SELF ASSESSMENT REPORT (SAR)

Submitted to

NATIONAL BOARD OF ACCREDITATION, NEW DELHI

By

Name of Programme : Diploma in Electrical Power System

VIDYA PRASARAK MANDAL'S POLYTECHNIC, THANE

Jnanadweepa, Thane College Campus, Thane (W) 400 601.
Maharashtra State – INDIA

Approved by All India Council for Technical Education, New Delhi,
Recognized by Directorate of Technical Education, Maharashtra State, Mumbai
Affiliated to Maharashtra State Board of Technical Education, Mumbai

Institute Code : D-3257
Vidya Prasarak Mandal's
POLYTECHNIC
(Accredited by : National Board of Accreditation, New Delhi*)
'Jnanadweepa', College Campus, Chendani, Bunder Road, Thane (w) 400 601 (M.S.)
Tel. : +91 22 2536 4494, Telefax : +91 22 2533 9872
email : vpmpoly@vpmthane.org URL : www.vpmthane.org

D. K. NAYAK
M E (Comp. Engg.), L M I S T E, M I E
Principal
email : dknayak@vpmthane.org

Ref. No. VPM / Poly / 600 / 2016-17 / Date : 25.11.2016

To,
The Member Secretary,
National Board of Accreditation,
NBCC Place, East Tower, 4th Floor,
Bhisham Pitamah Marg,
Pragati Vihar, New Delhi – 110 003, India.

Sub : Submission of SAR
Ref.: Application No. 1691-04/01/2016
Institute : Vidya Prasarak Mandal's Polytechnic Thane (W). 400 601 (MS)
Programme : Diploma in **Electrical Power Systems**

With reference to the subject cited above, herewith we are submitting the Self Assessment Report (SAR) of Diploma Programme in **Electrical Power Systems**.

The said SAR has been uploaded in the NBA website http://www.nbaind.org and in our institute website www. vpmthane.org.

The SAR copy is hereby submitted for kind consideration of Programme Assessment and Accreditation by NBA through the Peer team.

: - **Tentative Suggested dates for Peer team Visit** - :

Jan 27th – 30th, 2017
Feb 3rd – 5th, 2017
Feb 10th – 12th, 2017
Feb 17th – 19th, 2017
Feb 24th – 26th, 2017

Thanking You,

Your's Faithfully,

Dknayak

Prof. D. K. Nayak
Principal

PROLOGUE

Vidya Prasarak Mandal, Thane

|| Prajwalito Dnyanamayaha Pradipaha ||

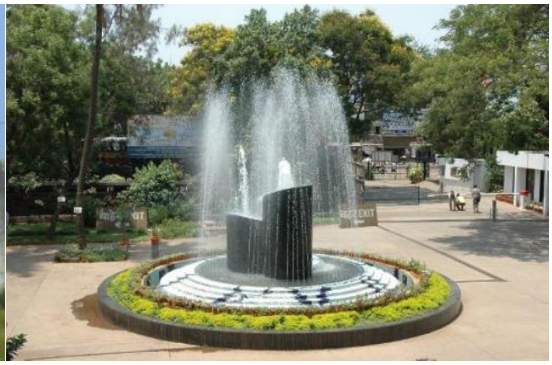
VPM Thane is an Educational Trust established in the year 1935, to encourage and give full scope of education in Thane and surrounding region for which there was limited facility during sixties. The Mandal started its first college in 1968-69 on a 13.5 acres marshy creek land gifted by the Government of Maharashtra for educational purposes. The Institutes of the Campus, enthusiastically and zealously cater annually to the basic needs of education of nearly 16,000 students from K.G to P.G through its Marathi and English Medium Schools, Arts, Commerce, Science, Law, Polytechnic, Management Studies, Information Technology Centre, Advanced Study Centre. The Campus provides State-Of-The-Art facilities to the students with the latest technologies to make them competent for the future career opportunities.

In the year 2012, VPM started an Engineering College at Velneshwar Village in Ratnagiri District for catering to the needs of rural population.

V.P.M.'s Polytechnic

Vidya Prasarak Mandal's Polytechnic Thane, the Self-financed Institute, was started by the Management in the year 1983. Polytechnic so far has trained over 9000+ diploma holders, 1000+ Advance Diploma Students, 5000+ Certificate course students. Important features include quality academic activities implementation, extensive co-curricular activities, National Conferences, Industrial visits, In-plant Training and Value Addition Programmes. Polytechnic, its students and staff have won awards at State and National level regularly. Institute is a trust worthy partner of Affiliating body Maharashtra State Board of Technical Education, Mumbai as a Project Institute for Curriculum Revision, Faculty Training lab Manual Development, Conduct of Semester Exams, Academic Monitoring, Career Fair and other activities. Institute has upgraded its Infrastructure, Faculty, Equipment's, and Teaching Learning process from time to time to meet changing technology needs and industry expectations.

- **Year of Start : 1983**
- **Year of First AICTE Approval : 1994**
- **Year of Accreditation : 2004**
- **Best ISTE Chapter Award : 2009**
- **Year of Best Polytechnic Award : 2009, 2015**



Polytechnic Journey so far….

Major Achievements

Year	Activity
1983	Polytechnic started with four Diploma Programmes – Chemical Engineering, Electrical Power Systems, Industrial Electronics and Instrumentation.
1987	Inauguration of First Computer Centre by Mr. M.G. Nayak, IAS, Deputy Secretary, Technical & Higher Education Dept., Govt. of Maharashtra.
1987	First Edition Polytechnic Magazine – Polyzine- Published.
1987	Foundation Stone laid for Polytechnic Buildings.
1987	Basic Training Centre for Trade Apprentices from Chemical Industries- NOCIL, BAYER,PIL, Herdillia, Chemicals, NRC, Savita Chemicals, Gharda Chemicals Ltd. (AOCP & MMCP) approved by Board of Vocational Education, Maharashtra.
1989	Visit of State Government Team for Polytechnic Gradation. Received 'A' Grade.
1989	Student Chapter of Instrument Society of America with 33 Student Members. First ISA student Chapter in India.
1990	First Two days Seminar on Process Control Instrumentation Chief guest-Mr. C.S. Joshi (M.D)Ornate Chemicals Ltd.
1990	Started Advance Diploma in Computer Software System Analysis and Applications Course affiliated to MSBTE and Certificate Course in Computer Operation Affiliated to DVET.
1991	Felicitation of Mr. P.S. Deodhar- President of APLAB Ltd. for receiving the prestigious US Award Engineering Manager from Management Society of America.
1992	Inauguration of Indian Society of Technical Education Chapter. Chief guest – Prof. B.B. Chopane – Director, Technical Education, Maharashtra State.

Year	Activity
2000	Millennium Information Technology Exhibition inaugurated by Hon'ble Union Minister Information Technology & Parliamentary affairs Mr. Pramod Mahajan.
2001	Start of Diploma in Information Technology.
2002	Start of Diploma in Computer Engineering, Advance Diploma in Industrial Safety
2003	Polytechnic Principal Prof. S.S. Mujumdar nominated as Member of Board of MSBTE, Mumbai.
2004	First NBA Accreditation of four Programmes, w.e.f 17/3/2004 for the period of 3 years.
2004	One-day National Seminar on Pollution of Water Bodies in Urban Area on 8th August 2004 supported by AICTE, New Delhi.
2004	Start of Diploma in Medical Electronics.
2005	Visit of Infosys founder Mr. N.R. Narayanamurthy as a Key Note Speaker at the Conference Challenges to Indian Multinationals.
2005	Received AICTE Grant of Rs. 5,00,000/-AICTEMODROBS Grant to Electrical Power System Department
2006	Prof. D.K. Nayak, Principal nominated as Member of Governing Council, Board of Apprenticeship Training Western Region, Mumbai.
2006	ISTE Best Project Award to Mr. Ramiz Pojee and team for Project on Biometrix OS Defense Shell guided by Dr. Mrs. Usha Raghavan.
2006	Installation of Automatic Weather Stations (AWS), developed and maintained by India Meteorological Department (IMD) Government of India.
2009	ISTE-Narsee Monjee Award for Polytechnics in Maharashtra State for the year 2009, for Best overall performance.
2009	V.P.M.'s Polytechnic, Thane received Best ISTE-Chapter in Maharashtra-Goa for the year 2009.
2009	District Level Energy Park developed with the partial grant of Rs.4.75 lakhs from Ministry of New and Renewable Energy, New Delhi.
2009	Prof. D.K. Nayak, Principal received Fulbright-Hays Federal Assistance Award of U.S. Department of State at Salzburg Seminar Session 463 on Greening the Minds: Universities, Climate Leadership, and Sustainable Futures, Salzburg, Austria for the paper title Renewable Energy Efforts - Special Focus on reduction of Global Warming.
2009	Start of Advance Diploma in Energy Management & Audit
2011	Start of Entrepreneurship Development Cell.
2012 & 2013	MSBTE Letter of Appreciation for Excellent Academic Performance in all the Diploma and Two Advance Diploma Programmes.

Year	Activity
2013	Student's Project (EPS Dept) - Open Hydro System selected by MSBTE and filed for Indian Patent.
2013	IOSH, UK Graduate Membership Accreditation for Advance Diploma in Industrial Safety Programme.
2014	Prof. D.K. Nayak, Principal received ISTE Ranganathan Engineering College National Award for Best Polytechnic Principal at the 44th ISTE National Annual convention.
2015	Received ISTE Narsee Monjee Student Project Award by Sharaddha Kamble, Vishal Raut, Mohak Bengale, Divyesh Jain students of Third year Instrumentation department for the project Thermostat Life Testing.
2015	ISTE-Narsee Monjee Award for Polytechnics in Maharashtra State for the year 2015, for Best overall performance.
2015	Received MSBTE Best Laboratory Award to Polytechnic Electrical Power System department.
2015	MSBTE Letter of Appreciation for Excellent Academic Performance.
2016	Master. Soham Kulkarni of Final year Industrial Electronics represented Polytechnic for International Competition Mostratec, an International Science and Technology Fair held in Brazil for his project Smart Building Automatic Controller. He also won the ISTE Narsee Monjee National Award for Best Project done by the Polytechnic students.
2016	Dr. (Mrs.) G. S. Ingawale, Sr. Lecturer filed for Indian Patent for her Invention in Measurement of Potential & Chemical Kinetics of Lantadene by using immobilized Enzyme.

ISTE Staff Awards

Year	Activity
2006	Mrs. S.S. Kulkarni received ISTE L&T National Award Best M. Tech. Thesis in Electrical and Electronics Engineering.
2008	Prof. D.K. Nayak, Principal received Rajarambapu Patil National Award for Promising Engineering Teacher (below 50 years of age) for creative work done in Technical Education (Polytechnics) from Indian Society for Technical Education (ISTE), New Delhi
2013	Dr. Usha Raghavan, Head of Information Technology Department has been conferred ISTE U.P. Government National Award for an outstanding work done in specified areas of Engineering and Technology for the year 2013 at 43rd ISTE National Annual Convention held at T.K.I.E.T. Warananagar, Kolhapur, Dist-Maharashtra.
2014	Dr. Mrs. Geetali S. Ingawale, Sr. Lecturer, honoured with ISTE Best Polytechnic Teacher Award for the year 2014 for Maharashtra and Goa States in the 44thISTE National Annual convention.
2014	Mrs. Sujata M. Gupte, Controller of Examination placed Second Position

Year	Activity
	in Zonal level ISTE Srinivasa Ramanujan Mathematics Competition 2014-2015 and placed Third Prize in National level.
	Ms. Amisha Mestry, Lecturer in Industrial Electronics Department placed Second Position in Zonal level ISTE Srinivasa Ramanujan Mathematics Competition 2014-2015.
	Ms. Rizvi Fatima Ismat, Lecturer in Mathematics placed First Position in Zonal level ISTE Srinivasa Ramanujan Mathematics Competition 2014-2015 and placed Fourth Prize in National level.
2015	Mrs. Santhi M. Laguduva. Lecturer, Industrial Electronics Department received ISTE – L & T National Award for Best M. Tech Thesis in Electrical & Electronics Engineering 2015.

Staff Paper Presentation Awards

Year	Activity
2006	Prof. D.K. Nayak, Principal presented paper Socio-economic aspects of Hydrogen Energy-Indian Perspective at the Plenary session of International Forum Hydrogen Technologies for Energy Production at Moscow, Russia Supported by AICTE, New Delhi.
2011	Prof. D.K. Nayak, Principal received Best Paper Award for the paper title Renewable Hydrogen Fuel for automobiles at National level Conference on Emerging trends in Technology at BVIT-Navi Mumbai.
2011	Mrs. K.S. Agashe, Head of Industrial Electronics Department received Best Paper Award for the paper title Future Non-volatile Memory option in VLSI: Memristor at Agnel Polytechnic, Vashi.
2013	Mrs. Radhika Kamath, Lecturer, Information Technology Department received 1st Prize for the paper title Grid & Distributed Networks to handle Mammoth Tasks at National Conference on Emerging Trends in Technology.
2014	Mrs. K.S. Agashe, Head of Industrial Electronics Department received Second Prize for the paper title Simulated Resistive switching behavior of Memristor at BVIT, Kharghar, Navi Mumbai.
2015	Ms. Latasha Keshwani, Lecturer, Industrial Electronics Department received Best Paper Award for the paper title Face Recognition using Radial Curves & Back Propagation Neural Network at International Conference on Advances in Science and Technology. (ICAST-2015) organized by Saraswati College of Engineering, Kharghar
2015	Mrs. S.D. Khandagale, Lecturer in Instrumentation received First Prize for the paper title Intelligent Approach for Motor Control at National Conference-Vision - 2015 at BVIT, Kharghar, Navi Mumbai.

MSBTE State Level Toppers

Year	Name of the Student	Course	Percentage	MSBTE Rank
1996	Ms. Joshi Bhakti B.	Electrical Power System	79.91	First
1996	Mr. Oak Parag V.	Electrical Power System	79.45	Second
1996	Mr. Deshmane Mahesh J.	Instrumentation	80.27	First
1997	Mr. Bafna Milind B.	Chemical Engineering	81.96	First
1997	Mr. Narkar Chandan K.	Industrial Electronics	82.77	First
1997	Mr. Hande Tushar T.	Electrical Power System	78.82	Second
1997	Mr. Buddhikot Mandar D.	Electrical Power System	78.27	Third
1998	Mr. Inamdar Mandar S.	Electrical Power System	72.98	First
1999	Mr. Lamkhande Dattaram T.	Electrical Power System	77.17	First
1999	Mr. Girkar Jayesh H.	Electrical Power System	72.78	First
2001	Mr. Narkar Vyankatesh V.	Industrial Electronics	84.29	Sixteenth
2002	Ms. Narkar Kirti Kamlakar	Industrial Electronics	85.14	Sixteenth
2004	Mr. Zingre Shreyas R.	Electrical Power System	83.31	First
2005	Mr. Kher Vaibhav	Electrical Power System	87.54	First
2006	Mr. Gokhale Kedar Dilip	Electrical Power System	87.00	First
2006	Mr. Rangari Rameez Anwar	Chemical Engineering	78.96	Second
2007	Mr. Mukadam Jasim Wazir	Chemical Engineering	82.00	Second
2008	Mr. Singh Shashank S.	Information Technology	89.58	Second
2008	Ms. Sarangdhar Grishma D.	Chemical Engineering	83.04	Third
2009	Mr. Waghmare Abhijit Arun	Chemical Engineering	89.06	Second
2014	Ms. Vaity Priya Jitendra	Information Technology	91.56	Third

List of National Conferences organized since 2004

Date & Year	Name of Conference
8th August 2004	Pollution of Water Bodies in Urban Area
27th& 28th August 2005	Alternative Energy Sources
8th& 9th December 2006	Geo – Informatics.
3rd February 2007	Innovations in Safety, Health and Environment.
5th January 2008	Latest Trends in Nano Technology
18th October 2008	Corrosion Prevention through advanced technologies.
10th January 2009	Biometrics, RFID and Emerging Technologies for Automatic Identification
19th September 2009	Advancements in Medical Instrumentation.
10th October 2009	Safety Practices for Peace, Productivity and Profits
3rd July 2010	Broader Perspectives of Language, Thinking and Technology
23rd October, 2010	Technology – a Strategy for Safety in Infrastructure
20th August 2011	Future Power Systems for Green & Clean World
15th October 2011	Progress and Prosper through Entrepreneurs & Intrapreneurs
5th January 2013	Emerging Trends in Solar Technologies
4th January 2014	Process Safety Management
16th & 17th January 2015	Next Generation Electronic
7th February 2015	Industry Expectation from safety Managers
19th December 2015	Life Safety - Today & Tomorrow
17th December 2016	Environment, Health & Safety

Department of Electrical Power System

Vision

Empowering students with best knowledge of Electrical Power System through innovative learning Methodologies.

- Year of Establishment (intake capacity 30) : 1983
- First AICTE approval received : 1994
- Year for rise in intake capacity (30-60) : 1997
- Accredited by NBA for three years : 2004

Received grant of Rs.5 lacs from AICTE under MODROBS for modernization of departmental laboratories.

Received 'Best Laboratory Award' by MSBTE for Electrical Machine lab with cash prize of Rs.50,000/- for academic year 2015-16.

Set up "District level Renewable Energy Park" in association with MNRE & MEDA (Rs.10 lacs on 50:50 sharing) in the year 2009.

Students' project- "Open Hydro System" selected by MSBTE and filed for Indian Patent in 2013.

Meritorious students of the Department have kept the trend of securing top position in the Merit List of Electrical Engineering Group declared by MSBTE (from 1996 onwards).

Successfully organized two days National conference on "Alternative Energy Sources" & one day National Conference On "Future Power System for Green and Clean World".

Experienced and dedicated staff of the department contribute to the healthy teaching learning environment. Department has developed well interaction with the neighboring industries and utilities.

With well-developed infrastructure Department extends training programmes for Polytechnic teachers all over Maharashtra.

Common Acronyms used in SAR

Acronym	Definition
AICTE	All India Council for Technical Education
C.O.E	Controller of Examination
CAT	Common Admission Test
CFY	Current Financial Year
CFYm1	Current Financial Year minus 1
CFYm2	Current Financial Year minus 2
CGPA	Cumulative Grade Progressive Assessment
CIAAN	Curriculum Implementation and Assessment Norms
CT	Class Test
CUTP	Content Updating Training Program
DC	Direct current
Dept.	Department
DTE	Directorate of Technical Education
EE	Electrical engineering
EM Lab	Electrical Measurement Laboratory
EP/EPS	Electrical Power System
FPADS	Faculty Performance Appraisal and Development System
GATE	Graduate Aptitude Test in Engineering
GRE	Graduate Record Examination
I.V	Industrial Visit
LBS	Learning Beyond syllabus
MODROB	Modernization and Removal of Obsolescence
MSBTE	Maharashtra State Board of Technical Education
OR	Oral
PR	Practical
PST	Practical Skill Test
PT	Progressive Theory Test
RBTE	Regional Board of Technical Education
SW	Sessional
TP	Training and Placement
TW	Term Work

Self Assessment Report (SAR)

for

Diploma in

Electrical Power System

Reaccreditation

SAR Contents

PART A: Institutional Information

1.	**Name and Address of the Institution :**	**VidyaPrasarakMandal's Polytechnic** Building No.1, 'Jnanadweepa', College Campus, Chendani Bunder Road, Thane (W) – 400601, Maharashtra State, India.
2.	**Name and Address of the Directorate of Technical Education**	**: Directorate of Technical Education,** Mumbai, Maharashtra State, 3, Mahapalika Marg, Post Box No.1967, Mumbai - 400001.
3.	**Year of Establishment**	**: 1983**
4.	**Type of the Institution**	**:**
	University	☐
	Deemed University	☐
	Autonomous	☐
	Affiliated	☑ **Maharashtra State Board of Technical Education, Mumbai**
	Any Other	☐
5.	**Ownership Status**	**:**
	Central Government	☐
	State Government	☐
	Government Aided	☐
	Self-Financing	☑ **Educational Trust**
	Trust	☐
	Society	☐
	Section 25 Company	☐
	Any Other (Please Specify)	☐

6. Other Academic Institutions of the Trust/ Society/etc., if any:

Name of the Institution	Year of Establishment	Programs of Study	Location
V.P.M's Dr. Bedekar Vidya Mandir Marathi Medium School (Aided)	1957	Junior K.G to SSC	Thane
V.P.M's K.G. Joshi College of Arts and N.G. Bedekar College of Commerce	1969	HSC, BA BMS, B.Com, BMM, B.Lib., M.Lib., MA, M.Com, Ph.D, Community College	Thane
V.P.M's B.N. Bandodkar College of Science	1969	HSC, B.Sc, M.Sc , B.Sc(IT), M.Sc(IT)	Thane
VPM's Thane Municipal Corporation (TMC) Law College	1972	LLB	Thane
V.P.M's Sau. A.K. Joshi English Medium School (Unaided)	1976	Junior K.G to SSC	Thane
V.P.M's Advanced Study Centre	1996	Applied Analy. Chemistry, Regulatory Affairs, Gardening & Landscape Designing, App. Of Statistics, Hospital administration	Thane
V.P.M's Polytechnic, Information Technology Centre	2000	ADCSSAA, Indu. Safety, Energy Management, Certificate courses - MS-CIT, Tally ERP9, Prog. in C	Thane
V.P.M's Dr. V.N. Bedekar Institute of Research & Management Studies	2005	MMS, PGDM	Thane
V.P.M's Centre for Foreign Language Studies	2008	Certificate courses in French,German, Japanese, Chinese (Mandarin)	Thane
V.P.M's Department of Defense and Strategic Studies	2008	Publications on Internationalization of Education	Thane
V.P.M's Academy of International Education and Research	2009	Educational tour to UK, Singapore, Participation in International Competitions	UK, China, Brazil, Sweden
V.P.M's Maharshi Parshuram College of Engineering	2012	Civil Engg, , Electrical Engg, Elect & Comm., Instru. Engg, Mechanical Engg	Velnesh war, Ratnagiri

7. Details of all the programs being offered by the institution under consideration:

Sr. No.	Programme Name	Year of Commencement	Intake Capacity	Year of Change in Intake	Increase / Decrease	AICTE Approval	Accreditation Status*
1	Diploma in Chemical Engineering (CH)	1983	60	2005	30	Yes	Eligible but not applied
2	Diploma in Electrical Power Systems (EP)	1983	30	1997	60	Yes	Granted Accreditation for 3 Years Period w.e.f. 19-03-2004
3	Diploma in Industrial Electronics (IE)	1983	60	-	-	Yes	Granted Accreditation for 3 Years Period w.e.f. 19-03-2004
4	Diploma in Instrumentation (IS)	1983	30	2011	60	Yes	Granted Accreditation for 3 Years Period w.e.f. 19-03-2004
5	Diploma in Information Technology (IF)	2001	30	2002	60	Yes	Applying First Time
6	Diploma in Computer Engineering (CO)	2002	40	2003	60	Yes	Applying First Time
7	Diploma in Medical Electronics (MU)	2005	60	-	-	Yes	Eligible but not applied

8. Programs to be considered for Accreditation vide this application

Sr. No.	Program Name
1	Diploma in Computer Engineering
2	Diploma in Information Technology
3	Diploma in Electrical power System
4	Diploma in Industrial Electronics
5	Diploma in Instrumentation

9. Total number of Employees

A. Regular* faculty and Staff

Items		CAY 15-16		CAYm1 14-15		CAYm2 13-14	
		Min	Max	Min	Max	Min	Max
Faculty in Engineering & Technology	M	02	02	02	02	02	02
	F	12	12	12	12	12	12
Faculty in Sciences & Humanities	M	01	01	01	01	01	01
	F	02	02	02	02	02	02
Non-teaching Staff	M	19	20	21	20	20	22
	F	10	12	12	13	13	13

B. Contractual Staff

Items		CAY		CAYm1		CAYm2	
		Min	Max	Min	Max	Min	Max
Faculty in Engineering & Technology	**M**	05	05	05	05	09	09
	F	34	36	35	38	33	36
Faculty in Sciences & Humanities	**M**	0	0	01	01	01	01
	F	06	06	05	06	06	06
Non-teaching Staff	**M**	11	11	08	12	07	06
	F	12	14	10	10	09	11

10. Total number of Students

Items	CAY 15-16			CAYm1 14-15			CAym2 13-14		
	R	T	G	R	T	G	R	T	G
Total no. of boys	673	30	**703**	610	29	**639**	775	25	**800**
Total no. of girls	370	31	**401**	397	28	**425**	397	30	**427**
Total no. of students	**1043**	**61**	**1104**	**1007**	**57**	**1064**	**1172**	**55**	**1227**

- **R- Regular, T- Tuition Fees Waiver Students, G- Grand Total**

11. Contact Information of the Head of the Institution and NBA Coordinator

i. Head of the Institution

Name : **Prof. D.K. Nayak**
Mobile No. : **9004690478**
Email id : **dknayak@vpmthane.org**

ii. NBA coordinator

Name : **Dr. (Mrs.) UshaRaghavan**
Designation : **Head Information Technology Department**
Mobile No. : **9920735746**
Email id : **usharagha@gmail.com**

PART B Criteria Summary

Name of the Program : Electrical Power System

Criteria No.	Criterion	Marks / weightage
Program Level Criteria		
1.	Vision, Mission and Program Educational Objectives	/ 50
2.	Program Curriculum and Teaching –Learning Processes	/ 200
3.	Course outcomes and Program outcomes	/ 100
4.	Students performance	/ 200
5.	Faculty Information and Contributions	/ 150
6.	Faculties and Technical support	/ 100
7.	Continuous improvement	/ 75
Institute level Criteria		
8.	Student support system	/ 50
9.	Governance, Institutional support and Financial Resources	/ 75
	Total	**/ 1000**

CRITERION 1	Vision, Mission and Program Educational Objectives	50

1.1. State the Vision and Mission of the Department & Institution (5)

Vision and Mission of the Institution

Vision : Ensuring skill development through Quality Technical Education.

Mission : Imparting creative learning by innovative methodologies to expose the talents by the way of MSBTE (Maharashtra State Board of Technical Education) curriculum.

Mission objectives are,

M– 1 : Develop technical skills and professional ethics with entrepreneurial spirit through conducive environment.

M– 2 : Cultivate lifelong learning skills to face challenges with innovation.

Vision and Mission of the Department

Vision : Empowering students with best knowledge of Electrical Power System through innovative learning Methodologies.

Mission : To accomplish excellent standards of quality technical education by keeping pace with changing technologies and create electrical professional with capabilities to accept new challenges.

Mission objectives are,

M– 1 : Accomplish quality technical education with updated Infrastructure.

M– 2 : Create Technical manpower with professional skills.

M– 3 : Accept new challenges through professional ethics.

1.2. State the Program Educational Objectives (PEOs) (5)

Program Educational Objectives (PEOs)

Diploma holders of the Electrical Power System program within a few years of education will:

PEO-1

Achieve goals in professional careers with broad core knowledge of electrical engineering

PEO-2

Exercise Technical proficiency with changing technology.

PEO-3

Groom with technical knowledge for competence to resolve problems in industries.

PEO-4

Use professional skill to work as good team-member/leader or entrepreneur.

1.3. Indicate where and how the Vision, Mission and PEOs are published and disseminated among stakeholders (10)

Vision and Mission are published and disseminated among stakeholders through

- Institute website
  http://www.vpmthane.org/polywebnew/home.html
- Departmental and Laboratory Notice Boards
- Head of Department's Cabin
- Department Level Documents and Official Mails
- Students Handbook, Manuals, Notices
- Parents Meeting, Conference Souvenir

Stake holder	Dissemination	Effectiveness
Internal Stakeholders		
Management, Promoters, Governing Body Members	• Departmental documents • Program Reports,	• Defining growth plan and road map • Providing physical, human and financial resources • Formulation of policies
Human Resources (Faculty and Support Staff)	• Laboratory's notice boards • Departmental circulars, notices, departmental document Files	• Implementer (Contributor) of Policies • Key contributor in developing / implementing growth plan • Responsible for producing competent technicians /product from the Institution
Students & Parents	• Laboratories & departmental notice board, Activity Certificates • Handouts, Learning material • Lab manuals • Disseminated during student orientation programme.	• Product of the Institution and responsible for creating institute image • Part of society and spectator of development of students.

Stake holder	Dissemination	Effectiveness
External Stakeholders		
Employer	• Institute website • Published in Souvenir of National conference, Seminar Proceedings, • Departmental document Files, • Activity Certificates, • Report of Training Program , • Monitoring file, • Department tech. magazine / News Letters • Polytechnic Magazine,	• Employing technicians and making an assessment on competence and industry readiness
Industry		• Employer as well as participant in curriculum development and industry – institute activities
Alumni		• Able to co-relate learning and practice • Provides appropriate to the department/program committee
Funding Agencies		• Provides financial assistance to the Institution and interacts with the Principal Investigator/Faculty of the department/program
Regulatory/Accrediting authorities like AICTE, NBA, DTE, MSBTE, RBTE		• Prescribes norms and standards to ensure quality assurance and enhancement
Society		• Provides intangible outcome from the Institution perspective

1.4. State the process for defining the Vision and Mission of the Department, and PEOs of the program (15)

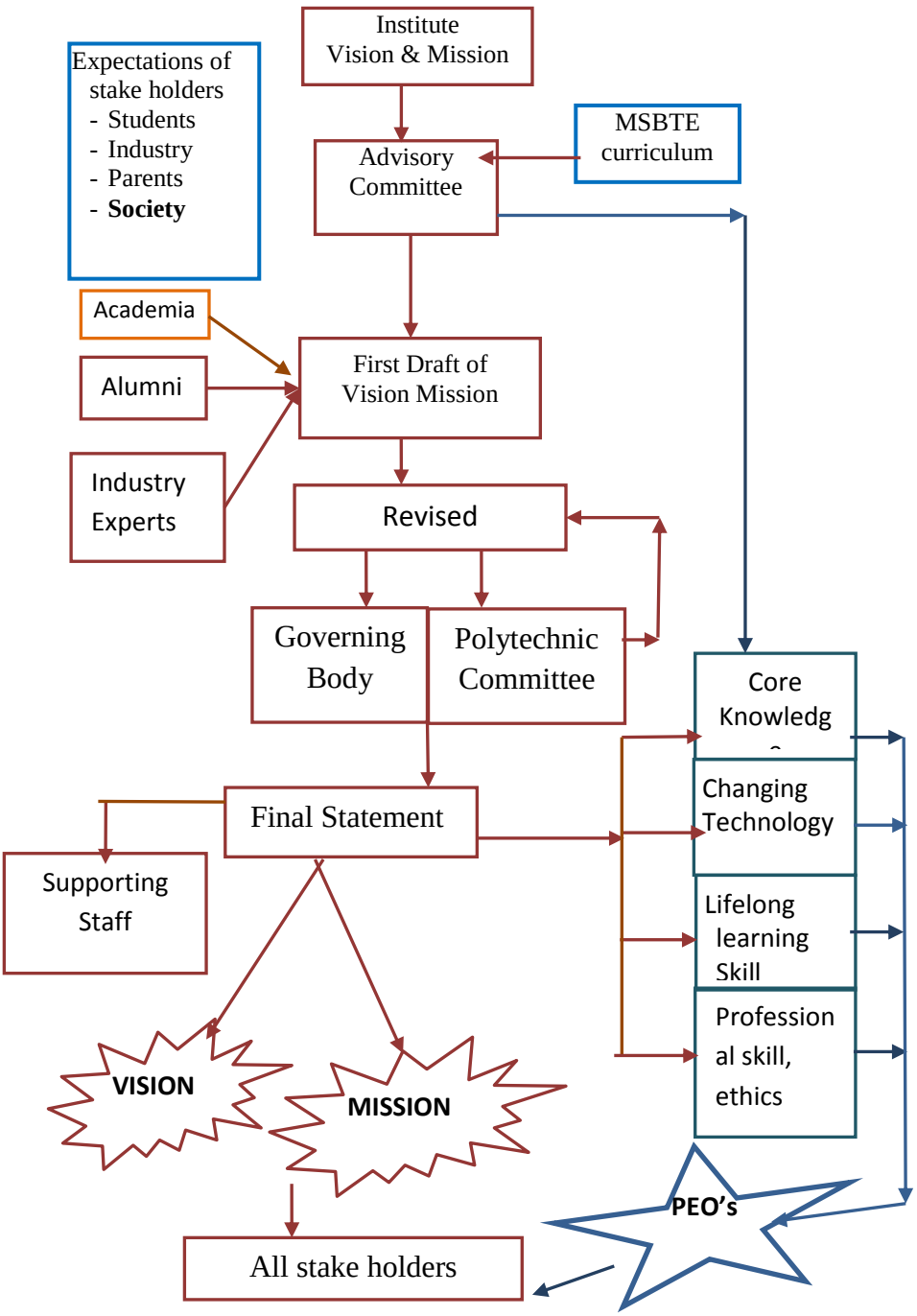
To define the Vision, Mission of the Department, and PEOs of the program following procedure is followed.

