TECHNICAL EDUCATION QUALITY IMPROVEMENT PROGRAMME (TEQIP)

(PHASE-III)

INSTITUTIONAL DEVELOPMENT PROPOSAL

for

Sub-Component 1.1
Institutional Development for Participating Institutions

Submitted by

RAJKIYA ENGINEERING COLLEGE
Atarra, Banda-210201
Uttar Pradesh

INSTITUTIONAL BASIC INFORMATION

1.1 Institutional Identity

- Name and address of the institution :

    Rajkiya Engineering College, Banda
    Atarra, Banda – 210201
    U.P.
    Email : 05191-254301, URL : www.braecit.ac.in, Mob: 9454382845

- Year of Establishment   2010

- Is the institution AICTE approved?   YES

- Furnish AICTE approval no.   F-No: Northern/2016/1-2881079901

                                        Dated 30 April 2016

- Type of Institution   Govt. Funded

- Status of Institution   Non-Autonomous

- Names and Designation of Head of Institution

    Prof. D. S. Yadav,
    Director
    Rajkiya Engineering College
    Banda - 210201
    Phone : , 05191-254301, Mob: 9454382845
    Email director.braecit@gmail.com, URL : www.braecit.ac.in

1.2 Academic Information

- **Engineering UG programmes offered in Academic year 2016-17**

Sr. No.	Title of Programme	Level (UG,PG, PhD)	Duration (Years)	Year of starting	AICTE Sanctioned Annual Intake	Total student Strength in all years of study
1.	Electrical Engineering	UG(B.Tech.)	4 Years	2010-2011	60	224
2.	Mechanical Engineering	UG(B.Tech.)	4 Years	2010-2011	60	242
3.	Information Technology	UG(B.Tech.)	4 Years	2010-2011	60	208
Total Number of Enrolment as on 30 January 2017						674

- **NBA- Accreditation Status of UG Programmes as on 31st December 2016:**
  - No. of programmes accredited: NIL
  - No. of programmes applied for accreditation: NIL
  - Number of Programmes applied for accreditation: We will apply for accreditation Soon.

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

No. of Sanctioned Regular Post	Present Status :Number in Position By Highest Qualification												Total Number of regular faculty in Position	Total Vacancies	Total Number of Contract faculty in Position
	Doctoral Degree				Masters Degree				Bachelor Degree						
	Eggs. 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	10	11	12	13	**14** (2+4+6 +8+10+ 12)	**15** **(1-14)**	**16** (3+5+7+9 +11+13)
48	01	00	00	02	00	29	00	00	00	00	00	00	01	47	31

Prof=Professor,AssoProf=AssociateProfessor,AsstProf=AssistantProfessor,Lec=Lecturer, R=Regular, C=Contract

2. INSTITUTIONAL DEVELOPMENTPROPOSAL (IDP)
(Implementation period: April 2017- March 2020)

2.1 Executive summary of the IDP

About the Institute:

Rajkiya Engineering College, Banda (Formerly Dr Bhimrao Ambedkar Engineering College of IT) was established by the Government of Uttar Pradesh in the year 2010 with three branches, Electrical Engineering, Mechanical Engineering, and Information Technology with annual intake of Sixty (60) in each branch. Initially the college was also a constituent institute of Dr A P J Abdul Kalam Technical University, Lucknow (Formerly Uttar Pradesh Technical University, Lucknow). The college has moved to its own fully residential campus located at Atarra, Banda in the month of July 2015 and all academic activities from the session 2015-16 are being carried out at its own campus. Fully residential campus of college consists of Academic Building, Workshop, Five Hostels (Boys and Girls), Residential Apartments, Student Activity Centre, College Canteen, Grocery Store and other facilities for recreation.

All India Council for Technical Education (AICTE) has granted approval of all three (03) B.Tech courses (Electrical Engineering, Mechanical Engineering and Information Technology) in the session 2016-17. At present funding for various plan and non plan activities comes from Government of Uttar Pradesh.

