

**TECHNICAL EDUCATION QUALITY IMPROVEMENT PROGRAM - PHASE-II**

**Of**

**Govt. of India**

**REVISED INSTITUTIONAL DEVELOPMENT PROPOSAL**

**For 2016**

**Sub-Component 1.2:**

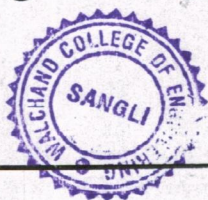
**Scaling-up Post Graduate Education and Demand-Driven R&D&I**



**Submitted by**



**Walchand College of Engineering, Sangli**

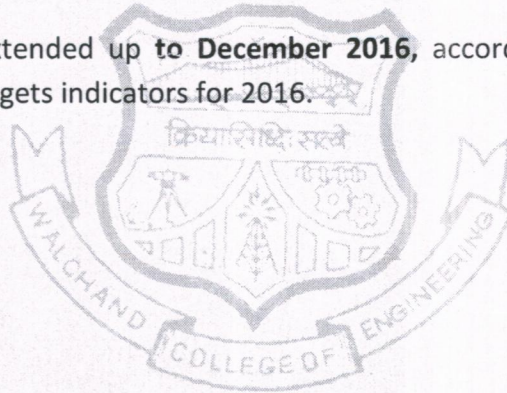




## PREAMBLE

Walchand College of Engineering Sangli, Autonomous Institute was selected for TEQIP-II under Sub Component 1.2. Since its implementation institute got accreditation by NBA. Institute had spent allocated amount of Rs. 8.50 Crores on the various parameters mentioned in the IDP as per the PIP document. Since the project implementation, 4 cycles of Performance Audit & Data Audi were completed. Internal Finance Audit, Statutory Audit have been completed up to 2013-14. Institute has met all the 12 performance indicators and was termed as **best performing institute** in the recent 4<sup>th</sup> JRM meeting held in December 2014. All the eligible UG and PG programme has been accredited/ applied for accreditation. The institute has completed all the till dated data inputs into the MIS. Procurement plan has also been executed. Completion and implementation of good governance development plan. The faculty members and students have filed 6 patents during the period of TEQIP-II.

As the project has been extended up to **December 2016**, accordingly institute is submitting the revised IDP with updated targets indicators for 2016.





## VISION, MISSION, OBJECTIVES and QUALITY POLICY

### VISION:

To produce capable graduate engineers with an aptitude for research and leadership

### MISSION:

- To impart quality education through demanding academic programs.
- To enhance career opportunities for students through exposure to industry.
- To promote excellence by encouraging creativity, critical thinking and discipline.
- To inculcate sensitivity toward society and a respect for the environment.

### OBJECTIVES:

- Achieve excellence in learning and research through continual improvement in both content and delivery of the academic programs.
- Promote close interaction among industry, faculty and students to enrich the learning process and enhance career opportunities for students.
- Develop state-of-the-art laboratories and other infrastructure commensurate with the need of delivering quality education and research services.
- Strengthen the Institution through network of alumni and optimize use of resources by leveraging inter-departmental capabilities.
- Provide opportunities and ensure regular skill up-gradation of faculty and staff through structured training programs.

### QUALITY POLICY:

To strive for excellence in academic and research programs in order to achieve proficiency in students by adopting continually improving standards to the learning process.





# 1. INSTITUTIONAL BASIC INFORMATION

## 1.1 Institutional Identity

- Name of the Institution : Walchand College of Engineering Sangli, 416415
- Is the institution AICTE approved? : Yes
- Furnish AICTE approval no. : 1. F No.740-89-284 (E) RC/95 dt May 2,2008  
2. 2A/ADG/ADM/2010/2310 dt 29<sup>th</sup> July 2010 from DTE, Mumbai
- Type of Institution : Private, partly Govt. aided, Autonomous
- Status of Institution : Autonomous Institute
- Names of Head of Institution and Project Nodal Officers

Head & Nodal Officer	Name	Phone Number	Mobile Number	Fax Number	E-mail Address
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Project Nodal Officers for:					
Procurement	Mr. S.G. Tamhankar	0233-2303410	9822345672	0233-2300831	<a href="mailto:teqip.procurement@gmail.com">teqip.procurement@gmail.com</a> <a href="mailto:teqip.procurement@walchandsangli.ac.in">teqip.procurement@walchandsangli.ac.in</a>
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Monitoring & Evaluation	Dr. G.R. Munavalli	0233-2300383	9421128158	0233-2300831	<a href="mailto:deanrdqa@walchandsangli.ac.in">deanrdqa@walchandsangli.ac.in</a>
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Equity Assurance	Mr. A. A. Powar	0233-2300831	9890648882	0233-2300831	<a href="mailto:Anil.powar@walchandsangli.ac.in">Anil.powar@walchandsangli.ac.in</a>





## 1.2 Academic Information

- Engineering Programmes offered in Academic year 2014-15

Sr. No	Title of Programme	Level (UG, PG, PhD)	Duration (Years)	Year of starting	AICTE Sanctioned Annual Intake	Total Student strength
1.	B. Tech. Civil	UG	4	1947	60	281
2.	B. Tech Mechanical	UG	4	1955	60	288
3.	B. Tech. Electrical	UG	4	1951	60	291
4.	B. Tech. Electronics	UG	4	1986	60	286
5.	B. Tech. Computer Science and Engineering	UG	4	1986	90	432
6.	B. Tech. Information Technology	UG	4	2001	60	285
7.	M. Tech. Civil – Environmental	PG	2	1995	18	34
8.	M. Tech. Civil – Structures	PG	2	1971	30	49
9.	M. Tech. Mechanical – Heat and Power	PG	2	1971	18	37
10.	M. Tech. Mechanical – Design	PG	2	1971	30	60
11.	M. Tech. Mechanical- Production	PG	2	1995	30	48
12.	M. Tech. Electrical – Power systems	PG	2	1971	18	36
13.	M. Tech. Electrical- Control systems	PG	2	1971	18	37
14.	M. Tech. Electronics	PG	2	1986	30	60
15.	M. Tech. Computer Science and Engineering	PG	2	1997	30	59
16.	M. Tech. Computer Science and Engineering (Spl.in IT)	PG	2	2012	18	36

