

RAJIV GANDHI PROUDYOGIKI VISHWAVIDYALAYA

(State Technological University of Madhya Pradesh)

Airport Road, Gandhi Nagar Bhopal-462033

(Established in the year 1998 by Rajiv Gandhi Proudhyogiki Vishwavidyalaya Adhiniyam)



TECHNICAL EDUCATION QUALITY IMPROVEMENT PROGRAMME (TEQIP)

PHASE-III

INSTITUTIONAL DEVELOPMENT PROPOSAL

For

Sub-component 1.1

Institutional Development for Participating Institutions

Submitted to:

National Project Director,

National Project Implementation Unit,

Ed. CIL House, 4th Floor, Plot No. 18-A, Sector 16-A

Gautam Buddha Nagar, Noida – 201 301 (Uttar Pradesh)

1. INSTITUTIONAL BASIC INFORMATION

1.1 Institutional Identity

- Name and address of the Institution : Rajiv Gandhi Proudyogiki Vishwavidyalaya
Airport Bypass Road, Gandhi Nagar
Bhopal, Madhya Pradesh -462036
- Year of establishment : 1998
- Is the Institution AICTE approved? : Yes
Furnish AICTE approval No. : Central/1-2812782746/2016/EOA
- Type of Institution : Self financing
- Status of Institution : Technical University
- Name and Designation of Head of the Institution : **Mrs. Kalpana Shrivastava**
Vice Chancellor
(Principal Secretary, Department of Technical Education & Skill Development, Govt. of Madhya Pradesh, Bhopal)

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.	B.E. in Automobile Engineering	UG	4	2012	60	174
2.	B.E. in Civil Engineering	UG	4	2006	60	259
3.	B.E. in Computer Science & Engineering	UG	4	1987	120	522
4.	B.E. in Electrical & Electronics Engineering	UG	4	2002	60	254
5.	B.E. in Electronics & Communication Engineering	UG	4	1987	120	495

6.	B.E. in Information Technology	UG	4	1999	60	248
7.	B.E. in Mechanical Engineering	UG	4	2008	60	253
8.	B.E. in Petrochemical Technology	UG	4	2012	60	169
9.	M.E. in Computer Science & Engineering	PG	2	2008	18	13
10.	M.E. in Digital Communication	PG	2	2011	18	36
11.	M.E. in Heat Power Engineering	PG	2	2008	18	28
12.	M.E. in Power System	PG	2	2008	18	34
13.	M.E. in Structural Engineering	PG	2	2008	18	34
14.	Master of Computer Application	PG	3	2003	60	102
15.	M.Sc. (Maths)	PG	2	2010	18	00
16.	M.Tech in Energy Technology	PG	2	2002	18	35
17.	M.Tech in Nanotechnology	PG	2	2007	18	27
18.	M.Tech in Cyber Forensic	PG	2	2013	18	21
19.	M.Tech in Data Sciences	PG	2	2013	18	07
20.	M.Tech in Computer Tech. & Application	PG	2	2002	18	13
21.	M.Tech in Information Technology	PG	2	2002	18	25
22.	M.Tech in Biotechnology	PG	2	2003	18	20
23.	M. Pharm. in Pharmaceutical Chemistry	PG	2	2002	10	16
24.	M. Pharm. in Pharmaceutics	PG	2	2004	10	16
25.	M. Pharm. in Quality Assurance	PG	2	2010	10	11
26.	Integrated PG in Civil Engineering	PG	5	2011	20	94
27.	Integrated PG in Computer Science Engineering	PG	5	2011	20	100
28.	Integrated PG in Electrical Engineering	PG	5	2011	20	48
29.	Integrated PG in Electronics & Comm. Engineering	PG	5	2011	20	56

30.	Integrated PG in Information Technology	PG	5	2012	20	22
31.	Integrated PG in Mechanical Engineering	PG	5	2011	20	98
32.	Dual Degree (Master of Applied Management)	PG	5	2013	60	19

