

**TECHNICAL EDUCATION QUALITY IMPROVEMENT PROGRAMME  
(TEQIP)  
PHASE - II**

**INSTITUTIONAL DEVELOPMENT PROPOSAL**

**For**

**Sub-component 1.1: Strengthening institutions to improve learning  
outcomes and employability of graduates**

**PONDICHERRY ENGINEERING COLLEGE  
PUDUCHERRY – 605 014  
UNION TERRITORY OF PUDUCHERRY**

**APRIL 2015**

# 1. INSTITUTIONAL BASIC INFORMATION

## 1.1 Institutional Identity

- Name of the institution : **PONDICHERY ENGINEERING COLLEGE**
- Is the institution AICTE approved? : **Yes**
- Furnish AICTE approval no. : 730-51-101(E)/ET/97 dated 02.05.2008
- Type of institution : **GOVERNMENT FUNDED INSTITUTION**
- Status of institution : **Autonomous** from 2014-15 onwards
- Affiliating University : **Pondicherry University (Central University)**
- Name of Head of the Institution and Project Nodal Officers

Head and Nodal Officer	Name	Phone Number	Mobile Number	Fax Number	E-mail Address
Head of the Institution	Dr. D. Govindarajulu	0413 2655214	09443860099	0413 2655101	dgovindarajulu@gmail.com principal@pec.edu
TEQIP Coordinator	Dr. G. Sivaradje	04132655281	09894088077	0413 2655101	shivraradje@pec.edu
<b>Project Nodal Officers for:</b>					
Academic activities	Dr. S. Sundaramoorthy	04132655281	09444290056	0413 2655101	ssm_pec@yahoo.com
Civil works including Environment Management	Dr. G. Ramakrishna	04132655281	09894270298	0413 2655101	ramakrishna_grk@rediff.com
Procurement	Dr. R. Santhanalakshmi	04132655281	9790972173	0413 2655101	sandalakshmi@pec.edu
Financial Aspects	Dr. R. Manoharan	04132655281	9443468480	0413 2655101	rmanoharan@pec.edu
Equity Assurance Plan Implementation	Dr. P. Revathi	04132655281	09944427159	0413 2655101	revathi@pec.edu

## 1.2 Academic Information

- **Engineering Programmes offered in Academic year 2014 –15**

S. No.	Title of Programme	Level (UG, PG, Ph.D)	Duration (Years)	Year of starting	AICTE Sanctioned Annual Intake	Total Student Strength**
1	Civil Engineering	UG	4	1985	60	272
2	Mechanical Engineering	UG	4	1985	60	271
3	Electronics and Communication Engineering	UG	4	1985	60	271
4	Computer Science and Engineering	UG	4	1985	60	277
5	Electrical and Electronics Engineering	UG	4	1993	60	272
6	Electronics and Instrumentation Engineering	UG	4	1997	60	257
7	Chemical Engineering	UG	4	1997	30	117
8	Information Technology	UG	4	2000	60	254
TOTAL						1991

9	Electronics and Communication Engineering	PG	2	1989	17	34
10	Energy Technology	PG	2	1994	17	34
11	Advanced Construction Technology	PG	2	1998	17	34
12	Distributed Computing Systems	PG	2	2002	25	50
13	Electrical Drives and Controls	PG	2	2002	25	50
14	Environmental Engineering	PG	2	2002	18	26
15	Information Security	PG	2	2006	18	36
16	Wireless Communication	PG	2	2006	18	35
17	Product Design and Manufacturing	PG	2	2006	18	36
TOTAL						335

\*\* Including intake through Lateral Entry

- **Ph D programmes offered in the institute**

19	Civil Engineering	Ph. D*	2	---	---	47
20	Mechanical Engineering	Ph. D*	2	---	---	42
21	Electronics and Communication Engineering	Ph. D*	2	---	---	87
22	Computer Science and Engineering	Ph. D*	2	---	---	31
23	Electrical and Electronics Engineering	Ph. D*	2	---	---	49
24	Mathematics	Ph. D*	2	---	---	09
25	Physics	Ph. D*	2	---	---	11
26	Chemistry	Ph. D*	2	---	---	04
TOTAL						280

\* - Minimum period of completion for Regular Programme – 2 years and for Part-time Programme - 3 years

- **Accreditation Status of UG Programmes:**

Title of UG Programmes being offered	Whether eligible for accreditation	Whether accredited as on 31 <sup>st</sup> March 2015	Whether "Applied for" as on 31 <sup>st</sup> March 2015
Civil Engineering	YES	YES	NO
Mechanical Engineering	YES	YES	NO
Electronics and Communication Engineering	YES	YES	NO
Computer Science and Engineering	YES	YES	NO
Electrical and Electronics Engineering	YES	YES	NO
Information Technology	YES	YES	NO
Electronics and Instrumentation Engineering	YES	YES	NO
Chemical Engineering	YES	YES	NO

• **Accreditation Status of PG Programmes:**

Title of PG Programmes being offered	Whether eligible for accreditation	Whether accredited as on 31 <sup>st</sup> May 2015	Whether "Applied for" as on 31 <sup>st</sup> May 2015
Electronics and Communication Engineering	YES	NO	YES
Structural Engineering*	NO	-	-
Energy Technology	YES	NO	YES
Distributed Computing Systems	YES	NO	NO
Electrical Drives and Controls	YES	NO	NO
Environmental Engineering	YES	NO	NO
Information Security	YES	NO	NO
Wireless Communication	YES	NO	YES
Product Design and Manufacturing	YES	NO	YES
Information Technology*	NO	-	-
Instrumentation Engineering*	NO	-	-

\*To be started from the academic year 2015-16

**Note: Improvements of the institutional facilities to meet the new NBA guidelines are to be carried out and hence, there is delay. On receipt of TEQIP grant, accreditation of all UG and PG programmes will be done within two years.**

**1.3 Faculty Status (Regular / On-Contract Faculty as on March 31<sup>st</sup>, 2015):**

Faculty Rank	No of sanctioned Regular Post	Present Status: Number in Position by Highest Qualification												Total Number of Regular Faculty Positions	Total Number of Vacancies	Total Number of Contract Faculty Positions
		Doctoral Degree				Master's Degree				Bachelor Degree						
		Engg. Disciplines		Other Disciplines		Engg. Disciplines		Other Disciplines		Engg. Disciplines		Other Disciplines				
		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	16	17
<b>Prof.</b>	<b>27</b>	<b>69</b>	-	<b>10</b>	-	-	-	-	-	-	-	-	-	<b>79*</b>	-	-
<b>Asso. Prof.</b>	<b>52</b>	<b>19</b>	-	<b>6</b>	-	<b>7</b>	-	<b>2</b>	-	-	-	-	-	<b>34*</b>	-	-
<b>Asst. Prof.</b>	<b>103</b>	<b>20</b>	-	<b>1</b>	-	<b>17</b>	-	<b>2</b>	-	-	-	-	-	<b>40*</b>	<b>29</b>	-
<b>Total</b>	<b>182</b>	<b>108</b>	-	<b>17</b>	-	<b>24</b>	-	<b>4</b>	-	-	-	-	-	<b>153*</b>	<b>29</b>	-

Prof. Professor: Asso. Prof. Associate Professor: Asst. Prof. Assistant Professor  
 R Regular C Contract

\* Including those promoted under Career Advancement Scheme

S. No.	Parameters	
1	Total strength of students in all programmes and all years of study in the year 2014-15	2326
2	Total women students in all programmes and all years of study in the year 2014-15	931
3	Total SC students in all programmes and all years of study in the year 2014-15	392
4	Total ST students in all programmes and all years of study in the year 2014-15	32
5	Total OBC students in all programmes and all years of study in the year 2014-15	767
6	Number of fully functional P-4 and above level computers available for students in the year 2014-15	650
7	Total number of text books and reference books available in library for UG and PG Students in the year 2014-15	51100
8	% of UG students placed through campus interviews in the year 2014-15	62.00
9	% of PG students placed through campus interviews in the year 2014-15	52.50
10	% of high quality undergraduates (>75% marks) passed out in the year 2014-15	75.16
11	% of high quality postgraduates (>75% marks) passed out in the year 2014-15	77.50
12	Number of research publications in Indian refereed journals in the year 2014-15	85
13	Number of research publications in International refereed journals in the year 2014-15	270
14	Number of patents obtained in the year 2014-15	Nil
15	Number of patents filed in the year 2014-15	Nil
16	Number of sponsored research projects completed in the year 2014-15	4
17	The transition rate of students in percentage from 1 <sup>st</sup> year to 2 <sup>nd</sup> year in the year 2014-15 for :	
	(i) all students	62.00
	(ii) SC	24.23
	(iii) ST	31.33
	(iv) OBC	72.54
18	IRG from students' fee and other charges in the year 2014–15 (Rs. in lacs)	512.53
19	IRG from externally funded R&D projects, consultancies in the year 2014–15 (Rs. in lacs)	21.12
20	Total IRG in the year 2014–15 (Rs. in lacs)	533.65
21	Total annual recurring expenditure of the applicant entity in the year 2014–15 (Rs. In lacs)	3403.03

## **2. INSTITUTIONAL DEVELOPMENT PROPOSAL (IDP)**

### **2.1 EXECUTIVE SUMMARY OF THE IDP**

Pondicherry Engineering College was established in 1984 by MHRD, Government of India under the Seventh Five Year Plan to meet the requirement of an engineering institution in the Union Territory of Puducherry. Ever since its inception, the college has maintained a steady academic and research growth both vertically and horizontally with an aim to offer quality technical education and cater to the diverse requirements of the industries besides the expectation of the prevailing societal system. Eight UG and nine PG programmes in core engineering disciplines besides MCA and Ph D programmes in all engineering disciplines and basic sciences are currently offered in the college. As the first engineering college in the Union Territory of Puducherry, it preserves its uniqueness among all professional institutions which were started later. The college enjoys significant autonomy for administration. The college initially affiliated to Pondicherry University, has been granted 'permanent affiliation' as the first and significant step towards attainment of academic autonomy and obtained Autonomous status from 2014-15 onwards.

