesh

6.6 Whether annual financial audit has been done   YES

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

Audit Type	External		Internal	
	Yes/No	Agency	Yes/No	Authority
Academic	Yes	HP-PERC, UGC, HP Govt., AISHE	Yes	IQAC
Administrative	Yew	HP-PERC, UGC, HP Govt., AISHE	Yes	IQAC, CFO

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

For UG Programmes   Yes

For PG Programmes   Yes

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

Improvement Examination: University has decided to provide a special chance to already pass out students to help them in improving their CGPAs. A particular student will be permitted to apply for improving CGPA by appearing in any of the five theory course examinations of his /her choice. Student will be permitted to improve his/her CGPAs only within 2 years of completion of regular degree.

Disclosure of evaluated answer sheet to Examinee: Any student who wish to see his/her answer sheet, then he/she has to first apply for re-evaluation and then in case of any doubt he/she may apply for physical verification of the answer sheet. The answer sheet will be shown to the student in the presence of subject expert along with a person nominated by the Controller of Examination.

6.10 What efforts are made by the University to promote autonomy in the affiliated/constituent colleges?

Not Applicable

6.11 Activities and support from the Alumni Association

- Strong linkages with the Alumni under the aegis of Chitkara Alumni Network (CAN) .
- Conduct of lectures: ALMA MATER
- Alumni meets
- Feedback on training and placement support
- Feedback on curriculum development
- Participation of alumni in IQAC and other committees

6.12 Activities and support from the Parent – Teacher Association

➢ Taking parent teacher association to the next level the University initiated the practice of Mentorship, wherein a group of 15-20 parents interact with a faculty mentors who acts as an in house guardian of the student in the University and keep a close eye on all his academic and daily activities.

➢ In case of observance of long period of absence (more than one week) of a student, an attempt is made to gather information from his fellow students. In case of their inability to provide the desired information, a telephone call is made to the parents of students to know the where about of student under the intimation of concerned HOD.

➢ In case of involvement of any student in any undesirable activity, mentor counsel the student and also inform the parents about the same in case the situation warrants.

➢ Mentors are required to conduct regular mentor meetings and prepare minutes of meeting for their records. In case of any conversation with parents, record of communication with parents are maintained by mentors and updated in ERP system for the reference.

➢ After Sessional test 1, SMC circulates the list of students whose attendance has fallen below 75%. Mentors are told to take undertakings from such students duly signed by their parents in the specified format.

➢ Parents of students of all batches who are having any backlog were called for a meeting in the University with the mentor and the respective head of department. A thorough discussion with the parents is done in order to improve the academic performance of their ward.

6.13 Development programmes for support staff

- Skill Upgradation Programs
- Sports & Recreation activities

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

➢ Rain Water Harvesting: Roof top rain water is collected to minimize the withdrawal from groundwater and is used for ground water recharge.

➢ The University has installed noise free generators for power backup to avoid Noise Pollution.

➢ Waste Management: The solid waste management through recycling is achieved through recycling plant at university, with the aim to recycle waste paper and converted into new papers, file covers, sheet, noting pad etc.

➢ Kitchen waste is taken care by Vermi composting.

➢ Own nursery, to enrich and sustain Greenery and maintain Flora and Fuana of the geography.

- Sewage Treatment Plant of 250 KLD has been installed. The treated water is being used for plantation within the premises.
- Regular Tree Plantation
- Separate bins for recycled waste
- Array of solar panels installed on rooftop of hostel and institute buildings.
- Hydroponic Farming- Based on Nutrient Film Techniques: The University has set up a Hydroponic Farming plant in its campus where tomatoes, broccoli and strawberries are produced using this technique. The total cost of the project is Rs. 9.5 lacs (approximately) whereby 15-20 kg seasonal vegetables are produced per day.
- Green Building: The students of Civil Engineering Department of the University have constructed a "Bio- Texture" green home as a live project during the semester in collaboration with ACC Cement Ltd. The material used includes Vehicle tyres, trash bottles and scrap. The cost of the project is Rs. 1.6 lakhs (approximately).
- Fire Safety: The University has followed all the guidelines for fire safety as per relevant Codes.

