



SELF STUDY REPORT

FOR

1st CYCLE OF ACCREDITATION

SHIVALIK COLLEGE OF ENGINEERING

**SIHNIWALA, P.O. SHERPUR, SHIMLA BY PASS ROAD, DEHRADUN,
UTTARAKHAND 248197**

248197

www.shivalikcollege.edu.in

Submitted To

NATIONAL ASSESSMENT AND ACCREDITATION COUNCIL

BANGALORE

February 2023

1. EXECUTIVE SUMMARY

1.1 INTRODUCTION

The Shivalik College of engineering(SCE) was established back in 2008 on a sprawling campus spread over 16 acres of land under the Rijan Educational Society, a non- profit organization that solely aims to mobilize world-class education and generate resources for providing and supporting quality education for all, with the vision for a better tomorrow. Today, after more than 15 years of selfless service to the country and the community SCE has been the flagship institution of Uttarakhand, and is still continue to be in the service of the country and society.

- SCE offers programs in four dicipline i.e.B.Tech CSE, ECE, ME and CE.
- Institute has an average of 67% of its students from more than 15 states of India
- Department of CSE has 06 State of Art Laboratory equipped with all ICT facilities and the latest Software and Hardware and has set up Microsoft Academy and IBM academy to train and certify graduating students.
- SCE has 15 functional MOUs with various industries and academia such as MICROSOFT, IBM, DELLOITE and INFOSYS, E-Yantra Lab of IIT Mumbai etc.
- Department of Mechanical Engineering has Collaborative Lab developed by BMW.
- Total 111 value-added course offered by the institute during last five years.
- SCE has an active Institute Innovation Council (IIC) approved by AICTE and has established an IPR cell which has facilitated total 42 patents published and 3 garnted till date.
- The SCE has established Incubation Center in year 2018-19 with the name of I-HUB@ Shivalik and tied up with I-HUB IIT Roorkee “Divya Sampark”. Total 09 startups have been established.
- SCE has an active Research & Development Cell and have received grants of Rs. 60 Lakhs.
- SCE have received 25 awards from various Govt. & Non-Govt. organizations.
- SCE has provided scholarship worth Rs. 2.66 Crore under various scholarship schemes in last five years
- Total 1125 placement offers received in the last five years.

- SCE has one Unit of NCC(60 cadets) and one unit of NSS.
- SCE has also adopted 5 villages under Unnat Bharat Abhiyan
- SCE has various certifications i.e. ISO 9001:2015, ISO 50001 (Energy Management System) ISO 14001 (Environment Management System)

Vision

To be premier technical institution that provides experiential learning and multi-disciplinary research to develop socially responsible and competent professionals.

Mission

Ø Create an ambiance that fosters a passion for learning and collaborative research and effectively disseminates knowledge between highly competent faculty and student community.

Ø Foster professionals, who can add value to organizations, engage in higher studies and pursue innovative entrepreneurial activities.

Ø Provide best in class infrastructure to facilitate experiential learning in cutting edge technologies.

Ø Develop leaders who exhibit ethical behavior in professional and societal activities.

1.2 Strength, Weakness, Opportunity and Challenges(SWOC)

Institutional Strength

1. Value-Based Education system.
2. Well-qualified, experienced and dedicated faculty.
3. MOUs with reputed industrial and Academic organizations.
4. 16 Acre lush green campus with 4 academic blocks, 29 staff accommodations.
5. Training in soft skills, ethical values and personality development.
6. Internally organizing Seminars, Workshops, Guest Lectures from eminent Educationists,
7. Industrialists and other resource persons.
8. Explicit Training & Placement Cell to provide continuous training for students with good
9. Placement ratio.
10. Well-equipped laboratories and sophisticated workshops.
11. Interest in expansion of cultural activities and student participation in community development programs through NSS.
12. 24x7 CCTV surveillance.
13. IQAC has been established for Quality Assurance and Standardization.
14. Positive reputation in the external community.
15. Well-equipped 18 classrooms with ICT-enabled facility.
16. 613 computer systems with advanced configuration and 250 mbps high-speed internet connectivity through LAN and WIFI.
17. Central Library with more than 53000 books and Journals and have active subscription of NPTEL, NDLI and J-GATE
18. Mentoring on a one-to-one student basis as required.
19. Registered Alumni Association
20. Well-connected with roads, as the college is located on State Highway.
21. STP of 25 KLD capacity as a step towards zero liquid discharge.
22. 04 Rainwater harvesting system throughout the campus.
23. 24x7 power backup
24. 500 kW roof top solar power plant installed.

Institutional Weakness

1. Decrease in the percentage of students opting for CIVIL, MECHANICAL and ECE in the last few years.
2. Being an affiliated college, limited scope for adopting inter-disciplinary innovative curriculum.
3. Limited intake capacity due to prevailing AICTE regulations.
4. Limited research grants from Govt. funding agencies.

5. Limited engagement and contribution from alumni.

Institutional Opportunity

1. Inculcating the culture of employment and entrepreneurship to students through technology transfer.
2. Organizing and conducting workshops and Guest lectures on latest emerging technologies to develop student employability skills.
3. To reduce the gap between industry and academia, by imparting quality education.
4. Collaborative research-projects with industries & other institutions.
5. Creating awareness on updated certification programs to enhance their new skills and Certification Courses for better employability.
6. Well supported by on and off campus placements for the students.
7. Encourage students and faculty for research publications by providing financial rewards.
8. Scope to use modern learning programs.

Institutional Challenge

1. Financial constraints comes in the way of development as self-financed institution.
2. Meeting the ever changing requirements of industry and society as a whole.
3. High priority for improving End Exam result.
4. Empowering students with enough skills to become employable in the most uncertain job market.
5. Bridging skill gap between students and industry requirements.
6. Attracting meritorious students to take admission.

1.3 CRITERIA WISE SUMMARY

Curricular Aspects

Shivalik Collge of Engineering(SCE) is affiliated to the University and follows the curriculum prescribed by the affiliating university.

- Each academic program has well-defined Programme Educational Objectives (PEOs), Programme Outcomes (POs), Programme Specific Outcomes (PSOs), and CourseOutcomes (COs).
- PEOs and PSOs of each program are aligned with the vision and mission of the deaprtment & institute.
- The institute runs various crosscutting issues related courses on Professional Ethics, Gender, Human Values, Environment and Sustainability as aper affilating university Curriculum.

- All programs are under Choice Based Credit System (CBCS)/ Elective System.
- The SCE offered 111 value added courses during the last five years. The students are encouraged to learn and enhance technical skills through their participation in various Add on /Certificate programs organized by various departments of the college.
- Value education through NSS, NCC.
- Certifications through MOOCs

- The students are encouraged to take part in field visits/internships in various reputed industries.
- Structured feedback system is taken from students, alumni, industry and teachers for continuous improvement in teaching and learning. The feedback covers students' assessment of curriculum delivery, teachers' assessment of curriculum structure, infrastructure, library & administrative services, and grievance redressal

Teaching-learning and Evaluation

The Shivalik Collge of Engineeirng (SCE) endeavours to nurture its students with knowledge, wisdom, belief in self and critical thinking through effective teaching-learning pedagogies for their holistic development.

- A well-qualified faculty with Faculty student ratio of 8:1, for an effective and inclusive learning process through modern ICT tools. Regular lectures, tutorials, remedial classes, research projects, field work and mentorship programmes prepare students for a contemporary knowledge-based world. Online resources, audio-visual platforms, Webinars etc. are used supportively for active learning.
- 67 % Students from other states
- 55.91 % students from SC/ST/OBC category.
- Slow and fast learners are identified on the basis of their performance in internal assesment.
- A good ratio of Mantor- Mantee.
- Each program/course has well-defined POs, PSOs, and COs developed in consonance with Bloom's Taxonomy.
- Various industrial visits, case discussions, outreach programmes, experiential workshops, add-oncourses, debates, interaction with alumni etc. enhance student learning experience.
- Through periodic participation in FDPs and conferences, the faculty persistently update their knowledge and skills as per latest developments in the subject.
- Teachers participate extensively in the evaluation process that helps assess outcomes of the teaching learning process. Internal assessment of projects, assignments and team activities are some of the methods of evaluation that help maximise benefit to students.
- The Internal Assessment Moderation and Grievance Committees address students' grievances related to grades secured in a transparent and satisfactory manner.
- Examination system is fully automated through ERP.

Research, Innovations and Extension

The shivalik Collge of Engineering(SCE) provides a conducive environment to its students and teachers that facilitates the conduct of research activities and continually stimulates innovative teaching pedagogies. College also ensures to fulfill its responsibilities towards society through various extension and outreach programs.

- SCE has an active Research & Development Cell and have received total grants and consultancy of worth Rs. 60 lakhs.
- Faculty and students has published 42 patents(three granted)100 research papers and 300+ conference papers, books and book chapters.
- Faculty members are committed towards continually updating their knowledge bank and skill a and have attended large number of FDP's, Seminars, Conferences, Workshops, Refresher Courses, and Professional Courses during last five years.

- In the pursuance of a vibrant research culture, the SCE faculty and students are engaged in collaborations with other colleges, institutions and organizations, taking the learning experience beyond classrooms.
- Extension activities and outreach programs help students to develop sensitivity and interventions towards society and community challenges. Around 51 extension and outreach activities have been conducted by various departments and societies in collaboration with government recognized and other organizations. Societies involved in the conduct of these activities include NCC & NSS.
- Societies/Chapters like IIC/Start-up Club/the Entrepreneurship Cell etc. also provide an opportunity to students for undertaking extension work. Motivated towards welfare of society a good number of students every year, actively participate in these activities.
- College has several collaborations and linkages with National and International bodies for providing students with skill enhancement opportunities. Currently the College has 15 functional MOUs for add-on courses, research, outreach programmes, workshops and events with well-known organizations such as organisations such as ICT, ILEADS, SLOG etc.

Infrastructure and Learning Resources

The college campus is spread over an area of 16 acres possessing a technologically advanced and aesthetic infrastructure comprising of Director's office, four academic blocks, two administrative block, a well-resourced library, a cafeteria, Yoga centre, Gymnasium and various sports facilities.

- Two academic blocks are well-equipped with ICT enabled classrooms, tutorial rooms and state of art labs to provide an interactive learning process.
- The SCE has 18 well equipped ICT enabled classrooms and 2 seminar halls and one conference room with cross ventilation and natural light. A auditorium of capacity of 550 students is under construction.
- Amenities such as washrooms, clean drinking water and ramps for differently-abled are provided in all wings of the institution.
- Medical health centre have dedicated staff with a Doctor and trained nurse, and supporting staff.
- Girls' Common Room, Students' Facilitation Centre, YOGA centre, Gym.
- Indoor and outdoor Sport facilities like table Tanis, badminton, carom, Chess, Cricket, Football, basketball , athematic track .
- The Staff Room provide a sense of camaraderie to the faculty members and is equipped with facilities such as refrigerator, microwave and a separate locker section.
- 29 Accomadation houses in campus for faculty and staff.
- Utility Shops and cafeteria also availabe in the campus.
- 2 Boys and 1 girls hostel with capacity of 550 students.
- The institute is an environment friendly campus with adoption of energy efficiency measures such as 500 kW solar plant.
- Central Library with more than 53000 books, 24 print Journals & e-Journals and have active subscription of NPTEL, NDL and J-GATE
- A playground offers space for various sports and physical activities. Sports equipment are maintained regularly for uninterrupted practice sessions.
- High Speed Internet bandwidth of 250 MBPS through LAN and WIFI.
- College has dedicated 613 computer systems for students use olny.
- The college has a regular and established system for maintenance of its academic and physical facilities through trained staff and periodic servicing.

Student Support and Progression

The Shivalik Collge of Engineering (SCE) provides a number of mechanisms for student support and mentoring. The HODs and faculty of respective departments help to identify understand and resolve the student issues.

- The institute has initiated a thriving tradition of scholarships to meritorious and deserving candidates.SCE has provided scholarship worth Rs. 2.66 Crore under various scholarship schemes in last five years.
- College has provided scholarships to 47 % of its students based on the merit and financial back ground.
- SCE Organizes capacity building and skills enhancement programmes in soft skills, language and communication, Life skills, Yoga, physical fitness, health and hygiene etc.
- 24 % students are benefited by guidance for competitive examinations and career counseling.
- The college also has a strong Women Grievance Redressal System under the roof of ICC for the support and care of female students.
- The college has well established Training and placement cell. Average placement percentage is 84 % during last five years.
- 38% students qualifying in state/national/ international level examinations during the last five years
- The students participated in Intra College sports, tournaments and cultural competitions and achieved 37 awards during last five years.

Governance, Leadership and Management

- The Shivalik Collge of Engineering (SCE) has created governing body in 2008 and later IQAC in 2019 to monitor the functioning and preserve the quality of the administrative and academic scenario of the institute.
- The governing body meets periodically to monitor and devise goals to improve the quality of the institution. As per the vision and mission of the institution, various steps are taken to conduct courses and organize programmes.
- The SCE has a hierarchical organizational structure with well defined roles and responsibilities.
- The implementation of E-governance in the areas of student support administration, finance, accounts and examinations through ERP.
- Feedback reports are shared with all Departments and Governing body meetings are held for discussions, suggestions and corrective measures.
- IQAC conducts regular **Academic and administrative Audits** with the purpose to continuously monitor and ensure effective implementation of teaching-learning process within college. An effective system of documentation and record maintenance helps keep track of administrative and academic matters.
- For effective execution, institute is in process to have paperless environment and has several e-governance initiatives through the college ERP.
- The various bodies, cells and committees present in the institute work in tandem to achieve the set targets as discussed and decided in the meetings.
- The SCE provides 10 causal, 10 Sick, 15 Earned leave and 10 academic leaves 6 month Maternity leave for the staff who completed their service for more than one year.
- Apart from providing basic facilities like library, canteen, the staff members (both teaching and nonteaching)are given free transportation facility.
- Health Insurance is provided to all employees.

- EPF is provided to employees.
- Financial support is extended to the staff for their professional development. Average 61% of faculty is provided financial support to attend conferences/workshops etc.
- The college organized 30 Professional development programs in last five years.
- The College has a mechanism of self-appraisal whereby Annual Performance Appraisal Forms (**APAF**) are submitted by teaching and non-teaching staff to the concerned authority.
- They are also encouraged for attending and conducting programs like FDPs, STTPs and conferences. At the same time the annual performance appraisal is conducted without fail.

