

INSTITUTIONAL DEVELOPMENT PROPOSAL

of

Rajiv Gandhi Govt. Engg. College Kangra at
Nagrota Bagwan, Distt. KANGRA (H.P.)

Under

***TECHNICAL EDUCATION QUALITY IMPROVEMENT PROGRAMME
(TEQIP)***

PHASE-III

For

Sub-component 1.1
(Enhancing Learning Outcomes for Increasing Employability of graduates.)

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1. INSTITUTIONAL BASIC INFORMATION

1.1 Institutional Identity

- Name and address of the Institution: RAJIV GANDHI GOVT. ENGG. COLLEGE
KANGRA AT NAGROTA BAGWAN
V.P.O MASSAL TEHSIL NAGROTA
BAGWAN DISTT. KANGRA (HP).
176047
- Year of establishment : AUGUST, 2014
- Is the Institution AICTE approved? : Yes/No
Furnish AICTE approval No. : North-West/2016//1-2847968671 &
Date 29- April-2016
- Type of Institution : Govt. funded
- Status of Institution : Institution
- Name and Designation of : Dr. Rakesh Sehgal, Director-cum-Principal
Head of the Institution
(Full time appointee)

1.2 Academic Information:

- **Engineering UG and PG programmes offered in Academic year 2016-17:**

S. No	Title of programmes	Level (UG, PG, PhD)	Duration (Years)	Year of starting	AICTE sanctioned annual intake	Total student strength in all years of study
1.	Mechanical Engg.	UG	4 Year	2014	60* (some seats over & above sanctioned as per govt. norms.)	702
2.	Civil Engg	UG	4 Year	2014	60*	
3.	Electronics & Comm. Engg.	UG	4 Year	2014	60*	
4.	Electrical Engg.	UG	4 Year	2015	60*	

- **NBA Accreditation Status of UG and PG programmes as on 31st December 2016:**

Total no of programmes eligible for accreditation (at least one batch pass out): NIL
 No. of programmes accredited: NIL
 No. of programmes applied for accreditation: NIL

- **Status of Faculty Associated with Teaching Engineering Students (Regular & Contract) as on 31st December 2016:**

Rank Faculty	No. Of Sanctioned Regular posts	Present Status: Number in Position												Regular Faculty	Vacancies	Total Number contract faculty in institute
		Doctoral				Masters				Bachelor						
		Engg. Discipline		Other Discipline		Engg. Discipline		Other Discipline		Engg. Discipline		Other Discipline				
		R	C*	R	C*	R	C*	R	C*	R	C*	R	C*			
1	2	3	4	5	6	7	8	9	0	11	2	3	14	15	16	17
															=(2-15)	=(4+6+8+10+12+14)
Professor	7	1	-	-	-	-	-	-	-	-	-	-	-	1	6	-
Associate Professor	3	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-
Assistant Professor	55	1	-	2	3	4	12	2	-	-	3	-	-	9	46	18
Total	65	2	-	2	3	4	12	2	-	-	3	-	-	10	55	18

- May also include faculty on Student Welfare Fund (recruited as per R& P rules)
- R=Regular, C=Contract

2. INSTITUTIONAL DEVELOPMENT PROPOSAL

2.1 Executive Summary

Rajiv Gandhi Government Engineering College Kangra at Nagrota Bagwan was started in year 2014 with three B. Tech. courses with an intake of 60 students namely : Mechanical Engineering, Civil Engineering, Electronics & Communication Engineering. Another engineering degree programme namely B. Tech. Electrical Engineering was started in year 2015 with an intake of 60 students. The institute is duly recognised by AICTE and is affiliated to Himachal Pradesh Technical University, Hamirpur (H.P.). The university has adopted Choice Based Credit System (CBCS) starting from session 2015-16 as per UGC guidelines. The syllabus of the university has been revised from the same session, and institute plays an active role in creation of syllabus in coordination with industry, as meaningful syllabus is directly proportional to learning outcomes in graduates. And learning outcomes are an integral component in enhancing the employability of graduates. The same has also been objective of National Project Implementation Unit working under Ministry of Human Resource Development, Govt. of India to enhance the level of technical education in India. The **vision** of Rajiv Gandhi Government Engineering College Kangra at Nagrota Bagwan, Distt. Kangra is :

“To become a Global Knowledge Hub, striving continuously in pursuit of excellence in Technical Education, Research, Entrepreneurship and Services to the society”.

The institute has been created with a vision of core themes of academic excellence, transformational learning, and shared responsibility and stewardship, this institute intends to be source of modern technical know-how, and support Himachal Pradesh, and India in many of its endeavours to achieve self-sustenance as well as be a leader in today’s technology driven world.