Criterion – VII

7. <u>Innovations and Best Practices</u>

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

The following innovations have been introduced over a period of time and during this session which created a positive impact on the functioning of the university:

➢ The result analysis of ST's helps faculty to focus on weak students in their respective courses. The students are being taken care through giving and evaluating assignments. Teaching beyond working hours provides support to majority of students. These classes were delivered by senior students to junior students under guidance of an expert faculty member.

➢ The formation of buddy system impact positively in academic performance of students.

➢ Outsourced Industry Professional to train the students under University Coding Academy (UCA).

➢ Udacity "Nano degree programme" for the students of BE CSE opted under the Integrated Project course.

➢ MOOC courses from SWAYAM platform offered.

➢ Introduction to knowledge through innovative video enabled learning solutions that drive better outcomes.

➢ The University has adopted project-based learning as a keystone of its pedagogy. The students are assigned projects in each semester to develop their innovative potential. The project statements are designed after due deliberations and the students are encouraged to arrive at the driving question and the problems that need to be solved based on that. The projects are so designed that they have more than one solution and the students are encouraged to apply their minds to identify those solutions, evaluate those and adopt the most suitable solution.

➢ The practical exercises in various laboratories are also designed to develop creativity amongst the students. For this purpose simulation software, like LABVIEW, MATLAB, Full suite of Cadence Design Tools have been procured by different departments.

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

Plan of Action	Action Taken
• Scheduled Academic Monitoring	• Conducted successfully thrice every semester for all courses offered
• Recommendations for Industrial Visits	• Departments arranged visits to several recommended industries / research laboratories.
• Invited Talks in courses	• Students benefitted through several Invited Talks/Seminars by resource persons
• Motivating Faculty for Research	• The faculty submitted various research projects to the different funding agencies and received research grant of more than Rs 40 Lacs in 2016-17.
• Recommendation for blended learning	• In addition to the regular courses, students have been provided the option to enrol for MOOCs at ITPL, ADX, Coursera, Swayam, Online Nano degree courses and credits have been awarded to the same.
• 24X7 Learning Processes	• In addition to the traditional classroom teaching the University has introduced Video Lectures Recording in several courses, to facilitate round the clock availability of learning resources.
• Research and Innovation	• Multi-disciplinary research projects were offered in the integrated Projects in each semester. NOVATE competition, Start-Up days and IPR sensitization programs were organised to promote research and entrepreneurship . Students and Faculty filed 12 patents during this academic year.
• Implementation of Industry feedback in the curriculum	• As per the suggestion received from the industry the University motivated the students and faculty to get certified by various certification agencies such as Python, Java and Oracle DBA etc. to increase their employability.
• Making the staff and students' socially responsible	• Initiatives were taken towards digitalization, NSS integration camp. Based on these initiative the University was awarded Environmental Leadership Award by Government of Himachal Pradesh for its contributions towards environmental conservation and social upliftment.

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

Best Practice I: Project Based Learning

Project Based Learning is introduces to boost the innovative thinking of the students and to take it to the next level through patenting their ideas. A tremendous growth has been seen with the implementation of this practice where the University has not only established an IPR Cell sponsored by Himachal Pradesh State Council of Science Technology and Environment but also has filed more than 25 patents till date and funding of over 1 crore from Research Projects of faculty.

Patents Filed :

1. **Alternative Construction Material Made from Electroplating Industry Sludge and a Method to Prepare the Same -** Dr. Varinder S Kanwar
   It provides a method of stabilizing & solidifying the industry sludge and after studying its engineering behavior it could be used as mortar mix or concrete mix.
   Patent Filing Number - 498/DEL/2015

2. **Improved Multifunctional Duster and Eraser Assembly for Writing Board –** Dr. Sushil Kumar
   An improved duster that could hold both markers and chalk, has a fluid cleaner for wet erasing, features dry erasing and a mechanism to hold the chalk dust inside the duster itself.
   Patent Filing Number - 1369/DEL/2015

3. **Improved Multi Level Food Tray –** Dr. Rajnish Sharma
   The invention proposed a improved food tray that feature thumb & finger grip, pocket to hold cutlery, it is compact as it is multilevel with slide-able and removable compartments.
   Patent Filing Number - 1731/DEL/2015

