INSTITUTIONAL DEVELOPMENT PROPOSAL

(REVISED)

Sub-Component 1.2:

Scaling-up Postgraduate Education

and

Demand-driven Research, Development & Innovation

TECHNICAL EDUCATION QUALITY IMPROVEMENT

PROGRAMME (TEQIP) (PHASE-II)

UNIVERSITY COLLEGE OF ENGINEERING

(Autonomous)

OSMANIA UNIVERSITY, HYDERABAD – 500 007

TELANGANA STATE
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</table>
1. INSTITUTIONAL BASIC INFORMATION

1.1 Institutional Identity

- **Name of the Institution**: University College of Engineering, Osmania University, Hyderabad
- **Is the Institution AICTE approved**: Yes
- **Furnish AICTE approval No.**: F.No. South-Central/1-2451035008/2015/EOA, Dated: 07.04.2015.
- **Type of Institution**: Govt. funded /University Constituent College
- **Status of Institution**: Autonomous Institute as declared by UGC, New Delhi & University

- **Names of Heads of Institution and Project Nodal Officers**

<table>
<thead>
<tr>
<th>Heads and Nodal Officers</th>
<th>Names</th>
<th>Phone Numbers</th>
<th>Mobile Numbers</th>
<th>Fax Numbers</th>
<th>E-mail Addresses</th>
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<tr>
<td>Head of the Institution</td>
<td>Prof. S. Ramachandram</td>
<td>27098254</td>
<td>9491382932</td>
<td>27095179</td>
<td><a href="mailto:schandram@gmail.com">schandram@gmail.com</a></td>
</tr>
<tr>
<td>TEQIP Coordinator</td>
<td>Prof. S. Ramachandram</td>
<td>27095757</td>
<td>9491382932</td>
<td>27095179</td>
<td><a href="mailto:schandram@osmania.ac.in">schandram@osmania.ac.in</a></td>
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**Project Nodal Officers for:**

- **Academic Activities**: Dr. M. Gopal Naik, 27095125, 9490685098, 27095179, ngnaike@gmail.com
- **Procurement**: Dr. E. Vidya Sagar, 27682328, 9985256268, 27095179, vidyasagar@osmania.ac.in
- **Financial Aspects**: Dr. K. Shyamala, 27682343, 9490219882, 27095179, prkshyamala@yahoo.com
- **Equity Assurance Plan Implementation**: Dr. A. Krishnaiah, 27097346, 9440834065, 27072427, kris_arakanti@yahoo.com

1.2 Academic Information

**Engineering programmes offered in Academic Year 2014-15**

<table>
<thead>
<tr>
<th>S. No</th>
<th>Title of programmes</th>
<th>Level (UG, PG, Ph.D)</th>
<th>Duration (Years)</th>
<th>Year of starting</th>
<th>AICTE sanctioned annual intake</th>
<th>Total student strength</th>
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<td>Civil Engineering</td>
<td>UG</td>
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<td>1929</td>
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<td>1939</td>
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<td>S. No</td>
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<td>PG</td>
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<td>1961</td>
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<td>2</td>
<td>Transportation Engg.</td>
<td>PG</td>
<td>2</td>
<td>2008</td>
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<td>2</td>
<td>Construction Engg. &amp; Mgmt.</td>
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<td>PG</td>
<td>2</td>
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Ph.D. Programme
- Number of Full-Time Students (Including Foreign Students) enrolled: 11
- Number of Part-Time (External) Students enrolled: 262
- Number of In-house Students enrolled: 15

Total Number of Ph.D. Students enrolled: 288

Accreditation Status of UG Programmes

<table>
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<tr>
<th>Title of UG programmes being offered</th>
<th>Whether eligible for accreditation or not?</th>
<th>Whether accredited as on 31st March 2010?</th>
<th>Whether “Applied for” as on 31st March 2010?</th>
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<td>NAAC Accredited*</td>
<td>All UG Programmes are accredited by NBA</td>
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</tr>
<tr>
<td>Electronics &amp; Comm. Engg.</td>
<td>Eligible</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mechanical Engg.</td>
<td>Eligible</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Accreditation Status of PG Programmes

<table>
<thead>
<tr>
<th>Title of PG programmes being offered</th>
<th>Whether eligible for accreditation or not?</th>
<th>Whether accredited as on 31st March 2010?</th>
<th>Whether “Applied/Obtained for” as on 31st March 2015?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Structural Engg.</td>
<td>Eligible</td>
<td>NAAC Accredited*</td>
<td>Obtained</td>
</tr>
<tr>
<td>Water Resource Engg.</td>
<td>Eligible</td>
<td></td>
<td>Obtained</td>
</tr>
<tr>
<td>Computer Science &amp; Engg.</td>
<td>Eligible</td>
<td></td>
<td>Obtained</td>
</tr>
<tr>
<td>Industrial Drives &amp; Control</td>
<td>Eligible</td>
<td></td>
<td>Obtained</td>
</tr>
<tr>
<td>Power Systems</td>
<td>Eligible</td>
<td></td>
<td>Obtained</td>
</tr>
<tr>
<td>Digital Systems Engineering</td>
<td>Eligible</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Microwave &amp; Radar Engg.</td>
<td>Eligible</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Systems &amp; Signal Processing</td>
<td>Eligible</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Production Engineering</td>
<td>Eligible</td>
<td></td>
<td>Obtained</td>
</tr>
<tr>
<td>Turbomachinery</td>
<td>Eligible</td>
<td></td>
<td>Obtained</td>
</tr>
</tbody>
</table>

* The University is NAAC Accredited by 5 Star in the year 2001 and subsequently Reaccredited by NAAC with A Grade in the year 2008. The college was also accredited by NBA in the year 1997 and obtained reaccreditation for NBA in the year 2013.
### Faculty Status (Regular/On-Contract Faculty as on March 31st, 2010)

<table>
<thead>
<tr>
<th>Faculty Rank</th>
<th>No. of Sanctioned Regular Posts</th>
<th>Present Status: Number in Position</th>
<th>Doctoral Degree</th>
<th>Master Degree</th>
<th>Bachelor Degree</th>
<th>Total Number of regular faculty in Position</th>
<th>Total Vacancies</th>
<th>Total Number of Contract Faculty in Position</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prof</td>
<td>26</td>
<td>R C R C R C R C R C R C R C</td>
<td>15</td>
<td>16</td>
<td>17</td>
<td>(3+5+7+9+11+13)</td>
<td>-</td>
<td>(2-15)</td>
</tr>
<tr>
<td>Assoc Prof</td>
<td>48</td>
<td>19 - 10 - - - - - - - - - -</td>
<td>29</td>
<td>-3</td>
<td>-</td>
<td></td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Asst Prof</td>
<td>74</td>
<td>04 - 10 - - - - - - - - - -</td>
<td>33</td>
<td>15</td>
<td>-</td>
<td></td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Lecturer</td>
<td>-</td>
<td>- - - - - - - - - - - - - -</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td></td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Total</td>
<td>148</td>
<td>36 - 13 - 54 15 1 7 3 9 - 1</td>
<td>107</td>
<td>41</td>
<td>32</td>
<td></td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

### Faculty Status (Regular/On-Contract Faculty as on March 31st, 2015)

<table>
<thead>
<tr>
<th>Faculty Rank</th>
<th>No. of Sanctioned Regular Posts</th>
<th>Present Status: Number in Position</th>
<th>Doctoral Degree</th>
<th>Master Degree</th>
<th>Bachelor Degree</th>
<th>Total Number of regular faculty in Position</th>
<th>Total Vacancies</th>
<th>Total Number of Contract Faculty in Position</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prof</td>
<td>26</td>
<td>R C R C R C R C R C R C R C</td>
<td>15</td>
<td>16</td>
<td>17</td>
<td>(3+5+7+9+11+13)</td>
<td>-</td>
<td>(2-15)</td>
</tr>
<tr>
<td>Assoc Prof</td>
<td>48</td>
<td>10 - 2 - 10 - - - - - - - - - - 2</td>
<td>21</td>
<td>05</td>
<td>-</td>
<td></td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Asst Prof</td>
<td>74</td>
<td>15 - 3 - 41 - 2 - - - - - - - - - 2</td>
<td>22</td>
<td>26</td>
<td>-</td>
<td></td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Lecturer</td>
<td>-</td>
<td>- - - - - - - - - - - - - - - -</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td></td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Total</td>
<td>148</td>
<td>44 - 07 - 51 18 2 10 - - - - - 2</td>
<td>104</td>
<td>44</td>
<td>40</td>
<td></td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>
### 1.4 Baseline Data (all data given for the following parameters must be restricted to engineering disciplines/fields only)

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Parameters for the academic year</th>
<th>2009-10</th>
<th>2014-15</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Total strength of students in all programmes and all years of study</td>
<td>2011*</td>
<td>2108*</td>
</tr>
<tr>
<td>2</td>
<td>Total women students in all programmes and all years of study</td>
<td>988</td>
<td>1021</td>
</tr>
<tr>
<td>3</td>
<td>Total SC students in all programmes and all years of study</td>
<td>311</td>
<td>324</td>
</tr>
<tr>
<td>4</td>
<td>Total ST students in all programmes and all years of study</td>
<td>142</td>
<td>157</td>
</tr>
<tr>
<td>5</td>
<td>Total OBC students in all programmes and all years of study</td>
<td>580</td>
<td>602</td>
</tr>
<tr>
<td>6</td>
<td>Number of fully functional P-4 and above level computers available for students</td>
<td>1000</td>
<td>1200</td>
</tr>
<tr>
<td>7</td>
<td>Total number of text books and reference books available in library for UG and PG students</td>
<td>88757</td>
<td>96329</td>
</tr>
<tr>
<td>8</td>
<td>% of UG students placed through campus interviews</td>
<td>75.00</td>
<td>76.90</td>
</tr>
<tr>
<td>9</td>
<td>% of PG students placed through campus interviews</td>
<td>35.00</td>
<td>33.00</td>
</tr>
<tr>
<td>10</td>
<td>% of high quality under Graduates (&gt;75% marks)</td>
<td>45.13</td>
<td>49.00</td>
</tr>
<tr>
<td>11</td>
<td>% of high quality postgraduates (&gt;75% marks)</td>
<td>22.66</td>
<td>43.4</td>
</tr>
<tr>
<td>12</td>
<td>Number of research publications in Indian refereed journals</td>
<td>14</td>
<td>42</td>
</tr>
<tr>
<td>13</td>
<td>Number of research publications in International refereed journals</td>
<td>44</td>
<td>114</td>
</tr>
<tr>
<td>14</td>
<td>Number of patents obtained</td>
<td>Nil</td>
<td>03</td>
</tr>
<tr>
<td>15</td>
<td>Number of patents filed</td>
<td>01</td>
<td>--</td>
</tr>
<tr>
<td>16</td>
<td>Number of sponsored research projects completed</td>
<td>05</td>
<td>03</td>
</tr>
<tr>
<td>17</td>
<td>The transition rate of students in percentage from 1st year to 2nd year</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(ii)</td>
<td>For all students</td>
<td>94.10</td>
<td>85.12</td>
</tr>
<tr>
<td>(iii)</td>
<td>SC</td>
<td>97.18</td>
<td>71.74</td>
</tr>
<tr>
<td>(iv)</td>
<td>ST</td>
<td>100.00</td>
<td>76.19</td>
</tr>
<tr>
<td>(v)</td>
<td>OBC</td>
<td>97.93</td>
<td>90.67</td>
</tr>
<tr>
<td>18</td>
<td>IRG from students fee and other charges (Rs. In lakh)</td>
<td>548.92</td>
<td>643.9</td>
</tr>
<tr>
<td>19</td>
<td>IRG from externally funded R&amp;D projects, Consultancies (Rs. In lakh)</td>
<td>235.50</td>
<td>466.57</td>
</tr>
<tr>
<td>20</td>
<td>Total IRG (Rs. In lakh)</td>
<td>784.42</td>
<td>1114.89</td>
</tr>
<tr>
<td>21</td>
<td>Total annual recurring expenditure of the applicant entity (Rs. In lakh)</td>
<td>389.74</td>
<td>868.8</td>
</tr>
<tr>
<td>22</td>
<td>Number of Joint publications with National authors</td>
<td>14</td>
<td>42</td>
</tr>
<tr>
<td>23</td>
<td>Number of Joint publications with International authors</td>
<td>07</td>
<td>114</td>
</tr>
<tr>
<td>24</td>
<td>Number of R&amp;D products commercialized</td>
<td>17</td>
<td>18</td>
</tr>
<tr>
<td>25</td>
<td>Number of joint MTech programmes with institutions undertaken</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>26</td>
<td>Number of joint MTech programmes with Industry undertaken</td>
<td>02</td>
<td>03</td>
</tr>
<tr>
<td>27</td>
<td>Number of joint PhD with institutions undertaken</td>
<td>4</td>
<td>24</td>
</tr>
<tr>
<td>28</td>
<td>Number of joint PhD with Industry undertaken</td>
<td>6</td>
<td>20</td>
</tr>
<tr>
<td>29</td>
<td>Number of joint consultancies undertaken with institutions</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>30</td>
<td>Number of joint consultancies undertaken with Industry</td>
<td>7</td>
<td>2</td>
</tr>
</tbody>
</table>

* - Excluding Part-time and Joint PG programmes
## 1.5 Table-33 (Benchmarks for Institutions to Qualify for Sub-component-1.2)