Step 1 : Principal forms an Advisory Committee of faculty members for developing the vision and mission statement of the department in alignment with Vision and mission of the institution.

Step 2 : Advisory Committee members under gone brain storming sessions to meet MSBTE-program objectives, expectations from stake holders and to match the needs of society at national and global levels.

Step 3 : First draft was revised as per suggestions by Alumni, Experts from Industry & academia in a meeting.

Process for defining Vision, Mission & PEOs of Department



Step 4 : The revised statements are passed, submitted to Principal for validation from to Governing body of Polytechnic, Polytechnic committee (Management). As per suggestions draft was again revised.

Step 5 : Final statement was defined publicized in the Institution among faculty members of department.

Step 6 : Considering four strategies: Core knowledge, hands on skill, professional skill and Life- long learning skill, program educational objectives has been defined.

Step 7 : Wide publicity was given for vision, mission and program educational objective among all stakeholders and society.

Step 8 : Review in closed loop every 10 years.

1.5. Establish consistency of PEOs with Mission of the Department (15)

Mission of the Department–PEOs matrix

PEO Statements		Mission		
		M-1 Updated Infrastructure	**M-2 Professional Skills**	**M-3 Professional Ethics**
PEO-1	Achieve goals in professional careers with broad knowledge of electrical engineering	3	3	3
PEO-2	Exercise Technical proficiency with changing technology.	3	3	3
PEO-3	Groom with technical knowledge for competence to resolve problems in industries.	3	3	3
PEO-4	Use professional skill to work as good team-member/leader or entrepreneur.	2	3	3

Note: M1, M2, M3 are distinct elements of Mission statement. Enter correlation levels 1, 2 or 3 as defined below:

1: Slight (Low) 2: Moderate (Medium) 3: Substantial (High)

PPEOs and Mission Statement mapping – justification

PEOs	Mission		
	M-1 Updated Infrastructure	**M-2 Professional Skills**	**M-3 Professional Ethics**
PEO-1	Professional career need quality Tech. Education	Professional skill boost career	Achieve goals through professional ethics.
PEO-2	Develop Technical proficiency with quality education in good infrastructure	Develop Technical man power with changing technology.	Adopting innovative analyzing skill with ethics
PEO-3	Quality education develops good competency.	Create competent technical man power.	Develop competency to Accept new challenges
PEO-4	Quality technical educations enforce to become good team-member/leader or entrepreneur.	Create Technical manpower to work as good team-member or leader.	Accept new challenges as good team-leader adopting professional ethics.

CRITERION 2	Program Curriculum and Teaching –Learning Processes	200

2.1. Program Curriculum (50)

2.1.1. Process used to identify extent of compliance of the Board curriculum for attaining the Program Outcomes (POs) & Program Specific Outcomes (PSOs) as mentioned in Annexure I and also the process used to identify curricula gaps. (30)

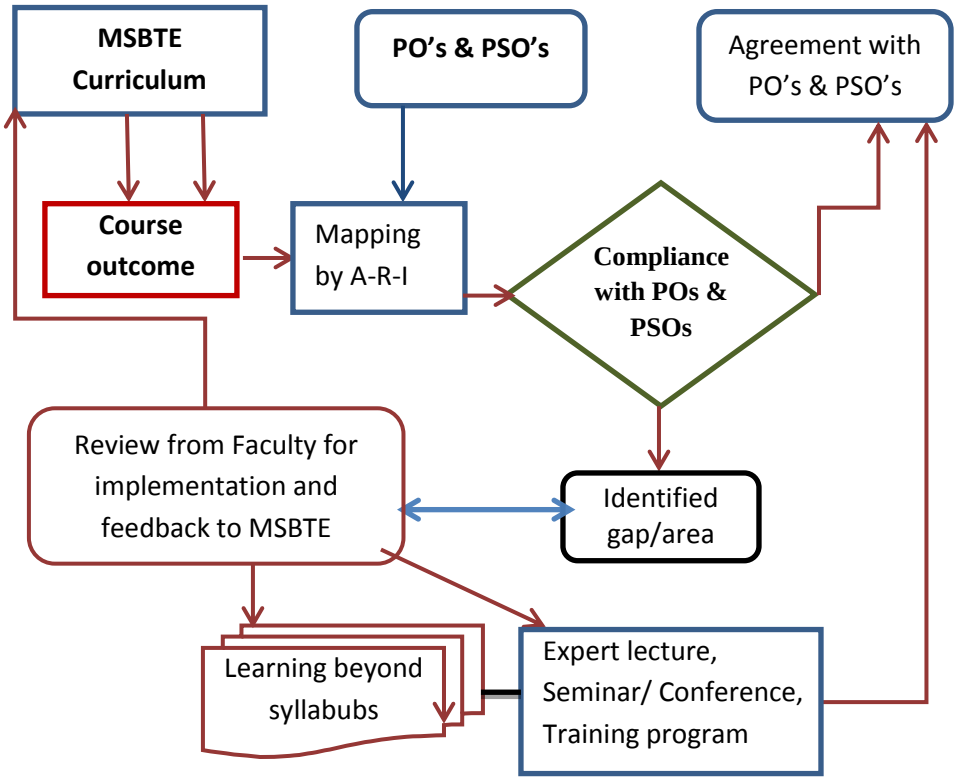
History

Our institute is affiliated to MSBTE; hence Curriculum of our programme is designed by Board of technical education. Board has practice of designing and changing curriculum every five year. we have curriculum of 'O-scheme (OLD)';'R-scheme (Revised)'; 'N-scheme (New)'; S-scheme (scientific)'; A-scheme (need based); E-scheme; 'G-scheme (industry based) since inception of programme in our institute. G-scheme curriculum is designed based on feedback from industries and teaching faculties. Department senior faculties were involved in this curriculum project since 1989. This curriculum is implemented in year 2012-13.

In Board curriculum course objectives are well defined and contents are demarked scientifically. Since Course Outcome (CO's), Program Outcomes (POs), Program Specific Outcomes (PSOs) are not openly defined in curriculum. Hence department form the Course Committee to demark CO's, PO's and PSO's of the programme. To determine the extent of of compliance of Board curriculum with PO's and PSO's following process is used.

Introduction

Gap analyses have been found to be an efficient and effective tool in the evaluation and assessment of curriculum against educational standards or requirements. Course outcome depends on curriculum content and implementation and assessment procedure.



Process procedure

Step 1 : Board curriculum comprises 43 courses considering all semesters. Each faculty member reviewed his or her own course materials against the competencies and listed as Course Outcome (COs). And Course Committee defined PO's and PSO's are listed which are based on board curriculum contents.

Step 2 : Mapping between CO's and PO's and PSO's is done separately on basis of A-R-I.

Where

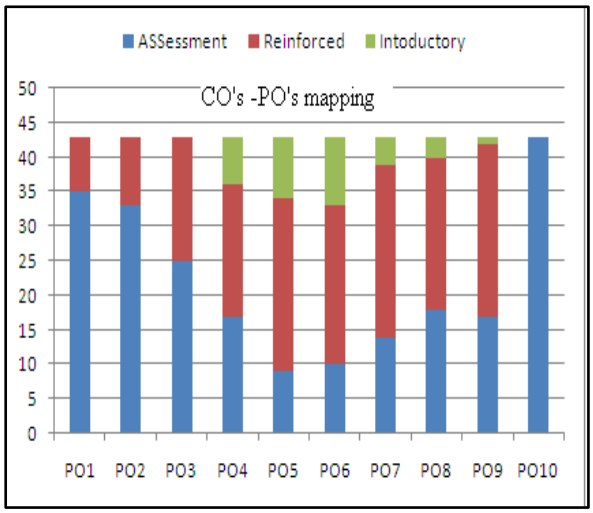
A – Assessment: The attainment of this outcome will be assessed in this course.

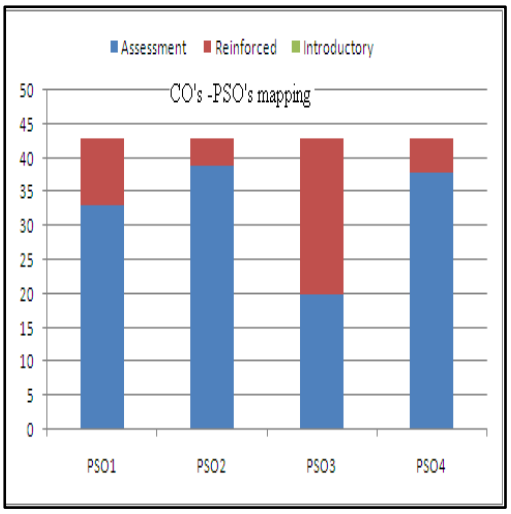
R – Reinforced: This course will build upon student's existing knowledge / skills / through which students can reinforce and/or further develop the knowledge / skills.

I – Introductory level: This subject offers learning opportunities for this particular intended outcome at an introductory level.

Mapping of CO's and PO's												Mapping of CO's and PSO's			
CO	COURSE	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO-1	PSO-2	PSO-3	PSO-4
C101	ENG	A	A	R	R	R	1	R	A	A	A	R	R	A	A
C102	EPH	A	A	A	R	R	A	R	I	R	A	A	A	A	R
C103	ECH	A	A	R	R	R	1	R	I	R	A	A	A	R	A
C104	BMS	A	A	A	1	1	R	R	R	R	A	A	A	R	A
C105	EGG	A	A	A	A	R	R	R	A	A	A	A	A	R	A
C106	CMF	R	R	A	A	R	1	R	R	R	A	R	R	R	A
C107	WPE	A	A	R	R	R	R	A	A	A	A	A	A	A	A
C201	CMS	R	A	R	R	R	I	A	A	A	A	R	R	R	A
C202	EGM	A	A	R	R	I	I	R	R	R	A	A	A	A	A
C203	APH	A	A	R	R	A	R	R	R	R	A	A	A	R	A
C204	ACH	A	A	R	R	R	A	R	R	R	A	A	A	R	A
CR05	FEE	A	A	R	R	I	I	A	R	R	A	A	A	R	A
C206	EMS	A	A	A	I	I	R	R	R	R	A	A	A	R	A
CR07	DLS	R	R	A	A	R	R	R	R	A	A	A	R	R	A
C301	AMS	A	A	R	I	I	R	R	R	R	A	A	A	R	A
C30R	BEE	A	A	A	A	A	R	R	R	R	A	A	A	R	A
C303	EEM	A	A	A	A	R	R	R	R	R	A	A	A	A	A
C304	ECN	A	A	R	R	R	A	R	R	A	A	A	A	R	A
C305	EPG	A	A	A	A	A	A	R	A	A	A	A	A	A	A
C306	CPR	A	A	A	R	R	R	R	R	R	A	A	A	A	A
C307	EWO	R	R	A	A	A	R	A	A	A	A	R	A	A	A
C308	PPO	R	A	R	R	R	R	A	A	A	A	R	A	A	A
C401	EST	R	R	A	A	R	A	R	A	R	A	R	A	A	A
C402	EME	A	A	R	A	R	R	I	R	R	A	A	A	R	A
C403	IIN	A	R	A	R	R	R	A	I	R	A	A	A	R	A
C404	DMT	A	A	A	A	R	R	R	R	R	A	A	A	A	A
C405	IES-1	A	A	A	A	A	R	A	A	A	A	A	A	A	A
C406	TDE	A	A	A	A	R	R	R	R	R	A	A	A	R	A
C407	PPT(17038)	A	A	R	R	R	R	A	A	A	A	R	A	A	A
C501	ECA	A	A	A	R	R	A	R	R	R	A	R	A	R	A
C502	IES-2	A	A	A	A	A	A	R	R	R	A	A	A	R	A
C503	SAP	A	A	A	A	A	R	R	R	R	A	A	A	A	A
C504	PSA	A	A	R	R	I	I	I	R	R	A	A	A	R	R
C505	ACM	A	A	R	A	I	I	I	R	R	A	A	A	R	A
C506	BSC	R	R	R	I	R	I	A	A	A	A	R	A	A	A
C507	EDP	A	R	R	I	R	R	A	A	A	A	A	A	A	A
C508	PPT	A	A	A	R	R	R	A	A	A	A	A	A	A	A
C601	MAN	R	R	R	R	A	A	A	A	A	A	A	A	A	A
C602	TME	R	R	A	A	I	R	A	A	R	A	A	A	R	R
C603	PEL	A	R	A	I	I	I	I	A	I	A	A	A	R	A
C604	PSO	A	A	A	A	R	R	A	A	A	A	A	A	A	R
C605	BCS	A	A	A	I	A	A	R	R	R	A	A	A	A	R
C606	PRO	A	A	A	R	R	A	R	A	A	A	R	A	R	A

Step 3 : Identified extent of compliance of the Board curriculum for attaining the Program Outcomes (POs) and Program Specific Outcomes (PSOs). Identified area is reviewed by faculty for implementation and selects one of the activities. If the compliance is not satisfied by activities then feedback is given to Board to carryout changes during revision of curriculum.





Step 4 : Compliance is fulfilled by engaging Expert lectures, Seminars / conference, training programs,/workshop, industrial visits etc. relevant to courses, so that gap can be reduced. Apart from this Learning beyond Syllabus (LBS) lectures/ practical are engaged every week. Additional knowledge relevant to the identified area of a course is provided, which will help to accomplish POs &PSOs.

Step 5 : Teachers design Assignments based on course outcome. Also take care of contents of theory –Lab., tutorial; coverage of curriculum. Make provision for frequently repeating or revision of theory and Laboratory contents.

Interpretation

Above procedure shows each course outcomes contribute for PO's and PSO's to larger extent. To have complete compliance and to uplift 'Reinforced' to 'Assessment' level activities related to knowledge imparting techniques have to be implemented.

***Activities* I**	***Activities II***	***Activities III***
Learning beyond syllabus	Expert lectures, Visits, Workshop/training program, seminars/conference.	Feedback for curriculum revision to MSBTE.

2.1.2. Contents beyond the Syllabus (20)

To attain the compliance gap observed in 2.1.1, identified activities are detailed as below. All these activities are planned and scheduled at the commencement of each semester.

Activities I : Learning beyond Syllabus (LBS)

- To attain the gap dept. has started LBS activities since 2014-15. Under this, one theory lecture is arranged every week with the provision in the time table. The topic covered will be relevant to course and helps to raise understanding level of students. So these activities will emphasizes PO4, PO5, PO6 & PSO1, PSO3 (Complete Documentation is available.) in practical / workshop during the same semester, every year.

Second year Acc year 2015-16

Relevant course /Topic taken	Date	Details of Faculty	Relevance to PO/PSO
PSA/Attributes Of Power system	4/07/15 18/07/15	Mrs.N.V.Vader HOD EPS Dept.	PO1,PO10, PSO1,PSO4
BSC /Self Confidence Building	23/07/15	Mrs.Anice Alias Sr.Lecturer EPS Dept.	PO1,PO7, PSO3,PSO1
PPO/SCADA	01/08/15 07/08/15	Mr.VaibhavKharat Lecturer EPS Dept.	PO9,PO10
PPO/ Digital India	20/08/15	Mrs.RadhikaKamat Lecturer IF Dept	PO5, PSO3,PSO4
EPG / Energy Awareness & role of Society	27/08/15	Mrs.S.S.Kulkarni Sr.Lect. EPS Dept.	PO3,PO6, PSO2
PPO/Effect of Harmonics	03/09/15	Mrs. R.U.Patil Sr.Lect. EPS Dept.	PO4,PSO2
PPO/Teachers Day	05/09/15	Mrs. Shweta Sagare Lecturer EPS Dept	PO7, PSO3,PSO4
PPO/Electrical Machines	19/09/15	Mrs.Pranali Bodke Lecturer EPS Dept	PO4,PSO2
PPO/Waste Management	24/09/15	Mrs. AsmitaKaralkar Lecturer EPS Dept	PO6,PO7, PSO3
PPO/Fire Safety	03/10/15	Mrs. Sunayana Joshi Lecturer CH Dept	PO6,PO7, PSO3
IIN/Pressure Measurement Techniques	30/12/15	Mrs. S D Khandagale. Sr.Lecturer CH Dept	PO1,PO10, PSO1,PSO4
IIN/Pressure Measurement Techniques	4/1/16	Mrs. S D Khandagane. Sr.Lecturer CH Dept	PO1,PO7, PSO3,PSO1
TD/Wireless Power	13/1/16	Mrs.Pranali Bodke	PO9,PO10

Relevant course /Topic taken	Date	Details of Faculty	Relevance to PO/PSO
Transmission	20/1/16	Lecturer EPS Dept	
DMT/Energy Efficient Transformer	30/1/16	Mrs.N.V.Vader HOD EPS Dept	PO3,PO6, PSO2
DMT/Energy Efficient Transformer	3/2/16	Mrs.N.V.Vader HOD EPS Dept.	PO1,PO10, PSO1,PSO4
TD/Restructuring of Power System	10/2/16 17/2/16	Mrs. R.U.Patil Sr.Lecturer EPS Dept	PO1,PO7, PSO3,PSO1
EPG/Waste Management	24/2/16	Mr. V A Walavalkar 1st Year In-Charge	PO5, PSO3,PSO4
EPG/Waste Management	2/3/16	Mr. V A Walavalkar 1st Year In-Charge	PO3,PO6, PSO2

Third year Acc year 2015-16

Relevant course /Topic taken	Date	Details of Faculty	Relevance to PO/PSO
SAP/SCADA	1/7/15 8/7/15	Mr.Vaibhav Kharat Lecturer EPS Dept.	PO1,PO10, PSO1,PSO4
BSC/Personality Dev. & Self Confidence Building	15/07/15	Mrs.Anice Alias Sr.Lect. EPS Dept..	PO9,PO10
ECA/Energy Awareness & role of Society	22/07/15 29/07/15	Mrs.S.S.Kulkarni Sr.Lect. EPS Dept.	PO5, PSO3,PSO4
IDP/Microcontroller	5/8/15	Mrs.V.A.Joshi HOD IS Dept	PO4,PSO2
PSA/Attributes Of Power system	19/08/15 26/08/15	Mrs.N.V.Vader HOD EPS Dept	PO7, PSO3,PSO4
PPO/Power Quality & Harmonics	2/9/15 9/9/15	Mrs. R.U.Patil Sr.Lect. EPS Dept.	PO6,PO7, PSO3
ECA/Waste Management	23/09/15 30/09/15	Mrs. Asmita Karalkar Lecturer EPS Dept	PO7, PSO3,PSO4
ACM/Control Techniques in Machine	7/10/15	Mrs.Pranali Bodke Lecturer EPS Dept	PO6,PO7, PSO3
PSO/Power Quality	29/12/15	Mrs.S.S.Kulkarni Sr.Lecturer EPS Dept	PO1,PO10, PSO1,PSO4
PSO/Power Quality	5/1/16	Mrs.S.S.Kulkarni Sr.Lecturer EPS Dept	PO9,PO10
PPO/Mobile Phone Systems	12/1/16 19/1/16	Mrs. Shweta Sagare Lecturer EPS Dept	PO5, PSO3,PSO4
RES/MPPT Techniques for Solar	30/1/16	Mrs.Aleena Vincent Lecturer EPS Dept	PO7, PSO3,PSO4
RES/MPPT Techniques for Solar	2/2/16	Mrs.Aleena Vincent Lecturer EPS Dept	PO6,PO7, PSO3

Relevant course /Topic taken	Date	Details of Faculty	Relevance to PO/PSO
PE/Advance PE Devices	9/2/16 16/2/16	Ms. Mayuri Dhake Lecturer EPS Dept	PO7, PSO3,PSO4
PPO/Quality Control	23/2/16	Mr. Anice Alias Sr.Lecturer EPS Dept	PO9,PO10
PPO/Quality Control	1/3/16	Mr. Anice Alias Sr.Lecturer EPS Dept	PO5, PSO3,PSO4

Activities II: Expert lectures, Visits, Workshop / training program, seminars / conference.

CAY -2015-16

Sr. No	Action Taken	Relevant course /Topic taken	Date-Month-Year	Resource Person with Designation	No. of students present	Relevance to POs & PSOs
1.	Expert Lecture	SAP/Latest developments in protective devices	22-9-15	Mr. S.P. Sharma Rtd. GM L& T Powai	61	PO-3 & PSO-3
2	Expert Lecture	IDP/Microcontroller	5-10-15	Mrs. V.A. Joshi, HOD, Instr. Dept. VPM's Polytech.	61	PO-7, PO-8, PSO-4
3	Expert Lecture	IES/Modern Traction	10-09-15	Mr. Yeshvant Jogdeo Rtd.ChiefEng. Indian Railways	61	PO-8
4	Industrial Visit	SAP/Switchgear R & D lab L&T Powai	26-8-15	Mr. Pintu Sharma, Sr.Lecturer, L&T Inst. of Tech. Powai	61	PO-3 & PSO-3
5.	Training Program	IDP/Micro controller and its applications	3-Sat.s of Dec15	Ind. Electronic Dept., V P M's Polytechnic	25	PO-4, PSO-1, PSO-4
6.	One day Seminar	Electro-vision -2015	17July 15	4sessions by Industry experts (program details documented)	120	PO4,5,6,7, 10 PSO-3,4

CAY m1 -2014-15

Sr. No	Action Taken	Relevant course /Topic taken	Date-Month-Year	Resource Person with Designation	No. of students present	Relevance POs & PSOs
1	Expert Lecture	PSOL/Power Quality	12-8-2014	H.B.Chaudhary Prof. in Electr. Engg. Depart, VJTI Matunga	60	PO-2, PO-8,PSO-2, PSO-4
2	Industrial Visit	PSOL/State Load Dispatch Centre, Kalwa	8/2/2015	Mr.Parashar, State Load Dispatch Centre,Kalwa	20	PO-3 & PSO-3
3	Training Programme	IDP/Microcontroller	12-09-2014	S. P. Sakhalkar, DoowhilePvt. Ltd.	18	PO-7, PO -8,PSO-4
4	Training Program	IDP/Industrial Automation	17,18 & 19thDec 2014	Yogita Katre, Senior Faculty, TAACT,Thane	26	PO-7, PO-10
5	One day Seminar	Electro-vision -2014(program details documented)	17 July 2014	4 sessions by Industry& Academic experts	130	PO4,5,6, 7,10 PSO-3,4

CAY m2 -2013-14

Sr. No	Action Taken	Relevant course /Topic taken	Date-Month-Year	Resource Person with Designation	No. of students present	Relevance POs & PSOs
1.	One day Workshop	IDP/ PCB Design	2-07-13	H.B.Haldankar S. P. Inst. of Tech. Andheri	30	PO-7& 8, PSO-4
2.	Training Program	IDP/ PLC & SCADA	13 to 15th Dec. 13	Mrs.YogitaKatre, Sr.Faculty, TAACT,Thane	20	PO-7& 10.

Activities III: Feedback for curriculum revision to MSBTE:

After every 5 years, curriculum of MSBTE is revised to keep pace with the changing technology and to make students of diploma program industry ready. This is in consultation with industry experts and senior academic faculties.

Senior faculties are involved in Curriculum Development Project of MSBTE for last 5 schemes. Curricular gaps and possible addition of new content/add-on courses in the curriculum have been suggested during the work. Few of them listed below –

Suggestions	Semester	Effective changes in Board Curriculum
➢ E to G -scheme		
Introduction of software	5th& 6th sem.	New content-Practical on MATLAB are introduced in course Power System Analysis, Power System Operation & Control
Energy Conservation & Audit	5th sem.	Add-on courses-Addition of new course in E &G curriculum scheme
➢ G to I -scheme		
Introduction of software	5th sem.	Suggested to have practical based on open source Software

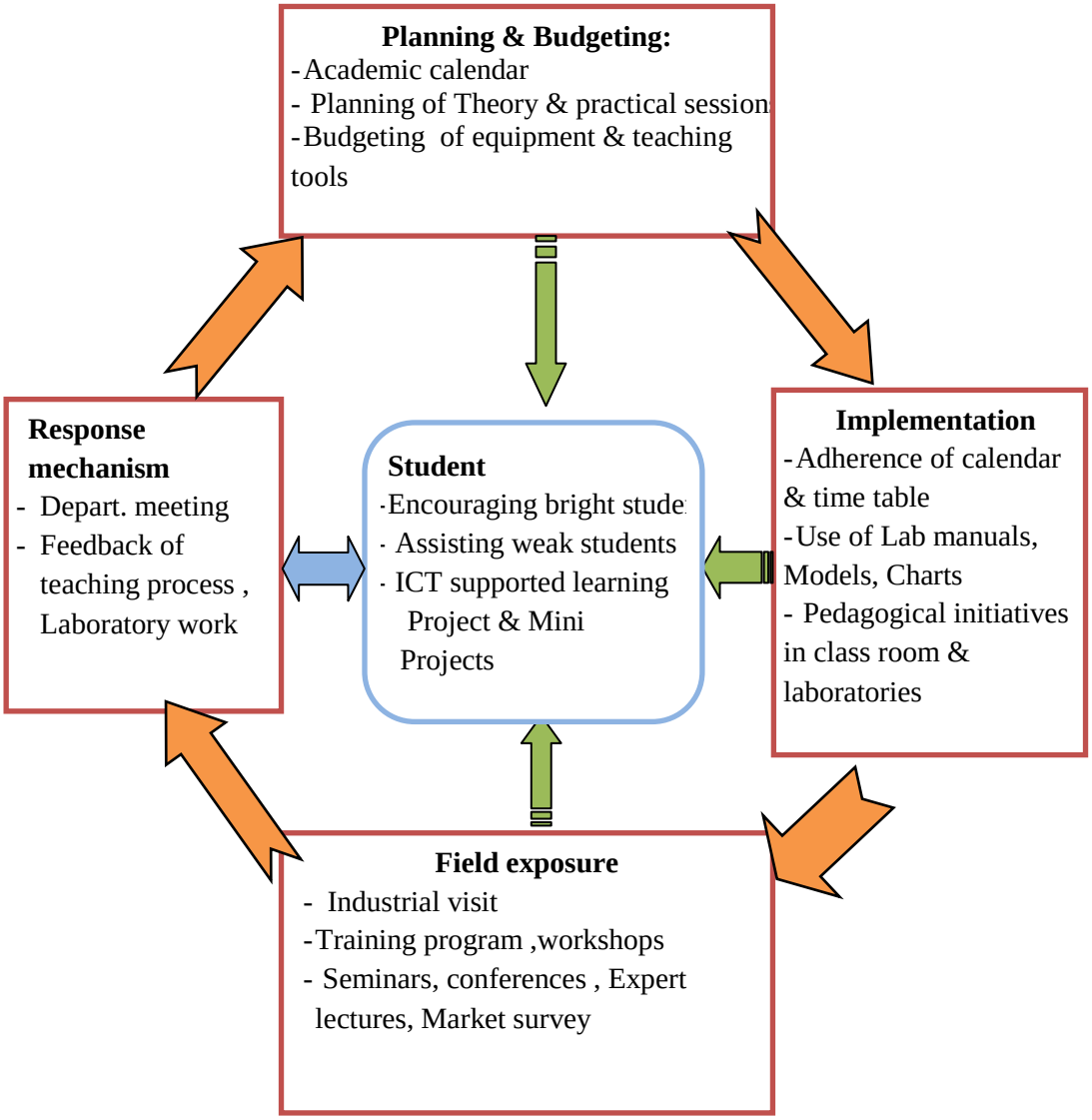
2.2. Teaching Learning Process (150)

2.2.1. Describe processes followed to ensure/improve quality of Teaching & Learning (25)

Technical Education believes that quality teaching is essential for quality learning. In modern knowledge-based economies, the demand for high-level skills is continuing to grow significantly. So the challenges facing education systems and teachers continue to intensify. The role of a diploma teacher is to lay the foundation for the maximum development of young technicians and provide them with a secure and positive learning environment.

Processes followed to ensure/improve quality of Teaching & Learning in department is shown below with flowchart.

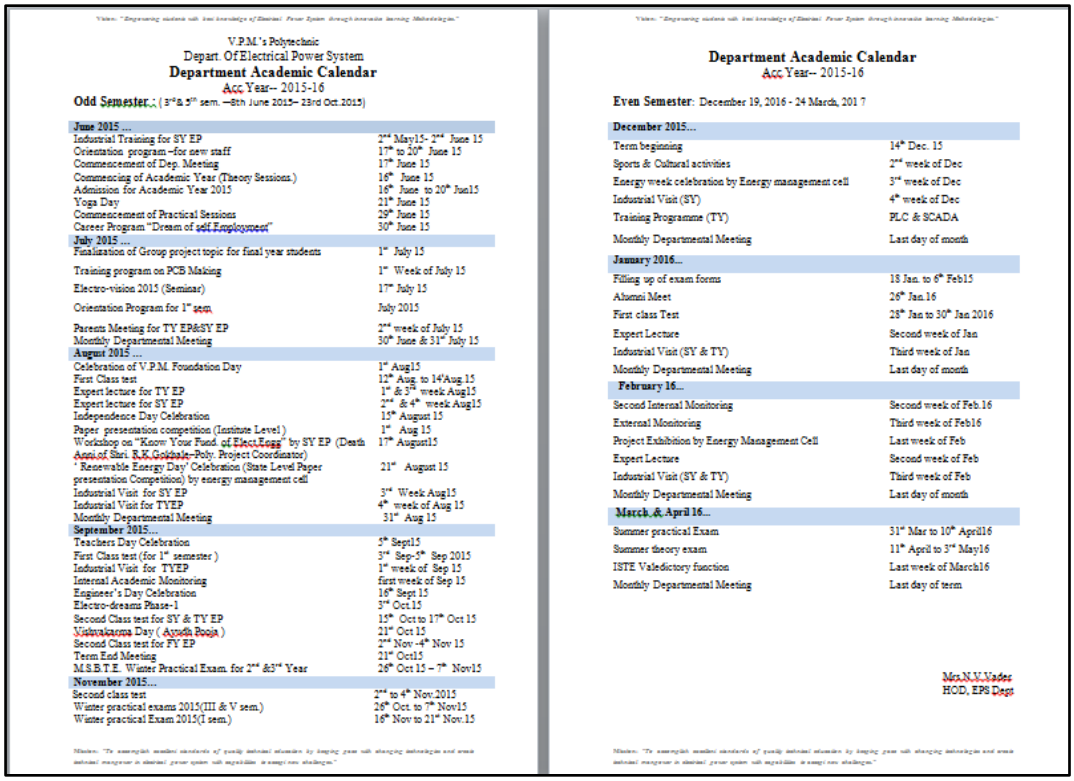
Processes to ensure/improve quality of Teaching & Learning



Stage-I: Planning and Budgeting

a) Planning of annual activities : Academic Calendar

Prior to beginning of each academic year, apart from MSBTE Calendar and Institute Calendar, two calendars were prepared and published –'Depart. Activity Calendar'& 'Project Calendar' Activity calendar shows the duration of each semester, stating various planned Co-curricular activities, Extra-curricular activities and also the schedule of Class test &Semester exams. Project calendar is specifically prepared for final year students to understand & follow the schedule. MSBTE Calendar compromises academic activity schedules. All calendars are put up on notice board at the beginning of year.