4. **User Controlled Automatic Timer Based Mosquito Repellent Device -** Sagar Juneja
   Invention proposed a repellent machine that we switch off after 8 hours, it features various burst modes so that machine is not ON all the times thus prevent wastage and long exposure to harmful fumes.
   Patent Filing Number - 1937/DEL/2015

5. **Automatically Adjustable Laptop Stand** - Dr. Neha Kishore & Vivek Khanna
   An automatic adjustable laptop/desktop stand enables the screen to move up/down and horizontally depending upon the posture of using a face recognition sensor that measures the distance and angle to user's eye.
   Patent Filing # - 2397/DEL/2015

6. **Driverless Car** - Anirudh Gupta

   An automatic driverless car with an open system for Indian road and whether condition, comprising of RADAR, SONAR, and different sensor that are controlled by Artificial Intelligence Systems

   Patent Filing # - 3132/DEL/2015

7. **Compact Touch Sensitive Projector** - Manik Gupta, Karan Bajaj, Dr. Shaily Jain & Gaurav Mehta

   A compact touch sensitive projector that works without computer features an inbuilt high definition camera for live recording. It come with additional hardware - light pen maker & an eraser.

   Patent Filing# -2727/DEL/2015

8. **Wearable Suit With Air Conditioning System** - Vinay Chadha

   Wearable suit with air conditioning system to keep a person comfortable during warm & cold conditions. It is energy efficient and uses light weight material so that it can be worn as an overcoat.

    Patent Filing# -3131/DEL/2015

9. **Mobile Back Panel With Safety Chip** - Dr. Disha Handa Mahendru, Ayush Garg & Gaurav Goyal

   A mobile back panel with safety chip to recognize distress voice and words like 'help', 'save me' etc without human interference send the location & mobile number of the victim to the nearest police station.

   Patent Filing# -3543/DEL/2015

10. **Combinational SIM Card Lock System For Mobile Phone** - Aniket Bharadwaj, Hemani Negi, Abhijit Dey, and Nilesh Khanna

    Mobile SIM card tray lock system is developed that consists of electronic motor & gear controlled using application software like pass code or pattern lock thus removing SIM card in case of theft is impossible.

    Patent Filing# -3523 /DEL/2015

11. **Device And System To Detect Future Emotional Behaviour Of Humans -** Dr. Tanu Sharma

    A portable system is developed to determine and predict emotions of the individual. It works on HYBRID-NAV-MAR algorithm to combine Naïve Bayes and Markov Model algorithms and implemented using microcontroller & sensors like electrodes, temperature sensors, photo-diode etc.

    Patent Filing# -3908/DEL/2015

12. **Automatic Multi- Level Parking System With Vehicle Tracking From Different Locations In The Building** - Sagar Juneja, Saurav Kochar and Sachin Dhiman

The system comprise of two cameras one extracts vehicle registration number and other guides the vehicle to the nearest free parking slot using image processing algorithms. Back end system tie the vehicle number with the parking slot number for vehicle tracking.

Patent Filing# -3898/DEL/201/DEL/2015

13. **Laptop Within Built Thermal Printer -** Dr. Neha Kishore, Vivek Khanna, Akshay Thakur

It is a printer inside a laptop. Printer comes with its own memory, LCD screen and ports to connect any other external device for taking prints.

Patent filing number – 201611003384

14. **System and Method of Electrical Energy Generation at Two Lane Highway -** Rohit Choudhary, Jasmeet Singh

Hydraulic piston cylinder arrangement is connected to the speed bumps which when pressed causes hydraulic fluid to move into the pipes that rotates the turbine and generates electricity.

Patent filing number – 201611003383

15. **Glove for Gripping or Holding Metallic Object -** Arjun Sharma & Mr. Neeraj Kumar

A glove with tubes of polymer is attached to the fingers. Copper coil is wound on these tubes that act as a solenoid, an on/off switch is fixed on the index finger that let user magnetize the glove.

Patent filing number – 201611007170

16. **Camera Accessory for Photography in Moving Vehicle -** Vinay Chadha & Dr. Varinder Kanwar

It consists of U and I shaped tubes that are interlinked. Prisms and lens are used inside the tube for directing light through it. A stepper motor is used that rotates the front part of tube and helps in changing direction of view.