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Attainment Parameters</th>
<th>Benchmark values</th>
<th>Institution’s response (Yes/No) as on 31.3.2010</th>
<th>Institution’s response (Yes/No) as on 31.3.2015</th>
</tr>
</thead>
</table>
| 1.     | Does the institution agree to implement all academic and non-academic reforms given as below:  
• Implementation of curricular reforms  
• Exercise of autonomous powers  
• Establishment of Corpus Fund, Faculty Development Fund, Equipment Replacement Fund and Maintenance Fund  
• Generation, retention and utilization of revenue generated through variety of activities  
• Institutions to fill-up all existing teaching and staff vacancies  
• Delegation of decision making powers to senior functionaries with accountability  
• Improve student performance evaluation  
• Improvement performance appraisal of faculty by students  
• Provide faculty incentive for Continuing Education (CE), consultancy and R&D  
• Obtaining accreditation | Yes | Yes | Yes |
| 2.     | Availability of academic autonomy as recognized by UGC for both UG and PG programmes | Yes | Applied for | Yes |
| 3.     | Presence of Board of Governors with an eminent academician or | Yes | Yes | Yes |
| 4.     | Percentage of eligible UG programmes accredited or applied for | 60% | Yes (100%) | Yes |
| 5.     | Percentage of eligible PG programmes accredited or applied for | 40% | Yes (55.5%) | Yes |
| 6.     | Cumulative number of PhDs produced in the last three academic years (2007-08, 2008-09 and 2009-10) #  
Academic Year (2010-11 to 2014-15)* | 5 | 55 # | 93* |
|        | or Cumulative number of MTech produced in the last three academic years (2007-08, 2008-09 and 2009-10) #  
Academic Year (2010-11 to 2014-15)* | 50 | 950 # | 1206* |
| 7.     | Faculty positions filled on regular full time basis as percentage of total faculty positions sanctioned in accordance with the AICTE prescribed student to faculty ratio | 65% | Yes (72%) | 72% |
| 8.     | Percentage of regular faculty with PhD in engineering* as percentage of total faculty | 15% | Yes (40%) | 47.3% |
INSTITUTIONAL DEVELOPMENT PROPOSAL (IDP)

2.1 Executive Summary

University College of Engineering, Osmania University founded in the year 1929, is one of the oldest and premier Institutions in the state and the country. In the year 1994, the college became autonomous, thus acquiring decision making authority to govern all aspects pertaining to Academic, Administrative and Financial matters of the Institution. As an autonomous institution, it has made rapid strides and became the top ranking Institution of the State as rated by Andhra Pradesh State Council of Higher Education (APSCHE). Further, the Institution was adjudged as the Best Engineering College in the Country during 2003 by ISTE, New Delhi. Living up to its reputation, the Institute has made major and significant contributions to all the parameters of accreditation helping University to acquire NAAC-5 Star rating in 2001 and NAAC ‘A’ Grade in 2008.

The college has implemented TEQIP Phase I programme successfully. The outcomes of the project has resulted in i) increase in pass percentage of UG/PG students, ii) enhancement of research publications by staff by three folds, iii) starting of six PG programmes in niche areas iv) academic reforms including introduction of credit system, and v) substantial increase in IRG.

Keeping in view the vision and objectives of the Institute, National, State education policies and outcome of SWOT analysis, a detailed strategic plan has been prepared for taking the institute on a road map to achieve excellence in technical education while meeting the objectives. The salient features of the proposal include i) scaling up and strengthening the PG and doctoral programmes, ii) enhancing the industry-institute collaboration, iii) starting of the interdisciplinary and joint PG programmes, iv) motivating and improving the quality of faculty and staff, v) improving the academic performance of the students, vi) networking with higher learning institutes for collaborative programmes and research, and vii) improving governance through effective management information system. For each of these components, action plan has been prepared meticulously to achieve the targeted objectives in the time frame of five years.
With the expertise and experience of implementing TEQIP Phase I Project successfully, it has a clear plan of action and structured approach to implement the tasks that are envisaged. The action plan includes i) signing of MoU’s with Institutions, R&D organizations and Industries, ii) strengthening and modernization of laboratories, iii) implementing faculty development programme, iv) organization of remedial classes and finishing school and v) implementation of Management Information System.

For implementing the above action plan, a comprehensive budget is prepared. The total budget proposed is Rs. 16.14 crores, with a year wise allocation as indicated below:

| Year wise - Proposed Allocation in crores |
|-------|------------------|
| 2012-13 | Rs. 14.41 |
| 2013-14 | Rs. 305.24 |
| 2014-15 | Rs. 494.67 |
| 2015-16 | Rs. 475.40 |
| 2016-17 | Rs. 246.26 |
2.2 Report of SWOT Analysis

2.2.1 The Process

The SWOT analysis is carried out in two levels i.e. at the Department level and Institutional level. Each Department has conducted SWOT analysis by inviting all the stakeholders including present students, alumni, industry and staff. Strengths and Weakness are discussed in detail with a focus on the respective Department domains and identified the same. Further, Opportunities and Threats are also discussed at Department level and reports are prepared.

At the Institution level, the SWOT analysis is conducted by inviting industry experts, alumni, staff and students. Industry was represented by TCS, Infosys, Wipro, Capital IQ, Delloit, DRDO. A total of 103 stakeholders have participated in the analysis which includes 08 representatives from industry, 50 students, 30 faculty members, and 15 alumni members. Parents feedback is separately taken during the parent-teacher meeting.

Principal briefly explained about SWOT and its importance and then gave a presentation about the institution highlighting its Strengths and Weaknesses. Each industry representative was given a chance to share their opinion about the institution strengths and weaknesses. Staff and Students were also given opportunity to share their opinion. Based on this, a core committee appointed for the purpose, prepared a detailed report indicating the Strengths, Weaknesses, Opportunities and Threats

2.2.2 STRENGTHS

1. Highly acclaimed academic institute with excellent track record of 80 years.
2. First autonomous college in the state with established procedures and processes for quality assurance.
3. Qualified, committed and motivated faculty members with more than 40% doctorates.
4. Excellent ambience with state-of-art equipment in a sprawling 100 acres of land.
5. Good research culture having linkage with R&D organizations.
6. Well established library with online access to journals and learning resources.
7. Best student input- top 1% of 3 lakhs students, opting for this college.
8. Good campus placement record with more than 75 more then percent of students placed every year continuously for the past one decade.
9. Excellent infrastructure with Campus-Wide-Networking (CWN) and wi-fi connectivity to the hostels.
10. Well placed alumni in reputed industry, R&D houses and academic institutions across the globe.
11. Fully residential campus having accommodation for faculty, staff and students.
12. Increased availability of resources from advanced research labs.
13. Memoranda of Understanding (MOUs) with industry, R&D centers and highly acclaimed academic institutions of repute.
14. Centre for English Language Training (CELT) rendering services to students rural background and the community at large.
15. Established Industry-Institute hub enabling interaction between the Institute and Industry
16. Institutionalized continuing engineering education through center for CEEP.
2.2.3 WEAKNESSES

1. Lack of quality input for PG and Doctoral programmes.
2. Lack of fellowships and scholarships to attract regular research scholars to promote research environment.
3. Lack of inter-disciplinary programmes.
5. Lack of incentives and regular promotions for performing staff.
6. Low key marketing strategies to build brand image.
7. Lack of institutionalized mechanism for upgradation of skill set with the fast changing technological developments.
8. College is a part of University, as a result major policy decisions such as staff recruitments rest with University/State Government.

2.2.4 OPPORTUNITIES

1. Availability of industry base in Hyderabad – scope for collaboration in respect of staff exchange, student internships, joint consultancy and projects.
2. Establishment of QIP centre for providing research facility for in-service engineering faculty and industry professionals.
3. Introduction of dual-degree programmes to encourage PG education.
4. Establishment of Incubation Centre.
5. Improving quality of instruction by supplementing with e-learning.
6. Institutionalizing services to community by making use of technology.
7. Transforming research & development into patentable product.
8. Utilizing strong alumni network in Institution building.
10. Availability of abundant space for horizontal expansion.

2.2.5 THREATS

1. Migration of faculty to other Institutions/Industries.
2. Competition with the vast number of new Universities/Colleges coming up.
3. Non-availability of staff to its full strength resulting in difficulty in maintaining standards and sustaining certain programmes.
## 2.2.6 Strategic Plan

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Goal</th>
<th>Strategies</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Improve the research culture</td>
<td>• Improve the laboratories by state-of-the-art equipment.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Collaborate with industries and R&amp;D organizations.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Increase the enrollment into Ph.D programme.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Motivate the faculty members and students and award the best talent.</td>
</tr>
<tr>
<td>2.</td>
<td>Give thrust to higher studies in Engineering Education</td>
<td>• Start industry-oriented M.Tech programmes</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Increase the enrollment in Ph.D.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Collaborate with Industry and R&amp;D Organizations for PG Programmes and Research.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Establish QIP centre.</td>
</tr>
<tr>
<td>3.</td>
<td>Make Engineering Education relevant to society</td>
<td>• Include Community Service as part of curriculum</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Establish Community Service Centre</td>
</tr>
<tr>
<td>4.</td>
<td>Enhance the competitiveness of the faculty and students</td>
<td>• Train and re-train the faculty members</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Improve the quality of instruction by pedagogy training and using Learning Resources.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Conduct remedial classes for academically weak students</td>
</tr>
<tr>
<td>5.</td>
<td>Enhance the consultancy and IRG</td>
<td>• Enhance collaborations with industry</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Establish Incubation Centre.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Offer incentives to the faculty for taking up consultancy.</td>
</tr>
<tr>
<td>6.</td>
<td>Give thrust to inter-disciplinary approach</td>
<td>• Start new inter-disciplinary PG courses.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Encourage inter-disciplinary projects.</td>
</tr>
<tr>
<td>7.</td>
<td>Improvement in Decision-making process</td>
<td>• Automation of Student Information System</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Use of Decision Support System.</td>
</tr>
<tr>
<td>8.</td>
<td>Networking with other higher learning institutes</td>
<td>• Signing MOUs</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Starting joint PG and Research programmes.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Exchange of faculty members.</td>
</tr>
</tbody>
</table>

### Challenges in implementation of the Strategic Plan

- Built-up area for the new PG Courses
- Recruitment of staff on regular basis
- Motivating faculty to work towards the new goals
- Marketing the new PG Programmes
2.2.7 Vision
The Vision of the Institute is to generate and disseminate knowledge through a harmonious blending of Science, Engineering and Technology. To serve the society by developing a modern technology in students’ heightened intellectual, cultural, ethical and humane sensitivities, fostering a scientific temper and promoting professional and technological expertise.

2.2.8 Mission
- To achieve excellence in Teaching and Research
- To generate, disseminate and preserve knowledge
- To enable empowerment through knowledge and information
- Advancement of knowledge in Engineering, Science and Technology
- Promote learning in free thinking and innovative environment
- Cultivate skills, attitudes to promote knowledge creation
- Rendering socially relevant technical services for the community
- To impart new skills of technology development
- To inculcate entrepreneurial talents and technology appreciation programmes
- Technology transfer and incubation

2.2.9 Values
Education: Student education is our primary mission. Students are our customers. When students attain their educational goals, both their communities and society as a whole are the beneficiaries. To accomplish this mission, we maintain an outstanding learning environment, including such resources as an excellent faculty and staff, student support services, and appropriate instructional facilities.

Faculty and Staff: Faculty and staff are committed to provide high quality education to students who are considered the customers of the Institute. Faculty members are encouraged to excel in their chosen domain and are suitably awarded.

Accountability: Faculty, staff and students are accountable for their responsibilities and the procedures and processes are in place to measure the effectiveness of their roles. They have to meet the standards set by both the State and Central Governments and the standards set by accreditation bodies.

Inclusiveness We adopt an inclusive approach to include the students from all sections of the society as per the State and National polices. Concessions in the fee and provisioning of learning resources, hostel facilities etc are some of the measures taken to mitigate the problems of students coming from the disadvantaged sections. While giving highest importance to the merit, we also adopt an inclusive approach to include the qualified members from all sections of the society as the faculty and staff members of the institute as per the State and National polices.

Environment friendly: All the stakeholders of the Institute are conscious about the environment and are responsible for protecting the environment. Environment science being a part of the curriculum for all the students the awareness amongst students is very high thus helping in maintaining and sustaining environment.
Communication: A system of an effective communication exists through which all the developments, events and other information is communicated to all the stakeholders of the Institute. Further, the Institute respects the Right to Information (RTI) Act, to provide the information for public scrutiny and auditing.

Diversity: We recognize and celebrate the similarities and differences in our students, staff, communities, services, programs, and ideas. We value diversity because it promotes learning, enriches our relationships, and enhances our ability to solve problems and make decisions.

Participatory Governance: Faculty and Staff at various levels are involved in the process of Governance of the Institute. The BOG delegates the power to various levels encouraging the participation of all the stakeholders for the smooth functioning of the Institute. The ideas and opinions of all the stakeholders are respected and taken into account in decision making.

2.3 Objectives & Expected Outcomes

Objectives
1. Improve the research culture by adopting best practices of R&D.
2. Strengthen interaction with Industry and improve industry consultancy.
3. Give thrust to inter-disciplinary approach.
4. Inculcate innovation and promote the best talent.
5. Institutionalizing continuing education.
6. Establish effective and efficient decision support system throughout the Institute.
7. Institutionalization of service to community activity.
8. Improvement of student success.