- **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):

S. No.	Program Name
1.	B.E. in Automobile Engineering
2.	B.E. in Civil Engineering
3.	B.E. in Computer Science & Engineering
4.	B.E. in Electrical & Electronics Engineering
5.	B.E. in Electronics & Communication Engg.
6.	B.E. in Information Technology
7.	B.E. in Mechanical Engineering
8.	B.E. in Petrochemical Technology
9.	M.E. in Computer Science & Engineering
10.	M.E. in Digital Communication
11.	M.E. in Heat Power Engineering
12.	M.E. in Power System
13.	M.E. in Structural Engineering
14.	Master of Computer Application
15.	M.Sc. (Maths)
16.	M.Tech in Energy Technology
17.	M.Tech in Nanotechnology
18.	M.Tech in Cyber Forensic
19.	M.Tech in Data Sciences
20.	M.Tech in Computer Tech. & Application
21.	M.Tech in Information Technology
22.	M.Tech in Biotechnology
23.	M. Pharm. in Pharmaceutical Chemistry
24.	M. Pharm. in Pharmaceutics
25.	M. Pharm. in Quality Assurance
26.	Integrated PG in Civil Engineering
27.	Integrated PG in Computer Science Engineering

28.	Integrated PG in Electrical Engineering
29.	Integrated PG in Electronics & Comm. Engg.
30.	Integrated PG in Mechanical Engineering

No. of programmes accredited: **Nil**

No. of programmes applied for accreditation: 01

S. No.	Program Name
1	B.E. in Electrical & Electronics Engineering

- **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)
152	11	0	0	0	14	15	0	0	20	55	07	12	52	100	82

R=Regular, C=Contract

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

2.1 Executive Summary:

Rajiv Gandhi Proudtyogiki Vishwavidyalaya (RGPV) was established under the Rajiv Gandhi Proudtyogiki Vishwavidyalaya Adhiniyam, 1998 to promote quality technical education in the state. The University offers many undergraduate, post-graduate and dual degree programmes in diverse fields of engineering, science, and technology. The TEQIP Phase-II is already in progress and the University is committed towards offering programs with global impact with a vision to broaden access to quality technical education while ensuring social, financial, gender equity and promoting excellence in teaching and research. The Institute has shown its commitment to Quality Technical Education and Research through its 23 Post Graduate programmes and 8 Ph.D. Programmes. At present the admission to M. Tech. Programmes is based on the GATE score obtained by the students in the national level examination. The support of TEQIP Phase-I and II had already helped the Institute in achieving the desired goals of the World Bank project. The major expenditure of funds in TEQIP-II were carried out in procurement, assistantship and faculty and staff development.

The University follows outcome-based methodologies towards confirming Employability, Innovation and Research through curriculum development. Employability of students through curriculum is ensured through Finish Schools as conceptualized by the University to produce industry-ready students. Three new PG courses have already been started since the commencement of TEQIP-II with due approval from AICTE and the infrastructure so developed will also be utilized in significantly increasing enrolment in existing and new Masters and Doctoral programmes in engineering disciplines

The University has taken up several initiatives to support meritorious and economically challenged students by constituting scholarships like Chancellors Scholarships, and Research Fellowships. Recently, University has tied-up with Tokyo Institute of Technology, Japan for Joint Research in the area of Cross Linear Concentrated Solar Power Project (a solar thermal initiative) on its campus. Researchers from the School of Pharmaceutical Sciences have also marked an unprecedented discovery followed by patents filing for novel anti-cancer molecules and also for bio-degradable Medicated Chewing Gum (MCG).

University's firm commitment towards its vision and mission is reflected in many initiatives like implementation of Choice Based Credit System (CBCS) for all its undergraduate programmes in Engineering, Pharmacy and Architecture; setting-up of new Institutes offering diverse academic programs in distant locales of Shahdol and Jhabua; MoUs with leading Universities and Industries around the world for sharing mutual expertise and to discuss new potential for innovations; on-campus finish Schools

and Corporate Schools; establishment of Research Centres across the state. Besides, University also encourages dynamic curriculum based on the needs of today's ever changing world.

