INSTITUTIONAL DEVELOPMENT PROPOSAL

For
Sub-Component 1.1
Institutional Development for Participating Institutions

Submitted to

National Project Implementation Unit (NPIU)

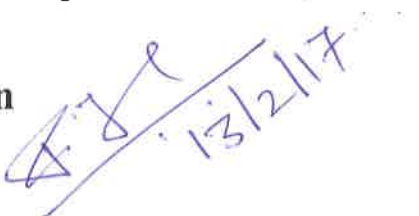**EdCIL House, Plot No. 18 A**
Sector 16 A, Gautam Budh Nagar
NOIDA (UP)

By

Government Engineering College, Ajmer

N. H. 08, Near Nareli Temple
Badliya Circle, Ajmer, Rajasthan

13/2/17

Co-ordinator (TEQIP-II)
Govt. Engineering College
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1. INSTITUTIONAL BASIC INFORMATION

1.1 Institutional Identity

- **Name of the Institution**   : **Government Engineering College, Ajmer**
- **Year of establishment**   : **1997**
- **Is the Institution AICTE approved**: **Yes**
- **Furnish AICTE approval No.**   : **F.No:765-66-210(E)/ET/97**
- **Type of Institution**   : **Govt. Aided**
- **Status of Institution**   : **Autonomous Institute as declared by State Government**
- **Name of Head of Institution (Full time appointee)** : **Dr. Rohit Misra, Principal**

1.2 Academic Information:

- **Engineering UG and PG programmes offered in Academic year 2016 – 2017**

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	B.Tech (Mechanical)	UG	4	1997	75	359
2	B.Tech (E&C)	UG	4	1998	90	393
3	B.Tech (IT)	UG	4	2000	60	201
4	B.Tech (CS)	UG	4	2000	90	376
5	B.Tech (EIC)	UG	4	2005	60	241
6	B.Tech (EE)	UG	4	2006	45	208
7	B.Tech (Civil)	UG	4	2011	60	276
8	M Tech. (Production)	PG	2	2007	18	15
9	M Tech. (Digital Engg.)	PG	2	2007	18	18
10	M. Tech. (CSE)	PG	2	2007	18	15
11	M. Tech. (IT)	PG	2	2008	18	00
12	M.Tech. (SE)	PG	2	2008	18	4
13	PhD. (ECE)	PhD	3	2012	-	07
14	PhD. (CSE)	PhD	3	2016	-	01
15	PhD. (ME)	PhD	3	2016	-	02
	TOTAL				**570**	**2116**

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- **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): **12**
  No. of programmes accredited: **NIL**
  No. of programmes applied for accreditation: **05**

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

No. of Sanctioned Regular Posts	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						
	Engineering Disciplines		Supporting Disciplines (Physics, Chemistry, Maths and English/ other languages)		Engineering Disciplines		Supporting Disciplines (Physics, Chemistry, Maths and English/ other languages)		Engineering Disciplines		Supporting Disciplines (Physics, Chemistry, Maths and English/ other languages)				
	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)
141	17	1	16	1	31	20	8	9	3	10	-	-	75	66	41

R=Regular, C=Contract

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2. INSTITUTIONAL DEVELOPMENT PROPOSAL (IDP)
(Implementation period: April 2017 – March 2020)

2.1 Executive Summary of the IDP:

(1) Background:

- Autonomous institute of Govt. of Rajasthan, established in 1997.
- Centrally located in the state of Rajasthan.
- Affiliated to Rajasthan Technical University, Kota.
- Largest technical institute of state govt. in terms of number of courses and students.
- One of the three colleges in the state offering M.Tech Programs in five specializations and PhD in three engineering programs.
- Central library having 46,640 books and 35 journals/magazine and 01 e-resource.
- Over 1000 computers in LAN
- Completed/Running 8 AICTE, DST, MHRD, etc sponsored research projects.

Our *vision* is to be an Institution of academic excellence with total commitment to quality education, research and improvement in human values with a holistic concern for better life, environment and society.

Our *mission* is to serve the society and improve quality of life by nurturing high quality talent, providing excellent academic and research environment, consultancy service and promoting dissemination of knowledge.

(2) Project Objectives:

The major objectives elaborated for inclusion in the current proposal for funding under TEQIP-III include the following:

- Promotion of training and research through upgrading infrastructure and laboratories and collaboration with ATU, twinning institute and industry.
- Improving the quality of education through systematic curriculum and staff development, upgrading classrooms, library and management information system.
- Establishing efficient operating structures and procedures for the governance and management of academic, financial and administrative activities.