Patent filing number – 201611006999

17. **Device to Predict Past, Present and Futuristic Human Aura/Emotion Via Bio-Feedback -** Dr. Tanu Sharma and Dr. Sapna Saxena

The invention records the data to predict past & future emotions of the humans. Input is taken from several bio-feedback parameters and processed using an embedded processor.

Patent filing number – 201611011102

18. **Process to Convert Toothpaste Industry Waste/Sludge into Usable Form -** Dr. Varinder Kanwar

There are several chemical, additives and colorants used in the toothpaste industry which can adversely affect the ecological balance if not disposed properly. This invention provides a method for reutilization of sludge into useful construction material.

Patent filing number – 201611022362

19. **Pen Type Soldering Iron -** Shubham Malhotra & Lipika Gupta

Pen type soldering iron is divided into two segments wire feeding mechanism and heating chamber. A push button is provided which when pressed moves the wire down to the heating chamber that melts the solder wire for soldering.
Patent Filing# - 201611028712

20. **Floating Safety Bag for Multiple Persons -** Ankush Gupta & Neeraj Kumar

Safety bag made from Kevlar is proposed that is having two air tubes on each side that prevents it from sinking. The triangular region of the safety bag holds three persons on each triangular side. It is leak proof, contain oxygen packets and a GPS tracker.
Patent Filing# - 201611029560

21. **Laptop Security System - Arjun Sharma and Neeraj Kumar**

Laptop security system consists of IR Transmitter & Receiver is proposed. Whenever anyone tries to open or close the flap of the laptop IR path is obstructed & the alert signal is sent to the user's mobile
Patent Filing# - 201611033440

22. **Farmer Interactive Remotely Controlled Rice Crop Disease Detection System -** Dr. Sheifali Gupta, Satpal Singh, Sagar Juneja, Dr. Rupesh Gupta

A hand held device with display and an unmanned aerial vehicle (UAV) with a camera controlled using a processor along with embedded image processing software is developed for remote detection of disease in the crops.
Patent Filing# - 201613036100

23. **Morse Pen as a Communication Tool for Blind –** Pratyaksh Joshi And Sagar Juneja

Invention proposes a low cost electronic device for blind that is based on Morse code. it is a pen like device having switch at the tip of the pen to generate morse code which will enable blind people to write.
Patent Filing # - 201611040790

24. **Method of Converting Lime Sludge of Paper Industry into Bricks -** Dr. Varinder S Kanwar, Brij Bhushan, Dr. Siby John

Engineering behaviour of this stabilized and solidified sludge from the paper industry that is rich in CaCo3 and CaO is analysed and proposed as partial replacement of clay in manufacturing of bricks and also be used as construction material
Patent Filing # - 201711003597

25. **Helmet Locking Mechanism for Two Wheeler -** Shubham Goyal and Aniket Bhardwaj

It is an integrated, easy to install and easy to operate helmet locking mechanism. Inventors have utilized dead and empty space inside the rear panel of the two wheeler without disturbing any part externally. Installing a small roller mechanism inside the rear panel which can house a
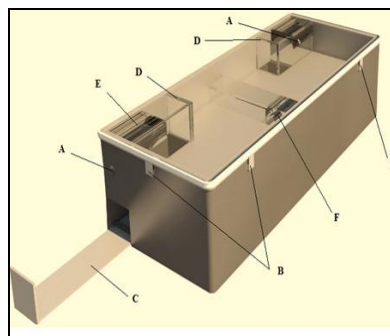
metallic wire with high tensile strength so that it can be pulled out when required and remains hidden when not required. There is no requirement of any lock and key mechanism.