The major strengths of the institution are its location, well-connected by land and (upcoming) air routes to major cities in India, highly qualified faculty and adequate infrastructure. The college, preserving its brand name, attracts the meritorious students of UT of Puducherry in addition to students from neighboring states. The placement of students through campus is progressive since inception. Considering all these aspects, the strategic plan for institutional development for TEQIP-II has been prepared with the following specific vision: "To transform this technical Institute into a Technological University with greater autonomy and evolve the university as educational institution of national importance and global eminence".

To become a world-class technological university and to keep abreast with emerging technologies that grow rapidly in all disciplines of engineering due to day-by-day revelation of newer research outcomes and technical know-how, and introduction of faster methodologies, it becomes mandatory that, (i) the faculty and staff have to be trained to improve in terms of qualifications and competency, (ii) academic and non-academic reforms have to be carried out to achieve full academic, administrative and financial autonomies, and (iii) the institute has to be strengthened with improved laboratory and computing facilities, advanced campus networking and upgraded teaching-learning resources in all respects.

Considering the above facts, this project proposal envisages a total outlay of Rs.120.00 million with the distribution of spending as follows: Rs. 66.79 million for equipment, furniture and civil works, Rs. 29.21 million for institutional management capacity enhancement, faculty development, training and assistantship, Rs. 6.00 million for upgrading library resources and softwares, Rs. 6.00 million for consultancy secured and Rs. 12.00 million for other operating costs.

By implementing the TEQIP Project, it is estimated that towards the end of the project most of the faculty members would be well qualified and trained, and the college would have the state of the art technology facilities and infrastructure. The transition rate of students will be raised to a reasonable value of 85% from the prevailing figure of 62%. Further, it is reasonable to expect that towards the end of the project all graduates from this institution will be able to find gainful employment and contribute to the growth of economy and industry of the nation. It is hoped that, through the establishment of finishing schools, the soft skills of weaker students will be enhanced so that their employability will be improved.

## 2.2 SWOT ANALYSIS

### 2.2.1 DETAILS OF SWOT ANALYSIS

SWOT analysis was carried out utilizing the deliberations from a series of departmental meetings conducted amongst (100% of) faculty and (99% of) staff members besides (95% of) students. The following parameters have been considered at large to make the analysis more rational and realistic.

Parameters involved in assessing “Strengths and Weaknesses” are taken as:

- Manpower : Faculty, Technical and Administrative Staff
- Material assets : Buildings, Laboratories, Workshops, Machinery, Equipment, Computers, Furniture and other Infrastructure
- Management : Curriculum Development, Staff Development, Teaching-Learning Processes, Student Support Services and Administration
- Merchandise : Students: Intake, Passing-out Percentage, Placement; Staff: Sponsored Projects and Consultancy – Research Publications and Project Reports

Factors used for assessing “Opportunities and Threats”:

- Technological aspects
- Financial aspects
- Environmental aspects
- Societal and political aspects

### STRENGTHS

- S1: Unique status and value as the first Government Institute in this UT kick started in 1985
- S2: Acquired brand name making the institute most-sought after by the meritorious rank-holders
- S3: Good infrastructure with adequate workshops and laboratories for running 8 B Tech and 9 M Tech courses
- S4: Adequate faculty members to educate students in the ratio 1:15
- S5: Rich knowledge of faculty members indulging academic developments, research guidance and publications to the tune of more than 300 research papers per year in reputed journals
- S6: Achievement of full academic autonomy is making the institute more competitive
- S7: Expertise in consultancy and R&D earning 100 lakhs (INR) annually
- S8: Well qualified team of technical staff capable of augmenting any technical eventualities
- S9: Good interaction with industries and research organizations through MOUs
- S10: Eudemonic interpersonal-relationship existing among faculty, staff and students
- S11: Strong commitment to teaching enabling an annual pass percentage of around 90%
- S12: Spirit of transforming students to suit industries resulting in 75% annual placement
- S13: Ardent coaching to score high in GRE, GATE, CAT etc. by 25% of students every year
- S14: Academic standards of the institute justifiable with accreditation of UG courses by NBA thrice, certification to LEVEL-A status by TATA Group and rating us to be amongst the top 5 institutes in South India by other industries
- S15: Constructive Counseling and Career Guidance to students including weaker sections unto instill participation in co- and extra-curricular activities.

## **WEAKNESS**

- W1:** Inadequate annual grant-in-aid not matching with demand and growth
- W2:** Old laboratory equipment and accessories which have served more than their lifetime
- W3:** Lack of AMC to maintain computer laboratories and other sophisticated scientific equipment
- W4:** Lack of advanced scientific and technological equipment and accessories
- W5:** Absence of full academic autonomy for PhD programs
- W6:** Lack of modern teaching aids in class rooms like smart class rooms
- W7:** Lack of multi-user access facility in central/department library
- W8:** Absence of corpus and maintenance funds to maintain equipment, accessories and machinery
- W9:** Absence of major industries in and around Pondicherry.
- W10:** Lack of funds for assignments and visits to build partnership with distant industries

## **OPPORTUNITIES**

- O1:** Greater potential to become a technological university
- O2:** More collaborated activities through MOUs with universities and industries globally
- O3:** Improving the status to QIP centre for PG and Ph D programmes in all disciplines
- O4:** Authentication of higher quality in industrial research and patentable product
- O5:** More revenue generation through industrial consultancy and sponsored projects
- O6:** Enhancing employability of engineering graduates/post graduates in industries
- O7:** Attracting large number of high caliber students for PG and Ph D programmes
- O8:** Increased access to world-best e-books and journals through digitalized library systems
- O9:** Improving marketability of graduates/post graduates with full academic autonomy.
- O10:** Building higher confidence, quality and standards of students by teaching and learning process through multimedia-assisted lectures in class rooms
- O11:** Improving technical skill of technical staff in advanced technologies
- O12:** Establishment of specialized centres of excellence in Disaster Management and Mitigation, Energy Efficient Systems, Information and Communication Technology

## **THREATS**

- T1:** Rapid Changes in technologies (hardware / software configuration) in short interval
- T2:** Establishment of NIT/ private engineering colleges in close vicinity with relatively better infrastructural facilities
- T3:** Chances of migration of experienced and talented faculty members and staff to newer central institutes/foreign universities
- T4:** Chances of missing meritorious students due to upcoming nearby governmental and non-governmental institutes/ universities
- T5:** Unexpected industrial recession and its consequence on employment



## **2.2.2 STRATEGIC PLAN DEVELOPED FOR INSTITUTIONAL DEVELOPMENT**

Pondicherry Engineering College experiences stiff competitions which have arisen due to new NIT in this union territory and neighboring governmental and non-governmental institutions and educational establishments. This competitive environment has prompted the institute to strengthen UG and PG besides Ph.D programmes offered in the college. This necessitates a mandatory leap into major reforms in curriculum, governance and infrastructural facilities. To keep the institute at the helm of global expectations, the following strategic plan is being evolved.

- Transform into a Technological University and evolve as an Institute of national importance
- Upgrade the institute as QIP center for PG and Ph D programmes
- Creating ICT enabled learning environment through up-gradation of campus networking and e-library facilities
- Increase the student's intake in demand driven UG/PG courses
- Augmenting the class rooms with Smart Teaching Aids and improvise teaching-learning process.
- Upgrading the laboratory facilities with modern/advanced equipment
- Provide stipend/contingency grant to the students enrolled for PG / Ph D programmes
- Enhance the testing and consultancy services with the specialized facilities
- Strengthening the faculty research through seed grant
- Increase the conduction of conferences/workshop/panel discussions, staff development and continuing education programmes
- Support the faculty members with grant to visit and collaborate with industries/research laboratories/ universities in India and abroad
- Provide periodical training to Technical staff in industries/training institutions

## **2.2.3 INSTITUTE'S MISSION, VISION AND VALUES**

### **VISION**

- To foster prosperity through technology by means of education, innovation and collaborative research and emerge as a world-class technical institution.