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- Establishing efficient system for gathering information and feedback to assess training requirement and performance evaluation of students, staff and faculty.
- Obtaining accreditation of existing eligible courses of study by 2018.
- Obtaining UGC autonomy by 2019.
- Improving students' transit rate from 65% to 80%
- Improving on-campus placements from 25% to 50%
- Increasing the number of enrollment in M. Tech and PhD courses.
- Generating revenue through training, consultancy, utilization of resources and increasing enrollments.
- Developing green and eco-friendly residential campus.

(3) Project Activities:

- Appointment of TEQIP coordinator and nodal officers
- Organizing subject related expert lectures, FDP/STC/Workshops and pedagogical training to improve transition rate and university results
- Collaboration with industry, twinning institute and ATU to improve employability and learning outcomes of students
- Procurement of equipments as per requirements submitted by departments to strengthen existing laboratories and establishing new laboratories
- Enhancement of resources required for research and consultancy
- Developing infrastructure required for academic and research purposes
- Collaboration with industry, Government bodies and other institutes to enhance research and consultancy activities
- Qualification improvement of teaching faculty and imparting training to technical and support staff
- Organizing remedial/special classes for weak students and improving success rate in competitive/GATE examination.
- Obtaining NBA accreditation and UGC autonomy
- Procurement of institute-wide surveillance system, online attendance system and Wi-Fi based communication system (latest mode of EPABX).
- Meeting energy requirement of campus through utilization of non-renewable energy sources viz. solar and wind energy

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2.2 Provide an action plan with timelines for:

(a) Improving the learning outcomes of the students

1. Faculty training (qualification upgradation, subject upgradation & research competence, Pedagogical training, participation in conferences, seminars/workshops etc.)

Training need analysis (TNA) is used to identify the gap between current and desired individual and organizational performance. It will help in identifying the areas where both individuals and organization would benefit from training in order to become more effective at achieving the individuals own objectives and the objectives of the organization.

Since, TNA covers one and all, so the performance of the individual and organization at large is bound to improve. TNA will give a chance of introspection to faculties and technical staff, that what they are and what they want to be. They will undergo training to acquire specific skills which will help them develop personally and also help in meeting the objectives of the institute.

For improving research and consultancy competence, it is proposed that TNA should be carried out by the twinning institute, whereas a separate TNA of faculty and staff by ATU will certainly help in identifying need for qualification and subject upgradation and pedagogical training.

Participation in conferences, seminars/workshops etc. and pedagogical training program will enhance the research and teaching skills of faculty. Moreover, it will result into improved quality & effectiveness of classroom and laboratory teaching.

For faculty training, following activities are proposed in TEQIP-III project:

- TNA by twinning institute and ATU by 2017
- Basic and advanced pedagogical training by 2017
- Subject / domain knowledge enhancement by mid of 2018
- Participation and organizing conference, workshops/seminars etc. throughout TEQIP-III project
- Improvement in faculty qualifications throughout TEQIP-III project
- Improving research and consultancy capabilities throughout TEQIP-III project

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2. Staff training (Technical & Administrative staff)

There can be different sections for training technical and other staff in their respective functional areas:

- Training to Accounts Persons.
- To Lab Technician of various departments.
- To Clerical Staff Members/Administrative Staff.

For staff training, following activities are proposed in TEQIP-III project:

- Basic training on house-keeping (5S) at the start of every semester
- Basic training of computer skills and ERP system in summer break of 2017 and 2018
- The Institution will also organize different training programs throughout TEQIP III project to train technical staff by inviting experts from twinning institute, ATU or other institutes.

3. Increasing capacity of UG, PG and PhD education (increasing enrollment and starting new UG, PG and PhD programmes)

The world of education and training has seen a tremendous change over the last decade. There is a need to strengthen further the PG programs to make them more acceptable. For increasing enrollment in UG, PG and PhD education, following activities are proposed in TEQIP-III project:

- All non-gate M. Tech. Students will be provided assistantship at par with Gate scholarship.
- Faculty qualification upgradation is planned under TEQIP. This will help in increasing intake of PhD.
- PhD scholars will also be provided assistantship.
- After obtaining NBA Accreditation by 2018, we will apply for increasing intake of current UG and PG courses.
- In TEQIP II, students were encouraged to participate in conferences, seminars and workshops. This practice will be continued in TEQIP III also.