V.P.M.'s Polytechnic
Depart. Of Electrical Power System
Department Academic Calendar
Acc Year-- 2015-16

Odd Semester : (3rd & 5th sem. –8th June 2015– 23rd Oct.2015)

June 2015 ...	
Industrial Training for SY EP	2nd May15- 2nd June 15
Orientation program –for new staff	17th to 20th June 15
Commencement of Dep. Meeting	17th June 15
Commencing of Academic Year (Theory Sessions.)	16th June 15
Admission for Academic Year 2015	16th June to 20th Jun15
Yoga Day	21st June 15
Commencement of Practical Sessions	29th June 15
Career Program "Dream of self Employment"	30th June 15
July 2015 ...	
Finalization of Group project topic for final year students	1st July 15
Training program on PCB Making	1st Week of July 15
Electro-vision 2015 (Seminar)	17th July 15
Orientation Program for 1st sem	July 2015
Parents Meeting for TY EP&SY EP	2nd week of July 15
Monthly Departmental Meeting	30th June & 31st July 15
August 2015 ...	
Celebration of V.P.M. Foundation Day	1st Aug15
First Class test	12th Aug to 14thAug 15
Expert lecture for TY EP	1st & 3rd week Aug15
Expert lecture for SY EP	2nd & 4th week Aug15
Independence Day Celebration	15th August 15
Paper presentation competition (Institute Level)	1st Aug 15
Workshop on "Know Your Fund. of ElectEngg" by SY EP (Death Anni.of Shri. R.K.Gokhale–Poly. Project Coordinator)	17th August15
' Renewable Energy Day' Celebration (State Level Paper presentation Competition) by energy management cell	21st August 15
Industrial Visit for SY EP	3rd Week Aug15
Industrial Visit for TYEP	4th week of Aug 15
Monthly Departmental Meeting	31st Aug 15
September 2015...	
Teachers Day Celebration	5th Sept15
First Class test (for 1st semester)	3rd Sep-5th Sep 2015
Industrial Visit for TYEP	1st week of Sep 15
Internal Academic Monitoring	first week of Sep 15
Engineer's Day Celebration	16th Sept 15
Electro-dreams Phase-1	3rd Oct.15
Second Class test for SY & TY EP	15th Oct to 17th Oct 15
Vishvakarma Day (Ayudh Pooja)	21st Oct 15
Second Class test for FY EP	2nd Nov -4th Nov 15
Term End Meeting	21st Oct15
M.S.B.T.E. Winter Practical Exam. for 2nd &3rd Year	26th Oct 15 – 7th Nov15
November 2015...	
Second class test	2nd to 4th Nov.2015
Winter practical exams 2015(III & V sem.)	26th Oct. to 7th Nov15
Winter practical Exam 2015(I sem.)	16th Nov to 21st Nov.15

Department Academic Calendar
Acc Year-- 2015-16

Even Semester: December 19, 2016 - 24 March, 201 7

December 2015...	
Term beginning	14th Dec. 15
Sports & Cultural activities	2nd week of Dec
Energy week celebration by Energy management cell	3rd week of Dec
Industrial Visit (SY)	4th week of Dec
Training Programme (TY)	PLC & SCADA
Monthly Departmental Meeting	Last day of month
January 2016...	
Filling up of exam forms	18 Jan. to 6th Feb15
Alumni Meet	26th Jan.16
First class Test	28th Jan to 30th Jan 2016
Expert Lecture	Second week of Jan
Industrial Visit (SY & TY)	Third week of Jan
Monthly Departmental Meeting	Last day of month
February 16...	
Second Internal Monitoring	Second week of Feb.16
External Monitoring	Third week of Feb16
Project Exhibition by Energy Management Cell	Last week of Feb
Expert Lecture	Second week of Feb
Industrial Visit (SY & TY)	Third week of Feb
Monthly Departmental Meeting	Last day of month
March & April 16...	
Summer practical Exam	31st Mar to 10th April16
Summer theory exam	11th April to 3rd May16
ISTE Valedictory function	Last week of March16
Monthly Departmental Meeting	Last day of term

Mrs.N.V.Vadev
HOD, EPS Dept

Observed the Effectiveness as:

- Smooth conduction of Activities & Academic sessions
- Students learn to follow given project schedule
- Students prepare well before & so can participate in activities
- Well planning for curriculum coverage by faculty
- Preparedness of students for class test & exam schedules.

b) Planning of Theory & Practical Sessions:

Before commencement of every semester subject teachers prepare teaching plan for theory sessions as well as for Laboratory sessions considering revision sessions and Class test &Progressive skill test schedule.

CIANN D1 & D2

D-1

Maharashtra State Board of Technical Education
V.P.M's Polytechnic, Thane
Department of Electrical Power System
Teaching Plan (TP) Academic Year: - 2016-17

Institute Code : 0007
Course and Code : EP5G
Semester : Fifth
Subject Code :**Power System Analysis(17510)**
Name of the Faculty :

Chapter No (Total hrs)	Title / Details	Allocated Hrs. in Curriculum	Date of Commencing Topic	Date of Completion of Topic	Teaching Method / Media	Remark
1	**Topic 1: Representation of Power System** Specific Objectives: ☐ Identify power system components. ☐ Develop per unit reactance diagram for given system ☐ Understand the role of power system engineer Contents: ☐ Basic Structure of Power System. ☐ Equivalent Circuit representation of the System components-Alternator, Transformer, Transmission line: Short, Medium & long ☐ Single line diagram. ☐ Impedance diagram. ☐ Reactance diagram. ☐ Per unit Calculations. .(Numerical) ☐ Aspects of Power System analysis. ☐ Role of power system Engineer	06	16/6/16	22/6/16	Black Board - chalks - Notes. Sulab software	Completed

Maharashtra State Board of Technical Education
V.P.M'S Polytechnic, Thane
Department of Electrical Power System

Laboratory /Assignment/Sheet/Job/Project Activity planning (LP)
Academic Year :- 2016-17

Institute Code: 0007
Course & code : EP5H
Semester: Fifth
Subject:- Ac machine.
Subject Code : 17511
Name Of Faculty: Mrs. A. M. karalkar

Sr.No.	Name of Experiment/ Assignment/ Sheet/Job/Project Activity		Date of Performance Planned	Date of Completion	Remarks
01	connect DOL starter & Y-A to start 3ph I.M.	Batch A	27/06/16	4/07/16.	Completed
		Batch B	30/06/16.	7/07/16.	
		Batch C	28/06/16	5/07/16.	
		Batch D			
02	Speed control of 3ph I.M.	Batch A	4/07/16	11/07/16	completed
		Batch B	07/07/16.	14/07/16.	
		Batch C	5/07/16	12/07/16.	
		Batch D			
03	Measurement of slip.	Batch A	11/07/16.	18/07/16.	completed
		Batch B	14/07/16.	21/07/16.	
		Batch C	12/07/16	19/07/16.	
		Batch D			
04	Direct load test on 3ph I.M.	Batch A	18/07/16	25/07/16.	completed
		Batch B	21/07/16	28/07/16.	
		Batch C	19/07/16	26/07/16.	
		Batch D			
05	% regulation for 3ph alternator.	Batch A	25/07/16	1/08/16.	completed
		Batch B	29/08/16	04/08/16.	
		Batch C	26/07/16	2/08/16.	
		Batch D			
06	% regulation for 3ph alternator -	Batch A	1/08/16	8/08/16.	completed
		Batch B	04/08/16	11/08/16.	
		Batch C	02/08/16	09/08/16	
		Batch D			
07	Synchronize the incoming m/c to Bus Bar.	Batch A	08/08/16	15/8/16.	completed
		Batch B	11/08/16.	18/08/16.	
		Batch C	09/08/16	16/08/16.	
		Batch D			

Mrs. A. M. karalkar.
Name & Signature of Faculty

Mrs. N. V. Vader
Signature of H.O.D.

Observed the Effectiveness as:

- Systematic planning & implementation of teaching process with the consideration of public holidays, depart./ institute level activities etc. improved the overall performance of department as well as students .
- Conduction of practical sessions in parallel with Topic covered in theory sessions was more effective and Sharing of equipment's with other department.
- Preparation related with revision lectures / practical sessions and Experts lectures / lectures on Learning beyond syllabus can be done effectively.

c) Budgeting of Equipment & Teaching tools:

As per requirement of curriculum, teaching tools (models, charts, books etc.) and Lab. equipment (meters, machine, auxiliary apparatus etc.) are in procured considering departmental sanctioned budget. We also share few no. of equipment for practical sessions with other department.

Observed the Effectiveness

- Developed systematic approach to all activities

Stage II : Implementation :

a) Adherence to academic calendar, Time table :

Department activities can be implemented in well planned way

Observed the Effectiveness

- Smooth conduction of academic & other activities.

b) Pedagogical initiatives:–

Sr. No.	Process Followed	Implementation Details	Observed the Effectiveness
1	Pedagogical Initiatives in class room	- Real life examples - Collaborative learning - Interactive classrooms	- students understand the technical concept easily - Enjoy the benefits of Knowledge sharing - Improves the analytical skill - Improves the attentiveness, thinking skill, communication, confidence level
2	Pedagogical Initiatives - in Practical sessions	- Quality of laboratory experience with regard to conducting experiments - Provides individual to	- Improves measuring skill - Develops motor skill - Develops confidence - Acquire thorough concept

Sr. No.	Process Followed	Implementation Details	Observed the Effectiveness
		operate, and to take reading - Recording observations - Helps in Analysis of data etc	- Develops interest in the subjects
3	Pedagogical Initiatives- Encouraging bright students	- Paper Presentation - Free Book Bank facility - Encouraging to participat in PPT, quiz, projec competitions/ Exhibition - Spoken Tutorials - Value added courses - Enter. Develop. Cell	- Boosting the confidence level, - Improves performance level - Inculcate desire for overall development, - Adopt professional skill easily - Develops thrust for more knowledge - Think about career options
4	Pedagogical Initiatives - Assisting weak students etc	- Counseling - Mentoring - Remedial classes - Parents meeting - Learning material	- Provides personal mentoring - Counsel by staff, HOD, Principal. - Institute Counselor helps to overcome personal problems - Discuss the problem with parents - Make arrangement to get learning material - Improvement in Learning & Performance.
5	Pedagogical Initiatives –ICT (Information Collection Tools) supported learning	- ICT such as Videos , PPTs, , Transparencies, Models ,Charts in theory / practical sessions - Lab Manuals Question Banks, Problem Banks	- Helps to visualize the concept - Models helps to understand the construction - Understands the question patterns and also how to write answers - Lab. Manuals theory behind the experiment and learn to answer the experiment related questions. - Develops desire for collection of ICTs
6	Mini Projects	- Preparation of Solar Charger, staircase Wiring	- Development of motor skills - Complete understanding of

Sr. No.	Process Followed	Implementation Details	Observed the Effectiveness
		, Energy Audit Project, - Upgrading of Lab's - Poster Exhibition - –"Electro- Fact-2015" - Project Synopsis Exhibits.-"Electro Dream" Phase-I & Phase-II	tech. concept - Practical expose - Develops ideas to put into model - Knowledge implementation skill
7.	Projects	Encouraging for need based projects based on Advance Technology	Improvement in Knowledge level in present scenario, confidence level & communication (oral & presentation)

Stage III : Field exposure activities :

a) Ind. visit, Training program, Seminars, Expert lectures, Market survey:

Industrial visit to Manufacturing Unit, Loco Shed, Substations/ Load Dispatch Center , R & D Lab, Renewable/Conventional Power plants provides field exposure refer to courses in curriculum. Training program and workshops develops professional skills with awareness of advance technology. Seminars, conferences, Expert lectures, Market survey introduces new area of electrical field.

Observed the Effectiveness:

- Students will have real view of apparatus
- Feel about Industrial safety measures
- Develops professional skills
- Understand professional ethics

Stage IV : Response mechanism:

a) Depart. meeting, Feedback of teaching process , Laboratory work:

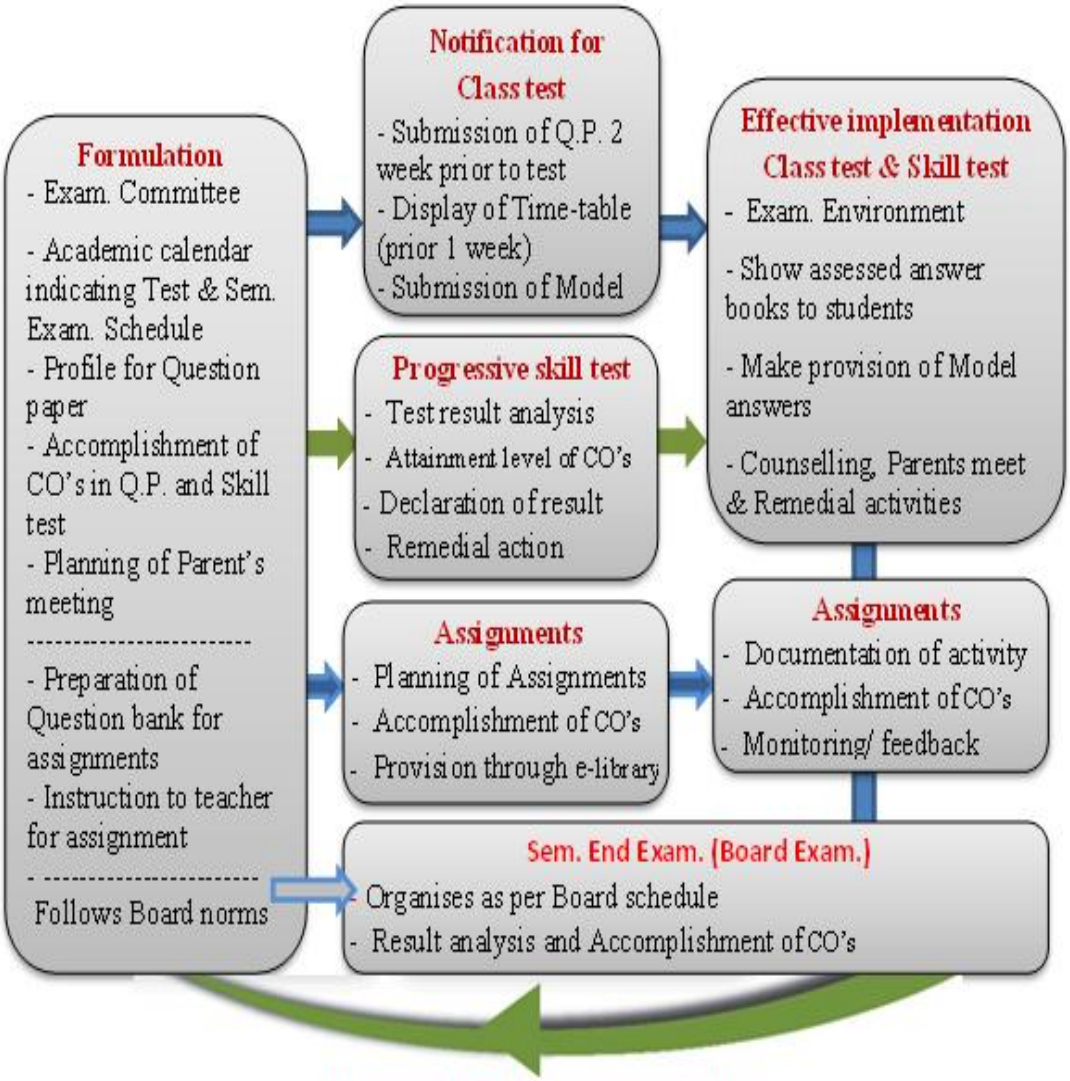
HOD, Mentor of class collects oral / written feedback in the format form from students about teaching process of all courses in every semester

Observed the Effectiveness:

- Helps to know the progress of curriculum covered, satisfaction level
- Helps to understand coordination between teacher and students
- Teachers are advised to improve in various parameters of teaching technology.

2.2.2. Initiatives to improve the quality of semester tests and assignments (15)

For organizing Class test, semester end exam and assignments, department has adopted following process .To improve the quality following initiatives and implementation procedures have been adopted:



Process chart for improving quality

Initiative-1 : Adherence of class test & semester exam schedule

Department plan and display academic activities including schedule of semester session, Class test, Sem. Exams in Depart. Calendar.

Inference: Students are well aware of complete schedule of semester, Class test, Sem. Exams at the starting of semester so they will manage their academic activities efficiently with managing stress level and develop the skill to follow the given schedules strictly.

Initiative- 2 : Availability of Question bank / problem bank

Student gets free accesses to Curriculum, Sample sem. Exam. & class test papers, previous Sem. Exam. Papers, previous Class test papers, model solutions for Semester exam in e-library facility of department. Question bank / problem bank prepared by subject teacher based on the same concept adopted by MSBTE question paper generation is also available.

Inference: Student gets free accesses to e-library. Students will develop skill to search /write answers for questions and also they will be aware of various types of questions.

Initiative-3 : Structured Questions: Question papers are structured to attain the course outcome at target level. Question Papers are designed with structured questions so that the student will be able to answer factual level, Conceptual level, Procedural level and analytical level. For Third year students most of the questions are on basis of analytical level. Previous semester exam question papers and class test papers are discussed & solved in the theory / practical sessions by the students. Model answer for Class test paper and Semester exam. Papers are made available through e-library.

V.P.M.'s Polytechnic,Thane

Depart. Of Electrical Power system

Question Paper Profile with Accomplishment of Course Outcome

Academic year : 2016-17

Year: Third year, Semester: 5th, Course (C505): AC AC Machines (17511)

*** Course Outcome :**

C505: AC Machines (17511)	Topic
1. Understand the construction, operation and the performance characteristics of three phase induction motor.	1,2
2. Understand the Construction, operation, Characteristics & Regulation of Alternator.	3
3. Understand parallel operation of alternator & solve the problems related to regulation.	4
4. Understand the construction /working principle of single phase Induction motors.	5
5. Understand the construction principle operation of special machines	6

*** Guidelines for Setting Class Test Question Paper:** Marks Time : 01 Hour

\# Question no.1 : Attempt any three out of four (3X3=9 Marks)

\# Question no.2 : Attempt any two out of three (2X4=8 Marks)

\# Question no.3 : Attempt any two out of three (2X4=8 Marks)

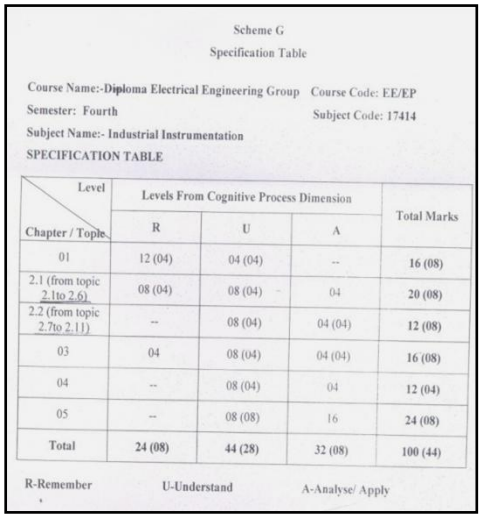
Class Test - II

	Question Paper Profile						Accomplishment of Course Outcome		
Topic No	Marks as per curriculum	Marks*0.75	Q. No. 1	Q. No. -2	Q. No. -3	Total Marks out of 36	Course Outcome	Total	Accomplishment in %
3	18	13.5	2 * 3	2 * 4		14	C505.2, C505.3	21	58.33
4	8	6	1 * 3		1 * 4	7			
5	12	9			2 * 4	8	C505.4	8	22.22
6	8	6	1 * 3	1 * 4		7	C505.5	7	19.44
Total	46	34.5	12	12	12	36		36	100.00

Subject Teacher :

Signature

Name



Scheme G

Specification Table

Course Name:-Diploma Electrical Engineering Group Course Code: EE/EP

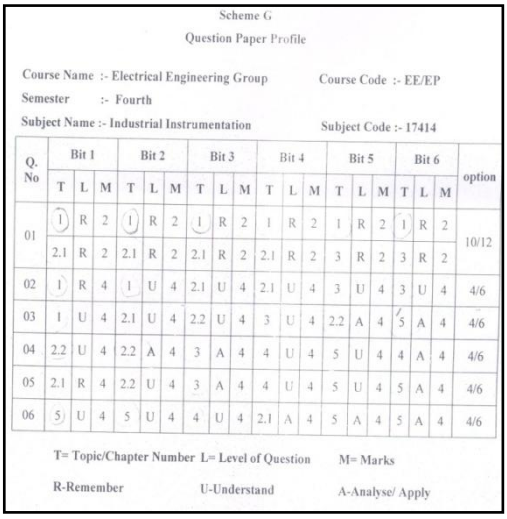
Semester: Fourth Subject Code: 17414

Subject Name:- Industrial Instrumentation

SPECIFICATION TABLE

Level / Chapter / Topic	Levels From Cognitive Process Dimension			Total Marks
	R	U	A	
01	12 (04)	04 (04)	--	16 (08)
2.1 (from topic 2.1to 2.6)	08 (04)	08 (04)	04	20 (08)
2.2 (from topic 2.7to 2.11)	--	08 (04)	04 (04)	12 (08)
03	04	08 (04)	04 (04)	16 (08)
04	--	08 (04)	04	12 (04)
05	--	08 (08)	16	24 (08)
Total	24 (08)	44 (28)	32 (08)	100 (44)

R-Remember U-Understand A-Analyse/ Apply



Scheme G

Question Paper Profile

Course Name :- Electrical Engineering Group Course Code :- EE/EP

Semester :- Fourth

Subject Name :- Industrial Instrumentation Subject Code :- 17414

Q. No	Bit 1			Bit 2			Bit 3			Bit 4			Bit 5			Bit 6			option
	T	L	M	T	L	M	T	L	M	T	L	M	T	L	M	T	L	M	
01	1	R	2	1	R	2	1	R	2	1	R	2	1	R	2	1	R	2	10/12
	2.1	R	2	2.1	R	2	2.1	R	2	2.1	R	2	3	R	2	3	R	2	
02	1	R	4	1	U	4	2.1	U	4	2.1	U	4	3	U	4	3	U	4	4/6
03	1	U	4	2.1	U	4	2.2	U	4	3	U	4	2.2	A	4	5	A	4	4/6
04	2.2	U	4	2.2	A	4	3	A	4	4	U	4	5	U	4	4	A	4	4/6
05	2.1	R	4	2.2	U	4	3	A	4	4	U	4	5	U	4	5	A	4	4/6
06	5	U	4	5	U	4	4	U	4	2.1	A	4	5	A	4	5	A	4	4/6

T= Topic/Chapter Number L= Level of Question M= Marks

R-Remember U-Understand A-Analyse/ Apply

Inference: Students will understand the pattern of question paper and develop the skill to recall knowledge at all level.

Initiative-4: Feedback Mechanism: The test results are declared within a week and every teacher discuss about the expected answers, common mistakes in papers. Model answer paper will also be made available to below average students.

Inference: Students will able to understand their performance levels, and able to overcome any lacuna if. Below average students will be able to understand the effort they required to put in to upgrade their performance level.

Initiative-5: Parents Meeting :Parents-Teachers meeting are organized to discuss about the performance of wards. Separate discussions are held with parents of wards with poor performance about their problems/difficulties.

Inference: Parent's involvement in learning process makes student aware of his responsibility and shows rise of interest in studies. Students will able to empower writing skill in examinations.

Initiative- 6: Assignments:

Teacher prepares question bank considering each topic in the course and course outcome. Assignment questions are chosen from question bank. Assignment on each topic of course is made available /put up on notice board after completion of topic. Students are encouraged to write minimum 30%of given question bank in a group and share the other question answers with other group. Sometimes teacher will detect the answer, if they are not able to reproduce it properly. Evaluation of

assignment will be done with comments for correction and returned within 3-4 days. Record for submission of assignment is maintained in CIANN. In a semester net 4-5 assignments will be specified. Planning of assignment is done to satisfy attainment of Course outcomes.

V.P.M.'s Polytechnic,Thane

Depart. Of Electrical Power system

Assignment /Tutorial Profile with Accomplishment of Course Outcomes

Program : **Electrical Power System**
Year: **Third year,** Sem. : **Fifth**
Course: **Energy conservation and audit (ECA)** Course code:**C501** MSBTE code: **17506**

*** Course Outcome :**	
C501.1:	Able to understand Energy scenario and apply energy conservation methods in lighting system.
C501.2 :	Able to explain Energy conservation techniques for improving the performance of transformer and induction motor.
C501.3 :	Able to find the opportunity for saving in energy conservation in Transmission distribution system and tariff structure.
C501.4 :	Can select appropriate cogeneration system to reduce energy bill
C501.5 :	Able to select proper energy conservation equipment and prepare energy audit report.

Assig. No.	Topic No.	Title of Topic	Marks as per teaching scheme	Planned no. of Questions	Attempted no. of Questions	Course Outcome	Accomplishment of COs	Attainment level
1	1	Energy conservation	4	15	12	C501.1	80%	3
	2	EC in lighting system	12					
2	3	ECT in Elect. Motors	14	20	15	C501.2	75%	3
	4	ECT in Transformer	8					
3	5	EC in T & D system	12	20	15	C501.3	75%	3
	6	Relation of Tariff & EC	14					
4	7	EC by Cogenration	12	13	10	C501.4	77%	3
5	8	EC equipments	12	20	15	C501.5	75%	3
	9	Energy Audit	12					
			100					

Attainment level criteria :
Level- 1 - for accomplishment from 20%upto 40%
Level- 2 - for accomplishment from40%upto 70%
Level -3 - for accomplishment from70%upto100%

Subject Teacher :

Inference: Students will learn to manage their stress level without loss and they learn to share the learning material.

Initiative-7 :MCQ tests:

MCQ testsare conducted after completion of practical assignments, which improves cognitive ability, provides reliable measurement of scores. For courses which have online exams are. MCQ-bank is prepared by teachers and gets solved regularly during theory / practical sessions. Extra tests are also conducted.

Inference: This improves cognitive ability in students and provides the opportunity for higher order of learning.

Initiative-8:Spot tests:

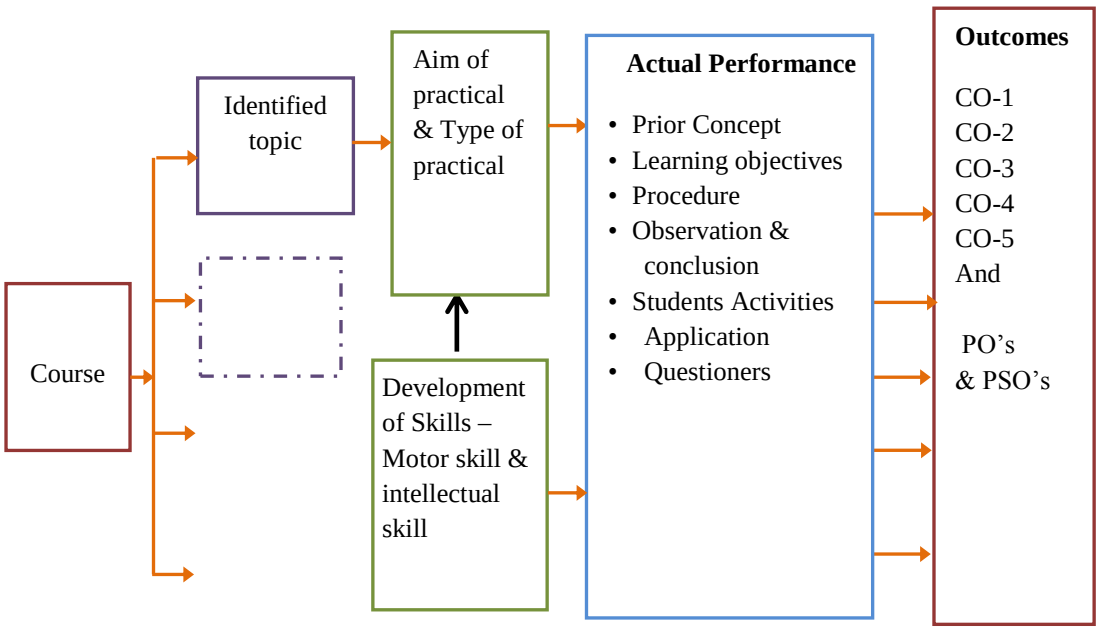
Spot tests are conducted in the class on working Saturdays for some courses and also during regular lecture hours after completion of important topics. This provides overview of topic and teacher can revise the topic if required.

Inference: Students can recall what they have learned and have revision of subject. They can test their grasping level and recalling of knowledge level. Students are ready for the forthcoming test. Students can check themselves for amount of study required for test.

2.2.3. Quality of Experiments (15)

The laboratory manuals are learning resources prepared under Lab Manual Development Project for 21 courses out of 43 courses of the program by Board. Department faculties were involved in development of manuals related to core engineering.

Flow chart showing general procedure adopted for practical relevance to its outcome



Procedure adopted to boost the effectiveness of Laboratory sessions:

Step 1: In curriculum, relation between topics and experiments are determined.

Step 2: Experiments are designed on the identified topics to fulfill the course outcomes.

Step 3: Each experiment compromises aim, theory behind, performance, student activities, Questions for confirmation learning, conclusion and applications.

Step 4: Development of intellectual skills and motor skills are also identified which will satisfies PO's program outcomes and presented in grid table.

Step 5: Student and teachers are made well aware of development of intellectual skills and motor skills based on experiment.Teacher also imbibes generic skills and ethics during the practical.

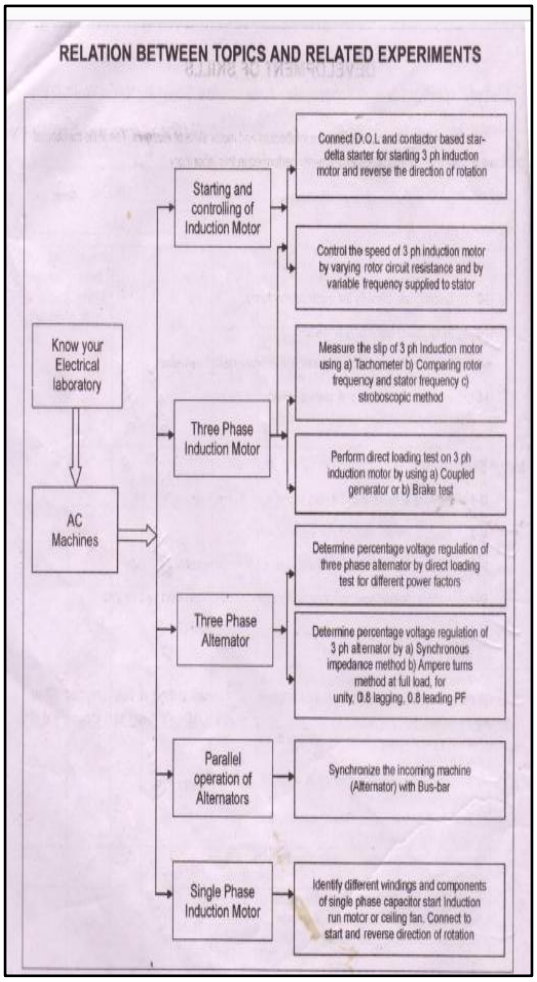
Step 6:Teacher make use of models, charts, videos and to support the learning process.