Expected Outcomes
1. Increase in the number of PG students graduated from 313 to 425 (increase by 112)
2. Increase in Ph.Ds awarded to 30 per year by the end of project completion.
4. Starting of four (4) new PG programmes.
5. Increase in the number of research publications in the reputed Journals and patents.
6. Establishment of incubation centre to harness the young talent.
7. Establishment of QIP centre to facilitate the faculty from neighboring institutes to pursue Doctoral programmes.
8. Faculty equipped with state-of-art technology and there by improving the quality of instruction.
9. Enable the management to make right decision at right time.
10. Increase in success rate of students.
2.4 Action Plan for scaling up PG and Ph.D Programmes

The college of Engineering is an autonomous college offering UG, PG and Doctoral programmes. At present, 21 PG programmes including 2 joint programmes in various specializations are offered, out of which 6 PG programmes were initiated during TEQIP Phase-I. The College also has Doctoral programme in all the six disciplines. The existing PG programmes will be strengthened both in terms of quality and quantity. It is also envisaged to start new PG programmes including inter-disciplinary courses. Further, the Doctoral programmes will be strengthened in terms of increasing enrollment and quality of research.

2.4.1 Scaling-up PG Programmes

**Strengthening of following existing PG Programmes**

- **Civil Engineering**: M.E (Structural Engineering), M.E (Hydromechanics and Water Management), M.E (Transportation Engineering), M.E (Geotechnical Engineering)
- **Mechanical Engineering**: M.E(Automation and Robotics), M.E(Production engineering), M.E(Turbo Machinery)
- **Electrical Engineering**: M.E(Power Systems), M.E(Power Electronic Systems), M.E(Industrial Drives and Controls),
- **Electronics & Communication Engineering**: M.E(Microwave and Radar Engineering), M.E9Digital Systems Engineering), M.E(Systems and Signal Processing), M.E(Embedded Systems and VLSI design)
- **Biomedical Engineering**: M.E(Bio-Medical Electronics)

**Starting of new PG Programmes**

- **Mechanical Engineering**: M.E (Design for Manufacturing) started in collaboration with M/s. CITD, Govt. of India from the academic year 2014-2015.
- **Computer Science & Engineering**: M.Tech. (Embedded Computing Systems) was started in the year 2013-2014 onwards.
- **Electronics & Communication Engg.**: M.E. (Railway Signaling and Telecommunication) in collaboration with IRISET, Indian Railways, Govt. of India. From the academic year 2015-2016.

The Table 2.1 gives the details of the PG programmes being strengthened in terms of increasing intake and establishing/upgrading the laboratories.

**Table 2.1 : Strengthening of existing PG courses**

<table>
<thead>
<tr>
<th>SI. No</th>
<th>Department</th>
<th>Specialization</th>
<th>Establishment/ Upgradation of lab</th>
<th>Existing Intake</th>
<th>Increased Intake</th>
<th>Academic year</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Civil</td>
<td>Structural Engineering</td>
<td>Concrete Lab Structures Lab.</td>
<td>25</td>
<td>55</td>
<td>2014-15</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Hydro Mechanics &amp; Water Mgmt.</td>
<td>Fluid Mechanics Lab, Environmental Engineering Lab.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Geotechnical Engineering</td>
<td>Soil - Mechanics Lab</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Transportation Engineering</td>
<td>Transportation Engineering Lab. Traffic design studio</td>
<td>15</td>
<td>15</td>
<td>2011-12</td>
</tr>
</tbody>
</table>
The Table 2.2 gives the details of the new PG programmes being introduced, establishment of associated laboratories and intake of each programme.

**Table 2.2: New PG programmes**

<table>
<thead>
<tr>
<th>SI. No</th>
<th>PG programme to be started</th>
<th>Intake</th>
<th>Academic year</th>
<th>Lab to be established</th>
<th>Cost (Rupees)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Civil</td>
<td>15</td>
<td>2012-13</td>
<td>Strengthening the existing lab</td>
<td>40,00,000.00</td>
</tr>
<tr>
<td>2</td>
<td>Mechanical</td>
<td>15</td>
<td>2014-15</td>
<td>Nano Technology and Material testing Lab.</td>
<td>60,00,000.00</td>
</tr>
<tr>
<td>3</td>
<td>CSE</td>
<td>15</td>
<td>2013-14</td>
<td>Embedded Systems Lab.</td>
<td>29,74,800.00</td>
</tr>
</tbody>
</table>

The Table 2.2 gives the details of the new PG programmes being introduced, establishment of associated laboratories and intake of each programme.
**Department of Civil Engineering**

<table>
<thead>
<tr>
<th>S.No</th>
<th>Activity</th>
<th>PROJECT MONTHS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Fluid Mechanics lab</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Geo Technical Engineering Lab</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Transportation Engineering Lab</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Concrete Lab</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Surveying Lab</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Civil Works</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Furniture</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Books, LR’s</td>
<td></td>
</tr>
</tbody>
</table>

**Figure 2.1.** Gantt chart for action plan for scaling up of PG and Ph.D programmes of Department of Civil Engineering
## Department of Mechanical Engineering

<table>
<thead>
<tr>
<th>SI. No.</th>
<th>Activity</th>
<th>PROJECT MONTHS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Introducing Computational Dynamics Lab</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>Strengthening Automation &amp; Robotics Laboratory</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>Strengthening Turbomachinery Laboratory</td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>Strengthening Production Engineering Laboratory</td>
<td></td>
</tr>
</tbody>
</table>

**Figure 2.2. Gantt chart for action plan for scaling up of PG programmes of Department of Mechanical Engineering**
## Department of Electrical Engineering

<table>
<thead>
<tr>
<th>SI. No.</th>
<th>Activity</th>
<th>PROJECT MONTHS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Strengthening and increase in intake of M.E (Power systems)</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Strengthening and increase in intake of M.E (Power Electronics system)</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Strengthening the M.E (Industrial Drives and Control)</td>
<td></td>
</tr>
</tbody>
</table>

**Figure 2.3. Gantt chart for action plan for scaling up of PG programmes of Department of Electrical Engineering**
Figure 2.4. Gantt chart for action plan for scaling up of PG programmes of Department of Electronics & Comm. Engineering
Department of Computer Science and Engineering

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Activity</th>
<th>PROJECT MONTHS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Setting up of R&amp;D Labs</td>
<td>25-27</td>
</tr>
<tr>
<td>2</td>
<td>Setting up of Embedded systems Lab</td>
<td></td>
</tr>
</tbody>
</table>

Figure 2.5. Gantt chart for action plan for scaling up of PG programmes of Department of Computer Science and Engineering
<table>
<thead>
<tr>
<th>Sl.No.</th>
<th>Activity</th>
<th>PROJECT MONTHS</th>
</tr>
</thead>
</table>

Figure 2.6. Gantt chart for action plan for scaling up of M.E(Bio Medical Electronics) of Department of Biomedical Engineering
2.4.2 Scaling up Ph.D programme

A key driver for research and development is the availability of quality doctoral students. According to Rangan Banerjee, and Vinayak P. Muley (Engineering Education in India), the number of engineering doctorates awarded in India each year is about one thousand. This is less than 1% of the total engineering graduate degrees awarded each year. The international comparison showed that most countries have the number of PhD degrees awarded annually ranging between 5-9% of the engineering graduate degrees awarded. The Engineering Institutes have a major role to play in increasing the number of PhDs awarded and thereby contributing to the research and development.

The doctorate degree is not a course work based fixed time degree. In order to obtain a doctorate, the candidate must make an original research contribution in the chosen specialization.

A three-pronged approach is planned to achieve the objective.

A) Attract good students to the PhD programme. How can this be achieved?
   - Offer fellowship amount to the PhD scholars.
   - Involve industry to sponsor special doctoral fellowships.
   - Special outreach / publicity to potential students.

B) Improve/Enrich the PhD experience.
   - Provide them modern offices with access to good research facilities.
   - Provide funding to attend international conferences
   - Increase the rigor of the Ph.D. by providing special PhD level coursework.
   - Facilitate exchange of ideas between PhD students, faculty and industry through annual national workshops.

C) Facilitate challenging jobs/careers after Ph.D.
   - Exhibition of research outputs to the Industry representatives. Circulating the database of graduating PhDs and their theses topics to the CII members.
   - Seed grants / Loans and access to venture capital is planned for PhD students who wish to commercialize their research results into technology products.

The Institute aims at increasing the number of PhDs awarded to a minimum of 50 per year. At present about 25 candidates complete PhD every year. It is planned to attract more number of candidates to enroll in PhD programme by offering fellowships. The figure 2.7 shows the scaling-up of PhDs awarded. At the end of project 30 more candidates will be completing PhDs every year.
Figure 2.7. Bar chart for increase in Ph.D awarded
2.5 Action plan for improving collaboration with Industry

The college has started a Technology Development Centre (TDC) to provide facilities for establishing specialized laboratories in collaboration with Industry. In line with this, two centres for CAD and CFD have been established which are engaged in conducting industry-oriented research and training programmes. The college has already signed MoU’s with the following firms:

- M/s. Cipher cloud India (2012-13)
- M/s. AMD India (2012-13)
- M/s TCS, Hyderabad – Student/Faculty development
- M/s Infosys - Student/Faculty development
- M/s Wipro Technologies
- M/s Cognizant Technology Solutions
- M/s ISRO – Joint INDO-US Education Programs
- M/s Astra Microwave Pvt. Ltd. – Research
- M/s Analog Devices Ltd. – Research
- M/s Titan Energy Systems Ltd. – Research and Consultancy

A centre of excellence in Microwave Engineering has already been established in collaboration with Astra Microwaves which is carrying out joint research in the area. The centre supports the research scholars leading to innovative products and their Ph.Ds. Similarly joint research is carried out in collaboration with Analog Devices, and Indian Railways.

The institute has also entered into an MOU with IIT, Hyderabad under KITE (Knowledge Incubation in Technical Education) Programme. Our Faculty members are being trained in the thrust areas by IIT, Hyderabad faculty members.

Further, The institute became a member of National Level Youth Entrepreneurship Development Initiative by Rajiv Gandhi National Institute of Youth Development, Govt. of India and ICTACT.

Establishment of Industry-Institute-Interaction-Cell (I-I-I-C): IIIC is engaged in exploring and facilitating the collaboration with industries. The following labs have been established with the collaboration of industries

- Cloud Computing Lab (Dept of CSE) in collaboration with M/S. Cipher Cloud India
- Heterogeneous Computing Lab (Dept of ECE) in collaboration with M/S. AMD India
- Power Systems Lab (Dept of Electrical Engineering) in collaboration with Consynchro IT Developers
- BE Project Lab (Dept of Electrical Engineering) sponsored by Alumni entrepreneurs.
The following table shows the budget allocation for the various activities to be undertaken under III cell for 2015-16 and 2016-17 financial years till the end of the project.

<table>
<thead>
<tr>
<th>I-I-I Cells</th>
<th>Academic Programmes with Industry</th>
<th>Rs. 3,00,000-00</th>
</tr>
</thead>
<tbody>
<tr>
<td>Short-term programmes</td>
<td></td>
<td>Rs. 3,00,000-00</td>
</tr>
<tr>
<td>Academic Networking with other Institutions</td>
<td></td>
<td>Rs. 5,00,000-00</td>
</tr>
<tr>
<td>Campus Placements</td>
<td></td>
<td>Rs. 7,00,000-00</td>
</tr>
<tr>
<td>Industrial Internship</td>
<td></td>
<td>Rs. 4,00,000-00</td>
</tr>
<tr>
<td>Technical Activity</td>
<td></td>
<td>Rs. 3,00,000-00</td>
</tr>
<tr>
<td><strong>Total / Year</strong></td>
<td></td>
<td><strong>Rs. 25,00,000-00</strong></td>
</tr>
</tbody>
</table>

2.6 Action plan for quantitatively and qualitatively improving research

The TEQIP Phase-I has given impetus to the research activities of the Institute. Research publications during this period have been tripled. The faculty members could participate in International Conference/Workshop/Seminars, and gained exposure to high quality research being carried out internationally. The following MOU’s have been signed with foreign universities with objectives of promoting joint research, exchange of faculty and students.

- State University of New York, Buffalo – Student / Faculty Exchange
- Metropolitan University of Tokyo, Japan.
- University of Western Australia, Perth, Australia.
- Carnegie Melon University CMU for MSIT Programme - (21st Century Gurukulum).

Further, to promote research culture among the faculty members the following action plan is proposed.

- Providing funding from IRG for innovative research proposals from young faculty members who have completed Ph.D’s
- Sponsoring faculty members to visit foreign/Indian Universities with which MOU’s exist.
- Sponsoring faculty members to visit industries on sabbatical leave for a period of 6 months
- Promoting the patent activities by providing financial support and support for filing patent.
It is also proposed to

- Supporting innovative ideas form the students by funding student research projects.
- Instituting best research paper award for UG/PG students
- Awarding the best internship project department wise. An internship programme has already been introduced in the curriculum to be carried out in the industry during the summer vacation after completion of third year.

The following table gives the budget allocation for various activities to be undertaken under R&D component for 2015-16 and 2016-17 financial years.

<table>
<thead>
<tr>
<th>Category</th>
<th>Sub Category</th>
<th>Amount / year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Research &amp; Development</td>
<td>Research Projects by UG Students</td>
<td>Rs. 3,00,000-00</td>
</tr>
<tr>
<td></td>
<td>Organizing One Conference</td>
<td>Rs. 6,00,000-00</td>
</tr>
<tr>
<td></td>
<td>Patenting of Research Product / Innovation</td>
<td>Rs. 3,00,000-00</td>
</tr>
<tr>
<td></td>
<td>Grant for faculty members</td>
<td>Rs. 2,00,000-00</td>
</tr>
<tr>
<td></td>
<td>Initial Grant for R&amp;D Projects</td>
<td>Rs. 12,00,000-00</td>
</tr>
<tr>
<td></td>
<td><strong>Total / Year</strong></td>
<td><strong>Rs. 26,00,000-00</strong></td>
</tr>
</tbody>
</table>

Establishment of Incubation Center: The College has embarked on establishing Incubation Center to provide Centre to promote innovation, commercialization of products and transfer of technology. The center will encourage the student and the alumni to participate in the incubation activity. The plan was approved by BOG with an outlay of 70 lakhs. The project will be completed in two phases. An amount of 35 lakhs is allocated for Phase-I and the remaining amount of 35 lakhs is allocated for the Phase-II. A part of this amount is being met from the IRG of the college.