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- Conducting expert lectures by people from industry and other reputed institutions on a regular basis will certainly improve enrollments.
- New laboratories will be established and existing laboratories will be strengthened to increase enrollment and start new PG courses.

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.**

- Seven smart class rooms were developed under TEQIP II, Department of CS/IT and Mechanical has submitted plans for establishing new smart class rooms cum seminar rooms.
- The complete campus is running Wi-Fi under TEQIP-II. Currently we have 1 Mbps Internet speed from BSNL. More Wi-Fi access points are planned in the campus to improve internet speed under TEQIP III project.
- Construction of one Girls hostel is under process and proposal for girls & boys hostels have been recently submitted to State Government. Wi-Fi facilities will also be provided in these hostels under TEQIP-III.
- E-books and e-journals will be procured under TEQIP III project.

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

To improve transition and pass rate of weak students, following activities are planned:

- English communication lab facilities would be improved.
- After the evaluation of terminal exams and the university result, the academically weak students will be motivated to participate in remedial classes.
- Faculty will be trained on methodologies such as 'learn with fun' for improving transition and pass rate of weak students.
- Methodologies followed at twinning institute and ATU will be implemented

In order to enhance the skill of students from the employability point of view emphasis will be given on:

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- Holding classes for personality development
- ATU will be asked to revise curriculum as per industry need
- Arranging visits of students to various industries
- Carrying out industry specific projects
- Methodologies followed at twinning institute and ATU will be implemented

6. **Instituting academic and non-academic reforms including programme flexibility (Is there any need to revise the curriculum? When it was last revised?)**

The UG and PG curriculum was last revised by ATU in the year 2012-13. Currently, ATU focuses on traditional subjects and examination centric pedagogy. Institute is also not exercising any short of feedback system for faculty and staff as well as continuous evaluation system for students. Following activities are proposed under TEQIP III for academic and non-academic reforms:

- We will suggest ATU to introduce wide range of elective papers including interdisciplinary subjects in syllabi.
- Introduction of continuous evaluation system for students viz. regular class tests, assignments, mid-term examinations, term papers, quizzes and laboratory tests.
- ATU will be requested to introduce Credit (SGPA/CGPA) system
- Introduction of online course feedback system for faculty and staff and implementation of corrective mechanism.
- Conducting expert lectures on topics of current interest in the academic program and project based learning.
- ATU will be requested to announce results within 25 days of examination.

(b) Improving employability of the students

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

Following activities are proposed for improving interaction with industry under TEQIP III project:

- Establishment of Industry-Institute interaction Cell by mid of 2017.

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- Organizing Workshops, conferences and symposia with joint participation of the faculty and the industries.
- Encouraging engineers from industry to visit Engineering Institution to deliver lectures.
- Participation of experts from industry in curriculum development.
- Arranging visits of staff members to various industry
- Professional consultancy by the faculty to industries.
- Joint research programmes and field studies by faculty and people from industries.
- Visits of faculty to industry for study and discussions or delivering lectures on subjects of mutual interest.
- Visits of industry executives and practising engineers to the Institute for seeing research work and laboratories, discussions and delivering lectures on industrial practices, trends and experiences.
- Memoranda of Understanding between the Institute and industries to bring the two sides emotionally and strategically closer.
- Human resource development programmes by the faculty for practising engineers.
- B.Tech. and M.Tech. projects/dissertation work in industries under joint guidance of the faculty and experts from industry.
- Visiting faculty/professors from industries.
- Practical training of students in industries.

8. Student career counseling and placement

Following are planned :

- Skill development of the students to fulfill the gap between academic syllabus and need of industry.
- Training students to equip them to face aptitude tests taken by various industries while conducting placements.
- Holding classes for personality development.
- Helping students prepare for GDPI by means of regular GD and Mock PI practices.
- Holding lectures from industry personnel at regular intervals with the intent of improving Industry Institutes relationship and providing an opportunity for students and faculty to be apprised of current requirement of the industry.

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- Local industries are being contacted for placement purposes and few have recruited students also.

(c) Increasing faculty productivity and motivation

9. sponsored research, consultancy and other revenue generating activities

- Key research facilities have been created in all the departments. High-end equipments have been procured through TEQIP-II project. More such equipment will be procured under TEQIP-III project. Such facilities will be used by faculty members and M. Tech/ Ph. D. scholars to improve the quality and quantity of research publications.