### **MISSION**

- To impart high quality training to students so as to provide human resource appropriate to the local and national needs.
- To create and disseminate knowledge for the betterment of mankind in general and rural masses in particular.
- To establish centres of excellence in collaboration with industries, research laboratories and other agencies to meet the changing needs of society.

### **VALUES**

- "Brand Name"
- Adequate faculty members
- Vast experience of the faculty to effect academic reforms
- Expertise to undertake consultancy, R&D
- Well qualified team of technical staff

## 2.2.4 GOALS TO ACCOMPLISH OVER THE NEXT FOUR YEARS

- To foster higher quality and standards in academics and research
- To enhance the quality of teachers in the other institutes
- To enhance quality in research and publications
- To meet the industrial requirements for quality graduate.
- To orient towards student centric learning /teaching, enhanced delivery of lectures
- To impart high quality practical knowledge through demonstration and practice of advanced concepts
- To attract meritorious students and increase in enrollment
- To enhance research leading to quality publications and patents
- To establish MOUs to enable the globally competitive research and developments
- To refresh and upgrade the skills of technical staff to handle the specialized equipments
- To upgrade the quality of students so that the employability is improved
- To establish networking with other institutes for sharing of resources

## 2.2.5 SUMMARY OF SWOT ANALYSIS LINKED TO INSTITUTIONAL KEY ACTIVITIES

Institutional key activities proposed		S	W	O	T
1	Transform into a Technological University with greater autonomy and evolve as the Institute of national importance.	S1- S8	W5 W8	O1 O3 O7 O12	T1 T2 T3 T7
2	Upgrade the institute as QIP center for PG and Ph D programmes.	S5- S7	W5	O1- O3	T3
3	Creating ICT enabled learning environment through up-gradation of campus networking and e-library facilities.	S4-S15	W1 W2 W6 W7 W11	O4 O5 O8 O9 O12	T1- T4
4	Increase the student's intake in demand driven UG/PG courses.	S1- S4 S12 S13	W1 W5 W8	O1 O6 O9	T3
5	Augmenting the class rooms with Smart Teaching Aids and improvise teaching-learning process.	S11- S15	W6 W7 W11	O6 O7 O8 O10	T1 T4
6	Upgrading the laboratory facilities with modern/advanced equipments.	S3 S4- S6 S11 S12 S14	W1-W3	O6 O9 O10 O11	T1 T4
7	Provide stipend/contingency grant to the students enrolled for PG / Ph.D programmes.	S3, S5, S7, S9	W1 W7	O6, O7	T1 T4
8	Enhance the testing and consultancy services with the specialized facilities.	S2, S7 S9	W4 W9	O2 O5 O12	T1 T5 T6
9	Strengthening the faculty research through seed grant.	S4 S6 S7 S9	W4 W9	O1 O6 O9	T1 T4
10	Increase the conduction of conferences / workshop, staff development and continuing education programmes.	S1- S3, S6 S7	W9 W10	Q1 Q2 Q7 Q8 Q12	-
11	Support the faculty members with grant to visit and collaborate with industries/research laboratories/universities in India and abroad.	S7, S9	W9 W10	Q2 Q5 Q7 Q12	T5, T6
12	Provide periodical training to Technical staff in industries/training institutions.	S8	W9 W10	O10 O11	T1

## 2.3 SPECIFIC OBJECTIVES OF THE PROPOSAL AND EXPECTED RESULTS OF THE PROPOSAL IN TERMS OF INSTITUTIONAL STRENGTHENING AND IMPROVEMENTS IN EMPLOYABILITY AND LEARNING OUTCOMES OF GRADUATES. THESE OBJECTIVES AND RESULTS ARE LINKED TO THE SWOT ANALYSIS

### 2.3.1 INSTITUTIONAL OBJECTIVES LINKED TO EXPECTED RESULTS

In the academically intense environment which is fully charged with stiff competition amongst several technical institutions, constructive objectives to strengthen the institute become unambiguous need of the hour. Further, it is also mandatory to elevate the academic, administrative and deliverable status of Pondicherry Engineering College to a level higher to the surrounding engineering institutions. With this foresight, the following objectives are outlined for achieving the expected results which are consolidated below.

<b>S.No.</b>	<b>Institution Objectives</b>	<b>Expected Results</b>
1	Transform into a Technological University and evolve as the Institute of national importance.	Foster higher quality and standards in academics and research
2	Upgrade the institute as QIP center for PG and Ph.D programmes.	Enhance the quality of teachers in the other institutes.
3	Creating ICT enabled learning environment through up-gradation of campus networking and e-library facilities.	Enabling instant access to diverse knowledge and enhance quality in research and publications.
4	Increase the student's intake in demand driven UG/PG courses.	To meet the industrial requirements for quality graduates.
5	Augmenting the class rooms with Smart Teaching Aids and improvise teaching-learning process.	Orient towards student centric learning /teaching, enhanced delivery of lectures to the satisfaction of teaching.
6	Upgrading the laboratory facilities with modern/advanced equipments.	Imparting high quality practical knowledge through demonstration and practice of advanced concepts.
7	Provide stipend/contingency grant to the students enrolled for PG/Ph.D programmes.	Attract meritorious students and increase in enrollment.
8	Enhance the testing and consultancy services with the specialized facilities.	Increase the revenue generations.
9	Strengthening the faculty research through seed grant.	Research leading to quality publications and patents.
10	Increase the conduction of conferences/workshop, staff development and continuing education programmes	Facilitates sharing and imparting of knowledge among researchers and professionals.
11	Support the faculty members with grant to visit and collaborate with industries/research laboratories/ universities in India and abroad.	Establish MOUs to enable the globally competitive research and developments.
12	Provide periodical training to Technical staff in industries/training institutions.	Refresh and upgrade the skills of technical staff to handle and service the specialized equipments.

### 2.3.2 INSTITUTIONS OBJECTIVES AND RESULTS MAPPED WITH SWOT ANALYSIS

Institutional objectives		S	W	O	T	Expected Results
1	Transform into a Technological University with greater autonomy and evolve as the Institute of national importance.	S1- S8	W5 W8	O1 O3 O7 O12	T1 T2 T3 T7	Foster higher quality and standards in academics and research.
2	Upgrade the institute as QIP center for PG and Ph.D programmes.	S5- S7	W5	O1- O3	T3	Enhance the quality of teachers in the other institutes.
3	Creating ICT enabled learning environment through up-gradation of campus networking and e-library facilities.	S4- S15	W1 W2 W6 W7 W11	O4 O5 O8 O9 O12	T1- T4	Enabling instant access to diverse knowledge and enhance quality in research and publications.
4	Increase the student's intake in demand driven UG/PG courses.	S1- S4 S12 S13	W1 W5 W8	O1 O6 O9	T3	To meet the industrial requirements for quality graduates.
5	Augmenting the class rooms with Smart Teaching Aids and improvise teaching-learning process.	S11- S15	W6 W7 W11	O6 O7 O8 O10	T1 T4	Orient towards student centric learning /teaching, Enhanced delivery of lectures to the satisfaction of teaching.
6	Upgrading the laboratory facilities with modern/advanced equipments.	S3 S4- S6 S11 S12 S14	W1- W3	O6 O9 O10 O11	T1 T4	Imparting high quality practical knowledge through demonstration and practice of advanced concepts.
7	Provide stipend/contingency grant to the students enrolled for PG / Ph.D programmes.	S3 S5 S7 S9	W1 W7	O6, O7	T1 T4	Attract meritorious students and increase in enrollment.
8	Enhance the testing and consultancy services with the specialized facilities.	S2 S7 S9	W4 W9	O2 O5 O12	T1 T5 T6	Increase the revenue generations.
9	Strengthening the faculty research through seed grant.	S4 S6 S7 S9	W4 W9	O1 O6 O9	T1 T4	Research leading to quality publications and patents.
10	Increase the conduction of conferences / workshop, staff development and continuing education programmes.	S1- S3 S6 S7	W9 W10	Q1 Q2 Q7 Q8 Q12	-	Facilitates sharing and imparting of knowledge among researchers and professionals.
11	Support the faculty members with grant to visit and collaborate with industries/research laboratories/ universities in India and abroad.	S7 S9	W9 W10	Q2 Q5 Q7 Q12	T5, T6	Establish MOUs to enable the globally competitive research and developments.
12	Provide periodical training to Technical staff in industries/training institutions.	S8	W9 W10	O10 O11	T1	Refresh and upgrade the skills of technical staff to handle and service the specialized equipments.