Major goals to be achieved during TEQIP-III

The overall objective at the college during TEQIP_III is to improvement in the quality of education at undergraduate and post graduate level by establishment of new laboratories and enrichment of existing laboratories and development of new infrastructure for enhanced teaching & learning, conduct high quality research and to provide leadership for industrial growth in the state and country. Participation of the institute in TEQIP Phase-III is necessary for overall improvement in quality of education.

- Strengthening the present Institute infrastructure required for teaching and learning with an objective to produce high quality engineers.
- Development of new infrastructure required for teaching and learning (New Laboratories, E-Classroom, Computer Network/WIFI ,Library, Electrical and Mechanical Workshop and Computer Center)
- Starting new PG programs.
- To furnish a multipurpose lecture hall/mini auditorium.
- To develop an ecosystem demand-driven Research & Development.
- Overall development of students and to improve learning skills
- Faculty and Staff training for enhancement in productivity and motivation
- Collaborative programs by establishing a network with premier institution and establishment of twinning system.

TEQIP-III–Action Plan
(Implementation period: April 2017- March 2020)

The institute has identified following broad objectives for the development under TEQIP-III.

- Strengthening of existing institutional infrastructure by procurement of new equipments in Laboratories and establishment of new laboratories, Books for Library, Learning resource material, establishment of Campus Wide Network and minor civil work.
- Improvement in Teaching, Learning and Research processes for students, faculty and staff training
- Starting post graduate programs.
- Skill development and career oriented skill development programs targrting at employability of students.
- Starting Continuing education program in collaboration with industries and academic partners.
- Empowering Community at local level by providing technological support and transfer of knowledge and skills.

Action Plan and Category-Wise funding for Key-Activities
(April 2017- March 2020)

Sl. No	Activities	Category of Expenditure	Total Requirement Rs. In Lakhs	Financial Year			Total Requirement (In lacks)
				2017-18	2018-19	2019-20	
1	**Infrastructure improvements for teaching, training and learning:**						
	A. Strengthening of existing laboratories			70	20	20	**110**
	B. Establishment of new laboratories for existing UG and proposed PG programs			20	40	00	**60**
	C. Campus Wide Network and strengthening of WIFI access.		530	60	10	10	**80**
	D. Establishment of new Electronic Class rooms and strengthening of existing class rooms			40	10	00	**50**
	E. Strengthening of Library including Books, Air-conditioning and Electronic library.	Procurement		50	15	15	**80**
	F. Establishment of Career Counseling and Skill Development Cell			10	10	10	**30**

	G. Procurement of Learning resource software and software for specific training.			20	20	10	**50**
	H. Refurbishment of Conference Hall/ Auditorium			50	00	00	**50**
	I. Minor Civil Work and Furniture			10	05	05	**20**
	Total			**330**	**130**	**70**	**530**
2	**Improvement in Teaching learning and Research Competence.**						
	A. Academic support for weaker students / Remedial Classes	Academic	370	20	20	20	**60**
	B. Support to students for skill development/ Special Training and obtaining Industry Certification on cutting edge technologies.			20	20	20	**60**
	C. Enhanced Industry Support and Support to UG students for innovative projects/ideas			15	15	15	**45**
	D. Institutional Management Capacity Enhancement			20	15	15	**50**
	E. Faculty and Staff Development based on training need analysis			15	20	15	**50**
	F. Providing teaching and research assistantships			10	30	30	**70**
	G. Establishment of a twining system to build capacity and improved performance			**10**	**15**	**10**	**35**
	Total			**110**	**135**	**125**	**370**
3.	**Incremental Operating Cost**	IOC	100	10	50	40	100
	Total		1000	450	315	235	1000

Rajkiya Engineering College, Banda

2.2 Provide an Action plan with timelines for:

(a) Improving the learning outcome of the students

1. Faculty Training Plan :

(For qualification up-gradation, subject up-gradation, pedagogical training, subject area and research competence based on Training Need Analysis (TNA) in the following areas.