The main focus of Rajiv Gandhi Government Engineering College Kangra at Nagrota Bagwan in this Institute Development Proposal (IDP) also overlaps with overall long term plans of the institute to be a regional hub of

technical knowledge, and be among the first 50 institutions of the country within next 15 years.

2.1 (a) Action Plan

To achieve the long term objectives of the Institute, following action plan is envisaged to enhance the employability of the graduates:

1. Creating “**Active Mentoring Cell**” in the form of Board of Governors for implementing best practices in all Institute Activities through administrative support of H.P. Govt., and active collaboration with at least 2 (two) institutes of the level of IITs, and 3 institutes of National Importance.
2. **Training of Faculty** in subject knowledge and pedagogical domain so that they are always updated with best teaching practices, and latest knowledge so as to create the future of country, etc.
3. **Training** of Top Administration and Staff to implement modern methods, e-filing, electronic procurement systems and e-financial management systems, etc.
4. **Modernization of various laboratories** with state of the art equipment in all departments of the institute,
5. Enhancing **internet (and intranet) access** capabilities for 24*7 with **Hardware and Software based Firewall** regulated access for unhindered research, project work and administration efficiency.
6. Creation of “**Video Conferencing Facility**” for effective administration and Interviews of students by Industry.
7. Enhancing Training opportunities for **weak students**,
8. Providing **Mechanism for Special Classes** for preparations of **GATE/other national level tests**.
9. Augmentation of **E-Resources**,
10. Implementation of “**Management Information System**” (MIS) software for speed and efficiency in administration and streamlining of all activities,
11. Creation of dedicated “**Institute Industry Interaction Cell**” (IIIC) with one major industry of the region as Chairperson of the Cell,

12. Creation of **Entrepreneurship Incubation Centers under Training and Placement Cell** with support for Faculty Supervisor visits to industry for collaboration, Student visits to industries, visits of industry leaders for lectures on advanced technologies. Support for shortlisted B. Tech. level projects, and working beyond projects to create sustainable products for Industry in collaboration.

2.1 (b) SWOT Analysis

As per advice of the Mentor attached with the institute, the institute carried out SWOT (Strength Weakness Opportunity and Threat) analysis to identify major bottleneck areas which could be strengthened for achieving the long term vision, mission and objectives of the institute. The analysis was conducted by a group of faculty members and few students drawn from each discipline having different perspectives. This was done to bring the stakeholders together and encourage their participation in their adherence to institutional strategy. To get the best objective results, the team held a day-long brain-storming session to identify the key factors in each of the four categories viz. Strengths, weaknesses, opportunities and threats.

The brainstorming session led to many inputs from faculty, staff as well as students which could be enlisted in terms of major key factors. This list of key factors was prepared under their individual category (among Strength, Weakness, Opportunities and Threats) within the context of institutes vision, mission, and purpose. Priorities were assigned to the listed factors. Finally the factors in each category were listed in order from highest priority at the top to lowest priority at the bottom thus completing the SWOT analysis. The final result of analysis, category wise, are listed below:

Strengths:

- More than adequate Govt. support,
- Aspiration of our youth to pursue technical education at UG level,
- Availability of meritorious students being a Govt. institution,
- Better location & connectivity (30 km from airport),

- Adequate infrastructure created due to govt. and RUSA funds,

Weaknesses:

- Lack of faculty at senior level.
- Lack of sufficient technical manpower in labs, office and central facilities.
- Absence of local industry in immediate vicinity.
- Lack of research facilities.
- Lack of academic, managerial and financial autonomy.
- Newly established institute.

Opportunities:

- The World Bank Project (TEQIP-III) which is necessary for upgradation of laboratories & other infrastructure.
- Application of IT tools for Technology Enhanced Learning.
- Collaboration with industry for collaborative projects, and frequent interaction with Industry Associations (such as CII, FICCI, ASSOCHAM) and of Professional Societies to partner and collaborate with institute,
- Networking with Public and private R&D Laboratories.
- Meaningful Collaboration with nearby institutions - IIT Mandi, IIIT Una & NIT Hamirpur.
- Support from alumni to their Alma Mater when they graduate successfully.

Threats:

- Entry of foreign institutions to India - offering foreign degrees - quality concerns need to be addressed immediately.
- No real job and hands-on working environment for graduates in immediate vicinity.
- Young faculty recruitments at starting levels in new institutions.
- Slow recruitment processes, and lack of motivational support for bright faculty.

Taking into account the major facts of SWOT analysis, the institute desires to follow a holistic approach so that all opportunities are grabbed

with all capability at our disposal. Therefore, it is desirable that Institute Development Proposal (IDP) shall also reflect the approach of the institute to achieve long term objectives as also defined in our Vision, and Mission.