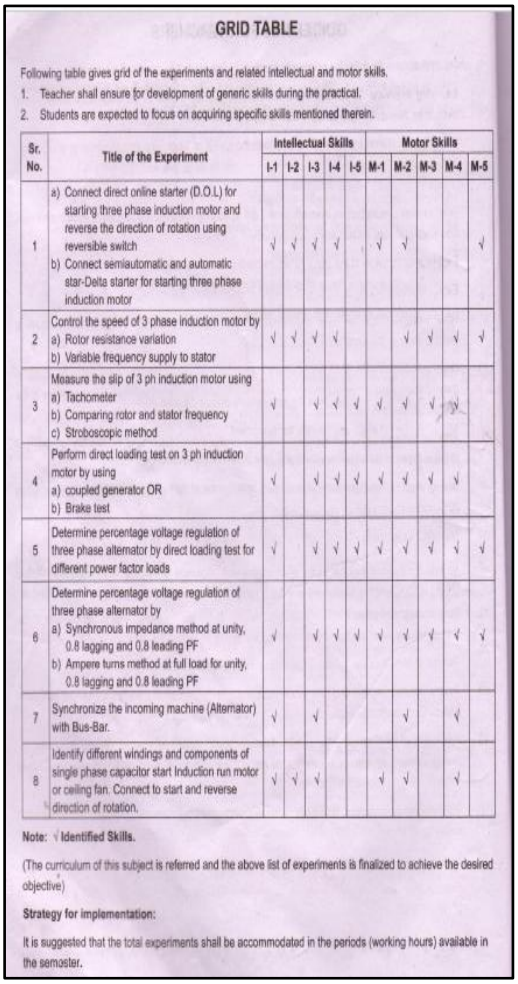
Step 7:Teacher ensures attainment of CO's, PO's and PSO's at the end of laboratory sessions.

Development of skills

Intellectual Skills	Motor Skills
I-1: Understand and identify the concepts.	M-1: Ability to sketch the circuit diagram /graph/ phasor diagram.
I-2: Discriminate /classify the electrical machines.	M-2: Ability to handle and operate the equipment.
I-3: Investigate /test /verify properties.	M-3: Ability to measure the values and note down the observations.
I-4: Select the proper range of measuring instruments/ cables /meters.	M-4: Ability to follow systematic procedure or sequence of operation step by step.
I-5: Interpret test results or numerical values.	M-5: Skill to observe the performance.

Sample: Course: A.C. Machines





GRID TABLE

Following table gives grid of the experiments and related intellectual and motor skills.

1. Teacher shall ensure for development of generic skills during the practical.
2. Students are expected to focus on acquiring specific skills mentioned therein.

Sr. No.	Title of the Experiment	Intellectual Skills					Motor Skills				
		I-1	I-2	I-3	I-4	I-5	M-1	M-2	M-3	M-4	M-5
1	a) Connect direct online starter (D.O.L) for starting three phase induction motor and reverse the direction of rotation using reversible switch b) Connect semiautomatic and automatic star-Delta starter for starting three phase induction motor	√	√	√	√		√	√			√
2	Control the speed of 3 phase induction motor by a) Rotor resistance variation b) Variable frequency supply to stator	√	√	√	√			√	√	√	√
3	Measure the slip of 3 ph induction motor using a) Tachometer b) Comparing rotor and stator frequency c) Stroboscopic method	√		√	√	√	√	√	√	√	
4	Perform direct loading test on 3 ph induction motor by using a) coupled generator OR b) Brake test	√		√	√	√	√	√	√	√	
5	Determine percentage voltage regulation of three phase alternator by direct loading test for different power factor loads	√		√	√	√	√	√	√	√	√
6	Determine percentage voltage regulation of three phase alternator by a) Synchronous impedance method at unity, 0.8 lagging and 0.8 leading PF b) Ampere turns method at full load for unity, 0.8 lagging and 0.8 leading PF	√		√	√	√	√	√	√	√	√
7	Synchronize the incoming machine (Alternator) with Bus-Bar.	√		√				√		√	
8	Identify different windings and components of single phase capacitor start Induction run motor or ceiling fan. Connect to start and reverse direction of rotation.	√	√	√			√	√		√	

Note: √ **Identified Skills.**

(The curriculum of this subject is referred and the above list of experiments is finalized to achieve the desired objective)

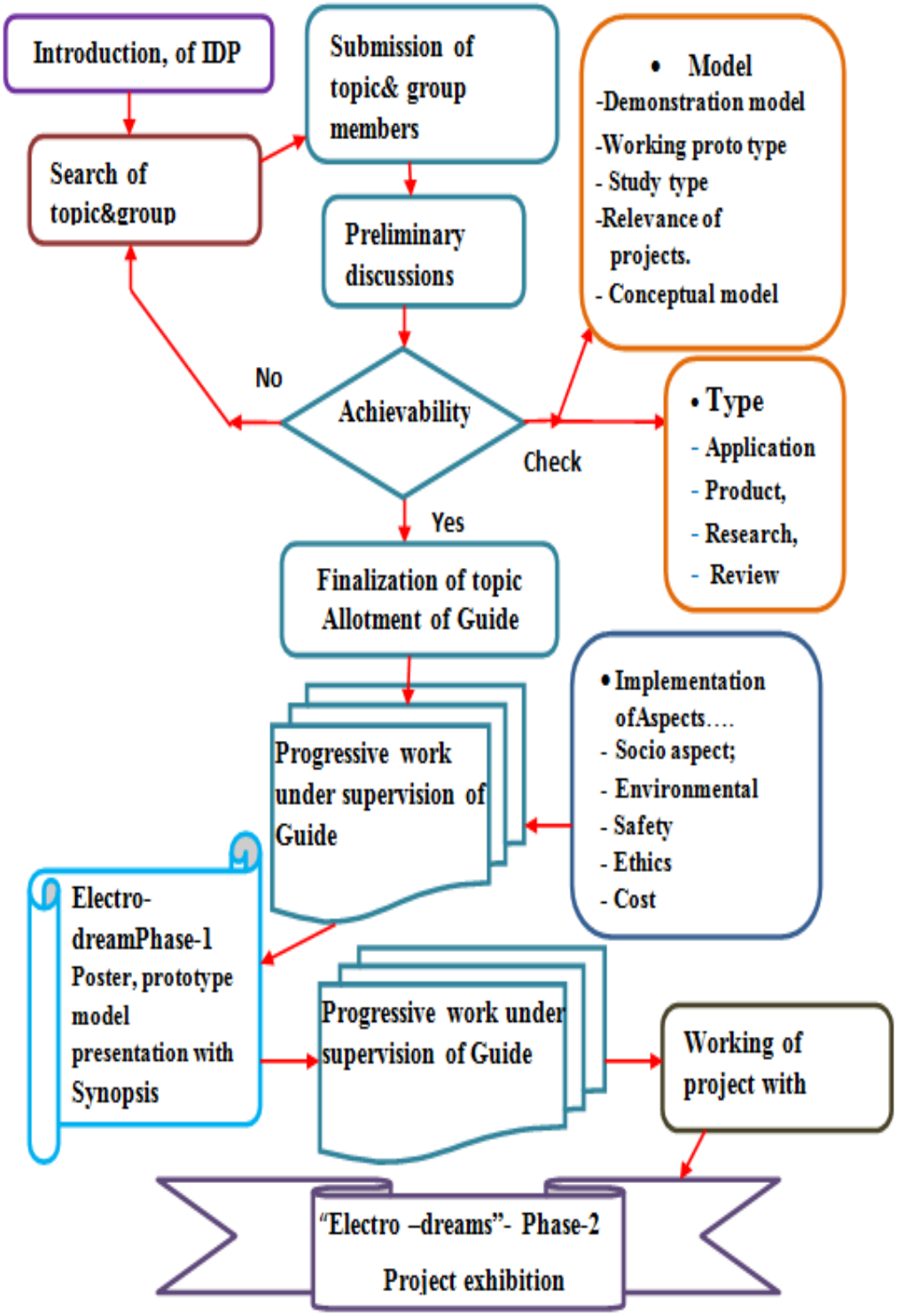
Strategy for implementation:

It is suggested that the total experiments shall be accommodated in the periods (working hours) available in the semester.

2.2.4. Quality of Students Projects and Report Writing (25)

An important part of this program will be the projects that students carryout in a team spirit to bring out their innovative ideas related to new concept / existing application / adoption of new technology in an apparatus / solutions for societal issues. Electrical engineering is the common field with Electricity as popular energy, so it provides lots of opportunity to adopt new technology with energy conservation concept. Students will understand facts, concepts and techniques of Electrical Engg., estimation & cost and procurement of material, fabrication and manufacturing of various items used in electrical field.

Process Flow Chart



Activity Details with attainments

Detail	Process	Observation , Effectiveness	Attainments of POs, PSOs
Group formation and search for topic	4 members per group, chosen by students .Start searching for topic in vacation before commencement of 5th sem.	More coordination, consensual, good team work, No complainant about members	PO2, PO8,PO5,PO7.
Project Identification	• Students search	Interest drags into extra effort , ready to take challenges,	PO2,PO4,PO5,PO6, PO7.
	• Faculty's idea		
	• Depart,/Lab. Requirement		PSO4
	• Based on new technology		
	• Societal need		
Allotment	Group interest, Practicability, possibility, Effort by group, successes, cost,	Rate of completion of project with good result is high	PO2.PO4,PO5, PO6, PO7. PSO4
Continuous Monitoring	• Reporting every forthright	• Discussion about conc	PO1,PO2, PO3,
	• Progressive steps	• Helps to manage techr	PO4,PO5,PO6,
	• Testing sessions		PO9, PO10.
	• Record maintained by guide		All PSO's
Report Writing	• Explained the Standard fo	Develops all professional w	PO1,PO2,PO3,
	• Inclusion of basic concept, used core technology ,		PO4,PO5,PO6,
	• Analysis of test results		PO7, PO8, PO9.
	• Estimation		
	• Future modification		All PSO' s
Supportive activity	• Workshop on PCB making	Enhance the knowledge lev	PO9,PO10,
	• Industrial visits		
	• Industry training if required		
	• Training program on Micro controller		All PSO' s
Demonstration Of Working Prototypes	• Electro-dream --Ph.-1 Poster exhibition with proto type model explaining synopsis, Invited Industry Expert provides idea for improvement	• Develop complete idea about their work	PO1,PO4,PO8,PO9
		• Add/change the in fabrication procedure	
		• 50% prepared for presentation in competition /final exam.	
	• Electro-dream --Ph.-2	• Trained for oral presentation	
	Project exhibition with working model, testing results and Project report	• Boost-confidence level	PSO1,PSO2,PSO3
Evaluation	Guide will carry out continuous assessment based on progress and contribution of each member Sem . Exam oral presentation with demonstration of project will be assessed by Examiners as per MSBTE Ass. Norms	- Students have mastered their project topic and able to think about draw backs / modification /new applications	PO2,PO4 PSO1,PSO2,PSO4

Sample Project Calendar

	V.P.M.'s Polytechnic	
	Depart of Electrical power system	
	Project Calender forAcc. Year 2015-16	
		Date: 17th June 2015

Activity No.	Details of Activities	Period
1	Formation of Group	20th June 2015
2	Selection of Topic	1st July 2015
3	Finalization of topic & announcement of Guide	10th July 2015
4	Last Call for Finalization of Topic	15th July 2015
5	Reporting to the Guide	Saturday of every month
6	Electro-Dreams 2015 phase I-Poster Exhibition on Project Synopsis	3rd October 2015
7	Submission of Synopsis of 1st Draft	5th October 2015
8	Submission of final Copy of synopsis	9th October 2015
9	Submission of first draft of project report	2nd January 2016
10	Submission of Project	16th January 2015
11	Submission of final copy of report	6th February 2015
12	Electro-Dreams 2015 phase II- Project Exhibition	Last week of Feb 2016

Mrs N V Vader

Head of Depart.

Outcome of Process

This will help the students to acquire skills and attitudes to work in industry and can start his enterprise. Diploma holders need to be capable of doing self-study throughout their life as the technology is developing with fast rate. Student will be able to find out various sources of technical information and develop self-study techniques to prepare a project and write a project report.

Electro –dreams (Phase 1)-Poster Synopsis presentation

Single phase preventer

Generation of Electricity from Waste.

Electro –dreams (Phase 2) Project Exhibition–

Simulation (MATLAB based) and fabrication of Single phase preventer

Sea Spilled Oil Separator on solar base

Prize winning projects in the Academic Year 2014-15:

Sr. No.	Title of project	Level of Competition	Prize
1.	Sea Oil – separator on solar base	National level Project Competition for Polytechnic students, G.H.R. College of Engg., Wagholi	First
2.	Hydro Iron	Regional level Project competition , A C Patil COE, New Mumbai	First

Media publication:

मोबाइल करणार घराची 'राखण'

कॉलेज विद्यार्थ्यांचा आविष्कार

विज्ञान दिन विशेष

आदित्य विचलकर, कॉलेज कनेक्ट रिपोर्टर

समुद्राच्या अभ्यासातून तयार झाली होममेड

व्हीपीएम तंत्रनिकेतन विद्यार्थ्यांचा शोधनिबंधातून नवा आविष्कार

2.2.5. Industry Interaction and Industry Internship/Training (30)

I. Industry involvement in the Program:

A. Curriculum Design:

MSBTE has adopted systems approach while designing the scientific based curriculum in semester pattern. The output of the system i. e. Diploma pass out is normally the input to industries. (Some students do go for higher education). While designing the curriculum the expectations of the industries play a major role. Due to globalization and competition the industries expect that pass outs have generic and technological skills along with right attitude. So G-scheme curriculum of MSBTE is on Industrial Need Based and is implemented in the year 2012-13.

B. Industry supported laboratories:

Name and address of Industry	Supported for	Objective	Utilization
Sai Electrical Pvt. Ltd., BelapurInd.Est. Thane	• Synchronization panel Practical set up in Elect. M/c Lab. • Rs. 3.5 lac as donation against components and fabrication	• Depart. needed set up for safe operation • Students Project of year 2010-11	Study of Synchronization of generators and load transfer
Supreme Instruments Ltd.MIDC, Mulund ,	• Meter test bench(Phatum load) Elect. Meas. Lab. • Rs 42,500/- self sponsored	• Depart. needed calibration of meter • Students Project of year 2006-07	To calibrate all voltmeters, ammeters, watt meters and p. f. meters

C. Details of the Industry-Department Interaction for the program:

Department has built up the relationship with more than 10 industries in order to support teaching learning activities of the program

1) Memorandum Of Understanding (MOU):

Department has signed MOU with 3 well established transformer mfg. companies and the reactor mfg. company for a period of 5 years. This will enable the department to arrange industrial visits for the practical exposure of the students and also to support the practical sessions on HV testing. Department also invites experts to give advanced technology used in the industries in the form of expert lectures, seminars. Department

has also organized training programs for students in collaboration with industry. Department received financial support for the national conference in 2011.

Name of Industry	Validity Period
Aditya Vidyut Pvt. Ltd., Bhiwandi, Thane Dist., Maharashtra	1st June 2014 to 1st June 2019 (5 years)
Shrihans Electricals Pvt. Ltd., Taloja, Thane Maharashtra	1st June 2015 to 1st June 2020(5 years)
Technocrats Academy of Automation And Control Technology, (TAACT), Nashik Maharashtra	1st Sept. 2012 to 1st Sept. 2015(5 years)

2) Industrial Expert Lectures:

To provide additional knowledge of field-details, field-applications, new technology related to topics covered in core courses which will help to develop learning skill, to update the knowledge level. Following table shows expert lectures arranged in the year

CAY 2015-16

Sr. No.	Topic	Details of Expert	Related Course	Date	Beneficiaries
1	Awareness of "Counseling" Program me	Miss Akshata Sonpatki, Campus Counselors Bandodkar college Psychology dept.	Professional Practice	26/6/15	Third Year students &Second Year Student
2	Industrial Safety and First Aid	Dr. Manjeet Singh, First- Aid /CPR Safety Trainer, Occupational Health Physician Mulund	Electrical Workshop	17/07/15	Second Year Student
3	The Power is within You	Dr. Deepa Rathi, Faculty, Life Sciences Institute, Thane	Professional Practice	17/07/15	Third Year students
4	Attributes of Power System	Mr.Bharat Kadam, Assi. Engineer, Deputy Quality Manager for NABL	Transmission & Distr. of Electric Power & Power system Analysis	17/07/15	Second Year Student
5	Interview Techniques	Mrs. Rupali Shah, HR Director, Shah Technical Consultants Pvt Ltd Mumbai	Professional Practice	17/07/15	Third Year students

Sr. No.	Topic	Details of Expert	Related Course	Date	Beneficiaries
6	Dream of Self - Employment"	Mr, Uday Yadkikar, Management consultant Corporate trainer Thane	Entrepreneurship Development	24/07/15 &25/7/15	Third Year students
7	Switchgear and its Components	Mr.S.P.Sharma. Rtd GM L&T Pvt. Ltd.	Switchgear & Protection	27/07/15	Third Year students
8	Modern Electric Traction	Mr. Yeshwant Jogdeo, Rt. Electrical Engineer, Training Center Nashik Indian Railway	Industry Electrical System	10/9/15	Third Year students
9	Transmission Line Erection and Safety"	Mr.HiteshKoli, Manager-Safety, Crompton Greaves Pvt, Ltd Kanjur marg	Power System Analysis	5/1/16	Third Year students
10	Preparation for Interview& Mono Rail	Mr. S R Kudalkar, Train Captain & Control Engineer, Mumbai Metropolitan Region Development Authority (MMRDA),	Industry Electrical System	20/1/16	Second year students
11	"Preparation for Professional Carrier	Mr. MandarBhadanag, Alumni,Student of Symbiosis Management of Institute .Pune	Professional Practice	29/1/16	Third Year students
12	Electrical Safety	Mr.R.R. Teli Director, Telly Safety Solutions Pvt.Ltd. Ghatkopar, Mumbai	Electrical workshop	20/2/16	Second year students
13	Transformer Design	Ms. Prerana Chougule, Sr. Executive Engineer, Raychem RPG ,Pune	D.C Machine & Transformer	20/2/16	Second year students

CAY 2014-15

Sr. No.	Topic	Details of Expert	Related Course	Date	Beneficiaries
1	Paper Presentation Skills	Mr.GauravMahashabhde Alumni, Jr. Engineer TATA Power LTD Mumbai	Professional Practice	19/7/14	Second Year Students
2	Career Opportunities in Electrical Power System	Mr. S.S Nerulkar, General Manager, L V Motors at Marathon Electric Motors Mumbai	Professional Practice	19/7/14	Second Year Students
3	Earthing And Grounding Technique	Prof H.B. Chaudhary, Ass.Professor Dept. of Elect. Engg. VJTI,Matunga	Switch gear & Protection	19/7/14	Third Year Students
4	Motivation	Prof. V.S Bhakre Management Consultant, Ind. Expert V.P.M's Thane	Management	19/7/14	Third Year Students
5	Role of nodal agencies in restructuring of power systems	Mr. NareshJinka, Asst.Director,PanaceanEnergy Solutions Pvt.Ltd	Power System Analysis	19/7/14	Third Year Students
6	Motivational Counselling	Dr.Anjali Deshpande, Sales Manager Hi Media Laboratories Pvt. Ltd.Mumbai	Professional Practice	6/1/15	Second &Third Year Students
7	Interview Techniques	Mr. UmeshPatil, Ass.Gen.Manager, Mitshibushi Elevator, Andheri	Management	31/1/15	Third Year Students
8	Project Management	Prof. V.S Bhakare, Management Consultant, V.P.M's Thane	Management	10/2/15	Third Year Students
9	Renewable Hydrogen energy – future fuel for Automobile	Prof. D.K Nayak, Principal. V.P.M's Polytechnic, Thane	Electric Power Generation	17/2/ 15	Second Year Students
10	Micro-controller	Mrs. S.D Khandagale Lecturer ,IS dept. V.P.M's Polytechnic, Thane.	Power Electronics	18/2/15	Third Year Students

Sr. No.	Topic	Details of Expert	Related Course	Date	Beneficiaries
11	Transformer and its selection for particular application	Mr. Milind D. Karalkar Project Lead Wipro Pvt.Ltd Mumbai	D.C Machine & Transformer	21/2/15	Second Year Students

CAY 2013-14

Sr. No.	Topic	Details of Expert	Related Course	Date	Beneficiaries
1	Paper Presentation Skills	Mr. Mandar Bhadang, Alumni, Lecturer VPM's Polytechnic Thane	Professional Practice	6/7/13	Second Year Students
2	Modern Trends in in A.C machine	Prof. S.H Sane, Asst. Professor Tasgaonkar COE Karjat	A.C Machines	16/07/13	Third Year Students
3	Goal Setting	Mrs.Vadavati Paranspe, Asst Prof, Campus Counsellor, K .J Joshi college Thane	Professional Practice	13/08/13	Second Year Students
4	Environmental Pollution & Control	Ms.Pournima Bhosale NGO EnviroVigil Paryavaran Dakshata Manch Thane	Professional Practice	30/08/13	Third Year Students
5	Electrical Safety &Earthing system	Mr.Rohan Homkar Lecturer , Elect Dept K.J.Somaiya Polytechnic Vidyvihar	Switch gear & Protection, Electrical Workshop	23/09/13	Third Year Students
6	Tenders & Contracts	Mr. V.K Bhadang Administrator & Technical Incharge EnviroVigil Thane	Electrical InstallationSystem	28/01/14	Second Year Students
7	Interview Technique	Mr. Arun Naik Counselling Psychologists Institute for Physiological Health Thane	Management, Professional Practice	1/2/14	Third Year Students
8	Motivation	Prof. V.S Bhakare, ManagementConsultant,V. P.M, Thane	Management,	5/2/2014	Third Year Students
9	Behavioral Safety	Mr.P.B.Shirsatte Visiting faculty,VPM's Law college	Professional Practice	11/2/2014	Second Year Students

3) Industrial Visit:

Objectives of Industrial visit are to practical exposure, technology implementation and latest technology, awareness of industrial safety and to know the field environment.

Following table shows Industrial Visits arranged in the year

CAY: 2015-16

Sr. No.	Name of Industry	Address	Related course	Date	Beneficiary
1	Thermal Power station, Dhananu	Mr. Vikrant Salpekar, Sr.Manager, Reliance Thermal Power Plant, Dahanu	Professional Practices & Electrical Power Generation	28/07/15	Second Year Students
2	L&T Ltd, Powai	Switchgear division L&T Ltd, Powai	Professional Practices & Switchgear & Protection	26/08/15	Third Year Students
3	33/11 kV substation	Mr. P. J. Kulkarni, Executive Engineer , MSEDCLThane Power House Substation	Professional Practices &Transmission &Distribution of Electrical Power	11/9/15	Second Year Students
4	Kurla Car shed	Mr. Arun Pratap, ADEE (TRS) CLA, EMU CARSHED, Kurla	Industry Electrical System	23/09/15	Third Year Students
5	NABL accredited Lab, Wagle Estate, Thane	Executive Engineer, Thane Testing Division, 4th floor Administrative Building, , Thane 4000604	Professional Practices & Switchgear & Protection	8/10/15	Third Year Students
6	Natu Plastic Pvt.Ltd. (Brushless Motor and	Mr. D.A.Vanjani (CEO), S.S.Natu Plastics & Metals Pvt. Ltd. Plot No. A-207, Rd	D.C Machine & Transformer	9/1/16	Second Year Students

Sr. No.	Name of Industry	Address	Related course	Date	Beneficiary
	Generator)	No.29,Opp. Ambika Nagar 2 WagleIndustrial Estate			
7	H.V substation, BalcumSubstaion,Thane	Mr. DhirajPatil, Ad. Executive Engineer, BalkumSubstation, Thane	Transmission & Distribution of Electric power	30/1/16	Third Year Students
8	Energy Conservation Unit, Indoor Substation, Thane	Mr. P. J. Kulkarni, Executive Engineer , MSEDCLThane Power House Substation	Power System & Load Dispatch	6/2/16	Third Year Students
9	Racold Solar Water Heating System Plant, Chakan, Pune	Mr. Mahesh Bhangale, Plant Head, Chakan, Pune	Renewable Energy Sources	19/2/16	Third Year Students
10	Environmental Park, Keshasrusti Park, Bhaydhar	The Manager, KeshavSrushtiUttan, Gorai Road, Bhayander (W), Dist. Thane-401106	Environmental Studies	19/2/16	Second Year Students

CAY: 2014-15

Sr. No.	Name of Industry	Address& contact details	Related course	Date	Beneficiary
1	L&T Ltd, Madh	Training In Charge,Madh Training Centre, Madh Jetty, Malad, Mumbai	Switchgear & Protection	7/8/2014	Third Year Students
2	Thermal Power station, Dhananu	Mr. Vikrant Salpekar, Sr.Manager, Dahanu Thermal Power Plant,	Electric Power Generation	17/9/14	Second Year Students

Sr. No.	Name of Industry	Address& contact details	Related course	Date	Beneficiary
3	33/11 kV substation	Executive Engineer , MSEDCLThane Power House Substation	Professional Practice	25/9/14	Second Year Students
4	KalyanLoco shed	Kalyan Loco Shed, Near Rail Way Hospital,Kaylan	Industry Electrical System	19/09/14 20/9/14	Third Year Students
5	Kurla Car shed	Mr. ArunPratap, ADEE (TRS) CLA, EMU CARSHED, Kurla	Industry Electrical System	26/9/14 27/9/14	Third Year Students
6	Visit to IIT for TECHFEST	IIT ,Powai, Mumbai	Professional Practice	3/1/15	Third Year Students& Second Year Students
7	Aditya Vidyut Appliances Pvt.Ltd	Mr. SudinPrabhu, Director, AdityaVidyut Appliances Pvt.Ltd, Bhivandi	D.C Machines &Transformer	31/01/15	Second Year Students
8	Transforme r Co. for Testing of Transforme r Oil	Shreehans Electrical Private Ltd.Thaloja.	Testing and Maint. Of electrical Machine	4/2/15	Third Year Students
9	H.V substation	Executive Engineer, Kolshet Substation, Thane.	Transmissi on &Distri. Of Electric Power	6/2/15	Second Year Students
10	Environmen tal Park	The Manager, KeshavSrushti Uttan, Gorai Road, Bhayander (W), Dist. Thane- 401106	Environme ntal studies	7/2/15	Second Year Students

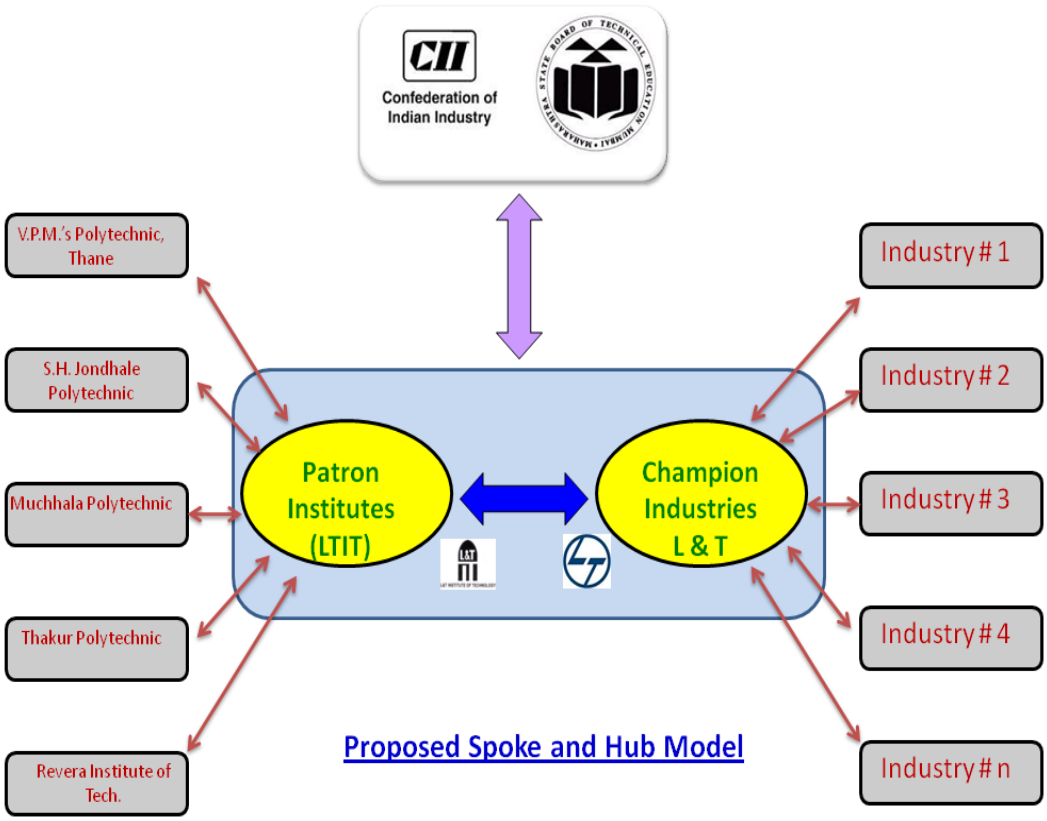
CAY: 2013-14

Sr. No.	Name of Industry	Address & contact details	Related course	Date	Beneficiary
1	33/11 kV substation, Thane	Executive Engineer , MSEDCLThane Power House Substation	Professional Practices &Electric power Generation	7/9/2013	Second Year Students
2	KalyanLocoshed, Kalyan	Sr. D.E.E ,Kalyan, Near Railway Hospital	Industry Electrical System	6/09/13 & 7/09/13	Third Year Students
3	KurlaCarshed, Kurla	Sr. D.E.E/TRS,CLA, EMU CARSHED, KurlaVidyavihar	Industry Electrical System	6/09/13 & 7/09/13	Third Year Students
4	Atomic Power station,Tarapur	Mr. Anand N. Ponkshe,Tarapur Atomic Power station	Industry Electrical System	21/09/13 & 28/09/13	Third Year Students
5	Zenith Engineering Pvt. Ltd,Vasai (E)	Mr. S. Rajan, Zenith Engg.	Electrical workshop	21/09/13	Second Year Students
6	Environmental Park	The Manager, KeshavSrushti Uttan, Gorai Road, Bhayander (W), Dist. Thane- 401106	Environmental Studies	1/2/2014	Second Year Students
7	Aditya Vidyut Appliances PvtLtd.	Mr. SudinPrabhu. Director, Aditya Vidyut Appliances Pvt. Ltd Bhivandi, Thane	D.C Machines & Transformer	15/2/14	Second Year Students
8	Century Rayon Ltd.	Mr. Irudaya Malhar, Manager HR Dept.	Electrical power Generation , Elements of Mechanical Engg.	18/2/14	Second Year Students

Sr. No.	Name of Industry	Address & contact details	Related course	Date	Beneficiary
9	Regional Load Dispatch Centre, Andheri	Chief Engineer, regional Load Dispatch Centre, Andheri	Power System Operation &Load Dispatch	12/2/2014	Third Year Students
10	State Load Dispatch Centre, Kalwa	Mr. Parashar, State Load Dispatch Centre, Kalwa	Power System Operation & Load Dispatch	8/2/2014	Third Year Students

4) Hub & spoke model :

MSBTE has developed Hub & spoke model of polytechnics along with Confederation of Indian Industry (CII) in the year 2013-14. It's an pilot project in which our institute was selected as one of spoke institute. Main objective was to strengthen the Industry-Academia Interactions; to promote innovative thinking among students and faculty; to enhance the Employability of Diploma Engineers.



