

**INSTITUTIONAL DEVELOPMENT PROPOSAL (IDP)**

From



**ENGINEERING COLLEGE BIKANER**

Under

**SUB-COMPONENT 1.1: STRENGTHENING INSTITUTIONS TO IMPROVE  
LEARNING OUTCOMES AND EMPLOYABILITY OF GRADUATES**

of

**TECHNICAL EDUCATION  
QUALITY IMPROVEMENT PROGRAMME**

of

**THE MINISTRY OF HUMAN RESOURCE DEVELOPMENT  
GOVERNMENT OF INDIA**

Submitted to

**STATE PROJECT IMPLEMENTATION UNIT, DEPARTMENT OF  
TECHNICAL EDUCATION, GOVT OF RAJASTHAN**

*[Signature]*  
**Principal  
Engineering College  
BIKANER**

**Engineering College Bikaner  
Sub-Component 1.1**

## 1. INSTITUTIONAL BASIC INFORMATION

(Note: Please insert the name of applicant institution and the Sub component number in the footer on each page of the proposal.)

### 1.1 Institutional Identity

- Name of the Institution : **Engineering College Bikaner**
- Is the Institution AICTE approved? : **Yes**
- Furnish AICTE approval No. : **F.NO. 765-66-212(E)/ET/99**
- Type of Institution : Govt. funded/ **Govt. Aided** / Private unaided/Other
- Status of Institution : **Autonomous Institute as declared by University** / Non Autonomous / Deemed University / Constituent College
- Affiliating University : **Rajasthan Technical University Kota**
- Name of Head of Institution and Project Nodal Officers: **Dr. Jaiprakash Bhamu**

Head and Nodal Officer	Name	Phone Number	Mobile Number	Fax Number	E-Mail Address
Head of the Institution (Full time appointee)	<b>Dr. Jaiprakash Bhamu</b>	<b>0151-2253999</b>	<b>9414202822</b>	<b>0151-2252919</b>	<b>principal@ecb.ac.in</b>
TEQIP Coordinator	<b>Dr. S.K. Bishnoi</b>	<b>0151-2253999</b>	<b>9414412027</b>	<b>0151-2252919</b>	<b>bishnoi_sk@yahoo.com</b>
<b>Project Nodal Officers for:</b>					
Academic Activities	<b>Sh. Manoj Kuri</b>		<b>9983504703</b>		
Civil Works including Environment Management	<b>Sh. Hamid Ali</b>				
Procurement	<b>Sh. Manish Tater</b>		<b>9829176140</b>		<a href="mailto:manisht23@yahoo.com">manisht23@yahoo.com</a>
Financial aspects	<b>Sh. ND Vyas</b>		<b>9829225300</b>		<a href="mailto:vyasndv@gmail.com">vyasndv@gmail.com</a>
Equity Assurance Plan Implementation	<b>Dr. Jaiprakash Bhamu</b>		<b>9414202822</b>		<b>principal@ecb.ac.in</b>

**1.2 Academic Information:**

- Engineering programmes offered in Academic year 2014-15

S.No.	Title of Programme	Level of (UG, PG, Ph.D.)	Duration (Years)	Year of Starting	AICTE sanctioned annual intake	Total student strength
<b>1</b>	<b>B.Tech. (ECE)</b>	<b>UG</b>	<b>4</b>	<b>1999</b>	<b>90</b>	<b>360</b>
<b>2</b>	<b>B.Tech. (CSE)</b>	<b>UG</b>	<b>4</b>	<b>1999</b>	<b>90</b>	<b>360</b>
<b>3</b>	<b>B.Tech. (Mech)</b>	<b>UG</b>	<b>4</b>	<b>1999</b>	<b>60</b>	<b>240</b>
<b>4</b>	<b>B.Tech. (IT)</b>	<b>UG</b>	<b>4</b>	<b>2002</b>	<b>60</b>	<b>240</b>
<b>5</b>	<b>B.Tech. (EE)</b>	<b>UG</b>	<b>4</b>	<b>1999</b>	<b>60</b>	<b>240</b>
<b>6</b>	<b>B.Tech. (EI&amp;C)</b>	<b>UG</b>	<b>4</b>	<b>2003</b>	<b>60</b>	<b>240</b>
<b>7</b>	<b>B.Tech. II Shift (Mech)</b>	<b>UG</b>	<b>4</b>	<b>2011</b>	<b>60</b>	<b>240</b>
<b>8</b>	<b>B.Tech. II Shift (EE)</b>	<b>UG</b>	<b>4</b>	<b>2013</b>	<b>60</b>	<b>120</b>
<b>9</b>	<b>B.Tech. (Civil)</b>	<b>UG</b>	<b>4</b>	<b>2013</b>	<b>60</b>	<b>120</b>

- Accreditation Status of UG programmes:

Title of UG Programmes being Offered	Whether eligible for accreditation or not?	Whether accredited as on 31 <sup>st</sup> March 2010?	Whether "Applied for" as on 31 <sup>st</sup> March 2010?
<b>B.Tech. (ECE)</b>	<b>YES</b>	<b>--</b>	<b>Applied For</b>
<b>B.Tech. (Mech)</b>	<b>YES</b>	<b>--</b>	<b>Applied For</b>
<b>B.Tech. (CSE)</b>	<b>YES</b>	<b>--</b>	<b>Applied For</b>
<b>B.Tech. (IT)</b>	<b>YES</b>	<b>--</b>	<b>Applied For</b>
<b>B.Tech. (EE)</b>	<b>YES</b>	<b>--</b>	<b>Applied For</b>
<b>B.Tech. (EI&amp;C)</b>	<b>YES</b>	<b>--</b>	<b>Applied For</b>
<b>B.Tech. II Shift (Mech)</b>	<b>No</b>	<b>--</b>	<b>--</b>
<b>B.Tech. II Shift (EE)</b>	<b>No</b>	<b>--</b>	<b>--</b>
<b>B.Tech. (Civil)</b>	<b>No</b>	<b>--</b>	<b>--</b>

• Accreditation Status of PG programmes:

Title of PG Programmes being Offered	Whether eligible for accreditation or not?	Whether accredited as on 31 <sup>st</sup> March 2010?	Whether "Applied for" as on 31 <sup>st</sup> March 2010?
<b>M.Tech. (Software Engg.)</b>	<b>NO (Since this course has been introduced in session 2010-11)</b>	--	--
<b>M.Tech. (Power System)</b>	<b>NO(Since this course has been introduced in session 2010-11)</b>	--	--
<b>M.Tech. (Thermal Engg)</b>	<b>NO(Since this course has been introduced in session 2011-12)</b>	--	--

**1.3 Faculty Status (Regular/On-Contract Faculty as on March 31<sup>st</sup> 2010)**

Faculty Rank	No. of Sanctioned Regular Post	Present Position Number in Position by Highest Qualification												Total Number of Regular Faculty in Position	Total Vacancies	Total Number of Contract faculty in position
		Doctoral Degree				Master Degree				Bachelor Degree						
		Engg.		Other		Engg.		Other		Engg.		Other				
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	15 = (3+5+7+9+11+13)	16= (2-15)	17= (4+6+8+10+12+14)
<b>Prof.</b>	15	---	---	1	---	---	---	---	---	---	---	---	---	1	14	---
<b>Asso Prof.</b>	32	---	---	2	---	10	---	---	---	---	---	---	---	12	20	---
<b>Asst Prof.</b>	90	---	---	4	---	23	---	23	---	31	---	---	---	81	09	---
<b>Lec</b>	---	---	---	---	---	---	---	---	7*+ 18	---	1* +17	---	---	---	---	43
<b>Total</b>	137			7		33		23	25	31	18	---	---	94	43	43