The incubation center is likely to be ready by the end of August 2015. Further, the following action plan is proposed.

- Every year a maximum of 2 projects will be funded with seed money.
- The incubation proposals are invited from the students and young faculty.

2.7 Training Need Analysis

TNA Summary: Training Need Analysis (TNA) is carried out at the Departmental level in order to improve the quality of staff. The training needs are identified for faculty, technical staff, supporting staff and administrators. The emphasis is given on the weak areas and the specializations in which new PG programmes are proposed. An equal importance is given to pedagogy training. The TNA outcomes are summarized Department wise.
2.7.1 Civil Engineering

**Structural Engineering**
- Training in Structural Engineering related Software Packages like ETAB / SAP.
- Updating on characterization, handling and application of new Civil Engineering materials together with Construction Technology.
- Capacity building on design of experimental setup using instrumentation and handling of modern equipment for testing of prototype structural elements in Structures Laboratory.
- Building of know-how on Green and cost effective material, Green concepts / environment friendly construction methods and technology.

**Geotechnical Engineering**
- Training in advance modeling of Soil Engg. using FEM package, 3D Analysis & Dynamic Analysis.
- Updating on use of Geosynthetics for Geotechnical Engineering applications.

**Hydro Mechanics and Water Management**
- Training in the usage and application of Geographic Information System (GIS) and Remote Sensing packages.
- Advanced Training in the fields of Flood Forecasting and Flood Management.
- Training in Groundwater modeling software like Visual Modflow, GMS to solve the problems related to propagation of Pollutants.
- Latest exposure in the areas of Solid Waste Management.
- Training in advanced developments in the field of Environmental Engineering and Management.

**Transportation Engineering**
- Training in the usage and application of HDM-4, TRANSCAD and MX- Road Software.
- Advanced and Recent developments in the design of Pavement systems.
- Latest material characterization techniques such as Super pave technology.
- Training in Latest software’s in the areas of Traffic and Transportation Planning.

2.7.2 Mechanical Engineering

The following are the Training Needs of the Department:
- Training in the area of Nanomaterials and Nano-Composites processing and characterization.
- Testing of Advanced materials such as Nano Composites.
- Robotics, Pneumatic and Hydraulic Trainer and Mechatronics.
- Rapid Prototyping and Tooling.
- Computational Fluid Dynamics.
- E-manufacturing and Supply Chain Management.
2.7.3 Electrical Engineering

Training Need Analysis, broadly the following key areas are identified. The faculty of the department is required to be sent for training in these areas.

- Protective Relay Testing
- RTDS & PSCAD Applications
- SCADA
- Office Automation
- Management
- Special Electrical Machines & Drives
- Power Electronics & Drives
- Multilevel Inverters
- Artificial Intelligence
- Micro Controller Applications
- DSP&PLC Applications

2.7.4 Electronics and Communication Engineering

The following areas are identified to address the requirements of Teaching Faculty of the Department.

- VLSI Design
- Wireless Communications
- Computer Vision.
- Machine Learning
- Embedded System Design.

2.7.5 Computer Science and Engineering

Based on the training need analysis carried out in the department the following areas were identified for training and development

- **Basic Courses:** Software Engineering, Operating Systems, Compilers, DBMS, DAA, CO
- **Skill Based Courses:** Oracle 10g, Data Mining Tools, Java programming, MATLAB, PHP
- **General Development Courses:** Management, Entrepreneurship, Pedagogy

2.7.6 Bio-Medical Engineering

The TNA was done by getting the relevant TNA Proforma filled by all the staff members-teaching faculty, technical staff and other support staff. The staff was advised to identify the areas in which training was required so as to achieve the mission of the department. Apart from attending workshops/seminars/conferences and short term training programs, the staff will be sent to reputed training organization.
The teaching faculty are encouraged to update the technical and pedagogical skills in their respective specialized areas. The trainer organizations include Engineering staff college of India, National Research Labs, IITs and other industrial establishments. The technical staff and other supporting staff are also encouraged to hone their skills by undergoing training at appropriate organizations.

This will enable the department to
- Impart the state-of-the-art techniques to the students.
- Enhance the research capabilities
- Enhance the industry-institute interaction.

Table 2.3. Faculty Attended Various Training Programmes

<table>
<thead>
<tr>
<th>S.No</th>
<th>Name of Faculty</th>
<th>Area of Training / Development</th>
<th>Duration</th>
<th>Organization/ Place</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Dr.R.Rajendra</td>
<td>Contact and Convergence with Abaqus Standard</td>
<td>28-30 November 2012</td>
<td>Bangalore</td>
</tr>
<tr>
<td>2</td>
<td>Md.Abdul Jaleel</td>
<td>“TIG and MIG Welding and AW-03 TIG Welding (SS, Al, Cu)”</td>
<td>6-17 May and 10-21 June 2013</td>
<td>ATI, Hyderabad</td>
</tr>
<tr>
<td>3</td>
<td>Mrs.G.V. Naga Lakshmi</td>
<td>“Power Quality and Custom Power Devices”</td>
<td>3-7 June 2013</td>
<td>R.V. College of Engineering, Bangalore</td>
</tr>
<tr>
<td>4</td>
<td>Shri. D.Ramakrishna</td>
<td>“IEEE Indian Antenna Week 2013 (IAW 2013)”</td>
<td>3-7 June 2013</td>
<td>Marathwada Institute of Technology, Aurangabad</td>
</tr>
<tr>
<td>5</td>
<td>Mrs.M.Manjula</td>
<td>“Power Quality and Custom Power Devices”</td>
<td>3-7 June 2013</td>
<td>R.V. College of Engineering, Bangalore</td>
</tr>
<tr>
<td>6</td>
<td>Dr.A.Krishnaiah</td>
<td>Management Capacity Enhancement</td>
<td>3rd to 13th June 2013</td>
<td>Kozhikode, Kerala</td>
</tr>
<tr>
<td>7</td>
<td>Mr.D.Rama Krishna</td>
<td>Training</td>
<td>24-28 June 2013</td>
<td>Chandigarh</td>
</tr>
<tr>
<td>8</td>
<td>Sri.L.K.Suresh Kumar</td>
<td>Training</td>
<td>15-19July 2013</td>
<td>Kanpur</td>
</tr>
<tr>
<td>9</td>
<td>Mr.K.Buchaiiah</td>
<td>Navigating New Frontiers in Materials</td>
<td>2-6 July 2013</td>
<td>NIT, Warangal</td>
</tr>
<tr>
<td>10</td>
<td>Dr. M. Gopal Naik</td>
<td>Management Capacity Enhancement</td>
<td>30th July to 9th August 2013</td>
<td>Bangalore</td>
</tr>
<tr>
<td>11</td>
<td>Prof. Sriram Venkatesh</td>
<td>Management Capacity Enhancement</td>
<td>30th July to 9th August 2013</td>
<td>Kozhikode, Kerala</td>
</tr>
<tr>
<td>12</td>
<td>Dr. M. Gopal Naik</td>
<td>Management Capacity Enhancement</td>
<td>30th July to 9th August 2013</td>
<td>Kozhikode, Kerala</td>
</tr>
<tr>
<td>13</td>
<td>Prof.Ravande Kishore</td>
<td>Capacity Building to Strengthen Management</td>
<td>2nd and 3rd Sept 2013</td>
<td>Indian School Of Business (ISB) Hyd</td>
</tr>
<tr>
<td>No.</td>
<td>Name</td>
<td>Course Title</td>
<td>Dates</td>
<td>Location</td>
</tr>
<tr>
<td>-----</td>
<td>---------------------------</td>
<td>-------------------------------------------------------------------------------</td>
<td>--------------------------------</td>
<td>---------------------------------</td>
</tr>
<tr>
<td>14</td>
<td>Prof.P.Premchand</td>
<td>Capacity Building to Strengthen Management</td>
<td>2\textsuperscript{nd} and 3\textsuperscript{rd} Sept 2013</td>
<td>Indian School Of Business (ISB), Hyd</td>
</tr>
<tr>
<td>15</td>
<td>Dr.R.Rajendra</td>
<td>Introduction to Abaqus” conducted by Dassault Systems</td>
<td>2-4 September 2013</td>
<td>Pune,</td>
</tr>
<tr>
<td>16</td>
<td>Dr.V.Bhikshma</td>
<td>Management Capacity Enhancement</td>
<td>30\textsuperscript{th} Sept 2013 to 04\textsuperscript{th} October 2013</td>
<td>Administrative Staff College of India (ASCI) Hyd</td>
</tr>
<tr>
<td>17</td>
<td>Dr.P.Laxminarayana</td>
<td>Management Capacity Enhancement</td>
<td>30\textsuperscript{th} Sept 2013 to 04\textsuperscript{th} October 2013</td>
<td>Administrative Staff College of India (ASCI) Hyd</td>
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<tr>
<td>18</td>
<td>Dr Yesu Ratnam</td>
<td>Pedagogical Training</td>
<td>30\textsuperscript{th} Sept to 4\textsuperscript{th} Oct, 2013</td>
<td>Chandigarh</td>
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<td>19</td>
<td>Dr Ramesh Babu</td>
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<td>30\textsuperscript{th} Sept to 4\textsuperscript{th} Oct, 2013</td>
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<tr>
<td>20</td>
<td>Mr.CH. Siva Kumar</td>
<td>Power Electronics Applications</td>
<td>14-18 October 2013</td>
<td>NIT Warangal</td>
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<tr>
<td>22</td>
<td>Sri.Venkat Dass</td>
<td>Pedagogical Training</td>
<td>28\textsuperscript{th} Oct to 1\textsuperscript{st} Nov 2013</td>
<td>Chandigarh</td>
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<tr>
<td>23</td>
<td>Dr.Rajendra Naik</td>
<td>Pedagogical Training</td>
<td>28\textsuperscript{th} Oct to 1\textsuperscript{st} Nov 2013</td>
<td>Chandigarh</td>
</tr>
<tr>
<td>24</td>
<td>Mrs. L. Nirmala Devi</td>
<td>Modern Navigation</td>
<td>29-30 November 2013</td>
<td>Hyderabad</td>
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<tr>
<td>25</td>
<td>Dr. Hemalatha Rallapalli</td>
<td>“Embedded System Development Using Arm</td>
<td>25-30 November 2013</td>
<td>Bangalore</td>
</tr>
<tr>
<td>26</td>
<td>Mr. E. Madhusudan Raju</td>
<td>Introduction to Abaqus Training</td>
<td>27-29 November 2013</td>
<td>Bangalore</td>
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<tr>
<td>27</td>
<td>Dr.Narsimhulu Sanke</td>
<td>Pedagogical Training</td>
<td>25-29 November 2013</td>
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<td>28</td>
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<td>Chandigarh</td>
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<tr>
<td>29</td>
<td>Mrs.P Kotilakshmi</td>
<td>Mathematical Modelling and Simulation for Scientists and Engineers</td>
<td>2-21 December 2013</td>
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<tr>
<td>30</td>
<td>Dr. V. Naga Raju</td>
<td>“Mathematical Modelling in Engg..”</td>
<td>2-6 December 2013</td>
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<tr>
<td>31</td>
<td>Dr. L. Nirmala Devi</td>
<td>Advanced Wireless Communication Research Faculty Summit-2013”</td>
<td>13-14 December 2013</td>
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<td>32</td>
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<td>16-20 December 2013</td>
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<td>Dec 16-20 2013</td>
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<td>34</td>
<td>Mr. M. V. Ramana Rao</td>
<td>“Role of Power Electronics in Modern Electrical System”</td>
<td>Dec 23-27 2013</td>
<td>MNIT, Jaipur</td>
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<td>35</td>
<td>Prof. S. Sameen Fatima</td>
<td>Capacity Building to Strengthen Management</td>
<td>Dec 23 &amp; 24th, 2013</td>
<td>ISB, Hyderabad</td>
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<td>36</td>
<td>Prof. M. Kumar</td>
<td>Capacity Building to Strengthen Management</td>
<td>Dec 23 &amp; 24th, 2013</td>
<td>ISB, Hyderabad</td>
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<td>37</td>
<td>B. Kumar</td>
<td>Entrepreneurial Approaches to Librarianship</td>
<td>Dec 26-28 2013</td>
<td>Institute of Development, Hyderabad</td>
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<tr>
<td>38</td>
<td>Dr. S. Sameen Fatima</td>
<td>Certified Apache Hadoop Developer Training</td>
<td>Jan 8-10 2014</td>
<td>Bangalore</td>
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<td>39</td>
<td>Mr. S. Srinivas Rao</td>
<td>Certified Apache Hadoop Developer Training</td>
<td>Jan 8-10 2014</td>
<td>Bangalore</td>
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<td>41</td>
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<td>Jan 20-25 2014</td>
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<td>42</td>
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<td>43</td>
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<td>Jan 27-29 2014</td>
<td>Schlumberger Water Services at Hyderabad</td>
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<td>44</td>
<td>Mrs. SVSNDL Prasanna</td>
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<td>Jan 27-29 2014</td>
<td>Schlumberger Water Services at Hyderabad</td>
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<td>45</td>
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<td>Coordinate Measuring Machine (CMM)</td>
<td>Feb 10-14 2014</td>
<td>Bangalore</td>
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<td>46</td>
<td>Shri. M. Srinivas</td>
<td>2nd National Biomedical Engineering Training Programme</td>
<td>Feb 17-23 2014</td>
<td>Bangalore</td>
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<td>47</td>
<td>Mr. M. Shyam Sunder</td>
<td></td>
<td>Mar 8-10 2014</td>
<td>IIT Delhi</td>
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<td>48</td>
<td>Mr. K. Buchaiah</td>
<td>Welding Technology and NDT Techniques</td>
<td>May 26-30 2014</td>
<td>Engineering Staff College of India (ESCI) Hyderabad</td>
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<td>49</td>
<td>Dr. A. Krishnaiah</td>
<td>Metal Forming Technology</td>
<td>Jun 21 2014</td>
<td>IIT Madras</td>
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<td>June 2014</td>
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<td>52</td>
<td>Suma Bindu</td>
<td>FSIT Training</td>
<td>June 2014</td>
<td>JNTUH</td>
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<td>54</td>
<td>Ms. A. Bharathi</td>
<td>Advanced in Antenna Design with applications &amp; Simulation with HFSS Software</td>
<td>24-26 July 2014</td>
<td>IEEE Hyderabad</td>
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<td>56</td>
<td>Dr. Narsimhulu Sanke</td>
<td>Train the Trainer Program</td>
<td>4-6 August 2014</td>
<td>Bosch Training Centre Ltd., Bangalore</td>
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<td>57</td>
<td>Prof. S. Sameen Fatima</td>
<td>Management Capacity Enhancement for Administrators</td>
<td>18th to 22nd August 2014</td>
<td>IIM, Bangalore</td>
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<td>58</td>
<td>Prof. M. Kumar</td>
<td>Management Capacity Enhancement for Administrators</td>
<td>18th to 22nd August 2014</td>
<td>IIM, Bangalore</td>
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<td>59</td>
<td>Prof. M. Malini</td>
<td>Management Capacity Enhancement for Administrators</td>
<td>18th to 22nd August 2014</td>
<td>IIM, Bangalore</td>
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</tbody>
</table>
2.8 Action plan for training technical and other staff in functional areas