Enhancing Faculty and staff competence with respect to qualification up-gradation, subject up-gradation, pedagogical training, subject area and research competence based on Training Need Analysis (TNA) is an essential part that would receive focused attention under the TEQIP-III. In order to identify the specific training needs of the various staff, Training Need Analysis (TNA) was conducted with all support staff, technical staff, administrative staff, faculty members, heads of departments and Principal. Aligning with the institution's mission and vision, objectives and priorities, the training needs are listed for the various categories. The faculty development is closely linked to the overall goals of the institution and institutional proposal and coordinated with the proposed investment in equipment, learning resources and facilities. Faculty development needs to be carried out through the activities like qualification up gradation, subject knowledge and research competence up gradation, participation in seminars, conferences, workshops and pedagogical training. We would like to work in close association with national institute of importance like IIT Kanpur, IIT Gandhinagar, NIT Allahabad and NITTRS at Chandigarh and Kolkata to meet pedagogical and knowledge upgratation of faculty in addition to inhouse faculty development programs. We have identified following different categories to meet these objectives.

1.1 Pedagogical Training

The basic pedagogical training was included in the *Induction Training* programmes for young faculty. Advanced pedagogy training such as Effective Teaching-Learning Process, Training on E-learning tools and preparation of E-Learning materials, Class Room Management and Micro teaching in addition to basic training on Attitudinal and mindset change, personality development, communication skills and motivation, will be offered to all faculty members. The HoDs and Principal will be given training on institutional development and management, quality management, Management information system, Planning

and Implementation, budgeting and financial management, system automation, human resource management etc in addition to basic training on personality development and motivation. Separate component is included in this under the Institutional Management Capacity Enhancement.

1.2 Up gradation of knowledge in specific area of Engineering

Faculty, staff, administrative including financial staff expressed desire to enhance their knowledge in the respective domain to cope up the changing needs of their job requirements in tune with the objectives and priorities of the institution. This training for domain knowledge enhancement will be conducted as in-house as well as outside the conducted in other institutions.

1.3 Participation in Conference, Seminars, Workshops

The will be encouraged to participate in short term/long term courses in their subject areas, Various National/International Seminars, Workshops Conferences etc are being planned during the project period to conduct within the Institution. Faculty will also be encouraged ro attend the Conference and workshops for knowledge up-gradation by attendance and contribution of articles.

1.4 Qualification Improvement

Faculty will be encouraged to participate in QIP programmes conducted each year at IITs/NITs for the purpose of improvement in their qualification such as M.Tech/Ph.D.

1.5 Improving Research Capabilities

The institution has already taken various initiates to improve research capabilities among faculty members. By providing state-of-the-art infrastructure facilities in the various laboratories, better computational facilities and learning resource in the library, significant improvement in research ambience will be generated in the institution. Moreover, the tie-up with nearby R&D organizations and premier academic institutions will help the students and faculty to undertake research projects. BoG and Director encourages research by Engineering students as well as faculty for viable projects of their own and also in collaboration with other research institution and industries. Funding is also available for initiating such research projects under this scheme.

1.6 Establishment of Departmental Library

Under TEQIP-III, for the full benefit of faculty and senior students, we also plan to establish a departmental library in each department.

Action Plan for Faculty Training :

Sl #	Prioritized Training	Project Months/ Number of people					
		1-6	6-12	12-18	18-24	24-30	30-36
Faculty (Basic and Advanced Pedagogy Training)							
1	Pedagogical Training/ Teaching and Learning Methods	0	10	5	5	5	5
2	E-Learning tools	0	5	5	5	5	5
3	Curriculum development	0	5	5	5	5	5
4	Guiding and counseling students	0	5	0	0	5	0
5	Leadership and personality development	0	2	2	2	2	2
6	Instructional design and delivery	0	5	5	5	5	5
Subject/Domain knowledge enhancement/improving research capabilities							
1	Designing and carrying out research project and publishing papers	0	2	2	2	2	2
2	Subject updating in your field of specialization	0	2	4	4	4	4
3	Visit and training in international institutes of excellence in relevant subjects.	0	2	2	2	2	2
4	Providing consultancy services	0	1	1	1	1	2
5	Industrial Training	0	1	1	1	1	0
6	Visiting and training in Institutions of excellence	0	0	4	0	4	0
7	Improving faculty qualification	0	0	0	4	0	4

2. Staff Training (Technical and Administrative Staff):

The Technical and administrative staff working in laboratories and other offices need to be trained in their functional areas including operation and routine maintenance of both the existing and new equipment. It is necessary to to encourage technical to participate in training and to use the newly acquired expertise for the benefit of students and the institution. Similarly, the administrative staff also needs training in respective functional areas, particularly in the use of modern office equipment, software, office automation, maintenance of records, procedures, etc. We have presently identified *Office Automation Tools, Training on Skill Development, Personality Development and Software Training* etc. as an area for staff training and

development. However, Action plan for administrative and technical staff is tentative and indicative only and it will be revised as per the requirement.