The University adopts well-defined teaching learning methodologies which delineate preparation of unit-wise teaching plans before the commencement of new semester. University also plans its curricular, co-curricular activities for the whole year beforehand at the commencement of new academic session. Academic calendar and schedules of curricular and co-curricular activities along-with the semester examination time-tables are uploaded on the University's Web Portal. The University does provide course outline and course schedule both to students and teachers before the commencement of academic session.

The main thrust of RGPV for next five year is on strategic interventions in four main areas i.e.

- Enhance opportunities for postgraduate education and research in areas of high relevance to nations science and technology capabilities.
- Promote use of IT in technical education through promotion of e-Learning and web enabled teaching processes.
- Transforming the university into a knowledge enterprise through its focus on research and development, industrial consultancy and by establishing efficient and
- Effective mechanisms for managing innovations.

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.)

The University has always given prime importance to quality teaching practice through well trained trainers. Thus University regularly organizes Faculty Development Programs (FDP's), training programs, curriculum development programs, workshops, refresher courses etc. to address the key issues pertaining to up-gradation of the way teaching is practiced within the campus.

University has signed a MoU with UGC for placement of the faculty under 'UGC Faculty Recharge Programme'. UGC has inducted four UGC assistant professor level faculty at RGPV.

Eminent professors, researchers, industry persons are also invited by the university to contribute their expertise to enhance the University curriculum, sharing their knowledge with students and research scholars. This accrues in strengthening the university industry linkages and promote on campus research environment.

Faculty Development Programs are organized in the campus where the researchers of eminence are invited. Experts from industries sometimes fundamentally transform the educational experience for students. The University encourages its faculty members to file patents as well as IPR to various national and international organizations.

For the empowerment of the faculty members as well as assisting faculty development through refresher courses, management development courses and orientation courses along with seminars, conferences, and workshops are conducted from time to time.

Academic Staff College is intact is engaged in conducting activities such as orientation courses and refresher courses. Performance appraisal scheme through APIs is in practice. A Self-Assessment Performa is designed for faculty. Practice of awarding the Best Teacher and Best Employee of the University appraisal schemes is inducted.

2. Staff training (Technical & Administrative staff)

University administrative staff and college administrative staff involved in examination process have been provided training periodically. Collaborative mode of working is encouraged. The university has recently implemented a debut online practical examination at the end of the semester where student has to answer multiple-choice based questions.

University provides a supportive work environment and a wide array of career development opportunities, including:

- Access to development resources like library/e-library
- In house and External Training Programmes
- Time Bound Promotion Scheme

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

The university provides support to UG, PG and PhD students for project implementation, visit to other institutions of national importance and presenting papers in conferences, Tech Fest etc. Lab facilities are offered along with materials required in execution. The following new programmes have been introduced in the last four years:

PG courses

- Digital Communication
- Cyber Security
- Energy Technology

UG Courses

- Mining
- Aeronautical Engineering
- Petrochemical Technology
- Automobile Engineering

Dual Degree Programmes

- Dual Degree Integrated Post Graduate Program (on Campus)

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.

Smart classrooms and Wi-Fi connectivity in academic and administrative buildings and hostels are in pipeline.

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.

The University offers remedial classes for SC/ST/OBC/Minorities and poorly-performing students. These classes are conducted by the individual departments on non-teaching slots especially in the evenings, weekends or holidays. Students after completion of Diploma courses are admitted in the second year of the undergraduate Courses have to enroll into few first years courses as bridge courses such as Engineering Mathematics, English, and Engineering Mechanics etc.