## 2.4 ACTION PLAN FOR:

- Improving employability of students
- Increased learning outcomes of the students
- Implementation of Autonomous status
- Maintaining the Accreditation status in live for all programmes which are already accredited.
- Implementation of academic and non-academic reforms
- Improving interaction with industry
- Enhancement of research and consultancy activities

### 2.4.1 IMPROVING THE EMPLOYABILITY

- Making the curriculum more appropriate and relevant to the current industrial trends through active participation of industrial experts in curriculum planning and design. More number of elective subjects is to be introduced in the curriculum to suit current industrial demands. This would make our graduates more attractive to the industry and improve employability.
- Arranging a number of 'Expert Lectures' and 'Industrial Visits' to keep our students updated with latest technological developments and industrial practices.
- Introducing compulsory in-plant training of two to three months duration in the curriculum to help the students gain practical knowledge of the subjects learnt in the class room.
- Introducing summer internships for the students to undertake mini projects in industries and R&D establishments. This would provide the students with opportunity to innovate practical solutions to industrial problems and enhance their design skills. This will be facilitated through Memorandum of Understanding with leading industries and R&D establishments involving CII and other bodies.
- Creating specialized facilities for training of students in soft skills development by setting up a 'Language and Communication Skills Laboratory'. This laboratory will also be suitably facilitated to offer foreign language classes (French / German) to the students in order to provide them with new employment avenues and opportunities in the global arena.
- Organizing short term courses / programmes to train the students in Leadership and Inter personnel skill development. Such programmes would help the students to mould their overall personality and groom themselves into confident individuals, who are capable of facing greater challenges in their profession. Student council would be supported with necessary grants to organize such programs.
- Creating curative-learning environment and imparting easygoing-teaching methodology for improving learning among weaker students

**Plan for improving employability of the students**

S. No.	Activity	Project Months															
		1-3	4-6	7-9	10-12	13-15	16-18	19-21	22-24	25-27	28-30	31-33	34-36	37-39	40-42	43-45	46-48
1	Curriculum development through industrial participation	X	X			X	X			X	X			X	X		
2	Expert lecture by experts from industries	X	X			X	X			X	X			X	X		
3	Industrial visits			X	X			X	X			X	X			X	X
4	In-plant training			X				X				X				X	
5	Summer internship		X	X			X	X			X	X			X	X	
6	Soft skill development through language laboratory and open class room coaching	X	X			X	X			X	X			X	X		
7	Short-term programmes		X	X			X	X			X	X			X	X	
8	Finishing school		X	X			X	X			X	X			X	X	

## 2.4.2 IMPROVING LEARNING OUTCOME OF STUDENTS

- Modernization of class rooms to have Smart Boards and Computers linked to LCD projectors with screens to create simulation environment for on-line demonstration of teaching concepts. This would remarkably improve the quality of lecture delivery and make the teaching – learning process more effective and efficient.
- Creating ICT enabled learning environment through upgradation of campus networking and E-library facilities. This will facilitate the students to have access to additional online study material that will help in self-learning and gaining deeper understanding of fundamental concepts covered in the class room.
- Introducing student centric active learning methods, in which students are facilitated to learn the concepts through participation in ‘Group tasks’ and ‘Interactive subject seminars’. Regular ‘Tutorial sessions’ and ‘Assignments’ will be introduced to emphasize on the problem solving skills of the students.
- Introducing ‘Continuous Evaluation’ of student’s performance to provide ample opportunities for improvement of learning outcomes. In this evaluation pattern, more weightage would be given to periodic assignments, tests and seminars. This would help in progressive monitoring of the students performance. The students will be helped in identifying their academic weaknesses and various options for performance improvement through a brainstorming by faculty with students.
- Enhancing the ‘quality of teaching’ by preparing the teachers in effective utilization of modern teaching aids and methodologies through regular pedagogical training programmes offered to teachers. Teachers are to be trained and encouraged to prepare E-learning materials in their respective subjects and effectively utilize them in their class room teaching.
- Modernization and strengthening of existing laboratories for UG/PG programmes by removal of obsolescence in laboratories and workshops
- Refurbishment of infrastructure and establishing new laboratories for existing UG and PG programmes
- Upgradation of Central and Departmental computer centres with newer hardware-configurations and licensed scientific and engineering softwares
- Modernization of Central library by converting into a Digital library
- Guiding the students to do mini and major projects that are relevant to industries
- Through industry-institute interaction, creating opportunity to the students to do real-time industry-sponsored projects

**Plan for improving learning outcomes of the students**

S. No.	Activity	Project Months															
		1-3	4-6	7-9	10-12	13-15	16-18	19-21	22-24	25-27	28-30	31-33	34-36	37-39	40-42	43-45	46-48
1	Modernization of class rooms with smart boards and computer-linked LCDs	X	X	X	X	X	X										
2	Modernization of laboratories	X	X	X	X	X	X		X		X		X		X		X
3	Establishment of new laboratories	X	X	X	X	X	X										
4	Student-centric active learning	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
5	Continuous and transparent evaluation and counseling	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
6	Preparation of simplified learning materials	X	X	X	X	X	X										
7	ICT enabled e-learning	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
8	Hand-on experience through real-time and industry-sponsored projects			X	X	X	X	X	X	X	X	X	X	X	X	X	X



### **2.4.3 IMPLEMENTATION OF AUTONOMOUS STATUS**

Based on the recommendations of the Expert Committee, the UGC has agreed to confer fresh autonomous status to Pondicherry Engineering College under the UGC autonomous colleges' scheme for a period of six years w.e.f. the academic year 2014-2015 to 2019-2020.

The UGC has requested Pondicherry University to issue necessary orders to PEC for grant of autonomous status for a period of six year from the academic year 2014-15.

Though the college is enjoying the academic autonomous status for all PG programmes from 2003 onwards, after getting a nod from UGC the college started academic and examination reforms for UG programmes. After obtaining autonomous status the college had constituted (/ modified the existing committee) the following statutory committees and Dean offices.

#### **2.4.3.1 Statutory Committees :**

The UGC guidelines for Autonomous Colleges specify that the college should constitute the following committees for the proper management of academic, financial and general administrative affairs.

- a. Governing Body
- b. Academic Council
- c. Board of Studies
- d. Finance Committee (Autonomy Grants)

UGC in its regulations for Autonomous status mentioned constitution of the above committees and functions of the above committees.

The Governing Body, which is existing at present had been included with one UGC nominee. The remaining three committees (Financial Committee -Autonomy Grants, Academic Council and Boards of Studies) had been constituted. The following Dean offices had been established to support the smooth functioning of the administration.

1. Dean - Academics
2. Dean - Examinations (Controller of Examinations)
3. Dean - Administration
4. Dean - Students
5. Dean - Research
6. Dean - Projects, consultancy and Industry Interaction
7. Dean - Autonomy and Accreditation

The constitution of the Academic Council, Board of Studies, and Finance Committee (Autonomy Grants) is given below:

#### **Constitution of Academic Council:**

- a. The principal (Chairman).
- b. All above said Deans
- c. All the heads of department in the college.
- d. Four teachers of the college representing different categories of teaching staff by rotation on the basis of seniority of service in the college.
- e. Not less than four experts from outside the college representing such areas as Industry, Commerce, Law, Education, Medicine, Engineering etc., to be nominated by the Governing Body.
- f. Three nominees of the university.
- g. Dean – Academic (member secretary).

#### **Constitution of Board of Studies:**

- a. Head of the department concerned (Chairman).
- b. The entire faculty of each specialization.

- c. Two experts in the subject from outside the college to be nominated by the Academic Council.
- d. One expert to be nominated by the vice-chancellor from a panel of six recommended by the college principal.
- e. One representative from industry/corporate sector/allied area relating to placement.
- f. One postgraduate meritorious alumnus to be nominated by the principal.
- g. One Expert other related branch of study from the college.
- h. One faculty Member – Member Secretary

**Constitution of Finance Committee (Autonomy Grants):**

- a. The Principal (Chairman).
- b. One person to be nominated by the Governing Body of the college for a period of two years.
- c. One senior-most teacher of the college to be nominated in rotation by the principal for two years.
- d. Dean (Administration) – Member Secretary

**ACADEMIC AUTONOMY**

- Academic council and Board of Studies have been constituted and the curriculum has been revised.
- The curriculum existing at present is more student-centric.
- The present curriculum consists of courses which will enable a student to enhance the professional skills and personality.
- The new curriculum will enable a student to carry out final semester project in the industry / research organization.
- It is necessary to study the effect of new curriculum on the students.
- Students should be given a provision to take up sufficient number of inter-department electives, so that one can logically migrate from one area of study to another.
- At present, the number of faculty and number of class rooms exist in each department may not be sufficient to implement more number of electives and in particular, inter-department electives.
- Faculty recruitment and addition of more class rooms need to be taken place.
- The institute has taken initiative to become a technological university