Action Plan for Staff Training

Sl #	Prioritized Training	Project Months/ Number of people to be trained					
		1-6	6-12	12-18	18-24	24-30	30-36
Support Staff/Administrative staff							
1	Office Automation Tools	0	2	0	2	0	0
2	Working in Office/Ethics	0	0	2	2	0	0
3	Government service rules/code and conduct	0	0	0	0	2	2
4	Personality development	0	0	2	0	2	0
5	Time management and Record maintenance	0	4	0	0	0	2
6	Motivational training	0	0	0	2	0	2
7	Professional ethics	0	0	2	0	2	0
Technical Staff							
1	Enhancement of knowledge in area of expertise	0	2	0	2	0	2
2	Management of laboratory/Record Keeping in lab	0	2	2	0	2	0
3	Computer networking and administration	0	2	0	2	0	0
4	Software training on relevant fields	0	2	0	2	0	2
5	General maintenance of Computer Lab/Servers	0	4	0	2	0	2
6	Industrial Training	0	2	2	0	2	0
7	Enhancement of Demonstration skills	0	2	0	2	0	2
8	General maintenance	0	2	2	0	2	0
9	Health and Safety practices in laboratory/offices	0	2	0	0	2	0
11	Calibration of equipments	0	2	0	0	0	2
12	Soft skills	0	0	2	0	2	0

3. Increasing Capacity of UG. PG and Ph.D Education

The Institute is offering following undergraduate programs in engineering and AICTE approval for these courses has been obtained. The detail of AICTE approved programs are below.

Sl.No	Branch	Intake
1.	Electrical Engineering	60
2.	Mechanical Engineering	60
3.	Information Technology	60

We plan to extend our capacity by following specific actions.

i. Starting of PG programme in **Mechanical Engineering, Information Technology and Electrical Engineering** by 2019.

ii. Starting two new UG program (i) **Computer Science and Engineering** (ii)) **Electronics and Communication Engineering** by 2018.

iii. Establishment of various laboratories for new UG programmes by 2018.

iv. Establishment of Center of Excellence in Robotics and Automation by 2018

v. Establishment of Center of Excellence in Flexible Manufacturing by 2018

vi. Establishment of Center of Excellence in Non Conventional Energy Resources by 2018.

vii. Establishment of various laboratories for new PG programmes by 2018.

viii. Faculty members attending conferences on area related to PG programmes and interact with the experts for advice in making the PG programmes globally competitive.

ix. Encouragement of visit of senior faculty members to premier academic institutions to study the state-of-the-art equipment and machinery requirements for establishing various laboratories for the proposed new PG programmes by 2018

x. Procurement of various advanced learning resources suitable for the proposed new PG programmes including more journals in the Library by 2018

xi. Organizing national and international conferences on domains specific to the identified PG programmes

Activity Chart for Increasing Capacity of UG/PG and Ph.D. programs

Sl #	Activity	Project Months					
		1-6	6-12	12-18	18-24	24-30	30-36
Increasing Capacity of UG/PG and Ph.D. programs							
1	Starting new UG Programs in EC & CSE			▓	▓	▓	▓
2	Starting new PG Prgram in IT/ME/EE					▓	▓
3	Establishment of New Laboratories for UG Programs	▓	▓				
4	Establishment of New Laboratories for New PG Programs	▓	▓	▓			
5	Establishment of Center of Excellences (robotics/Flexible Manufacturing/Non Conventional Energy Resources)	▓	▓				
6	Visit of Senior Faculty to Institute of importance development	▓	▓	▓	▓		
7	Procurement of Learning Resources/ Software for new UG/PG Programs delivery	▓	▓	▓			
8	Modernization of Existing Labs for New UG/PG programs	▓	▓	▓			