\*:- adhoc

**1.4 Baseline Data (all data given for the following parameters must be restricted to engineering disciplines/fields only)**

S.No.	Parameters	
1	Total strength of students in all programmes and all years of study in the year 2009-10	<b>2016</b>
2	Total women students in all programmes and all years of study in the year 2009-10	<b>250</b>
3	Total SC students in all programmes and all years of study in the year 2009-10	<b>325</b>
4	Total ST students in all programmes and all years of study in the year 2009-10	<b>242</b>
5	Total OBC students in all programmes and all years of study in the year 2009-10	<b>425</b>
6	Number of fully functional P-4 and above level computers available for	<b>600</b>

	students in the year 2009-10	
7	Total number of text books and reference books available in library for UG and PG students in the year 2009-10	<b>52000</b>
8	% of UG students placed through campus interviews in the year 2009-10	<b>75%</b>
9	% of PG students placed through campus interviews in the year 2009-10	<b>N.A.</b>
10	% of high quality undergraduates (>75% marks) passed out in the year 2009-10	<b>10%</b>
11	% of high quality postgraduates (>75% marks) passed out in the year 2009-10	<b>NA</b>
12	Number of research publications in Indian refereed journals in the year 2009-10	<b>45</b>
13	Number of research publications in International refereed journals in the year 2009-10	<b>10</b>
14	Number of patents obtained in the year 2009-10	<b>Nil</b>
15	Number of patents filed in the year 2009-10	<b>1</b>
16	Number of sponsored research projects completed in the year 2009-10	<b>05</b>
17	The transition rate of students in percentage from 1st year to 2nd year in the year 2009-10 for : (i) all students (ii) SC (iii) ST (iv) OBC	<b>98%</b> <b>92%</b> <b>88%</b> <b>96%</b>
18	IRG from students' fee and other charges in the year 2009-10 (Rs. In lakh)	<b>1000.00</b>
19	IRG from externally funded R&D projects, consultancies in the year 2009-10 (Rs. in lakh)	<b>50.00</b>
20	Total IRG in the year 2009-10 (Rs. in lakh)	<b>1050.00</b>
21	Total annual recurring expenditure of the applicant entity in the year 2009-10 (Rs. in lakh)	<b>725.00</b>

## **2. Institution Development Proposal (IDP)**

### **2.1 Give the Executive Summary of the IDP.**

Engineering College Bikaner is the foremost engineering college in the State and fittingly it has been given top ranking amongst engineering colleges in the State in a recent survey conducted by Outlook Magazine. The college is an autonomous institution of Govt. of Rajasthan & has been granted with financial & administrative autonomy. Model of granting academic autonomy is being devised by State Govt. in consultation with Rajasthan Technical University and other Govt. funded institutes. The college is having its own Consultancy Cell, Entrepreneurship Development Cell, Examination Cell, Placement Cell and Monitoring system for Academic Audit and Evaluation. It is having an established Administrative and Financial Audit systems necessary for obtaining students feed back, organizing remedial classes, redressing the staff and students grievances and conduct of industrial training. However, there is some obsolescence in the labs as they are growing old with the college and most of the staff members require to be exposed to latest international technologies and the existing library needs to be modernized. The college wants to be flag bearer in the State on the road to implement Technical Education Quality Improvement Program.

#### **Proposed line of action of the College to meet the Target:**

- Regular revision of curricula and syllabi to keep pace with the emerging trends in technology.
- A comprehensive faculty development program through active participation in courses, workshops etc by faculties, officers as well as technical staffs
- Enhancement of facilities for research and development to augment postgraduate and doctoral level studies, which in turn will open up new areas for providing consultancy and carrying out industrial testing
- Identification of socially relevant problems and finding acceptable solutions keeping in view post crisis management
- A strategic plan for enhancing participatory management in academic, administrative and financial affairs

- Strengthening of departmental laboratories to keep up to the modern trends in technology
- Upgradation of campus wide networking
- A proactive effort for intensive interaction with industries for mutual exchange of ideas and possible ways to find effective and economic solutions
- Implementation of a well defined and time bound plan of cooperation with the networked institutions
- Providing flexible learning techniques including guiding, counseling etc for the benefit of SC/ST, backward classes and minorities

#### **Long-term Objective for Institutional Development**

- Generation of knowledge through analysis, experimentation and imagination
- Responsive management of institute for academic upliftment through efficient utilization of resources
- To become a role-model in India in providing quality education keeping in tune with its long heritage
- Creating awareness and understanding, improving skills and value orientation for globalized knowledge-based society

#### **Project Period Objective**

- To strengthen and upgrade all the laboratories and the workshops with a thrust on emerging areas and removal of obsolescence.
- Introduction of new courses and bringing in innovation in education keeping in view the technological development as well as demand and supply scenario
- To train the faculty and technical staff in advance institutions/organizations of the country/abroad for quality improvement
- To build up a strong academic network with other institutions
- To implement socially relevant projects for the benefit of SC/ST, backward classes and minorities
- To act as a hub of continuing and entrepreneurial activities.

## Financial Requirements

S.No.	Activities	Project Life Allocation
1	Infrastructure improvements for teaching, training and learning through:	4.8 Crore
	(i) Modernization and strengthening of laboratories	
	(ii) Establishment of new laboratories for existing UG and PG programmes and for new PG programmes	
	(iii) Modernization of classrooms*	
	(iv) Updation of Learning Resources	
	(v) Procurement of furniture	
	(vi) Establishment/Upgradation of Central and Departmental Computer Centers*	
	(vii) Modernization/improvements of supporting departments*	
	(viii) Modernization and strengthening of libraries and increasing access to knowledge resources	
	(ix) Refurbishment (Minor Civil Works)*	50 Lakh
2	Providing Teaching and Research Assistantships to increase enrolment in existing and new PG programmes in Engineering disciplines	1 Crore
3	Enhancement of R&D and institutional consultancy activities*	20 Lakh
4	Faculty and Staff Development (including faculty qualification upgradation, pedagogical training, and organising/participation of faculty in workshops, seminars and conferences) for improved competence based on TNA	1 Crore
5	Enhanced Interaction with Industry	40 Lakh
6	Institutional management capacity enhancement	30 Lakh
7	Implementation of institutional reforms	20 Lakh
8	Academic support for weak students under the aegis of Finishing School	40 Lakh
9	Technical assistance for procurement and academic activities	20 Lakh
10	Incremental Operating Cost	1 Crore
<b>Total</b>		<b>10 Crore</b>

It is hoped that the TEQIP funding will enable in strengthening the institute & the desired outputs of improving learning outcomes and employability of graduates.



**2.2 Provide the details of SWOT analysis (see Annex-V to PIP) carried out (in terms of methodology used, analysis and information and data as collected and inferences derived with respect to strengths, weaknesses, opportunities and threats).**

Vision Statement of Engineering College Bikaner is: "To maintain the highest standards of excellence as an activity led institution of national standing and to equip the students with appropriate attitude, knowledge and skills for their chosen vocation and inculcate values required for the globalized world."