**Plan for implementing autonomous status**

S. No.	Activity	Project Months															
		1-3	4-6	7-9	10-12	13-15	16-18	19-21	22-24	25-27	28-30	31-33	34-36	37-39	40-42	43-45	46-48
<b>Academic autonomy</b>																	
1	Implementation of New curriculum	X	X	X	X	X	X	X	X								
2	Study the performance and tuning the curriculum									X	X						
3	Recruitment of faculty to offer more electives and industry oriented courses								X	X	X	X	X	X			
4	Encouraging the students for selecting more inter-department electives.														X	X	X

#### **2.4.4 ACCREDITATION OF UG AND PG PROGRAMMES**

- All the undergraduate programmes offered by PEC have been accredited by National Board of Accreditation (NBA) thrice.
- Five UG programmes (B.Tech in Civil engineering, Mechanical Engineering, Electronics and Communications Engineering, Computer Science and Engineering and Electrical and Electronics Engineering) have been awarded five years (w.e.f. 8.11.2013) of accreditation by NBA. Three UG programmes (B.Tech in Information Technology, Electronics and Instrumentation Engineering, and Chemical Engineering) have been awarded the status of provisional accreditation for two years (w.e.f. 8.11.2013) by NBA.
- The process of accreditation for all PG programmes is in progress and expected to complete by the end of 2015.
- The process of accreditation of above three UG programmes which got provisional accreditation is in progress and expected to complete by the end of 2015.
- New laboratories need to be established to support all PG programmes and three UG programmes.
- To continue the process of accreditation infrastructure and laboratory facilities have to be upgraded.

#### **2.4.5 IMPLEMENTATION OF ACADEMIC AND NON-ACADEMIC REFORMS**

##### **2.4.5.1 ACADEMIC REFORMS**

- Curricular reforms will be excised with innovative approaches in periodic revision of curricula and syllabi in consultation with industrial requirements for all engineering disciplines at UG and PG levels so as to make outgoing students well-suited for any assignment in the global manpower market
- Performance appraisal of faculty by students will be carried out such that the results of this appraisal could be used to help faculty identify weaknesses and implement remedial actions for improvement of teaching-learning processes
- Evaluation of performance of every student admitted to respective engineering discipline will be carried out continuously subject-wise and subsequently, the results will be published in the shortest period and thus providing opportunities for improvement of student's performance
- Initiatives will be taken up to improve the soft-skill and the competency-level of students for suitable placement in multi-national companies or furthering their education in world-class universities and research organizations.
- Motivation of faculty members will be done to participate in 'Training-the-Trainers' programmes so that they could impart quality education in specialized area
- Improvement in teaching of faculty will be made through performance appraisal of students
- All faculty members will be encouraged through proper incentives to participate in organizing and /or attending continuing education programmes, to offer consultancy services to industries and to take part in both academic and industrial R&D activities
- Proper actions in appropriate time will be taken to get all eligible UG and PG programmes accredited within the specified time-frame in order to publicize and attract quality-students and improve in intake of students in demand-driven specializations

## 2.4.5.2 NON-ACADEMIC REFORMS

At present,

- All financial powers are vested with Head of the Institution
- The Head of the Institution allocates funds to various financial heads like Salary, Infrastructure, Purchase of Equipment and Machineries etc.
- Purchase of equipment and machineries are approved by a Purchase Committee constituted by the Governing Body
- The institute retains and utilizes all the revenue generated including 100% of tuition fees and other charges from the students without adjusting the revenue in non-plan grants
- Pondicherry Engineering College (PEC) which is twenty five years old has autonomy in the matters of administration, staff recruitment and development
- The institute receives plan funds from the UT Government on regular basis towards salaries and development of infrastructure
- The Head of the Institution has discretionary power for the utilization of the grant to special need that deems fit

As a move to non-academic reforms,

- Steps will be taken for filling up of all existing vacancies of faculty and staff within two years
- Steps will also be taken for formation of various committees paving way for participation and governance of all stake-holders
- Delegation of financial powers to all senior institutional functionaries will be provided to help better implementation of the Project and establish a decentralized administrative environment in which every faculty and staff will be made to know their responsibilities and accountabilities
- Initiatives will be taken up to create and operate separate bank accounts for four funds, namely, Corpus Fund, Faculty Development Fund, Equipment Replacement Fund and Maintenance Fund

**Plan for accreditation of UG and PG programmes**

S. No.	Activity	Project Months															
		1-3	4-6	7-9	10-12	13-15	16-18	19-21	22-24	25-27	28-30	31-33	34-36	37-39	40-42	43-45	46-48
1	Upgrading infrastructure facilities	X	X	X	X	X	X										
2	Upgrading laboratory facilities	X	X	X	X	X	X										
3	Filling of faculty and staff vacancies	X	X	X	X	X	X	X	X								
4	Increasing R&D and consultancy	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

**Plan for academic and non-academic reforms**

S. No.	Activity	Project Months															
		1-3	4-6	7-9	10-12	13-15	16-18	19-21	22-24	25-27	28-30	31-33	34-36	37-39	40-42	43-45	46-48
1	Curricular reforms	X	X			X	X			X	X			X	X		
2	Soft skill development of students	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
3	Establishment of four funds (Corpus Fund, Faculty Development Fund, Equipment Replacement Fund and Maintenance Fund)	X	X	X	X												
4	Formation of committees for participating management	X	X														
5	Financial reforms	X	X	X	X												

## 2.4.6 IMPROVING INTERACTION WITH INDUSTRY

The institute has so-called Institute-Industry-Partnership Cell (IIP Cell) for more than a decade with the Principal as chairman, a senior faculty as convenor and few senior faculty as members including Training and Placement Officer. However, this Cell will be renamed as Industry-Institute-Interaction Cell (I-I-I Cell) with active participation of more members from the institute and industry as per the guidelines presented in PIP. The members of I-I-I Cell and activities to be carried out are listed below.

### Industry-Institute-Interaction Cell (I-I-I Cell)

1	Prof. D.Govindarajulu , Principal	Chairman
2	Dr. S. Kothandaraman, HoD (CE)	Member
3	Dr. A. Selvaraju, HoD (ME)	Member
4	Dr. G. Nagarajan, HoD (ECE)	Member
5	Dr. D. Loganathan, HoD (CSE)	Member
6	Dr. (Mrs.). Alamelu Nachiappan, HoD (EEE)	Member
7	Dr. P. Rajmeshbabu, HoD (EIE)	Member
8	Dr. G. Chandrasekar, HoD (Chem.Engg)	Member
9	Dr. S. Saraswathi, HoD (IT)	Member
10	Dr. R. Saravanane, CE	Member
11	Dr. B. Prabu, ME	Member
12	Dr. V. Vijayalakshmi, ECE	Member
13	Dr. Ka. Selvaradjou, CSE	Member
14	Dr. R. Gnanadass, EEE	Member
16	Dr. G. Srinivasan, Chem. Engg.	Member
17	Dr. M. Ezhilarasan, IT	Member
18	Mr. R. Mananathan, MD, MANATEC	Member
19	Mr. C.S. Dwivedi, Vice-President, HCL	Member
20	Dr. F. Sagayaraj Francis, Placement Officer	Member
21	Dr. K. Mahadevan, ME	Coordinator

- Expert lectures by high profile managers, administrators and CEOs for the benefit of students
- Involving industries in curriculum design and curriculum implementation
- Participation of industries in such bodies as the Board of Governors, Academic Council, and Boards of Studies.
- Participation in joint R&D activities
- Establishing laboratories and research facilities within the institutional premises through MOU with industries and R&D organizations



- Involving industries in development of PG education in current and potential areas of demand
- Industrial training for faculty and technical staff in newer technologies and processes
- Training students in industries and exposing students to new technologies
- Providing student-groups to undertake problem-solving projects in industries
- Assistance of industries in improving employability of students in different disciplines through entrepreneurial training, technical skill training and training in soft skills required by industries
- Utilizing institutional resources and expertise for industrial man-power training
- Establishing demand-driven facilities for offering special training in technical skill development, improvement of domain knowledge and soft skill development for industrial personnel

#### **2.4.7 ENHANCEMENT OF RESEARCH AND CONSULTANCY ACTIVITIES**

- A separate “Industrial Consultancy and Research Cell” will be established to promote increased participation of faculty in sponsored research and consultancy
- Consultancy activities will be enhanced with active participation of all qualified faculty to market technical know-how and services of the institution to industries
- Policy will be framed to reward revenue generation to the institute by the faculty through incentives by way of providing assistantship for attending conferences and purchase of literatures
- Steps will be initiated to obtain patents for technical know-how and outcome of research