Institutional Values and Best Practices

Shivalik College of Engineering(SCE) is committed to provide value based education to students by inculcating moral values and social responsibilities along with quality education. Gender equity programs, national days and cultural fests are conducted regularly. Students are encouraged to participate during elections as volunteers and webcasting personnel. Socio economic policies of government are implemented in campus and so students mingle with each other without any inhibitions. The code of conduct is strictly implemented among staff and students. Awareness programs on code of conduct are organized regularly.

The institution is very conscious about conservation of water, energy and environment. Water conservation measures include rain water harvesting bore well recharge facility and construction of bund across natural stream maintained in the campus. Energy conservation measures were initiated by usage of LED bulbs, solar lights and installation of a Sewage treatment plant. Green & Environment audit and energy audit are conducted in the campus. The recommendations of audit committees are implemented and students are educated on protection of environment. Single-use plastics are banned in campus.

The campus has got disabled friendly barrier free environment. The institution has taken utmost care in waste management system. Solid, liquid and chemical wastes are disposed off by taking safety measures. Best practices like conducting Value added/ certificate courses and motivating IPR filing from are enhancement of employability and student counseling are implemented religiously. The institution with a motto of quality education, discipline and employment strives to be a role model in the field of engineering education.

Effective Waste management for various wastes managed through external agencies for the efficient disposal of e-waste, and other solid waste generated on the campus. For liquid waste, has an STP plant of 25 KLD capacity and four Rain water harvesting unit.

2. PROFILE

2.1 BASIC INFORMATION

Name and Address of the College	
Name	SHIVALIK COLLEGE OF ENGINEERING
Address	Sihniwala, P.O. Sherpur, Shimla By Pass Road, Dehradun, Uttarakhand 248197
City	DEHRADUN
State	Uttarakhand
Pin	248197
Website	www.shivalikcollege.edu.in

Contacts for Communication					
Designation	Name	Telephone with STD Code	Mobile	Fax	Email
Director	Prahlad Singh	0135-2639401	9997997584	-	director@sce.org.in
Associate Professor	Kuldeep Panwar	0135-2693401	9760305410	-	drkuldeep.panwar@sce.org.in

Status of the Institution	
Institution Status	Private and Self Financing

Type of Institution	
By Gender	Co-education
By Shift	Regular

Recognized Minority institution	
If it is a recognized minority institution	No

Establishment Details	

State	University name	Document
Uttarakhand	Uttrakhand Technical University	View Document

Details of UGC recognition		
Under Section	Date	View Document
2f of UGC		
12B of UGC		

Details of recognition/approval by stationary/regulatory bodies like AICTE,NCTE,MCI,DCI,PCI,RCI etc(other than UGC)				
Statutory Regulatory Authority	Recognition/Approval details Institution/Department programme	Day,Month and year(dd-mm-yyyy)	Validity in months	Remarks
AICTE	View Document	03-07-2022	12	

Recognitions	
Is the College recognized by UGC as a College with Potential for Excellence(CPE)?	No
Is the College recognized for its performance by any other governmental agency?	No

Location and Area of Campus				
Campus Type	Address	Location*	Campus Area in Acres	Built up Area in sq.mts.
Main campus area	Sihniwala, P.O. Sherpur, Shimla By Pass Road, Dehradun, Uttarakhand 248197	Rural	16	27483

2.2 ACADEMIC INFORMATION

Details of Programmes Offered by the College (Give Data for Current Academic year)						
Programme Level	Name of Programme/ Course	Duration in Months	Entry Qualification	Medium of Instruction	Sanctioned Strength	No.of Students Admitted
UG	BTech,Department Of Computer Science And Engineering, Computer Science and Engineering	48	Class 12th Certificate	English	120	91
UG	BTech,Department Of Mechanical Engineering, Mechanical Engineering	48	Class 12th Certificate	English	60	20
UG	BTech,Department Of Civil Engineering,Civil Engineering	48	Class 12th Certificate	English	60	21
UG	BTech,Department Of Electronics And Communication,Electronics and Communication Engineering	48	Class 12th Certificate	English	60	19

Position Details of Faculty & Staff in the College

Teaching Faculty												
	Professor				Associate Professor				Assistant Professor			
	Male	Female	Others	Total	Male	Female	Others	Total	Male	Female	Others	Total
Sanctioned by the UGC /University State Government	4				4				63			
Recruited	4	0	0	4	3	1	0	4	48	15	0	63
Yet to Recruit	0				0				0			
Sanctioned by the Management/Society or Other Authorized Bodies	0				0				0			
Recruited	0	0	0	0	0	0	0	0	0	0	0	0
Yet to Recruit	0				0				0			

Non-Teaching Staff						
	Male		Female		Others	Total
Sanctioned by the UGC /University State Government						0
Recruited	0		0		0	0
Yet to Recruit						0
Sanctioned by the Management/Society or Other Authorized Bodies						45
Recruited	30		15		0	45
Yet to Recruit						0

Technical Staff				
	Male	Female	Others	Total
Sanctioned by the UGC /University State Government				0
Recruited	0	0	0	0
Yet to Recruit				0
Sanctioned by the Management/Society or Other Authorized Bodies				15
Recruited	11	4	0	15
Yet to Recruit				0

Qualification Details of the Teaching Staff

Permanent Teachers										
Highest Qualification	Professor			Associate Professor			Assistant Professor			Total
	Male	Female	Others	Male	Female	Others	Male	Female	Others	
D.sc/D.Litt/LLD/DM/MCH	0	0	0	0	0	0	0	0	0	0
Ph.D.	0	0	0	0	0	0	0	0	0	0
M.Phil.	0	0	0	0	0	0	0	0	0	0
PG	0	0	0	0	0	0	0	0	0	0
UG	0	0	0	0	0	0	0	0	0	0

Temporary Teachers										
Highest Qualification	Professor			Associate Professor			Assistant Professor			Total
	Male	Female	Others	Male	Female	Others	Male	Female	Others	
D.sc/D.Litt/LLD/DM/MCH	0	0	0	0	0	0	0	0	0	0
Ph.D.	0	0	0	0	0	0	0	0	0	0
M.Phil.	0	0	0	0	0	0	0	0	0	0
PG	0	0	0	0	0	0	0	0	0	0
UG	0	0	0	0	0	0	0	0	0	0

Part Time Teachers										
Highest Qualification	Professor			Associate Professor			Assistant Professor			Total
	Male	Female	Others	Male	Female	Others	Male	Female	Others	
D.sc/D.Litt/LLD/DM/MCH	0	0	0	0	0	0	0	0	0	0
Ph.D.	0	0	0	0	0	0	0	0	0	0
M.Phil.	0	0	0	0	0	0	0	0	0	0
PG	0	0	0	0	0	0	0	0	0	0
UG	0	0	0	0	0	0	0	0	0	0

Details of Visting/Guest Faculties					
Number of Visiting/Guest Faculty engaged with the college?	Male		Female		Total
	1		0		1

Provide the Following Details of Students Enrolled in the College During the Current Academic Year

Programme		From the State Where College is Located	From Other States of India	NRI Students	Foreign Students	Total
UG	Male	205	303	0	13	521
	Female	37	39	0	2	78
	Others	0	0	0	0	0
Diploma	Male	0	0	0	0	0
	Female	0	0	0	0	0
	Others	0	0	0	0	0

Provide the Following Details of Students admitted to the College During the last four Academic Years

Category		Year 1	Year 2	Year 3	Year 4
SC	Male	5	5	8	4
	Female	1	0	2	2
	Others	0	0	0	0
ST	Male	3	1	3	4
	Female	0	0	1	1
	Others	0	0	0	0
OBC	Male	28	21	67	46
	Female	2	3	3	4
	Others	0	0	0	0
General	Male	91	92	61	83
	Female	21	12	9	9
	Others	0	0	0	0
Others	Male	0	0	0	0
	Female	0	0	0	0
	Others	0	0	0	0
Total		151	134	154	153

<p>1. Multidisciplinary/interdisciplinary:</p>	<p>The Vision of National Education Policy, to provide high quality education to every student in an incorporated manner, is well taken by the college. Moreover, Uttarakhand being the first state to implement NEP 2020 in India, the college has taken various steps to make NEP 2020 successful. The college has implemented a NEP based curriculum in the first year as directed by Uttarakhand Technical University (UTU). In order to introduce a Multidisciplinary / Interdisciplinary curriculum in higher semesters i.e 2nd Semester to 8th Semester, the college constituted the committee headed by the Director. On the committee's recommendation, the college has introduced various multidisciplinary certificate courses in emerging technologies. The main aim of such courses is to make the students not only intellectually equipped for the competitive world for getting jobs but also they can find a way towards self-employment. In view of the NEP, the college has initiated new interdisciplinary centres integrating different departments at one place. The objective of this centre is to provide the collective learning approach to achieve the NEP 2020 goals.</p>
<p>2. Academic bank of credits (ABC):</p>	<p>As per the guidelines issued by AICTE (Ref. NeGD/05-01/2022 dated 16th August 2022) and the guidelines issued by UTU (affiliating university) on dated 31st August 2022 vide Ref. 1574/UTU/DigiLocker_Id/ABC_Id/2022-23, the college has created Academic Bank of Credit ID (ABC ID) for all students studying in 1st Semester. The digiLocker Id for all students has been created. The Academic Bank of Credits (ABC) will digitally store the academic credits earned by students. A committee under the Chairmanship of Controller of examination is constituted to sensitize and facilitate students to choose their own learning path to attain degree/Diploma/Certificates, working on the principle of multiple entry-multiple exits as well as any-time, any-where, and any-level of learning.</p>
<p>3. Skill development:</p>	<p>Realising the importance of skill education as the need of the hour, the Shivalik College of Engineering(SCE) has planned and executed skill development initiatives across all the Engineering Departments. However, being the affiliated Institute, the restrictions in developing the regular course curriculum bound the institution to run such</p>

programs as additional value added courses. All our Engineering departments have signed MOU with training partners and various industries to upskill the students in the emerging areas of their disciplines. Some of the areas where we skilled up the students are: Web development technologies, Staad Pro design, Arduino platform, Matlab Applications (Simulink), CAD & 3D printing, CNC Programming, Automobile Engg. (by BMW) etc. Python Programming , AWS cloud Certifications. The institute has also set up a high speed computing lab for skilling up students in the area of cloud computing, Internet of Things, AI & ML, data Sciences to name a few. To provide support and make these courses truly industry relevant , MOUs have been signed with several organizations. To strengthen our students' communication skills as per the corporate needs, Shivalik College of Engineering runs the regular communication skill classes for all the students from the day of entrance into our campus. SCE regular personality development programs for all semester students and also run interview skills and aptitude training for pre-final and final year students.

4. Appropriate integration of Indian Knowledge system (teaching in Indian Language, culture, using online course):

The official language of content delivery at Shivalik college of Engineering is English as per statutory requirements, but in order to make students coming from rural and vernacular backgrounds comfortable, the faculty regularly route to local languages (particularly Hindi) as and when required in an informal manner. Hopefully, with NEP 2020, and country-wide drive to write books in vernacular languages, in future sufficient academic resources will be available to officially teach in the mother tongue of the students.

5. Focus on Outcome based education (OBE):

As a part of its initiative to acquire the quality education and to focus on transformative learning, Shivalik College of Engineering has adopted Outcome Based Education (OBE), wherein the CO's and PO's are mapped after every semester. The attainment on a scale of 1 to 3 (1 being lowest and 3 being highest) is analyzed. College has also tried to bridge the gap of CO-PO attainments by arranging expert talks/ expert lectures, seminars/conferences relevant to the field of Engineering and are beyond the scope of the curriculum. The department advisory committee (DAC) analyses the CO-PO attainment

	<p>results. The committee calculates direct and indirect attainments using the predefined methods i.e defined by NBA and NAAC guidelines. The indirect attainments are preferably calculated from surveys amongst the stakeholders.</p>
<p>6. Distance education/online education:</p>	<p>Shivalik College of Engineering is all set to provide online education since the start of Covid -19 pandemic. Our Institute is prepared to engage classes, conduct conferences and meetings in online mode. The Institute also believes that online education has broken the geographical barriers resulting in widening the possibilities of interaction of experts and students from distant geographies. This has paved the way for adopting a hybrid mode of education in times to come. Due to the experience gained during the closure period of Covid-19, access to online education by educators and students will now have no constraint anymore. Faculties and students are encouraged to take MOOC (SWAYAM/ NPTEL) courses every semester. Students of 1st year where Choice Based Credit System (CBCS) has been implemented from the current session i.e 2022-23, the earned credit through MOOC courses can be transferred to their Academic Bank of Credit (ABC).</p>

Extended Profile

1 Students

1.1

Number of students year wise during the last five years

2021-22	2020-21	2019-20	2018-19	2017-18
599	626	716	773	822

File Description	Document
Upload supporting document	View Document
Institutional data in the prescribed format	View Document

2 Teachers

2.1

Number of teaching staff / full time teachers during the last five years (Without repeat count):

Response: 131

File Description	Document
Upload supporting document	View Document
Institutional data in the prescribed format	View Document

2.2

Number of teaching staff / full time teachers year wise during the last five years

2021-22	2020-21	2019-20	2018-19	2017-18
71	71	88	82	98

3 Institution

3.1

Expenditure excluding salary component year wise during the last five years (INR in lakhs)

2021-22	2020-21	2019-20	2018-19	2017-18
832.04	696.33	677.61	774.34	694.93

4. Quality Indicator Framework(QIF)

Criterion 1 - Curricular Aspects

1.1 Curricular Planning and Implementation

1.1.1

The Institution ensures effective curriculum planning and delivery through a well-planned and documented process including Academic calendar and conduct of continuous internal Assessment

Response:

The Shivalik College of Engineering (SCE) is committed to impart the highest standards of curriculum delivery to the students through its well erudite and well trained academic staff ever since its inception in the year 2008. The Institute is affiliated to Veer Madho Singh Bhandari Uttarakhand Technical University (VMSBUTU), Deharadun and follows the curriculum as provided by the University in all the academic programmes.