- Accreditation Status of UG Programmes:

Title of UG Programmes being offered	Whether eligible for accreditation or not	Whether accredited as on 30 <sup>th</sup> April 2015	Whether "Applied for" as on 30 <sup>th</sup> April 2015
B. Tech. Civil	Yes	No	Yes
B. Tech Mechanical	Yes	No	Yes
B. Tech. Electrical	Yes	No	Yes
B. Tech. Electronics	Yes	No	Yes
B. Tech. Computer Science and Engineering	Yes	Yes	--
B. Tech. Information Technology	Yes	No	Yes





• Accreditation Status of PG Programmes:

Title of PG Programmes being offered	Whether eligible for accreditation or not	Whether accredited as on 30 <sup>th</sup> April 2015	Whether "Applied for" as on 30 <sup>th</sup> April 2015
M. Tech. Civil – Environmental	Yes	Yes	--
M. Tech. Civil – Structures	Yes	No	Yes
M. Tech. Mechanical – Heat and Power	Yes	No	Yes
M. Tech. Mechanical – Design	Yes	No	Yes
M. Tech. Mechanical- Production	Yes	Yes	--
M. Tech. Electrical – Power systems	Yes	No	Yes
M. Tech. Electrical- Control systems	Yes	No	Yes
M. Tech. Electronics	Yes	No	Yes
M. Tech. Computer Science and Engineering	Yes	Yes	--
M. Tech. Computer Science and Engineering (Spel. In IT)	Yes	No	Yes

1.3 Faculty Status (Regular/On-Contract Faculty as on 30<sup>th</sup> April, 2015)

Faculty Rank	No. of Sanctioned Regular Post	Present Status : Number in Position by Highest Qualification												Total Number of regular faculty in Position	Total Vacancies	Total Number of contract faculty in Position
		Doctoral Degree				Masters Degree				Bachelor Degree						
		Engg. Discipline		Other Discipline		Engg. Discipline		Other Discipline		Engg. Discipline		Other Discipline				
		R	C	R	C	R	C	R	C	R	C	R	C			
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15= (3+5+7+9+11+13)	16= (2-15)	17= (4+6+8+10+12+14)
Prof	14	11	2	-	-	-	1	-	-	-	-	-	-	11	3	3
Asso Prof	27	10	-	-	-	5	3	-	-	-	-	-	-	15	12	3
Asst Prof	68	4	-	2	-	39	21	6	3	2	-	-	-	53	15	24
Lect	-	--	-	-	-	-	-	-	-	-	15	-	-	--	--	15
Total	109	25	2	2	0	44	25	6	3	2	15	0	0	79	30	45

Prof = Professor, Asso Prof = Associate Professor, Asst Prof = Assistant Professor, Lec=Lecturer, R=Regular, C=Contract





## 1.4 Baseline Data as on 2014-15

S. No.	Parameters	
1	Total strength of students in all programmes and all years of study in the year 2014-15	2319
2	Total women students in all programmes and all years of study in the year 2014-15	790
3	Total SC students in all programmes and all years of study in the year 2014-15	274
4	Total ST students in all programmes and all years of study in the year 2014-15	81
5	Total OBC students in all programmes and all years of study in the year 2014-15	459
6	Number of fully functional P-4 and above level computers available for students in the year 2014-15	150
7	Total number of syllabus Text books and Reference books available in library for UG & PG students in the year 2014-15	35326
8	% of UG students placed through campus interviews in the year 2014-15	86.61%
9	% of PG students placed through campus interviews in the year 2014-15	57.82
10	% of High quality undergraduates (>75% marks) in the year 2013-4	18.32%
11	% of High quality post graduates (>75% marks) in the year 2014-15	37.78%
12	Number of research publications in Indian refereed Journals in the year 2014-15	Nil
13	Number of research publications in International refereed Journals in the year 2014-15	26
14	Number of Patents obtained in the year 2014-15	Nil
15	Number of Patents filed in the year 2014-15	1
16	Number of sponsored research projects completed in the year 2014-15	40
17	The transition rate of students in percentage from 1 <sup>st</sup> year to 2 <sup>nd</sup> year in the year 2013-14 for :	
	(i) all students	83.90%
	(ii) SC	68.75%
	(iii) ST	25.00%
	(iv) OBC	91.35%
18	IRG from students fee and other charges in the year 2014-15 (Rs. in lacs)	131.82
19	IRG from commercialization of R & D products, consultancy & other sources in the year 2014-15 (Rs. in lacs)	16.02
20	Total IRG in the year 2014-15 (Rs. in lacs)	147.84
21	Total recurring expenditure in the year 2014-15 (Rs. in lacs)	2279.81
22	Number of Joint publications with National authors in the year 2014-15	---
23	Number of Joint publications with International authors in the year 2014-15	2
24	Number of R & D products commercialized in the year 2014-15	Nil
25	Number of Joint M.Tech programmes with institutions undertaken in the year 2014-15	Nil
26	Number of joint M.Tech programmes with Industry undertaken in the year 2014-15	Nil
27	Number of joint Ph. D with institutions undertaken in the year 2014-15	1
28	Number of Joint Ph. D. with Industry undertaken in the year 2014-15	Nil
29	Number of Joint consultancies undertaken with Institutions in the year 2014-15	Nil
30	Number of Joint consultancies undertaken with Industry in the year 2014-15	285





## 2. INSTITUTIONAL DEVELOPMENT PROPOSAL (IDP)

### 2.1 Executive summary

Walchand College of Engineering (WCE), Sangli, with a track record of 65 years of UG and 35 years of PG education and now having become autonomous, is now looking for further strengthening and reformation of PG programs to bring these at par with national and International level. With strong Industrial liaison, state-of-the-art Library and adequate research guides, the Institute is ready to establish as a strong research centre for scaling up doctoral programs and enhance research output. In implementation of TEQIP-II till 2014, WCE has an appreciable record of 12 out of 12 KPIs. This achievement is a testimony to WCE's capability and determination to accept greater challenges associated with making the institute as one of the best.