RGPV has established SC/ST section for these categories of students. The following facilities are provided:

- SC/ ST Book Bank.
- SC/ST and OBC scholarships and other schemes sanctioned by Central and State Governments.
- Academic support by way of conducting remedial classes for weaker students.
- Stationary and drawing equipment facility for SC/ST students.

The University has been following inclusive policies by extending the support to backward classes of the society. The University follows the directions of the Government issued from time to time regarding statutory reservation policies. SC/ST/OBC candidates of Madhya Pradesh are also granted with the travel allowances as per the University/Govt. of Madhya Pradesh norms. The University has also constituted 50 scholarships of Rs 40000/- per student for meritorious SC/ST students.

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

University's firm commitment towards its vision and mission is reflected in many initiatives like implementation of Choice Based Credit System (CBCS) for all its undergraduate programmes in Engineering, Pharmacy and Architecture. In order to transform current teaching-learning framework from teacher-centric to student-centric, University has implemented Choice Based Credit System (CBCS). This new students' choice-oriented system ensures seamless mobility among students while promoting learning based on their choices. Syllabus of each course under CBCS scheme is well framed in the form of a module with clear mentioning of course objective and its learning outcomes.

Departments of UIT, UTD's have academic flexibility through complete autonomy in curriculum design and reforms. The teaching, learning and assessment strategies are structured right from framing the curriculum and preparing the annual plan by the Departments and Boards of Studies. The students soon after the induction programme are updated with the information relating to time table and the academic programme.

The major examination reforms initiated by the University are as follows:

- Examination Section of the University has implemented Online Paper Delivery System (OPDS), which directly mails question paper online to examination centers.
- Every dissertation should contain a proof of check for plagiarism.
- University has adopted Choice Based Credit System, which supports continuous

assessment of learners' ability through mid-terms, quiz, assignments, tutorial sheets and the final examination.

- From 2015-16 academic sessions, University is conducting Online Practical Examination.
- All the examination centres of the affiliated institutions are equipped with CCTV surveillance facility

(b) Improving employability of the students

University ensures employability of students through curriculum in following ways:

- Finish Schools are conceptualized by the University to produce industry-ready students.
- The University has signed MoU with DAUTO Engineering Pvt. Ltd., Bhopal to acquaint mechanical and automobile engineering students with job-oriented modern design technologies.
- The University has signed number of MoUs with Corporate Houses such as EMC Corporation and IBM to establish corporate schools on campus. These schools help in imparting training and offering many job-driven certification courses in emerging areas of Science and Technology such as Big Data and Cloud computing to students on in-trend technologies of industries.
- University in collaboration with IBM, USA has established 15 Centres of Excellence to disseminate industry-specific knowledge and skills among students.
- Industrial-visits and study-tours are organized as a part of the curricula.
- University regularly organizes expert lectures, workshops, symposiums, seminars, talks from invited experts from industries.
- University has inculcated six months (one semester) internship as a mandatory component of its Dual Degree Programs.
- EMC supported Corporate School to let students understand state-of-the-art technologies in the area of data sciences which shall enable them to get quality employment.
- University promotes training programs, field visits, and industry-oriented major/minor projects in order to imbibe hands-on experience in students.

1. Student career counselling and placement

University has well established Training and Placement Cell which is actively involved in the industry institute interaction activities. University has appointed the T&P officer of Professor Cadre. University has strong relations with several reputed national and international organizations.

University Training & Placement Cell provides career counselling and guidance for the students for placement and other development related issues on regular basis and also conducts various lectures, workshop and seminars.

RGPV has a University Career Portal and the main objective of the career portal is to automate the Placement Activities online including career guidance for the students of RGPV. The university career portal will fulfil the placement needs of University Placement Department, career guidance needs of students and recruitment needs of employers. This career portal serves as a communication platform between the employer, the University placement cell and students. This career portal helps RGPV and an employer connect easily and also helps students enhance their skills in career planning and self-marketing to get better remunerations and jobs.