- Training programmes for technical staff in their respective areas for proper maintenance and operation of equipment in the laboratories.
- Training for office staff in automation and maintenance of records.
- Training on CNC Machining for Mechanical Engineering Technical Staff.
- Basic Training on Computer Knowledge and Internet Usage.
- Training in upgradation of skills for technical staff in their respective areas for proper maintenance and operation of equipments.
- Enhancement of Computer literacy and its applications.
- Training for office staff in automation and maintenance of records
- Training for office staff in automation and maintenance of records.
- Training on CNC Machining for Mechanical Engineering Technical Staff.
- Basic Training on Computer Knowledge and Internet Usage.
- Courses on Microprocessors and Microcontrollers
- PC assembly and maintenance
- Maintenance of electronics equipment
- Accounting package and Communication Skills

EQUIPMENT WISE TRAINING

**Bio-Medical Engineering**

<table>
<thead>
<tr>
<th>Sl. No</th>
<th>Equipment Name</th>
<th>Location</th>
<th>Training Date</th>
<th>Name of the Trained Persons</th>
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<tbody>
<tr>
<td></td>
<td></td>
<td>(Bio Medical Electronics)</td>
<td></td>
<td>Mr.K.E.Ch.Vidya sagar</td>
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<td></td>
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<td></td>
<td>Mr.K. Harish</td>
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<td></td>
<td></td>
<td>Mr.Naresh, Bal Reddy, Srivani, Munish</td>
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<td>Uma Devi, Padmavathi</td>
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<tr>
<td>2.</td>
<td>Arbitrary waveform generator</td>
<td>Strengthening of M.E</td>
<td>20/01/2014</td>
<td>Sri.D.Suman</td>
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<td></td>
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<td>(Bio Medical Electronics)</td>
<td></td>
<td>Mr.K.E.Ch.Vidya sagar</td>
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<td></td>
<td></td>
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<td>Mr.K. Harish</td>
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<td>Uma Devi, Padmavathi</td>
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<td></td>
<td>Mr.Naresh</td>
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<td>3.</td>
<td>PCI bus data acquisition system</td>
<td>Strengthening of M.E</td>
<td>6/12/2013</td>
<td>Sri.D.Suman</td>
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<td></td>
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<td>(Bio Medical Electronics)</td>
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<td>Mr.K.E.Ch.Vidya sagar</td>
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<td></td>
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<td></td>
<td>Mr.K. Harish</td>
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<td>No.</td>
<td>Description</td>
<td>Strengthening of M.E (Bio Medical Electronics)</td>
<td>Date</td>
<td>Name</td>
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<td>4</td>
<td>Biomedical Sensors with signal conditioning boards</td>
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<td>20/01/2014</td>
<td>Sri.D.Suman, Mr.K.E.Ch.Vidya sagar, Mr.K. Harish, Uma Devi, Padmavathi, Mr.Naresh</td>
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<td>5</td>
<td>Ultra centrifuge</td>
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<td>16/10/2014</td>
<td>Sri.D.Suman, Mr.K.E.Ch.Vidya sagar, Mr.K. Harish, Uma Devi, Padmavathi, Mr.Naresh</td>
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<td>6</td>
<td>Electronic Weighing Balance</td>
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<td>28/09/2014</td>
<td>Sri.D.Suman, Mr.K.E.Ch.Vidya sagar, Mr.K. Harish, Uma Devi, Padmavathi, Mr.Naresh</td>
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<td>7</td>
<td>PCI Bus data Acquisition systems</td>
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<td>17/10/2013</td>
<td>Sri.D.Suman, Mr.K.E.Ch.Vidya sagar, Mr.K. Harish, Uma Devi, Padmavathi, Mr.Naresh</td>
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<td>8</td>
<td>Virtual Instrumentation system with LABVIEW Software</td>
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<td>17/10/2013</td>
<td>Sri.D.Suman, Mr.K.E.Ch.Vidya sagar, Mr.K. Harish, Uma Devi, Padmavathi, Mr.Naresh</td>
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<td>9</td>
<td>8 port POE Swiches</td>
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<td>Sri.D.Suman, Mr.K.E.Ch.Vidya sagar, Mr.K. Harish</td>
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<td>10</td>
<td>UPS Facility</td>
<td></td>
<td>8/06/2015</td>
<td>Sri.D.Suman, Mr.K.E.Ch.Vidya sagar, Mr.K. Harish</td>
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# EQUIPMENT WISE TRAINING

## Civil Engineering

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<th>Sl. No</th>
<th>Equipment Name</th>
<th>Location</th>
<th>Training Date</th>
<th>Name of the Trained Persons</th>
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<tbody>
<tr>
<td>1.</td>
<td>Submersible Load Cell for the Existing Cyclic Triaxial Test Facility</td>
<td>Geo-Technical Engg Lab</td>
<td>10-12-2014</td>
<td>Mrs.K.L.Radhika, Mr.K.Sudarshan, Mr.M.V.S.Sreedhar, Mr.P.Bhoomaiah, G.Ramdhan</td>
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<td>2.</td>
<td>Bitumen Testing Equipment</td>
<td>Transportation Lab</td>
<td>10/04/2015</td>
<td>Dr.M.Kumar, Mr.M.V.S.Sreedhar, Mr.Vevekananda, Mr.Mohd ahmed</td>
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<td>3.</td>
<td>CARD / 1 (Transportation Engineering Software)</td>
<td>Computer Lab</td>
<td>3-8-2014</td>
<td>Dr.M.Kumar, Mr.Vinay Kumar, Mr.Srinivasa Rao</td>
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<td>4.</td>
<td>Drying Shrinkage &amp; Moisture Movement Apparatus</td>
<td>Concrete Lab</td>
<td>18-3-2014</td>
<td>Dr.M.Kumar, Mr.M.V.S.Sreedhar, Mr.Vevekananda, Mr.Mohd ahmed</td>
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<td>5.</td>
<td>Oven</td>
<td>Concrete Lab</td>
<td>5-3-2014</td>
<td>Dr.M.Kumar, Mr.M.V.S.Sreedhar, Mr.Vevekananda, Mr.Mohd ahmed</td>
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<td>6.</td>
<td>Digital Rebound Hammer</td>
<td>Concrete Lab</td>
<td>9-3-2014</td>
<td>Dr.M.Kumar, Mr.M.V.S.Sreedhar, Mr.Vevekananda, Mr.Mohd ahmed</td>
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<td>7.</td>
<td>Longitudinal Comprssometer</td>
<td>Testing Materials Lab</td>
<td>20-03-2014</td>
<td>Mrs.K.L.Radhaka, Mrs.Fatima Raju, Mr.Nizamuddin</td>
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<td>8.</td>
<td>Geo-slope (Geotechnical Engineering slope stability software)</td>
<td>Geo-Technical Engg Lab</td>
<td>10-12-2014</td>
<td>Mr.M.V.S.Sreedhar, Mr.Babu rao, Mr.Wajid Muneer</td>
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<td>9.</td>
<td>Discharge Measuring system</td>
<td>Fluid Mechanics Lab</td>
<td>25-11-2013</td>
<td>Dr.P.Raja Sekhar, Mrs.A.Naga Mani, Mr.Ramesh</td>
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## EQUIPMENT WISE TRAINING

**Electrical Engineering**

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<td>1.</td>
<td>Photovoltaic training and research kit</td>
<td>Strengthening and increase in intake of M.E (Power systems)</td>
<td>03-06-2013</td>
<td>Mrs.M.Manjula, Mr.Linga Swamy, Mr.B.Jitendranath, Mr.Md.Mahmmood</td>
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<td>2.</td>
<td>PSSE software</td>
<td>Strengthening and increase in intake of M.E (Power Electronics system)</td>
<td>18-09-2013</td>
<td>Mr.P. Lokendar Reddy, Mr.V.Praveen kumara chary, Mr.Narsaiah</td>
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<td>3.</td>
<td>Digital storage oscilloscopes</td>
<td>Strengthening the M.E (Industrial Drives and Control)</td>
<td>18-08-2014</td>
<td>Mrs. G.V. Nagalaxmi, Mrs.M.Manjula, Mr.V.Praveen kumara chary, Mr.P.Nagaraju</td>
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<td>4.</td>
<td>AC Drives</td>
<td>Strengthening the M.E (Industrial Drives and Control)</td>
<td>28-11-2014</td>
<td>Mr.P. Lokendar Reddy, Mr.V.Praveen kumarachary, Mr.Narsaiah</td>
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# EQUIPMENT WISE TRAINING

*Electronics & Communication Engineering*

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<tbody>
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<td>1.</td>
<td>Digital Storage oscilloscope</td>
<td>Strengthening of M.E. (Communication Lab)</td>
<td>12-12-2014</td>
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<td>Mr.Srinivasa Rao</td>
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<td>Tanner Tools</td>
<td>C.V.Raman lab</td>
<td>15-9-2013</td>
<td>B.Rajender Naik</td>
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<td>Strengthening of M.E. (Microwave Lab)</td>
<td>10-2-2014</td>
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<td>OrCad simulation Suite</td>
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<td>Mrs.Naga mani</td>
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</tbody>
</table>
## EQUIPMENT WISE TRAINING

**Computer Science & Engineering:**

<table>
<thead>
<tr>
<th></th>
<th>Equipment Type</th>
<th>Training Details</th>
<th>Trainer(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>CSE-Servers</td>
<td>Setting up of R&amp;D Labs</td>
<td>Mr. Vivekananda</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Mr. Murali Mohan</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Mr. Abdul Hussain</td>
</tr>
<tr>
<td>2</td>
<td>CLOUD enabling System</td>
<td>Setting up of R&amp;D Labs</td>
<td>Mr. Vivekananda</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Mr. Murali Mohan</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Mr. Abdul Hussain</td>
</tr>
<tr>
<td>3</td>
<td>Hyper-V Server</td>
<td>Setting up of R&amp;D Labs</td>
<td>Mr. Raju</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Mr. Satish</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Mr. Abdul Hussain</td>
</tr>
<tr>
<td>4</td>
<td>Text Analytics</td>
<td>Setting up of R&amp;D Labs</td>
<td>Mr. Murali Mohan</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Mr. Raju</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Mr. Satish</td>
</tr>
<tr>
<td>5</td>
<td>Data Analytics</td>
<td>Setting up of R&amp;D Labs</td>
<td>Mr. Raju</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Mr. Satish</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Mr. Abdul Hussain</td>
</tr>
<tr>
<td>6</td>
<td>CSE-Embedded Systems Software Development Tools</td>
<td>Setting up of R&amp;D Labs</td>
<td>Mr. Vivekananda</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Mr. Murali Mohan</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Mr. Abdul Hussain</td>
</tr>
<tr>
<td>7</td>
<td>Virtualization Software</td>
<td>Setting up of R&amp;D Labs</td>
<td>Mr. Vivekananda</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Mr. Murali Mohan</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Mr. Abdul Hussain</td>
</tr>
<tr>
<td>8</td>
<td>Microcontroller Hardware Development tool kit</td>
<td>Setting up of R&amp;D Labs</td>
<td>Mr. Raju</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Mr. Satish</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Mr. Abdul Hussain</td>
</tr>
<tr>
<td>9</td>
<td>CSE-Microcontroller development tool kit</td>
<td>Setting up of R&amp;D Labs</td>
<td>Mr. Vivekananda</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Mr. Murali Mohan</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Mr. Abdul Hussain</td>
</tr>
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</table>
## EQUIPMENT WISE TRAINING