For effective curriculum delivery, following initiatives are taken:

- The curriculum is carefully crafted to support the syllabus contents and industrial/practical exposure to provide a congenial environment for academic excellence. The prime focus is maintained on efficacy of delivering methodologies.
- Subjects are assigned to faculty members as per their expertise and interest and prepare course file accordingly.
- Department Advisory Committee Meetings conducted with senior faculty members and other stakeholder before the commencement of the semester to streamline the teaching learning process.
- Subject wise course files are prepared which contains course scheme and syllabus, course plan & coverage, list of books required, CO-PO-PSO mapping, tutorial sheets, mid-term & university question papers, assignments, subject notes and handouts etc. as per the need prerequisite courses are discussed.
- To fill the gap between curriculum and industry needs, Student training, expert lectures of industry and academic experts are arranged on a regular basis.
- Faculty frequently use ICT tools for effective and interesting lecture delivery using PPT's, video lectures etc.
- During COVID pandemic, online teaching-learning methodology was implemented for curriculum delivery. The institute has taken subscription for Cisco, Webex and Zoom in addition to the conventional platforms, such as Google Meet for online classes.
- Student attendance is monitored by an online attendance management system (ERP). Attendance defaulters are regularly counseled through mentors for improving their attendance.
- In Academic Advisory Committee (AAC) meetings, the review of academic progress, students' attendance, and syllabus completion status is discussed.
- Academic activities beyond the curriculum are regularly planned. The activity calendar is prepared by each department in synchronization with the Institute's and University academic calendar.
- Institute follows a practice of conduction of Internal Academic Audit through IQAC to probe the

effectiveness of teaching-learning methodologies and the necessary steps are taken to steer the desired changes whenever required.

- Several activities like conferences, seminars, workshops, expert lectures, webinars, STTPs, FDPs etc are organized throughout the year to connect faculty and students with the latest ongoing trends and practices.
- In order to improve self learning flip classes, role play, experiential learning classes etc. are conducted for the students.

At SCE, it is a deeply felt and practiced aim of the management & administration to create technocrats and managers who are champions in every walk of life.

File Description	Document
Upload Additional information	View Document
Provide Link for Additional information	View Document

1.2 Academic Flexibility

1.2.1

Number of Add on /Certificate/Value added programs offered during the last five years

Response: 30

File Description	Document
Upload supporting document	View Document
Institutional data in the prescribed format	View Document

1.2.2

Percentage of students enrolled in Certificate/ Add-on/Value added programs as against the total number of students during the last five years

Response: 78.68

1.2.2.1 Number of students enrolled in subject related Certificate/ Add-on/Value added programs year wise during last five years

2021-22	2020-21	2019-20	2018-19	2017-18
571	478	545	602	586

File Description	Document
Upload supporting document	View Document
Institutional data in the prescribed format	View Document

1.3 Curriculum Enrichment

1.3.1

Institution integrates crosscutting issues relevant to Professional Ethics, Gender, Human Values, Environment and Sustainability into the Curriculum

Response:

Curriculum

Shivalik College of Engineering (SCE) offers courses relevant to Professional Ethics, Gender, Human Values, Environment and Sustainability as per the curriculum of University. The SCE organizes seminars, workshops, camps at regular intervals under the banner of Internal Complaints Committee (ICC).

- Environmental Sciences in B.Tech I yr II Semester
- Universal Human Values in B. Tech II yr (all branches)
- Energy & Environmental Engineering in B. tech II yr, Civil Engineering and Mechanical Engineering
- Environmental Engineering-I in B. Tech III yr, Civil Engineering
- Environmental Management & Sustainable Development (Open Elective), III yr
- Environmental Impact Assessment in B. Tech III yr, Civil Engineering
- Renewable Energy Resources in B. Tech III yr, Civil Engineering
- Environmental Engineering 2 in B. Tech IV yr, Civil Engineering
- Ground Water Engineering in B. Tech IV yr, Civil Engineering
- River Engineering in B.Tech IV yr, VIII Semester, Civil Engineering
- Renewable Energy Technology in B. Tech III yr Mechanical Engineering (Open Ele.)

Co-curricular and Extracurricular Activities

Institute integrates crosscutting issues relevant to Professional Ethics, Gender, Human Values, Environment and Sustainability into the curriculum. Environmental Sciences as a course is integrated in B. Tech first year programme by university. Gender Sensitization, though not a part of curriculum, we at SCE understand the institutional responsibility of promoting such issues among stakeholders, for that we organize seminars, awareness camps, nukkad natak, plays and such other related activities at regular intervals. Some of the steps taken are below:

Gender Sensitization

The Internal Complaint Committee(ICC) organizes various programs on Woman Empowerment and Woman Saftey. Our Gender Champions Club and Girls Up Club organizes Women's Day, Workshop on

Womens saftey, Essay Competition to sensitize students on gender equality. The N.S.S. unit of our college has been very proactive in conducting different extension activities not only in college premises but also in adopted villages also. Major gender issues are focused and addressed through activities like Save girl child campaign, Essay and poster exhibitions, wall paper presentations, etc.

Environment and Sustainability

N.S.S. promotes environmental protection through tree plantation and other sustainable development programs. Every year, N.S.S. unit undertakes a host of activities in the nearby villages. In these camps, N.S.S. organizes various environment related programs including tree plantation, village cleanliness, cleaning of gutters, digging of soak peats, eradication of Gajar grass, plastic free drive, Poster Competition, Debate Competition etc. Different activities have been initiated by the college to save environment such as Cleanliness Campaigns at Temple places, Bus and Public spaces, quiz and poster competitions, invited talks etc. The cleanliness program is organized to clean ponds, watering plant, Celebration of various days like World Environment Day, N.S.S. Day, etc. The SCE has taken initiative in Swachch Bharat Summer Internship (SBSI) Abhiyan and Tree plantation programs which are introduced by the Govt.

Human Values and Professional Ethics

To create a scientific approach and social awareness among the students, lectures and quiz, essay, Health and Hygiene awareness programs, Medical check-up camps, AIDS awareness programs, Voter's awareness program, Road safety Campaign, Blood donation camps are organized by NSS, NGO and other govt. bodies. The SCE makes efforts for integration of ethical and human values through extra-curricular activities also.

File Description	Document
Upload Additional information	View Document
Provide Link for Additional information	View Document

1.3.2

Percentage of students undertaking project work/field work/ internships (Data for the latest completed academic year)

Response: 74.79

1.3.2.1 Number of students undertaking project work/field work / internships

Response: 448

File Description	Document
Upload supporting document	View Document
Institutional data in the prescribed format	View Document

1.4 Feedback System

1.4.1

Institution obtains feedback on the academic performance and ambience of the institution from various stakeholders, such as Students, Teachers, Employers, Alumni etc. and action taken report on the feedback is made available on institutional website (Yes or No)

Response: Yes

File Description	Document
Upload supporting document	View Document

Criterion 2 - Teaching-learning and Evaluation

2.1 Student Enrollment and Profile

2.1.1

Enrolment percentage

Response: 45.58

2.1.1.1 Number of students admitted year wise during last five years

2021-22	2020-21	2019-20	2018-19	2017-18
151	134	154	153	160

2.1.1.2 Number of sanctioned seats year wise during last five years

2021-22	2020-21	2019-20	2018-19	2017-18
300	300	300	360	390

File Description

Document

Upload supporting document

[View Document](#)

Institutional data in the prescribed format

[View Document](#)

2.1.2

Percentage of seats filled against seats reserved for various categories (SC, ST, OBC, Divyangjan, etc. as per applicable reservation policy) during the last five years (Exclusive of supernumerary seats)

Response: 17.27

2.1.2.1 Number of actual students admitted from the reserved categories year - wise during the last five years

2021-22	2020-21	2019-20	2018-19	2017-18
28	23	33	35	33

2.1.2.2 Number of seats earmarked for reserved category as per GOI/ State Govt rule year wise during the last five years

2021-22	2020-21	2019-20	2018-19	2017-18
160	160	160	192	208

File Description	Document
Upload supporting document	View Document
Institutional data in the prescribed format	View Document

2.2 Student Teacher Ratio

2.2.1

Student – Full time Teacher Ratio
(Data for the latest completed academic year)

Response: 8.44

2.3 Teaching- Learning Process

2.3.1

Student centric methods, such as experiential learning, participative learning and problem solving methodologies are used for enhancing learning experiences using ICT tools

Response:

For enhancing learning experiences and student involvement, SCE believes in the adoption of students centric methods as a part of participative learning and problem solving methodology. FLIP Classes, Team works, Debates, Seminar Quizzes and case studies. Students centric Teaching Methods are reflected in project work, Field Visit, Industrial visit & guest lectures.

Student Centric Methodology includes:

Interactive/Participative Learning:

The faculty members make learning interactive with students by motivating student participation in FLIP classes, subject quiz, Tutorials, Team Work, Debates, and Group Work. Procedure Manual of Flip Class is attached.

- **FLIP Classes:** Flip Class is a role reversal process in which student acts as instructor/faculty and is at the delivery end of the class while faculty acts as student and is at receiving end in the class.

- **Team Work:** All Departments organize students activities to promote the spirit of Team work The activities and Camp of NSS, institutional social responsibility through NSS, Village Adoption, Tree plantation . Swatchh Bharat and Health awareness camp to help the students t to learn Art of living in a team for Social and community welfare.
- **Debates:** Debates are followed in many of the subjects where students are required to come with different opinions, thought processes thus the learning process gets justified in the argue-mental way of learning.
- **Group Work:** Practicals and workshops in all individual and group work under the guidance of teachers are also conducted

Experiential learning:

- **Project methods:** The project work stimulate student’s interest on the subject and provide student an opportunities of freedom of thoughts and free exchange of different views. The projects are done in two phases-Minor Project and Major Projects
- **Student Seminars/Conferences:** National and International Seminars and Conferences are organized where in the research papers are presented by students on contemporary topics. Students are also the part of organizing committee of such events to enrich their learning experience
- **Summer Internship in Industry:** Students carryout Summer Internship as per the University Syllabus. After completion of Summer Internship students submits the report and gives presentation about the learning and experiences during the training in the department. On the basis of report and presentations students’ performance are evaluated.
- **Participation in competition at various levels:** For Real time exposure students are encouraged to participated at National and International Level
- **Industrial Visits:** Departments Plan and Organise the industrial visits for students to provide exposure to industrial work culture.
- **Guest lecture:** Guest lecture by eminent experts from industry and academics from across the world are organised to supplement the teaching process and provide experiential learning.

Problem Solving Methodology:

- **Quizzes:** Quizzes are conducted by subject teachers in all programmes
- **Analysis and Reasoning:** Questions in examination are based on analysis and reasoning. Free internet access in the library and wifi facilities in campus promotes the habit of self learning and discussion.
- **Research Activities:** Research activities are conducted in each Department under the guidance of senior faculty where the students of different semester get knowledge about emerging area and help them to promote in Research aptitude.

File Description	Document
Upload Additional information	View Document
Provide Link for Additional information	View Document

2.4 Teacher Profile and Quality

2.4.1

Percentage of full-time teachers against sanctioned posts during the last five years

Response: 100

2.4.1.1 Number of Sanctioned posts / required positions for teaching staff/ full time teachers year wise during the last five years:

2021-22	2020-21	2019-20	2018-19	2017-18
71	71	88	82	98

File Description	Document
Upload supporting document	View Document

2.4.2

Percentage of full time teachers with NET/SET/SLET/ Ph. D. / D.M. / M.Ch. / D.N.B Superspeciality / D.Sc. / D.Litt. during the last five years (consider only highest degree for count)

Response: 18.54

2.4.2.1 Number of full time teachers with NET/SET/SLET/Ph. D. / D.M. / M.Ch. / D.N.B Superspeciality / D.Sc. / D.Litt. year wise during the last five years

2021-22	2020-21	2019-20	2018-19	2017-18
12	11	12	15	26

File Description	Document
Upload supporting document	View Document
Institutional data in the prescribed format	View Document

2.5 Evaluation Process and Reforms

2.5.1

Mechanism of internal/ external assessment is transparent and the grievance redressal system is time- bound and efficient

Response:

Examinations Grievances

The examination related grievances of the students such as late application form filing, non-receipt of admit card of examinations or wrong entries in the admit card, out of syllabus questions in examinations and errors in university examination question papers etc. are communicated to University Examination cell with the assistance of the examination cell of the institution.

Grievances associated with the internal examination, assessments are handled by the examination section of the institute whereas grievances related to the external assessment are forwarded to the Uttarakhand Technical University, Dehradun. Institute follows the guidelines laid down by Uttarakhand Technical University, Dehradun. Any grievances related to the exam are sent to the university liaison officer who deals with the institute. The grievance is registered in logbook maintained at the university.

In case if the student is not satisfied with his/her performance in any exam, he/she can request for photocopy of the answer scripts. The photocopy of answer script shall be mailed to the student by university. After checking the answer paper thoroughly, student can apply for revaluation. The institution ensures that examination related grievances are sorted out in a proper manner by coordinating with university.

Procedure for Submission of Application for Supply of Photocopy of Assessed Answer Sheets:

1. The student who has grievances fills the Application form and signs it.
2. The candidate shall submit their application forms along with the requisite fees to the Registrar of the institution who forwards the same to concerned authority in the University.

Evaluation of Semester End Theory Examination answer sheets is done by the university as per marking scheme set by the paper setter, after completion of evaluation procedure, University declares the result on university website. Subsequently, university informs the institution and students the results of the examinations. The results are displayed on the notice board of the institution and on the university website.

The code of the conduct of examination is displayed at examination cell, student hand book and on the institute and University website. The same is displayed on the notice board for the students.

The schedule of the internal examination is prepared by the Examination Committee and the same is sent to IQAC to introduce the schedule in semester academic calendar. The academic calendar which contains all information about registration date, commencement of classes, schedule of internal exam, schedule of answerscript showing etc. is published for students and faculty information. However, external examinations are scheduled by the University and notified for the information through institutes and on web site.

Internal Examination answer sheets are shown to the students after the assessment by the concerned subject teachers and request every student for further clarification if any. Internal examination marks (both theory and practicals) are filled on University online portal. Moreover institute also fill all the internal examination marks on institute ERP system to keep the record.

If in case any of the students are not satisfied with the marks which are given by the examiner they can also apply for rechecking and revaluation or moderation.

Students can put their examination related queries through the suggestion/complain boxes kept in the institute exam cell.

External Examinations

File Description	Document
Upload Additional information	View Document
Provide Link for Additional information	View Document

2.6 Student Performance and Learning Outcomes

2.6.1

Programme Outcomes (POs) and Course Outcomes (COs) for all Programmes offered by the institution are stated and displayed on website and attainment of POs and COs are evaluated

Response:

Shivalik College of Engineering (SCE) introduced Outcome Based Education (OBE) in 2016-17. The faculty were trained by conducting several FDPs and Workshops to prepare curriculum in line with the characteristics of OBE.

Program Outcomes (POs): It represents the knowledge, skills and attitudes the students should have at the end of a course completion of their respective engineering program.

Course Outcomes (COs): It gives the resultant knowledge and skills the student acquires at the end of each course.