Above Hub & Spoke model provided the opportunity to arrange Expert lectures and visits.

Details of program		Date & Beneficiary
Industrial Visit	Madh Training Centre , Larsen & Toubro Madh Jetty, Malad, Mumbai	7th Aug 2014 Final Year Students
	R & D Laboratory, L & T, Powai,	21st Aug.2016 Final Year Students
Expert Lecture	**Design aspects and applications of L.V. Switchgear products** By Mr. Satya Prakash Sharma Jt. General Manager Switch gear design and development centre L & T Pvt. Ltd., Powai	27-07-2015 Final Year Students
	What Industry expects from an Engineer? • By Mr.VipulBhagat, Campus Connect Lead, L & T infotech, Powai	09/02/2016 Final Year Students

II. Industry Internship/Training support provided to the students with implementation Details--

- To bridge the gap between theory and practical it is essential that a student should be imparted an industrial training.
- To make diploma holder industry ready, MSBTE has started in-plant training activity for students after completing 4th and 6th semester as a pilot activity from academic year 2015-16.
- To enhance industry institute tie up to increase employability of polytechnic students.

Industry – Implant Training

Industry Involved	Implementation details & Benefiters	Observed Effectiveness
Academic Year 2015-16		
i. Reliance Infra. Ltd. Chembur ii. Siemens Pvt. Ltd, Kalwa iii. M.S.E.D.C.L,Bhandup iv. HPCL, Chembur Mumbai v. Top Electricals, Kalwa	Training after completion of 4th sem. exams i.e. During the summer vacation (4 weeks) **Benefiters** -18 students	Developed professional skill and ethics
i. Indian Rly. Car shed ,Kurla ii. Telawne Power Eq.Navi Mumbai iii. Central Rly Loco Shed, Kalyan iv. Reliance Infra.Ltd.Chembur v. Ashida Electronics,Thane vi. .Natu Plastics & Metals Pvt.Ltd. vii. Saini Electr.Engg.Works,	Training after completion of 6th sem. exams i.e. During the summer vacation (4 weeks)	Foundation for placement

Industry Involved	Implementation details & Benefiters	Observed Effectiveness
Mumbai viii. Siemens Pvt. Ltd, Kalwa ix. Satguru Stamping Ind. Ambernath	**Benefiters** -30 Students	
Academic Year 2014-15		
i. Shri Hans Pvt Ltd,Mumbai ii. L & T Pvt. Ltd. , Powai	Training after completion of 4th sem. exams i.e. During the summer vacation (4 weeks) **Benefiters** -09 students	-Awareness of industrial culture - Practical orientation -Improved comm. skill -Oriented towards report writing skill
i. Siemens Pvt. Ltd, Kalwa ii. L & T Pvt. Ltd. , Powai	Training after completion of 6th sem. exams i.e. During the summer vacation (4 weeks) **Benefiters** -02 Students	Developed professional skill
Academic Year 2013-14		
i. KHAN Electricals Eng. & Contractors (I) Pvt. Ltd., ii. Siemens Pvt. Ltd. ,Kalwa iii. Central Railway KalwaCarshed iv. Deltron Electricals, Vasai v. Narendra Electricals, Thane vi. A.D Enterprises Govt. Traders & Contractors, Nagpur	Training after completion of 4th sem. exams i.e. During the summer vacation (4 weeks) -**Benefiters**-- 37 students	-Awareness of industrial culture - Practical orientation -Improved communicatio n skill

2.2.6. Information Access Facilities and Student Centric Learning Initiatives (15)

A. Information Access Facilities

Facilities	Details	Implementation	Outcome
Department Library	- Reference books, Course notes, Curriculum and CO's. Teacher's guide, Lab. Manuals, Sample Question Papers,	- Specifically for teachers.	- Minimum sharing of books by teachers from Central library
e- Library (e-	- Curriculum , Question Papers set, Course wise	- Available in Computer lab on	- Benefitted to students to

Facilities	Details	Implementation	Outcome
resources)	question bank, Model Answers , Notes, e-Books, MCQ banks, PPTs, Technical papers, etc.	each PC .Students have free access and is updated every month as per requirement	improve self-learning
Central Library	- Books, Reference books, Technical magazines, Conference Souvenir, News paper - Internet facility	- Book Bank facility for Needy students - Free Book bank facility for merit holder student - Open access system	- Fully air conditioned - Open 8a m to 8p m - Reading room facility
Library -to-Library	Access to Other college (science/Arts/Management) library in Campus	- Students can access through teachers for their project work etc.	

B. Student Centric Learning Initiatives

Sr. No.	ICT facilities	Materials	Implementation Methods	Evaluated Effectiveness
1	Class room and Lab.s	- Provision for laptop & LCD projector, Over Head Projector, connection - Well-equipped with internet facility.	-As per topic requirement teachers make use of these tools	- Enhances learning & teaching process
2	e-learning	Using Libre office, C/C++ Base, Calc, draw, impress, math, Writer	Spoken tutorial : It is MHRD project under IIT-B	Awareness of various e-learning software tools
3	Self -learning	Topic related to curriculum,	Webinars, NPTEL&Websites suggested in MSBTE Curriculum.	Helps students to develop learning skills
4	Learning Tools	• CDs, Videos, PPTs, Flash Points • Transparencies of core subject	Made available in the Computer Departmental Library	Provides additional opportunity for deeper learning

2.2.7. New Initiatives for embedding Professional Skills (15)

Employment in industry of diploma output is as technicians and career growth is up to Jr. Engineer and changes as per type or nature of industry. During his career growth he has to handle many projects either independently or in group. He will be successful based on his depth knowledge of core technology along with good professional skill. To imbibe professional skills in our students following are the initiatives undertaken by department to enhance their employability skills.

Sr. No.	Initiated Program	Program Details	Professional Skill developed	Employability skill developed
1.	**Electro Vision** Initiated in year 2014	One day seminar is organized at the beginning of acc. Year with the objective to provide career vision and career options	- Setting up of goal	Preparation for Interviews Identification of Career options
2.	**Electro-Facts** (Poster presentation on fundamentals of Elect. Engg) Initiated in year 2012	Commencements of odd semester SY students prepare posters on fundamentals of Elect. Engg& demonstrate/ explain them to first year and other department students.	- Information Search - Oral presentation - Planning & execution - Coordination - Innovation -	-Self learning -Communication - Working in a Team -Positive thinking
3.	**Electro-Dreams**-Phase I (Project Synopsis Exhibition by Final year students) Initiated in year 2010	At the end of first term final year students present their project Synopsis in an exhibition with their concept in posters, Prototype Models form. Suggestions help them to carryout modifications in their project.	- Oral & Written communicatio n - Information Search - Thinking skills - Over view of product / model - Design aspect - Estimation/ costing - Professional approach	-Professional approach - Communication -Presentation - Information search - Job responsible

Sr. No.	Initiated Program	Program Details	Professional Skill developed	Employability skill developed
4.	**Electro-Dreams**-Phase II (Project modelpresentation by Final year students) Initiated in year 1999	At the end of Even semester students present their completed project model with test results, future modifications, merits, conclusions, etc.	Information collection Time management Stress management Team work Project report writing	Team attitudes Project management Professional writing
5.	Personality Development Initiated in year 2000	Lectures on stress management ,Time Management, work ethics, motivation, health management etc.	-Development of life skills / Soft skills - Work ethics Emotional Management	Life learning skill Soft skills Professional ethics
6.	Workshop on **Electro-Finishing school** Initiated in year 2015	Sessions on Group Discussion Oral communication Gestures Dress code Mock Written Test Psychological test Aptitude Test	- Information search related to employer Dressing Sense Presentation of documents	Preparedness to face interview
7.	**Mock Interview** Training Programs Initiated in year 2010	Training session on - Writing of Curriculum Vitae - Preparation of documents - Pre- interview preparations - Interview day preparations - Communication during interview	- Systematic approach - Time management-Communication skill -Documentation skill -Self presentation -	- Understands the Interview technique - Prepared for employment
8.	Paper Presentationcompetition & project competition Initiated in	Students are encouraged to participate in Tech. Paper Presentation (TPP) Competitions&Project	- Writing of Tech. Paper - Preparation of PPT - Tech. Paper Presentation	- Presentation skill - Information search skill - Answering to queries

Sr. No.	Initiated Program	Program Details	Professional Skill developed	Employability skill developed
	year 2000	Competition at Depart. level, Institute level, Regional level , State level, National level.	- Skill to answer queries - Information search skill	- Awareness of self responsibility
9.	Quiz Competition Initiated in year 2004	Encourage to participate in Tech. / General Quiz competitions at various level	- Preparation for Written test , competitive exams, - General knowledge	- Skill for written test , - Awarene ss of surroundings

2.2.8. Co-curricular & Extra-Curricular Activities (10)

Co-curricular & Extra-Curricular Activities (10)

Co-Curricular Activities

(Details of 2015-16 given below and details of previous years are maintained.)

Sr. No.	Name of the activity	Details	No. of Participants	Award
1.	Paper presentation competition (Renewable energy day -21st Aug.2015)	Inter department level	08	04 students
		Institute level	04	02 –Third prize
		State level	02	02-Second prize
2.	Poster presentation on fundamentals of Elect. Engg (Electro-Facts - 2015)	Know your Elect. Fundamentals- through poster and demonstration	56	04- First prize
				04 –Third prize
				04-Second prize
3.	Project Synopsis Exhibition by Final year students (Electrodreams-2015phase-1)	Exhibition of proto models of projects	61	All groups presentations are appreciated by invitees.
4.	MSBTE-Tech. paper presentation Electro –Evolution 2015	MSBTE-Tech. paper presentation	04	02- First Prize
5.	Project competition	State level, national level organized by	6 to 8 project	Min.3 groups won prizes.

Sr. No.	Name of the activity	Details	No. of Participants	Award
		MSBTE, ISTE, nearby Polytechnics, DIPEX-State level	groups every year	New Projects receives media publicity.
5	ELECRAMA-2016	Intr. national project exhibition –student pavilion	3 project registered	To be held
6	Paper presentation competition	Regional level, State level ,National level, organized by MSBTE, Other Polytechnics,	7 to 8 papers every year	Min.3 papers receives prizes.

Extra –curricular activities

(Details of 2015-16 given below and details of previous years are maintained.)

Sr. No.	Name of the activity	Details	No. of Participants	Award
1.	Engineers day celebration - ISTE activity	Slide presentation On given tech. topics	04	02- Second Prize
		Poster presentation on social issues	06	02- First Prize
		Marathi - Essay Competition on general issues.	02	01 –Third prize
2.	Energy Management Cell	Awareness' of Energy conservation in all classes	10	Work appreciated by staff.
3.	National level Tech. paper presentation	Organized by Universal College of Engg., Vasai	02	02-Second prize
4	Poly-spark 2014	Pot Painting T shirt Paining Best from Waste Pencil sketch Mahanadi Nail Art Rangoli Talent Hunt Traditional day competition	4 4 3 2 4 3 3 1 2	3-First prize 3- Second prize 3- Second prize
		Saree Queen & Tie King	8	4- Second prize
		Dance Competition	6	
		Singing competition	4	

National Cadet Corps (NCC):

Students are encouraged to join NCC to develop qualities like social service, team spirit, leadership, Discipline &self-confidence. Three students of SYEPS & TYEPS one student of FYEPS joined NCC.

Sr. No.	Name of Students enrolled	Year	Rank
	NCC-Navy Boys		
1	TanveerAhmed Salim Shaikh (TYEP)	2016-17	Navy Cadet Camp Attended :- • 10 days one ATC (Annual Training Camp)
	NCC-Army Boys & Girls		
2	Vaibhav Govind Bodke	2012-13 2013-14	SGT Sergeant Master
3	Atharv Deshpande	2012-13 2013-14	CSM-Company Sergeant Master Camp Attended :- • Two ATC (Annual Training Camp) • One TSC (Thal Sainik Camp)
4	Ganesh Simanchal Panda	2011-12 2012-13	C.S.M (Company Sarjant Master) Camp Attended :- • Two Atc (Annual Training Camp) • One Tsc (Thal Sainik Camp) Achievements:- • Gold Medal inAtcfor Best Senior Cadet. • One Silver Medal in B.N Bandodkar College for Best Performance in Atc. • Two Silver Medalsin B.N Bandodkar College For 100% Attendance.
5	Shaunak Dhananjay Purav	2011-12 2012-13	SGT (Sarjant) Camp Attended :- • One Atc (Annual Training Camp) • One Tsc (Thal Sainik Camp) Achievements:- • Two Silver MedalsIn B.NBandodkar College For 100% Attendance.

Sr. No.	Name of Students enrolled	Year	Rank
6	Geetanjali Salgaonkar	2010-11 2011-12	SGT Sergeant Master
7	Shravan Kumar	2010-11 2011-12	CSM-Company Sergeant Master Camp Attended :- • Two Atc (Annual Training Camp) • One Tsc (ThalSainik Camp)

CRITERION 3	Course Outcomes and Program Outcomes	100

3.1. Establish the correlation between the courses and the POs & PSOs (20)

3.1.1. Course Outcomes (SAR included course outcomes of one course from each semester of study, however prepared for all courses) (05)

Note: C102 is the 2nd course in 1st Semester and 0.1 to 0.5 are number of Outcomes for a course.

1st Sem. Course C101: English (ENG-17101)	
C101.1	Able to develop vocabulary.
C101.2	Apply the rules of grammar.
C101.3	Able to comprehend the given unseen passage
C101.4	Able to write synonyms and antonyms of given words
C101.5	Able to write a paragraph on a given topic
2nd Sem. Course C205: Fundamentals of Electrical Engineering (FEE-17214)	
C205.1	Understand various parameters and quantities used in electric circuit.
C205.2	Understand DC circuit, resistance and combinations of it.
C205.3	Able to interpret various magnetic circuits and details of it.
C205.4	Able to understand importance of various properties of materials.
C205.5	Apply knowledge of maintenance to various electrical equipments.
3rd Sem. Course C303: Elect. and Electronic Measurement (EEM-17322)	
C303.1	Able to understand different terms and errors in measuring instruments.
C303.2	Identify various measuring instruments and know the constructional details.
C303.3	Understand the procedure to read different meters properly.
C303.4	Able to select proper meter / equipment for particular measurement.
C303.5	Calibrate various types of meters/ instruments as per ISS.

4th Sem. Course C404 – D.C. Machines and Transformers (DMT-17415)	
C404.1	Understand the details of D.C machine & Able to identify different types.
C404.2	Able to plot different Characteristics of DC motors & select for industrial applications.
C404.3	Analyze regulation and efficiency of single-phase transformer.
C404.4	Able to differentiate between auto transformer and power transformer.
C404.5	Understand the importance of instrument transformer in electrical power system.
5th Sem. Course C505 –A. C. Machines (ACM-17511)	
C505.1	Understand the construction, operation and the performance characteristics of three phase induction motor.
C505.2	Understand the Construction, operation, Characteristics & Regulation of Alternator.
C505.3	Understand parallel operation of alternator & solve the problems related to regulation.
C505.4	Understand the construction /working principle of single phase Induction motors.
C505.5	Understand the construction principle operation of special machines
6th Sem. Course C604--Power System operation and Control (PSO-17643)	
C604.1	Student will be able to interpret the power balance and reactive power compensation.
C604.2	Understand the need of Load flow analysis and develop Y bus matrix using MATLAB.
C604.3	Understand the Power system stability and methods of improvement.
C604.4	Able to explain turbine speed governing system & excitation voltage regulators
C604.5	Student will be able to analyze economical and optimum load dispatch.

3.1.2. CO-PO matrices of courses selected in 3.1.1 are shown below. (six matrices; one per Semester from 1st to 6th semester is shown.) (5)

Note: The correlation levels 1, 2 or 3 are defined below:

1: Slight (Low) 2: Moderate (Medium) 3: Substantial (High) if there is no correlation, put "-".

A-Correlation between Course Outcome and Program Outcome:

1st Sem. Course C101: English (ENG-17101)										
CO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**
C101.1	1	"-".	1	2	1	"-".	2	2	3	3
C101.2	1	"-".	1	2	1	"-".	2	3	3	3
C101.3	2	"-".	2	2	1	"-".	2	2	3	3
C101.4	1	"-".	1	2	1	"-".	2	3	3	3
C101.5	3	"-".	2	2	2	2	1	2	3	3
C101	8	0	7	10	6	2	9	12	15	15
Co-relation	2	0	2	2	2	1	2	3	3	3
C205-Fundamentals of Electrical Engineering (17214)										
CO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**
C205.1	2	2	1	1	"-".	1	"-".	1	2	3
C205.2	3	3	3	2	1	1	"-".	2	1	3
C205.3	3	3	2	2	2	1	"-".	1	2	3
C205.4	2	2	2	3	1	1	"-".	2	2	3
C205.5	3	2	1	1	1	1	"-".	2	2	3
C205	13	12	9	9	5	5	0	8	9	15
Co-relation	3	3	2	2	1	1	0	2	2	3
C303-Elect. and Electronic Measurement										
CO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**
C303.1	3	3	3	2	2	1	1	2	2	3
C303.2	3	3	2	2	2	2	1	2	2	3
C303.3	2	3	2	3	2	2	2	1	2	3
C303.4	3	2	3	3	2	2	1	2	2	2
C303.5	3	3	2	3	2	2	2	2	2	3
C303	14	14	12	13	10	9	7	9	10	14
Co-relation	3	3	3	3	2	2	2	2	2	3
C404-D.C machine & Transformer(17415)										
CO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**
C404.1	3	2	3	2	1	2	2	2	3	3
C404.2	3	3	2	2	2	2	1	1	1	3
C404.3	3	3	3	3	2	1	1	2	2	2
C404.4	3	3	2	2	2	3	2	3	3	3
C404.5	3	3	2	2	2	2	2	1	1	3
C404	15	14	12	11	9	10	8	9	10	14
Co-relation	3	3	3	3	2	2	2	2	2	3

C505-A.C. Machines (17511)										
CO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**
C505.1	2	3	2	2	"-".	1	1	"-".	1	3
C505.2	3	3	2	3	1	"-".	1	2	2	3
C505.3	2	3	3	3	2	1	2	"-".	1	2
C505.4	2	3	1	1	"-".	1	1	2	2	3
C505.5	2	3	1	2	1	1	"-".	2	1	2
C505	11	15	9	11	4	4	5	6	7	13
Co-relation	3	3	2	3	1	1	1	2	2	3
C604-Power System Operation & Control (17643)										
CO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**
C604.1	3	3	3	3	2	2	2	1	3	3
C604.2	3	3	3	3	1	2	1	2	3	3
C604.3	3	3	2	1	1	"-"	3	3	2	3
C604.4	3	3	2	2	2	1	3	3	3	3
C604.5	3	3	1	2	2	3	2	2	3	3
C604	15	15	11	11	8	8	11	11	14	15
Co-relation	3	3	3	3	2	2	3	3	3	3

Table 3.1.2

B-Correlation between Course Outcome and Program Specific Outcome

Following tables shows CO-PSO matrices of courses selected in 3.1.1

C101- English					C205-Fundamentals of Elect. Engg				
CO	**PSO1**	**PSO2**	**PSO3**	**PSO4**	**CO**	**PSO1**	**PSO2**	**PSO3**	**PSO4**
C101.1	1	1	1	2	**C205.1**	2	3	1	3
C101.2	2	2	3	3	**C205.2**	3	3	1	2
C101.3	1	1	2	3	**C205.3**	3	3	2	3
C101.4	2	2	3	3	**C205.4**	3	3	2	3
C101.5	"-".	"-".	2	3	**C205.5**	3	3	1	3
C101	6	6	11	14	**C205**	14	15	7	14
Co-relation	**2**	**2**	**3**	**3**	**Co-relation**	**3**	**3**	**2**	**3**
C303-Elect. & Electronic Measurement					**C404-D.C machine & Transformer**				
CO	**PSO1**	**PSO2**	**PSO3**	**PSO4**	**CO**	**PSO1**	**PSO2**	**PSO3**	**PSO4**
C303.1	3	3	2	3	**C404.1**	3	3	2	3
C303.2	3	3	3	3	**C404.2**	3	3	3	3
C303.3	3	3	3	3	**C404.3**	3	3	3	3
C303.4	3	2	3	2	**C404.4**	3	3	2	3
C303.5	3	3	2	3	**C404.5**	3	3	2	2
C303	15	14	13	14	**C404**	15	15	12	14
Co-relation	3	3	3	3	**Co-relation**	3	3	3	3

C505-A.C. Machines					C604- Power Sys. Operation & Control				
CO	PSO1	PSO2	PSO3	PSO4	**CO**	**PSO1**	**PSO2**	**PSO3**	**PSO4**
C505.1	3	3	1	3	**C604.1**	3	3	3	1
C505.2	3	3	3	2	**C604.2**	3	2	2	"-"
C505.3	2	3	1	2	**C604.3**	3	3	3	3
C505.4	3	3	2	2	**C604.4**	3	3	3	2
C505.5	1	3	2	2	**C604.5**	2	3	3	2
C505	12	15	9	11	**C604**	14	14	14	8
Co-relation	3	3	2	3	**Co-relation**	3	3	3	2

3.1.3. Program level Course - PO matrix of all courses INCLUDING first year courses (10)

A-Correlation between Course Outcome and POs:

CO-Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
C101-ENG	2	"-".	2	2	2	1	2	3	3	3
C102-EPH	3	3	3	2	2	"-".	2	"-".	2	3
C103-ECH	3	3	2	2	2	1	2	"-".	"-".	3
C104-BMS	3	3	3	1.	1	"-".	2	2	2	3
C105-EGG	3	3	3	3	"-".	2	2	3	3	3
C106-CMF	2	2	3	3	2	1	2	2	2	3
C107-WPE	3	3	2	2	2	2	"-".	3	3	3
C201-CMS	2	"-".	2	2	2	1	3	3	3	3
C202-EGM	3	3	2	2	1	1	"-".	2	2	3
C203-APH	3	3	2	2	"-".	2	2	2	2	3
C204-ACH	3	3	2	2	2	3	2	2	"-".	3
C205-FEE	3	3	2	2	1	1	"-".	2	2	3
C206-EMS	3	3	3	1	1	"-".	2	2	2	3
C207-DLS	2	2	3	3	2	2	2	2	3	3
C301-AMS	3	3	2	1	1	"-".	2	2	2	3
C302-BEE	3	3	3	3	3	2	2	2	2	3
C303-EEM	3	3	3	3	2	2	2	2	2	3

CO-Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
C304-ECN	3	3	2	2	2	"-".	2	2	3	3
C305-EPG	3	3	3	3	3	3	2	3	3	3
C306-CPR	3	3	3	2	2	"-".	2	2	2	3
C307-EWO	2	2	3	3	3	2	3	3	3	3
C308-PPO	2	3	2	2	2	2	3	3	3	3
C401-EST	2	2	3	3	2	3	2	3	2	3
C402-EME	3	3	2	3	2	2	"-".	2	2	3
C403-IIN	3	2	3	2	2	2	"-".	1	2	3
C404-DMT	3	3	3	3	2	2	2	2	2	3
C405-IES	3	3	3	3	3	2	3	3	3	3
C406-TDE	3	3	3	3	2	2	2	2	2	3
C407-PPT	2	3	2	2	2	2	3	3	3	3
C501-ECA	3	3	3	2	2	3	2	2	2	3
C502-IES	3	3	3	3	3	3	2	2	2	3
C503-SAP	3	3	3	3	3	2	2	2	2	3
C504-PSA	3	3	2	2	1	1	1	2	2	3
C505-ACM	3	3	2	3	1	1	1	2	2	3
C506-BSC	1	2	2	1	2	1	3	3	3	3
C507-EDP	2	2	2	1	3	2	3	3	3	3
C508-PPT	3	3	3	2	2	2	3	3	3	3
C601-MAN	1	2	2	2	3	3	3	3	3	3
C602-TME	2	2	3	3	1	2	3	3	2	3
C603-PEL	3	2	3	1	1	1	1	3	1	3
C604-PSO	3	3	3	3	2	2	3	3	3	3
C605-BCS	2	2	2	1	3	3	2	2	2	3
C606-PRO	2	2	2	2	2	2	2	3	2	2
Net Target level of all courses	**2.6**	**2.7**	**2.5**	**2.3**	**2.1**	**1.9**	**2.2**	**2.4**	**2.4**	**3.0**

Table 3.1.3*

B—Correlation between Programs level Course and Program Specific Outcome:

CO -PSOs matrix of all courses of all semester are shown below.

First Semester					Second Semester				
CO-Course	**PSO1**	**PSO2**	**PSO3**	**PSO4**	**CO-Course**	**PSO1**	**PSO2**	**PSO3**	**PSO4**
C101-ENG	2	2	3	3	**C201-CMS**	2	2	2	3
C102-EPH	3	3	3	2	**C202-EGM**	3	3	3	3
C103-ECH	3	3	2	3	**C203-APH**	3	3	2	3
C104-BMS	3	3	2	3	**C204-ACH**	3	3	2	3
C105-EGG	3	3	2	3	**C205-FEE**	3	3	2	3
C106-CMF	2	2	2	3	**C206-EMS**	3	3	2	3
C107-WPE	3	3	3	3	**C207-DLS**	3	2	2	3
Third Semester					**Fourth Semester**				
CO-Course	**PSO1**	**PSO2**	**PSO3**	**PSO4**	**CO-Course**	**PSO1**	**PSO2**	**PSO3**	**PSO4**
C301-AMS	3	3	2	3	**C401-EST**	2	3	3	3
C302-BEE	3	3	2	3	**C402-EME**	3	3	2	3
C303-EEM	3	3	3	3	**C403-IIN**	3	3	2	3
C304-ECN	3	3	2	3	**C404-DMT**	3	3	3	3
C305-EPG	3	3	3	3	**C405-IES**	3	3	3	3
C306-CPR	3	3	3	3	**C406-TDE**	3	3	2	3
C307-EWO	2	3	3	3	**C407-PPT**	2	3	3	3
C308-PPO	2	3	3	3					
Fifth Semester					**Sixth Semester**				
CO-Course	**PSO1**	**PSO2**	**PSO3**	**PSO4**	**CO-Course**	**PSO1**	**PSO2**	**PSO3**	**PSO4**
C501-ECA	2	3	2	3	**C601-MAN**	3	3	3	3
C502-IES	3	3	2	3	**C602-TME**	3	3	2	2
C503-SAP	3	3	3	3	**C603-PEL**	3	3	2	3
C504-PSA	3	3	1	2	**C604-PSO**	3	3	3	2
C505-ACM	3	3	2	3	**C605-BCS**	3	3	3	2
C506-BSC	2	3	3	3	**C606-PRO**	2	3	2	3
C507-EDP	3	3	3	3					
C508-PPT	3	3	3	3					
Net Target level of all courses						**2.77**	**2.91**	**2.44**	**2.88**

Table 3.1.3*

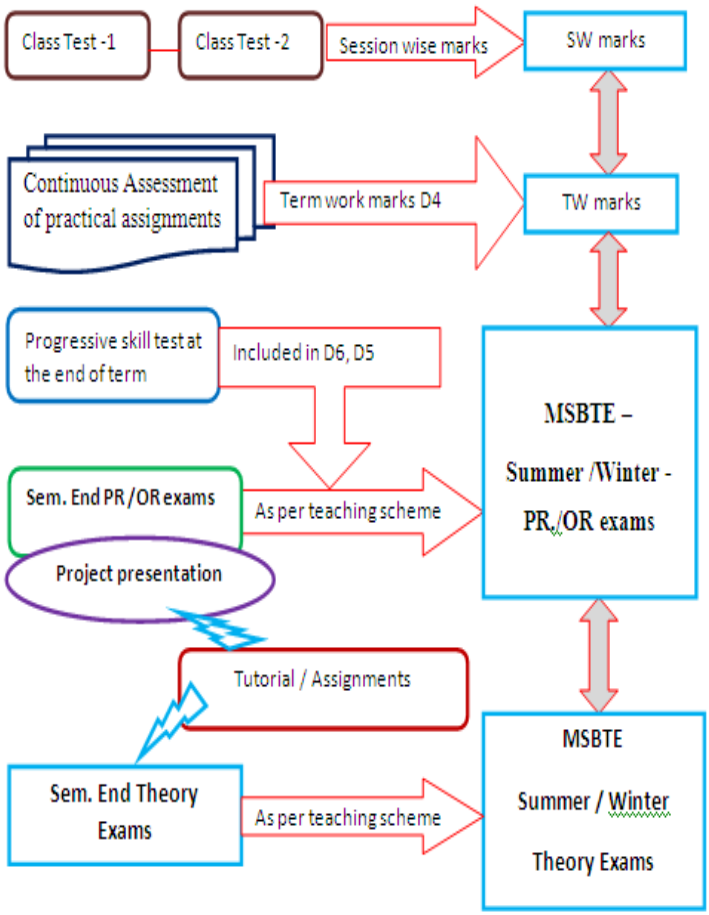
3.2. Attainment of Course Outcomes (40)

3.2.1. Described the assessment processes used to gather the data upon which the evaluation of Course Outcome is based (10)

Philosophy of Assessment:

The objectives mentioned in the MSBTE curriculum document are to be achieved through proper implementation of the curriculum. During implementing the curriculum, various methods of instructions are used to accomplish course outcomes. The achievement of students' learning is measured through well-defined assessment whose purpose is to assess and provide feedback on student learning so that the student can improve his performance. The continuous feedback will be useful to the learner and also to the teacher so that he (teacher) can change the methodology to ensure learning of students.

Assessment Flow chart



Note: Bold letter shows the process involved External assessment and the remaining is internal assessment.

In CIAAN the assessment norms for various heads of examination scheme theory, practical, term work, oral, project and sessional are given. The norms on each examination scheme are defined based on the progressive assessment of the student. However this also provides feed back at regular intervals to the teachers. Assessment process is followed as per norms given in MSBTE – CIAAN.

The Assessment Flow Chart shows assessment processes and table shows type of assessment. This process helps to collect data upon which the evaluation of Course Outcome is based.

Nature of Assessment:

We follow Internal and External assessment course wise as given in MSBTE – CIAAN.

<table>
<tr><th>Process Name</th><th>Nature of Assessment</th><th>Procedure Outcome</th><th>MSBTE Examination</th></tr>
<tr><td>Class Test -1
Class Test -2</td><td>Internal Assessment</td><td>Converted to session marks of each course</td><td>SW marks in board examination</td></tr>
<tr><td>Tutorial /Assignments</td><td>Internal Continuous Assessment</td><td>Improves performance in Board Exams</td><td>------</td></tr>
<tr><td>Term Work (TW)</td><td>Internal Continuous Assessment</td><td>Converted into Net Term Work marks course wise.</td><td>TW marks in Board Exam (MSBTE CIAAN norms – D4</td></tr>
<tr><td>Progressive skill test</td><td>Internal Assessment</td><td>Term end skill test Transferred to D5, D6</td><td rowspan="3">MSBTE Practical / Oral Exams</td></tr>
<tr><td>Board Practical/Oral Exam</td><td rowspan="2">External / Internal assessment</td><td rowspan="2">As per MSBTE CIAAN norms – D5,D6</td></tr>
<tr><td>Project Presentation</td></tr>
<tr><td>Semester end Theory Exams</td><td>External assessment</td><td>Exams are conducted as per Teaching scheme of semester</td><td>Board Theory Exam</td></tr>
</table>

Note: Each process mentioned in above table is explained in detail in Annexure 3.2.1

3.2.2. Record the attainment of Course Outcomes of all courses with respect to set attainment levels (30)

Program shall have set Course Outcome attainment levels for all courses. The attainment level has been set considering average performance levels in the MSBTE examination for the assessment years. Attainment level is measured in terms of student performance in internal assessments with respect the COs of a course plus the performance in the Board examination.