Patent Filing # - 201711015054

26. Stationery Box – Dr. Sita Ram

Design Patent
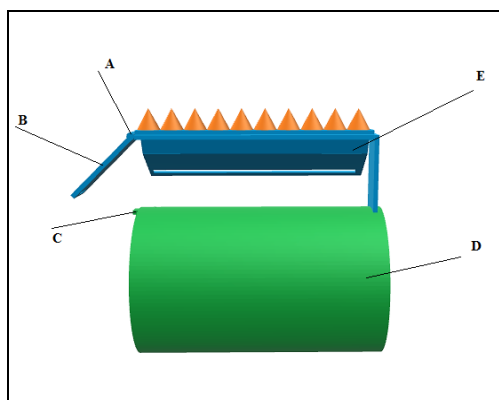
Patent Filing # - 290477

27. Tape Dispenser - Ashish Vadhan and Atul Rana

Design Patent

Patent Filing# - 291772

Best Practice II: Detailed Course Delivery Plan

A detailed Course Delivery Plan And Session Plans named Course handout is shared with the students by the concerned faculty before the commencement of the semester.

Institute / School Name	Chitkara School of Engineering and Technology		
Program Name	BE (CE)		
Course Code	CEL4301		
Course Name	TRANSPORTATION ENGINEERING I		
Lecture / Tutorial (per week)	4-1-0	**Course Credits**	4.5
Course Coordinator Name			

Objectives

- To understand the importance of transportation and characteristics of road transport.
- To know about the history of highway development, surveys and classification of roads.
- To study about the geometric design of highways.
- To study about traffic characteristics and design of intersections.
- To know about the pavement materials and design.

1. **Course Learning Outcomes**

   On completion of course, student will be able to:
   - Carry out surveys involved in planning and highway alignment.
   - Design cross section elements, sight distance, horizontal and vertical alignment.
   - Implement Traffic studies, traffic regulations and control and intersection design.
   - Determine the characteristics of pavement material.
   - Design flexible and rigid pavements as per IRC.

2. **Textbooks**

   TB1: Khanna, S.K. & Justo, C.E.G., Highway Engineering, Nem Chand and Bros.
   TB2: Kadiyali, L.R, Traffic Engineering and Transport Planning, Khanna Publishers, New Delhi

3. **Reference Books**

   RB1: Kadiyali, Principles of Highway Engineering, Khanna Publishers.
   RB2: Traffic Engg. By Matson, T.M., Smith, W.S. and Hurd, P.W.McGraw Hill Book Co., New York.
   RB3: Bindra, SP; "A Course on Highway Engineering" New Delhi, Dhanpat Rai and Sons

4. **Other Readings And Relevant Websites**

S.No.	Link of Journals, Magazines, websites and Research Papers
1.	http://en.wikipedia.org/wiki/Transport_engineering
2.	http://www.icivilengineer.com/Transportation_Engineering/
3.	http://books.google.co.in/books/about/Principles_of_Transportation_Engineering.html?id=HProD_2wlYgC&redir_esc=y
4.	http://bestundertaking.com/transport_engineering.asp

4. **Course Plan**

Lecture Number	*Topics*	Web Links for video lectures	Text Book(s) referred	Page Numbers of Text Book(s)
1-3	Road Development and Planning: Transportation and its importance. Different modes of transportation. Scope of highway engineering, road cross-section, Objectives of highway planning,	https://www.youtube.com/watch?v=umjY6ihvl7M	TB1 RB1 RB3 http://en.wikipedia.org/wiki/Transport_engineering	1-34
TUT-1	**Tutorial-1, Tutorial sheet 1**			
4-6	Classification of roads, Road patterns, Planning surveys. Saturation system of planning.		http://bestundertaking.com/transport_engineering.asp	
TUT-2	**Tutorial-2, Tutorial sheet 2**			
7-10	**Highway Location and Alignment:** Ideal alignment and factors controlling, engineering survey for highway location.	https://www.youtube.com/watch?v=GuElcdfymu0&index=23&list=PL911998B0A90DFC88	TB1 RB1 RB3 http://bestundertaking.com/transport_engineering.asp	49-71