Program Specific Outcomes (PSOs): PSOs are designed by the concerned Departments with their respective vision, mission and scope of the programme.

Program Outcomes (POs), Program Specific Outcomes (PSOs) and Course Outcomes are communicated to the stakeholders of the program by the following procedures-

- COs, POs and PSOs are approved by the Department Academic Committee (DAC)
- COs, POs and PSOs are available in the Institute website <https://shivalikcollege.edu.in/>
- COs, POs and PSOs are kept in Course Files, Student Manual, Academic Manuals and are also displayed in prominent locations such as Notice boards, Department office, Laboratories, Library etc.
- Course Outcomes (COs) are framed by concerned faculty and reviewed at Department Academic

Committee meetings.

- COs are communicated to the students during the introduction class itself.
- POs and PSOs are communicated to employers and Alumni by sending mail and during the Alumni Meeting and IQAC Meetings.

Calculation of Outcomes:

SCE has evolved its tools and practice of attainment calculation of learning outcomes based on outcome-based education and revised Bloom's Taxonomy during the duration of last few years based on experience, recommendations of experts and best practices of leading academic institutions. The university has also put forth COs for all the courses and same has been adopted by SCE.

Dimension of Outcomes:

Course Outcomes, Program Outcomes and Program Specific Outcomes are measured by both direct and indirect methods.

Outcome based Assessments:

Each internal assessment item is mapped to a particular course outcome and according to revised Bloom's levels. The performance of the student with respect to each assessment item is captured. Then, the combined performance of the class for all assessment items of a specific course item is separately tabulated and compared.

Reviewing the Under-performing and Over-performing Outcomes:

The under-performing course outcomes are reviewed for improvements under multiple teaching learning parameters such as content delivery, instructional design, alignment of assessment, teacher readiness, additional classes, remedial classes, and student capabilities. The loop is closed by adopting appropriate action by the board of management and ensuring better results in succeeding sessions.

The computed scores of indirect methods are calculated along with scores of direct methods with a predetermined weightage of 20% for indirect and 80% to direct methods.

Program Outcome / Program Specific Outcome Attainment (%) = (weight age: 80%) x (Average attainment in direct method) + (weightage: 20%) x (Average attainment in indirect method).

Analysis of Outcomes:

The program outcomes are reviewed and analysed by all the course instructors aligned to the respective program outcomes.

File Description	Document
Upload Additional information	View Document
Provide Link for Additional information	View Document

2.6.2

Pass percentage of Students during last five years

Response: 87.83

2.6.2.1 Number of final year students who passed the university examination year wise during the last five years

2021-22	2020-21	2019-20	2018-19	2017-18
118	159	191	180	189

2.6.2.2 Number of final year students who appeared for the university examination year-wise during the last five years

2021-22	2020-21	2019-20	2018-19	2017-18
152	170	214	210	207

File Description	Document
Upload supporting document	View Document
Institutional data in the prescribed format	View Document

2.7 Student Satisfaction Survey

2.7.1

Online student satisfaction survey regarding teaching learning process

Response: 3.4

File Description	Document
Upload database of all students on roll	View Document

Criterion 3 - Research, Innovations and Extension

3.1 Resource Mobilization for Research

3.1.1

Grants received from Government and non-governmental agencies for research projects / endowments in the institution during the last five years (INR in Lakhs)

Response: 59.66

3.1.1.1 Total Grants from Government and non-governmental agencies for research projects , endowments, Chairs in the institution during the last five years (INR in Lakhs)

2021-22	2020-21	2019-20	2018-19	2017-18
5.26	5.00	24.2	15.2	10.00

File Description

Document

Upload supporting document

[View Document](#)

Institutional data in the prescribed format

[View Document](#)

3.2 Innovation Ecosystem

3.2.1

Institution has created an ecosystem for innovations and has initiatives for creation and transfer of knowledge

Response:

Shivalik College of Engineering (SCE) has created an ecosystem for Research and Innovation by:

- Recruiting and developing desirable human resource,
- Taking initiative for creation and dissemination of knowledge and
- Establishing state of the art infrastructure

Annual Performance Appraisal System linked to Research and Innovation

The annual performance appraisal system encourages faculty to enhance their teaching, research and administrative skills, as well as extension activities.

Well Defined Research Policy

The institute has a well-defined and published research promotion policy. The faculty members are financially supported for minor Research projects up to one Lacks rupees by the management fund. Leaves are granted for attending conferences, workshops and academic leaves for Ph.D. work.

Conferences

SCE has been organizing the International Conference every year named ICEDET where all research scholars across the institute demonstrate their research work and the papers presented are published in reputed journals proceedings.

Experts Sessions

SCE invites renowned experts from various domains from India and abroad to facilitate networking and establish collaborations for undertaking multi-disciplinary and inter- disciplinary research.

Community Research-

Some of the products developed (Patent Published) after rigorous research used for the community are listed below:

- Use of LPG in Domestic Refrigeration
- Remote Controlled Shutter System
- Food Processing Device
- Electric Bicycle
- An Agricultural Device
- Automatic Sewage Cleaning Machine
- Artificial intelligence based smart hand sanitization system for elderly
- IOT, Cloud Computing based Automatic Bed Tracking System in Hospitals Using Machine Learning Algorithms
- Grass Cutting Device
- Portable Handicapped Crutches

Establishment of research infrastructure

Research infrastructure has been created through internal funding and extramural sources that include TEQIP, UCOST, USERC. Seed money is provided to faculty to pursue research. Central research facilities and advanced Research Centres have been established that are accessible to all faculty. The Institute has developed research lab “**Gayatri**” in the respective area of research. These include:

- Computational Fluid Dynamics (CFD)
- Nano-Fluids Dynamics
- Space Heating

Entrepreneurship and Incubation Centre

SCE has an active Institute Innovation Council (IIC) under the Ministry of MHRD’s Innovation Cell where in students and faculty participate and organize events such as Leadership Talks Series, Workshops on IPR, Startup Boot Camp, Prototype Competition, Smart India Hackathon and Ideathon.

IPR Cell

The objective of IPR Cell at SCE is to create awareness and provide guidance to faculty and students on the practices and the rules and regulations of institute regarding IPR and obligations within the framework of the IPR policy of the institute.

Some of the unique areas identified by the institute and work ongoing include:

- Experimental and Simulation Study of Thermal Behavior of Heat Pipes/ Micro channels in Solar Collector Applications Aptitude analysis
- Experimental Analysis on Packed Bed Heat Reservoir Filled with Heat Absorbing Material for Space Heating in Hilly Areas.
- Experimental analysis of physical-chemical, properties of nano composite particle and nano composite fluid
- CFD and Experimental analysis of fluid flow and thermal behavior on concentric tube heat exchanger with hybrid nano fluids.
- Techn-fest (Shiva-Tech) to foster creativity and innovation along with other creative art contests.

File Description	Document
Upload Additional information	View Document
Provide Link for Additional information	View Document

3.2.2

Number of workshops/seminars/conferences including on Research Methodology, Intellectual Property Rights (IPR) and entrepreneurship conducted during the last five years

Response: 7

3.2.2.1 Total number of workshops/seminars/conferences including programs conducted on Research Methodology, Intellectual Property Rights (IPR) and entrepreneurship year wise during last five years

2021-22	2020-21	2019-20	2018-19	2017-18
4	0	1	0	2

File Description	Document
Upload supporting document	View Document
Institutional data in the prescribed format	View Document

3.3 Research Publications and Awards

3.3.1

Number of research papers published per teacher in the Journals notified on UGC care list during the last five years

Response: 0.24

3.3.1.1 Number of research papers in the Journals notified on UGC CARE list year wise during the last five years

2021-22	2020-21	2019-20	2018-19	2017-18
0	3	11	5	12

File Description	Document
Upload supporting document	View Document
Institutional data in the prescribed format	View Document

3.3.2

Number of books and chapters in edited volumes/books published and papers published in national/ international conference proceedings per teacher during last five years

Response: 0.3

3.3.2.1 Total number of books and chapters in edited volumes/books published and papers in national/ international conference proceedings year wise during last five years

2021-22	2020-21	2019-20	2018-19	2017-18
03	17	11	4	4

File Description	Document
Upload supporting document	View Document
Institutional data in the prescribed format	View Document

3.4 Extension Activities

3.4.1

Extension activities are carried out in the neighborhood community, sensitizing students to social issues, for their holistic development, and impact thereof during the last five years.

Response:

Shivalik College of Engineering (SCE) has been in the forefront in sensitizing its students pertaining to social issues through its curriculum and extension activities. SCE organises blood donation camps, education awareness programmes, gender equality awareness activities and visits to slums in vicinity to create awareness among the dwellers. Different departments undertake social outreach activities which are meant for helping society and training students to shoulder all responsibilities with ease and impact.

The NSS Cell, NCC and other Departments in collaboration with different agencies, trusts, NGOs, hospitals etc. lead extension activities to address local issues and sensitize students for their holistic development. To address the issues of domestic violence, child marriages, health care, HIV/Aids, street children, runaway children, alcohol addiction and drug addiction, etc. the students and teachers have collaborated through their departments with other agencies to help society and local communities.

The NSS Cell in SCE works to develop the overall personality of students through a series of regular activities which are undertaken both within the Campus and outside it in the form of special camps. The motto of the Cell is *Not Me But You*.

It invites volunteers for all-round personality development through community service, group interactions, awareness generation programme, group training and leadership training programmes. The Cell has been very vibrant and active with single units of 100 volunteers. It conducts regular weekly meeting of volunteers to discuss the plan of action. Students' orientation to community service, blood donation camps, awareness and sensitization in and outside Campus, village adoption under *Unnat Bharat Abhiyan*.

Under Unnat Bharat Abhiyan Cell (UBA Cell), SCE had adopted 5 Gram Panchayats,

1. Gram Panchayat Sabhawala, Distt Dehradun
2. Gram Panchayat Mazra, , Distt Dehradun
3. Gram Panchayat Jhajra Range, Distt Dehradun
4. Gram Panchyat Shishambara, Distt Dehradun
5. Gram Panchayat Sherpur, Distt Dehradun

These villages are located at a distance of 15 km (approx.) from the SCE Campus, Shiniwala, Dehradun. These Gram Panchayats come under Gharwal Mandal of District Deharadun, Uttarakhand. Jhajra village has witnessed high degree of urbanization and the agricultural activities have just vanished, and the real estate business is at peak resulting into high disparity among the dwellers. There is a huge disparity with respect to prosperity and deprivation among the village population. There is high struggle for livelihood found in villagers that leads to adverse effects on the education of their children. The large concentration of marginalized groups, their acute deprivation and pathetic educational scenario are key factors for the adoption of these Gram Panchayats. The Cell has been coordinating with Gram Pradhan, Panchayat

Committees, teachers, schools, Anganwadis for planning education, health and sanitation interventions.

SCE also organised and commemorated events such as *World Health Day, International Women's Day, International Day of Yoga, Environment Day, Ek Bharat Srestha Bharat Abhiyan, Swakshta Pakwada, Computer Installation in all 5 Gram Panchayats adopted* etc.

File Description	Document
Upload Additional information	View Document
Provide Link for Additional information	View Document

3.4.2

Awards and recognitions received for extension activities from government / government recognised bodies

Response:

S.No	Name of the Activity	Name of the Award/ recognition	Name of the Awarding government/ recognised bodies	Year of award
1	Awareness of Intellectual Property Rights	Certificate recognition	Ministry of Education Innovation Cell, Govt. of India	2021-22
2	National Intellectual Property Mission	Certificate recognition	Ministry of Commerce and Industry, Govt of India	2021-22
3	New Age of Defence	Certificate recognition	Defence Minister of India. Ministry of Defence	2021-22
4	State Election Duty	Certificate recognition	SDM, Sadar, Dehradun	2021-22
5	Ek Bharat Shrestha Bharat Sapath	Certificate of Award	Camp Commandant, 11 UK Girls Battalion, Dehradun	2021-22
6	ICT Academy	Certificate recognition	ICT Academy	2021-22
7	Special Summary Revision Programme 2022	Certificate recognition	Chief Electoral Officer, Govt of Uttarakhand	2021-22
8	Neeraj Chopra Glory Cross Country Run	Certificate recognition	Uttarakhand Sports Department	2021-22

9	Social Work	Certificate recognition	of NGO	2021-22
10	Inspring Leaders Uttarakahnd 2022	Certificate of Award	Times Group	2021-22
11	Adoptation of Villages Unnat Abhiyan	Certificate recognition under Bharat	of Uttarakhand Technical University	2020-21
12	Distribution of food during COVID -19 for workers and labours	Certificate recognition	of Police Department Sabhawala	2020-21
13	Distribution of 8 litres of sanitizer to sabhawala police department	Certificate recognition	of Police Department Sabhawala	2020-21
14	Clenliness Drive in Village, Sherpur	Certificate recognition	of Gram Pradhan, Sherpur	2020-21
15	Training Program for Students	Certificate recognition	of SLOG and MSME	2020-21
16	ICT Academy	Certificate recognition	of ICT Academy	2020-21
17	ICT Academy Ppartner Growth	Certificate recognition	of ICT Academy	2020-21
18	Tree plantation in near by villages Shishambada	Certificate recognition	of Uttarakhand Technical University	2019-2020
19	Uttarakhand Skill Development Mission 2018	Certificate recognition	of IAS, Govt of Uttarakhand	2018-19
20	Bridge-18	Certificate recognition	of ICT Academy	2018-19
21	4th Industrial Expo	Certificate recognition	of CII	2017-18
22	Internation Conference on Emerging Developments 2017	Certificate recognition	of Governor Uttarakhand	of 2017-18
23	Award for Education Excellence	Certificate recognition	of Indian Society of Industry & Intellectual Development	of 2017-18
24	Online Training Programme Remote Sensing	Certificate recognition	of Indian Institute of Remote Sensing, ISRO	of 2017-18
25	Academic Excellence Award	Certificate recognition	of RCPL	2017-18

File Description	Document
Upload Additional information	View Document
Provide Link for Additional information	View Document

3.4.3

Number of extension and outreach programs conducted by the institution through NSS/NCC/Red cross/YRC etc., (including the programmes such as Swachh Bharat, AIDS awareness, Gender issues etc. and/or those organised in collaboration with industry, community and NGOs) during the last five years

Response: 17

3.4.3.1 Number of extension and outreach Programs conducted in collaboration with industry, community, and Non- Government Organizations through NSS/ NCC/ Red Cross/ YRC etc., year wise during the last five years

2021-22	2020-21	2019-20	2018-19	2017-18
10	01	04	01	01

File Description	Document
Upload supporting document	View Document
Institutional data in the prescribed format	View Document

3.5 Collaboration

3.5.1

Number of functional MoUs/linkages with institutions/ industries in India and abroad for internship, on-the-job training, project work, student / faculty exchange and collaborative research during the last five years.