A) Measuring Course Outcomes attained through Board examinations:

Since Board has not provided useful indicator (marks), program has chosen attainment level on its own as follows-

Average marks selected by the Program = 40% of total mark to assess a course.

Justification: Program has set course outcome attainment level for all courses. To measure course outcome attain through board examination target level is stated as percentage of students getting more than that the selected by program in final exam. Since MSBTE has provided score index only for summer 2015 exam, program has continued to consider common average mark for all acc years

Program defined attainment levels vs. target for Internal and Board Exams are,

Attainment Level	Target Level
Attainment Level 1	up to 50% students scoring more than average percentage marks
Attainment Level 2	51% to 60% students scoring more than average percentage marks
Attainment Level 3	61% to 70% students scoring more than average percentage marks
Attainment Level 4	71% 80% students scoring more than average percentage marks
Attainment Level 5	above 80% students scoring more than average percentage marks

- Attainment is measured in terms of actual percentage of students getting set percentage of marks.
- If targets are achieved then all the course outcomes are attained for that year. Program is expected to set higher targets for the following years as a part of continuous improvement.
- If targets are not achieved the program should put in place an action plan to attain the target in subsequent years.

Attainment Level through MSBTE Examination:

Following table shows Attainment Level for last three year (Curriculum G-scheme) for all courses of program through MSBTE examinations.

CO-Course	2015-16		2014-15		2013-14	
	Target Level (%)	Attain. level	Target Level (%)	Attain. level	Target Level (%)	Attain. level
C101-ENG	88.33	5	98.33	5	93.33	5
C102-EPH C103-ECH	70.00	3	88.33	5	78.33	4
C104-BMS	50.00	1	43.33	1	53.33	2
C105-EGG	100.00	5	100.00	5	100.00	5
C106-CMF	100.00	5	100.00	5	100.00	5
C107-WPE	100.00	5	100.00	5	100.00	5
C201-CMS	94.83	5	98.31	5	94.83	5
C202-EGM	37.93	1	42.37	1	36.21	1
C203-APH C204-ACH	75.86	4	77.97	4	81.03	5
C205-FEE	75.86	4	76.27	4	74.14	4
C206-EMS	10.34	1	54.24	2	31.03	1
C207-DLS	100.00	5	100.00	5	100.00	5
C301-AMS	52.78	2	52.78	2	17.81	1
C302-BEE	90.28	5	50.00	2	82.19	5
C303-EEM	79.17	4	77.78	4	89.04	5
C304-ECN	94.44	5	80.56	4	80.82	5
C305-EPG	86.11	5	55.56	2	66.67	3
C306-CPR	100.00	5	100.00	5	100.00	5
C307-EWO	100.00	5	100.00	5	100.00	5
C308-PPO	100.00	5	100.00	5	100.00	5
C401-EST	100.00	5	97.10	5	98.59	5
C402-EME	65.71	3	59.42	2	94.37	5
C403-IIN	81.43	5	91.30	5	88.73	5
C404-DMT	88.57	5	86.96	5	97.18	5
C405-IES	98.57	5	81.16	5	95.77	5
C406-TDE	72.86	4	67.65	3	49.30	1
C407-PPT	100.00	5	100.00	5	100.00	5
C501-ECA	93.44	5	89.47	5	Last year of E-scheme curriculum implementation	
C502-IES	75.41	4	89.47	5		
C503-SAP	90.16	5	94.74	5		
C504-PSA	96.72	5	92.98	5		
C505-ACM	96.72	5	100.00	5		
C506-BSC	100.00	5	100.00	5		
C507-EDP	100.00	5	100.00	5		
C508-PPT	100.00	5	100.00	5		
C601-MAN	80.33	5	88.14	5	Last year of E-scheme curriculum implementation	
C602-TME	100.00	5	95.00	5		
C603-PEL	98.36	5	85.00	5		
C604-PSO	100.00	5	91.67	5		
C605-BCS	100.00	5	81.67	5		
C606-PRO	100.00	5	95.00	5		

B) Measuring CO attainment through Internal Assessments:

Target may be stated in terms of percentage of students getting more than class average marks or set by the program in each of the associated COs in the assessment instruments-class test. Mini project report, presentation etc. are accounted in TW /PR/OR exams of respective courses in final board examination.

Target level = Class Average marks of that course

Attainment Level for Year 2014-15 in Class Test. During assessment period.

Note: For following academic years Attainment Level of all courses in Internal Assessment (Class Test) is based on result of respective courses.

CO-Course	2015-16		2014-15		2013-14	
	Target Level (%)	Attain. level	Target Level (%)	Attain. level	Target Level (%)	Attain. level
C101-ENG	53.33	2	64.40	3	54.83	2
C102-EPH C103-ECH	65.00	3	71.18	4	56.66	2
C104-BMS	45.00	1	79.66	4	60.00	3
C105-EGG	Non-theory exam					
C106-CMF	Non-theory exam					
C107-WPE	Non-theory exam					
C201-CMS	55.93	2	68.96	3	50.00	1
C202-EGM	42.37	1	76.27	4	63.33	2
C203-APH C204-ACH	69.49	3	52.54	2	48.21	1
C205-FEE	67.80	3	86.44	5	54.23	2
C206-EMS	50.85	2	66.10	3	36.66	1
C207-DLS	Non-theory exam					
C301-AMS	84.93	5	66.66	3	67.12	3
C302-BEE	100.00	5	77.46	4	35.61	1
C303-EEM	98.61	5	63.38	3	86.48	5
C304-ECN	98.61	5	77.77	4	86.30	5
C305-EPG	82.19	5	77.77	4	79.72	4
C306-CPR	Non-theory exam					
C307-EWO	Non-theory exam					
C308-PPO	Non-theory exam					
C401-EST	98.59	5	70.14	3	94.44	5
C402-EME	81.69	5	86.76	5	77.77	4
C403-IIN	92.96	5	79.71	4	84.72	5
C404-DMT	94.37	5	77.61	4	86.11	5
C405-IES	90.14	5	68.18	3	88.73	5
C406-TDE	95.77	5	82.08	5	69.01	3

CO-Course	2015-16		2014-15		2013-14	
	Target Level (%)	Attain. level	Target Level (%)	Attain. level	Target Level (%)	Attain. level
C407-PPT	Non-theory exam					
C501-ECA	96.72	5	80.70	4	Last year of E-scheme curriculum implementation	
C502-IES	93.44	5	80.70	4		
C503-SAP	96.72	5	94.73	5		
C504-PSA	85.25	5	85.96	5		
C505-ACM	93.44	5	84.21	5		
C506-BSC	Non-theory exam					
C507-EDP	Non-theory exam					
C508-PPT	Non-theory exam					
C601-MAN	98.36	5	96.61	5	Last year of E-scheme curriculum implementation	
C602-TME	100.00	5	85.00	5		
C603-PEL	77.05	4	81.35	5		
C604-PSO	91.80	5	91.66	5		
C605-BCS	98.36	5	84.48	5		
C606-PRO	Non-theory exam					

Net Course Outcome Attainment Level for three years

Net attainment level of each course is calculated as

Net Attainment level= (80% of Attainment of board assessment) + (20% of Attainment of internal assessment)

CO-Course	2015-16	2014-15	2013-14
C101-ENG	4.4	4.6	4.4
C102-EPH **C103-ECH**	3	4.8	3.6
C104-BMS	1	1.6	2.2
C105-EGG	4	4	4
C106-CMF	4	4	4
C107-WPE	4	4	4
C201-CMS	4.4	4.6	4.2
C202-EGM	1	1.6	1.4
C203-APH **C204-ACH**	3.8	3.6	4.2
C205-FEE	3.8	4.2	3.6
C206-EMS	1.2	2.2	1
C207-DLS	4	4	4
C301-AMS	2.6	2.2	1.4
C302-BEE	5	1.6	4.8
C303-EEM	4.2	3.8	5
C304-ECN	5	4	4.2
C305-EPG	5	2.4	3.4

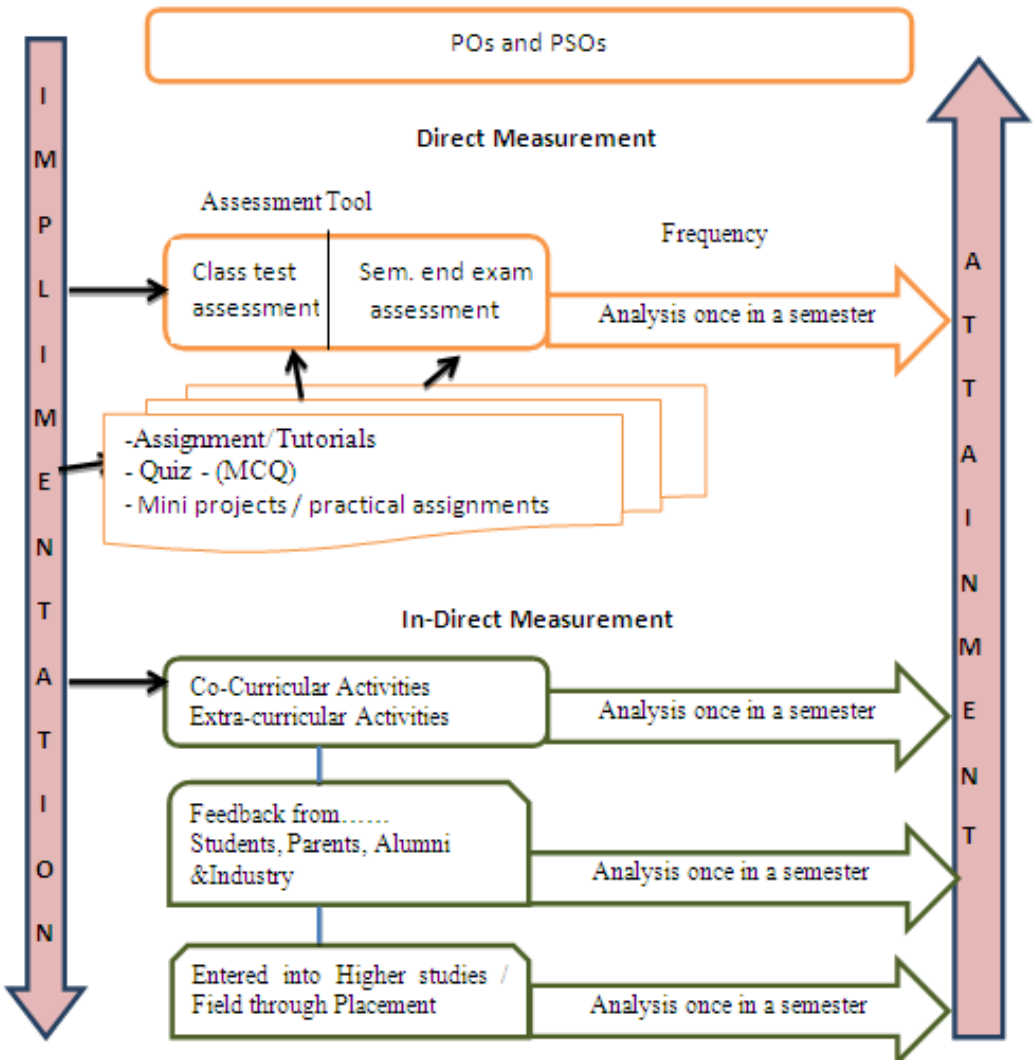
CO-Course	2015-16	2014-15	2013-14
C306-CPR	4	4	4
C307-EWO	4	4	4
C308-PPO	4	4	4
C401-EST	5	4.6	5
C402-EME	3.4	2.6	4.8
C403-IIN	5	4.8	5
C404-DMT	5	4.8	5
C405-IES	5	4.6	5
C406-TDE	4.2	3.4	1.4
C407-PPT	4	4	4
C501-ECA	5	4.8	Last year of E-scheme curriculum implementation
C502-IES	4.2	4.8	
C503-SAP	5	5	
C504-PSA	5	5	
C505-ACM	5	5	
C506-BSC	4	4	
C507-EDP	4	4	
C508-PPT	4	4	
C601-MAN	5	5	Last year of E-scheme curriculum implementation
C602-TME	5	5	
C603-PEL	4.8	5	
C604-PSO	5	5	
C605-BCS	5	5	
C606-PRO	4	4	

3.3. Attainment of Program Outcomes & Program Specific Outcomes (40)

3.3.1. Describe assessment tools and processes used for assessing the attainment of each POs and PSOs as mentioned in Annexure 1 (10)

Direct measurements & indirect measurement processes are adapted to measure attainment levels of POs & PSOs. The following chart & table provide details of identified assessment tools, Assessment Criteria, Data Collection frequency, Responsible Entity & Mapped POs & PSOs

Process to measure Attainment of POs & PSOs:



Process to measure Attainment of POs & PSOs:

Assessment Tool	Assessment Criteria	Data Collection frequency	Responsible Entity	Mapped POs & PSOs
Type of Assessment Tool - Direct tool				
Class test performance	Number of students passed	Twice every semester	Result processing (RP) unit of the department	All
Course Performance	Number of students passed	Once every semester	Result processing (RP) unit of the department	All
- Assignment & Tutorials - Quiz - Multiple Choice Questions (MCQ) - Mini projects / practical assignments	No separate assessment is considered. As it has direct impact on student's performance in Class test and Semester end exam		Course Faculty's CIAAN	All
Type of Assessment Tool - Indirect tool				
Extracurricular activities	No. of students participated	Once every year	Department	All
Co-curricular activities	No. of students participated	Once every year	Department	All
Feedback system	Feedback from students, parents,	Once every semester	Department	All
	Alumni, Industry	Once every year		
Higher Studies Record	Number of students opted for higher studies	Once every year	Department	All
Placement Record	Number of students employed	Once every year	Training and Placement Office of the institute	All

3.3.2. Provide results of evaluation of each POs & PSOs (30)

POs Attainment for all courses for CAY 2015-16: Reference Table 3.1.3

CO-Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
C101-ENG	1.8	0.0	1.8	1.8	1.8	0.9	1.8	2.6	2.6	2.6
C102-EPH	1.8	1.8	1.8	1.2	1.2	0.0	1.2	0.0	1.2	1.8
C103-ECH	1.8	1.8	1.2	1.2	1.2	0.6	1.2	0.0	0.0	1.8
C104-BMS	0.6	0.6	0.6	0.2	0.2	0.0	0.4	0.4	0.4	0.6
C105-EGG	2.4	2.4	2.4	2.4	0.0	1.6	1.6	2.4	2.4	2.4
C106-CMF	1.6	1.6	2.4	2.4	1.6	0.8	1.6	1.6	1.6	2.4
C107-WPE	2.4	2.4	1.6	1.6	1.6	1.6	0.0	2.4	2.4	2.4
C201-CMS	1.8	0.0	1.8	1.8	1.8	0.9	2.6	2.6	2.6	2.6
C202-EGM	0.6	0.6	0.4	0.4	0.2	0.2	0.0	0.4	0.4	0.6
C203-APH	2.3	2.3	1.5	1.5	0.0	1.5	1.5	1.5	1.5	2.3
C204-ACH	2.3	2.3	1.5	1.5	1.5	2.3	1.5	1.5	0.0	2.3
C205-FEE	2.3	2.3	1.5	1.5	0.8	0.8	0.0	1.5	1.5	2.3
C206-EMS	0.7	0.7	0.7	0.2	0.2	0.0	0.5	0.5	0.5	0.7
C207-DLS	1.6	1.6	2.4	2.4	1.6	1.6	1.6	1.6	2.4	2.4
C301-AMS	1.6	1.6	1.0	0.5	0.5	0.0	1.0	1.0	1.0	1.6
C302-BEE	3.0	3.0	3.0	3.0	3.0	2.0	2.0	2.0	2.0	3.0
C303-EEM	2.5	2.5	2.5	2.5	1.7	1.7	1.7	1.7	1.7	2.5
C304-ECN	3.0	3.0	2.0	2.0	2.0	0.0	2.0	2.0	3.0	3.0
C305-EPG	3.0	3.0	3.0	3.0	3.0	3.0	2.0	3.0	3.0	3.0
C306-CPR	2.4	2.4	2.4	1.6	1.6	0.0	1.6	1.6	1.6	2.4
C307-EWO	1.6	1.6	2.4	2.4	2.4	1.6	2.4	2.4	2.4	2.4
C308-PPO	1.6	2.4	1.6	1.6	1.6	1.6	2.4	2.4	2.4	2.4
C401-EST	2.0	2.0	3.0	3.0	2.0	3.0	2.0	3.0	2.0	3.0
C402-EME	2.0	2.0	1.4	2.0	1.4	1.4	0.0	1.4	1.4	2.0
C403-IIN	3.0	2.0	3.0	2.0	2.0	2.0	0.0	1.0	2.0	3.0
C404-DMT	3.0	3.0	3.0	3.0	2.0	2.0	2.0	2.0	2.0	3.0
C405-IES	3.0	3.0	3.0	3.0	3.0	2.0	3.0	3.0	3.0	3.0
C406-TDE	2.5	2.5	2.5	2.5	1.7	1.7	1.7	1.7	1.7	2.5
C407-PPT	1.6	2.4	1.6	1.6	1.6	1.6	2.4	2.4	2.4	2.4
C501-ECA	3.0	3.0	3.0	2.0	2.0	3.0	2.0	2.0	2.0	3.0
C502-IES	2.5	2.5	2.5	2.5	2.5	2.5	1.7	1.7	1.7	2.5

CO-Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
C503-SAP	3.0	3.0	3.0	3.0	3.0	2.0	2.0	2.0	2.0	3.0
C504-PSA	3.0	3.0	2.0	2.0	1.0	1.0	1.0	2.0	2.0	3.0
C505-ACM	3.0	3.0	2.0	3.0	1.0	1.0	1.0	2.0	2.0	3.0
C506-BSC	0.8	1.6	1.6	0.8	1.6	0.8	2.4	2.4	2.4	2.4
C507-EDP	1.6	1.6	1.6	0.8	2.4	1.6	2.4	2.4	2.4	2.4
C508-PPT	2.4	2.4	2.4	1.6	1.6	1.6	2.4	2.4	2.4	2.4
C601-MAN	1.0	2.0	2.0	2.0	3.0	3.0	3.0	3.0	3.0	3.0
C602-TME	2.0	2.0	3.0	3.0	1.0	2.0	3.0	3.0	2.0	3.0
C603-PEL	2.9	1.9	2.9	1.0	1.0	1.0	1.0	2.9	1.0	2.9
C604-PSO	3.0	3.0	3.0	3.0	2.0	2.0	3.0	3.0	3.0	3.0
C605-BCS	2.0	2.0	2.0	1.0	3.0	3.0	2.0	2.0	2.0	3.0
C606-PRO	1.6	1.6	1.6	1.6	1.6	1.6	1.6	2.4	1.6	1.6
Direct attainment	2.1	2.2	2.1	1.9	1.7	1.7	1.8	2.0	2.0	2.4
80% of DA	1.7	1.7	1.7	1.5	1.4	1.3	1.5	1.6	1.6	1.9
Indirect attainment	2.6	2.8	2.8	2.7	2.7	2.7	2.7	2.7	2.7	2.8
20% of Indirect attainment	0.53	0.56	0.56	0.54	0.54	0.53	0.54	0.54	0.53	0.55
Total Attainment achieved	2.2	2.3	2.2	2.1	1.94	1.9	2.0	2.2	2.1	2.5
Net attainment level from 3.1.2	2.6	2.7	2.5	2.3	2.1	1.9	2.2	2.4	2.4	3
Target Level										
Achieved Target Level	**4**	**4**	**4**	4	**3**	3	4	4	4	5
Desired Target Level from 3.1.2	**5**	**5**	**5**	4	**4**	3	4	4	4	5

Attainment Level of Program outcome (PSO) for CAY 2015-16: Reference Table 3.1.3

CO-Course	PSO1	PSO2	PSO3	PSO4	CO-Course	PSO1	PSO2	PSO3	PSO4
First Semester					**Second Semester**				
C101-ENG	1.8	1.8	2.6	2.6	**C201-CMS**	1.8	1.8	1.8	2.6
C102-EPH	1.8	1.8	1.8	1.2	**C202-EGM**	0.6	0.6	0.6	0.6
C103-ECH	1.8	1.8	1.2	1.8	**C203-APH**	2.3	2.3	1.5	2.3
C104-BMS	0.6	0.6	0.4	0.6	**C204-ACH**	2.3	2.3	1.5	2.3
C105-EGG	2.4	2.4	1.6	2.4	**C205-FEE**	2.3	2.3	1.5	2.3
C106-CMF	1.6	1.6	1.6	2.4	**C206-EMS**	0.7	0.7	0.5	0.7
C107-WPE	2.4	2.4	2.4	2.4	**C207-DLS**	2.4	1.6	1.6	2.4
Third Semester					**Fourth Semester**				
C301-AMS	1.6	1.6	1.0	1.6	**C401-EST**	2.0	3.0	3.0	3.0
C302-BEE	3.0	3.0	2.0	3.0	**C402-EME**	2.0	2.0	1.4	2.0
C303-EEM	2.5	2.5	2.5	2.5	**C403-IIN**	3.0	3.0	2.0	3.0
C304-ECN	3.0	3.0	2.0	3.0	**C404-DMT**	3.0	3.0	3.0	3.0
C305-EPG	3.0	3.0	3.0	3.0	**C405-IES**	3.0	3.0	3.0	3.0
C306-CPR	2.4	2.4	2.4	2.4	**C406-TDE**	2.5	2.5	1.7	2.5
C307-EWO	1.6	2.4	2.4	2.4	**C407-PPT**	1.6	2.4	2.4	2.4
C308-PPO	1.6	2.4	2.4	2.4					
Fifth Semester					**Sixth Semester**				
C501-ECA	2.0	3.0	2.0	3.0	**C601-MAN**	3.0	3.0	3.0	3.0
C502-IES	2.5	2.5	1.7	2.5	**C602-TME**	3.0	3.0	2.0	2.0
C503-SAP	3.0	3.0	3.0	3.0	**C603-PEL**	2.9	2.9	1.9	2.9
C504-PSA	3.0	3.0	1.0	2.0	**C604-PSO**	3.0	3.0	3.0	2.0
C505-ACM	3.0	3.0	2.0	3.0	**C605-BCS**	3.0	3.0	3.0	2.0
C506-BSC	1.6	2.4	2.4	2.4	**C606-PRO**	1.6	2.4	1.6	2.4
C507-EDP	2.4	2.4	2.4	2.4					
C508-PPT	2.4	2.4	2.4	2.4					
Direct attainment considering all courses						2.3	2.37	2.01	2.43
80% of Direct attainment considering all courses						1.84	1.90	1.60	1.94
Indirect attainment obtained by indirect-tools						2.87	2.75	2.70	2.73
20% of Indirect attainment obtained by indirect-tools						0.57	0.55	0.54	0.55
Total Attainment achieved						2.4	2.4	2.1	2.5
Net attainment level from 3.1.2						2.8	2.9	2.4	2.9
Target Level									
Achieved Target Level						**4**	**4**	4	5
Desired Target Level from 3.1.2						**5**	**5**	4	5

Comparison of Attainment Level of POs & PSOs for first two batches of program

Program Outcomes (POs)										
Attainment Levels	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**
Net attainment level from 3.1.2	2.6	2.7	2.5	2.3	2.1	1.9	2.2	2.4	2.4	3
Desired Target level	5	5	5	4	4	3	4	4	4	5
CAY m1 2014-15										
Net Attainment achieved	2.2	2.2	2.2	1.9	1,7	1.6	1.8	2.0	2.0	2.5
Achieved Target Level	**4**	**4**	**4**	**3**	**3**	**3**	**3**	**4**	**4**	**5**
CAY 2015-16										
Net Attainment achieved	2.2	2.3	2.2	2.1	1.94	1.9	2.0	2.2	2.1	2.5
Achieved Target Level	**4**	**4**	**4**	**4**	**3**	**3**	**3**	**4**	**4**	**5**

Program Specific Outcome (PSOs)				
Attainment Levels	**PSO-1**	**PSO-2**	**PSO-3**	**PSO-4**
Net attainment level from 3.1.2	2.8	2.9	2.4	2.9
Desired Target level	5	5	4	5
CAY m1 2014-15				
Net Attainment achieved	2.33	2.39	2.11	2.38
Achieved Target Level	**4**	**4**	**4**	**4**
CAY 2015-16				
Net Attainment achieved	2.4	2.4	2.14	2.5
Achieved Target Level	**4**	**4**	**4**	**5**

Above table indicates consistency in efforts to achieve Desired Attainment level.

CRITERION 4	Students' Performance	200

Intake Information

Item	2015-16	2014-15	2013-14	2012-13
Sanctioned intake strength of the program (N)	60 + 3 (TFWS)	60 + 3 (TFWS)	60 + 3 (TFWS)	60 + 3 (TFWS)
Total number of students, admitted through state level Counseling (N1)	48+3*=51	48+3*+1R e-adm =52	48+3*=51	48+3*=51
Number of students, admitted through Institute level quota (N2)	12	08	11	11
Number of students, admitted through lateral entry- Direct Second Year (N3)	25	17	21	11
Total number of students admitted in the Program (N1 + N2+ N3)	88	77	83	73

*TFWS: Tuition fee Waiver students

Success Rate Without Backlog Subjects				
Year of entry	(N1 + N2) + N3 (As defined above)	Number of students who have successfully passed without backlogs in any year of study		
		I Year	II Year	III Year
CAY 2015-16	63+25=88	14/58 *4DS+ 1left		
CAYm1 2014-15	58+1 re-adm +17=76	23/58 *2DS	26/40	
CAYm2 (LYB)* 2013-14	62+21=83	20/58 *4DS	18/41	17/18
CAYm3 (LYBm1) 2012-13	62+11=73	32/59 *3DS	27/43	23/27
CAYm4 (LYBm2) 2011-12	63+12=75	13/63	12/25	12/12

*Latest Year Batch and m1 & m2 indicate minus one year and minus 2 years respectively.

DS: Disallowed Student

Success Rate With Backlog Subjects				
Year of entry	(N1 + N2) + N3 (As defined above)	Number of students who have successfully passed with backlogs in any year of study		
		I Year	II Year	III Year
CAY 2015-16	63+25=88	41/58 *4DS+ 1left		
CAYm1 2014-15	59+1 re-adm +17=77	49/58 *2DS	39/64 (2DS)	
CAYm2 (LYB)* 2013-14	62+21=83	45/58 * 4DS	53/63 (3DS)	40/53
CAYm3 (LYBm1) 2012-13	62+11=73	53/59 *3DS	50/62 (2DS)	35/50
CAYm4 (LYBm2) 2011-12	63+12=75	48/63	43/60	50/54 (43+11OTO)

4.1. Enrolment Ratio (20)

Enrolment Ratio= (N1+N2)/N

Following table indicates enrolment ratio year wise.

Year	N1	N2	N	Enrolment Ratio = (N1+N2)/N
2015-16	51	12	63	1
2014-15	51+1Re-adm	8	63	0.952
2013-14	51	11	63	0.984
2012-13	51	11	63	0.984
Average enrolment ratio for assessment year = 0.976				

Students enrolled at the First Year Level on average basis during the period of assessment	2015-16	2014-15	2013-14	2012-13
>=90% Students		02		01
>=80% Students	19	21	12	08
>=70% Students	27	23	31	39
>=60% Students	11	08	11	08
>=50% Students	05	06	08	04
<50% Students	01			02
Total No. Of Students	63	60	62	62

4.2. Success Rate in the stipulated period of the program (60)

4.2.1. Success rate without backlogs in any year of study (40)

$$Success\ rate\ Index\ (SI) = \frac{No.of\ students\ who\ have\ passed\ from\ the\ program\ without\ backlog}{No.of\ students\ admitted\ in\ the\ FY of\ that\ batch\ and\ admitted\ in\ lateral\ entry}$$

Average SI = Mean of success index (SI) for past three batches

Success rate without backlogs in any year of study = 40 × Average SI

Item	Latest Passed Batch 2015-16	Latest Passed Batch Minus 1 Batch 2014-15	Latest Passed Batch Minus 2 Batch 2013-14	Latest Passed Batch Minus 3 Batch 2012-13
Total number of students (admitted through state level counseling + admitted through Institute on level quota + admitted through lateral entry) (N1 + N2 + N3)	83 = (62 + 21)	73 = (62 + 11)	75 = (63 + 12)	67 = (56 + 11)
No. of students disallowed	7	5	--	7
No. of students left	4	3	2	--
Number of students who have passed without backlogs in the stipulated period	17	23	12	11
Success index (SI)	0.236	0.354	0.164	0..183
Average SI	**0.251**			
Success rate without backlogs in any year of study	40 x 0.251= **10.05**			

4.2.2. Success rate in stipulated period (20)

$$Success\ rate\ Index\ (SI) = \frac{No.of\ students\ who\ have\ passed\ from\ the\ program\ in\ stipulated\ periode}{No.of\ students\ admitted\ in\ the\ FY of\ that\ batch\ and\ admitted\ in\ lateral\ entry}$$

--Average SI = mean of success index (SI) for past three batches

--Success rate = 20 × Average SI

Item	Latest Passed Batch 2015-16	Latest Passed Batch Minus 1 Batch 2014-15	Latest Passed Batch Minus 2 Batch 2013-14	Latest Passed Batch Minus 3 Batch 2012-13
Total number of students (admitted through state level counseling + admitted through Institute on level quota + admitted through lateral entry) (N1 + N2 + N3)	83 = (62 + 21)	73 = (62 + 11)	75 = (63 + 12)	67 = (56 + 11)
No. of students disallowed	7	5	--	7
No. of students left	4	3	2	--
No. of students who have passed in the stipulated period	40	35	50	24
Success index (SI)	0.556	0.539	0.685	0.4
Average SI	**0.5933**			
Success rate with backlogs in any year of study	0.5933 x 20 = **11.866**			

4.3. Academic Performance in Final Year (15)

Mean of Final Yr Grade Point Average of all successful Students on a 10 point scale

$$\text{GPA} = \frac{\text{Mean of the percentage of marks of all successful students in Final Yr}}{10}$$

$$\text{Academic Performance Index (API)} = \frac{\text{GPA}}{10} X \frac{No.of\ students\ passed}{No.of\ students\ appeared}$$

Academic Performance Level =1.5 x Average API

Academic Performance	CAY 2015-16	CAYm1 2014-15	CAYm2 2013-14
Mean of CGPA (X)	68.86/10 = 6.886	70.58/10 = 7.058	69.83/10 = 6.983
Total no. of successful students (Y)	49	36	63
Total no. of students appeared in the examination (Z)	61	60	73
API = x* (Y/Z)	AP1 =5.531	AP1 =4.234	AP2 =6.026
Average API = (AP1+AP2+AP3)/3	**5.264**		
Academic Performance Level	**1.5 x Average API = 7.896**		

Note: Successful students are those who passed in all the final year courses

4.4. Academic Performance in Second Year (20):

Academic Performance Level = 2.0 * Average API

Mean of 2nd Yr Grade Point Average of all successful Students on a 10 point scale

$$\text{GPA} = \frac{\text{Mean of the percentage of marks of all successful students in Second Yr}}{10}$$

$$\text{Academic Performance Index (API)} = \frac{\text{GPA}}{10} X \frac{No.of\ students\ passed}{No.of\ students\ appeared}$$

Note: Successful students are those who are permitted to proceed to the final year

Academic Performance	CAY 2015-16	CAYm1 2014-15	CAYm2 2013-14
Mean of CGPA or Mean Percentage of all successful students(X)	67.69/10= 6.769	64.18/10= 6.418	60.01/10= 6.001
Total no. of successful students (Y)	58	54	57
Total no. of students appeared in the examination (Z)	72-2DS=70	72-3DS=69	74-3DS=71
API = x* (Y/Z)	AP1 =5.61	AP1 =5.022	AP2 =4.817
Average API = (AP1+AP2+AP3)/3	**5.15**		
Academic Performance Level	**2 x Average API = 10.30**		

4.5. Academic Performance in First Year (25)

Academic Performance Level = 2.5 * Average API

Mean of First Yr Grade Point Average of all successful Students on a 10 point scale

$$\text{GPA} = \frac{\text{Mean of the percentage of marks of all successful students in First Yr}}{10}$$

$$\text{Academic Performance Index (API)} = \frac{\text{GPA}}{10} X \frac{No.of\ students\ passed}{No.of\ students\ appeared}$$

Academic Performance	CAY 2015-16	CAYm1 2014-15	CAYm2 2013-14
Mean of CGPA or Mean Percentage of all successful students(X)	58.61/10= 5.861	62.26/10= 6.226	61.91/10= 6.191
Total no. of successful students (Y)	41	50	45
Total no. of students appeared in the examination (Z)	63-4DS-1Left =58	60-2DS =58	62-4DS =58
API = X * (Y/Z)	AP1=4.143	AP1=5.367	AP2=4.803
Average API = (AP1+AP2+AP3)/3	**4.771**		
Academic Performance Level	**2.5 x Average API =11.928**		

Note: Successful students are those who are permitted to proceed to the second year

4.6. Placement and Higher Studies (40)

Assessment Points = 40 × (1.25X + Y)/N where, X = Number of students placed in companies or

Government sector through on/off campus recruitment

Y = Number of students admitted to higher studies

N =Total number of final year students

Item	Latest Passed Batch 2015-16	Latest Passed Batch Minus 1 Batch 2014-15	Latest Passed Batch Minus 2 Batch 2013-14
Total No. of Final Year Students (N)	61	60	73
No. of students placed in companies or Government Sector (X)	07	02	05
No. of students admitted to higher studies (Y)	42	34	58
1.25X + Y	50.75	36.5	64.25
Placement Index : (1.25X + Y)/N	0.832	0.608	0.880
T = Average of (1.25X + Y)/N	**0.773**		
Assessment = 40 X T (To be limited to 40)	**30.93**		

4.7. Professional Activities (20)

4.7.1. Professional societies/student chapters & organizing technical events (15)

Department has established **ISTE Student Chapter** and **Energy Management Cell** to provide separate platform to develop professional skills in young Technicians. Following are common activities organized by students.