**Plan for improving interaction with industries, R&D and consultancy**

S. No.	Activity	Project Months															
		1-3	4-6	7-9	10-12	13-15	16-18	19-21	22-24	25-27	28-30	31-33	34-36	37-39	40-42	43-45	46-48
1	Setting up of ICRC	X	X	X	X												
2	Deputation of faculty to industries		X		X		X		X		X		X		X		X
3	Development of industry-driven curriculum		X		X		X		X		X		X		X		X
4	Industry-based projects		X	X			X	X			X	X			X	X	
5	Training of industrial personnel		X		X		X		X		X		X		X		X
6	Marketing know-how					X	X	X	X	X	X	X	X	X	X	X	X
7	Signing MoUs in specialized areas with renowned industries and R&D establishments	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

## **2.5 AN ACTION PLAN FOR IMPROVING THE ACADEMIC PERFORMANCE OF SC / ST / OBC / ACADEMICALLY WEAK STUDENTS**

### **2.5.1 EVALUATION OF REMEDIAL TEACHING-LEARNING PROCESS**

- Weaker students will be divided into smaller groups so that counseling can be done effectively to identify draw-backs for mismatch with so-called stronger students
- With a view to uplift the level of understanding of weaker students, soft skill development classes will be conducted in both open class rooms and language laboratory
- Simplified course materials will be prepared specially for engineering subjects to make the concepts and contents understandable by any weak student
- Remedial coaching classes will be conducted with a highlight on illustrated mechanisms / methods which would be familiar to students
- The weak students will be trained thoroughly and tested on the most frequently asked questions (FAQ) in the respective courses of engineering discipline
- The students will be given every opportunity to improve their performance by conducting weekly / periodical tests and publication of results in a shortest period
- Learning resources such as book banking, web-based e-book access, internet connectivity etc. will be made easily and specially available for the students to improve their analytical, design and technical skills and to instill creative and innovative thinking

### **2.5.2 TRAINING FOR PLACEMENT**

- Job-oriented training programmes will be conducted to make the students fit for software, service and core industries belonging to public and private sectors
- Special coaching classes will also be conducted with an aim to make students participate in national level civil service and engineering service examinations
- Finishing school programmes will be arranged to improve soft skill
- Professional organizations will be involved to offer necessary training / coaching towards improving the employability of weak students

## **2.6 AN ACTION PLAN FOR STRENGTHENING OF PG PROGRAMMES**

### **2.6.1 IMPROVING TEACHING-LEARNING FACILITIES**

- Existing laboratories will be modernized with advanced equipment, machines, devices and softwares
- New laboratories will be established by inducting newer and current state-of-art equipment, machines and devices
- Teaching resources will be upgraded with smart boards and computers linked to LCD projectors with screens
- Learning resources such as web-based e-book access, electronic libraries, advanced internet connectivity etc. will be made available exclusively to all PG students for improving their knowledge and acquire information on current status of advancement in the selected area of interest of any student

## 2.6.2 FINANCIAL SUPPORT AND ENHANCEMENT OF RESEARCH

- Teaching assistantships will be provided to non-GATE qualified students with an aim to attract more and better qualified students for existing PG programmes
- Initiatives will be taken to interact with prospective industries for resource sharing through collaborative projects and research so that PG students could be involved to gain hands-on experience in a real-time working environment
- MoUs will be signed with research institutions and laboratories for developing interest in research for PG students through executing demand-driven research and projects
- Through industry-institute partnership programmes, steps will be initiated to improve enrolment of more candidates sponsored by industries for all PG programmes
- Strengthening of PG programmes will be done by establishing new laboratories, procurement of furniture, upgradation of learning resources and refurbishment of infrastructure

## 2.7 FACULTY DEVELOPMENT PLAN FOR THE FIRST 18 MONTHS

The faculty status in terms of number at present in the institute is 153, which is more than the required number of 151 as per the new AICTE norms. Steps would be initiated to fill up vacancies of already sanctioned faculty positions. The major strength of the institute is highly qualified team of faculty comprising of 125 Ph D holders and 28 Post-Graduates. However, to identify and define the gap between the knowledge that the individual faculty currently possesses and the knowledge that he /she requires to meet on recent trend in specific area of the selected discipline in addition to satisfying the department's and institute's objectives, All faculty members have been made to carry out Training Need Analysis (TNA) so as to draw up a concise faculty development plan.

- Parameters used for exercising TNA by the individual faculty are as follows:
  - Current strategic development plan of the institution
  - Recent SWOT analysis of the institute
  - Seniors' feedback
  - Students' feedback
  - Feedback from previous training programmes
- The TNA report submitted by the individual faculty has been reviewed by respective departmental scrutiny committee headed by concerned HoD to investigate the relevance of the training for the departmental and institutional development plan.
- The outcomes of the TNA, namely, training have been categorized to fit in a particular faculty for improving his / her knowledge/expertise through appropriate training as given below:
  - Training to gain advanced subject knowledge
  - Training to take up advanced R&D activities
  - Training to acquire state-of-art knowledge for laboratory / workshop developments
  - Training towards specialized consultancy
- On the basis of the consolidated report of TNA of faculty from all departments, faculty development plan at institute-level has been drawn
- Steps have been initiated to train the faculty in a phased manner
- As the initial move for training of faculty, the following plan for the first 18 months of the TEQIP project is presented.

Subject of Training	Duration	Number of faculty	Place /Location / Institution	Estimated Cost (Rs.) in Crores
Advanced subject knowledge	15 days	01	Abroad	0.0100
Advanced R&D activity	30 days	14	Abroad	0.1750
Lab. Developments	15 days	15	Within country	0.0375
Training for consultancy	30 days	08	Within country	0.0280

## 2.8 AN ACTION PLAN FOR TRAINING TECHNICAL AND OTHER STAFF IN FUNCTIONAL AREAS

### 2.8.1 TRAINING FOR TECHNICAL AND ADMINISTRATIVE STAFF

- Training Need Analysis (TNA) has been made to exercise by every staff to assess and define the gap between the knowledge, skills and attitudes that the individual staff currently possess, and the knowledge, skills and attitudes that he /she requires to meet the objectives in functional areas.
- Parameters used for exercising TNA by the individuals are:
  - Current strategic development plan of the institution
  - Recent SWOT analysis of the institute
  - Controlling Officers' / Supervisors' feedback
  - Feedback from previous training programmes
- The TNA report submitted by the individual staff has been reviewed by respective section's / department's head to find out the usefulness and effectiveness of such training for the department / section and institutional development plan.
- The outcomes of the TNA, namely, training have been categorized to fit in a particular staff for improving his / her knowledge / expertise through appropriate training as given below:
  - Training for attitudinal and mind-set change
  - Training for operation and maintenance of advanced equipment
  - Training for advance learning in relevant occupational area
  - Training for development of domain skill, communication skill and knowledge
- Training for technical and other staff has been evolved using the above outcomes
- On the basis of the consolidated report of TNA of staff from all departments and sections, the following plan for the first 18 months of the Project is presented.

Staff category	Duration	Number of staff	Place /Location / Institution	Estimated Cost (Rs.) in lacs
Class IV staff	15 days	05	In-house training	0.50
Support staff	30 days	19	In-house training	1.90
Technical staff	15 days	26	In-house training	2.60

## 2.8.2 INSTITUTIONAL MANAGEMENT CAPACITY ENHANCEMENT (IMCE)

The main objectives of this activity are:

- Improving managerial and administrative abilities of Head of institution, Heads of departments, Senior faculties and officials through specially designed training programmes
- Enhancing management capacities of Heads, senior faculties and officials through study tours and visits within the country and abroad for helping the institution to gain increased autonomy and improved efficiencies
- **The IMCE activities will be finalized in concurrence with initiatives taken by NPIU**

## 2.9 THE RELEVANCE AND COHERENCE OF INSTITUTIONAL DEVELOPMENT PROPOSAL WITH STATE'S / INDUSTRIAL / ECONOMIC DEVELOPMENT PLAN

The Union Territory of Puducherry, the erstwhile French settlement, comprises of four scattered enclaves, viz., Puducherry (formerly known as Pondicherry), Karaikal, Yanam and Mahe located along eastern and western coastal belts of south India. This Union Territory interspersed over a total land area of 479 sq. kilometers has a population of nearly one million (974,345 according to the 2001 census) with the density of population being 2034 persons per sq. kilometer. The rural population constitutes 33.43% whereas the urban population accounts for the remaining 66.57% of total population. Agriculture is the most important occupation in this Union Territory, which provides livelihood for majority of the population. Due to competing demand on inelastic land resources by urbanization, industries and other socioeconomic activities, there has been a constant decline in the net area cultivated. Hence, the urban population (accounting 2/3 of the total population) as well as a part of rural population looks for suitable employment on the basis of their educational qualification in companies, industries and factories situated within the Union Territory and neighbouring States. It is obvious that the technical education becomes a vital source for sustaining the livelihood of majority of people.