<table>
<thead>
<tr>
<th>Sl. No</th>
<th>Equipment Name</th>
<th>Location</th>
<th>Training Date</th>
<th>Name of the Trained Persons</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>MSC adams software</td>
<td>CAD/CAM Lab and Automation Lab</td>
<td>12-2-2013</td>
<td>Mr.madhusudhan Raju&lt;br&gt;Mr.L.Siva Rama Krishna&lt;br&gt;Mr.Bhanu Murthy&lt;br&gt;M.E.Students</td>
</tr>
<tr>
<td>2.</td>
<td>solar photovoltaic trainer and Research kit</td>
<td>Thermal Engg Lab</td>
<td>20-9-2013</td>
<td>Mrs.Usha Sree&lt;br&gt;Dr.Narsimhulu sanke&lt;br&gt;Mr.Hadya&lt;br&gt;Mr.Santosh</td>
</tr>
<tr>
<td>3.</td>
<td>Twin cylinder 4 stroke diesel engine</td>
<td>Thermal Engg Lab</td>
<td>20-9-2013</td>
<td>Mrs.Usha Sree&lt;br&gt;Mr. Narender&lt;br&gt;Mr.Hadya&lt;br&gt;Mr.Santosh</td>
</tr>
<tr>
<td>4.</td>
<td>4 cylinder 4 stroke petrol engine</td>
<td>Thermal Engg Lab</td>
<td>20-9-2013</td>
<td>Mrs.Usha Sree&lt;br&gt;Mr. Narender&lt;br&gt;Mr.Hadya&lt;br&gt;Mr.Santosh</td>
</tr>
<tr>
<td>5.</td>
<td>Variable compression engine</td>
<td>Thermal Engg Lab</td>
<td>20-9-2013</td>
<td>Mrs.Usha Sree&lt;br&gt;Mr. Narender&lt;br&gt;Mr.Hadya</td>
</tr>
<tr>
<td>6.</td>
<td>Abaqus Software</td>
<td>CAD/CAM Lab and Automation Lab</td>
<td>12-2-2013</td>
<td>Mr.Madhusudhan Raju&lt;br&gt;Mr.L.Siva Rama Krishna&lt;br&gt;Mr.Bhanu Murthy&lt;br&gt;M.E.Students</td>
</tr>
</tbody>
</table>
2.9 Relevance and coherence of IDP with State’s/National Industrial/ Economic Development Plan

National Scenario: India has the potential to be a global technology leader. The Indian economy has been growing at the rate of 9% per year. The Indian industry has also become globally competitive in several sectors and can increase its global market share. A critical factor in this will be the success of the Engineering education system in India. A comprehensive report on “Engineering Education in India” submitted by Rangan Banerjee and Vinayak P. Muley has made the following recommendations to improve the Engineering education:

- Strengthening Ph.D initiatives
- Attracting Quality faculty.
- Incentivizing performance
- Strengthening Masters Programme
- Industry-Institute interaction
- Making Engineering education relevant to society
- Faculty Quality Improvement
- Continuing Education and skill upgradation
- Administrative reforms

State Scenario: More than 600 Engineering colleges have been running in the AP state offering UG programmes in various disciplines. There is a big gap between the availability and requirement of quality staff in the engineering institutions. The AP state has time and again been stressing on the manpower development particularly in the technical education. Further, the quality of the students coming out of these colleges a big concern. NASSCOM made a statement that not even 25% of the graduates are employable. The expected outcomes of the IDP of this college addresses these problem by way of scaling up and strengthening the PG education, focusing on the quality of the students by way of remedial classes and finishing school concept.

The State Government has been making all efforts in improving the employability of graduates by a centre (JKC) which collaborates with educational institutions and helps imparting the relevant training required by the industry. In the proposal prepared by the college, the strategy and action plan are in line with the policies of the State Government.

The national and state scenarios in engineering education are taken into account in the preparation of this IDP proposal. The main focus has been on the strengthening and scaling up of PG education and Research & Development. Also, the emphasis has been on the bridging the gap between Institutes and Industry by fostering the collaborative research, projects and joint programmes. The expected major outcomes of the proposal after implementation are:

1) Improved Quality of PG students
2) Increase in the enrolment of PG graduates and Doctorates
3) Increased Industry-Institute collaboration
4) Faculty development in terms of Quality of teaching, research and consultancy
2.10 Participation of Departments/Faculty in the proposal preparation and implementation

The following steps are taken to prepare the TEQIP Phase-II proposal. A core committee was formed vide orders 1031/TEQIP Phase-II/UCE/2010 dt: 20.7.2010 to form a strategy to come up with the proposal for TEQIP Phase-II. The committee has formulated an action plan for the purpose. The action plan is prepared such that the faculty, staff, students and all other stakeholders at all levels are involved in the preparation of the proposal.

Action Plan:
- Briefing about the TEQIP Phase-II in the monthly meeting of the faculty members.
- Conducting Heads meeting to explain the Action Plan and the role of the HODs in the preparation of the proposal.
- Conduct of SWOT analysis and TNA at the department level.
- Conduct of SWOT analysis at the Institute level.
- Preparation of Strategic Plan for the implementation of TEQIP Phase-II.
- Constitution of a committee of Department Representatives for the preparation of the proposal.
- Conduct of department level meetings to prepare department level proposals based on the SWOT analysis and the Strategic Plan.
- Review of the proposal by the Core Committee.
- Review of the proposal by the BOG.
- Submission of the draft proposal to SPFU.
- Fine-tuning of the proposal
- Submission of the proposal to SPFU.

The Table 2.4 gives the calendar of SWOT meetings. The SWOT reports are attached in the Table 2.4: Schedule of SWOT analysis meetings.

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Institute/Department</th>
<th>Date of SWOT Analysis Meeting</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Institute Level</td>
<td>March 8, 2010</td>
</tr>
<tr>
<td>2</td>
<td>Bio-Medical Engineering</td>
<td>June 26, 2010</td>
</tr>
<tr>
<td>3</td>
<td>Civil Engineering</td>
<td>April 27, 2010</td>
</tr>
<tr>
<td>4</td>
<td>Computer Science &amp; Engg.</td>
<td>March 3, 2010</td>
</tr>
<tr>
<td>5</td>
<td>Electrical Engineering</td>
<td>June 2, 2010</td>
</tr>
<tr>
<td>6</td>
<td>Electronics &amp; Communication Engineering</td>
<td>April 27, 2010</td>
</tr>
<tr>
<td>7</td>
<td>Mechanical Engineering</td>
<td>June 26, 2010</td>
</tr>
</tbody>
</table>
Participation of Departments/Faculty in the revised proposal preparation and implementation: Two committees are constituted vide orders no.276/TEQIP/Phase-II/UCE/2015 dated 28-01-2015 and no. 129/Admn/UCE/2015 to review and recommend the activities to be taken up under the following components of TEQIP-II.

- R&D
- III Cell
- Academic Reforms

Also, a committee was constituted to prepare Good Governance Document to be submitted to NPIU/SPFU.

The recommendations of all the above committees have been incorporated in the Revised IDP.

2.11 Institutional Project Implementation Arrangements: The College has established procedures and processes in place for the implementation of the projects of this nature. The Phase-I of TEQIP has been completed successfully.

The figure 2.8 shows the organization structure of the Institute.
In addition to the above, the following arrangements are made for the purpose of implementation of TEQIP Phase-II project.

Figure 2.9 Organization Structure of TEQIP Phase-II

Apart from the above administrative structure, the following committees are in place for implementing academic, procurement, finance and administrative activities:

- Department Level Purchase Committees
- Institutional Level Purchase Committee
- Departmental Research Committee
- Departmental Committee

For procurement of equipments/civil works the following procedure is adopted:

- Approval by Departmental Committee
- Approval by appropriate purchase committee
- Approval by BOG

For initiating any new academic activities such as starting of new academic programmes, the following procedure is adopted:

- Approval by Departmental Committee/Departmental Research Committee
- Approval of syllabus and associated academic rules in Board of Studies
- Approval of syllabus and associated academic rules by Academic Council.
- Approval of proposal by BOG
### 2.12 Institutional Project Budget

**Table 2.5 - Table- 34 of PIP**

<table>
<thead>
<tr>
<th>S. No</th>
<th>PROJECT LIFE ALLOCATION</th>
<th>FINANCIAL YEAR</th>
<th>Actual</th>
<th>Budget Estimates</th>
<th>Grand Total</th>
</tr>
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<tbody>
<tr>
<td>1.</td>
<td>Infrastructure improvement for teaching, training and learning through:</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Equipment</td>
<td>375</td>
<td>-</td>
<td>155.66</td>
<td>126.75</td>
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<tr>
<td></td>
<td>Furniture</td>
<td>25</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Books &amp; LRs &amp; Software</td>
<td>87.50</td>
<td>-</td>
<td>29.14</td>
<td>112.86</td>
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<tr>
<td></td>
<td>Minor Items</td>
<td>12.50</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Refurbishment (Civil Works)</td>
<td>37.5</td>
<td>-</td>
<td>-</td>
<td>18.04</td>
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<td></td>
<td>Consultant Services</td>
<td>25</td>
<td>-</td>
<td>-</td>
<td>-</td>
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<tr>
<td>2.</td>
<td>Providing teaching and research assistantships for significantly increasing enrolment in existing and new Masters and Doctoral programmes in engineering disciplines</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>250</td>
<td>-</td>
<td>46.65</td>
<td>100.61</td>
</tr>
<tr>
<td>3</td>
<td>Enhancement of R &amp; D and Institutional consultancy</td>
<td>62.5</td>
<td>3.89</td>
<td>0.45</td>
<td>3.00</td>
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<tr>
<td>4</td>
<td>Faculty and staff development for improved competence based on TNA</td>
<td>125</td>
<td>1.86</td>
<td>54.6</td>
<td>101.61</td>
</tr>
<tr>
<td>5</td>
<td>Enhanced interaction with industry</td>
<td>62.5</td>
<td>-</td>
<td>5.43</td>
<td>7.48</td>
</tr>
<tr>
<td>6</td>
<td>Institutional Management capacity enhancement</td>
<td>25</td>
<td>0.14</td>
<td>3.35</td>
<td>1.44</td>
</tr>
<tr>
<td>7</td>
<td>Implementation of institutional reforms</td>
<td>12.5</td>
<td>-</td>
<td>-</td>
<td>0.25</td>
</tr>
<tr>
<td>8</td>
<td>Academic support for weak students</td>
<td>25</td>
<td>-</td>
<td>-</td>
<td>0.67</td>
</tr>
<tr>
<td>9</td>
<td>Incremental operating cost</td>
<td>125</td>
<td>8.52</td>
<td>9.96</td>
<td>21.96</td>
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<tr>
<td><strong>TOTAL</strong></td>
<td>1250</td>
<td>14.41</td>
<td>305.24</td>
<td>494.67</td>
<td>475.40</td>
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### Table 2.6 - Table-35 of PIP

<table>
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<tr>
<th></th>
<th>Tragets to be achieved at the end of 2 years of joining the Project</th>
<th>Status as on (2014-2015)</th>
<th>Tragets to be achieved By Project closing Oct. 2016</th>
</tr>
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<tbody>
<tr>
<td>1</td>
<td><strong>Number of students registered for</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(a) Masters in Engineering programme</td>
<td>313</td>
<td>403</td>
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<td></td>
<td>(b) Doctoral Programme in Engineering</td>
<td>288</td>
<td>308</td>
</tr>
<tr>
<td>2</td>
<td><strong>Revenue from externally funded R&amp;D projects and Consultancies in total revenue (Rs. in lakh)</strong></td>
<td>264</td>
<td>325</td>
</tr>
<tr>
<td>3</td>
<td><strong>Number of</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(a) Research publications in refereed journals</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- National journals</td>
<td>14</td>
<td>40</td>
</tr>
<tr>
<td></td>
<td>- International journals</td>
<td>44</td>
<td>60</td>
</tr>
<tr>
<td></td>
<td>(b) Citations</td>
<td>95</td>
<td>120</td>
</tr>
<tr>
<td></td>
<td>(c) Patents obtained / filed</td>
<td>01</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>(d) Books</td>
<td>14</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>(e) No. of R&amp;D projects commercialized</td>
<td>15</td>
<td>20</td>
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<td>4</td>
<td><strong>IRG as % of total recurring expenditure</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>30%</td>
<td>40%</td>
</tr>
<tr>
<td>5</td>
<td><strong>Number of co-authored publications in refereed journals</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(a) National</td>
<td>15</td>
<td>40</td>
</tr>
<tr>
<td></td>
<td>(b) International</td>
<td>45</td>
<td>60</td>
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<tr>
<td>6</td>
<td><strong>Student credentials</strong></td>
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<tr>
<td></td>
<td>(a) Campus placement rate of</td>
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<td></td>
</tr>
<tr>
<td></td>
<td>- UG students</td>
<td>75 %</td>
<td>85 %</td>
</tr>
<tr>
<td></td>
<td>- PG students</td>
<td>30 %</td>
<td>40 %</td>
</tr>
<tr>
<td></td>
<td>(b) Average salary of placement package for</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(Rs. in lakh)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- UG students</td>
<td>4.2</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>- PG students</td>
<td>3.6</td>
<td>4.2</td>
</tr>
<tr>
<td>7</td>
<td><strong>Number of collaborative programmes with Industry</strong></td>
<td>2</td>
<td>2+2</td>
</tr>
<tr>
<td>8</td>
<td><strong>Accreditation Status (obtained and applied for)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(a) Applied for</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- 100% UG programs and 75% of eligible PG programmes</td>
<td>100% UG and 53% PG</td>
<td>100 % on obtained</td>
</tr>
<tr>
<td>9</td>
<td><strong>Vacancy position for faculty and staff</strong></td>
<td>28%</td>
<td>Vacancy reduced to 5% or less</td>
</tr>
<tr>
<td>10</td>
<td><strong>Percentage of regular faculty with PhD in Engineering disciplines</strong></td>
<td>40%</td>
<td>50%</td>
</tr>
</tbody>
</table>
2.13 (b) Plan in detail for achievement of the targets enumerated in Table-35 of PIP (Table 2.24 of IDP).