Response: 15

File Description	Document
Upload supporting document	View Document
Institutional data in the prescribed format	View Document

Criterion 4 - Infrastructure and Learning Resources

4.1 Physical Facilities

4.1.1

Availability of adequate infrastructure and physical facilities viz., classrooms, laboratories, ICT facilities, cultural activities, gymnasium, yoga centre etc. in the institution

Response:

Shivalik College of Engineering (SCE) has a well-developed campus of around 7.5 acres which is equipped with facilities and learning resources to accomplish academic excellence to attain its vision and strategic objectives.

The SCE augments its infrastructure to promote a good teaching learning environment and continuously upgrades and improves its physical infrastructure to meet the needs of changing times.

ICT Facilities

The institute has an internet bandwidth of 250 MBPS. Two Audio Video recording and studio has been established to record and create online contents by faculty. The SCE has ERP with all e-governance modules and is used by all stakeholders. The SCE has adequate classrooms & Tutorials rooms with ICT facilities. The SCE also has four smart class rooms. The campus is fully equipped with WI-FI access points and CCTV cameras.

Classrooms & Laboratories

To meet the needs of practical and hands on training as per the curriculum 32 laboratories have been established under various departments. The SCE has 18 well equipped ICT enabled classrooms and 2 seminar halls and one conference room with cross ventilation and natural light. A auditorium of capacity of 550 students is under construction. The SCE have been established lab and Centre of Excellence(CoE) in collaboration with industry and academia:-

- Robotics Lab with IIT Bombay
- COE for Cloud Computing with IBM
- COE with DELL (EMC)
- Computer Centre

Central Workshop & language Lab:

The college has a centralized workshop, a Computer Centre with 613 computers, a language lab with 30 computers which are open for extended hours enabling the students to take advantage beyond the college teaching hours.

Central Library

The College has a central library well stacked with over 52,296 volumes and over 5059 titles. The Institute is a member of J-Gate consortium, DELNET and NDLI. Institute library is fully accessed through ERP system. The institute also has a separate reprographic system to facilitate students.

Seminar Halls

To help the students in holistic development Two seminar halls are available at SCE for group discussions, guest lectures, and different cultural and academic activities.

Power Backup

The College has 24*7 reliable power backup of 45 KVA, 82 KVA and 25 KVA by means of three noise and pollution free generators. The College also has UPS in all the computer labs and seminar halls.

Indoor/Outdoor Sports Facilities

SCE has adequate amenities for sports, games (indoor/outdoor), such as Handball, basketball, Volley ball, lawn tennis, Table-Tennis, chess, carom, and Badminton. There is sports complex for athletics, Football, Cricket, gymnasium and yoga etc.

The sports facilities have been used for organizing inter-collegiate events. Our students also participate in various inter university events, State and National level competitions. The College motivates such students by way of financial support for their expenses during the event. Students and teams who win these competitions are felicitated during the annual event with medals and certificates.

Physical Fitness Facilities:

The College has well equipped separate gymnasium for Girls and Boys with a qualified instructor.

Cultural Activities:

SCE has various student clubs which organizes and promotes cultural activities such as: “Shiva-Fest” for singing, Dance, Open Mic, NukkadNatak, Art and Painting, photography, debate, poster making, etc. every year during different occasions and the winners are felicitated in the annual function celebration.

File Description	Document
Upload Additional information	View Document

4.1.2

Percentage of expenditure, excluding salary for infrastructure augmentation during last five years (INR in Lakhs)

Response: 40.89

4.1.2.1 Expenditure for infrastructure augmentation, excluding salary during the last five years (INR in lakhs)

2021-22	2020-21	2019-20	2018-19	2017-18
496.01	501.2	271.07	128.4646	106.02

File Description	Document
Upload supporting document	View Document
Institutional data in the prescribed format	View Document

4.2 Library as a Learning Resource

4.2.1

Library is automated using Integrated Library Management System (ILMS), subscription to e-resources, amount spent on purchase of books, journals and per day usage of library

Response:

Shivalik College of Engineering (SCE) has a fully automated Library since 2015. Cyborg-ERP & e-Campus SDT Consultants (P) Ltd (**version 1.0.0.1**) is the software used for Circulation, Procurement, OPAC and Project Reports. All the library documents are bar-coded. E-Campus SDT Consultants (P) Ltd (**version 1.0.0.1**) is very versatile and is extensively used for generating all the reports that are required in day-to-day requirements of the library.

Library Networking

All the holdings such as books and Journals, syllabus, question papers and Project reports of the library could be searched using OPAC. The library has the membership of J-Gate, DELNET and NDLI since 2017. The library has e-library with 15 computers for students and faculty to access the e-resources.

Back volumes of journals, Project Reports, Question Banks, Syllabus sets

The library has printed journals with 182 titles and 226 bound volumes.

In the Project reports section more than 800 reports in physical and digital forms are available which are being used extensively by the students. Libraries maintain software through which the softcopy of the reports could be uploaded, searched and downloaded.

Library Subscriptions

- e-ShodhSindhu – for archive access of peer reviewed e-Journals
- e-Shodhganga – Through University for Thesis Archives

Library Facilities & Services

- Books, Journals, e-Journals, Projects & CD Access
- Reference Sections with reference books
- Text Books Section
- News Papers (Hindi and English daily)
- OPAC Facility
- Digital Library

Reprography Facility

A high end Canon Xerox machine is available in library which has the facilities for copying and printing.

Library Classification and Cataloguing

Library is making use of DDC classification (19th edition) for all its documents. For cataloguing the library is making use of MARC II format.

Open Access

Right from the inception of the Library, it is following the open access to all its documents housed in it that includes books. Bound volumes, reports and other reading material.

Library bay guides to locate the materials easily

The library has good bay guides which helps the readers to easily locate the books and other reading material even without the help of Library staff. The departmental books are arranged subject-wise.

Display of New Arrivals

All the new books and journals are kept in the new arrival racks for a period of two weeks or till the arrival of next lot of new books or journals

Display boards of library data and services

There are library data boards which give information about the collection and services offered and staff details.

Power back up (UPS)

The library has its own power back up. Efforts are also being made to get the support of the central UPS which caters to the institute.

Drinking water facility

There is water filter (RO) installed in vicinity of library which has both normal and cold water facility.

File Description	Document
Upload Additional information	View Document
Provide Link for Additional information	View Document

4.3 IT Infrastructure

4.3.1

Institution frequently updates its IT facilities and provides sufficient bandwidth for internet connection

Response:

Shivalik College of Engineering(SCE) continuously strives to provide state-of-the-art technologies and update its ICT facilities to ensure efficient functioning. Extensive infrastructure has been setup during the last five years:

IP based Surveillance System

The infrastructure includes latest & upgraded desktops systems and laptops, Internet lease line services is installed with (Ring Topology) two way Fiber Cable connectivity including one RF backup, the IP Surveillance system was established with the following configuration.

- Desktops (Intel i5, 100- Intel i3, 300 - Dual Core based with 4 to 32 GB RAM and 250 GB to 1TB SSD & HDD)
- Laptops (i7, i5- 6th generation, Core2 Duo based 2.4 GHz with 4 to 8 GB RAM)
- Total number of (Desktops & Laptop) systems = 613
- 1 Tower server (Xeon 4.2 GHz, 32 GB RAM)
- 250 Mbps leased fiber lines for internet connectivity
- 200 HD & IP camera (1.2 to 8 MP, Hikvision, CP-plus, i-ball)
- 3 NVR & 4DVR with 25TB of storage
- 9-Cisco, 20-D-Link, 7-HP,9-Digisol Switches
- 65 Wireless Access Points (Grand Stream 7605, Ubiquiti UAP-AC-LR)
- 2 Km of Fiber Optic Cable.

Fiber Lines

All the Locations are connected through fiber optic cables like Guest House and Seminar Hall Complex, Boys Hostel, Girls Hostel, Institute LAN and for Internet access managed by (Cisco SG350-28, Huawei S5700S-28P-LI-AC Gigabit Managed Switches). Associated equipment such as Ethernet and fiber

switches are also installed at different locations.

WIFI Facility

WIFI facility was installed with “Grand Stream 7605, Ubiquiti UAP-AC-LR” Wireless Access Points. All buildings, hostels, Seminar halls, conference rooms and common areas in the campus are wi-fi enabled.

ICT and Computing Facilities

Significant investment has been made to upgrade Computer Labs & classrooms to e-classrooms/smart classrooms with the purchase of the following equipment:

- Epson LCD Projectors Models like (Epson EB-W49).
- Microsoft licenses under Azure Teaching & Learning tool with yearly subscription has been purchased for Microsoft products.
- Hardware Firewall XG310 (SFOS 18.0.4 MR-4) has been installed at the networking infrastructure for the Internet Policy and its control.

File Description	Document
Upload Additional information	View Document

4.3.2

Student – Computer ratio (Data for the latest completed academic year)

Response: 0.98

4.3.2.1 Number of computers available for students usage during the latest completed academic year:

Response: 613

File Description	Document
Upload supporting document	View Document

4.4 Maintenance of Campus Infrastructure

4.4.1

Percentage of expenditure incurred on maintenance of infrastructure (physical and academic support facilities) excluding salary component during the last five years (INR in Lakhs)

Response: 38.52

4.4.1.1 Expenditure incurred on maintenance of infrastructure (physical facilities and academic support facilities) excluding salary component year wise during the last five years (INR in lakhs)

2021-22	2020-21	2019-20	2018-19	2017-18
285.32	195.13	331.88	300.61	302.84

File Description	Document
Upload supporting document	View Document
Institutional data in the prescribed format	View Document

Criterion 5 - Student Support and Progression

5.1 Student Support

5.1.1

Percentage of students benefited by scholarships and freeships provided by the Government and Non-Government agencies during last five years

Response: 52.97

5.1.1.1 Number of students benefited by scholarships and freeships provided by the Government and Non-Government agencies year wise during last five years

2021-22	2020-21	2019-20	2018-19	2017-18
332	303	375	372	491

File Description	Document
Upload supporting document	View Document
Institutional data in the prescribed format	View Document

5.1.2

Capacity building and skills enhancement initiatives taken by the institution include the following

- 1. Soft skills**
- 2. Language and communication skills**
- 3. Life skills (Yoga, physical fitness, health and hygiene)**
- 4. ICT/computing skills**

Response: B. 3 of the above

File Description	Document
Upload supporting document	View Document
Institutional data in the prescribed format	View Document

5.1.3

Percentage of students benefitted by guidance for competitive examinations and career counseling offered by the Institution during the last five years

Response: 91.15

5.1.3.1 Number of students benefitted by guidance for competitive examinations and career counselling offered by the institution year wise during last five years

2021-22	2020-21	2019-20	2018-19	2017-18
522	485	688	731	797

File Description

Document

Upload supporting document

[View Document](#)

Institutional data in the prescribed format

[View Document](#)

5.1.4

The Institution has a transparent mechanism for timely redressal of student grievances including sexual harassment and ragging cases

- 1.Implementation of guidelines of statutory/regulatory bodies**
- 2.Organisation wide awareness and undertakings on policies with zero tolerance**
- 3.Mechanisms for submission of online/offline students' grievances**
- 4.Timely redressal of the grievances through appropriate committees**

Response: A. All of the above

File Description

Document

Upload supporting document

[View Document](#)

5.2 Student Progression

5.2.1

Percentage of placement of outgoing students and students progressing to higher education during the last five years

Response: 83.92

5.2.1.1 Number of outgoing students placed and / or progressed to higher education year wise during the last five years

2021-22	2020-21	2019-20	2018-19	2017-18
129	121	186	180	188

5.2.1.2 Number of outgoing students year wise during the last five years

2021-22	2020-21	2019-20	2018-19	2017-18
152	171	216	208	211

File Description

Document

Upload supporting document

[View Document](#)

Institutional data in the prescribed format

[View Document](#)

5.2.2

Percentage of students qualifying in state/national/ international level examinations during the last five years (eg: JAM/CLAT/GATE/ GMAT/ CAT/ GRE/ TOEFL/ Civil Services/State government examinations)

Response: 38.04

5.2.2.1 Number of students qualifying in state/ national/ international level examinations (eg: JAM/CLAT/NET/ SLET/ GATE/ GMAT/CAT/GRE/ TOEFL/ Civil Services/ Judicial Services/Public Prosecution services/All India Bar Exams/State government examinations) year wise during last five years

2021-22	2020-21	2019-20	2018-19	2017-18
14	15	12	11	10

5.2.2.2 Number of students appearing in state/ national/ international level examinations (eg: JAM/CLAT/NET/ SLET/ GATE/ GMAT/CAT,GRE/ TOFEL/ Civil Services/ State government examinations) year wise during last five years

2021-22	2020-21	2019-20	2018-19	2017-18
33	42	27	26	35

File Description

Document

Upload supporting document

[View Document](#)

Institutional data in the prescribed format

[View Document](#)

5.3 Student Participation and Activities

5.3.1

Number of awards/medals for outstanding performance in sports/ cultural activities at University / state/ national / international level (award for a team event should be counted as one) during the last five years

Response: 26

5.3.1.1 Number of awards/medals for outstanding performance in sports/cultural activities at national/international level (award for a team event should be counted as one) year wise during the last five years

2021-22	2020-21	2019-20	2018-19	2017-18
01	0	09	09	07

File Description

Document

Upload supporting document

[View Document](#)

Institutional data in the prescribed format

[View Document](#)

5.3.2

Average number of sports and cultural programs in which students of the Institution participated during last five years (organised by the institution/other institutions)

Response: 6

5.3.2.1 Number of sports and cultural programs in which students of the Institution participated year wise during last five years

2021-22	2020-21	2019-20	2018-19	2017-18
08	0	09	06	7

File Description

Document

Upload supporting document

[View Document](#)

Institutional data in the prescribed format

[View Document](#)

5.4 Alumni Engagement

5.4.1

There is a registered Alumni Association that contributes significantly to the development of the institution through financial and/or other support services

Response:

Shivalik College of Engineering(SCE) has registered an Alumni Association Registration No: UK0600892022009373 under the Societies Registration Act. 1960 on 19th September 2022 at Dehradun, Uttarakhand. Prior to the registration of the Alumni Association, the Institute established an Alumni cell in the year 2012.