It is envisaged that various engineering departments of the institute shall create as well as modernize various labs and Workshops and also work to remove the obsolescence till end of project duration. The main concern of the state of the art laboratory creation and modernization will be *to enhance the functional efficiency* of the Institution. The institute has outlined few major areas by brainstorming with staff and students, which need focus and thrust for achieving the objectives of TEQIP-III as envisioned by Govt. of India.

2.1 (c) Improving employability of graduates

It has been a common problem shared by many industries as well as information available through various agencies, that *“more than 70 percent of our engineering graduates are not employable”*. Basically the students entering any professional institution are neither provided any career counselling, nor they are guided and mentored for taking critical decisions affecting their careers in long term. So they are normally left to seek guidance from “internet” or “class-fellows” who themselves may be lacking originality of thought, and may possibly be even mis-guided to take their decisions. In many of the engineering institutions, least effort is given to polish their personality traits, which could also go a long way in increasing one’s career prospects. Many industries and recruiters refuse to take only “engineers” without much needed personality traits like good communications skills, efficient multi-language skills, other skills like CAD/CAM/software skills. The top three most important general skills identified are integrity, reliability and teamwork, while the top three most important specific skills are entrepreneurship, communication in English and use of modern tools and technologies.

If institutions want to improve the employability of their graduates, they have to focus on reducing these important skill gaps through improvements in curriculum and modern teaching methods. We need to develop professionals who are skilled and ready to face the challenges of

increased competition. Each institution should define a set of skills that a graduate is supposed to have after each semester. Further, they ***need to change pedagogical style from teacher-centric to student-centric*** so that students are encouraged to think independently, analyse critical problems, and are able to apply various engineering tools on real life problems. Educational curriculum and industrial training received by students needs to be examined from time to time so that any required changes in the teaching-learning process are applied timely so that the future engineers can become more employable.

2.2 Action plan with timelines

(a) For Improving the learning outcomes of the students through

Faculty training (qualification up-gradation, subject up-gradation & research competence, Pedagogical training, participation in conferences, seminars/workshops etc.)

The faculty of any institution is the foundation on which large structures of world class institutions can sustain. The recruitment processes are always controlled by statutory bodies which might have been given powers through legislation. But, many a times some faculty from different backgrounds may join the institute, and may need orientation as well as knowledge enhancement due changes in syllabus and technologies in practice. Therefore faculty training has to be the basic pillar on which foundations of quality technical education can be laid down. The trained faculty with latest technologies and content are always desirable for improvement in learning outcomes of students. Therefore, during the implementation of the IDP, more effective procedures will be adopted in the following domains with tentative budget as mentioned below:

2.2(a) 1 Faculty Training

(A)

Sr. No.	Component	Sub-Component Budget	Tentative Budget for 4-years (Lacs. Rs.)
1	Faculty Training	Participation of one week or two week Courses/Conferences/ workshops, Research Competence Pedagogical Training within India and abroad, etc.	35
		Conducting One Day/Two Day/Three Day Conferences/Seminars or Workshops	25
		Conducting One Week Courses	80
		Conducting Two Week courses	40
		Qualification upgradation.	5
		National and Foreign Tours for collaboration with institutions of national and international importance (as permitted by Govt.)	40
		National tour for collaboration with industry	10
Total			240 lakh

2.2(a)2 Staff Training (Technical and Administrative staff)

The technical and administrative staff of any institution is spine of the overall structure. The efficiency of staff ultimately affects the speed of working atmosphere of any organization and the real “functional efficiency” of any institution. It is pertinent to push the staff for training in their respective domains, be it simple as well as electronic office procedures, financial or procurement procedures. Due to ever increasing workload, the staff also feels demotivated due to lack of training and monotony of work, therefore the institute has planned for training of technical as well as administrative staff in a phased manner. The training of staff shall be focussed more in the year 2017-18, and 2018-19 so that the institute is able to reap the benefits of improved efficiency of staff so as to deliver the attainable results. The budget provision for the various types trainings is mentioned as below:

(B)

Sr. No.	Component	Sub-Component	Tentative Budget for 4-years (Lacs. Rs.)
1	Staff Training	In House-Training of technical and administrative staff	2
		Sending staff for various training programmes	2
		Arranging visits of staff to institutions of state and national/international importance to learn new technologies (as permitted by Govt.)	1
Grand Total			5 lakhs

2.2(a)3 Increasing capacity of UG, PG, and Ph.D.

The Himachal Pradesh Technical University, Hamirpur has declared this institute as Research Centre. It is expected that the institute may start Ph.D. programme under university *from session 2017-18*. All permissible provision under support to research scholars would be extended to the students, as and when the programme starts. The planned budget provision is mentioned below:

(C)

Sr. No.	Component	Sub-Component	Tentative Budget for 4-years (Lacs. Rs.)
1	Increasing capacity of education levels	UG/PG/Ph.D. programme Providing contingency, and research work related expenses	3
		Awarding scholarship to Masters or Ph.D. students	5
		Provision of payment of Fees, Binding, Printing etc.	2
Grand Total			10 lakhs

2.2 (a) 4 Investing in smart classrooms, campus Wi-Fi (24*7 broadband connectivity and Wi-Fi access in all academic and administrative buildings and hostels (with a minimum of 2 MBPS speed for each connection)), e-library etc.