1. Scaling-up PG and Doctoral Programmes:

The following activities are proposed to strengthen the PG and Doctoral programmes.

**Strengthening of following existing PG Programmes**

- **Civil Engineering**: M.E (Structural Engineering), M.E (Water Resources Engineering), M.E (Transportation Engineering), M.E (Geotechnical Engineering)
- **Mechanical Engineering**: M.E(Automation and Robotics), M.E(Production engineering), M.E(Turbo Machinery)
- **Electrical Engineering**: M.E(Power Systems), M.E(Power Electronic Systems), M.E(Industrial Drives and Controls),
- **Electronics & Communication Engineering**: M.E(Microwave and Radar Engineering), M.E(Digital Systems Engineering), M.E(Systems and Signal Processing), M.E(Embedded Systems and VLSI design)
- **Biomedical Engineering**: M.E(Biomedical Electronics)

**Starting of new PG Programmes**

- **Mechanical Engineering**: A new PG programme M.E (Design for Manufacture) was started during the academic year 2014-15 in collaboration with CITD, Govt of India, Hyderabad.
- **Computer Science & Engineering**: A new PG programme M.Tech. (Embedded Computing Systems) was started during the academic year 2013-14.
- **ECE Department**: A new PG programme is proposed in collaboration with IRISET, Indian Railways, Govt. of India, Hyderabad for IES candidates selected through UPSC, during the academic year 2014-15.

**Strengthening of PhD Programme**

A three-pronged approach is planned to achieve the objective.

A) Attract good students to the PhD programme. How can this be achieved?
   - Offer fellowship amount to the PhD scholars.
   - Involve industry to sponsor special doctoral fellowships.
   - Special outreach / publicity to potential students.

B) Improve/Enrich the PhD experience.
   - Provide them modern offices with access to good research facilities.
   - Provide funding to attend international conferences.
   - Increase the rigor of the Ph.D. by providing special PhD level coursework.
   - Facilitate exchange of ideas between PhD students, faculty and industry through annual national workshops.

C) Facilitate challenging jobs/careers after Ph.D.
   - Exhibition of research outputs to the Industry representatives.
   - Circulating the database of graduating PhDs and their theses topics to the CII members.
   - Seed grants / Loans and access to venture capital is planned for PhD students who wish to commercialize their research results into technology products.

D) Procuring financial assistance from various funding agencies like UGC, AICTE, DEITY for the research scholars pursuing PhDs.
2. **Scaling-up R&D Projects and Consultancies**

The increased competency of the faculty members, the enhanced laboratory facilities, the improved research culture will enable the faculty members to bid for more number of sponsored R&D projects and consultancy from the various agencies and the industry. The faculty members will be motivated to apply for the R&D projects and consultancy projects. In addition the following action plan is prepared to strengthen the links with the industry.

- To strengthen collaborative research and joint projects with M/s. TCS with whom an MOU is already signed
- To have a Joint PG Programmes in collaboration with M/s. CITD, Govt of India and IRISET, Govt of India in the departments of Mechanical Engineering and ECE respectively.
- Inviting experienced industry engineers / managers to associate with the college as adjunct faculty / or as advisors
- Encouraging experienced faculty to associate with industry in advisory / visiting.
- Inviting industry representatives in the formation of syllabus.

3. **Scaling-up research output**

Further to promote Research culture among the faculty members the following action plan is proposed.

- Providing funding from IRG for innovative research proposals from young faculty members who have completed Ph.D’s
- Instituting best researcher award for publishing high impact research work in reputed journals
- Sponsoring faculty members to visit Foreign/India Universities with which MOU’s exists.
- Sponsoring Faculty members to visit industries on sabbatical leave for a period of 6 months
- Promoting the patent activities by establishing a patent cell for financial support and support for filling patent.

*It is also proposed to*

- Supporting innovative ideas form the students by funding student Research projects.
- Instituting best research paper award for UG/PG students
- Awarding the best internship project department wise. An internship programme has already been introduced in the curriculum to be carried out in the industry during the summer vacation after completion of third year.
4. Enhancement of IRG
Main sources of IRG have been: Industrial Consultancy, R&D Projects, and Funds generated through Continuing Engineering Education Programmes (CEEP). Further, activities proposed in the proposal are aimed at increasing overall quality of the instruction, research activities, and consultancy. Increase in IRG is an important ingredient of all these programmes. Further the following initiatives envisaged in the proposal are likely to enhance the consultancy activity and boost the IRG.

- Enhance collaborations with industry
- Establish Incubation Centre.
- Offer incentives to the faculty for taking up consultancy

5. Scaling-up of co-authored publications: The action plans in sections 2.4, 2.5 and 2.6 have envisaged the following activities which will help in increasing the number of co-authored publications.

- Collaboration with Industries
- Collaboration with foreign universities
- Collaboration with R&D organizations

6. Student success rate: The following Action Plan is proposed to increase the success rate of students:

- Conducting Remedial classes for the academically weak students
- Conducting soft skill courses.
- Conducting Finishing school courses to make the students industry-ready.
- Improving the quality of instruction.
- Introducing/strengthening internship programme.

7. Collaborative programmes with industry
The following Table 2.25 shows the PG programmes proposed to be strengthened/ initiated by collaborating with industry.

<table>
<thead>
<tr>
<th>SI. No</th>
<th>PG programmes started/to be started</th>
<th>Collaborating Industry</th>
<th>Academic year</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Mechanical Design for Manufacture</td>
<td>CITD, Govt of India, Hyderabad</td>
<td>2014-15</td>
</tr>
<tr>
<td>2</td>
<td>ECE Railway Signaling and Telecommunication Engineering(RSTE)</td>
<td>IRISET, Govt of India, Hyderabad</td>
<td>2015-16</td>
</tr>
</tbody>
</table>
8. Accreditation Status
Osmania University is NAAC accredited with 5 Star in the year 2001 and re-accredited with A Grade with a CGPA of 3.31. The college was also NBA accredited in the year 2013 for both UG (100%) and PG (60%) programmes.

9. Vacancy Position for faculty and staff
At present 28% of faculty positions are vacant in spite of 17 faculty members who were recruited during 2013-14. It is expected that the gap will be reduced further to comply with TEQIP phase-II.
The institute has a policy of filling the vacancies with the Adjunct/Visiting Professors and Academic Consultants on temporary basis for smooth conduct of academic programmes.

10. Percentage of PhDs
At present 44 out of 93 faculty members are Ph.D holders amounting 48 percentage. Many young faculty members are pursuing their PhDs either on QIP or in-house. As many as 7 faculty members are pursuing PhDs under QIP programme in premier institutes like IISc and IITs. The institute has a policy of sponsoring the faculty members for PhD programme on QIP basis. Further, as many as 29 faculty members are pursuing PhDs in the Institute.

2.14 Sustainability Plan
The developments, reforms, best practices and the activities initiated during the project have to be sustained, continued and improved further after the project completion. Sustainability is one of the important goals of the project TEQIP. The institute has the experience and expertise in executing and continuing the good work further.
The institute has participated in the project IMPACT during 1992-2000, a world bank aided project. The institute has won “Best Participating Institute” award for its best performance. Self-sustenance was one of the important components of the projects. All the reforms, best practices and the developments that took place during the project have been sustained, continued and improved further.
The institute has successfully completed the Phase-I of the TEQIP. The Institute has initiated many technological developments, reforms, best practices new PG programmes.
All the activities that have been initiated are sustained and improved through an effective action plan for sustainability.

- Four funds have been created from the purpose and the allocation into these funds is made from the IRG of the college. These funds are: i) Corpus Fund ii) Faculty Development Fund iii) Maintenance Fund and iv) Depreciation Fund.
- IRG is earned mainly through: i) Industrial Consultancy, ii) R&D Projects, and iii) Funds generated through Continuing Engineering Education Programmes (CEEP).
- Yearly budget allocations are made for all the activities that are to be sustained.
All the activities that have been proposed in the IDP are aimed at increasing the quality of instruction, research standards and consultancy and collaborative projects. This will enable the college to improve IRG to sustain and improve the activities further. The following shows the preparedness of the Institute for the sustainability.

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Present Corpus Fund</td>
<td>30 millions</td>
</tr>
<tr>
<td>IRG before TEQIP Phase-I</td>
<td>65 millions</td>
</tr>
<tr>
<td>IRG after TEQIP Phase-I</td>
<td>115 millions (2 times approx)</td>
</tr>
<tr>
<td>IRG during Phase-II(2013-14)</td>
<td>46.66 millions</td>
</tr>
</tbody>
</table>
2.15 Procurement plan for Goods and Civil Works in Table 36 and consultancy services in Table 37 with budget and time frame

Table 2.8 - Table-36 of PIP (procurement plan for Works and Goods* for sub-component 1.2)

Name of the institution with location: University College of Engineering, OU, Hyderabad

<table>
<thead>
<tr>
<th>A. EXPENDITURE IN PIPE LINE</th>
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</thead>
<tbody>
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<tr>
<td>18</td>
</tr>
<tr>
<td>19</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
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</table>
## B. COMMITTED EXPENDITURE

<table>
<thead>
<tr>
<th>Sl. No</th>
<th>Pkg No as in PMSS</th>
<th>Package Name</th>
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<tbody>
<tr>
<td>1</td>
<td>AP/AP2G04/227</td>
<td>Basic Hydrology System</td>
</tr>
<tr>
<td>2</td>
<td>AP/AP2G04/388</td>
<td>Digital Power Analyzer</td>
</tr>
<tr>
<td>3</td>
<td>AP/AP2G04/321</td>
<td>Centrifugal Blower Test Rig</td>
</tr>
<tr>
<td>4</td>
<td>../AP/AP2G04/112</td>
<td>Replacement of Old drainage</td>
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<tr>
<td>5</td>
<td>AP/AP2G04/391</td>
<td>DSP Processor</td>
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<tr>
<td>6</td>
<td>AP/AP2G04/10</td>
<td>Multilevel Inverters</td>
</tr>
<tr>
<td>7</td>
<td>AP/AP2G04/331</td>
<td>8051 Microcontroller Software Kit</td>
</tr>
<tr>
<td>8</td>
<td>AP/AP2G04/327</td>
<td>Free and Forced vibration test rig</td>
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<tr>
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<tr>
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<td>---</td>
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</tr>
<tr>
<td>9</td>
<td>AP/AP2G04/419</td>
<td>Furniture-Laboratory work stations</td>
</tr>
<tr>
<td>10</td>
<td>../AP/AP2G04/323</td>
<td>Air Compressor Test Rig</td>
</tr>
<tr>
<td>11</td>
<td>AP/AP2G04/436</td>
<td>Relay Protection Test Set</td>
</tr>
<tr>
<td>12</td>
<td>AP/AP2G04/434</td>
<td>Static Percentage Baised Differential Realay Study Trainer</td>
</tr>
<tr>
<td>13</td>
<td>AP/AP2G04/377</td>
<td>Incubation Centre - I - Furniture and False Ceiling</td>
</tr>
<tr>
<td>14</td>
<td>AP/AP2G04/428</td>
<td>Numerical Over/Under Frequency Relay Study Trainer</td>
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<td>15</td>
<td>AP/AP2G04/435</td>
<td>Buchloz Relay Study Trainer</td>
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<td>TOTAL 7535261</td>
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<td>Purchase Order No., and Date</td>
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<td>------------------------------------------------------------------</td>
</tr>
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<td>1</td>
<td>../AP/AP2G04/223 Photovoltaic Training &amp; Research Kit</td>
<td>01/Teqip-II/P.O/EE/UCE/OU/13 dt:22-01-2013</td>
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<td>2</td>
<td>../AP/AP2G04/232 Stadd related Software</td>
<td>02/Teqip-II/P.O/Civil/UCE/OU/ 2013 dt:22-01-2013</td>
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<td>3</td>
<td>AP/AP2G04/308 Laptops</td>
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<td>4</td>
<td>AP/AP2G04/305 Printer with Scanner Facilities</td>
<td>04/Teqip-II/P.O/CEN/UCE/OU/ 2013 dt:22-05-2013</td>
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<td>AP/AP2G04/122 Online Journals for the central Library</td>
<td>05/Teqip-II/P.O/EE/UCE/OU/13 dt:22-05-2013</td>
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<td>6</td>
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<td>06/Teqip-II/P.O/EE/UCE/OU/13 dt:22-05-2013</td>
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<td>7</td>
<td>../AP/AP2G04/16 CSE-Microcontroller development Tool Kit</td>
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<td>8</td>
<td>../AP/AP2G04/17 CSE-Microcontroller Hardware development Tool Kit</td>
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</tr>
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<td>Total Station</td>
</tr>
<tr>
<td>11</td>
<td>../AP/AP2G04/228</td>
<td>Discharge Measuring System</td>
</tr>
<tr>
<td>12</td>
<td>../AP/AP2G04/318</td>
<td>Flexisim Software</td>
</tr>
<tr>
<td>13</td>
<td>../AP/AP2G04/338</td>
<td>B-EST Civil Engineering Estimation</td>
</tr>
<tr>
<td>14</td>
<td>../AP/AP2G04/77</td>
<td>PCI Bus Data Acquisition System</td>
</tr>
<tr>
<td>15</td>
<td>../AP/AP2G04/77</td>
<td>Virtual Instrumentation System</td>
</tr>
<tr>
<td>16</td>
<td>../AP/AP2G04/337</td>
<td>MD Fee Bundle</td>
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<td>17</td>
<td>../AP/AP2G04/59</td>
<td>PSSE Software</td>
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<tr>
<td>18</td>
<td>../AP/AP2G04/231</td>
<td>Matlab Software to Civil (5 users to 10 users)</td>
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<tr>
<td>21</td>
<td>AP/AP2G04/66</td>
<td>Orcad Simulation Suit</td>
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<td>No.</td>
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<tr>
<td>24</td>
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<td>Automatic Compactor</td>
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<td>../AP/AP2G04/256</td>
<td>Furniture PC Workstation</td>
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<td>28</td>
<td>../AP/AP2G04/311</td>
<td>Furniture-Chairs, Tables, White boardse etc.</td>
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<td>30</td>
<td>../AP/AP2G04/225</td>
<td>Electrodes for Joins</td>
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<tr>
<td>32</td>
<td>../AP/AP2G04/375</td>
<td>Data Analytics</td>
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<tr>
<td>33</td>
<td>AP2G04/119</td>
<td>Books and LR,s</td>
</tr>
<tr>
<td>34</td>
<td>AP2G04/320</td>
<td>PCB Prototype Machine and Tina Designsuit</td>
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<td>AP2G04/342</td>
<td>Arbitrary Waveform Generator</td>
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<td>36</td>
<td>AP2G04/73</td>
<td>Spectrum Analyser</td>
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<td>37</td>
<td>AP2G04/385LED</td>
<td>LED Projectors</td>
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<td>38</td>
<td>AP2G04/344</td>
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<td>AP2G04/47</td>
<td>Accelerated Polishing Machine</td>
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<td>Installation of Water Purifying System with Pipelining</td>
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**Teqip-II/P.O/Inst Level/UCE/OU**