University Placement Cell can register employers, post job vacancies from employers on the online notice board, publish news and schedule campus interviews using this portal. Real time reports of applications made by students, placement performance and employer recruitment performance from the University can be viewed.

Students can use this portal for making applications to employers hiring through portal, communicating with the University Training and Placement Cell, participating in on-campus/ off-campus recruitment drives of employers. This portal truly serves as knowledge centre that includes a career guidance section, resume and interview preparation sections provided by the University Training and Placement Cell for benefit of students, an exclusive library containing videos on education, daily updates on educational/university news and articles on career and placements are provided. In addition students have access to career counsellors, online quizzes, tests and a National level industrial training vacancy of reputed companies.

(c) Increasing faculty productivity and motivation

1. sponsored research, consultancy and other revenue generating activities

the University has evolved a knowledge management strategy through various programmes like Organization of National/ International theme-based Seminars/Conferences/Workshops/Symposia, theme based panel discussions, targeted minor/ major research projects, financial assistance for publications, knowledge

partnership with various government organizations and institutions, multi faculty and interdisciplinary research. With these measures the University tries to utilize the available knowledge for further development of the stakeholders.

The University follows various modes and methods for reflecting its values in day to day activities.

- Annual faculty development programmes are organized in collaboration with partnering institutions. These collaborations effect faculty exchange and enrichment programmes.
- Faculty members are using NPTEL video lectures for instructing students and upgrading themselves. In order to facilitate proper teaching aid, some of the classrooms are equipped with projectors and audio systems.
- Research, Publication; Academic linkages have enhanced interdisciplinary research activities that have resulted in publication of research findings.
- Consultancy: There is a marked increase in the number of consultancies and revenue generated.
- Extension: The University has started self-growth and community work of 2 credits each to promote extension activities.

2.3 Provide an action plan with timelines for

1. Obtaining autonomous institution status from UGC

RGPV is a technical university established under the Rajiv Gandhi Proudyogiki Vishwavidyalaya Adhinyam, 1998.

2. Improving the NBA accreditation status

RGPV has organised one day workshop on NBA accreditation under TEQIP-II. The workshop include

- Accreditation and Quality Enhancement
- Merits of CBCS Scheme
- Governance and Autonomy
- Learner Centric Teaching Practices
- Demand-driven Innovation and R&D

The significant steps for NBA accreditation preparation at University level are stated below:

1. Identify the issues and challenges and analyse them for designing the strategies to achieve the quality goals.
2. Document the best practices on various criteria of NBA.
3. Self-assessment of quality of programmes on NBA criteria.
4. Pre-Qualifiers TIER-I (Institutions Profile of the Institute and Program information) in the month of April 2017
5. Preparation of SAR tier-1 in the month of June 2017
6. Apply to National Board of Accreditation in the month of July 2017
7. Mock Accreditation by expert team
8. Visit by evaluation team from NBA
9. Getting Accreditation status

2.4 Describe the following in brief:

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

RGPV is a technical university

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

No

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

No

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

Yes, the university provides guidance and motivation to students on routine basis. Regular counseling is provided by faculty for competitive examinations. This has resulted in tenfold increase in pass percentage of GATE students in four years.

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).

The University has a culture of student-centric education and learning. Twinning Agreements will be made in order to focus on knowledge transfer, exchange of experience, optimizing the use of resources and developing long-term strategic partnerships.

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?

University ensures the qualified and diversified faculty in the emerging areas of studies as per the requirements of the course curriculum. In order to ensure quality, vacancies are advertised and duly publicized through leading newspapers and University website, and appointment procedure is followed strictly as per UGC norms.

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

University will allocate sufficient budget for the sustainment of the project.

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

A meeting was held with the faculty members of departments along with the students regarding the preparation of Institutional Development Proposal for TEQIP phase-III. Head of Departments, Faculty members of all disciplines, Administrative Staffs of the University were actively involved. All staff members and students of various disciplines have participated and cooperated in providing the necessary information for the development of this IDP.