The key findings of SWOT Analysis after having discussions/interaction with students of the all the courses, faculty & staff of all the academic departments of the college are reported as follows:-

**Strengths**

- Well Qualified Faculty Members.
- Excellent Infrastructure with state of art laboratories, instructional facilities, computational facilities, computer centre, library.
- All the departments are having their own computer lab equipped with TV, DVD player, LCD projector, Smart board, Audio system for making presentations, delivering lectures/seminars with visual aids, group discussions etc.
- To supplement the conventional teaching methods, students have access to Educational CDs from IITs & Eklavya Educational Channel for which separate room has been allocated & classes time table are arranged in such a way that every class get a chance every week.
- The College has established a special center for ethics to inculcate ethical values and nationalism amongst students.
- **For increasing the employability of students**, the College is running a center for self development to enhance over all personality & soft skills among students. Also, for improving communication skills of students, language lab has been setup in the college.
- Special Lecture by teachers of the college is arranged on every Saturday of week under Faculty Development initiative which is attended by all other faculty members.
- On-line feedback by students directly given to Principal about performance of faculty members.
- On-line aptitude Tests for students for preparing them for GRE, CAT etc.

- Student Chapters of ISTE, IEI have been set up for carrying out various technical activities. Also, National level technical festival popularly known as SAKSHMA is organized by students only. This annual event has proven to be huge success witnessing the participation of about 2000 students from more than 500 colleges from through out the country.
- NCC, NSS wings for both girls & boys students are under full operation.
- Projects from Air Force, DST, Hospitals and other Govt. agencies are being undertaken jointly by faculty members & students to give them hands-on experience of live projects. Testing & fabrication facilities are also provided to other Public Sector Deptt.
- Faculty advisers have been appointed and they work as Mentor for a selected group of students through out their stay at college from I year to final year.

### **Weakness**

- **Low level of corporate exposure:** - Since the city doesn't abode enough number of factories and corporate houses, there is significant dearth of corporate exposures for the students.
- **Poor Connectivity:** - The city doesn't have the privilege of an airport and for the past 2 years due to major shuffling of tracks is being done by railway; it is poorly connected with the national capital. These all leave much to be desired as major corporate and training agencies couldn't come.
- **Underdeveloped skill set in Students:** - Since most of the students come from rural and semi urban background, their proficiency on the language is low from the corporate standards.
- **Slow Curricular reforms:-** A relatively slow responding curricular process when set against the continual need for rapid program changes driven by external accrediting agencies

### **Opportunities**

- **Growth of the organization:** - Engineering College Bikaner is one of the leading colleges of Rajasthan and this helps in attracting a large pool of talented faculties and students as well. If the college can keep its momentum, it will be able to attract corporate honchos as well.
- **Probability of State Technical University:** - The State govt. has initiated the actions to give our institute the status of State Technical University; soon after its realization the prospects of the institute will gain momentum.

- **Growth of the City:** - Of late, the city is being recognized by many corporate and govt. agencies as a growth centre. If the city achieves the special status, the institute will be able to put its best foot forward to address training and final placement needs.
- **Likelihood to improve connectivity:** - Recently the Central Govt. and Rajasthan govt. have initiated to open Airport in Bikaner. The city as well as institute will gain benefits by opening of the airport.
- **Cross-Disciplinary Collaboration:-** The institute is well placed to undertake cross-disciplinary collaboration (research, teaching, service) due to broad-based disciplinary focus of faculty and programs
- **Partnerships with the Community:-**We have the ability to connect and develop partnerships with the community and a diverse array of agencies (e.g., medical, fitness, schools, businesses).

### **Threats**

- **Growing Competition:** - Though at present the institute enjoys a healthy position in the mind of students, the large number of openings of the technical colleges may change the rule of the game. Improving quality of education is the only solution to curb it.
- **Examination Pattern and outdated syllabus:-** The changes in the corporate world are fast and furious and this throws a major challenges in front of the institute to incorporate this changes but since the syllabus are a decision beyond the purview of the college thus it result into weakness which is difficult to overcome.
- **Growing distance with Industry:** Another challenge in the front of the institute is how to align with the industry since the syllabus doesn't meet the industry standards and industries are not willing to cooperate enough.

- **Based on SWOT analysis, provide the “strategic plan” developed for institutional development.**

The elaboration of vision statement as well as the above assessments of current strengths and weaknesses and opportunities and threats in the environment of the institute leads to the identification of the main strategic directions that will have to be pursued over the next five years in order to move the institute closer to its vision.

**The seven strategic directions that have been proposed for the development of our institute over the next 5 -10 years are summarized as follows:-**

1	Human Resources	Substantial improvement in the production of quality graduates & post-graduates capable of leading the creation of sustainable and cost-effective innovations for the industry and society
2	Excellence	Achievement of leadership in the development of selected emerging technologies to meet national economic, social and environmental needs
3	Quality	The creation of complete professionals through upgrading of curriculum, faculty and staffing patterns, facilities, equipment, learning resources and communication systems of the institute
4	Social Justice	Special attention to and active promotion of the full participation of women and socially disadvantaged groups
5	Autonomy	Achievement of academic, managerial, administrative and financial autonomy
6	Organization	Development of the organizational culture of the institution in the direction of increased administrative systemization, performance, efficiency and team work.
7	Outreach	Increased public visibility, networking and outreach of the institute to the community and industry

**• How the key activities proposed in the Institutional Development Proposal are linked with the results of SWOT Analysis.**

Following key activities are being proposed under Technical Education Quality Improvement Programme (TEQIP) of the Government of India to help our institute achieve its strategic objectives. They have been classified under the four heads, as follows:

1	Improvement in teaching, training and learning	<ul style="list-style-type: none"> <li>➤ Modernization and strengthening of Laboratories</li> <li>➤ Establishment of new laboratories for existing UG and PG programmes and for new PG programmes</li> <li>➤ Modernization of classrooms</li> <li>➤ Updation of Learning Resources</li> <li>➤ Establishment/Upgradation of Central and Departmental Computer Centers</li> <li>➤ Modernization/improvements of supporting departments</li> <li>➤ Modernization and strengthening of libraries and increasing access to knowledge resources</li> <li>➤ Providing Teaching and Research Assistantships to increase enrolment in existing and new PG programmes in Engineering disciplines</li> </ul>
2	R&D	<ul style="list-style-type: none"> <li>➤ Enhancement of R&amp;D &amp; institutional consultancy activities</li> </ul>
3	Networking with Industry & Institutions	<ul style="list-style-type: none"> <li>➤ Industry Institute Interaction</li> </ul>
4	Institutional Reforms	<ul style="list-style-type: none"> <li>➤ Structural Reforms</li> <li>➤ Institutional management capacity enhancement</li> <li>➤ Academic support for weak students</li> </ul>

**2.3 State the specific objectives and expected results of your proposal in terms of, “Institutional strengthening and improvements in employability and learning outcomes of graduates”. These objective and results should be linked to the SWOT analysis.**

### **Specific Objectives**

- To create additional infrastructure facilities to support the existing academic programmes in various disciplines like Mechanical, Electrical, Electronics and Communication, Electronics Instrumentation & Control, Information Technology and Computer Science Engineering.
- To enhance the research facilities in the areas of established expertise of the Institution.
- To restructure and reorient the undergraduate and postgraduate programmes in tune with needs of the Industry and Society.
- To start new Interdisciplinary P.G. programmes required for the present day needs of the society in the areas of proven expertise of the Institution.
- To provide better communication facilities for the faculty, staff and students through campus networking and Internet facilities.