4. Investing in Smart Classrooms, Campus Wide Network/ Wi-Fi access in all academic and administrative buildings and hostels

Presently, the Institute has 100 Mbps leased line over Optical Fibre for internet access. All computing laboratories are connected to leased line for internet access. The part of the academic building is WIFI. Before 2020 with the help of TEQIP –III Following work to be done:

i. To establish a campus wide network providing internet access to all rooms in Academic Building, Student Activity Center and Hostel.
ii. Extension of exiting Wi-Fi access in all academic and campus building including Student Activity Center and hostels before 2020

iii. Establishment of New Electronic Class Rooms
iv. Strengthening of existing Electronic Class Rooms
v. Providing internet access to Electronic Library and procurement of electronic books and other learning resources in the library
vi. To provide internet access and establishment of new ICT/Audio Visual facilities at designated places such as conference room/department meeting rooms.
vii. Establishment of E-Library

Activity Chart for smart Class Rooms/Campus Wide Network/WIFI

Sl #	Activity	Project Months					
		1-6	6-12	12-18	18-24	24-30	30-36
Smart Class Rooms and Internet Access/WIFI							
1	To establish a campus wide network providing internet access to all rooms in Academic Building, Student Activity Center and Hostel.	▓	▓	▓			
2	Extension of exiting Wi-Fi access in all academic and campus building including Student Activity Center and hostels before 2020	▓	▓	▓	▓		
3	Establishment of New Electronic Class Rooms	▓	▓				
4	Strengthening of existing Electronic Class Rooms	▓					
5	Providing internet access to Electronic Library and procurement of electronic books and other learning resources in the library	▓	▓	▓	▓		
6	To provide internet access and establishment of new ICT/Audio Visual facilities at designated places such as conference room/department meeting rooms		▓	▓	▓	▓	▓
7	Establishment of E-Library	▓	▓	▓			

5. **Improving the academic performance of SC/ST/OBC: Action Plan for improving the academic performance of SC/ST/OBC/academically weak students through remedial and skill development classes with the objective of improving their employability**

The Rajkiya Engineering College, Banda was established by Government of U.p. under special component plan meant for uplifting and providing education to socially deprived class. As a result, the seats reserved every year for SC/ST/OBC students in all disciplines are 70 % approximately. Students are admitted to college based on the competitive examination conducted by UPSEE every year. Despite the completion, each year many students are admitted to the colleges who have passed out 10+2 from the school located in far-flung and rural areas. As a result, proper mentoring and continuous monitoring these students are necessary. The present focus is on significant improvement in the pass rate of such students and the college is taking care for improving their academic performance by various measures to bring them along with other students. Following are the action plan for improving academic performance of academically weaker students.

The Action plans for improving academic performance of Weaker students :

i.   Providing scholarship to financially week and academically sound students.

ii. Conduction of remedial classes on important subjects

iii. Conduction of special English class and utilization of existing Language laboratory at College.

iv. Mentoring of students by giving assignments on simple topics and gradually increasing the gravity of topics

v.   To provide individual mentoring to needy students.

vi. To provide special counseling by the external expert/agencies to needy students.

vii. Conducting Soft skill training for improving communication skill.

viii. Arranging special coaching classes for improving their analytical, verbal and technical skill sets which are required for improving their employability.

ix. Setting up of a counseling cell in the campus and regular sessions of experts in the field by 2020.

x.   Establishment of separate Book Bank for Economically weaker students.