Table 2.1.1 Proposed Financial expenditures for 2015-16 and 2016-17 are given below.

Sr. No	Activities	Project life Allocation (Rs Lakhs)	Expenditure till 31 <sup>st</sup> march 2015 (Rs Lakhs)	Project Financial year (Rs Lakhs)	
				2015-16	2016-17
1	Infrastructure for teaching, training and learning	562.5	489.75	72.75	--
2.	Providing assistantships for PG and Doctoral Prog.	205.0	96.77	54.12	54.11
3.	Enhancement of R & D Consultancy activities	62.5	22.46	35.03	5.00
4.	Faculty and staff development based on TNA	125.0	93.72	25.02	6.25
5.	Enhanced interaction with Industry	62.5	30.71	25.43	6.35
6.	Institutional Management capacity enhancement	37.5	22.56	11.95	2.98
7.	Implementation of Institutional reforms	45.0	25.79	15.36	3.84
8.	Academic support for weak students	25.0	21.58	02.73	0.68
9.	Incremental Operating cost	125.0	25.60	79.52	19.88
	TOTAL	1250.00	828.98	321.93	99.13

With the advantage of readily available built-up space & infrastructure supported by TEQIP-II funding, PG Intake in the year 2014-15 has been increased from 126 to 240, which includes students of newly started PG program in M.Tech. CSE (IT) with intake 18.





## Strategic plan

This institute looks at continuing its journey towards excellence in imparting quality technical education and to emerge as a strong PG and PhD research centre at the National level and International level. Following are the Institute's strategies in achieving this objective:

- Invest in upgrading and expanding PG infrastructure.
- Provide quality training to teachers in line with advancement of technology.
- Promote sharing of infrastructure between Industry and Institute.
- Revitalize the teaching profession to attract and retain good quality teachers.
- Encourage working professionals for improving their qualification.
- Produce industry ready UG, PG qualified candidates.
- Promote contribution of industry and research organizations in curriculum design and its delivery.
- Provide skill up gradation and qualification improvement to the existing employees of the institute.
- Attract quality faculty by providing incentives.
- Encourage foreign Universities participation in bilateral mode for organizing need based programs.
- Invite management and alumni to contribute to executing Institute's master plan of campus development.
- Support local Industries by providing consultancy services, cost effective solutions, energy auditing for Municipal Corporation, testing for quality assurance of building materials and survey of environment pollution such as Noise, Water, Air etc.

### The principal challenges for implementation of the strategic plan

- The institute's PG departments are facing deficiency of exclusive faculty. A large number of faculty appointed for UG section are required to handle additional responsibilities in PG teaching.
- All the ten ongoing PG programs approved by AICTE are running on self supporting basis. The PG Fee structure cannot support recruiting all faculty & Non-teaching Supporting staff on regular pay scale basis.





- **Summary of SWOT analysis**

**Strengths:**

1. 67 years of excellent standing, including 34 years of imparting quality technical education at PG and doctoral research.
2. Proven capability of implementing TEQIP – II, performance rated at 12 out of 12 KPIs (by Dec. 2014).
3. Achieved extension of Autonomous status from UGC till the period of 2019-2020
4. Visionary leadership of Administrative Council (BOG).
5. Good Governance practices in place.
6. Well qualified and dedicated faculty with aptitude for research.
7. All the UG & PG programs with NBA Status as “Applied or accredited for Three years.
8. Admissions of meritorious students at UG and PG level.
9. State of art library facilities for supporting research activities.
10. Availability of land and space for growth - 90 acres of green campus.
11. Established strong liaison with industries.
12. Network of successful Alumni spread across the world.
13. Recognized as QIP Ph.D. Research center.

**Weaknesses**

1. Inadequate exclusive PG faculty as per AICTE guidelines
2. All PG programs are not financially supported by AICTE.
3. Shortage of Technical staff for PG.
4. Block grant not implemented.

**Opportunities**

1. Demand for new PG programs and specializations.
2. Continuing education programs for practicing engineers.
3. Potential for collaboration with reputed foreign universities.
4. Attract best Indian and overseas students.
5. Rising demand from industry for consultancy and testing
6. Phase wise development of the institute as per the Campus Master plan.
7. Faculty and staff development through exposure to world class academic and research institutions

**Threats**

1. High Rate of obsolescence in the hi-tech areas.
2. Financial constraints for upkeep of old infrastructure.
3. Potential competition from overseas institutions coming to India.





- **Linkages of Key activities with SWOT Analysis.**

**Activates Based on strengths:**

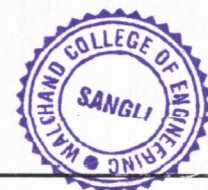
- Revamp PG and doctoral programs to make these industry-relevant by involving industry experts in curricula development and delivery.
- Become a research centre of National repute by building on existing research resources, industry linkages and creating network with IITs, national laboratories and similar institutions.
- Set up state-of-the-art labs in software testing and network engineering domain using in-house and external expertise.
- Involve alumni in promotion of brand WCE, resource raising and development of campus and laboratories.
- Enhance consultancy and testing revenue.