**The realization of the above objectives can be attained by focusing in two broad areas:**

#### **1. Focus at the development of common facilities for the institution**

A high amount of importance is to be given to strengthen the following common facilities in the campus for achieving the overall academic excellence & improving learning out comes:-

- Digital Libraries & E-Resources
- Central Computing Facility
- Campus - wide Networking and Internet
- Faculty and Staff Development

#### **2. Focus at the instructional level for the departments**

At the instructional level, following reforms are envisaged:

- Elective subjects with technical writing
- Summer courses
- Lateral and multi-level entry
- Counseling and career guidance

- Student evaluation on future performance
- Periodic interaction with old students through alumni association
- Establishment of student clubs and forums
- Liberal assistance for faculty research activity
- Recognizing meritorious faculty and supporting their academic needs
- Maximizing the utilization of resources
- Periodic academic and administrative audits
- Methods such as incentives to faculty for attracting and retaining their quality

### **Expected Results**

- The completion of project will enhance the quality of training to the students to the standards required in the age of globalization **& thereby improving their learning outcomes & employability.**
- The project will enable the institution to take up the advanced research required for the present day needs of the society and industry.
- The facilities created under the project will enable the institution to serve the society in the vicinity for improving the quality of living.

## **2.4 Provide an action plan for: (max 1 page each)**

### **a) Improving employability of graduates**

Employability skills are defined as skills required not only to gain employment, but also to progress within an enterprise so as to achieve one's potential and contribute successfully to enterprise strategic directions.

It is necessary that the skills would be prioritized and adapted to suit various job-roles. The eight skills identified for improving employability of our graduates are: -

- Communication skills that contribute to productive and harmonious relations between employees and customers
- Teamwork skills that contribute to productive working relationships and outcomes
- Problem solving skills that contribute to productive outcomes
- Self-management skills that contribute to employee satisfaction and growth
- Planning and organizing skills that contribute to long-term and short-term strategic planning
- Technology skills that contribute to effective execution of tasks
- Life-long learning skills that contribute to ongoing improvement and expansion in employee and company operations and outcomes
- Initiative and enterprise skills that contribute to innovative outcomes.



**b) Increased learning outcomes of the students**

Following action plan is hereby envisaged for increasing the learning outcomes of our students vis-à-vis employability skills:-

<b>Employability Skill</b>	<b>Teaching strategies for increased learning outcomes of the students</b>
Communication	Writing and presenting written and verbal reports Role plays Demonstrations Working in groups
Teamwork	Team or group projects Group discussion Problem solving in teams and networks
Problem solving	Case studies Simulations Investigative projects and research Using various problem solving tools and techniques Developing or designing models
Self-management	Development of portfolios Work plans Using log books to record time management skills and monitor own performance Career planning exercises
Planning and organizing	Research and data collection Developing action plans Planning and organizing events Time management activities Collecting and analyzing information
Technology	Using the Internet, Intranets Using ICT skills to complete activities Industry relevant software, technology and equipment
Learning	Reflective journals log books, diaries Mentoring and coaching activities Self-evaluation tools
Initiative and enterprise	Brainstorming activities Designing innovative and creative practices and solutions Initiating change / designing change processes Simulation activities

### **c) Obtaining autonomous institution status within 2 years**

Engineering College Bikaner is an autonomous institution of Govt. of Rajasthan & it already enjoys Administrative, Managerial & Financial autonomy within the Department of Technical Education, Govt. Rajasthan. Principal of the college has been given the status of Head of Department of Govt. of Rajasthan & has been entrusted with sufficient administrative, managerial & financial powers for smooth conduct of operations of the college without much need of getting sanctions from Govt. except on major policy decisions. Also, within the college sufficient managerial & financial autonomy (imprest money power) has been given to HODs of academic departments. Also, Engineering College Bikaner has already been given financial autonomy in terms of retention of Tuition and other fees for ensuring sustainability of the development activities.

However, one of the main challenges to the achievement of its vision is the lack of sufficient academic autonomy, as college operates under set of restrictions implied by affiliating university regulations. Careful planning and active pursuit of full autonomy is therefore one of Engineering College Bikaner's strategic priorities. For the benefit of the technical education system in the State if the academic autonomy is granted to Engineering College Bikaner then it will help in the pursuit of educational excellence, the preservation of academic standards, and the proper management of examinations. Model of granting academic autonomy is being devised by State Govt. in consultation with Rajasthan Technical University and other Govt. funded institutes.

- d) Achieving the targets of 60% of the eligible UG and PG programmes accredited within two years of joining the Project and 100% accreditation obtained and applied for by the end of the Project of the eligible UG and PG programmes**

Engineering College Bikaner has already applied to NBA-AICTE for accreditation of following three programmes:-

- B.Tech. (ECE )
- B.Tech. (Mechanical Engg)
- MBA
- B.Tech. (Electrical Engg.)
- B.Tech. (Computer Science & Engg.)
- B.Tech. (Information Technology)
- B.Tech. (Electronics Instrumentation & Control Engg.)

**The main challenges before the institution for getting accredited are:-**

1. Strengthening of R&D projects
2. Availability of Senior Professor in the Department

For over coming above challenges college is focusing on improving R&D facilities. Keeping in view the shortage of senior faculty through out the nation, institution is taking services of retired senior Professors, Scientist, Engineers for making up the shortfall.

**e) Implementation of academic and non academic reforms (details given in Annex-I to PIP)**

**Academic Reforms:**

With grant of autonomy under TEQIP, we are aiming to introduce Elective Subjects in UG & PG Level as per market demand & accreditation of all eligible UG & PG programme at earliest. The courses will enjoy full autonomy except conducting examination and awarding degree. Evaluation of Teachers by students and teacher's counseling; encouraging institutes to develop synergic networking with institutes of repute through sharing of physical and human resources; Granting incentive to the Faculty & Staff to conduct continuing Education Scheme, Sponsored Research Programs etc. are another set of reforms to be introduced with utmost priority. Qualification and skill up-gradation of Faculty and Staff will be undertaken as a continuous programme.

**Non-Academic Reforms:**

In this category following reforms are proposed to be introduced:-

Financial Autonomy through Block Grant funding of non-salary non-plan expenditures with authority to appropriate and re-appropriate; Retention of Tuition and other fees for ensuring sustainability of the reforms process; Authority to generate, retain and utilize Internally Generated Revenue (IRG) through different academic and non academic activities; Establishment of Four Funds i.e. Corpus, Staff Development, Maintenance and Depreciation Funds to create financial strength of the institutes to sustain autonomy. Delegation of decision making powers to all senior institutional functionaries with accountability , Filling up all teaching and Staff vacancies.

## **f) Improving interaction with industry**

The identified employability skills are broadly consistent across all industry sectors and seen to apply to entry level and established employees working at all levels in the organization, with recognition that there will be different priorities for different roles and that there will be different levels of complexity required for skills, again depending on the job role.

In terms of the development of these employability skills, for imparting the vocational education and training; a systematic approach proposed as follows will be adopted linked to these employability skills in a framework; to accomplish mutual goals:-

- Our institute seeking to establish stronger ties with professional bodies, industries and enterprises.
- Industries & professional bodies working to help shape and inform up-to-date curriculum and course design
- T&P cell of our institute linking students with employers and facilitating events which bring employers on campus
- Our institute inviting business representatives to actively participate through formal structures and committees.

By adoption of above approach, we will be able to have an up-to-date description of what industry expects of our graduates and with the help of academic autonomy we will be able to immediately implement the inclusion of these competencies in curriculum and ensure that individual faculties provide as much industry contact and work experience as possible.

Industry persons will be invited to visit us and review documentation & speak with staff directly about their teaching and assessment practices; thereby providing us right feedback.