Activity Chart for improving the academic performance of SC/ST/OBC/academically weak students

Sl #	Activity	Project Months					
		1-6	6-12	12-18	18-24	24-30	30-36
Improving Academic Performance of weaker Students							
1	Providing scholarship to financially week and academically sound students.	■	■	■	■	■	■
2	Conduction of remedial classes on important subjects	■	■	■	■	■	■
3	Conduction of special English class and utilization of existing Language laboratory at College.	■	■	■	■	■	■
4	Mentoring of students by giving assignments on simple topics and gradually increasing the gravity of topics	■	■	■	■	■	■
5	To provide individual mentoring to needy students.	■	■	■	■	■	■
6	To provide special counseling by the external expert/agencies to needy students	■	■	■	■	■	■
7	Conducting Soft skill training for improving communication skill.	■	■	■	■	■	■
8	Establishment of Separate Book bank for economically weaker students	■	■				
9	Arranging special coaching classes for improving their analytical, verbal and technical skill sets which are required for improving their employability.	■	■	■	■	■	■
10	Setting up of a counseling cell in the campus and regular sessions of experts in the field by 2020.	■	■	■	■	■	■

6. **Institute academic and non-academic reforms : Implementation of academic and non-academic reforms**

Presently, the curriculum prepared by the affiliating university Dr. APJ Abdul Kalam Technical University is being followed at the Institute. The syllabus of the university is revised periodically. One of the goals under the TEQIP-III is to apply for academic autonomy by 2020. Once the Institute becomes autonomous we will device our curriculum by studying local and global need. Action plans and other details are given in Section 2.3.

2.2 (b) Improving Employability of the students

Through the TEQIP-III project at the college, we aim to provide state-of-the-art engineering equipment facilities in the laboratories, familiarizing all possible classical and basic experiments, to establish campus wide network for intent access and other computing services and learning resources to enriching the student's knowledge through procurement. In addition to this, our objective is to enhance the analytical capabilities and to cater to other soft skill requirement of the students by organizing remedial classes, special English classes, special metoring from expertise available at campus and inviting expert from outside. We will also establish career counseling and skill development cell at the institute that will have special focus on identification of special need of the student.

7. Increasing Interaction with Industry:

The institute is located in the Bundelkhand region of the state which is primarily an agriculture based region known for citric food, special crops requiring less water and having maximum sunshine making it suitable for generation of solar energy. The nearest industrial hub is located at Kanpur and Jhansi primarily known for textile, leather and other small and medium scale industries. Industries in the region are heavily concentrating on innovations and R&D activities to equip them globally competitive with their products and services. The institution can encourage the faculty, technicians and students to interact with industries in all possible ways with the spirit of delivering mutual benefit. The major modes of interactions are planned for improved interaction with industry:

    i.   Visit of faculty and students to industries to identify R&D problems.

ii.   Signing the MOU with local industry for mutual benefit and knowledge transfer.

iii.   To increase the number of industrial projects by the students.

iv.   To invite industry experts for conducting special lectures on industrial practices, safety and trends.

v.   Offering training for students in industries

vi.   To undertake joint research project with local industry and faculty members.

vii.   Undertake joint projects on mutually agreeable domains

viii.   Jointly organize conferences, workshops and seminars at national/international level

ix.   To encourage industry people to participate in PG programs once started at the college under TEQIP-III.

8. Student Career Counseling and Placement

Under TEQIP-III we plan to establish a n Career Counseling and Skill Development cell to foster interaction with local and national industry and companies. Various activities envisaged for improving employability/placement of graduates are as follows:

i.   To conduct soft skill training
ii.   To conduct special English classes
iii.   To offer special skill development programs/ session on specialized skill need.
iv.   To provide career counseling
v.   Conduct remedial classes for academically weak students
vi.   Organize more visiting executive programmes.
vii.   MOU to be signed with career counselor to improve employability/placement.

2.2 (c) Increasing faculty productivity and motivation

Keeping in view the changing business/industrial environment and job-markets' demands, the Institute intends to introduce new professional courses in the emerging areas such as in Energy Management, Energy and Environment, Computer Science and Engineering, Perfumery and Cosmetics and Surface Coating Technology to increase faculty as well as students productivity and motivation.

9. Sponsored research, consultancy and other revenue generating activities : Enhancement of research and consultancy activities

With the introduction of new PG programmes, the participation of faculty members into research will be increased. By establishing state-of-the-art equipment in laboratories, enriching the library with good volume of books and learning resources and also by providing high speed net connectivity and computational facilities, the faculty as well as students will always be in an ambience of research. Interacting with National level R&D organization through the infrastructure facilities established will also bring good results in research. The students can take up industry related M.Tech/Doctoral Projects. Because of the improved facilities, funded research projects can be brought in from various agencies.