ISTE Student Chapter:

The Indian Society for Technical Education is a national, professional, non-profit making Society registered under the Societies Registration Act 1860. In the year 1995, ISTE student and staff chapter of V.P.M.'s Polytechnic was incepted. Students become member of this chapter since their entry in institute. ISTE chapter is that umbrella of institute which shelters, cares for and motivates the students to use their

creative minds and their boundless imagination in the best possible way. The young, energetic, enthusiastic ISTE-members have always made their mark wherever they set their foot. And the result is ISTE-ITNU has been awarded the "**Best Students' Chapter Award**" Six times.

ISTE Chapter Activities of last three years

Year	Activity
2013-14	Inauguration of ISTE Chapter activities. **Teachers Day Celebration** on **5th September 2013.**
	Engineer's Day Celebration and **Quiz competition** on **15th September 2013**.
	Poster Competition on the theme **Industrial Safety, Safety at Work Place, Computer Security** on **10th October 2013**.
	The Blood Donation camp was conducted in association with **Samarpan Blood Bank on 1st March 2014.**
	Women's Day was celebrated on 8th March 2014 under ISTE Chapter.
2014-15	Inauguration of ISTE Chapter activities. **Teachers Day Celebration** on **5th September 2014**.
	Engineer's Day Celebration and **Quiz competition** on **15th September 2014**.
	The Blood Donation camp was conducted in association with **HDFC Bank** and **Plasma Diagnostic on 5th December 2014**.
	ISTE Srinivasa Ramanujan Mathematics 2014-2015 (SRMC 14-15) Zonal level Competition was held at V.P.M's Polytechnic on **12th December 2014**
	Swachtha Abhiyan on **20th December 2014**. Students and staff participated in a cleanliness drive around Thane railway station.
	Women's Day Celebration on **7th March 2015**. Guest **Mrs. Sujata Soparkar MD, Integrated Thane, Dr. Rashmi Karandikar, DCP, Thane.**
2015-16	EPS Department celebrated **Renewable Energy Day** by conducting State Level Technical Paper Presentation Competitions on **21st August 2015.**
	On the Occasion of Engineers Day Celebration on **15th September 2015** ISTE Student Chapter organized Essay Competition, Poster presentation competition and Powerpoint presentation competition.
	Received **ISTE Narsee Monjee Student Project Award** by Sharaddha Kamble, Vishal Raut, Mohak Bengale, Divyesh Jain students of **Third year Instrumentation department** for the project **Thermostat Life Testing in October 2015.**
	VPM's Polytechnic along with **HDFC bank and Plama Blood Bank**

Year	Activity
	conducted **Blood Donation camp** on **11th December 2015**. Third year engineering students and staff members of V.P.M's contributed for this noble cause.
	A programme on **Startup Entrepreneurship** - The journey begins!! was conducted by ED Cell on **26th January 2016.**Dr. V.V. Bedekar, Chairman, V.P.M**., Mr. Ram Bhogale**, Director, Nirlep Group of Companies and **Mr. Deepak Ghaisas**, currently Chairman of Gencoval Strategic services Pvt. Ltd., along with other guests inaugurated the programme.
	ISTE Chapter V. P. M's Polytechnic, Thane, cordially invited **Dr. Rajendra Agarkar (Honorary Physician Tata Institute of Fundamental Research**. Colaba, Mumbai) Who is founder President Society for the prevention of **Hypertension and Diabetics Medical Adviser** addressed awareness lecture cum presentation on **6th March 2016.**
	Two programmes for **Women's Day celebration** on **8th March 2016** were conducted by **Mrs. Irravati Lagu, T.V. and Drama Artist, Mumbai** on **Life Risk Management and by Sisters of Prajapita Brahma Kumaris Ishwariya Vishwa Vidyalaya, Mulundon Rajyoga Meditation, Maintaining Stability in Turbulant Times, Women's empowerment.**
	On **27th March 2016**, **79 students and 3 Teachers** from V.P.M's Polytechnic were enrolled in **SRM Competition**. This Chapter level competition was held at Vivekanand Polytechnic, Chembur, Mumbai. 2 students from Third Year Industrial Electronics Department **Gaurav Vinay Kadam** and **Omkar Manohar Pawar** were succeed in **ISTE – SRMC – 2015-16 Chapter Level examination.** Student from Electrical Power System First Year **Shashikant Dilip Gharge** ranked in **National Level Merit** list **SRM Competition** 2015-16.

List of the awards secured by ISTE chapter

Sr.No.	Name of the Award	Received by	Year
1	ISTE Narsee-Monjee Award for Polytechnics having Best Overall Performance instituted by the Narsee-Monjee Trust, Mumbai.	Vidya Prasarak Mandal's Polytechnic, Thane (W), Mumbai	2015
2	ISTE L&T National Award for Best M.Tech. Thesis Award in Electrical & Electronics Engineering **Second Prize**	Mrs. Santhi M. Laguduva Electronics Engineering Dept. For the thesis entitled : Performance Evaluation of PAPR Reduction in OFDM based on Signal Distortion	2015

Sr.No.	Name of the Award	Received by	Year
		and Signal Scrambling Techniques	
3	Best Polytechnic Teacher Award (State Level)Maharashtra & Goa **(Shared)**	Geetali S. Ingawale , Senior Lecturer, Vidya Prasarak Mandal's Polytechnic Thane	2014
4	ISTE-Ranganathan Engineering College National Award for Best Polytechnic Principal instituted jointly by Dr. P. Tamilarasi Murugesan, Chairperson Ranganathan Rajeswari Charitable Trust, Coimbatore and Dr. R. Murugesan, President, ISTE.	Shri Nayak Dileep Kumar Krishna, Principal Vidya Prasarak Mandal's Polytechnic, Thane (W)	2014
5	Narsee-Monjee Award for the Best Project work done by Polytechnic Students in Maharashtra State **Second Prize**	Mr. Amey K. Chalke, Ms. Shrutika Ms. Esha S. Gupta and Ms. Tejasvi S. Patil Depart. of Electrical Power System, Vidya Prasarak Mandal's Polytechnic, Thane For their project titled : Open Hydro Technology	2012
6	ISTE Best Chapter Award	Vidya Prasarak Mandal's Polytechnic, Thane (W)	2011
7	Narsee-Monjee Award for the Best Project work done by Polytechnic Students in Maharashtra State for the year 2011 **Second Prize**	Mr. Amit B. Dalvi, Amar S. Dighe, Shailesh D. Kesarkar & Mayuresh B. Mahashabde Vidya Prasarak Mandal's Polytechnic, Thane For their project titled : Wireless Power Transmission	2011
8	Narsee-Monjee Award for the Best Project work done by Polytechnic Students in Maharashtra State **Third Prize**	Mr Gaurav Mahashabde, Sddhesh Tare, Annirudha Patil, Tejas Malvankar Final year project–2008- 09 Project-Green Building – A Path Towards Zero Energy Building	2010
9	ISTE Best Chapter Award	Vidya Prasarak Mandal's Polytechnic, Thane (W)	2009
10	ISTE Narsee-Monjee Award for	Vidya Prasarak Mandal's	2009

Sr.No.	Name of the Award	Received by	Year
	Polytechnics having Best Overall Performance instituted by the Narsee-Monjee Trust, Mumbai	Polytechnic, Thane (W)	
11	Maharashtra State National Award for the Best Research work done by Teachers of Engineering College, L & T Best M Tech Thesis award **First Prize**	Mrs. S.S. Kulkarni Sr Lecturer, Electr. Power System Depart. for Thesis – Numerical Techniques in Electromagnetic	2006
12	ISTE – Best Student Award	Shreyas Zingare Final year student, Electr. Power System Depart	2004

Energy Management Cell

Activity	Details of activity	Beneficiary
Workshop	Workshop on Waste Management for staff & students	All staff & students
Renewable Energy Day Celebration	State level Paper presentation competition	Students from various polytechnics
workshop	Fabrication of Solar charger	TY Students
Energy conservation week	Poster presentation competition	All students of VPM's Polytechnic
	Development of conservation skill awareness presentation in class by students	
	Essay competition	
Project	Smart Energy conservator –Energy conservation in lab	TYEP student group
	Hair Solar panel	
	Remote controlled Irrigation	
	Design of solar power system for Polytechnic Building (for Lighting load)	

Entrepreneurship Development Cell:

Activity	Details of activity	Date	Beneficiary
Expert Lecture	"Entrepreneurship Opportunity for Engineers". by Mr. Pratapsinh K. Desai president ISTE New Delhi	10th September 2015	ED cell Members
	"Dream of Self - Employment"	24th July 2015	TYEP students
Short term Course	**"Startup Entrepreneurship"- The journey begins!!** (72 Hrs)	26th Jan 2016	ED cell Members

4.7.2. Publication of technical magazines, newsletters, etc. (05)

(The Department shall list the publications mentioned earlier along with the names of the editors, Publishers, etc.)

News Letter

- Electro-e-news (half yearly) -
  - First Issue released in the month of August with the details of academic activities planning along with latest achievements.
  - Second Issue released in the month of February with the details of Departmental activities and achievements.

Technical Magazines

- Souvenir of RED

  Publishes on Renewable Energy Day (every year).

  Department observes 20TH August as "Renewable Energy Day" every year by organizing State level TPP competition. Tech papers related to "Renewable energy and Energy conservation "presented by students of various polytechnics in the competition are published in the Souvenir.
- Symposium of seminar

  Department conducts one day seminar Electro-Vision every year & publishes Symposium.
- Training course material

  Department organizes training program for students as well as faculties & provides course material. Also organizes content updating training program for faculties of all over Maharashtra & make available updated topic material.
- Electro-Tech. Magazine

  Published at sem. End

  Best Tech. Papers presented by students in various competitions as well as in department are published along with informative articles collected by students & staff.
- Souvenir of National Conferences

  Published in year

  Institute organizes National Conferences every year on different theme covering new emerging technological areas.

List of conferences Hosted by Electrical Power System Department

2005, 27th Aug	Alternative Energy Sources
2011, 20th Aug	Future Power Systems for Green and Clean World

Institute magazine

"Innovision" is published at the end of each year. This features extra & co-curricular activities of each department, articles on academic advice, career tips, student success stories, sports & cultural activities.

CRITERION 5	Faculty Information and Contributions	150

Faculty Information

Current Academic Year 2016-17

Sr. No.	Name of Faculty	Qualification, University & Year of graduation	Designation & date of joining	Distribution of Teaching Load (%)			Academic Research during the Ass. Yr		Years of experience
				1st year	2nd year	3rd year	Research Paper Publications	Faculty rec. M. Tech /Ph.D.	
1	Ms. N.V. Vader	B.E. (Electrical) Karnataka University, 1984	Head of Dept 08/08/1986	0.00	0.00	100	1	Registered for Ph.D.	32
2	Ms. S.S. Kulkarni	M. Tech. (Power) VJTI Mumbai, 2006	Sr. Lecturer 02/08/1993	0.00	70.58	29.40	In Process	----	23
3	Ms. Anice Alias	B. Tech (Elect.) Kerala University, 1987	Sr. Lecturer 18/09/1994	0.00	61.11	38.88	In Process	----	22
4	Ms. R.U. Patil	M. Tech. (Power) VJTI Mumbai, 2015	Sr. Lecturer 01/09/1996	0.00	33.33	66.66	In Process	M. Tech. 2015	20
5	Ms. A.M. Karalkar	B. Tech (Elect.) Dr B.A.T.U, 2009	Lecturer 01/06/2014	0.00	38.09	61.90	In Process	----	6
6	Ms. S.S. Sagare	B.E (Electronics) Govt COE, Karad, 2011	Lecturer 15/12/2011	20.00	70.00	10.00	In Process	----	3
7	Ms. P. Bodke	B.E. (Electrical) K.K. Wagh COE Nashik, 2014	Lecturer 01/06/2015	40.90	13.63	45.45	In Process	----	3
8	Ms. S.M. Munje	B.E. (Electrical), Nagpur University 2006	Lecturer 15/12/2011	0.00	36.36	63.63	----		6
9	Ms. P. Shintre	B.E. (Electrical) Shivaji Univ,2012	Lecturer 01/06/2016	18.18	72.72	9.09	In Process	Pursuing M.E	2
10	Ms. S.M. Gupte	Msc (Maths), Mumbai University,1987	Sel. Grade Lecturer 01/06/1987	0.00	33.33	0.00	In Process	----	28
11	Dr. G.S Ingawale	Ph.D Chemistry) JJTU Rajasthan, 2015	Sr. Lecturer 06/08/1995	33.33	0.00	0.00	In Process	Ph.D 2015	22+ 6 Ind
12	Ms. S.S. Ghaisas	MA (English) Mumbai, 2004	Lecturer 01/06/2010	33.33	0.00	0.00	----	----	11
13	Ms. N.A. Warade	M.Sc.(Physics), NMU University2004	Lecturer 01/06/2016	33.33	0.00	0.00	----	----	11

Sr. No.	Name of Faculty	Qualification, University & Year of graduation	Designation & date of joining	Distribution of Teaching Load (%)			Academic Research during the Ass. Yr		Years of experience
				1st year	2nd year	3rd year	Research Paper Publications	Faculty rec. M. Tech /Ph.D.	
14	Ms. K.D. Tajne	B.E.(Mechanical) RINMU Univ, 2013	Lecturer 01/06/2015	33.33	0.00	0.00	----	----	2
	Ms. S.V. Kale	B.E. (Mechanical) Shivaji University, 2013	Lecturer 08/08/2016				----	Pursuing M.E	2.5
15	Ms. P. Pawar	B.E. (Electronics), Mumbai University, 2012	Lecturer 02/06/2012	33.33	0.00	0.00	In Process	Pursuing M.E	4

Assessment Academic year – CAY 2015-16

Sr. No.	Name of Faculty	Qualification, University & Year of graduation	Designation & date of joining	Distribution of Teaching Load (%)			Academic Research during the Ass. Yr		Years of experience
				1st year	2nd year	3rd year	Research Paper Publications	Faculty rec. M. Tech /Ph.D.	
1	Ms. N.V. Vader	B.E. (Electrical) Karnataka Univ, 1984	Head of Dept 08/08/1986	0.00	0.00	100	2	Registered for Ph.D.	31
2	Ms. S.S. Kulkarni	M. Tech. (Power) VJTI Mumbai, 2006	Sr. Lecturer 02/08/1993	15.78	21.05	63.15	1	----	22
3	Ms. Anice Alias	B. Tech (Elect.) Kerala Univ, 1987	Sr. Lecturer 18/09/1994	0.00	65.78	34.21	1	----	21
4	Ms. R.U. Patil	M. Tech. (Power) VJTI Mumbai, 2015	Sr. Lecturer 01/09/1996	0.00	26.32	73.68	2	M. Tech. 2015	19
5	Ms. A.M. Karalkar	B. Tech (Elect.) Dr B.A.T.U, 2009	Lecturer 01/06/2014	20.93	62.79	16.28	1	----	5
6	Ms. S.S. Sagare	B.E (Electronics) Govt COE, Karad, 2011	Lecturer 15/12/2011	0.00	85.71	14.29	----	----	2
7	Ms. Aleena Vincent	M. Tech (PE & Drives) VIT, Vellore,2012	Lecturer , 15/12/2013	34.88	0.00	65.12	2	----	3
8	Ms. P. Bodke	B.E. (Electrical) K.K. Wagh COE Nashik, 2014	Lecturer 01/06/2015	10.26	23.08	46.15	1	----	3
9	Mr. Vaibhav Kharat	BE (Electrical) Tasgaonkar COE 2014	Lecturer , 01/06/2015	20.00	62.50	17.50	----	Perusing M.E	1
	Ms. M. Dhake	B.E.(Electrical) AC Patil COE, Mumbai	Lecturer, 15/12/2015				----	Pursuing M.E.	4

Sr. No.	Name of Faculty	Qualification, University & Year of graduation	Designation & date of joining	Distribution of Teaching Load (%)			Academic Research during the Ass. Yr		Years of experience
				1st year	2nd year	3rd year	Research Paper Publications	Faculty rec. M. Tech /Ph.D.	
10	Ms. Sheetal Jagtap	BE (Mechanical), ADCET, Sangli, 2012	Lecturer 01/06/2015	66.66	33.33	0.00	----	Pursuing M.E.	3
	Ms. K.D. Tajne	B.E.(Mechanical) RINMU Univ, 2013	Lecturer 01/06/2015				----	----	1
11	Ms. S.M. Gupte	Msc (Maths), Mumbai Univ,1987	Sel. Grade Lecturer 01/06/1987	0.00	33.33	0.00	----	----	27
12	Dr. G.S Ingawale	Ph.D Chemistry) JJTU Rajasthan, 2015	Sr. Lecturer 06/08/1995	33.33	0.00	0.00	2	Ph.D 2015	21+ 6 Ind
	Mr. V.A. Walavalkar	M.Sc.(Chemistry), Mumbai Univ, 1985	Sel. Grade Lecturer, 1/06.2016				----	----	26
13	Ms. S.S. Ghaisas	MA (English) Mumbai, 2004	Lecturer 01/06/2010	33.33	0.00	0.00	----	----	11
	Ms. V.Y. Sonavane	MA B.Ed.(Eng) Pune Univ, 2004	Lecturer 01/06/2007	11.11			----	----	13
14	Ms. H. Nadgauda	M.Sc.(Physics), Shivaji Univ, 2012	Lecturer 01/06/2015	33.33	0.00	0.00	----	----	5

Academic Year 2014-15 (CAYm1)

Sr. No.	Name of Faculty	Qualification, University & Year of graduation	Designation & date of joining	Distribution of Teaching Load (%)			Academic Research during the Ass. Yr		Years of experience
				1st year	2nd year	3rd year	Research Paper Publications	Faculty rec. M. Tech /Ph.D.	
1	Ms. N.V. Vader	B.E. (Electrical) Karnataka Univ, 1984	Head of Dept 08/08/1986	0.00	13.79	86.20	1	Registered for Ph.D.	30
2	Ms. S.S. Kulkarni	M. Tech. (Power) VJTI Mumbai, 2006	Sr. Lecturer 02/08/1993	15.78	18.42	65.78	----	----	21
3	Ms. Anice Alias	B. Tech (Elect.) Kerala Univ, 1987	Sr. Lecturer 18/09/1994	0.00	63.15	26.31	----	----	20
4	Ms. R.U. Patil	B.E.(Elect), Shivaji univ,1996	Sr. Lecturer 01/09/1996	0.00	32.43	67.57	2	M. Tech. 2015	18
5	Ms. S.M. Munje	B.E. (Electrical), Nagpur University 2006	Lecturer 15/12/2011	10.00	55.00	35.00	----	----	4
6	Ms. A.M. Karalkar	B. Tech (Elect.) Dr B.A.T.U, 2009	Lecturer 01/06/2014	42.50	47.50	10.00	----	----	4
7	Mr. S.R. Kudalkar	B.E. (Electrical), Mumbai Uni. 2012	Lecturer 15/06/2013	0.00	59.46	40.54	1	----	1

Sr. No.	Name of Faculty	Qualification, University & Year of graduation	Designation & date of joining	Distribution of Teaching Load (%)			Academic Research during the Ass. Yr		Years of experience
				1st year	2nd year	3rd year	Research Paper Publications	Faculty rec. M. Tech /Ph.D.	
8	Mrs. Swapnali Muley	B.E. (Electrical), Nagpur Uni. 2011	Lecturer 01/06/2014	18.91	24.32	56.75	----	----	1
9	Ms. Aleena Vincent	M. Tech (PE & Drives) VIT, Vellore,2012	Lecturer , 15/12/2013	14.71	29. 41	50.00	----	----	2
	Mrs. Tejashree Bahikar	Persuing ME from K.K. Wagh COE Nashik	Lecturer , 15/12/2014				----	----	1
10	Ms. Sheetal Jagtap	BE (Mechanical), ADCET, Sangli, 2012	Lecturer 01/06/2015	66.67	33.33	0.00	----	----	2
11	Ms. S.M. Gupte	Msc (Maths), Mumbai Univ,1987	Sel. Grade Lecturer 01/06/1987	0.00	33.33	0.00	----	----	26
12	Mrs. G.S Ingawale	M.Sc. Chemistry) Mumbai Univ, 1989	Sr. Lecturer 06/08/1995	33.00	0.00	0.00	3	Pursuing Ph.D.	20+ 6 Ind
13	Ms. S.S. Ghaisas	MA (English) Mumbai, 2004	Lecturer 01/06/2010	33.00	0.00	0.00	----	----	10
14	Ms. Raji Nair	M.Sc.(Physics), Mumbai Univ, 2005	Lecturer 01/06/2006	33.00	0.00	0.00	----	----	10
15	Ms. Fatima Rizvi	M.Sc. (Maths) Mumbai Univ., 2009	Lecturer 01/07/2011	33.00	0.00	0.00	----	----	2

Academic Year 2013-14(CAYm2)

Sr. No.	Name of Faculty	Qualification, University & Year of graduation	Designation & date of joining	Distribution of Teaching Load (%)			Academic Research during the Ass. Yr		Years of experience
				1st year	2nd year	3rd year	Research Paper Publications	Faculty rec. M. Tech /Ph.D.	
1	Ms. N.V. Vader	B.E. (Electrical) Karnataka Univ, 1984	Head of Dept 08/08/1986	0.00	16.12	83.87	1	----	29
2*	Ms. S.S. Kulkarni	M. Tech. (Power) VJTI Mumbai, 2006	Sr. Lecturer 02/08/1993	27.02	0.00	72.97	1	----	20
3	Ms. Anice Alias	B. Tech (Elect.) Kerala Univ, 1987	Sr. Lecturer 18/09/1994	0.00	64.90	35.10	1	----	19
4	Mr. Sayed Ali	BE Electrical , COE Jabalpur	Lecturer 15/12/2013	21.43	28.57	56.75	----	----	1
	Mr. Sanket Berde	BE (Elect) Mumbai Univ2012	Lecturer 01/08/2013				----	Pursuing M.E.	1

Sr. No.	Name of Faculty	Qualification, University & Year of graduation	Designation & date of joining	Distribution of Teaching Load (%)			Academic Research during the Ass. Yr		Years of experience
				1st year	2nd year	3rd year	Research Paper Publications	Faculty rec. M. Tech /Ph.D.	
5	Mrs. P.A. Kulkarni	ME (Electrical) Bhopal Univ 2012	Lecturer 15/12/2013	0.00	31.70	48.78	----	1	10
	Mr. Sayed Ali	BE Electrical , COE Jabalpur	Lecturer 15/12/2013				----	----	1
6	Ms. S.M. Munje	B.E. (Electrical), Nagpur University 2006	Lecturer 15/12/2011	0.00	58.54	41.46	----	----	3
7	Mr. S.R. Kudalkar	B.E. (Electrical), Mumbai Uni. 2012	Lecturer 15/06/2013	0.00	10.00	90.00	1	----	1
8	Mr. Mandar Bhadang	B.E (Electrical) Amaravati 2012	Lecturer 15/12/2013	0.00	46.34	53.66	1	----	1
9	Miss. Nishita Hosmath	B.E (Electrical) L.T.COE Navi Mumbai 2012	Lecturer 15/06/2013	36.58	19.51	43.90	----	----	1
	Ms. Aleena Vincent	M. Tech (PE & Drives) VIT, Vellore,2012	Lecturer 15/12/2013				----	----	2
10	Mrs. HimaBindu	B.Tech (Electrical) JNU Hydrabad 2012	Lecturer 01/08/2013	19.51	48.78	31.71	----	----	1
11 *	Mrs. G.S Ingawale	M.Sc. Chemistry) Mumbai Univ, 1989	Sr. Lecturer 06/08/1995	33.33	0.00	0.00	3	Pursuing Ph.D	19+ 6(Ind)
12	Ms. Raji Nair	M.Sc.(Physics), Mumbai Univ, 2005	Lecturer 01/06/2006	33.33	0.00	0.00	----	----	9
13	Ms. S.S. Ghaisas	MA (English) Mumbai, 2004	Lecturer 01/06/2010	33.33	0.00	0.00	----	----	9
14	Ms. Fatima Rizvi	M.Sc. (Maths) Mumbai Univ., 2009	Lecturer 01/07/2011	33.00	0.00	0.00	----	----	1
15	Ms. Sheetal Jagtap	BE (Mechanical), ADCET, Sangli, 2012	Lecturer 01/06/2015	55.55	0.00	0.00	----	----	1
	Mr. Hemant Sonavane	B.E. (Mechanical) Pune University, 2012	Lecturer 01/07/2013				----	----	1

***Sample Calculation**

Name of Faculty	First Year	Second Year	Third Year	Total
Mrs. S.S. Kulkarni (Core Faculty)	10/37 x 100 = 27.02%	---	27/37 x 100 = 72.97%	100%
Mrs. G.S. Ingawale First Year Staff	100/3 = 33.33%	Total 3 Courses load		

Data in the above table is used for evaluation in the sub-sections that follows.