### **g) Enhancement of research and consultancy activities**

Our institution is very much focused on every facet of Engineering Education – Teaching, Research and Consultancy. Under TEQIP one of the key priorities will be to develop culture for research and undertaking consultancy assignments in institution. The proposed steps in this direction are:-

- Modernization of labs with state of art equipments for high quality/demand driven research & development and publications. Full utilization of the major equipment would be accomplished by increase in research work and consultancy.
- Creation of better learning infrastructure such as world class 24X7 operational computer facilities, campus-wide networking, smart class rooms.
- Introduction of new post graduate & doctoral programmes in the institution.
- Periodic impact evaluation at institute level based on output parameters viz. improved quality of research, PhD offering and output, increase in research publications, patents, R&D performance, improved student learning (high quality graduates) etc.
- More efforts will be made by the institution to increase internal revenue generation other than tuition fee by way of consultancy, testing/certifications and sponsored research projects etc.
- Efforts will be made to join/collaborate/associate with other research based organizations.
- Amount collected through consultancy/training programmes will be remitted in the IRG fund. This fund will be used for the development activities and faculty development.

Activities to be undertaken	Estimated starting and completion time					
	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
1. Improving employability of graduates	←					→
2. Increased learning outcomes of the students	←	←	←	←	←	→
3. Obtaining autonomous institution status within 2 years	←				→	
4. accreditation of Programs	←	←	←	←	→	
5. Implementation of academic and non academic reforms	←	←	←	←	→	
6. Improving interaction with industry	←	←	←	←	←	→
7. Enhancement of research and consultancy activities	←	←	←	←	←	→

**2.5 Provide an action plan for organising a Finishing School and for improving the academic performance of SC/ST/OBC/academically weak students through innovative methods, such as remedial and skill development classes for increasing the transition rate and pass rate with the objective of improving their employability.**

**Proposed activities to be undertaken to improve the academic performance of SC/ST/OBC/academically weak students through innovative methods are as follows:-**

- Conducting remedial teaching throughout academic sessions for improving transition rate and pass rate of students
- Conducting specialized soft skills and professional skills development training during semester-breaks and vacations (preferably starting from 5th Semester onwards) for increasing employability,
- Conducting high intensity training (of at least 4-weeks duration) for development of soft and professional skills in the students that graduate but fail to secure any employment, and
- Organizing campus interviews and making other efforts to secure employment for graduate engineers that complete the training under activity.

**The activities of the Finishing School will be regularly supervised and monitored on following parameters:-**

- the number of graduates participating in the 4-week training and
- the percentage of these participants securing employment within 3-months of completion of training.
- Transition rate from 1st –2nd year Pass rate
- Improved performance of individual students
- Increased satisfaction index of the students



**2.6 Provide an action plan for strengthening of PG programmes and starting of new PG programmes.**

**Strengthening of PG programmes:-**

<b>Objectives</b>	<b>Priority</b>
Improving Postgraduate teaching/learning processes through better curricula, better faculty competence, better delivery, better interaction, development of proper attributes, and exposure to industrial practices	1
Increasing facilities for Postgraduate education, equipment. LRs, internet access, etc	2
Increasing efficiency and effectiveness of the education process through better academic discipline and improved governance	3
Improving post-graduate admission to M.Tech and Research programs through better structuring of offerings and increased facilities	4
Improving sponsored Research and Consultancy activities	5
Development of institutional management capability	6

**Following PG programmes have been started from session 2010-11:-**

<b>S.No.</b>	<b>Course Name</b>	<b>Department</b>	<b>Intake</b>	<b>Affiliating University</b>
1	M.Tech (Software Engg)	Computer Science & Engineering	18	Rajasthan Technical University Kota
2	M.Tech. (Power System)	Electrical Engineering	18	Rajasthan Technical University Kota

**Following PG programmes have been started from session 2011-12:-**

<b>S.No.</b>	<b>Course Name</b>	<b>Department</b>	<b>Intake</b>	<b>Affiliating University</b>
1	M.Tech. (Thermal Engg.)	Mechanical Engg. Department	18	Rajasthan Technical University Kota

## **2.7 Attach a summary of Training Needs Analysis carried out.**

### **Summary of Training Needs Analysis:-**

#### **a) Faculty to be trained for**

- Improved competence in teaching training
- Management of industry and community interactions
- New techniques in research

#### **b) Faculty to be encouraged to**

- Upgrade their qualifications
- Attend seminars and conference
- Interact with peer groups within India and abroad
- Establish linkages with academic institutions and industry etc.

**c) For continuous improvement of faculty**, competence, establish mechanisms for students, evaluation of teachers' performance combined with feedback to teachers and peer counseling for improvement, introduce incentives for participating activities and securing projects from industry and community.

**d) Establish system of recognizing** merit and out standing performance

**Also, provide Faculty Development Plan for the first 18 months for improving their teaching, subject area and research competence based on Training Needs Analysis (TNA) (see Annex-VI to PIP) in the following areas.**

**Faculty Development Plan**

Area of Training	Training duration			
	Within India		Abroad	
	No. of Persons	Duration	No. of Persons	Duration
Basic and advanced pedagogy	20	1 Month (each) in two spells	5	1 Month (each) in one spell
Subject / domain knowledge enhancement	25	2 Months (each) in five spells	10	1 Month (each) in five spells
Attendance in activities such as workshops, seminars	40	2 days- one week depending upon the programme duration	10	2 days- one week depending upon the programme duration
Improvement in faculty qualifications	10	depending upon the course duration	2	depending upon the course duration
Improving research capabilities	10	minimum 6 months to 1.5 years	5	minimum 6 months to 1.5 years

**2.8 Provide an action plan for training technical and other staff in functional areas.**

<b>Functional areas of training</b>	<b>Training duration</b>	
	<b>No. of Persons</b>	<b>In month</b>
Student counseling	30	1(each)
Student performance evaluation	25	1 (each)
Development of modern learning resources etc.,	20	1.5 (each)
Upgrade qualification	20	Depending upon course duration
Attend seminars and conferences	40	one week to two weeks
Establish linkages with academic institutions and industry	25	1 (each)
Improved teaching competence	30	2 (each)

## **2.9 Describe the relevance and coherence of Institutional Development Proposal with State's/National (in case of CFIs) Industrial/Economic Development Plan.**

The economy of India is based in part on planning through its five-year plans, developed, executed and monitored by the Planning Commission. The economic reforms initiated in the country in 1991 brought about a paradigm shift in the approach to economic growth, industrialization and income distribution. A number of control regimes were dismantled in the areas of industrial policy, taxation, export-imports and foreign investment. The new Industrial Policy of Rajasthan mainly aimed at simplification of procedures and rationalization of rules and the Industry. A comprehensive Information Technology Policy has been announced, keeping in view the importance of the IT sector for employment generation, and its implications for industry and trade, the financial sector, media and entertainment, and health, education and research.

The new Industrial Policy has been formulated keeping in view the objectives of balanced & sustained growth and employment, and an expansion in livelihood opportunities. It supplements the provisions of the Information Technology. In the phase of second generation economic reforms, the objective of Rajasthan Industrial Policy is to further accelerate the flow of investment in industry and infrastructure, promoting IT, high-tech, knowledge based and biotech industries, augmenting exports from the industrial units in the State and creating large scale employment opportunities duly ensuring environmental planning. Adequate creation of internet connectivity, adequate number of satellite earth stations/ VSATs , strengthening the optical fiber network .

The proposed IDP conforms to the Governments objective of technical education and align with the States and Regional economic development plan. The action plan also ensures a pattern of economic and industrial development that would lead to economic growth and social cohesion. The objectives of the proposal cater to the requirement of the region so that the technology inputs of the institution could benefit the region.