Further, the Government of Puducherry has projected in its report (*presented during 52<sup>nd</sup> National Development Council meeting held on 09<sup>th</sup> December 2006*) on 11<sup>th</sup> Five year plan that, over the past few years, this Union Territory has come to be recognized as an educational hub with many professional colleges being set up. This is one sector where Puducherry could go from strength to strength. While welcoming more professional colleges, adequate care has to be taken to ensure that the institutions established / being established in Puducherry should function as Centres of Excellence. As addressed in the approach paper during the Eleventh Plan, steps have been taken in a major way to expand and improve the quality of the higher education system.

Thus, on looking at the rapid industrial growth demanding more man power with greater technical skills and capability, the territorial government has brought out initiatives to address looming challenges and strengthen technical education. Upon implementation of TEQIP Project, it is projected that:

- Quality of engineering graduates is enhanced to improve their employability in local industrial establishments besides global job market
- Socio-economic status of society including under-privileged and weaker sections is improved through quality technical education
- Overall capability and competency of technological institution in the Union Territory is enhanced, thereby, raising the per capita income of the Union Territory of Puducherry

## 2.10 BRIEF NOTE ON THE PARTICIPATION OF DEPARTMENTS / FACULTY IN THE PROPOSAL PREPARATION AND IMPLEMENTATION

The proposals for TEQIP project are originally generated by the faculty members in charge of the laboratories / programmes and staff in each of the departments. In fact, an implementation committee at the department-level comprising of sub-committees, such as, academic development committee, infrastructure & resource development committee, procurement committee, financial management committee and planning committee, has been formed by involving all departmental faculty and staff to make the processes of execution of the Project in the institute effective, transparent and more interactive. This implementation committees formed by the departments have vetted their proposals and put up to the college level committees for approval. Preparation of department-level SWOT analysis and consolidation of TNA of faculty and staff have been performed meticulously by the implementation committee members. Every member of the committees realizing his / her responsibility and commitment to the implementation of departmental development plan has indulged in preparation of departmental proposal along with budgetary estimates. The activities taken up and to be carried forward by the development-level committees are listed below to emphasize on the role and contribution of each committee in implementation of the TEQIP Project:

Academic development committee	Improving teaching-learning process, training faculty and staff, TNA etc
Procurement committee	purchase of equipment and devices etc.
Infrastructure development committee	Creation of facilities like virtual class rooms, remodeling working space etc.
Financial management committee	Monitoring the departmental budget for listed activities and maintaining record of expenditure
Planning committee	Justification of academic development, infrastructural development, procurement methodology, consolidation of reports for activities completed, preparation of further plan for implementation of TEQIP project etc

## 2.11 THE INSTITUTIONAL PROJECT IMPLEMENTATION ARRANGEMENTS

The following committees have been formed for implementation of the project.

### 2.11.1 ADVISORY AND COORDINATION COMMITTEE

Dr. D. Govindarajulu, Professor, Civil Engineering
Dr. S. Subramanian, Professor, Chemistry, Dean Administration
Dr. P. Dananjayan, Professor, ECE, Dean Examinations
Dr. S. Sundaramoorthy, Professor, Chemical Engineering, Dean Academic
Dr. K. Vivekanandan, Professor, Computer Science & Engineering, Dean Students
Dr. N. Srinath, Professor, Computer Science & Engineering, Dean Accreditation
Dr. T. Sundararajan, Professor, Civil Engineering, Dean Projects
Dr. R. Himavathy, Professor, EEE, Dean Research

### 2.11.2 FINANCE COMMITTEE

Dr. D. Govindarajulu, Professor, Civil Engineering
Dr. S. Subramanian, Professor, Chemistry, Dean Administration
Dr. P. Dananjayan, Professor, ECE, Dean Examinations
Dr. P. Sankar, Professor, Chemistry, Associate Dean, Administration

### 2.11.3 ACADEMIC COMMITTEE

Dr. S. Sundaramoorthy, Professor, Chemical Engineering (Nodal Officer) Dean Academic
Dr. M. Ezhilarasan, Professor, IT, Associate Dean, Academic
Dr. R. Rajagopan, Associate Professor, Chemistry, Associate Dean, Academic
Dr. N. Alagumurthy, Professor, Mechanical Engineering
Dr. M. Tamilarasi, Professor, Electronics & Communication Engineering
Dr. K. Manivannan, Professor, Electrical & Electronics Engineering
Ms. M. Amirthavalli, Associate Professor, Electronics & Instrumentation Engineering
Dr. S. Kanmani, Professor, Information Technology
Dr. G. Srinivasan, Professor, Chemical Engineering

### 2.11.4 Procurement Committee

Dr. R. Sandanalakshim, Assistant Professor, ECE
Dr. K. Subbarayudu, Professor, Mechanical Engineering
Dr. G. F. Sudha, Professor, Electronics & Communication Engineering
Dr. N. Sreenath, Professor, Computer Science & Engineering
Dr. Alamelu Nachiappan, Professor, Electrical & Electronics Engineering
Dr. P. Rameshbabu, Professor, Electronics & Instrumentation Engineering
Mr. R. Srihar, Assistant Professor, Chemical Engineering
Dr. M. Ezhilarasan, Professor, Information Technology

### 2.11.5 CIVIL WORKS AND ENVIRONMENT MANAGEMENT COMMITTEE

Dr. G. Ramakrishna, Professor, Civil Engineering (Nodal Officer)
Dr. V. L. Narasimha, Professor, Civil Engineering
Dr. K. Palaniradja, Professor, Mechanical Engineering
Dr. L. Nithyanandan, Professor, Electronics & Communication Engineering
Dr. D. Loganathan, Computer Science & Engineering
Dr. R. Gnanadass, Professor, Electrical & Electronics Engineering
Mr. S. Mourougapragash, Associate Professor, Electronics & Instrumentation Engineering
Dr. G. Chandrasekhar, Professor, Chemical Engineering
Dr. P. Bhoobalan, Assistant Professor, Information Technology

### 2.11.6 EQUITY ASSURANCE COMMITTEE

Dr. P. Revathi, Assistant Professor, Civil Engineering
Dr. M. A. Sivasanakaran, Professor, Civil Engineering
Dr. K. Mahadevan, Professor, Mechanical Engineering
Dr. M. Sukumaran, Professor, Computer Science & Engineering
Dr. B. Ramireddy, Professor, Electrical & Electronics Engineering
Mr. R. Sundaramurthy, Assistant Professor, Electronics & Instrumentation Engineering
Ms. T. Pallavhee, Assistant Professor, Chemical Engineering
Mr. V. Govindaswami, Assistant Professor, Information Technology



## 2.12 INSTITUTIONAL PROJECT BUDGET

**Table – 29: INSTITUTIONAL PROJECT BUDGET FOR SUB-COMPONENT 1.1 (RUPEES IN LAKHS)**

S. No.	Activities	Project life allocation	Project financial year						
			2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17
1	Infrastructure improvements for teaching, training and learning through								
	(i) Modernization and strengthening of laboratories	240.00	-	-	67.45	5.54	249.16	242.49	-
	(ii) Establishment of new laboratories for existing UG and PG programmes	111.67	-	-	-	-	-		
	(iii) Modernization of class rooms	33.33	-	-	-	-	-		
	(iv) Updation of learning resources	16.67	-	-	-	-	-		
	(v) Procurement of furniture	28.33	-	-	-	-	8.39		
	(vi) Establishment/Upgradation of central and departmental computer centres	44.17	-	-	-	-	-		
	(vii) Modernization/Improvements of supporting departments	82.50	-	-	-	-	-		
	(viii) Modernization and strengthening of libraries and increasing access to knowledge resources	33.33	-	-	-	-	9.55		
	(ix) Refurbishment (Minor civil works)	16.67	-	-	9.75	-	14.34		
2	Providing teaching and research assistantship to increase enrolment in existing PG programmes in Engineering disciplines	87.50	-	-	16.76	31.55	7.22	19.18	12.79
3	Enhancement of R&D and institutional consultancy activities	16.67	-	-	-	-	-	10.00	6.67
4	Faculty and staff development for improved competence based on TNA	75.00	-	-	10.41	26.46	5.75	19.43	12.95
5	Enhanced interaction with industry	33.33	-	-	-	0.14	0.17	10.26	6.84
6	Institutional Management Capacity Enhancement	22.50	-	-	-	5.14	2.07	9.17	6.12
7	Implementation of institutional reforms	16.67	-	-	17.00	2.10	13.48	0.00	0.00
8	Academic support for weak students under the aegis of finishing school	25.00	-	-	0.50	3.07	-	12.86	8.57
9	Technical assistance for procurement and academic activities	16.67	-	-	-	-	-	10.00	6.67
10	Incremental Operating Cost	100.00	-	-	1.75	3.06	4.60	54.35	36.24
<b>TOTAL</b>		<b>1000.00</b>		-	<b>123.62</b>	<b>77.06</b>	<b>314.73</b>	<b>387.75</b>	<b>96.84</b>