The institute is self sufficient in basic class room infrastructure in spite of starting in year 2014-15, but there is only one smart class room in institute. The institute plans to create more smart class rooms so that students are able to attend live lectures given by faculty of IISc/IITs or other institutions of higher learning. The provision for budget for various sub-components for the plan is explain as below :

(also included within Overall Plan of the Institute)

Sr. No.	Component	Sub-Component	Tentative Budget for 4-years (Lacs. Rs.)
1	Smart Class Rooms, etc. Internet services	Smart Class Rooms	80
		1. Furniture with Blinds	
		2. Teaching Material/Smart Board	
		3. PCs with Power Backup (UPS)	
		4. Laptops,	
		5. LED with Video Conferencing Facility	
		6. Public Address system	
		7. Smart Dias (with capability to project book/writing)	
		Campus wide WiFi	60
		24*7 Broadband access (College, Hostel, Quarters)	50
		E-Library (PCs, Software, Access Fees of E-Books, E-Journals, etc.)	60
2	Video Conferencing (Central Facility)	Video Conferencing through dedicated Hardware and Software	30
Grand Total			280 lakhs

An internet facility over Wi-Fi is more simpler in its functioning, and provides greater access to the students as well as faculty. The faculty as well as students can avail other E-Journal and E-Library facilities through Wi-Fi internet access. Through live classrooms transmitted over internet, the faculty would also learn through interactive sessions. Even the institute may go ahead to develop such live classroom broadcast center later on, for benefit of the other institutions in region in long term. In short term, these facilities will be created in year 2017-18, as well as 2018-19 as and when permissible funds are released by NPIU to the institute.

2.2 (a) 5 Improving academic performance of SC/ST/OBC/academically weak students through innovative methods, such as remedial classes and skill development classes, peer assisted learning for increasing the transition rate, non-cognitive skills and pass rate.

After receiving inputs from main stake holders i.e. students, regarding their poor performance in many of the subjects, it has been decided that the institute would keep a close vigil on performance of poor students. They will be assigned dedicated faculty advisors so that the students are able to express their weaknesses to the faculty members, which will help us in identifying their weak areas. The process should result in timely remedial classes so that their transition rate is improved.

(also included in Training and Placement section Budget Planning)

Sr. No.	Component	Sub-Component Budget	Tentative Budget for 4-years (Lacs. Rs.)
1	Improving academic performance of SC/ST/OBC/other weak students for increasing transition rate	Remedial Classes	04
		Finishing Classes	06
		Skill Development Classes (including Peer Assisted learning)	06
Grand Total			16 lakhs

2.2(a) 6 Implementation of academic and non-academic reforms

As the syllabus is controlled by Himachal Pradesh Technical University, Hamipur, all curricular reforms are started by the university. And, as and when they are desired to be implemented, the institute normally takes the lead in implementing the same. Presently the syllabus is under revision, and institute is contributing in creating a syllabus after consulting industry personnel, as well as senior faculty from NIT Hamirpur, and IIT Roorkee.

2.2 (a) 7 Overall Institute Plan for Creation and Modernization of various laboratories, and Furniture to support Engineering Branches – to improve Employability)

The institute has planned uniform development of all departments, as the institute is new and needs overall development. Therefore, suggestions were invited from all departments/sections and have been incorporated in planning of budget to be spent. The budget shall be spent as per guidelines of NPIU, and major division of planned expenditure is as given below :

(D)

Sr. No.	Component	Sub-Component Budget	Tentative Budget for 4-years (Lacs. Rs.)	Total Budget for 4-years (Crore)
1	Mechanical Engg. Deptt.	Furniture	10	1.45 crore
		SOM Lab.	50	
		I.C. Engine Lab. And Thermal Lab.	50	
		Materials Technology and Tribology	15	
		CAD Lab software	15	
		Workshop (advanced equipment)	5	
2	Electronics Engg. Deptt.	Smart Class Room	20	1.15 cr.
		Furniture (For three labs)	20	
		Microwave and Optical Communication Lab	20	
		Simulation and Project lab	25	
		Analog Communication and Electronic Workshop	15	
		Digital Electronics and microprocessor Lab	15	