**Activities Based on Opportunities:**

- To strengthen and expand PG programs and raise their quality by leveraging autonomy and collaborating with global institutions.
- To establish entrepreneurship development cell and technology incubation centre.
- To establish state-of-the-art testing and calibration facilities.
- To offer Engineers Development Programs and other short courses.
- To generate intellectual property and generate resources.

**Activities Based on Weaknesses:**

- Inadequacy of exclusive teachers for PG programs will be overcome by recruiting faculty as per the need.
- Unskilled technical staff required for maintenance and operation of PG laboratories will be trained in technical and managerial skills.
- In spite of having a liaison with the Industries/ Institutes, further attempts will be made to strongly collaborate with well known Industries/ Institutes for need based research and consultancy through MoU's.
- By attracting more PG and Ph.D. research scholars in the program, their services can be used for teaching assistance ship. This will help to meet the gap between available and required faculty.
- Research sponsored project will help Industry - Institute interaction and would lead to innovative research work; part of which can be taken up for commercialization.
- Given high rate of obsolescence and emerging new technologies, faculty and support staff will be provided with required training.





### **Activities Based on Threats:**

- Attempts will be made to optimize use of lab and IT resources.
- Greater reliance on open source technology will be effected.
- Use of IT tools, programs, simulation platforms will be entrusted to faculty, staff, students.
- Tie-ups with foreign institutions for improving quality of programs will be effected.
- Phase-wise development of the campus as per the Master Plan will be under taken.

### **Significant Key activities proposed**

The key activities are proposed as under, based on the SWOT analysis.

- Creating awareness through periodic updating on web, brochure and circulars for new program.
- Providing meritorious and needy students with financial support for PG / PhD programs.
- Inviting Industry participation for curriculum design.
- Upgrading Lab Facilities by procurement of additional equipments in line with program requirements.
- Organizing joint short term program / workshop in association with industries under institute – interaction cell.
- Undertaking sponsored research projects from industries for PG programs.
- Procurement of state of art equipments for establishing centre of national importance, for getting recognition from organizations like NABL.
- Involving PG and research students in teaching assistance ship and industrial consultancies.
- Deputing faculty for Faculty up-gradation program at institutes and laboratories of national repute.
- Instituting an award for creating innovative concepts/ ideas.
- Evolving prospective entrepreneurs to maximize usage of the incubation facility.
- Undertaking more of consultancy / testing activities leading to increase in IRG.



## 2.3 Specific objectives and expected results of proposal in terms of, “Scaling-up post graduate education and demand-driven R&D&I”

### Objectives

- To restructure and strengthen the existing PG program in terms of students' enrollment.
- To start new demand driven programs and its courses.
- To improve expertise of faculty.
- To strengthen the existing industry liaison in terms of sponsored research projects and students employability.
- To institute industry institute interaction cell to provide industry – academia liaison for mutual benefit.
- To build expertise to apply research outcomes for betterment of human life.
- To emerge as an institute of national importance in PG and doctoral research.
- To produce research work of patentable nature.
- To produce PG and PhD qualified faculty/ researchers with leadership qualities.
- To stay ahead in imparting quality technical education at UG/PG/PhD level.
- To set up incubation facilities for promotion of entrepreneurship activities.
- To mobilize resource generation for making self sustaining activities in longer run.
- To carry out education and research activities to uplift regional and local community needs by creating awareness and ready to use technologies.
- To provide cost effective solutions at different levels of expected quality.
- To emerge as an institute of effective training providers to the trainer.

### Outcomes (Expected results)

- 20% increase in PG student enrollment
- 25% increase in research publications.
- Setting up of incubation centre.
- Setting up Industry Institute Interaction cell.
- Bringing-in additional ten reputed industry / organizations under the preview of industry institute interaction cell.
- Producing four patents thorough research work.
- Completion of Eight PhD scholars in a span of two years.
- Completion of 450 M.Tech scholars in a span of Two years.
- Providing 25 Man-days of training over two years for each faculty in technical courses as per the “Training Need Analysis”.
- Providing 15 Man-days of training over Two years for each senior faculty for developing management capacities.
- Providing 15 Man-days of training over two years for each technical staff member for technical skill up gradation.



- Providing 30 Man-days of training to each non-technical staff for effective institutional administration.
- Organization of 20 short term programs in four years for community education on various need based programs.
- Organizing three National conferences / Workshops in emerging areas.
- Organizing twenty special talks of eminent persons / industrialists / Scientists/ Academicians.

## 2.4 Action Plan for scaling-up enrollment into Master's and Doctoral Programs

### Strengthening of existing programs.

- It is proposed to:
  - ❖ Invite foreign Institutes for curricular reformation.
  - ❖ Propose need based additional few PG certification programs to make PG student more industry ready.
  - ❖ Initiate Faculty/ student exchange program for short duration.
  - ❖ Start Joint research work with foreign universities.
- It is ensured that for scaling-up enrolment in the Master's and Doctoral Programs the eligible existing UG teachers are willing to teach and guide at PG program. Institute has reappointed few retired faculty at PG. Adjunct faculty appointments are proposed at UG and PG level. It is expected that with the scaling-up enrolment of the Master's and Doctoral Programs, at least total of 20% additional teaching assistants (TA) and research assistants (RA) would be available, under the supervision of existing senior existing faculty, to undertake teaching load at UG. With this arrangement, it is expected that, both UG and PG will be strengthened. It is believed that, with the association of RA and TA at UG level, research interest among UG students will further increase.
- Proposal will have provision for sending outstanding candidates enrolled for PhD, in select cases, to be sent abroad for completion of their research in a better way for a period of three months.
- The proposal ensures that PG faculty will also be given an opportunity to visit research organizations abroad to make them competent with other researchers. It is believed that the interactions of PG student, PG faculty of this institute with other foreign institutes will bring collaborative research culture to this institute. The PG faculty will have better interactions with other research organizations to explore taking research to benefit on real life problems.