SCE and the Alumni association jointly believe in creating and maintaining associations with its alumni. The Alumni Association provides an interface for establishing a link between the institute's alumni, staff, and students. SCE alumni are currently working in various positions all over the globe and proving their mettle in all spheres of management.

The Alumni Association Contribution through various means:-

- **Book Donation:** Contribution by donating Books.
- **Alumni Interaction:** Alumni of SCE give input to aspiring Engineering graduates. They are invited as resource persons at various events, such as guest lectures, and panel discussions. They provide inputs and share their experiences regarding skills, recent technologies & trends in the corporate world, application of knowledge, and corporate working culture.
- **Placement & Career Guidance Assistance:** Alumni are working in organizations at various capacities. They keep the faculty and placement officer abreast of available job opportunities. They assist and guide the students to crack the interviews. They also share their experience with the students and motivate them for their career development in various domains.
- **Summer Internship Opportunities:** Internship being a part of the MBA curriculum; Alumni provide innumerable opportunities in various companies to the students.
- **Entrepreneurship Awareness:** Some of our Alumni have established startups in different sectors, many of them are first generation entrepreneurs. They decided to become entrepreneurs during their academic span at SCE. Through the journey as an entrepreneur they learnt various skills & knowledge. They enlighten the students with their success stories and challenges faced.
- **Alumni Meet:** We at SCE has a tradition of inviting alumni for Annual Alumni Meet "Convergence" in the month of February. In this meet the alumni get chance to reconnect with the Alma mater and old friends. This is the best platform for networking and sharing new trends and current happenings in the corporate world. These inputs are helpful to the academicians for moulding the aspiring students.

File Description	Document
Upload Additional information	View Document
Provide Link for Additional information	View Document

Criterion 6 - Governance, Leadership and Management

6.1 Institutional Vision and Leadership

6.1.1

The governance and leadership is in accordance with vision and mission of the institution and it is visible in various institutional practices such as decentralization and participation in the institutional governance

Response:

Vision

To be a premier technical institution that provides experiential learning and multi-disciplinary research to develop socially responsible and competent professionals.

Mission

- Create an ambience that fosters a passion for learning and collaborative research and effectively disseminate knowledge between highly competent faculty and student community.
- Foster professionals, who can add value to organizations, engage in higher studies and pursue innovative entrepreneurial activities.
- Provide best in class infrastructure to facilitate experiential learning in cutting edge technologies.
- Develop leaders who exhibit ethical behaviour in professional and societal activities.

To achieve the vision of the college the governance arrangement demonstrates the practices of participative management system which ensures development, implementation and continuous improvement in Teaching & Learning along with other Administrative process.

The leadership and guidance provided by the apex body, the Board of Governors has ensured a very effective system development and improvement. Developmental needs are identified, discussed and reviewed periodically to remove the impediments involved in the functioning of the College and furthering its progress. The governing body supports the college administration with decisions, approvals and developmental matters.

The governance of the institute is over seen by the director of the under the guidance of Board of Management (BOM). The Director of the institute is the guiding beacon and strategic direction and accepts responsibility for risk.

Department of Quality Assurance acts as a central body for continual improvement of institutional quality and suggest different measures to achieve vision of the college. Department of Academic Vigilance and Monitoring keeps a close watch on the implementation of the strategic academic direction received from Director.

IQAC is the forum to discuss and implementation of the strategies policies it also acts as watch dog and conducts Audits and Surveys to assess the pulse of the college.

File Description	Document
Upload Additional information	View Document
Provide Link for Additional information	View Document

6.2 Strategy Development and Deployment

6.2.1

The functioning of the institutional bodies is effective and efficient as visible from policies, administrative setup, appointment and service rules, procedures, deployment of institutional Strategic/ perspective/development plan etc

Response:

The hierarchy of the institution facilitates effective governance. It promotes decentralization of decision making while ensuring effective leadership and transparency at all levels with detailed process documentation and communication. It facilitates feedback from all stake holders and promotes improvement at all levels.

- Institution has defined roles and responsibilities for all levels of hierarchy. Policies for different stakeholders are put in place under establishment, Academic and student manual.
- Institution has defined roles and responsibilities for all levels of hierarchy. Policies for different stakeholders are put in place under establishment, Academic and student manual. The Secretary of the society in consultation of members of society appoints the Director of the college as per the norms of the regulatory bodies.
- The Director is guided and supported by Board of Management.
- The Registrar, Dean Student Welfare, Dean Research Promotion & Monitoring, Dean Quality Assurance Exam controller, Training & Placement head, Accounts, Proctor and Admissions directly reports to the Director.
- Respective Head of department, Head of different committees/Cells/clubs report to respective Deans and Director.
- All administrative functions and roles such as hostel, transport, maintenance, human resource, administration, information technology, cafeteria and mess, stores and Purchase report to the registrar.
- The institute has a well-defined policy and procedure for selection of teaching and non-teaching staff.
- The code of conduct for all employees and students laid down and available to all stake holders.
- The pay scale, terms and conditions of employment, benefits to employees are well defined.
- Performance appraisal is conducted, and promotions and increments are based on annual appraisal.

File Description	Document
Upload Additional information	View Document
Provide Link for Additional information	View Document

6.2.2

Implementation of e-governance in areas of operation

- 1. Administration**
- 2. Finance and Accounts**
- 3. Student Admission and Support**
- 4. Examination**

Response: A. All of the above

File Description	Document
Upload supporting document	View Document

6.3 Faculty Empowerment Strategies

6.3.1

The institution has effective welfare measures and Performance Appraisal System for teaching and non-teaching staff

Response:

At Shivalik Collge of Engineering(SCE), the staff welfare schemes as follows:

- Contributory provident fund-EPF.
- Contributory Insurance Scheme-ESI.
- Medical leave with full pay.
- 10 days Academic leave.
- 10 casual leaves for teaching staff.
- 15 Earned leaves.
- Six Month Maternity leave for female staff.
- Extra Ordinary leave/Special leaves.
- Facility of advance amount for teaching and non-teaching staff.
- Health insurance Policy.
- Residence facility in campus for teaching and administrative staff.
- Free Transport facility for teaching and non-teaching staff.
- Loan facility without interest for teaching and non-teaching staff.
- Research Incentive Policy.
- 24x7 Free Wi-Fi facility for teaching and non-teaching staff.
- Access to Journals, periodicals and Newspapers.

- Dedicated staff rooms with computers facility.
- Fee concession Policy for Employee wards.
- Long Service Recognition with 5000 rupees award.
- Study Leave for teaching staff.
- Uniform for non teaching and supporting staffs.
- Access to Gymnasium and sports facilities.
- Cafeteria and Mess facility.

Performance appraisal system of the Teaching staff includes the following mechanisms:

The Self-Appraisal Report (SAR) of all teaching staff is taken on annual basis using structured questionnaire. The questionnaire is of 300 marks which is sub divided into 5 parts (A to E)

Part A : Teaching learning & Evaluation related Activities (100 Marks)

Part B : Research Publication Projects and Consultancy (100 marks)

Part C : Extension activities (80 Marks)

Part D : Leave Records (10 Marks)

Part E : Professional Ethics & Competence (10Marks)

Based on the last year's performance Human resource department under the guidance of Director if college prepaid appraisals. Director of the college takes personal interest in guiding the teachers for further improvement. Senior faculty members of the department groom the new recruits to help them to enhance their teaching and evaluation performance.

The appraisal reports are analyzed and discussed with individual staff members. Major decisions based on these appraisals include:

- The faculty strengths are appreciated and corrective measures are suggested for shortcomings by the Director and Dean academics
- Enhanced increments
- Promotion
- Planning for FDPs
- Enhancement of IT infrastructure

The major decisions are utilized for the strategic planning of the institution in the areas of enhancement of faculty, efforts to enhance pedagogic innovations, adopt best practices.

Performance Appraisal System non-teaching staff

The Self-Appraisal Report (SAR) of non-teaching staff is taken on annual basis using structured questionnaire. Based on the performance and the feedback, the Registrar takes personal interest in guiding the non- teaching Staff. The Manager and the senior members of the non-teaching Staff groom the new recruits to help them to enhance their performance. The non-teaching Staff members have assigned to work in different capacities on rotation basis. The appraisal reports are analyzed and the

working ability of individuals is assessed

File Description	Document
Upload Additional information	View Document
Provide Link for Additional information	View Document

6.3.2

Percentage of teachers provided with financial support to attend conferences/workshops and towards membership fee of professional bodies during the last five years

Response: 28.05

6.3.2.1 Number of teachers provided with financial support to attend conferences/workshops and towards membership fee of professional bodies year wise during the last five years

2021-22	2020-21	2019-20	2018-19	2017-18
28	09	30	37	11

File Description	Document
Upload supporting document	View Document
Institutional data in the prescribed format	View Document

6.3.3

Percentage of teaching and non-teaching staff participating in Faculty development Programmes (FDP), professional development /administrative training programs during the last five years

Response: 100

6.3.3.1 Total number of teaching and non-teaching staff participating in Faculty development Programmes (FDP), professional development /administrative training programs during the last five years

2021-22	2020-21	2019-20	2018-19	2017-18
96	96	108	106	151

6.3.3.2 Number of non-teaching staff year wise during the last five years

2021-22	2020-21	2019-20	2018-19	2017-18
25	25	20	24	53

File Description	Document
Upload supporting document	View Document
Institutional data in the prescribed format	View Document

6.4 Financial Management and Resource Mobilization

6.4.1

Institution has strategies for mobilization and optimal utilization of resources and funds from various sources (government/ nongovernment organizations) and it conducts financial audits regularly (internal and external)

Response:

The Shivalik College of Engineering (SCE) of takes every possible effort towards resource mobilization and generating funds. The college is self-financed, not-for-profit institution, catering to the needs of various cross sections of the society, to metamorphize the students to become responsible citizen of our country both professionally and otherwise. A well-defined mechanism is in force for financial audit to have discipline and transparency in financial management. The accounts of the institution are subject to internal and external audit. Finance and Fees Committees are in place since 2014, to monitor the financial system. The College has a conscious policy of keeping the student fee affordable. The College is now constantly searching for opportunities to receive grants and financial assistance from various Government Agencies, apart from Fees so that more emphasis can be done on Research aspects.

The College constantly encourages its faculty members to apply for research grants offered by various funding agencies. The office of the Director encourages and guides faculty and students to apply for research projects. Besides Government agencies, the College is trying to obtain private funding agencies for supporting research and developmental projects.

The integrity and service mindedness of the College management have generated enormous faith and goodwill towards the College among many donors and philanthropists. The college has an active alumni cell, wherein many illustrious alumni are continuously and voluntarily donating amounts to the College.

The College not only strives to generate funds from diverse sources without burdening the students, but also makes every effort to make optimal utilization of the funds mobilized by stringent fiscal management.

The status of Internal and External Audits are as under:

- Internal Audit: Reports held on record. Deficiencies reported rectified. More stringent internal controls now in place, on the recommendations of the Auditors.
- External Audit: Reports and Income Tax Returns with all schedules and annexures held on record.

6.5 Internal Quality Assurance System

6.5.1

Internal Quality Assurance Cell (IQAC) has contributed significantly for institutionalizing the quality assurance strategies and processes. It reviews teaching learning process, structures & methodologies of operations and learning outcomes at periodic intervals and records the incremental improvement in various activities

Response:

Internal Quality Assurance cell (IQAC) was established at Shivalik College of Engineering in the year of 2018 and its first meeting was held on 14th January 2019 to chisel out quality graduates from institution. This cell has wide representation from all functional areas of institution and meets at least twice every semester to review quality initiatives being carried out and propose new initiatives. The cell since its inception has conducted multiple events such as seminars, workshops, expert lectures etc. year on year. As a part of quality initiative, all areas of the institution were reviewed and recommendations for improving teaching and learning were provided. The IQAC enhanced institution's ability to acquire and develop competencies for teaching learning, research resulting in improved learner experience and enhance research opportunities. IQAC decided to follow ISO 9001:2015 standards in the institution for implementing quality improvements. Under the directions of IQAC, a list of initiatives was undertaken year on year to support various educational, administrative and operation needs of the institution.

The IQAC Initiatives are as follows

- a) Introducing outcome-based education was one of the key changes implemented under the guidance of IQAC. Multiple workshops were conducted in collaboration with Uttarakhand Technical University and NITTT-Chandigarh were conducted to enhance the understanding of OBE at college.
- b) Students and teachers were trained on Blooms taxonomy by inviting experts. Process such as attainment calculations were implemented across all courses and programs and it helped identify areas of improvements.
- c) Creating IIC, Clubs for Co-curricular & Extra-curricular activities ensured proper mapping of these activities to the course and program outcomes and also ensured student participation throughout.
- d) Uniform standards for Course files were initiated across the institution and it helped institution wide common practices and performance records. This helped to identify areas for improvements across

departments.

e) Feedback process were introduced to capture the feedback periodically across all stakeholders such as students, teachers, alumni, industry and parents. The feedback was analysed at AAC meetings and suitable recommendations were given. The feedback obtained were included in the indirect attainment calculation of the course and program outcomes. This helped in continuous quality improvements and better course and program outcomes.

f) Have conducted Faculty orientation programs to provide opportunity to the faculties to upgrade themselves in teaching pedagogy and outcome based learning.

g) Workshops and seminars on research paper writing and intellectual property right to promote the research environment in the college.

File Description	Document
Upload Additional information	View Document
Provide Link for Additional information	View Document

6.5.2

Quality assurance initiatives of the institution include:

- 1.Regular meeting of Internal Quality Assurance Cell (IQAC); Feedback collected, analysed and used for improvements**
- 2.Collaborative quality initiatives with other institution(s)/ membership of international networks**
- 3.Participation in NIRF**
- 4.any other quality audit/accreditation recognized by state, national or international agencies such as NAAC, NBA, ISO Certification etc**

Response: B. Any 3 of the above

File Description	Document
Upload supporting document	View Document
Institutional data in the prescribed format	View Document

Criterion 7 - Institutional Values and Best Practices

7.1 Institutional Values and Social Responsibilities

7.1.1

Measures initiated by the Institution for the promotion of gender equity and Institutional initiatives to celebrate / organize national and international commemorative days, events and festivals during the last five years

Response:

Measures initiated by the institution for the promotion of gender equity during the last five years:

- Shivalik College of Engineering (SCE) ensures women empowerment through gender equality. The Institute makes consistent efforts to promote women's education.
- The Institute has taken several measures to enhance safety & security on campuses by constituting Internal Complaints Committee (ICC), installing CCTV cameras & by providing 24 hours*7 days security. Women security guards are also available on the premises of the Institute to ensure the safety of women.
- SCE has implemented a common uniform for all of its students. Gender-neutral uniforms can allow students to not feel confined to any particular gender identity.