3	Electrical Engg. Deptt.	Electrical machine lab	30	1.0 cr.
		Power electronics lab	10	
		Furniture for labs	20	
		Linear control system	10	
		Switchgear and protection.	15	
		Illumination engineering lab	15	
4	Civil Engg. Deptt.	Research, Testing and Software Lab	25	1.10 cr.
		Geotechnical Engg Lab	15	
		Surveying Lab	20	
		Transportation Engg. Lab	15	
		Environmental Engg Lab	15	
		Building Material cum Concrete Lab	15	
		Furniture	05	
		5	Computer Centre	
24*7 Broadband Internet .	15			
Open source Programing Lab. (Linux based high performance systems for programing)	20			
24*7 Electric Backup Unit for Computer Centre And central Server Room.	08			
Furniture.	05			
Video Conferencing Facility (for administration and interviews).	02			
6	Central Library			E-Library and Data Center
		E-Books and E -Journals	40	
7	Supporting Departments Activities (Applied Science and Humanities, etc.)	Advanced Chemical Analysis and Physical Research Lab.		0.10 cr.
Grand Total				6 crore

2.2. (a) 8 Overall Plan of the Training and Placement Cell

The Training and Placement Cell of the institute has forwarded a plan for overall development of students. The faculty of the institute usually gives high priority to normal academic schedule, thereby transferring all essential components of technical know-how. However, a very essential part is many a

times overlooked by many institutions - which is personality development and other essential skills development which may be needed for clearing exams like GATE/GRE/etc. Moreover, it is also true that many a times, weak students from any class are either forced by institutions to leave studies or they become directionless thereby affecting their overall growth. The T&P cell has vision for overall development of students which is detailed below:

Plan of Training and Placement Cell

(Part of Student Training)

(E)

Sr. No.	Component	Sub-Component Budget	Tentative Budget for 4-years (Lacs. Rs.)	Total Budget for 4-years (Crore)
7	Training and Placement	Conducting <i>Remedial</i> classes for weak students	Rs 4	0.50 cr.
		<i>Skill Development/Special classes</i> for GATE/GRE other International/National level tests	Rs 6	
		Creation of Industry Institute Interaction Cell (visits of Industry, visits of Faculty supervisors, Joint meetings, Student visits, etc.) Incubation Activities	Rs. 16	
		Pre-Placement activities	Rs. 4	
		Placement activities (stay of Industry personnel, Printing, Paper costs, etc.)	Rs. 14	
		<i>Finishing Classes</i> for personality development and Soft Skills/ Research oriented skills it's training for graduate employment and it's evaluation	Rs. 6	
Grand Total				0.5 cr.

2.2. (a) 9 Time Lines for various Departments :

1. Mechanical Engineering Department:

The mechanical engineering department was started in year 2014 at the inception of the institute, and offers 4-year B. Tech. (Mech. Engg.)

programme with an intake of 60 students. The department is currently equipped with all basic workshops as well as laboratories of 2nd and 3rd year. The department would create various laboratories in a timed schedule so that there in uniform development of all related areas i.e. Thermal Engg., Production Engg, Design Engg., and Industrial Engg. The following table depicts the projected completion time of various labs of Mechanical Engineering Department.

Sr. No.	Item	Spending Schedule (Amount shown in Lacs Rs. Within blocks)			
1	Furniture				
2	SOM and Flui Lab.				
3	I.C. Engine and Thermal Engg.				
4	Material Technology and Tribology lab				
5	CAD/Simulation Lab software				
		2017-18	2018-19	2019-20	2020-21

Central facilities like WiFi shall be created in year 2017-18 and 2018-19 and are shown in main table.

2. Civil Engineering Department

The major core labs of Civil Engineering Department will be developed on timely basis with state of art equipment being given preference and having major stake in the labs. Department remains committed in ensuring that the labs be developed as a modern research facility with state of art equipment in sufficient quantities, and thus, will serve both the faculty and students in their quest for knowledge.

The following table depicts the projected completion time of various labs of Civil Engineering Department.

Sr. No.	Item	2017-18	2018-19	2019-20	2020-21
1	Software Lab				
2	Geotechnical Engg Lab				
3	Surveying Lab				
4	Transportation Engg. Lab				
5	Environmental Engg Lab				
6	Building Material cum Concrete Lab				
7	Furniture for Labs				

The consultancy works are revenue generating activities and essentially very useful for the financial security of the Department as a whole. All the major equipment that would prove useful in consultancy will also be procured, in order to promote the consultancy works in the Department. The Department also plans to make Smart Class Rooms which would help in grooming of the students for which a separate Budget has been planned. The Smart Class room will have modern computers and/or laptops, Wi-fi enabled workspace, touch enabled interactive projectors, etc.