**Table 2.4.1 : Key activities for scaling up of PG education and demand driven RDI**

Sr. No	Key Activities	Project Year	
		2015-16	2016-17
1.	Creating awareness through periodic updating on web, brochure, circulars for new program	Yes	Yes
2.	Providing meritorious and needy students with financial support for ongoing and new PG / PhD programs	Yes	Yes
3.	Inviting Industry participation for curriculum design.	Yes	Yes
4.	Upgrading Lab. facilities by procurement of additional equipments in line with program requirements.	Yes	Yes
5.	Organizing joint short term program / workshop in association with industries under institute – interaction cell.	Yes	Yes
6.	Undertaking sponsored research projects from industries for PG Programs	Yes	Yes
7.	Deputing faculty for Faculty up- gradation program at institutes and laboratories of national repute	Yes	Yes

## 2.5 Action Plan for improving collaboration with industries

It is proposed to improve collaboration with industry in following ways

- Walchand – IBM hub will be set up to cater the required need of local Industry.
- Strengthen the existing tie-ups with Kirloskar Brothers Ltd., Pune for PG sponsorships, for providing training to industries and to conduct the bridge course for students to make them industry ready in specific area of turbo machinery.
- Strengthen other MoUs with TCS, Infosys, IBM Software Centre for Excellence, Oracle, Geometric (3DPLM) Software, Sugar industries etc.
- New MOU's will be signed with industries for internship & sponsored PG & UG projects.
- Efforts on elevating the present status of the UG/PG/Ph. D. programs
- Joint B. Tech./M. Tech./Research projects
- Qualification improvement of Industrial personnel
- Consultancy and testing at college
- Establishment of advanced and high tech labs with joint efforts
- Curriculum developmen





This will increase the industry institute interaction and joint research opportunity for industry and faculty.

The following table describes the action plan for improving collaboration with Industry in the areas of research, commercialization of innovation and Consultancy and joint PG programs.

**Table 2.5.1 : Key activities for improving collaboration with industry**

S. No	Key Activities	Project year	
		2015-16	2016-17
1	Improving collaboration with Industry in the areas of research projects	Yes	Yes
2	Commercialization of innovation and Consultancy projects	Yes	Yes
3	Joint PG / Ph.D. programs	Yes	Yes





**2.6 Action Plan for (1) quantitatively increasing and qualitatively improving research by their faculty individually, jointly and collaboratively, (2) developing research Interest among undergraduate students, and (3) Collaborations with academia (National and international)**

**1. Quantitatively increasing and qualitatively improving research by their faculty individually, jointly and collaboratively,**

- Providing opportunity to faculty to carry out joint research work at Institute of National/ International repute. Faculty will be deputed for 3 months in such institutes. Alternatively, Inviting Industrial experts and faculty of National – International Institute to work as a co-guide.
- Research promotion through institute funding
- Deputing faculty to national and international conferences
- Expenses reimbursement and incentives to faculty for publications and patents, industrial visits,
- Conducting expert lectures on research methodology from various industry and academia professionals.
- Giving scholarships and incentives to students and faculty carrying out the research
- Organizing conferences, seminars and workshops

**2. Developing research interest among undergraduate students**

- Nationwide talent search activities. Students will participate in such activities to demonstrate skills and innovative ideas.
- Institute award to motivate students for innovative projects.
- To create interest in UG students through lectures, discussions on “*how to carry out research?*”, “*what constitutes research?*” etc.
- Motivation to faculty members to visit and discuss with faculty from IITs and understand the methodology of developing research interest
- Strengthening the courses/Curricula to cover fundamentals in the respective subject areas
- Giving students open ended problems during the course work and giving appropriate credit for the same.





3. Collaborations with Indian (IITs, NITs, NPL, NCL, BARC, CDAC, CEERI etc.) and foreign institutions in academic and research area through MoUs have been initiated. Selected few under consideration will focus on Faculty exchange, Joint research guidance, Credit transfer etc. and not for award of degrees from foreign university

- To motivate the faculty and students to help achieve the targets during the project period, following incentives are proposed for faculty and students.

• **Table 2.6.1 : Incentives proposed for faculty and students for research**

Sr. No.	Activity	Incentive in Rs. Thousand
1.	Publication by faculty in Refereed National Journal	5
2.	Publication by faculty in Refereed international Journal	10
3.	Filing of patent by faculty	50
4.	Book publication with reputed publisher	25
5.	R&D project, consultancies from various funding agencies for funding of More	10
6.	National level Training programs ( Seminars, Workshops, CEPs etc) coordinated	5
7.	National Conference Convenor	10
8.	International Conference Convenor	25
9.	Publication by student in Refereed international conference	5
10.	Publication by student in Refereed national/International Journal	10
11.	Filing of patent by student	50
12.	Award to the best UG students research project	10
13.	Joint Research Projects by faculty to partner institutes	5





- **Activity Plan**

- **Table 2.6.2 : Activity plan for improvement in research and innovation**

Sr. No.	Activity	2015-16	2016-17
1.	Publication by faculty in Refereed National Journal	10	15
2.	Publication by faculty in Refereed international Journal	8	10
3.	Filing of patent by faculty	1	1
4.	Book publication with reputed publisher	1	1
5.	R&D project, consultancies from various funding agencies for funding of More than Rs. 5.0 Lakhs	10	12
6.	National level Training programs ( Seminars, Workshops, CEPs etc) coordinated	5	7
7.	National Conferences	1	1
8.	International Conferences	1	1
9.	Publication by student in Refereed international conference	2	2
10.	Publication by student in Refereed national/International Journal	2	2
11.	Filing of patent by student	1	1
12.	Award to the best UG students research project	2	2
13.	Joint Research Projects by faculty to partner institutes	2	2

**Table 2.6.3 : Action plan for quantitatively increasing and qualitatively improving research by their faculty individually, jointly and collaboratively.**

Sr. No.	Key Activities	Project Year	
		2015-16	2016-17
1.	Secure Industry and Government sponsored projects	2	2
2.	publications in refereed Journals	2	2
3.	Collaborating with Indian and foreign	1	1





## 2.7 Faculty Development Plan

Based on following information, training schedule for individual faculty has been prepared.