## 2.13 THE TARGETS AGAINST THE DELIVERABLES

**Table – 30: PROJECT TARGETS FOR INSTITUTION UNDER SUB-COMPONENT 1.1**

S. No.	Deliverables	Baseline (2009-10)	Targets to be achieved	
			At the end of 2 <sup>nd</sup> Year	By project closing
1	Number of students registered for (a) Masters in engineering programme (b) Doctoral program in engineering	152 (173 <sup>#</sup> ) 118	173 150	228 350
2	Revenue from externally funded R&D projects and consultancies in total revenues (Rs. In lacs)	56.35	80.0	100.00
3	Number of publications in refereed journals (a) National (b) International	14 185	20 200	75 275
4.	IRG as percentage of total annual recurring expenditure	20.17%	25%	30%
5	Number of co-authored publications in refereed journals (a) National (b) International	14 185	20 200	25 225
6	Students credentials (a) Campus placement rate of • UG students • PG students (b) Average salary of placement package for (Rs. In lacs) • UG students • PG students	57.55% 5.88%  3.14 3.14	65% 30%  3.45 3.60	75% 60%  4.0 4.5
7	Number of collaborative programmes with industry	02	05	09
8	Accreditation status	01 UG	08 UG (100%)	08 UG (100%) 08 PG (100%)
9	Vacancy position for faculty (Total)	25 /182	18	0
10	Number of regular faculty having a Master degree or a doctoral degree in engineering disciplines	PG - 56 Ph D - 78	PG - 49 Ph D - 90	PG - 47 Ph D - 115
11	Transit rate from 1 <sup>st</sup> and 2 <sup>nd</sup> year for the following • All students • SC & ST students • OBC students • Women students	57.33% 19.75% 62.54% 71.18%	70% 60% 75% 80%	85% 75% 85% 90%
12	Autonomy status	--	Yes	Yes
13	Enrollment of faculty with only Bachelor degree for qualification upgradation*	Nil	Nil	Nil
14	Any other academic deliverables			
(i)	Conducting national and international conferences	3	5	10
(ii)	Training for other college faculty	2	5	10
(iii)	Student conferences / workshops	2	6	8

\* - All are Master Degree holders and No faculty having bachelor degree in enrolled

# - Sanctioned strength of PG students

## **2.14 THE ACTION PLAN TO ENSURE THAT THE PROJECT ACTIVITIES WOULD BE SUSTAINED AFTER THE END OF THE PROJECT**

### **2.14.1 Plan for Utilization of Block Grant**

- The institute retains and utilizes all the revenue generated including 100% of tuition fees and other charges from the students without adjusting the revenue in non-plan grants
- The institute receives partial 'Block Grant' from the Government of Puducherry to meet recurring expenditure like Salary etc.
- The Head of the Institution has discretionary power for the utilization of the grant to special needs that deems fit.
- The concept of Block Grant funding for non-recurring expenditure is yet to be adopted by the Government of Puducherry.
- Once the full Block Grant funding is implemented the funds will be used effectively for developing new infrastructure and laboratory facilities in different departments of the college.

### **2.14.2 Initiative for Non-Tuition Revenue**

- The institute is located in the capital city of Puducherry Union Territory, Puducherry, surrounded by industrial estates and software parks.
- This strategic location provides adequate possibilities to increase the Internal Revenue Generation (IRG) through consultancy, sponsored projects, short-term courses and training programmes for industrial personnel, orientation programmes for both governmental and non-governmental executives / employees.
- With the new equipment and facilities acquired with the TEQIP funding, the industrial interaction in terms of testing and consultancy services is expected to increase substantially.

**2.15 PROCUREMENT PLAN FOR THE FIRST 18 MONTHS FOR GOODS / CIVIL WORKS IN TABLE – 31 AND CONSULTANCY SERVICES INCLUDING PEDAGOGICAL TRAINING IN TABLE – 32 WITH BUDGET AND TIME FRAME**

**Table – 31: 18 MONTHS PROCUREMENT PLAN FOR WORKS / GOODS FOR SUB-COMPONENT 1.1**

Sl.No.	Name of the Department	Estimated cost (Rs. in lakhs)	Estimated cost for 18 months (Rs. in lakhs)	Method of procurement	Design/specification finalization (date)	Estimate sanctioned (date and value)	Preparation of bid document (date)	Receipt of banks no objection to bidding document(date)	Bids		Contract Award (date/value)	Date of completion of contract
									Invitation (date)	Opening (date)		
1	2	3	4	5	6	7	8	9	10	11	12	13
1	Civil Engineering	54.44	38.10	Shopping / NCB	One month from the receipt of grant	one and half months from the receipt of grant	Two months from the receipt of grant	---	Three months from the receipt of grant	Four months from the receipt of grant	Four and half months from the receipt of grant	Eighteen months from the receipt of grant
2	Mechanical Engineering	61.44	43.00									
3	Electronics and Communication Engineering	55.00	38.50									
4	Computer Science and Engineering	71.00	49.70									
5	Computer Applications	40.00	28.00									
6	Information Technology	54.00	37.80									
7	Electrical and Electronics Engineering	56.00	39.20									
8	Electronics and Instrumentation Engineering	54.00	37.80									
9	Chemical Engineering	40.00	28.00									
10	Mathematics	6.00	4.20									
11	Physics	19.00	13.3									
12	Chemistry	18.00	12.6									
13	Humanities and Social Sciences	6.00	4.20									
14	Library and Administration	20.00	14.00									
<b>Total</b>		<b>554.88</b>	<b>388.40</b>									

**Table – 32: 18 MONTHS PROCUREMENT PLAN FOR CONSULTANCY SERVICES FOR SUB-COMPONENT 1.1**

Sl. No.	Description of Services	Estimated Cost (Rs. In lacs)	Methods of Selection	TOR Finalization (Date)	Advertisement (Date)	RFP final draft to be forwarded to the Bank (Date)	No Objection from Bank for RFP (Date)	RIP 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
1.	Pedagogical Training	20	CQ	One month from the receipt of grant	One and half months from the receipt of grant	-----	-----	-----	Three months from the receipt of grant	Four months from the receipt of grant	-----	20 lacs and five months from the receipt of grant	18 months from the receipt of grant
2.	Technical Skill Training	12	CQ	One month from the receipt of grant	One and half months from the receipt of grant	-----	-----	-----	Three months from the receipt of grant	Four months from the receipt of grant	-----	12 lacs and five months from the receipt of grant	18 months from the receipt of grant
3.	Office Administration Training	06	CQ	One month from the receipt of grant	One and half months from the receipt of grant	-----	-----	-----	Three months from the receipt of grant	Four months from the receipt of grant	-----	06 lacs and five months from the receipt of grant	18 months from the receipt of grant

## 2.16 THE INFORMATION RELATED TO SPECIAL ACADEMIC ACHIEVEMENTS OF THE INSTITUTION

### 2.16.1 Academic Achievements through Research and Guidance (Last five years)

- Profound knowledge of faculty members with doctoral degree has helped in producing **48 Ph Ds** in all disciplines
- Well qualified team of faculty and staff members have rendered their services to turn out **498 M Tech and 126 MCA** Graduates
- Faculty members indulging in research and elucidation have exhibited their inquisitive spirit and talent through publications comprising **558** articles in journals, **992** papers in conferences and **28** technical books
- Expertise and proficiency of faculty members have currently brought in **28 on-going research projects** to the tune of **INR. 1.28 crores**.
- Quality of education imparted to the students besides career guidance and counseling yielded a record of **80% placement** of students (at an average) through in-campus and off-campus recruitment programmes.

### 2.16.2 Achievements through MoUs

- MoU is established with The University of Arkansas at Little Rocks (UALR), Little Rock, Arkansas, USA, to promote educational and cultural co-operation in the areas of education, research and other activities
- Academic and Research interaction has been initiated between Ecole Supérieure d'Ingenieurs de Poitiers (ESIP), Poitiers, France and Pondicherry Engineering College (PEC), Puducherry, India.
- The College is in the process of entering into a MoU with University of Auburn, USA. The field of interest is Wireless Communication
- MoU has been firmed up with Honeywell Technology Solutions Pvt. Ltd., Bangalore to undertake joint research projects in the area of Process Systems Engineering by the Department of Chemical Engineering
- A Letter of Understanding has been signed with M/s. Freescale Semiconductor India Pvt. Ltd., Bangalore, for setting up an Embedded Systems Laboratory in the Department of Electronics and Communication Engineering
- A proposal for entering into a MoU with Centre for Development of Advanced Computing (C-DAC), Chennai for setting up of Linux Resource Training Centre at the Centre for Continuing Education for the U.T. of Puducherry has been firmed up
- MoU is established with Oracle University to impart "Work Force Development Programme" in which faculty members are trained in specific area of core engineering including data base application
- A state-of-art language laboratory has been set up for improving communication skill of the students. Japanese, French and Chinese are the additional languages included.
- Finishing school programme has also been initiated