3. Electrical Engineering Department

The department of electrical engineering started with the objective to provide efficient and employable manpower to the technical world. With the updating modern day technology, laboratories also need to be modernized to adapt to the latest needs and challenges faced by industry. The department of Electrical Engineering would be spending the grant received for procurement in a time schedule as mentioned below:

Sr No.	Items	Spending Schedule			
		2017-18	2018-19	2019-20	2020-21
1	Electrical machine lab				
2	Power electronics lab				
3	Furniture for labs				
4	Linear control system				
5	Switchgear and protection.				
6	Illumination engineering lab				
		2017-18	2018-19	2019-20	2020-21

4. Electronics and Communication Engineering Department

The department of Electronics and Communication Engineering was also started with the inception of the institute in 2014. The department intends to develop existing laboratories with the state of the art equipment so that future ready and competent graduate engineers are produced, thereby enhancing their employability. The department intends to schedule setting up its laboratories as per given time schedule :

Sr No.	Items	Spending Schedule			
		2017-18	2018-19	2019-20	2020-21
1	Smart Class Room				
2	Furniture				
3	Microwave and Optical Fiber lab.				
4	Simulation and Project Lab.				
5	Analog Communication and Electronics Workshop				
6	Digital Electronics and Microprocessor Lab.				
		2017-18	2018-19	2019-20	2020-21

2.2 (b) 1 Improving employability of the students (through)

- **Increasing interaction with industry (What are the industries located in the vicinity? What role of industry is perceived for the institute?)**

The institute would go ahead in creation of dedicated “Industry Institute Interaction Cell” with two members from leading Industries of the region, which would be an active platform *for the students* of various branches who will be encouraged to visit various industries and to take up their summer projects in collaboration with them. It is expected that Training and placement cell will devise a mechanism to work closely with various industries so that more and more industries visit the Institute for campus placements: Some of the big industries located in the region are :

- (1) Mahindra and Mahindra, Mohali, (Pb.)
- (2) Eicher Tractors, Hoshiarpur, (Pb.)
- (3) International Cars and Motors Pvt. Ltd., Amb, (H.P.)
- (4) Anand Group, Parwanoo (H.P.)
- (5) SML Isuzu, Ropar (Pb.)
- (6) Sonalika Tractors, Hoshiarpur,(Pb.)
- (7) Gate India, Lalru, (Pb.)
- (8) JCBL, Lalru, (Pb.)
- (9) Hella Inida, Derabassi (Pb.)
- (10) ALP Nishikawa, Lalru (Pb.)
- (11) Bharat Heavy Electricals Ltd., Haridwar (Uttarakhand)
- (12) MARUTI Syzuki, Gurugram (Haryana)

The institute will sign Memorandum of Understanding with leading industries of the region as well as institutions of National importance after due approval from Director of Technical Education, H.P. and Principal Secretary (Technical Education), H.P. Govt., so that all our students get *chance to work in various types of industries as per their chosen field of study*. It is expected that some of the Private as well as govt. PSUs/Govt. Training Institutions would also come forward in our endeavour to provide quality and *hands -on training* to students, e.g. IITs, NITs, Central Tool Room, Ludhiana, Secondary Steel Technology Institute, Pb., BHEL Haridwar, Maruti

Suzuki Gurugram, Honda Daruheda, Hero Industries, Bajaj Motors Pvt. Ltd, etc.

2.2 (b) 2 Student career counselling and placement

The institute has already assigned Faculty Advisors to students as per existing rules of Himachal Pradesh Technical University, Hamirpur. It is expected that Training and Placement cell of the institute would also create a mechanism for career counselling. It has also been included in the IDP, that specialized experts would be invited from Industries, as well as Human Resource companies so that students are well prepared before they face any interview. The Training and Placement cell would conduct special sessions in between the semesters, so as to provide guidance to all students so that they chose a career as per their aptitude as well as interests.

2.2 (c) Increasing faculty productivity and motivation (through)

2.2 (c) 1 Sponsored research, consultancy and other revenue generating activities

The institute would be forwarding a proposal to H.P. Govt. so that five funds as mentioned below are created by the government. The institute would request H.P. Govt. to issue guidelines for providing seed money and creation of four funds as required under TEQIP-III norms for long term sustainability of the institute:

S.No.	Name of Fund
1	Development Fund
2	Equipment Replacement Fund
3	Maintenance Fund
4	Sustainability Fund
5	Sponsored Research, and Consultancy Fund
6	Internal Revenue Generation Fund (will need only seed money)

If the fund creation is supported by govt., the faculty would be encouraged to start research projects from the “seed money” given by government, after due short listed projects by any capable committee constituted by the govt. Normally, the funding agencies push “only for positive results”, therefore it would also be envisaged that the first research projects are only exploratory in nature, and no undue pressure is put on faculty. Such pressures to produce “only positive results” normally encourages “fudging and manipulation of data” and is extremely detrimental for the research moment which the govt. always desired to provide to the country. The revenue generated through variety of activities undertaken through consultancies, research projects will be utilized for Staff Development as well as development of infrastructure at institute level in long term.