- Institution's Strategic Development Plan;
- Institution's (recent) SWOT analysis;
- Previous years' Development/Training plans;
- Seniors' and/or Peers' feedback;
- Students' feedback;
- Feedback on previously attended training programs;
- Individual's professional aspirations;
- Teaching in Research areas given importance under the Project.

Based on following four areas detailed training schedule for faculty has been prepared.

- Basic and advanced pedagogy
- Subject / domain knowledge enhancement
- Attendance in activities such as workshops, seminars
- Improvement in faculty qualifications
- Improving research capabilities via collaboration.

### Faculty Development Plan extract (For 124 Faculty members including contractual)

For the year 2015-16 & 2016-17

Table 2.7.1 : Faculty development plan

Sr. No.	Activity	Total Man weeks
1.	Basic and advanced pedagogy training for all faculty	150
2.	Subject/Domain knowledge (International)	20
3.	Subject/Domain knowledge (National)	125
4.	Attendance In International conferences	20
5.	Attending National conferences	40
6.	International workshops and seminars	10
7.	International study tour for policy planners and institute	5
8.	Short term training programs in R&D and academic institutes	20
9.	Management capacity development	20
10.	Soft skill development	20





## 2.8 Action Plan for training technical and other staff in functional areas for the year 2015-16 & 2016-17

Based on following information, training schedule for supporting staff has been prepared.

- Institution's Strategic Development Plan;
- Institution's (recent) SWOT analysis;
- Previous years' Development/Training plans;
- Seniors' and/or Peers' feedback;
- Feedback on previously attended training programs;
- Individual's professional aspirations;

Based on following areas training schedule for technical supporting staff has been prepared.

- Basic and advanced training needs
- Subject / domain knowledge enhancement
- Attendance in activities such as workshops, seminars

### Supporting staff (Non technical/Clerical) Number of staff - 27

Table 2.8.1 : Supporting staff development plan (Nontechnical/Clerical)

Sr.	Activity	Man weeks
1.	Financial Accounting	10
2.	MIS usage/Office software training	10
3.	Work culture training	25
4.	Administrative capacity building	25
5.	Soft skill	10
6.	Health care	10
	Total	90





### Technical non teaching staff (No of staff – 50)

Table 2.8.2: Staff development plan (Technical non teaching staff)

Sr. No.	Activity	Man weeks
1.	Subject specific training	40
2.	Soft skill development	25
3.	Work culture and mind set change	20
4.	Health care training	5
	Total	90

### Non - Technical non teaching staff (No of staff – 59)

Table 2.8.3 : Staff development plan (Non-technical non teaching staff)

Sr. No.	Activity	Man weeks
1.	Mindset improvement and work culture training	20
2.	Training on health care	10
3.	Soft skills	5
4.	Computer Usage	20
	Total	55



## 2.9 Relevance and coherence of Institutional Development Proposal with State's/National Industrial / Economic Development Plan

The proposal has been critically worked out by keeping in view the state government's policy and national policy on improving higher and technical education. The proposal has been also based on recommendations of National Knowledge Corporation. The salient features of coherence are as under.

- Inviting foreign Institute / Universities.
- Flexible higher study program
- Distance education program
- Commercializing research

The objective of the proposal focuses on catering to the requirement of the region to benefit the region.

This college is one of the oldest institutes in the state catering to the needs of southern Maharashtra in the areas of qualified manpower development (B. Tech., M. Tech and Ph. D. programs) in Engineering (Admissions are open for all Maharashtra students), It is also a composite institute running Degree and Diploma and catering to the needs of technical manpower requirement at different levels. The college also receives grants for community development through polytechnic from MHRD and is catering to the needs of rural and local population.

To strengthen the above through this project and the proposed activities are

- Improvement of industrial consultancy to Local and Sugar Industries
- Manpower training for local industries
- Environmental monitoring
- Testing and consultancy services
- Awareness camp for farmers/rural population on use of technology
- Development and spreading the use of appropriate rural technologies
- Providing town planning services using GIS.RS
- Active participation in development of Sangli-Miraj-Kupwad as a model eco-city project





## 2.10 Participation of departments / faculty in the proposal preparation and implementation

- All the stake holders (BOG, Faculty, staff, Alumni, students) were apprised regarding objectives and outcome for implementation of TEQIP- Phase II in an open meetings with stake holders.
- During regular meetings of HODs, Deans, OSDs, proposed development plan was discussed with reference to project objectives, admissible and non-admissible expenditures, etc.
- SWOT analysis was carried out through inputs from all stake holders namely Director, HODs, Faculty members, Supporting staff, students, Alumni and industries.
- TNA was carried out for faculty and staff. Inputs taken from HODs, Director and BOG
- Based on SWOT analysis of individual and department. Department plan is tuned to the objectives of the Institute. Accordingly, infrastructural requirement in department and training needs are determined.
- Through brain storming sessions, action plan has been refined through more than 25 meetings in the past six months with Faculty, students and functionaries.