## 2.10 Describe briefly the participation of departments/faculty in the IDP preparation.

The involvement of faculty and staff as a team has resulted in positive output in form of this proposal. As the action plan requires the proper coordination with faculties of various departments, a proper integrated and coordination mechanism was chalked out .

Following teams from different departments worked for the preparation of IDP as a unit:-

S.No.	Department	Faculty & Staff
1	Electrical Engineering	Sh Tarun Chopra Sh. Ujjwal Kalla
2	Electronics & Communication Engg	Sh Sanjeev Jain Sh S.K.Bishnoi
3	Computer Science & Engineering	Sh. Narpal Singh Shekhawat Sh. Ritu Raj Soni
4	Information Technology	Sh. Ganesh Singh Sh. Subhash Panwar
5	Mechanical Engineering	Sh. O.P. Jakhar Sh. Mohd Yunis Sheikh
6	Electronics Instrumentation & Control Engg.	Sh. Rahul Raj Choudhary Sh. Ravindra Dayama
7	Physics	Ms. Preeti Naruka
8	Chemistry	Ms. Chanchal Kachhawa Sh. Praveen Purohit
9	English	Sh. Atul Goswami
10	Library	Ms. Pooja Raisinghani
11	Accounts	Sh. N.D. Vyas Sh. Amit Singh
12	Establishment	Sh Pratap Telang Sh J.K.Purohit
13	T&P Cell	Ms. Richa Yadav Sh. Mahendra Taylor
14	Exam	Sh. Mukesh M. Joshi
15	Proctor	Sh. Mukesh Vyas

### **2.11 Describe the Institutional project implementation arrangements with participation of faculty and staff.**

The institutional level implementation of the project will be carried out by Institutional TEQIP Unit and the entire process will be monitored by the Governing Council/Executive Council of the college at regular intervals of 2-3 months in a year. A sub committee of Governing Council/Executive Council will be constituted and empowered to take decisions regarding the deputation of faculty for participation in International conferences etc.

**It is proposed to constitute following sub committees comprising of faculty and staff members of the college which will be effectively involved in the implementation of TEQIP project:-**

- Finance Committee
- Procurement committee
- Civil works committee
- Academic Committee
- Faculty and Staff Development committee
- Services to community committee
- Networking committee
- Monitoring committee

These committees will meet on regular basis and take appropriate decisions for the smooth implementation of the project. Hence the total coordination in the conduct of the project will not be held up at any point of time during its implementation.

2.12 Provide an Institutional project budget in Table-29.

Table-29

Institutional Project Budget for Sub-Component 1.1

[Note: For details of permissible and non-permissible expenditures, please see Table-18 (for Government funded and aided institutions) and Table-19 (for private unaided institutions)]  
(Rs. in Crore)

S.No.	Activities	Project Life Allocation	Financial Year				
			2012-13	2013-14	2014-15	2015-16	2016-17
1	<b>Infrastructure improvements for teaching, training and learning through:</b>	48%	0.80	2	1	1	
	<b>(i) Modernization and strengthening of laboratories</b>		0.20	0.50	0.30	0.30	
	<b>(ii) Establishment of new laboratories for existing UG and PG programmes and for new PG programmes</b>		0.40	1.00	0.50	0.60	
	<b>(iii) Modernization of classrooms*</b>		0.05	0.02	0.01	0.01	
	<b>(iv) Updation of Learning Resources</b>		0.02	0.05	0.03	0.01	
	<b>(v) Procurement of furniture</b>		0.01	0.03	0.005	0.00	
	<b>(vi) Establishment/Upgradation of Central and Departmental Computer Centers*</b>		0.10	0.25	0.10	0.05	
	<b>(vii) Modernization/improvements of supporting departments*</b>		0.01	0.05	0.03	0.02	
	<b>(viii) Modernization and strengthening of libraries and increasing access to knowledge resources</b>	0.01	0.10	0.025	0.01		
<b>(ix) Refurbishment (Minor Civil Works)*</b>	5%	0.10	0.20	0.10	0.10		
2	<b>Providing Teaching and Research Assistantships to increase enrolment in existing and new PG programmes in Engineering disciplines</b>	10%	0.10	0.30	0.30	0.15	0.15
3	<b>Enhancement of R&amp;D and institutional consultancy activities*</b>	2%	0.02	0.03	0.05	0.05	0.05
4	<b>Faculty and Staff Development (including faculty qualification upgradation, pedagogical training, and organising/participation of faculty in workshops, seminars and conferences) for improved competence based on TNA</b>	10%	0.10	0.15	0.20	0.25	0.30
5	<b>Enhanced Interaction with Industry</b>	4%	0.05	0.05	0.10	0.10	0.10
6	<b>Institutional management capacity enhancement</b>	3%	0.05	0.10	0.10	0.05	



7	<b>Implementation of institutional reforms</b>	2%	0.02	0.04	0.06	0.04	0.04
8	<b>Academic support for weak students under the aegis of Finishing School</b>	4%	0.05	0.08	0.08	0.09	0.10
9	<b>Technical assistance for procurement and academic activities</b>	2%	0.02	0.04	0.06	0.04	0.04
10	<b>Incremental Operating Cost</b>	10%	0.10	0.15	0.20	0.25	0.30
<b>Total</b>			<b>1.41</b>	<b>3.14</b>	<b>2.25</b>	<b>2.12</b>	<b>1.08</b>

2.13 Provide the targets against the deliverables listed in Table-30.

**Table-30**  
**Project Targets for Institutions under Sub-Component 1.1**

S.No.	Deliverables	Base-line	Targets to be Achieved	
			At the end of 2 years of joining the Project	By project closing
1	Number of students registered for (a) Masters in Engineering programme	36	144	216
	(b) Doctoral programme in Engineering	0	15	25
2	Revenue from externally funded R&D projects and consultancies in total revenue (Rs. in lakh)	50	100	150
3	Number of publications in refereed journals (a) National	45	60	100
	(b) International	10	15	30
4	IRG as % of total annual recurring expenditure ( <b>IRG from R&amp;D projects and consultancies has been considered</b> )	10%	20%	30%
5	Number of co-authored publications in refereed journals (a) National	35	50	75
	(b) International	06	10	25
6	Student credentials (a) campus placement rate of • UG students	75%	85%	100%
	• PG students	NA	100%	100%
	(b) average salary of placement package for (Rs. in lakh) • UG students	3.50	6.00	10.00
	• PG students	NA	7.00	12.00
7	Number of collaborative	05	10	20

	programmes with Industry			
8	Accreditation status (obtained and applied for)	33% (Applied for)	Minimum 60% of UG + PG	100% of eligible UG + PG programmes
9	Vacancy position for faculty and staff	NIL	Vacancy reduced to 10% or less	Zero
10	Percentage of regular faculty having a Masters Degree or a Doctorate Degree in Engineering disciplines	35%	Increased by 20% and 10% respectively over base line	Increased by 40% and 20% respectively over base line
11	Transit rate from 1st to 2nd year for the following: • All Students • SC and ST Students • OBC Students • Women Students	98% 90% 96% 99%	100% 100% 100% 100%	100% 100% 100% 100%
12	Autonomy status	Administrative & financial autonomy already there. For granting academic autonomy applied to RTU Kota	Required to be obtained	
13	Enrolment of faculty with only Bachelor Degree for qualification upgradation	75%	At least 50% at the parent institution or 25% at other institution	
14	Any other academic deliverables (maximum 3)			
(i)				
(ii)				
(iii)				

Note : The accreditation targets for Undergraduate and Postgraduate programme are **for NBA accreditation of programmes.**

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

As explained in Section 2.2, Engineering College Bikaner has identified clear strategic directions for itself and has already engaged in these directions. TEQIP is a timely and welcome stimulus to help it realize the organizational realignment it had envisaged. The directions Engineering College Bikaner is pursuing are therefore not externally imposed but internally determined. It is through an analysis of the national and international scenarios that Engineering College Bikaner has chosen to focus on the strategic objectives it has set for itself. This orientation will remain the prime moving force behind our actions for the foreseeable future, regardless of any project implementation.