Following action plans are envisaged for enhancing the research and consultancy activities:

i.   Setting up of new laboratories and strengthening of existing laboratories.

ii. Introduce new PG programmes

iii. To organize workshop/conference on technology of relevance.

iv. To undertake joint research project with industry at local and national lelevl.

v.   Encourage faculty as well as students to publish research papers

vi. Encourage faculty to undertake consultancy works under Government Departments as well as industries

vii. Organize national and international level conferences on state-of-the-art technology

viii.   Starting up of collaborative research projects with R&D organizations

ix. Explore funding from various state/national/international agencies for taking up research projects

x. Create research fund from alumni, charitable organizations, prospective industries and professional societies like IEEE, CSI, ISTE etc for triggering research interest among UG students

xi. Providing incentives for consultancies and participation in conferences for research publications

2.3 Action plan with timelines for :

(Obtaining autonomous status from UGC and NBA Accreditation)

Present status of the Institute:

All India Council for Technical Education (AICTE) has granted approval of all three (03) B.Tech courses (Electrical Engineering, Mechanical Engineering and Information Technology) in the session 2016-17. All necessary infrastructures as per the norms of AICTE have been developed at the college to commence studies in three branches of engineering (IT, ME and EE) w.e.f from session 2015-16. State of the art infrastructure for various offices in the college, such as, Director /Registrar /Accounts /Examination/Dean Academic/Head of the Departments/Faculty Members and other academic offices exists at the college. All of these offices are fully equipped with electronic infrastructure required for communication and reprographic facilities at par with any other institute of national importance. The colleges currently have a pool of thirty four outstanding faculty members in four academic departments, namely, Applied Science and Humanities, Department of Mechanical Engineering, Department of Electrical Engineering and Department of Information Technology. All faculty members possesses either M.Tech or Ph.D from institutions of national importance such as IITs/IIITs/NITs and other prestigious universities.

Fifteen (15) state of the art laboratories in the Department of Electrical Engineering, Seven (07) laboratories in the Department of Mechanical Engineering and a Central Workshop has been developed at the college. Central computer centre consists of 180 high speed computers in 05 computing laboratories. All nodes are connected over a LAN to the state of the art high speed servers. Central computer centre and all computing laboratories are fully air-conditioned through centrally located ductable air-conditioning units. All nodes in the computer centers and servers are powered by centrally located on line UPS with battery bank capable of supplying power to all computers for three hours in absence of electricity. BSNL has established an electronic exchange in the laboratory complex to provide 100 Mbps leased line connectivity for internet over optical fibre.

The teaching and learning takes place in various fully air-conditioned Electronic Class Rooms equipped with modern teaching aid, such as, Touch Screen Podium, Interactive White Boards, Short through Projector along with Audio Visual facilities.

The college also has 500 KVA generator unit capable of providing electricity to whole campus including academic building, workshop, hostels, street lights etc. A state of the art Language laboratory with Sixty Nodes (30 Nodes) along with necessary software and audio visual aid has been developed at the college. All nodes are connected via LAN to our servers.

1. **Obtaining autonomous institution status from UGC**

For obtaining the Autonomous institution status from UGC, the institute is focusing on the following points. These are: Faculty preparation, Departmental preparation, Institutional preparation, and preparation of students and the local community. The college plan to get autonomy from the UGC from 2020.

Faculty Preparation:

All the Faculty of this institution is involved in the decision making & planning process for the approval. Seminars, workshops and consultations will be organized to make the staff familiar with the concept, objectives and rationale of autonomy. This is also mentioned in the Academic calendar of the institute.

Departmental Preparation:

Concerned department is focusing on preparing suitable course materials for the major & related subjects. The department is adopting the semester pattern of study for better teaching of the major subjects related to discipline. Department is focused on continuous internal assessment for evaluating the understanding of the subjects by the students. The institute is adopting the Credit/grading system for betterment of the students. The department is conducting the student feedback of the faculty for subjects for improving the teaching standards. Department will also focus on Self-appraisal by teachers.