- All types of projects and lab activities are offered to all students irrespective of boys and girls.
- The Institute has two women counselors who provide regular counseling sessions to both girl students and female faculty members on a regular basis.
- The Institute have organized more than 12 training programs, seminars, workshops etc. on gender equality and sensitization.
- The women empowerment cell of SCE celebrates International Women's Day on 8th March, every year. Distinguished women from various fields discussed their challenges and success stories. All the female students along with the female faculty members attended the program, and there was a question answer session followed by debate at the end of the program.
- National Girl Child Day is observed every year on January 24 to promote awareness about the rights of a girl child and to promote the importance of their education, health, and nutrition.
- The Institute organized a women empowerment training program on Gender Equality from 3rd December to 4th December, 2020. The program aimed at creating awareness of their rights and duties. It also provides a platform for women to share their experiences and views regarding their status in the society and to suggest ways to improve and empower themselves. The program mainly stands for facilitating women's empowerment through guest lectures, seminars, awareness programmes and other welfare activities. SCE will step forward with specific objectives and plan of action by focusing quality activities for the well-being of girl students.
- A scholarship specifically for Girls Child with the name of UDAN introduced to promote the girls child education in the state of Uttarakhand.

File Description	Document
Upload Additional information	View Document

7.1.2

The Institution has facilities and initiatives for

- 1. Alternate sources of energy and energy conservation measures**
- 2. Management of the various types of degradable and nondegradable waste**
- 3. Water conservation**
- 4. Green campus initiatives**
- 5. Disabled-friendly, barrier free environment**

Response: A. 4 or All of the above

File Description	Document
Upload supporting document	View Document

7.1.3

Quality audits on environment and energy regularly undertaken by the Institution. The institutional environment and energy initiatives are confirmed through the following

- 1. Green audit / Environment audit**
- 2. Energy audit**
- 3. Clean and green campus initiatives**
- 4. Beyond the campus environmental promotion activities**

Response: C. Any 2 of the above

File Description	Document
Upload supporting document	View Document

7.1.4

Describe the Institutional efforts/initiatives in providing an inclusive environment i.e., tolerance and harmony towards cultural, regional, linguistic, communal socioeconomic diversity and Sensitization of students and employees to the constitutional obligations: values, rights, duties and responsibilities of citizens (Within 500 words)

Response:

The Shivalik college of Engineering (SCE) has conducted several programs for promoting tolerance and harmony towards cultural, regional, linguistic, communal, socio-economic, and other diversities

providing an inclusive environment. SCE offers several scholarships to students across the country as per the nation-wide jurisdiction of the college and full fee free scholarship policy for female students under Udaan Scheme. Veer Madho Singh Bhandari Scholarship (for students from Uttarakhand), Rakshak Scholarship (for Army/Navy/Airforce/Corona Warriors dependents), Karuna Scholarship (for Divyanjan Students) Special State Scholarship (for J&K residents), Scholarship to students from Bhutan & Nepal.

For the promotion of unity in diversity, NSS Cell, ICC Cell and NCC Unit of SCE organizes various programs such as *Ek Bharat Shrestha Bharat* campaign (2021-22) and *Unity Day* (2020-21) on the anniversary of Sardar Vallabhai Patel. The program aims at strengthening the bond between states to strengthen the unity and integrity of India.

Rashtriya Ekta Diwas “Run for Unity” (2019-20) a large number of teachers and students participated in it.

The NSS Cell, NCC and other Departments in collaboration with different agencies, trusts, NGOs, hospitals etc. lead extension activities to address local issues and sensitize students as a responsible citizen. To address the issues of domestic violence, child marriages, health care, HIV/Aids, street children, runaway children, alcohol addiction and drug addiction, etc. the students and teachers have collaborated through their departments with other agencies to help society and local communities.

The NSS Cell at SCE works to develop the overall personality of students through a series of regular activities which are undertaken both within the Campus and outside it in the form of special camps. The motto of the Cell is ***Not Me But You.***

The NSS cell has been very vibrant and active with single units of 100 volunteers. It conducts regular weekly meeting of volunteers to discuss the plan of action. Students’ orientation to community service, blood donation camps, awareness and sensitization in and outside Campus, village adoption under *Unnat Bharat Abhiyan*.

Under Unnat Bharat Abhiyan Cell (UBA Cell), SCE had adopted 5 Gram Panchayats,

1. Gram Panchayat Sabhawala, Distt Dehradun
2. Gram Panchayat Mazra, , Distt Dehradun
3. Gram Panchayat Jhajra Range, Distt Dehradun
4. Gram Panchyat Shishambara, Distt Dehradun

The large concentration of marginalized groups, their acute deprivation and pathetic educational scenario are key factors for the adoption of this Gram Panchayat. The Cell has been coordinating with Gram Pradhan, Panchayat Committees, teachers, schools, Anganwadis for planning education, health and sanitation interventions.

SCE also organised and commemorated events such as World Health Day, International Women’s Day, International Day of Yoga, Environment Day, Ek Bharat Srestha Bharat Abhiyan, Swakshta Pakwada, Computer Installation in all 5 Gram Panchayats adopted etc.

The College also organizes various cultural programs to celebrate the cultural diversity of India. Students from various regional and cultural backgrounds participate in such programs and present their regional or

cultural folk songs and dances.

File Description	Document
Upload Additional information	View Document

7.2 Best Practices

7.2.1

Describe two best practices successfully implemented by the Institution as per NAAC format provided in the Manual

Response:

BEST PRACTICE - I

1.Title of the Practice:

Engineering solutions for societal problems by disseminating awareness, understanding and application of **Intellectual Proper Rights(IPR)** among the students

2.Objectives of the Practice:

- To create the culture of creative thinking and Innovation in the institute.
- To beneficiate society by providing Engineering solutions to various existing problems with the help of right process, tool and techniques.
- To file Design/ Prototype patents from various Projects
- To make students and faculty members aware of IPR
- To increase the Innovation Index of Institute that leads to enhance the Global Innovation Index of Country.

3.The Context:

Intellectual property pertains the originality of the human intellect such as literacy, technical or scientific creations. IPR refers to the legal rights given to the inventor or creator to protect his invention or creation for a certain period of time. There are several intellectual property protections like patent, copyright, trademark etc. IPR is prerequisite for better identification, planning, commercialization, rendering of the products. It provides a mechanism of handling infringement, piracy, and unauthorized use of the invention. As per the vision of Shivalik College of Engineering *“To be a premier technical institution that provides experiential learning and multi-disciplinary research to develop socially responsible and competent professionals”* we at Shivalik College are committed to provide experiential learning and multi disciplinary research to our students in order to make them socially responsible. In order to fulfill this SCE vision, the institute has a vibrant IPR Cell which work in close coordination with IIC and KPILA (An AICTE Scheme) to make students and faculty aware of Research and IPR.

Shivalik IPR Cell mentors and helps students and faculty members in drafting the patent application and also providing financial support to them. The students are encouraged to produce Ideas/Designs/Projects which could solve societal problems by engineering solutions.

Engineering Solutions such as Solar Sewage Cleaning Machine, Portable Handicapped Crutch for visually challenged people, Solar powered Grass Cutting Device for gardeners, Remote Controlled Shutter System for small shopkeepers, Electric Bicycle Prototype for commute, Paddled powered washing machine for household and many more have been made/designed and patented by the stake holders of SCE.

4.The Practice

5. Evidence of success:

From the inception of this best practice students and faculty members of Shivalik College of Engineering have solved more than 100 societal problems and published 42 patents out of them. The summary of the Patents File and Published is as follows:

SHIVALIK COLLEGE OF ENGINEERING, DEHRADUN			
Year	Patents Filed	Patents Published	Patents Granted
2022	36	36	0
2021	6	6	3
2020	6	0	0
2019	0	0	0
2018	0	0	0
2017	0	0	0

6. Problem encountered and resources required

- Sensitizing students and faculty about new knowledge and need of IPR.
- Encouraging the students and faculty for innovation and research is challenging.
- Finding a good legal expert in IPR with a minimum fee is challenging.
- Updating the current university curriculum with few new courses on Innovation and IPR for an affiliated college is a challenge.

BEST PRACTICE –II

Title of the practice: Introduces Value Added Courses (VACs) to bridge Industry Academia Gaps.

2.Objectives of the Practice

- To provide students with an understanding of the expectations of the industry.

- To improve the employability skills of engineering students
- To bridge the skill gaps and make students industry ready.
- To provide an opportunity for students to develop interdisciplinary skills.

3.The Context of the Practice:

The Value Added Courses aim to provide additional learner-centric graded skill-oriented technical training, with the primary objective of improving the employability skills of engineering students.

The courses focus on skill developments in which 50% of the time is spent on practical training. The students are trained to understand the academic topics from engineering disciplines, so that they can solve the real world engineering problems.

4.The practice:

- Department Academic Committee (DAC) including all stakeholders identifies and proposes Value Added Courses for students for the academic session after taking inputs from all stakeholders.
- The proposed course is led by VAC Coordinator of the Department.
- The proposed course is handled by internal faculty (VAC Instructors) and invited guest lecturers from Industry (with whom MoU is done).
- The course duration is 30 hrs or more depending upon the syllabus of the particular course.
- Brochure of all VACs is shared with students through ERP and is also made available at college website prior to the commencement of the course.
- During and after the completion of VAC there are assessments made by the course faculty/trainer on the basis of which students are awarded course completion certification.
- Along with assessment made by course faculty/trainer mandatory attendance more than 85% is required in each course for the award of course completion certification.

5. Evidence of Success

- 111 Value Added Courses are offered in last 5 years.
- Value Added Courses brochures are shared with all students through their student login and as well as available on institute website.
- Number of students enrolled in different Value Added Courses in last 5 years as follows
- Total 610 students benefitted to placements in last 5 years.

Academic Year	No of Students Enrolled
2021-22	599
2020-21	626
2019-20	715
2018-17	773
2017-18	822
Total	3535

6. Problem encountered and resources required

- Collaborating with good training institute/ agency for student training with minimum fee is challenging.
- Accomodating classes for students with ongoing semester academics is challenging.
- Motivating students to enroll for value added courses.
- Getting qualified resource person or trainer and coordinating with the external resource person poses a challenge.

File Description	Document
Best practices as hosted on the Institutional website	View Document

7.3 Institutional Distinctiveness

7.3.1

Portray the performance of the Institution in one area distinctive to its priority and thrust within 1000 words

Response:

Shivalik College of Engineering(SCE) is constituent under the Rijan Educational Society and down its timeline has become the most preferred destination for engineering students across India. Engineering programs offered at SCE are approved by AICTE, Ministry of HRD, Govt. of India, New Delhi.

The institution incubates & promotes creativity, innovation through entrepreneurship. The students encouraged and given opportunity to get involved in research efforts. Various value added courses offered by each department which is intended to provide advanced information about latest technology. Beside this, institute takes conscious efforts to take initiatives for energy conservation and renewable energy usage in the college campus. Solar panels are used in the hostel and the college campus. The institute has lush green eco-friendly campus spread over 18 acres.

The institution has 500 KW Solar Power Plant installed on the roof top of the building and is connected to the grid. The 500 KW solar power generation MoU executed between the institute and Uttarakhand Power Corporation Ltd. The solar power plant is installed as a green and renewable energy practice. The solar power plant also wheeling to give power back to the grid.

The solar water heaters also installed on the roof top of the girl and boys hostels to provide the warm water. The solar water heater helps to reduce the use of commercial energy sources and take the institute to the green and renewable energy practices. The institute also includes successive use of the LED and LCD bulbs around the campus. The classrooms, labs, office areas, hostels and the walkways are lined with trees and LED bulbs.

Silent features of institute:

- The student NSS and NCC wing is active in order to imbibe strong Social values in our students.

- The NCC unit of the institute was recognised by NCC Directorate. Presented by Hon'ble Chief Minister of Uttarakhand Shri Trivendra Singh Rawat.
- The institute was awarded with Best Engineering College in Industrial Interface by Divya Himgiri and Uttarakhand Technical University, Education Excellence Award in 2019.
- The institute was awarded with Best Engineering Institute for Academic Excellence in 2015 by CMAI, AICTE and UTU. Award was received from Shri Harish Rawat.
- The institute received Best Industry Interface Award in 2013 and Prof. (Dr.) O.N Malhotra received the award from Prof. Durg Singh Chauhan.
- The institute becomes first college in Northern India to establish Robotics lab in collaboration with IIT Mumbai (E-Yantra Lab).
- Shivalik College become first college in Northern India to link a MoU with IBM to establish in Cloud Computing.
- The institute has MOU with DELL as a DELL EMC Centre of Academic excellence in which Data Science and Big data Analysis facilities provided.
- The institute has Dr. A.P.J Abdul Kalam Learning Resource Centre dedicated to the Former President of India. The center was inaugurated by Shri Harish Rawat.
- Entrepreneurship Development Cell. In Association with NIESBUD (Ministry of Skill Development, Govt. of India) made students readily acceptable to the corporate world and promote entrepreneurship.
- Disciplinary Committee to look into the in disciplinary Acts & Ragging.
- The institute takes conscious efforts to create awareness about energy conservation and renewable energy usage among students. Solar panels are used in the hostel and the college campus.
- Institute is friendly for Differently Abled.
- Various Social events carried out for enrichment of students' holiestic development.
- Soft skill and personality development programs offered by the institute training and placement department has developed systematic road map for improving the different aspects of personality developments, Communication Skill, Presentation Skill, Team Work, leadership qualities, etc. and makes them ready to face the challenges in industry.

File Description	Document
Appropriate web in the Institutional website	View Document

5. CONCLUSION

Additional Information :

Shivalik College of Engineering (SCE) is constantly endeavouring to improve and enhance policies, practices and processes to provide a learning environment conducive to holistic development of students and faculty members. The points that has distinguished the Institution are given below

1	Introduction of the new under graduate courses in emerging technologies.	Introduction of the new under graduate courses in emerging technologies such as AIML & Data Science. Approval Recieved from AICTE and Affiliating University for the session 2022-23.
2	Introduction of Minors in CSE, ECE and ME	Approval from affiliating University for Introduction of Minors in AI & ML, Data Sciences, IOT, Robotics and 3D Printing for 2nd Year Students.
3	Institute Social Responsibility	Institute offers various CSR activities in Schools and colleges by conducting workshops on Road Safety, Anti – Drug and alcohol Movement etc.
4	Community Outreach	Conducts various programs in the adopted 5 villages like: <ul style="list-style-type: none"> 1. Nukkad Natak on female hygines 2. Aawareness for Har Ghar Tiranga 3. Swakshata Abiyan 4. Help The DOOR FOUNDATION in educating the Girl Child who lost their parents during COVID.
5	Organize Science Championship	institute organized a science Championship Program for the School childrens with the name of SPARDHA. 56 Schools with more then 600 students Participated in this Championship
6	Female NCC Cadets	More then 30 % of the cadets in NCC are Female Cadets.
7	Prepare students for GOVT. And PUBLIC / PVT. SECTORS	MANTHAN Club runs the preparatory classes for the aspirants of PSU or GOVT. examinations.