2.3 Action plan with timelines for UGC and NBA status

2.3 (a) Obtaining autonomous institution status from UGC

The functional efficiency of an institution is more apparent if the administration of the entity feels more autonomous. However, any amount of autonomy must also be attached with riders of accountability. Some of the government’s dream projects like IITs, NITs, ISRO, Delhi Metro have been achieved only because a functional autonomy was granted to these bodies with inbuilt system for accountability. Because, ours is a publicly funded institution, autonomy is normally an alien idea. If the H.P. Govt. grants a true functional autonomy after recommendations from UGC, it will be our duty to make the necessary changes proactively to keep pace with the changing responsibilities to the society.

Therefore the institute would apply for autonomous status around March 2018, as more and more infrastructure is created for being self sustainable. It is normal for the UGC to respond on a quarterly basis, and after evaluation of the Autonomy application reports, and subsequent inspections as per procedures adopted of UGC, it is expected that the institute would be able to achieve autonomous status in last quarter of 2018.

2.3 (b) Improving the NBA accreditation status

Presently the institute is neither NBA accredited and eligible to apply for NBA accreditation as minimum two batches would have passed only in August 2018. Thereafter, the institute would start work on Self Assessment Report (SAR), and submit the same around Dec 2018. As per preset procedures adopted by National Board of Accreditation, it is expected that the inspections of NBA team would take place around end of 1st quarter of 2019. It is expected that if H.P. Govt. Goes ahead with all administrative reforms, along with strengthening of laboratories, and faster recruitment processes - the institute may achieve *NBA accreditation status around 2nd quarter of 2019.*

2.4 Describe the following in brief (about Mentoring, BoG, ERP, Special Classes):**2.4 (a) Is any enhanced assistance / mentoring that the institution is looking forward from its ATU?**

As one of the major academic reforms desired by NPIU through TEQIP project has always been an effective academic autonomy. If and when UGC grants Autonomous status to the institute, the institute would work to work on two major domains:

- (1) It is expected that Institute would be given full control of syllabi – as also required under UGC and NBA norms. Even presently, the institute is actively involved and contributed immensely to the syllabi creation of the present university, however by this mechanism, the syllabi would entirely come into hands of Board of Studies of institute as also desired by UGC and NBA, and practiced in institutions of National Excellence like IITs, NITs. The same would be done with collaboration of industry which could be included in administrative structure of institute, and duly recognized by H.P. Govt. If the institute would exercise control over syllabus, it is expected that all evaluation would also become internal, and Technical University would award only degrees, and would be free

from evaluation work of the institute as also done in autonomous Engineering colleges of Punjab Govt.

- (2) Establishing Research Centre which would also be a regional centre for testing of materials, with purchase and installation of advanced measuring devices, equipment. This creation of research centre by university within the institute should start with focus on a particular field i.e. Mechanical Engineering, Civil Engineering, etc.. It is expected that university should have ample funds (through TEQIP) to create and fund a dedicated new civil structure within institute to house the Research Centre which would be under control of the Director/Principal but would be run with fees structure recommended for studies as well testing, as proposed by university from time to time. It is expected that the Fee structure would be such that the Research Centre is self-sustainable in long term. This is possible through creation of rules and conditions of consultancy work for faculty working on research projects. It is expected that university shall be able to create rules which are encouraging for the faculty to invest their time, and at the same time earn reasonable revenue for him/her as well as university. The same would be possible, if major industrial house of the northern region is also roped in initially for the project to take off. The major spinoff would be higher impetus to research work, research projects funded by govt. as well as private bodies, and would be a win-win situation for the faculty as well university, as the research output of the university will also improve.

2.4 (b) Does your BoG need strengthening, if yes, then how?

The BoG structure as recommended by UGC/AICTE is good enough, and it is expected that the H.P. Govt. would notify the formation of BoG within 1st quarter of 2017. The institute is communicating possible suggested members of BoG as per structure proposed by NPIU (as per AICTE). The presence of a person from IIT, and

a person possibly from an Industrial House of the order of Mahindra and Mahindra/Maruti Suzuki/Toyota India/Infosys/Tata Sons/ etc. would go a long way in taking the institute to greater heights envisioned by our great leaders, and administration. Its matter of pride that highly efficient BoGs exist at IIMs, ISBs, IITs, and NITs which are known to be innovative and always contribute to overall vision of the institute. The same *needs to be supported by appropriate Act created by H.P. Govt., for perfect functioning of BoG.*

2.4 (c) Is there an ERP/MIS system existing, if yes, then any improvement, modification suggested.