The TEQIP project will provide a significant boost in these strategic directions and will reinforce several streams of activity which include improved institutional management practices including excellence in academic activities in such areas as postgraduate education, doctoral programs, faculty research, R&D and consultancy services, improved curricular practices, interaction with industry ,administrative and financial management practices, higher internal efficiencies, exercise of autonomies, faculty recruited under the project ,Teaching and Research Assistantship. The project also includes a systematic program of faculty training and development to build this capacity and a large increase in the production of well-trained PhD who will be prime candidates for future recruitment. Both continuous attentions to teaching improvement and to curriculum development are likely to become part of the culture of the institution. The project will have improved networking and public relations capacity of our institute and will help in better tapping of its alumni and other networks, which will further increase its capacity to generate funds.

Being Govt. funded institution we also expect to receive encouragement & helping hand from the State government as provided to us from time to time in past.

We are confident that with the right policy environment each one of these streams of activity will be sustained and even expanded beyond the life of the project.

2.15 Provide a Procurement Plan for the first 18 months for Goods and Civil Works in Table-31 and Consultant Services in Table-32 with budget and timeframe.

**Table-31**

**18-month Procurement Plan for Works and Goods\* for Sub-Component 1.1**

**Name of the institution with location: Engineering College Bikaner, Karni Industrial Area, Pugal Road, Bikaner (Raj.)**

Package No.	S. No.	Activities	Description of Works/ Goods	Estimated Cost (Rs. in lac)	Method of Procurement	Design/Investigation completion/ Specification Finalization.(Date)	Estimate Sanctioned (Date and Value)	Preparation of Bid Document (Date)	Receipt of Bank's No Objection to Bidding Document.(Date)**	invitation (Date)	Opening (Date)	Contract Award (Date/Value)	Date of Completion of Contract		
1	2	3	4	5	6	7	8	9	10	11	12	13	14		
	1	Modernization and strengthening of laboratories	CSE	<ul style="list-style-type: none"> <li>100 Computers</li> <li>Server</li> </ul>	50.00	Through Open Tender									
				10.00	Completed										
		IT	<ul style="list-style-type: none"> <li>100 Computers</li> <li>01 Photo Copier</li> </ul>	50.00											
			1.00	Completed											
	ECE			<b>Basic Electronics Lab</b>											
				<ul style="list-style-type: none"> <li>114CRO (60 MHz)</li> </ul>	5.00										
				<ul style="list-style-type: none"> <li>Function Generator</li> </ul>	1.00										
				<ul style="list-style-type: none"> <li>Dual Regulated Power Supply</li> </ul>	1.20										
				<ul style="list-style-type: none"> <li>Digital Multimeter</li> </ul>	0.80										
				<ul style="list-style-type: none"> <li>up 8085 Kit with key board</li> </ul>	2.25					Jan. 2015	Feb. 2015	Mar. 2015	Apr. 2015	May 2015	June 2015
<ul style="list-style-type: none"> <li>up 8086 Kit with key board</li> </ul>	2.25														
<ul style="list-style-type: none"> <li>uc Kit 8051 with key board</li> </ul>	2.25														
<ul style="list-style-type: none"> <li>Programmer &amp; Burner with PC interface</li> </ul>	3.00														
<ul style="list-style-type: none"> <li>Advance Com.m. Lab (Anechoic Chamber, M/W Frequency</li> </ul>	0.60														

		Generator etc.)	23.30										
	<b>Electrical Engg.</b>	<ul style="list-style-type: none"> <li>• <b>Power Electronic Lab</b> (single phase ac voltage controller using SCR and TRIAC, MOSFET based single phase inverter, DSO 100 MHz 2 channel With Storage and USB port, DSO 500 MHz 2 channel With Storage and USB port, single phase dual converter etc.)</li> </ul>	18.00		Jan. 2015	Feb. 2015	Mar. 2015	Apr. 2015	May 2015	June 2015	July 2015	Aug. 2015	
	<b>EI &amp; CE</b>	<ul style="list-style-type: none"> <li>• <b>Instrumentation Lab</b></li> </ul>	14.00		Jan. 2015	Feb. 2015	Mar. 2015	Apr. 2015	May 2015	June 2015	July 2015	Aug. 2015	
	<b>Mechanical Engg.</b>	<ul style="list-style-type: none"> <li>• <b>Heat Transfer Lab</b> (Condensation In Drop &amp; Film Forms, Heat Transfer In Vacuum etc.)</li> </ul>	4.00										
		<ul style="list-style-type: none"> <li>• <b>Lab: IC Engine</b> (Bomb Calorimeter Apparatus, Redwood Viscometer Multiple Apparatus etc.)</li> </ul>	0.70										
		<ul style="list-style-type: none"> <li>• <b>Fluid Machine Lab</b> Variable Speed Reciprocating Pump Test Rig etc.)</li> </ul>	2.00		Jan. 2015	Feb. 2015	Mar. 2015	Apr. 2015	May 2015	June 2015	July 2015	Aug. 2015	
		<ul style="list-style-type: none"> <li>• <b>Lab Refrigeration and Air Conditioning</b> (Computerized Vapour Absorption Refrigeration Test Rig)</li> </ul>	7.50										
		<ul style="list-style-type: none"> <li>• <b>CAD/CAM Lab</b> (CAM Software, Analysis</li> </ul>	4.30										

**Engineering College Bikaner  
Sub-Component 1.1**

			Software (Simulia) • <b>Production Lab</b> (Drill Tool Dynamometer, Lathe Tool Dynamometer etc.)											
		<b>Civil Engg.</b>	• <b>Surveyor and Testing Lab</b>	25.00		Jan. 2015	Feb. 2015	Mar. 2015	Apr. 2015	May 2015	June 2015	July 2015	Aug. 2015	
		<b>Establishment of new laboratories for existing UG and PG programmes and for new PG programmes</b>												
		<b>CSE (For Existing PG /M.Tech. Programme in Software Engg.)</b>	• Cluster SERVER	10.00										
			• Wireless Switch	10.00										
			• Data Store Facilities For every student	5.00										
			• Software for SE Lab	3.00		Jan. 2015	Feb. 2015	Mar. 2015	Apr. 2015	May 2015	June 2015	July 2015	Aug. 2015	
			• Network Simulator & Simulation Lab Tools	5.00										
			• Laptop Wi-Fi Enabled	5.00										
		<b>IT (Setting up of Voice Lab)</b>	• Cisco Voice Phone & Call Manager	30.00		Jan. 2015	Feb. 2015	Mar. 2015	Apr. 2015	May 2015	June 2015	July 2015	Aug. 2015	
		<b>Electrical Engg. (For existing M.Tech Programme – Power System)</b>	• <b>Electrical High Voltage &amp; Power System Lab</b> (Transmission Line Simulator, Distribution Trainer, High Resistance cable Fault Locator	15.00										
			• <b>Drive Lab</b> (SRM Machine with Load Setup and converter ,controller, PMBL D.C. Machine with Load Setup and converter ,controller etc.)	15.00		Jan. 2015	Feb. 2015	Mar. 2015	Apr. 2015	May 2015	June 2015	July 2015	Aug. 2015	
			• <b>AC DC Convertor Board</b>											