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<td>/AP/AP2G04/26 Ground Water Model</td>
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<td>/AP/AP2G04/130 Twin Cylinder 4 stroke diesel engine</td>
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<td>AP/AP2G04/127 Variable Compression Engine</td>
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<td>AP/AP2G04/128 4 cylinder 4 stroke petrol engine</td>
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<td>51</td>
<td>AP/AP2G04/414 CARD/1 (Transportation Engineering Software, 5-License)</td>
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<td>52</td>
<td>AP/AP2G04/324 Anesthesia Machine (Computerized Data Recording System for Human/AMS)</td>
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<td>AP/AP2G04/93 Bio Medical Sensors with Signal conditioning Boards</td>
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<td>../AP/AP2G04/361</td>
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<td>AP/AP2G04/386</td>
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<td><strong>TOTAL</strong></td>
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2.16 Any other information related to special academic achievements of the Institution

I. Publications/Workshops etc.
- Number of journal publications in the last 5 years: Journals: 195
- Number of publications in conferences: 572
- Number of Books Published in the last 5 years: 17
- Number of Workshops/Training Programmes /Seminars/Conferences: 103
- Number of Community Service Programmes: 14


III. Collaboration with Foreign Universities
- State University of New York, Buffalo – Student / Faculty Exchange
- Southern Illinois University for M.E. (Construction Engineering and Management)
- Carnegie Melon University CMU for MSIT Programme - (21st Century Gurukulum)
- M/s ECIL, Hyderabad – Collaborative Program M.S. (By Research)
- M/s CITD, Ministry of Small Scale Industry, Govt. of India
- Metropolitan University of Tokyo
- University of Western Australia

IV. Collaboration with Multi National Companies
- M/s. Cipher cloud India(2012-13)
- M/s. AMD India (2012-13)
- M/s TCS, Hyderabad – Student/Faculty development
- M/s Infosys - Student/Faculty development
- M/s Wipro Technologies
- M/s Cognizant Technology Solutions
- M/s ISRO – Joint INDO-US Education Programs
- M/s IIT Mumbai – Distance Education Programs
- M/s Astra Microwave Pvt. Ltd. – Research
- M/s Analog Devices Ltd. – Research
- M/s Titan Energy Systems Ltd. – Research and Consultancy

V. Select Awards and Recognitions

Table 2.9 : Select Awards and Recognitions of Faculty

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Nature of Award</th>
<th>Person/Institute Received</th>
<th>Year of Award</th>
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<tr>
<td>1</td>
<td>Padmasri</td>
<td>Sri. N. Diwakar, Former Chairman, BoG</td>
<td>2004</td>
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<tr>
<td>2</td>
<td>Performance Excellence award</td>
<td>Sri. N. Diwakar, Former Chairman, BoG</td>
<td>2002</td>
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<td>3</td>
<td>Scientist of the Year award of DRDO</td>
<td>Sri. N. Diwakar, Former Chairman, BoG</td>
<td>2000</td>
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<td>4</td>
<td>IETE-IRSI Award</td>
<td>Sri. N. Diwakar, Former Chairman, BoG</td>
<td>1999</td>
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<td>5</td>
<td>Best Engineering College Award in the Country by the ISTE</td>
<td>UCE, OU</td>
<td>2003</td>
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<tr>
<td>6</td>
<td>Best participating Institute in the Project Impact by Govt. of India</td>
<td>UCE, OU</td>
<td>1992</td>
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<tr>
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<td>Awards Description</td>
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<td>Department</td>
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<tr>
<td>7</td>
<td>Sir M. Vishweshvaraiah Award for outstanding Engineer</td>
<td>Prof. Pandari Pandey, Dept. of ECE</td>
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<tr>
<td>8</td>
<td>Best Teacher Award by Andhra Pradesh State Government</td>
<td>Prof. Pandari Pandey, Dept. of ECE</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Best Teacher Award by Andhra Pradesh State Government</td>
<td>Prof. A. D. Rajkumar, Dept. of EEE</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Best Teacher Award by Andhra Pradesh State Government</td>
<td>Prof. K. V. Chalapati Rao, Dept. of CSE</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Best Teacher Award by Andhra Pradesh State Government</td>
<td>Prof. Shanta Ram, Dept. of Civil Engg.</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>Best Teacher Award by Andhra Pradesh State Government</td>
<td>Prof. D. Babu Rao, Dept. of Civil Engg.</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>Best Teacher Award by Andhra Pradesh State Government</td>
<td>Prof. D. C. Reddy, Dept. of ECE</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>Certificate of merit for a publication in the Journal of Institution of Engineers</td>
<td>Prof. A. D. Rajkumar, Dept. of EEE</td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>Prof. S. C. Aiya Memorial IETE Award</td>
<td>Prof. P. Pande, Dept. of ECE</td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>Best Research Paper Award at 4th Malaysian Software Engineering conference</td>
<td>Prof. S. Ramachandram, Dept. CSE, OU</td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>Prof. K. Sreenivasan Memorial IETE award</td>
<td>Prof. P. Pande, Dept. of ECE</td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>ISTE Anna university National Award</td>
<td>Prof. P. Pande, Dept. of ECE</td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>ICI: Altra-tech endowment award for outstanding concrete Technologist</td>
<td>Prof. P. Rao, Civil Engineering Dept.</td>
<td></td>
</tr>
<tr>
<td>21</td>
<td>Distinguished Position occupied by the faculty</td>
<td>Prof. D. N. Reddy, Vice-Chancellor, JNTU</td>
<td></td>
</tr>
<tr>
<td>22</td>
<td>Distinguished Position occupied by the faculty</td>
<td>Prof. P. Pande, Director of NIT Nagpur</td>
<td></td>
</tr>
<tr>
<td>23</td>
<td>Distinguished Position occupied by the faculty</td>
<td>Prof. D. C. Reddy Vice-Chancellor, OU</td>
<td></td>
</tr>
<tr>
<td>24</td>
<td>Best Teacher Award by UCE, OU</td>
<td>Prof. A. D. Rajkumar, Dept. of EEE</td>
<td></td>
</tr>
<tr>
<td>25</td>
<td>Best Teacher Award by UCE, OU</td>
<td>Prof. P. Pande, Dept. of EEE</td>
<td></td>
</tr>
<tr>
<td>26</td>
<td>Best Teacher Award, Govt of AP</td>
<td>Prof. S. Ramachandram, Dept of CSE</td>
<td></td>
</tr>
<tr>
<td>27</td>
<td>Best Young Teacher Award, Govt of Telangana</td>
<td>Dr. P. Sateesh Kumar, Dept of Electrical Engineering</td>
<td></td>
</tr>
<tr>
<td>28</td>
<td>Dr. G. Mallesham</td>
<td>Dr. Dr. G. Mallesham, Dept of Electrical Engineering</td>
<td></td>
</tr>
<tr>
<td>29</td>
<td>Academic Research Award of Excellence by AMSI</td>
<td>Center for Prototyping and Testing of Industrial products(CPTIP)</td>
<td></td>
</tr>
</tbody>
</table>
VI. Select Student Achievements

Table 2.10 Select Student Achievements

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Achievement Particulars</th>
<th>Name of the Student</th>
<th>Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>All India First Rank GATE</td>
<td>T. Satish, Dept. of Civil Engineering</td>
<td>2009</td>
</tr>
<tr>
<td>2</td>
<td>All India third Rank GATE</td>
<td>M. Bhaskar Yadav, Dept. of Civil Engineering</td>
<td>2009</td>
</tr>
<tr>
<td>3</td>
<td>All India First Rank GATE</td>
<td>B. Buchhi Reddy, Dept., of CSE</td>
<td>2007</td>
</tr>
<tr>
<td>4</td>
<td>Indian Engineering Services</td>
<td>B. Anusha, Dept. of Civil Engineering</td>
<td>2010</td>
</tr>
<tr>
<td>5</td>
<td>All India First Rank GATE</td>
<td>P. Rajender, Dept. of Civil Engineering</td>
<td>2006</td>
</tr>
<tr>
<td>6</td>
<td>All India fourth Rank GATE</td>
<td>P. Koteswar, Dept. of Civil Engineering</td>
<td>2007</td>
</tr>
</tbody>
</table>

VII. Conferences Conducted during last four years

Table 2.11 conferences conducted

<table>
<thead>
<tr>
<th>Sl. No</th>
<th>Name of The conference</th>
<th>Organizers</th>
<th>Date and year</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>National Conference on Recent Advances in Civil Engg.</td>
<td>Dept. of Civil Engg.</td>
<td>7-8 November, 2014</td>
</tr>
<tr>
<td>2</td>
<td>International Conference on Computing and Communication Technology (ICCCT-2014)</td>
<td>Dept. of Computer Science &amp; Engg.</td>
<td>11-13 December 2014</td>
</tr>
</tbody>
</table>

VIII. Centers of Excellence in College Campus

- Navigational Electronics Research and Training Unit (NERTU)
- Microwave Engineering (CEME)

IX. Centers of Research, Development and Consultancy

- Centre for Energy Technology
- Entrepreneurship Development Cell
- Placement and Training Cell
- Centre for Creative technologies
- Biomedical Instrumentation Centre
- Centre for Prototype Development and testing of Industrial Products
X. Collaboration for Ph.D. programme

The Table 2.12 given the list of industry & R&D organization with whom Ph.D programme is being conducted.

**Table 2.12: Collaboration for Ph.D programme**

<table>
<thead>
<tr>
<th>S.No.</th>
<th>R&amp;D Organization</th>
<th>Departments Covered</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>ADRIN</td>
<td>ECE,CSE</td>
</tr>
<tr>
<td>2.</td>
<td>DRDL</td>
<td>ECE,CSE</td>
</tr>
<tr>
<td>3.</td>
<td>NFTDC</td>
<td>Mechanical Engineering</td>
</tr>
<tr>
<td>4.</td>
<td>IICT</td>
<td>Mechanical Engineering</td>
</tr>
<tr>
<td>5.</td>
<td>ARCI</td>
<td>Mechanical Engineering</td>
</tr>
<tr>
<td>6.</td>
<td>DMRL</td>
<td>Mechanical Engineering</td>
</tr>
<tr>
<td>7.</td>
<td>CBIT</td>
<td>All the departments</td>
</tr>
</tbody>
</table>
2.17 Finishing School and Remedial Classes

2.17.1 Finishing School: The institute conducts the Finishing School activities through two centres i.e., Center for English language Training (CELT) and Placement Cell. CELT organizes classes on soft skills and English language regularly for the students who are poor in English and students who come from rural backgrounds. The institute attracts many foreign students for pursuing various UG /PG programmes who lack English language skills. CELT also offers tailor-made programmes for the foreign students. Placement Cell apart from organizing the placements for the students, it undertakes the gap analysis by taking the feedback from the industry representatives who come for the campus placements. The Cell takes necessary steps to fill the gap by organizing the workshops and lectures by industry experts in consultation with the respective departments.

2.17.2 Remedial Classes: The institute has a practice of identifying academically weak students and conducting remedial classes. The practice has been initiated during the phase-1 of project TEQIP. It is proposed to institutionalize this activity making it part of academic calendar. The following action plan is proposed.

- Identifying weak students: The performance of the students after every class test is analyzed and the academically weak students are identified.
- Conducting remedial classes: After taking the feedback from the faculty members a time table is prepared to conduct remedial classes during the Saturdays.
- Analyzing the final result and taking corrective actions: The semester results are analyzed further to identify the weak students. Corrective measures are initiated in consultation with the respective faculty members and HODs.