Institutional Preparation:

Institute is preparing for the changeover for the academic, administrative/ management & Financial implications. Institute is prepared to discharge its new functions efficiently.

2. **Improving the NBA accreditation status**

At present the institution is eligible for applying accreditation of 3 UG programmes. The advertisement for the recruitment of faculty has already been out. We have received the application and hope to complete the recruitment of

regular faculty by July 2017. Upon completion of regular faculty members we will apply to the NBA for accreditation.

Action plan for Obtaining Autonomous Institution Status and NBA Accreditation

Sl #	Activity	Project Months					
		1-6	6-12	12-18	18-24	24-30	30-36
Improving Academic Performance of weaker Students							
1	Faculty Preparation for UGC Autonomy	▓	▓	▓	▓	▓	▓
2	Departmental Preparation for UGC Autonomy	▓	▓	▓	▓	▓	▓
3	Institutional Preparation for UGC Autonomy	▓	▓	▓	▓	▓	▓
4	Applying for UGC Autonomy						▓
5	Applying for NBA Accreditation				▓	▓	▓

2.4 Brief description the following:

1. **Is any enhanced assistance / mentoring that the institution is looking forward from its ATU?**
   The institute is offering the curriculum of the University. No specific assistance at present is required from the ATU, however, in future any scheme is announced by the ATU which benefit the student and faculty of institute, the institute would like to work with ATU..

2. **Does your BoG need strengthening, if yes, then how?**
   Presently BOG of the institute is capable enough to take decision in the interest of the institute. However, BOG may be itself decide the changes or amendments as and when requirement arises.

3. **Is there an ERP/MIS system existing, if yes, then any improvement, modification suggested.**

The institute is using an ERP for day to day monitoring of academic activates such as maintaining the data of students and faculty. The functionalities of the existing ERP will be extended whenever any specific need arises.

4. **Is there any mechanism i.e. special classes being conducted in the institution for improving the GATE score?**

Presently we are using NPTEL video lecture in the electronic classrooms for the preparation of students for GATE examination. It is however required that an expert lectures or separate classes should be organized for better preparation. During TEQIP-III, we will provide the training to the students by arranging expert lectures on specific subject after identification of need of the students.

We future plan to procure MOOCS course for the benefit of students that helps in preparation for GATE.

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

We are looking forward to twining program in association with other Institutions, such as IIT, NIT Allahabad and other educational institution of importance located in the state of Uttar Pradesh. Several areas that can be taken up under twining programs are below:

i.   Faculty interaction and Invited lectures
ii.   Student and faculty exchange for short term
iii. Mutual cooperation for organizing conference/workshop and faculty development programs.
iv.   Sharing Library and other learning resources
v.   Offering joint research and student projects

Specific objectives of the twinning plan shall be finalized with the help of potential partner institutions based on discussions and strength area of partner institutions.

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?

We have already rolled out the advertisement for recruitment of regular teaching staff. The applications are being scrutinized and very soon we will be able to conduct interviews. Therefore, presently there is not any difficulty in recruitment of regular faculty members. Our target is to appoint regular faculty members at the institute before beginning of the session in July 2017.

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

At the end of TEQIP-III at the institute we hope to achieve following:

1. Corpus fund with which institute will be able to maintain the equipment and machines.
2. Highly qualified and knowledgeable faculty would be able to inculcate better technical and morale education to the students.
3. As a result of successful completion of TEQIP-III we will be able to generate resource through training and consultancy.
4. The availability of funds and commitment of the College faculty would definitely make it happen and the vision could be translated into reality.
5. After the completion of this project, the stagnation will be broken and dissipated, and the fresh breeze of vibrant academic environment will definitely bloom thousands flowers of academic excellence.

2.8 The participation of departments/faculty in the proposal preparation and implementation

Required data and targets have been collected through various departments and faculty in consultation. We have also organized the meeting at department level as well as institute level to understand future requirement for development of institute. The students of various departments have also been consulted and their feedback has been taken into consideration. Tentative, budget requirements for new labs, modernization and equipments were discussed with department heads, and were later finalized collectively in various meetings held time to time.