## 2.11 Institutional Project implementation arrangements

The TEQIP implementation unit has been created. Units created for the project implementation are as under -

**Academic Unit –** Dean (Academics)- Coordinator

All HODs members

**Procurement Unit –** Deputy Director – Coordinator

Workshop superintendent

One faculty member incharge Central Stores

Store Keeper

**Administrative Reforms –** Director,

Deputy Director- Coordinator,

OSD (general),

OSD (Legal) and HODs Members





**Financial Management Unit – Director**

OSD (Finance)

Internal Auditor Accounts Officer One senior Clerk

**Quality Assurance and Monitoring (Monitoring and evaluation)-**

Dean (Research, Development and Quality assurance) All members of R & D and Quality assurance cell

**Student Committees –**

OSD (Students welfare) Coordinator

Three students from each class (a Total of 27 UG 9 PG classes)

**Methodology (Indicative):**

- To cater to the needs of the end user, bottom up approach won be focused more than to top down approach
- More involvement of young faculty / contributes for execution of project plan under the supervisor of senior faculty /advisor

**Preparedness:**

- All the units are functional and are aware of the TEQIP phase II framework
- Refurbishment work to accommodate the proposed laboratories is in progress. The amount of Rs. 42 Lakhs (2009-10) and Rs. 35 Lakhs (2010-11) is approved by the Finance Committee and BOG for getting ready to implement the TEQIP Phase II.





2.12 INSTITUTIONAL BUDGET:

(Cost in Rs. Lakhs)

Table 2.12.1 : INSTITUTIONAL BUDGET

S. No	Activities	Project Life Allocation	Project Financial year	
			2015-16	2016-17
1	Infrastructure improvements for teaching, training and learning facilities	562.5	72.75	--
	Establishment of new laboratories for new and existing PG programs			
	Updation of learning resources and Modernization and strengthening of libraries and access to knowledge resources			
	Procurement of furniture			
	Refurbishment ( Minor Civil Works)			
2.	Providing assistantships for significantly increasing enrolment in existing and new Master's and Doctoral programs in Engineering Disciplines.	205.0	54.12	54.11
3.	Enhancement of Research and Development and Institutional Consultancy activities	62.5	35.03	5.00
4.	Faculty and staff development for improved competence based on TNA	125.0	25.02	6.25
5.	Enhanced interaction with Industry	62.5	25.43	6.35
6.	Institutional Management capacity enhancement	37.5	11.95	2.98
7.	Implementation of Institutional reforms	45.0	15.36	3.84
8.	Academic support for weak students	25.0	2.73	0.68
9.	Incremental Operating cost	125.0	79.52	19.88
	<b>TOTAL</b>	1250.00	321.93	99.13





## 2.13 (a) Targets against the deliverables

**Table 2.13.1 : INSTITUTIONAL PROJECT TARGETS**

Sr No.	Deliverables	Baseline 2014-15	Revised target	
			At the end of 2 years	By project closing
1	Number of students registered for a. Masters in Engineering Program b. Doctoral program in Engineering	240	240	240
2	Revenue from externally funded R&D projects and consultancies in total revenue ( Rs. In Lakh)	40.00	80.00	80.00
3	Number of a. Research publication in refereed • National Journals • International Journals b. Citations c. Patents obtained/ filed d. Books e. No of R&D projects commercialized	40 10 1 -----	50 15 1 -----	50 15 1 -----
4	IRG as % of total recurring expenditure	5%	5%	5%
5	Number of co-authored publications in refereed journals a. National b. International	40	50	50
6	Students credentials a. Campus placement rate of • UG Students • PG students b. Average salary of placement package for (Rs. In lakh) • UG Students • PG students	88% 22% 3.25/- 3.50/-	95% 40% 4.0/- 4.0/-	95% 40% 4.0/- 4.0/-
7	Number of collaborative programs with Industry	Nil	2.	2
8	Accreditation status	66%	80%	80%
9.	Vacancy position for faculty and staff Teaching Non Teaching	40% 45%	30% 40%	30% 40%





10.	Percentage position for faculty and staff Teaching Non Teaching	60%	70%	70%
11	Any other ( maximum three)			
i.	Ph. D. qualification of faculty	30	40	40
ii.	Foriegn University Collaborations	Nil	1	1
iii.	Web based MIS implementation in entire college	Nil	Y	Y

**(b) Plan for achievement of the targets**

**Table 2.13.2 : Plan for achievement of the project targets enumerated**

Sr. No	Key Activities	2015-16	2016-17
1	Students registered for PG and Doctoral program	PG 240, PhD 10	PG 240, PhD 10
2	Revenue from externally funded R&D projects and consultancies and Research publication	60 Lakhs	60 Lakhs
3	Number of collaborative programs with Industry	01	01
4	Accreditation	80%	80%
5	Faculty and staff Recruitment	Faculty 70%	Faculty 70%
6	Ph. D. qualification of faculty	38	38
7	Web based MIS implementation in entire college	Y	Y





## 2.14 Action plan to ensure sustenance of the Project activities after the end of the Project

During the project period, revenue through IRG would be strengthened by various activities such as:

- Consultancy and testing
- Commercialization of research
- Conducting training programs
- Fees Collection.

The accumulated revenue over a period of two years next will be enough to run the activities on self sustaining basis, after the closure of the TEQIP –II project period.

Since the activities have been based on strengths and opportunities, it is believed that the running of the activities will not experience any difficulties

## 2.15 Information related to specific academic achievements of the institution

Following are the salient academic achievements of the institution in past 3 years.

- . Relative grading system implemented successfully
- . Revamping of curriculum carried out in consultation with a few US academic experts
- . MoU signed with other institutes for academic credit transfers
- . Received QIP Ph D research center
- . Received extension of autonomy from UGC up to 2019-20.