ASSIGNMENT – 1				
TUT-3	**Tutorial-3, Tutorial sheet 3**			
11-12	Drawings and Report, Highway projects.	https://www.youtube.com/watch?v=KNd0duH7aSg		
TUT-4	**Tutorial-4, Tutorial sheet 4**			
13-16	**Highway Geometric Design:-** Introduction, Highway Cross Section Elements, Sight Distance	https://www.youtube.com/watch?v=Y8rB-wm_QqQ&list=PL91199 8B0A90DFC88&index=14	TB1 RB1 RB3 http://en.wikipedia.org/wiki/Transport_engineering	72-166
TUT-5	**Tutorial-5, Tutorial sheet 5**			
17-21	Design of Horizontal Alignment, Design of Vertical Alignment	https://www.youtube.com/watch?v=936Rv57vzQ8		
TUT-6	**Tutorial-6, Tutorial sheet 6**			
ST-I (Syllabus covered from 1-21 lectures)				
22-26	**Traffic Engineering:** Traffic characteristics, Traffic studies and their uses, Traffic flow characteristics,	https://www.youtube.com/watch?v=_YJY2JXk00c&index=2&list=PL911998B0A90DFC88	TB1 TB2 RB1 RB2 http://bestundertaking.com/transport_engineering.asp	167-308
ASSIGNMENT – 2				
TUT-7	**Tutorial-7, Tutorial sheet 7**			
27-33	Traffic Regulation and control, Traffic Signs, Road markings and parking facilities.	https://www.youtube.com/watch?v=0yzgMc110po&list=PL911998B0A90DFC88&index=4		
TUT-8	**Tutorial-8, Tutorial sheet 8**			
34-39	**Design of Highway Pavements:** Design factors, types & component parts of pavements, Design of flexible pavement by CBR method	https://www.youtube.com/watch?v=3oNa9Z94Hiw&index=27&list=PL911998B0A90DFC88	TB1 RB1 RB3 http://en.wikipedia.org/wiki/Transport_engineering	388-495
ASSIGNMENT – 3				
TUT-9	**Tutorial-9, Tutorial sheet 9**			
40-43	Group Index and Burmister methods, Design of rigid pavements.	https://www.youtube.com/watch?v=uJntLOgEHD4&list=PL911998B0A90DFC88&index=36		
TUT-10	**Tutorial-10, Tutorial sheet 10**			
ST-II (Syllabus covered from 22-43 lectures)				
44-46	**Construction of Roads:** Construction of water bound macadam roads, bituminous pavements, cement concrete roads, construction of joints in cement concrete pavements.	https://www.youtube.com/watch?v=exctAga2KXY&list=PL911998B0A90DFC88&index=24	TB1 RB1 RB3 http://www.icivilengineer.com/Transportation_Engineering/	496-588
TUT-11	**Tutorial-11, Tutorial sheet 11**			
47-48	**Highway maintenance:** Pavement Deterioration, maintenance techniques, evaluation and strengthening of	https://www.youtube.com/watch?v=_vVIM1Xzz4Q	TB1 RB1 RB3	617-689

	existing pavements.		http://books.google.co.in/books/about/Principles_of_Transportation_Engineering.html?id=HProD_2wlYgC&redir_esc=y	
TUT-12	**Tutorial-12, Tutorial sheet 12**			
ST-III (Syllabus covered from 1-48 lectures)				

6. Evaluation Scheme:

Component 1*	Sessional Tests (STs)*	30
Component 2	Assignment Evaluation	10
Component 3**	End Term Examination**	60
	Total	**100**

* There are three Sessional Tests (STs) for all theory papers. Average of best two will be considered.

** The End Term Comprehensive examination will be held at the end of semester. The mandatory requirement of 75% attendance in all theory classes is to be met for being eligible to appear in this component.

SYLLABUS

Topics	No of lectures	Weight age
Road Development and Planning: Transportation and its importance. Different modes of transportation. Scope of highway engineering. Road cross-section, Objectives of highway planning, Classification of roads, Road patterns, Planning surveys. Saturation system of planning.	7	12%
Highway Location and Alignment: Ideal alignment and factors controlling, engineering survey for highway location, drawing and reports, highway projects.	4	8%
Highway Geometric Design:- Introduction, Highway Cross Section Elements, Sight Distance, Design of Horizontal Alignment, Design of Vertical Alignment	7	20%
Traffic Engineering: Traffic characteristics, Traffic studies and their uses, Traffic flow characteristics, Traffic data collection, Intersections & Rotaries, Signaling, Road markings and parking facilities.	10	20%
Design of Highway Pavements: Design factors, types & component parts of pavements, Design of flexible pavement by CBR method, Group Index and Burmister methods, Design of rigid pavements.	7	20%
Construction of Roads: Construction of water bound macadam roads, bituminous pavements, cement concrete roads, construction of joints in cement concrete pavements.	4	10%