**Engineering College Bikaner  
Sub-Component 1.1**

				10.00												
		Mechanical Engg. (For M.Tech. programme – Thermal Engig.)	<ul style="list-style-type: none"> <li>Heat Transfer Lab (Computerized Fluidized Bed Heat Transfer)</li> </ul>	1.50												
			<ul style="list-style-type: none"> <li>Robotics Lab</li> <li>Lab: IC Engine (LPG Injection System)</li> </ul>	9.75												
			<ul style="list-style-type: none"> <li>Renewable Energy Lab (Wind Power Generation Experimental Equipment)</li> </ul>	4.35												
			<ul style="list-style-type: none"> <li>Turbo Machine Lab (Submersible Pump Test Rig, Apparatus For Study of Cavitation)</li> </ul>	17.00		Jan. 2015	Feb. 2015	Mar. 2015	Apr. 2015	May 2015	June 2015	July 2015	Aug. 2015			
			<ul style="list-style-type: none"> <li>CNC Production Lathe</li> </ul>	2.00												
				16.00												
	3	Modernization of classrooms*	<ul style="list-style-type: none"> <li>LCD Projector</li> <li>Smart Board etc.</li> </ul>	9.00	Completed											
	4	Updation of Learning Resources	<ul style="list-style-type: none"> <li>Education CDs</li> <li>Eklavya Channel</li> </ul>	9.00	July 2015	Aug. 2015	Sept. 2015	Oct. 2015	Nov. 2015	Dec. 2015	Jan 2016	Feb 2016				
	5	Procurement of furniture	<ul style="list-style-type: none"> <li>Classroom Furniture</li> <li>Office Furniture</li> </ul>	9.00	Completed											
	6	Establishment/Upgradation of Central and Departmental Computer Centers*	<ul style="list-style-type: none"> <li>Server</li> <li>Networking (Wi Fi)</li> </ul>	50.00	July 2015	Aug. 2015	Sept. 2015	Oct. 2015	Nov. 2015	Dec. 2015	Jan 2016	Feb 2016				
	7	Modernization/improvements of supporting departments*	<ul style="list-style-type: none"> <li>Language Lab</li> <li>Personality Development Cell</li> <li>T &amp; P Cell</li> <li>Applied sciences department</li> </ul>	11.00	July 2015	Aug. 2015	Sept. 2015	Oct. 2015	Nov. 2015	Dec. 2015	Jan 2016	Feb 2016				
	8	Modernization and strengthening of libraries and increasing access to knowledge resources	<ul style="list-style-type: none"> <li>E- journals</li> <li>International / National Journal</li> </ul>	12.25	July 2015	Aug. 2015	Sept. 2015	Oct. 2015	Nov. 2015	Dec. 2015	Jan 2016	Feb 2016				
	9	Refurbishment (Minor Civil Works)*	<ul style="list-style-type: none"> <li>Aluminum Partition</li> <li>PVC Flooring</li> <li>False Ceiling etc.</li> </ul>	50.00	July 2015	Aug. 2015	Sept. 2015	Oct. 2015	Nov. 2015	Dec. 2015	Jan 2016	Feb 2016				

**\* Note : There may be some variation in the schedule depending upon the requirement while maintaining the sanctioned amount.**

**Table-32**  
**18-month Procurement Plan for Contract Services for Sub-Component 1.1**

**Name of the institution with location : Engineering College Bikaner, Karni Industrial Area, Pugal Road Bikaner**

Package No.	S.No.	Activities	Description of Services	Method of Selection @	TOR Finalization (Date)	Advertisement (Date)	to be Forwarded to the Bank (Date)	No Objection from the Bank for REF.(Date)**	REF Issued (Date)	Proposals Received (Date)	Evaluation (Date)	No Objection by the Bank (Date)**	Contract value and Date of Award	Contract Completion (Date)
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
	1	Enhancement of R&D and institutional consultancy activities*	For Advise in Scientific Matters	individual	July 2015	Aug. 2015	Sept. 2015	Oct. 2015	Nov. 2015	Dec. 2015	Jan. 2016	Feb. 2016	Mar 2016	Apr. 2016
	2	Faculty and Staff Development (including faculty qualification upgradation, pedagogical training, and organising/participation of faculty in workshops, seminars and conferences) for improved competence based on TNA	For TNA	Competitive procedure QCBS	May 2015	June 2015	July 2015	Aug. 2015	Sept. 2015	Oct. 2015	Nov. 2015	Dec. 2015	Jan. 2016	Feb. 2016
	3	Institutional management capacity enhancement	For Consultancy in overall assessment of college	Competitive procedure	July 2015	Aug. 2015	Sept. 2015	Oct. 2015	Nov. 2015	Dec. 2015	Jan. 2016	Feb. 2016	Mar 2016	Apr. 2016
	4	Implementation of institutional reforms	For Consultancy in suggesting effective implementation of reforms	Competitive procedure	July 2015	Aug. 2015	Sept. 2015	Oct. 2015	Nov. 2015	Dec. 2015	Jan. 2016	Feb. 2016	Mar 2016	Apr. 2016
	5	Academic support for weak students under the aegis of Finishing School	Experts for lecturers	individual	Sept. 2015	Oct. 2015	Nov. 2015	Dec. 2015	Jan. 2016	Feb. 2016	Mar 2016	Apr. 2016	May 2016	June 2016

**\* Note : There may be some variation in the schedule depending upon the requirement while maintaining the sanctioned amount.**

**Engineering College Bikaner**  
**Sub-Component 1.1**



**2.16 Provide any other information related to special academic achievements as given in Eligibility proposal of the institution.**

- Engineering College Bikaner has been ranked **first** in Rajasthan by Career 360 survey conducted recently out look magazine group.
- Keeping in view the State of Art facilities available here, Engineering College Bikaner is being promoted to second **State Technical University** of Rajasthan. Announcement in this regard has been made by Hon'ble Minister for Technical Education.
- Engineering College Bikaner has been declared as **Model Institute** of Rajasthan in State Legislative Assembly.
- Engineering College Bikaner has been awarded **State level second prize** for Clean & Green campus.
- The Institute is having Committed 200 faculty members, which is **biggest number** in Rajasthan. The faculty members have authored more than 50 books and 300 research papers & articles.
- **Principal and 5 faculty members** of Engineering College Bikaner have been honored on 26<sup>th</sup> Jan & 15<sup>th</sup> August by State Govt.
- **To upgrade the qualification** of existing faculty members, more than 40 faculty members have been sponsored for higher studies at different prestigious institutes like IITs, NITs, NITTTR etc during last 4 years.
- The **academic results** of college students is among best in the Rajasthan (more than 95% result).
- Engineering College Bikaner is **accredited by TCS** for student placement. The highest numbers of students are being placed in good number of reputed companies from our college.
- Within short span college has collaborated with the industries & generating revenues of over **Rs. 50 lac per year through consultancy, testing etc.**
- **District Ceramic Testing & Research Centre** (First in North India)through financial assistance of Rs. 7 crore have been set up in the college premises which meet the needs of local industries & unique example of industry-institute partnership.
- **The College have organized 10 international conferences, 3 national conferences, 10 short-term courses for faculty development, 10 vocational training programs during last 3 years.**

- Every year College organizes National level Techno Management student festival "SAKSHMA" witnessing participation of more than 2000 student participants from around 500 technical institutions throughout the country.
- Two student projects (one related with car engine design & other related with multi touch screen) have won awards at International level.



Principal  
Engineering College  
BIKANER