## 2.16 Equity action plan

Equity action plan: All faculty members, non-teaching staff from all cadres, students from all categories will be given equal opportunity of development.

To improve on providing coaching to students following measures are being taken and a few new have been proposed.

- Students are categorized based on previous academic performance in Physics and Mathematics at First year level, based on the categorization, to *strengthen their understanding*, special coaching classes will be conducted



- *English Proficiency* tests will be conducted at the beginning of FY. (Immediately after the admissions), Classification of students in three categories with Low/Medium/High scores in the tests, training to be provided to them according to their category.
- Students would be categorized based on their aptitudes. 4 weeks' program spread over the semester will focus on need based training of categorized students to bring them at par with industry expectations.
- The organization of the program is as follows – For first year students  
Counseling as per individual's needs- English Proficiency and strengthening of basics of Physics and Mathematics  
For second year and above
  - (a) Based on academic performance coaching for respective classes in groups.
  - (b) Providing training to students to improve their soft skills.
  - (c) Proposing a compulsory audit course at pre-final UG and PG level for providing training to make them Industry ready.

For others in general

- TNA on periodical basis will be carried out.
- All teachers will be provided training on pedagogy on periodical basis.
- Schedule for monitoring progress on training will be worked out.
- To strengthen the existing 'Sexual Harassment Committee' to provide right justice to all female on campus.
- To organize yearly seminars for promoting sharing of infrastructural facilities between project and non project institutes.
- To organize yearly workshops for promoting sharing of infrastructural facilities between institute and other organizations





**Table 2.17.1 : Equity action activity plan**

Activity	Organized by	2015-16	2016-17
Certificate course in Soft Skill development for students	Students Associations	Semester Breaks	
Training on Health awareness for students	NSS coordinators	Week ends and Holidays of National Importance	
Pedagogical training for faculty and Staff	Dean, Faculty	Summer / Winter Vacation	
Health Awareness Camp for Women on Campus	Ladies hostel Rector	During Semester I and II	
Work shop on Recent trends in Research	Dean, R&D	Sept 2015	Sept 2016
Providing Extra coaching to weak students	Dean, Academics	Mid Semester Break & In between end semester Examination and Reexamination	
Providing on floor Industrial Training to Faculty and students	TPO	Summer and Winter vacations	
Training on floor project management	BOG	End of every semester	
Organising National level conference for appraising the development of knowledge sharing	Departmental Head	NOV. 2015	NOV. 2015
To publish a periodicals / news letter to constantly update on quality improvement activities	Librarian and Magazine committee	Yes	Yes
To organize study tours to understand the functionality of institutes of National and International repute	Dean, Academics	Yes	Yes
Finishing schools	All departments	Yes	Yes
Communication skill development program	English Department	Yes	Yes
Program on Business strategy and economic development	Humanity department	Yes	Yes



## 2.18 Environment and Disclosure Management Framework (EMF and DMF)

### a. Environmental Management Framework

Institute proposes to maintain environment friendly activities by focusing on following points in the organization of various activities

- Rain water harvesting
- Promotion of green building concept
- Plantation of medicinal plants
- Promotion of usage of Non conventional energy sources.
- Solid waste management including E-waste management
- Promotion of use of disposable and recyclable items.
- Adhering to energy audit norms.
- Campus cleanliness and beautification.

### b. Disclosure Management Framework

Institute proposes to ensure accountability and transparency in project implementation and its achievements by strictly adhering to detailed guidelines provided by NPIU / SPFU.

It is proposed to focus on following:

- Through continuous updates on college website, the progress of implementation of TEQIP II will be made available to public.
- All data and reports in format will be submitted quarterly or as and when needed, to SPFU/ NPFU.
- A procurement details, audit reports will be made available to all relevant stake holders.





## 2.19 Additional Demand Budget Allocation:

The Institute requires additional 5.00 crores. (Excluding 12.5 crores) for implementing the various activities during extended period of the project. Activity wise budget allocation is given below:

**Table 2.19.1 Details of Additional Fund for Extended Project Period**

Sr. No	Activities	Project Life Allocation (in lakhs )	Expenditure till 31 <sup>st</sup> March 2015 (in lakhs )	Expected Additional fund for extended project (in lakhs )
1	Infrastructure for teaching, training and learning	562.5	489.75	100.00
2.	Providing assistantships for PG and Doctoral Prog.	205.0	96.77	100.00
3.	Enhancement of R & D Consultancy activities	62.5	22.46	25.00
4.	Faculty and staff development based on TNA	125.0	93.72	75.00
5.	Enhanced interaction with Industry	62.5	30.71	50.00
6.	Institutional Management capacity enhancement	37.5	22.56	50.00
7.	Implementation of Intuitional reforms	45.0	25.79	75.00
8.	Academic support for weak students	25.0	21.58	25.00
9.	Incremental Operating cost	125.0	25.60	15.00
	<b>TOTAL</b>	<b>1250.00</b>	<b>828.98</b>	<b>515.00</b>





## Summary

The initial project allocation of Rs. 12.50 crores sanctioned to Walchand College of Engineering, Rs. 10.50 crores has been received to date. The amount spent to date within the project is about Rs 9.00 crores. The rest of the sanctioned funds of Rs. 3.5 crores will be spent as per the proposed financial expenditure as given in table 2.1.1.

Table 2.19.1 shows the additional fund allocation planned for the extended period of the project. With the visionary leadership of the BOG and the motivated faculty and staff, Walchand College of Engineering intends to continue its journey towards excellence in upgrading the demand driven research and post graduate education with the help of the additional funds sought in this revised IDP.

  
TEQIP-II Coordinator



  
Director 28/5/15