- It is proposed to invite government organizations and industries located in nearby vicinity for collaboration and usage of resources procured under TEQIP projects. This arrangement with government bodies and industry will help in identifying opportunities for consultancy work and organization of FDP/STC or training program by qualified faculty will certainly help in generating revenue.

2.3 Provide an action plan with timelines for:

1. Obtaining autonomous institution status from UGC

Action plan for obtaining UGC autonomy is exhibited below:

ID	Task Name	Start	Finish	Duration	2017			2018				2019				2020	
					Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2
1	Applying and obtaining NOC from ATU (RTU)	17-07-2017	28-12-2018	76w													
2	2 F registration	15-11-2017	12-04-2019	73.6w													
3	Obtaining NBA accreditation of 50% courses	03-04-2017	31-12-2018	91.2w													
4	Obtaining UGC autonomy	15-11-2017	31-07-2019	89.2w													

2. Improving the NBA accreditation status

Action plan for obtaining and improving NBA accreditation is exhibited below:

ID	Task Name	Start	Finish	Duration	2017			2018				2019				
					Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1
1	SAR submission for already applied five UG courses	17-04-2017	31-08-2017	19.8w	▬											
2	Obtaining NBA accreditation of five UG courses	01-09-2017	30-03-2018	30.2w		▬	▬									
3	Appling for NBA accreditation for remaining courses	16-04-2018	15-06-2018	9w					▪							
4	SAR submission for remaining courses	16-04-2018	31-08-2018	20w						▬						
5	Obtaining NBA accreditation for remaining courses	03-09-2018	31-12-2018	17.2w							▬					

2.4 Describe the following in brief:

1. Is any enhanced assistance / mentoring that the institution is looking forward from its ATU?

We shall look forward to our ATU for following activities during TEQIP III:

- Training of faculty and staff based on TNA carried out by ATU for improving transition rate and university results.
- Visiting faculty /professor from ATU
- Joint research programs.
- Involving our faculty feedback as well as industry requirements in curriculum revision/design
- Participation of ATU expert in curriculum development when institute obtains UGC autonomy.

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2. Does your BoG need strengthening, if yes, then how?

Yes, BOG of our institute can be strengthened by involving staff and student representative in it.

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

Yes, an ERP/MIS system was procured in TEQIP-II. Presently, it is used only in the library. The same will be enhanced to support the entire institutional database and facilitate paper less work during TEQIP III project.

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

No, presently special classes are not conducted in the institution for improving the GATE Score. It is proposed to conduct special classes under TEQIP-III for GATE examination by subject experts of the institute as well as from twinning institute, IITs/ NITs and other institutes.

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).**
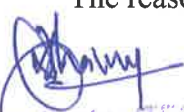
We shall look forward to our twinning institute for following activities during TEQIP III:

- Carrying out TNA of faculty and staff for improving research quality and consultancy outcome
- Finishing school for UG/PG students to improve the employability.
- Organizing workshops, FDP and STC with joint participation.
- Participation of experts in conducting classes for improving GATE score.
- Sharing research and testing facilities.
- Arranging training for faculty and staff.

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?**

Our institute is facing a lot of difficulties in recruitment and selection of high-quality faculty. The reasons are listed below:

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- State Government does not provide funds against the salary of already recruited faculty.
- Service benefits in terms of carrier advancement, medical facility and pension are not well defined and given on regular basis.
- Institute doesn't have residential campus.
- According to State Government order, guest faculty can be hired for one year contractual period.

The action plan to solve this issue is as follows:

- Institute will demand fund against the salary of existing as well as recruitment of new faculty through our BOG.
- Institute will put efforts to raise funds for developing a residential campus.
- BOG will be requested to frame rules for hiring guest faculty for at least a term of two years.

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

Action plan for sustaining project activities is as follows:

- Four funds were created during TEQIP-II by contributing 0.5% of total recurring expenditure of the institute to each fund every year.
- It is proposed to create sustainability fund during TEQIP-III by contributing 8% of total recurring expenditure of the institute every year.
- Apart from the above funds, the revenue generated from consultancy, testing and FDP/STC/training program will be utilized for sustaining the activities after the end of the project.

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

TEQIP Coordinator, Dr. Devendra Choudhary, participated in TEQIP-III orientation program held at NPIU, Delhi on 19/01/2017. At the College level, a meeting of concerned HODs was held under the chairmanship of Principal on 24/01/2017 where a briefing on salient features of TEQIP-III was made by TEQIP Coordinator. This was followed by project document

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