Highway maintenance: Pavement failures, maintenance techniques, evaluation and strengthening of existing pavements.	4	10%

The Document is approved by:

Designation	Name
Course Coordinator	
H.O.D	
Dean	
Date	

Evaluation and Examination Blue Print:

Internal assessment is done through quiz tests, presentations, assignments and project work. Two sets of question papers are asked from each faculty and out of these two, without the knowledge of faculty, one question paper is chosen for the concerned examination. Examination rules and regulations are uploaded on the student's portal. Evaluation is a very transparent process and the answer sheets of sessional tests, internal assessment assignments are returned back to the students.

The components of evaluations alongwith their weightage followed by the University is given below

Sessional Test 1	15%
Sessional Test 2	15%
Sessional Test 3	15%
Assignments/Quiz Tests/Seminars	10%
End term examination	60%

7.4 Contribution to environmental awareness / protection

Beyond effective education system the University a comforting and state of art environment to produce positive energy and bonding the human with their surrounding environment. Various environment friendly factors such as Water, Air & Noise, Land, Parking, Flora & Fauna, Socio Economic, Solid Waste Treatment, Nursery, Solar Systems contribute in making all the campuses eco-friendly.It has a zero discharge environmental friendly campus where students & staff are encouraged to be responsible citizens for a clean and healthy nation. Regular sensitization of employees and residents on environmental issues through special seminars and programmes.

A change has been observed in social behaviour of nearby areas due to such activities and processes for clean environment which improves the health of the residents of nearby areas. The various best practices towards Swachh Bharat through Resource Conservation Measures introduced includes:

- Effective management set-up for regular checks and mantainence of all areas
- Waste Water Generation through STP and use of double plumbing techniques
- Collection of roof top rain water collected and disposed off in rain water harvesting pits
- Vermin Compost Plant
- Organic Composting using water wastes from vermin compost.
- Hydroponic Farming

- Solar Lights, Heating Panels
- Semi automated kitchen in mess
- Semi automated Housekeeping
- Mechanised Laundry
- Installation of LED Lights
- Nursery with different varieties of plants
- Mantainence of green belt
- Regular tree plantation drives
- Regular conduct of environmental sensitizarion programmes/workshops for student, staff and residents of nearby areas to increase awareness.
- Seperate well defined parking zone within the premises
- Energy observant buildings planned to reduce consumption of electricity in terms of light and air efficiency through least usage of Air Conditioners and Lights
- Paperless operations where the mode of communication is own Entterprse Resource Planning (ERP) –Chalkpad, Schoolpad and recycled paper is used in daily operations if required.

7.5 Whether environmental audit was conducted?

Yes. Internal. The University has also received an award from the Himachal Pradesh State Government for best practices in Environmental Resource Conservation.

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

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8. **Plans of institution for next year**

The University is working towards the research initiatives such as projects, patents, publications and other innovations to contribute in the betterment of the society and to boost the start ups by turning the youth of India from job-seekers to job-creators and contributing towards the Prime Minister's Start up India initiative.

Dr. Rohit Verma
Signature of the Coordinator, IQAC

Brig. (Dr.) R. S. Grewal, VSM (Retd.)
Signature of the Chairperson, IQAC

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Abbreviations:

AMC	-	Academic Monitoring Committee
BOS	-	Board of Studies
CAS	-	Career Advanced Scheme
CAT	-	Common Admission Test
CBCS	-	Choice Based Credit System
CE	-	Centre for Excellence
COC	-	Course Coordinator
COP	-	Career Oriented Programme
CPE	-	College with Potential for Excellence
DPE	-	Department with Potential for Excellence
GATE	-	Graduate Aptitude Test
HOD	-	Head of Department
IQAC	-	Internal Quality Assurance Committee
NET	-	National Eligibility Test
PEI	-	Physical Education Institution
SAP	-	Special Assistance Programme
SF	-	Self Financing
SLET	-	State Level Eligibility Test
TEI	-	Teacher Education Institution
UPE	-	University with Potential Excellence
UPSC	-	Union Public Service Commission

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