The institute is expected to implement MIS/ERP system, if the same is permissible within TEQIP norms. It is expected that NPIU would empanel some of the top 10 companies, which could be asked to incorporate all possible steps within the MIS/ERP, so that the administrative steps become more smoother, students are able to access required information like results (through integration with University ERP/MIS), and submit their Fees online, Check their Registration status, Apply for Examination Registration (through integration with university MIS/ERP)parents are able to access attendance position of their wards, staff is able to submit attendance records online, submit information of students online, apply for Leave, Courses, TA/DA Claims, Medical claims, Submit status of Movable/Immovable assets, apply for various services of the institute.

2.4 (d) Is there any mechanism i.e. special classes being conducted in the institution for improving the GATE score?

The institute intends to create “Special Classes Center for Internal Students” through Training and Placement Cell for preparation of students for exams like GATE/Public Service Commission exams, etc. by utilizing services of internal faculty and also by arranging expert lectures on a monthly basis

2.5 Provide a Twinning Plan with a high performing institute with the objective of capacity building knowledge transfer and developing long term strategic partnerships. (Twinning plan will be formalized into Twinning agreement after finalizing the twinning partner).

It is expected that Twinning Partner would be soon announced by NPIU, and it is expected that it may be an NIT of the region so that collaboration and

mentoring is easier through more frequent interaction of faculty as well as students through any mechanism suggested by NPIU under TEQIP-III. Presently the Himachal Pradesh Technical University, Hamirpur has entered into a Twinning Arrangement with a foreign university, and it is expected that this mechanism may also be of use to the faculty and students of the institute.

2.6 Is there any difficulty in Recruitment and selection of high-quality faculty? If yes, what are the reason & action plan to solve the issue?

The process of selection of faculty is controlled by H.P. Govt., and all recruitment takes place through H.P. Public Service Commission, Shimla. The process adopted Commission is robust, and beyond suspicion. However, there is always considerable delay between creation of posts, and filling up more due to overloaded commission, which is into process of selection of Administrative Officers, Medical Officers, and other class of officers.

Action Plan Suggested:

- (1) As the state govt. delegates selection process to H.P. Public Service Commission, Shimla through acts created by H.P. Govt. If a dedicated act is passed by H.P. Govt. which creates "Special Recruitment Cell" for State Govt. Engineering Colleges. All those selected have to be Bonafide/Domicile Himachali candidates as previously incorporated in all selection rules. The special recruitment body may be chaired by any of the nominated IIT Directors, with one member from H.P. Public Service Commission, One invited expert, One nominee of State Govt. (Director/Principal of institute) at the time of interview, or a similar body which could invite applications on "Round the Year" basis, and conduct interviews on a quarterly basis out of received application letters. This kind of mechanism would go a long way in increasing the speed as well as efficiency of recruitment, and would also reduce overload of H.P. Public Service Commission, Shimla. Those put in merit list may be called by Govt. Engg. Colleges depending upon vacancy position.
- (2) A similar body headed by Dean level officer of University can also work to reduce shortage of quality faculty in private institutions. This body can act like a Large Talent Pool Source, which may be accessed by all private institutions of the state. All faculty recruited through this process (which can be mandated by State Acts, and Central Acts for minimum wages for College level faculty) should receive their salaries through Online Salary Distribution System which goes through controls of University to ensure minimum salary to all those employed. This, when linked

through AADHAAR Based Finger Print Attendance System of faculty would also create mechanism through which university (and government bodies) can also keep a tab on private institutions. As many faculty which are claimed by Private Institutions as their employees only for inspection purposes, are many a times not genuine faculty of the institute, and If this high technology driven attendance system is brought online, it can be checked in real time, as which faculty is working at which place, thereby inducing discipline as well as doing good for better careers of students going to private institutions..

2.7 Give an action plan for ensuring that the project activities would be sustained after the end of the Project.

As institute grows to develop state of the art laboratories, and govt. also helps in recruitment of faculty and staff, along with continuity of faculty and technical staff at any one institute, it is expected that the equipment would continue to function, and faculty would start venturing into research projects. More research projects, and at least 10% self finance seats (through strict merit) with full fees can increase the revenues of the institute. It is expected that the institute would be self sustainable after at least 5-6 years of its present state, as more funds will also be required for research level advanced equipment as envisaged under sub-component for Research Enhancement.

2.8 Describe briefly the participation of departments/faculty/students in the IDP preparation.

All faculty of the department were invited to give their inputs, and they shared their vision, as well as concerns. Many of the inputs related to faculty recruitment processes were also sparked by inputs from various faculty, as well as students. The main demand of students have always been to increase project funding at B. Tech. level, more interaction with industry, along with support for weak students. The students had requested for some mechanism to train them for exams like GATE, etc. which have also been incorporated in the Institutional Development Proposal. Training and Placement cell has also been providing continuous inputs regarding student training which would ultimately enhance the employability of graduates. Therefore, it would not have been possible to create a comprehensive yet brief document of overall development plan for next few years.