8	GATE Classes	Every department of Shivalik College is running Classes for GATE aspirants.
9	Industry –Academia Interface	Industry-Academia Interface augmented through Guest Lectures, Industry Visits and HR –Connects Program and Alumni Talks..
10	Parent-Faculty Interaction	Institute successfully conducts Parent-Faculty Interaction every year. Such Interaction at various places like Delhi, Dehradun (Campus), Patna and Paonta Sahib for the parents in nearby places.
11	ICT Enabled Classroom	100 % classrooms are Equipped with ICT Facilities and Wi-Fi Connectivity.
12	World Class Computer Lab	Computer Science Lab is well equipped with world class Hardware and software with state of the art architectural design and ergonomically designed furniture.

Concluding Remarks :

- Shivalik College of Engineering offers B.Tech in four disciplines with an average of 67% of its students from more than 15 different states of country.
- Institute has provided scholarship worth Rs. 2.66 Crore under various scholarship schemes in last five years.
- Institute has an active Research & Development Cell and have received total grants and consultancy of worth Rs. 60 lakhs.
- Faculty and students has published more than 40 patents,100 research papers and 300+ conference papers, books and book chapters.
- Institute have received 25 awards from various Govt. & Non-Govt. organizations.
- Student Facilitation Centre under Department of Student Welfare was established to facilitate students and resolve their day today grievances.
- More than 1000 placement offers received in the last five years making average placement of 84%.
- Institute has an active NCC and NSS unit. Institute has 16 Acre lush green campus with 4 academic blocks, 29 staff accommodations.
- Institute has well-equipped 18 classrooms with ICT-enabled facilities and 250 mbps high-speed internet connectivity through LAN and WIFI.
- Central Library with more than 53000 books and Journals and have active subscription of NPTEL, NDLI and J-GATE.
- The feedback covers students' assessment of curriculum delivery, teachers' assessment of curriculum structure, infrastructure, library & administrative services, and grievance redressal mechanisms with special emphasis on awareness regarding such matters as sexual harassment and sensitization programmes being run by the College.
- The college has a regular and established system for maintenance of its academic and physical facilities

through trained staff and periodic servicing.

- The College has a mechanism of self-appraisal whereby Annual Performance Appraisal Forms (**APAF**) are submitted by teaching and non-teaching staff to the concerned authority.
- Best practices like conducting Value added/ certificate courses and motivating IPR filing from are enhancement of employability and student counseling are implemented religiously. The institution with a motto of quality education, discipline and employment strives to be a role model in the field of engineering education.

6.ANNEXURE

1.Metrics Level Deviations

Metric ID	Sub Questions and Answers before and after DVV Verification																																								
1.2.1	<p>Number of Add on /Certificate/Value added programs offered during the last five years</p> <p>Answer before DVV Verification : Answer After DVV Verification :30 Remark : DVV has made the changes as per shared report by HEI.</p>																																								
1.3.2	<p>Percentage of students undertaking project work/field work/ internships (Data for the latest completed academic year)</p> <p>1.3.2.1. Number of students undertaking project work/field work / internships Answer before DVV Verification : 599 Answer after DVV Verification: 448 Remark : DVV has made the changes as per shared report by HEI.</p>																																								
2.1.2	<p>Percentage of seats filled against seats reserved for various categories (SC, ST, OBC, Divyangjan, etc. as per applicable reservation policy) during the last five years (Exclusive of supernumerary seats)</p> <p>2.1.2.1. <i>Number of actual students admitted from the reserved categories year - wise during the last five years</i> Answer before DVV Verification:</p> <table border="1"> <thead> <tr> <th>2021-22</th> <th>2020-21</th> <th>2019-20</th> <th>2018-19</th> <th>2017-18</th> </tr> </thead> <tbody> <tr> <td>39</td> <td>30</td> <td>80</td> <td>61</td> <td>36</td> </tr> </tbody> </table> <p>Answer After DVV Verification :</p> <table border="1"> <thead> <tr> <th>2021-22</th> <th>2020-21</th> <th>2019-20</th> <th>2018-19</th> <th>2017-18</th> </tr> </thead> <tbody> <tr> <td>28</td> <td>23</td> <td>33</td> <td>35</td> <td>33</td> </tr> </tbody> </table> <p>2.1.2.2. Number of seats earmarked for reserved category as per GOI/ State Govt rule year wise during the last five years Answer before DVV Verification:</p> <table border="1"> <thead> <tr> <th>2021-22</th> <th>2020-21</th> <th>2019-20</th> <th>2018-19</th> <th>2017-18</th> </tr> </thead> <tbody> <tr> <td>80</td> <td>80</td> <td>80</td> <td>96</td> <td>104</td> </tr> </tbody> </table> <p>Answer After DVV Verification :</p> <table border="1"> <thead> <tr> <th>2021-22</th> <th>2020-21</th> <th>2019-20</th> <th>2018-19</th> <th>2017-18</th> </tr> </thead> <tbody> <tr> <td>160</td> <td>160</td> <td>160</td> <td>192</td> <td>208</td> </tr> </tbody> </table>	2021-22	2020-21	2019-20	2018-19	2017-18	39	30	80	61	36	2021-22	2020-21	2019-20	2018-19	2017-18	28	23	33	35	33	2021-22	2020-21	2019-20	2018-19	2017-18	80	80	80	96	104	2021-22	2020-21	2019-20	2018-19	2017-18	160	160	160	192	208
2021-22	2020-21	2019-20	2018-19	2017-18																																					
39	30	80	61	36																																					
2021-22	2020-21	2019-20	2018-19	2017-18																																					
28	23	33	35	33																																					
2021-22	2020-21	2019-20	2018-19	2017-18																																					
80	80	80	96	104																																					
2021-22	2020-21	2019-20	2018-19	2017-18																																					
160	160	160	192	208																																					

Remark : DVV has made the changes as per shared report by HEI.

2.6.2 Pass percentage of Students during last five years

2.6.2.1. Number of final year students who passed the university examination year wise during the last five years

Answer before DVV Verification:

2021-22	2020-21	2019-20	2018-19	2017-18
118	157	191	180	189

Answer After DVV Verification :

2021-22	2020-21	2019-20	2018-19	2017-18
118	159	191	180	189

2.6.2.2. Number of final year students who appeared for the university examination year-wise during the last five years

Answer before DVV Verification:

2021-22	2020-21	2019-20	2018-19	2017-18
152	168	214	210	207

Answer After DVV Verification :

2021-22	2020-21	2019-20	2018-19	2017-18
152	170	214	210	207

Remark : DVV has made the changes as per shared report by HEI.

3.1.1 Grants received from Government and non-governmental agencies for research projects / endowments in the institution during the last five years (INR in Lakhs)

3.1.1.1. Total Grants from Government and non-governmental agencies for research projects , endowments, Chairs in the institution during the last five years (INR in Lakhs)

Answer before DVV Verification:

2021-22	2020-21	2019-20	2018-19	2017-18
5.26	5	24.2	15.2	10

Answer After DVV Verification :

2021-22	2020-21	2019-20	2018-19	2017-18
5.26	5.00	24.2	15.2	10.00

Remark : DVV has converted the value into lakhs.

3.2.2 **Number of workshops/seminars/conferences including on Research Methodology, Intellectual Property Rights (IPR) and entrepreneurship conducted during the last five years**

3.2.2.1. **Total number of workshops/seminars/conferences including programs conducted on Research Methodology, Intellectual Property Rights (IPR) and entrepreneurship year wise during last five years**

Answer before DVV Verification:

2021-22	2020-21	2019-20	2018-19	2017-18
4	3	4	4	3

Answer After DVV Verification :

2021-22	2020-21	2019-20	2018-19	2017-18
4	0	1	0	2

Remark : DVV has made the changes as per shared report by HEI.

3.3.1 **Number of research papers published per teacher in the Journals notified on UGC care list during the last five years**

3.3.1.1. **Number of research papers in the Journals notified on UGC CARE list year wise during the last five years**

Answer before DVV Verification:

2021-22	2020-21	2019-20	2018-19	2017-18
70	1	3	6	1

Answer After DVV Verification :

2021-22	2020-21	2019-20	2018-19	2017-18
0	3	11	5	12

Remark : DVV has made the changes as per shared report by HEI.

3.3.2 **Number of books and chapters in edited volumes/books published and papers published in national/ international conference proceedings per teacher during last five years**

3.3.2.1. **Total number of books and chapters in edited volumes/books published and papers in national/ international conference proceedings year wise during last five years**

Answer before DVV Verification:

2021-22	2020-21	2019-20	2018-19	2017-18
56	10	8	2	153

Answer After DVV Verification :

2021-22	2020-21	2019-20	2018-19	2017-18
03	17	11	4	4

Remark : DVV has made the changes as per shared report by HEI.

3.4.3 Number of extension and outreach programs conducted by the institution through NSS/NCC/Red cross/YRC etc., (including the programmes such as Swachh Bharat, AIDS awareness, Gender issues etc. and/or those organised in collaboration with industry, community and NGOs) during the last five years

3.4.3.1. Number of extension and outreach Programs conducted in collaboration with industry, community, and Non- Government Organizations through NSS/ NCC/ Red Cross/ YRC etc., year wise during the last five years

Answer before DVV Verification:

2021-22	2020-21	2019-20	2018-19	2017-18
17	8	20	11	9

Answer After DVV Verification :

2021-22	2020-21	2019-20	2018-19	2017-18
10	01	04	01	01

Remark : DVV has made the changes as per shared report by HEI.

4.1.2 Percentage of expenditure, excluding salary for infrastructure augmentation during last five years (INR in Lakhs)

4.1.2.1. Expenditure for infrastructure augmentation, excluding salary during the last five years (INR in lakhs)

Answer before DVV Verification:

2021-22	2020-21	2019-20	2018-19	2017-18
496.01	925.17	271.07	128.4646	106.02

Answer After DVV Verification :

2021-22	2020-21	2019-20	2018-19	2017-18
496.01	501.2	271.07	128.4646	106.02

Remark : DVV has made the changes as per shared report by HEI.

4.4.1 Percentage of expenditure incurred on maintenance of infrastructure (physical and academic support facilities) excluding salary component during the last five years (INR in Lakhs)

4.4.1.1. Expenditure incurred on maintenance of infrastructure (physical facilities and academic support facilities) excluding salary component year wise during the last five years (INR in lakhs)

Answer before DVV Verification:

2021-22	2020-21	2019-20	2018-19	2017-18
285.32	351.77	331.88	300.61	302.84

Answer After DVV Verification :

2021-22	2020-21	2019-20	2018-19	2017-18
285.32	195.13	331.88	300.61	302.84

Remark : DVV has made the changes as per shared report by HEI.

5.1.2 Capacity building and skills enhancement initiatives taken by the institution include the following

1. *Soft skills*
2. *Language and communication skills*
3. *Life skills (Yoga, physical fitness, health and hygiene)*
4. *ICT/computing skills*

Answer before DVV Verification : A. All of the above

Answer After DVV Verification: B. 3 of the above

Remark : DVV has select B. 3 of the above as per shared report by HEI.

5.3.1 Number of awards/medals for outstanding performance in sports/ cultural activities at University / state/ national / international level (award for a team event should be counted as one) during the last five years

5.3.1.1. Number of awards/medals for outstanding performance in sports/cultural activities at national/international level (award for a team event should be counted as one) year wise during the last five years

Answer before DVV Verification:

2021-22	2020-21	2019-20	2018-19	2017-18
12	0	10	8	7

Answer After DVV Verification :

2021-22	2020-21	2019-20	2018-19	2017-18
01	0	09	09	07

Remark : DVV has made the changes as per shared report by HEI.

5.3.2 Average number of sports and cultural programs in which students of the Institution participated during last five years (organised by the institution/other institutions)

5.3.2.1. Number of sports and cultural programs in which students of the Institution participated year wise during last five years

Answer before DVV Verification:

2021-22	2020-21	2019-20	2018-19	2017-18
13	0	10	8	7

Answer After DVV Verification :

2021-22	2020-21	2019-20	2018-19	2017-18
08	0	09	06	7

Remark : DVV has made the changes as per shared report by HEI.

6.3.2 Percentage of teachers provided with financial support to attend conferences/workshops and towards membership fee of professional bodies during the last five years

6.3.2.1. Number of teachers provided with financial support to attend conferences/workshops and towards membership fee of professional bodies year wise during the last five years

Answer before DVV Verification:

2021-22	2020-21	2019-20	2018-19	2017-18
53	45	49	54	51

Answer After DVV Verification :

2021-22	2020-21	2019-20	2018-19	2017-18
28	09	30	37	11

Remark : DVV has made the changes as per shared report by HEI.

6.5.2 Quality assurance initiatives of the institution include:

- 1. Regular meeting of Internal Quality Assurance Cell (IQAC); Feedback collected, analysed and used for improvements**
- 2. Collaborative quality initiatives with other institution(s)/ membership of international networks**
- 3. Participation in NIRF**
- 4. any other quality audit/accreditation recognized by state, national or international agencies such as NAAC, NBA, ISO Certification etc**

Answer before DVV Verification : A. All of the above

Answer After DVV Verification: B. Any 3 of the above

Remark : DVV has select B. Any 3 of the above as per shared report by HEI.

7.1.3 Quality audits on environment and energy regularly undertaken by the Institution. The

institutional environment and energy initiatives are confirmed through the following

- 1. Green audit / Environment audit**
- 2. Energy audit**
- 3. Clean and green campus initiatives**
- 4. Beyond the campus environmental promotion activities**

Answer before DVV Verification : A. All of the above

Answer After DVV Verification: C. Any 2 of the above

Remark : DVV has select C. Any 2 of the above as per shared report by HEI.

2.Extended Profile Deviations

ID	Extended Questions
1.1	Number of teaching staff / full time teachers during the last five years (Without repeat count): Answer before DVV Verification : 226 Answer after DVV Verification : 131