5.1. Student-Faculty Ratio (SFR) (15) + Availability of HOD (5); (20)

S:F ratio = N/F; F = No. of faculty = (a + b – c) for every assessment year
a: Total number of full-time regular Faculty serving fully to All Years of this program
b: Total number of full-time equivalent regular Faculty (considering fractional load) serving this program from other Program(s)
c: Total number of full time equivalent regular Faculty (considering fractional load) of this program serving other program(s)

Year	N	F = No. of faculty = (a + b – c)				SFR=N/F
		a	b	c	F	
As per enrolled student and faculty						
Current Academic Year (2016-17)	190	8	1.99	0.0	9.99	19.01
CAY (2015-16)	196	9	1.43	0.2	10.84	19.15
CAYm1 (2014-15)	192	9	1.66	0.15	10.51	18.26
CAYm2 (2013-14)	226	10	1.88	0.2	10.68	21.16(OTO)
Average SFR for three assessment years(CAY to CAYm2) = 19.52						
As per sanctioned intake and faculty						
Current Academic Year (2016-17)	213	8	1.99	0.0	9.99	21.32
CAY (2015-16)	213	9	1.43	0.2	10.84	19.64
CAYm1 (2014-15)	213	9	1.66	0.15	10.51	20.26
CAYm2 (2013-14)	213	10	1.88	0.2	10.68	19.94
Average SFR for three assessment years (CAY to CAYm2) = 19.94						

5.2. Faculty Qualification (20)

FQ = 2 (10x +7y)/F where x is no. of faculty with M.Tech. And y is no. of faculty with B.Tech. F is no. of faculty required to comply 1:20 Faculty Student Ratio (no. of faculty and no. of students required to be calculated as per 5.1)*

Academic Year	X (no. of faculty with M.Tech)	Y(no. of faculty with B.Tech)	F (no. of faculty required to comply 1:20)	FQ=2* (10x+7y)/F
Current Academic Year (2016-17)	3	11	9.99	21.42
CAY (2015-16)	4	9	10.84	19.00
CAYm1 (2014-15)	2	12	10.51	19.79
CAYm2 (2013-14)	1	13	10.68	18.91

5.3. Faculty Retention (20)

Sr. No.	Name of Faculty	Designation	2013-14 (CAYm2)	2014-15 (CAYm1)	2015-16 (CAY)	2016-17 (Current Year)
1	Mrs. N.V. Vader	Head of Department	✓	✓	✓	✓
2	Mrs. S.S. Kulkarni	Sr. Lecturer	✓	✓	✓	✓
3	Mrs. Anice Alias	Sr. Lecturer	✓	✓	✓	✓
4	Mrs. R.U. Patil	Sr. Lecturer	✓	✓	✓	✓
5	Mrs. A.M. Karalkar	Lecturer	Maternity Leave/Mr. S. Kudalkar	✓	✓	✓
6	Mrs. S.S. Sagare	Lecturer	Maternity Leave / Mrs. P.A.Kulkarni	✓	✓	✓
7	Mrs. Sheetal Munje	Lecturer	✓	✓	Mr. V. Khara / Miss M. Dhake	✓
8	Mrs. Aleena Vincent	Lecturer	---	✓	✓	---
9	Miss. P.S. Bodke	Lecturer	---	---	✓	✓
10	Mrs. S.M. Gupte	Sr. Lecturer (Humanity Dept)	✓	✓	✓	✓
11	Dr. Mrs. G.S. Ingawale	Sr. Lecturer (Humanity Dept)	✓	✓	✓	✓
12	Mrs. V.Y. Sonavane	Lecturer (Humanity Dept)	✓	✓	✓	✓
13	Mrs. Shreya Ghaisas	Lecturer (Humanity Dept)	✓	✓	✓	✓
14	Miss. Sheetal Jagtap	Lecturer (Humanity Dept)	✓	✓	✓	
15	Mrs. Komal Tanjane	Lecturer (Humanity Dept)	---	---	✓	✓

Faculty Available in 2013-14	Faculty Retained in Assessment year 2015-16	% of Retention
12	**11**	**91.66**
>= 90% of required Faculties retained during the period of assessment keeping CAY*m*2 as base year		

5.4. Faculty as participants in Faculty development/training activities (30)

- A Faculty scores maximum five points for participation
- Participant in 2 to 5 days Faculty/faculty development program: 3 Points
- Participant >5 days Faculty/faculty development program: 5 points

Name of the Faculty / Designation	2013-14 (CAYm2)		2014-15 (CAYm1)		2015-16 (CAY)		2016-17 (Current Year)	
	FDP/FTP	Marks	FDP/FTP	Marks	FDP/FTP	Marks	FDP/FTP	Marks
Mrs. N.V. Vader, Head of Department	MATLAB, EPS Dept 2 days	**5**	QIP-Electromagnetics Pedagogy IIT Bombay 2 days	**3**	Ind. Training, Technosis Pvt. Ltd., Mumbai 2 days	**3**	SCILAB Training, EPS Dept 2 days	**3**
	Workshop Compute your personal carbon footprint, VPM Poly 1 day				Ind. Training, IIC, MSBTE Reliance Energy, Dahanu 3 days		----	
	Quality management NITTR, 5days							
Mrs. S.S. Kulkarni, Sr. Lecturer	MATLAB, EPS Dept 2 days	**3**	STTP – Electronic Development and Design SP COE, Mumbai 2 weeks	**5**	STTP – Environmental Studies IIT, Bombay 2 weeks	**5**	FDP Blended Learning IIT, Bombay 2 weeks	**5**
	Workshop Compute your personal carbon footprint, VPM Poly 1 day		QIP-Electromagnetics Pedagogy IIT Bombay 2 days		Ind. Training, Technosis Pvt. Ltd., Mumbai 2 days		SCILAB Training, EPS Dept 2 days	
					QIP-HV Insulation diagnosis ,VJTI 1week			
Mrs. Anice Alias, Sr. Lecturer	MATLAB, EPS Dept 2 days	**3**	CUTP – Progressive Elect. System EPS Dept 5 days	**3**	STTP – Environmental Studies IIT, Bombay 2 weeks	**5**	SCILAB Training, EPS Dept 2 days	**3**
	Ind. Training, IIC, MSBTE Reliance Energy, Dahanu 3 days				QIP-HV Insulation diagnosis ,VJTI 1week			

Name of the Faculty / Designation	2013-14 (CAYm2)		2014-15 (CAYm1)		2015-16 (CAY)		2016-17 (Current Year)	
	FDP/FTP	Marks	FDP/FTP	Marks	FDP/FTP	Marks	FDP/FTP	Marks
Mrs. R.U. Patil, Sr. Lecturer	MATLAB, EPS Dept 2 days TEQUIP, VJTI, Mumbai 6 days	**5**	CUTP – Progressive Elect. System EPS Dept 5 days QIP-Electromagnetics Pedagogy IIT Bombay 2 days	**5**	Ind. Training, Technosis Pvt. Ltd., Mumbai 2 days QIP – Recent Trends in Power System VJTI, Mumbai 1 week	**5**	FDP Blended Learning IIT, Bombay 2 weeks SCILAB Training, EPS Dept 2 days	**5**
Mrs. S.R. Sagare, Lecturer	Maternity Leave	**0**	Induction training programme for implementation of G scheme 3 days	**3**	Ind. Training, IIC, MSBTE Reliance Energy, Dahanu 3 days Induction Training Programme – NITTR 2 weeks Ind. Training, Technosis Pvt. Ltd., Mumbai 2 days	**5**	SCILAB Training, EPS Dept 2 days	**3**
Mrs. A.M. Karalkar, Lecturer	Maternity Leave	**0**	Ind. Training, IIC, MSBTE L&T, Powai 3 days CUTP – Progressive Elect. System EPS Dept 5 days	**5**	QIP – Recent Trends in Power System VJTI, Mumbai 1 week Induction Training Programme – NITTR 2 weeks	**5**	SCILAB Training, EPS Dept 2 days	**3**
Mrs. Sheetal Munje Lecturer	MATLAB, EPS Dept 2 days	**3**	STTP-RE Sources Fr Agnel, Vashi 5 days	**3**	----	**0**	SCILAB Training, EPS Dept 2 days	**3**
Mrs. Aleena Vincent, Lecturer	MATLAB, EPS Dept 2 days	**3**	Induction training programme for implementatio	**3**	STTP-MATLAB Shah & Anchor, Chembur 5 days	**3**		

Name of the Faculty / Designation	2013-14 (CAYm2)		2014-15 (CAYm1)		2015-16 (CAY)		2016-17 (Current Year)	
	FDP/FTP	Marks	FDP/FTP	Marks	FDP/FTP	Marks	FDP/FTP	Marks
			n of G scheme 3 days					
Mrs. Swapnali Mulye Lecturer	Maternity Leave	**0**	CUTP – Progressive Elect. System EPS Dept 5 days	**3**	Maternity Leave	**0**		
Mr. Vaibhav Kharat Lecturer					Ind. Training, IIC, MSBTE Reliance Energy, Dahanu 3 days	**3**		
Mrs. Hima Bindu	Ind. Training IIC, MSBTE –PLC & SCADA, Siemens Ltd, 5 days	**3**						
Dr. Mrs. G.S. Ingawale Sr. Lecturer	Induction training programme for implementation of G scheme 3 days	**3**	----	**0**	STTP – Environmental Studies IIT, Bombay 2 weeks	**5**	FDP Blended Learning IIT, Bombay 2 weeks	**5**
Mr. S.R. Kudalkar, Lecturer	MATLAB, EPS Dept 2 days	**3**						
	Ind. Training, IIC, MSBTE Reliance Energy, Dahanu 3 days							
Mrs. S.M.Gupte Selection grade Lecturer	Quality management NITTR 5days	3						
Total		**34**		**33**		**39**		**30**
***RF*(**Number of Faculty required to comply with 20:1 Student-Faculty ratio as per 5.**1)**	10.68		10.51		10.84		9.99	

Name of the Faculty / Designation	2013-14 (CAYm2)		2014-15 (CAYm1)		2015-16 (CAY)		2016-17 (Current Year)	
	FDP/FTP	Marks	FDP/FTP	Marks	FDP/FTP	Marks	FDP/FTP	Marks
Assessment = 6 × Sum/0.5 RF (Marks limited to 30)	38.2		37.67		43.17		36.03	
Average assessment over the three years (Marks limited to 30)							**39.68**	
Average assessment over the four years (Marks limited to 30)							**38.76**	

5.5. Product development, Consultancy, Manufacturing contracts, testing contracts (20)

Product development

Department develops the apparatus/equipments which are required for learning and maintenance process, but are highly costlier compared to its usage. We undertake this as final year students' project which helps to involve students/parents/alumni in laboratory development and to enhance the Department-Industry interaction.

Apparatus Details	Project Undertaken	Cost	Usage
Meter Test Bench	Student's Project 2006-07	Rs.0.425 lacs Market cost-Rs.0.6 lacs	Calibration of all meters in our department
Synchronization Panel for Alternators	Student's Project (2005-06)	Rs.3.5 lacs Market cost-Rs.5 lacs	For laboratory sessions and training programs
Single phasing preventer for Induction motor	Students' Project (2014-15)	Cost Rs.0.06 lacs Market cost-Rs.0.1 lacs	For laboratory expt, of subject
Experimental Kits, Lamp banks	Lab Development	Within recurring budget of dept.	For performing expts.
Automatic star-delta converter	2016-17 students' Project	In Process	For laboratory sessions

Consultancy

- **Curriculum development**: Senior faculty were involved in curriculum development project of MSBTE (O, N, R, S, A, E, G and I Scheme). As academician Head of department and one of Sr. faculty are working as member of "Program Board Of Studies (PBOS)" of Autonomous Polytechnics from Mumbai region.

- **Learning resource development**: Faculties have provided their proficiency for development of Lab. manual for Electrical group programmes to MSBTE.
- **Development of laboratories**: Sr. faculties provided their knowledge & skill for the development of Laboratories of Electrical Dept. of M.P.College of Engg & Technology, Velneshwar, Maharashtra.
- **Consultancy to outside organization**: Department has developed good interaction with Thane Municipal Corporation and participated in solar city development project, street light projects

Kind attention: Ours is a unaided polytechnic located in an area enriched with higher technical educational institutes such IIT, Bombay, Veermata Jeejabai Technological Institute, Mumbai, Sardar Patel College of Engg.,Mumbai. The region is also in the vicinity of no. of degree colleges more than 10 in number. We are also surrounded by Govt. Polytechnics (2), aided polytechnics (4) and unaided polytechnics (24).Though we are located in industrial and commercial sectors and Govt. organizations, we get very less opportunity for consultancy and testing contracts.

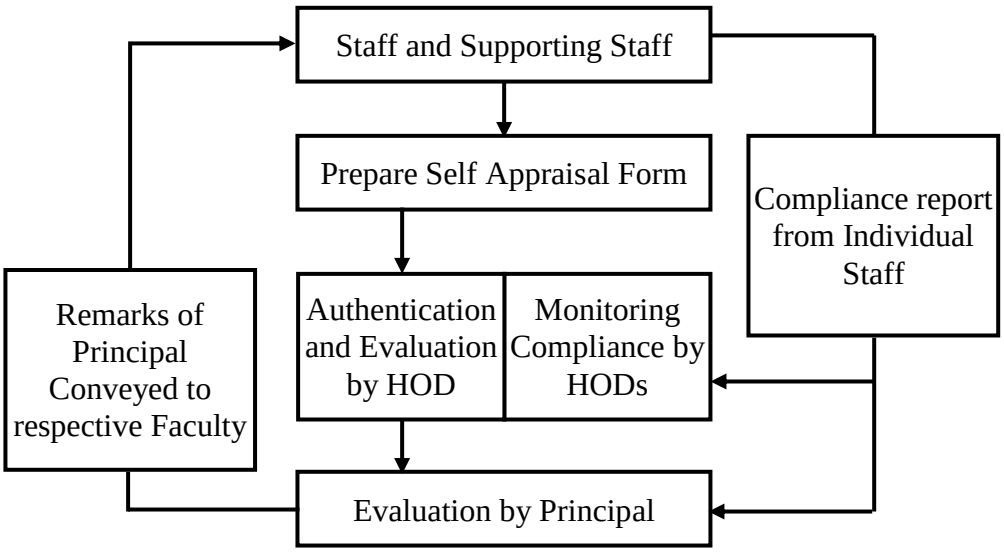
5.6. Faculty Performance Appraisal and Development System (FPADS) (30)

A. A well-defined system implemented for all the assessment years.

Polytechnic is following Performance Appraisal Development System with the following objectives,

- Effective Teaching– Learning mechanism for each Course Theory and Practical's.
- Ensure regular Teaching, Co-curricular and Extra-curricular activities.
- Faculty involvement for Guest lectures, Quiz, Technical Paper presentation, Project competitions and other Co-Curricular activities.
- Induction Training
- Content Updating Workshops
- Industrial Trainings
- Presenting Technical/Research papers in National and International Conferences.
- Publication of Journal Papers
- Guidance for Innovative, Application based projects
- Patents
- Specific Individual achievements

Faculty Performance Assessment Chart



Key Performance Indicators in the Self-Appraisal

- Teaching and practical load details of Curricular, Co-curricular responsibilities
- Course Result Analysis
- Trainings/Workshops Organized/attended
- Conferences/Guest lecturers Organized/ attended
- Conference Papers presented
- Journal Papers/ Books published
- Membership of Professional bodies
- Awards, Innovative Projects
- Skill Upgrades
- Student feedback

The Appraisals are evaluated on 100 point scale and observations are conveyed to the respective staff members.

B. FPADS implementation and its Effectiveness:

The Self-Appraisal form submitted by Individual staff members includes Academic and Personal contributions of the academic year. The system helps in faculty accountability and the effect is visible in the below listed aspects.

Faculty:

- Staff is aware of Role and Responsibilities.
- Teaching Plan with learning resources ready with every Teacher at the start of term.
- Inculcates Outcome Based Teaching Learning process culture.
- Motivation to participate in Content Updating as well as Industrial Training Activities.
- Facilitates participation of Teachers in Peer Reviewed Conferences.
- Encourages publication of Journal Papers.
- Participation of staff in MSBTE Curriculum Revision, Career Fair and other initiatives.
- Innovative practices in Teaching/learning, Use of ICT tools
- Motivating students for Co-curricular activities.

Institution:

- Better equipped and motivated human resource.
- Competent and Peer recognized faculty.
- Establishing credibility within the Student community and Society.
- Helps in achieving goals of the Organization.
- Establish State-Of-The-Art facilities.
- Ability to deal with the futuristic needs.

C. Qualification up-gradation of faculty:

For enriching academic performance and effectiveness Teaching and Support staff are regularly deputed to attend Certificate courses, Workshops, Content Updating Training Program (CUTP), Industrial Trainings, Industrial Visits, Industry Sponsored Exhibitions and Conferences. Such events help the staff to remain updated for Curriculum Implementation.

Staff Development Activities

Sr. No.	Activity	Total No. of Training Programs attended		
		2013-14	2014-15	2015-16
1	No. of Staff deputed for training organized by MSBTE/Industries	13	9	13
2	No. of Staff training programs conducted	4	4	2

Sr. No.	Activity	Total No. of Training Programs attended		
		2013-14	2014-15	2015-16
3	No. of Staff deputed for ISTE Summer / Winter STTP Schools or QIP centers	1	3	9
4	No. of Staff deputed for long / short course organized by NITTTR	2	0	2
5	No. of Staff deputed for other programs (Conferences, Exhibitions, Career Fair etc.)	13	10	6
Total		**33**	**26**	**32**

- The **Institute ISTE Chapter** is very active and organizes many programs for staff and students. The **V.P.M's Polytechnic ISTE Chapter** received **Best Chapter Award among Maharashtra and Goa Section during the Year 2009**.
- **National Conferences organized by V.P.M's Polytechnic, Thane**

In view of inviting Industrial experts and give opportunity for publication of Conference papers, the institute organizes National Conferences every year. The event is announced a year in advance and Proceedings of the same are published during the Conference. The event receives adequate sponsorship and participation support from external delegates and students.

The list of Conferences conducted in the last 3 years is as under.

Sr. No.	Name of Conference	Date & Year	Supported By
1	**13th** One Day National Conference on **Future Power System for clean and green world**	20-8-2012	• Aditya Vidyut Appliances Pvt. Ltd., Thane • MSBTE, Mumbai
2	**14th** One Day National Conference on **Emerging Trends in Solar Technologies**	5-1-2013	• Ministry of New and Renewable Energy, New Delhi
3	**15th** One Day National Conference on **Process Safety Management**	4-1-2014	• Cinque Solution Pvt. Ltd, Andheri, Mumbai
4	**16th** Two Days National Conference on **Next Generation Electronics**	16-1-2015 & 17-1-2015	• BRNS Grant from BARC, Mumbai • MSBTE, Mumbai
5	**17th** One Day Conference on **Industry Expectation from Safety Managers**	7-2-2015	• ACC Ltd., Thane • Safety Messenger, Mumbai • Canara Bank • TJSB Bank, • NKGSB Bank, • Netel Chromotographs, Thane

Sr. No.	Name of Conference	Date & Year	Supported By
6	**18th** One Day National Conference on **Life Safety - Today & Tomorrow**	19-12-2015	• MSBTE, Mumbai • GP Parsik Bank • State Bank of India • Canara Bank • Eduforce, Mumbai
7	**19th One Day National Conference on Environment, Health & Safety**	17-12-2016	• MSBTE, Mumbai • GP Parsik Bank

5.7. Implementation of Career Advancement Scheme

The Career Advancement Scheme is implemented by following AICTE guidelines and individual performance, academic results, Publications and other KPI.

The Polytechnic encourages all the staff members to take part in Career Advancement to upgrade qualifications. This will enable them to improve the Classroom / Laboratory performance as well as competency levels. The staff members including support staff approach the HOD/Principal at the start of academic year with their interest for enrolment to the PG/Advance Diploma programmes. The Academic load of such staff is adjusted to suit to their commitments. The list of faculty members who upgraded their qualification in the last 4 years is included in the table.

Qualification	2015-2016		2014-2015		2013-2014		2012-2013	
	In Process	Completed	In Process	Completed	In Process	Completed	In Process	Completed
Ph.D.	1	1	2	-	2	-	2	-
M.E./M. Tech	2	-	2	1	1	-	-	1
Energy Manager	1	-	-	-	-	-	-	1
CP / IT / ER	2	1	-	1	-	-	-	-
MS-CIT	2 Teaching + 4 Supporting Staff completed before 2012-13							
Total	**6**	**2**	**4**	**2**	**3**	**-**	**2**	**2**

Staff Members Pursuing/Completed M.E/Ph.D (10)

Sr. No.	Name of Staff	Provision for Year	Specialization	Status
Ph.D.				
1	Prof. D.K. Nayak	2010-2011	Renewable Energy	Thesis submitted 2015 - 2016
2	Dr. Mrs.G.S. Ingawale	2011-2012	Chemistry	Completed 2015-16

Sr. No.	Name of Staff	Provision for Year	Specialization	Status
M.E. / M.Tech				
3	Mrs. S.S. Kulkarni	2004-05	M. Tech (Power System)	Completed 2005-06
4	Mrs. R.U. Patil	2013-2014	M. Tech (Power System)	Completed 2014 - 2015
5	Mrs. Tejashri Bahikar	2014-15	M.E (Power System)	Completed & Left 2015-16
6	Mrs. Sheetal Jagtap	2014-15	M.E (Mechanical)	Completed & Left 2015-16
7	Mr. Vaibhav Kharat	2015-16	M.E (Power System)	Left 2015-16
8	Ms. Mayuri Dhake	2015-16	M.E (Power System)	Left 2015-16
9	Mrs. Priyanka Shintre	2016-17	M.E (Power System)	In process
Energy Manager				
10	Mrs. N.V. Vader	2006-2007	NPC Certified Energy Manager	Completed 2008-2009
CP / IT / ER				
11	Miss Akshada Joshi	2014-15	Adv. Dip. In Comp. Soft. Sys. Ana. & Applications (CP)	Completed 2014 - 2015
12	Miss Bhakti Mestry	2015-16		Completed 2015 - 2016
13	Mrs Vandana Naik	2015-16		In Process
14	Miss Mrunal Tatke	2015-16		In Process
15	Mr. Ajit Nikam	2015-16	Advance Diploma in Energy Management and Audit (ER)	In Process

CRITERION 6	Facilities And Technical Support	100

6.1. Availability of adequate, well-equipped classrooms to meet curriculum requirements (10)

Sr. No.	Room Description	Facility Available	Legend Name	Shared/ Exclusive	Capacity (sq. m)	Required/ Adequacy as per norms
1	Class room	School desk-32; Black-Board 01; Light & fan facility; Arrangement for OHP/LCD/ Laptop connection; Table 01.	GCIC04	Exclusive	70	66
			GCIC05	Exclusive	70	66
			GCIC06	Exclusive	70	66
2	Tutorial Room	Round table with 25 chairs; White-Board 01; Light & fan facility: Arrangement for OHP/LCD/ Laptop connection	GCIT02	Exclusive	60	33
3	Seminar Hall	School desk-32; Table-04; White board 01; Light & fan facility; Audio system; Arrangement for OHP/LCD/ Laptop connection	FCIS01	Shared	150	132
4	Auditorium	Air conditioned, Light & fan facility; Audio visual system; Internet facility, attached anteroom with washroom	Thorale Bajirao Peshave hall	Shared	600 Persons	340

6.2. Availability of adequate, well-equipped workshops to meet curriculum requirements (10)

Weekly Usage	Curriculum requirement	Major equipments	Technical Manpower support
Electrical Workshop Legend Name GPIL19 (Exclusive for department) Capacity - 200sqm (Area required as per norms and available)			
Electrical Workshop for second year (8 hrs)	- Electrical installation; - Electrical maintenance of appliances. - Mini projects	• **Wireman's tools** • **Appliances** - Vacuum Cleaner, Philip toaster, Hot plate, Mixer & grinder, Water heater etc. • **Maintenance tools** - Digital Multimeter, Speed hammer drill, Growler, Spirit level, Dial indicator, Bearing puller, Soldering gun. • **Demo models** - Sodium vapour lamp, Wiring accessories, Types of Wiring installation, Lighting accessories, Types of light sources.	**Lab In-charge** Mrs. S.S. Kulkarni Sr. Lecturer M.Tech Power System **Technical Assistant** Mr. C.S. Kale PWD Wireman License (No- 78556)
Project for final year (8 hrs)	- Fabrication of Final year projects		
Elect. Depart. Maintenance (10hrs)	- Elect. Apparatus, Machines maintenance		
Common Workshop-Legend Name GZIW01 (Shared by Department) Capacity - 200sqm (Area required as per norms and available)			
Electrical Workshop for First year (8hrs)	- Plumbing, - Turning, - Sheet metal molding - welding	- Working table -8 - All basic w/s tools - Welding machine & Screen, Wire brush, Die holder - Types of Hammers, Types of Spanners, Types of files Hacksaw, Wooden mallet - Lathe machine (wood work)	Lab In-charge Instructor Mr. S.L. Khachane Mr. H.R. Dandawate Mr. A.B. Kuvar
Project for final year (4hrs)	- Fabrication of Final year projects		

6.3. Adequate and well equipped laboratories, and Technical manpower (30)

Sr. No.	No. of Students/ Setup (Batch Size)	Name of the Important equipment	Weekly utilization status(all the Courses for which the lab is utilized)	Technical Manpower support (Name of staff / Designation / Qualification)
1	**Electrical Machine Lab – L1**		**Area 120 sq mt**	
	4/set up & 20/batch	- Centralized Control panel - M- G set: D.C. compound Motor coupled to Alternator - Synchronization panel for alternators - D C shunt Motor with Break Pulley arrangement - D C series motor with brake pulley arrangement - Identical M- G shunt M/C - M-G- set induction motor coupled to D.C. Generator - M-G- set slip ring induction motor coupled to D.C. Generator - Analog & digital meters - 1Φ & 3 Φ Transformer - 1Φ & 3 Φ Variac - Stroboscope - Different types of starters - Cut-section of Machines - Analog & digital tachometer - HV Oil test kit	**Odd Sem** Total hrs- 26 hrs *** Department course** - A.C. Machines 6 hrs +2 hrs (prep) - Elect. Circuit & N/w 8 hrs +2 hrs (prep) *** Other Department** - Basic Electrical Eng 6 hrs +2 hrs (prep) **Even Sem.** Total hrs- 30 hrs *** Dept course** - Testing & Maint. of E. E. 2x6 hrs +2 hrs (prep) - Element of Elect. Eng 6 hrs +2 hrs (prep) *** Other Department course** - Industrial drives 6 hrs +2 hrs (prep)	**Lab In-charge** Mrs. R.U, Patil Sr. Lecturer M-Tech Power system , BE Elect **Instructor** Mrs. S.S. Shelar Diploma in Elect. Engg **Technical Assistant** Mr. C.S. Kale PWD Wireman License No-78556

Sr. No.	No. of Students/ Setup (Batch Size)	Name of the Important equipment	Weekly utilization status(all the Courses for which the lab is utilized)	Technical Manpower support (Name of staff / Designation / Qualification)
2	**Electrical Measurement Lab - L2**		**Area 80 sq.mt**	
	4/set up & 20/batch	Cut Section of meters, Electronic Energy meter, Wattmeter, Frequency Meter, Earth Tester, Megger, LCR Meter, Kelvin's & Wheat stone Bridge, Lux Meter, Variac CT& PT transformer, CRO dual trace, Kits of LVDT, Strain gauge, Theorem, Resonance, Variable R L C Load 2kw Regulated power supply, Signal Generator, RTD / Thermocouple, Thermostat, DC Regulated Power	**Odd Sem** Total hrs- 34 hrs *** Dept course** - Elect. & Electronic Meas.8 +2 hrs (prep) * **Other Depart. course** - Basic EE (3 programs (6 +2 hrs (prep)) **Even Sem.** Total hrs- 24 hrs **Dept course** - Inst. 8 hrs +2 hrs (prep) - Fundamental of EE 6 hrs +2 hrs (prep) **Other Depart. course** - Electrical &Electronics Eng.4 hrs +2 hrs (prep)	**Lab Incharge** Mrs. Anice Alias Sr. Lecturer B-Tech Elect **Instructor** Mrs. N.S. Nangare Diploma in Elect. Engg **Technical Assistant** Mr. C.S. Kale PWD Wireman License No-78556
3	**Power System Lab - L3**		**Area -80 sq.mt**	
	4/set up & 20/batch	- Relay Testing Equip. - Ind. Motor fault Simulator - Portable oil test set - Over I relay - Insulators - Simulation of over I relay - DC Regulated Power Supply o/p 0-32 V, 5A	**Odd Sem** Total hrs- 16 hrs *** Dept course** - Switchgear & protection 8Hrs - Energy Conservation & Audit 8Hrs	**Lab Incharge** Mrs. Asmita Karalkar Lecturer B.Tech Elect **Instructor** Mrs. S.S. Shelar Diploma in Elect.

Sr. No.	No. of Students/ Setup (Batch Size)	Name of the Important equipment	Weekly utilization status(all the Courses for which the lab is utilized)	Technical Manpower support (Name of staff / Designation / Qualification)
			Even Sem. Total - 16 hrs **Department course** - Renewable Energy System 8 hrs - PPO- 8 hrs	Engg **Technical Assistant** Mr. C. S. Kale PWD Wireman License No-78556
4	**Computer Lab –L4**		**Area -55 sq.mt**	
	2/set up & 20/batch	**Hardware** - Personal computers - Printers - Scanner **Software** - Turbo-C - Scilab - Matlab - Linux - Microsoft Windows 2007	**Odd Sem** Total - 35 hrs *** Depart. course** - Computer programming 16 hrs+ 4 hrs (prep) - Power System Analysis 6 hrs+ 2 hrs (prep) - Professional Practice 4 hrs - Industrial Project 3 hr **Even Sem.** Total-22 hrs **Department course** - Power Sys. Operation 6 hrs+ 2 hrs (prep) - Industrial project 6 hrs - Environmental science 6 hrs+ 2 hrs (prep)	**Lab Incharge** Mrs. Shweta Sagre Lecturer B.E. E&TC **Lab Assistant** Miss. Bhakti Mestry BSC-IT ADCSSA **Technical Assistant** Mr. C. S. Kale PWD Wireman License No-78556

Sr. No.	No. of Students/ Setup (Batch Size)	Name of the Important equipment	Weekly utilization status(all the Courses for which the lab is utilized)	Technical Manpower support (Name of staff / Designation / Qualification)
5	**Power Electronics & Industrial Electronics Lab (Sharing with IE Dept) Area -80 sq.mt**			
	4/set up & 20/batch	- Aplab Oscilloscope, Digital Storage Oscilloscope, Power Supply, Function Generator, - Dimmerstate, Demo kit, - DC Shunt motor, LCR-Q Meter, Cycloconverter	**Odd Sem** - Power Electronics 6 hrs+ 2 hrs (prep)	**Lab Incharge** Mrs. M. Santhi Lagduva Lecturer ME Electronics **Lab Assistant** Mrs Vidya Hebli Diploma in Electronic
6	**Advance Electronics Lab (Sharing with MU depart.) Area -70 sq.mt**			
	4/set up & 20/batch	- Function Generator, CRO, Digital Storage Oscilloscope - Dual Power Supply, Regulated Power Supply	**Even Sem.** - Basic Electronics 8 hrs+ 2 hrs (prep)	**Lab Incharge** Mrs. Shradda Thakre Lecturer ME Electronics **Lab Assistant** Mrs. Jyoti Sable Diploma in Electronics
7	**Drawing Hall (Sharing with FY & CH dept) Area -132 sq.mt**			
	1/Drawing Desk 60 students	- Half Imperial Drawing board with Desk 60 nos - Blackboard.	**Odd Sem** - Eng. Graphics 6 hrs **Even Sem.** - Ind. Elect. Syst. 8hrs	**Lab Incharge** Mrs. Komal Tajane Lecturer BE Mechanical
8	**Physics lab (common for all Departments) Area -70 sq.mt**			
	4 /set up & 20/batch	- Barometer, Multimeter, Power Supply, Physical balance, Tuning Fork Set, Thermocouple, Vernier Caliper Spectrometer,	**Odd Sem.** - Basic Physics 6 hrs	**Lab Incharge** Mrs. Raji Nair Lecturer MSC

Sr. No.	No. of Students/ Setup (Batch Size)	Name of the Important equipment	Weekly utilization status(all the Courses for which the lab is utilized)	Technical Manpower support (Name of staff / Designation / Qualification)
		Rheostat, - Searle's Apparatus, Travelling Microscope, Micrometer, Steam generator, Potentiometer.	**Even Sem.** - Applied Physics 6 hrs	**Lab Assistant** Miss. M.M. Tatke BSC
9	**Chemistry lab (common for all Departments)**			**Area -120 sq.mt**
	4 /set up & 20/batch	- Magnetic Stirrer, PH meter, Oven, Furnace, Kipp's Apparatus, Titration Apparatus - Conductivity Meter	**Odd Sem.** - Basic Chemistry 6 hrs **Even Sem.** - Applied Chemistry 6 hrs	**Lab Incharge** Mr. V.A. Walavalkar Sr. Lecturer MSC **Lab Assistant** Mrs. Vandana Naik BSC
10	**Applied Mechanics lab (common for all Departments)**			**Area -70 sq.mt**
	4 /set up & 20/batch	- Winch Crab Single, Pulley Block Shegue, Screw Jack Appratus, Alluminim Pulley - 1/2 Punch winch crab M/C - Screw Jack, Differential Pulley Block, Geared Pulley Block,, Jib and Crane,Universal Force Table, Law of Momentum Apparatus, Gear Train Apparatus, Model of IC Engine,	**Even Sem.** - Applied Mechanics 6 hrs	**Lab Incharge** Mrs. Komal Tajane Lecturer BE Mechanical

6.4. Additional facilities created for improving quality of learning experience in Laboratories (20)

Sr. No.	Facility Name	Details	Reason(s) for creating facility	Utilization	Expected areas of enhanced learning	Relevance to POs/ PSOs
1	Synchronization panel in Machine Lab.- L1	Panel board with supply provision, metering, lamp method, safety switchgears	To upgrade safety level To provide actual experience of synchronization	Demonstrating synchronization procedure For performing experiments • V curve of Syn. Motor • OC /SC Test on alternator • Load test on alternator	Testing of Electrical Machine Power System operation Switchgear & Protection Electrical Measurement	PO-1 PO-4 PO-8 PO-10 PSO-1 PSO-3
2	Cut section models in Machine Lab.- L1 Electrical Measurement lab- L2 Power system lab L3	 CS of machine , CS of Equipments CS of cable	To present the constructional details To get the visual aspects	For studying the construction of M/C,. meters, Power System Components Enhancing capacity for visual approach	Elect. M/C Power Sys. operation Switchgear & Protection Electrical Measurement	PO-1 PO-2 PO-3 PO-8 PSO-1 PSO-2 PSO-4
3	Transformer model in Electrical Measurement lab- L2	Scale down structure of transformer & accessories	To get the visual aspect of actual transformer & its components	For studying location of all accessories of transformer	Electrical Machine Switchgear & Protection	PO-1 PO-2 PO-3 PO-8 PSO-1 PSO-2 PSO-4
4	Solar TV in Machine Lab.- L1	TV, DVD player energized by solar	To show the videos on related practical	For showing the actual working of m/c & tools through videos	Enhancing practical approach through videos	PO-3 PO-4 PO-9 PO-10 PSO-2 PSO-4
5	Implementation of Energy conservation measures	Replacement Ballast & EE Tube light	To illustrate Energy conservation techniques	For showing model & motivate for energy saving	Energy conservation	PO-6 PO-7 PSO-2 PSO-3

Sr. No.	Facility Name	Details	Reason(s) for creating facility	Utilization	Expected areas of enhanced learning	Relevance to POs/ PSOs
6	Separate Computer lab for department	Computer lab	To have exclusive computer lab & to provide Internet Facility	For providing computer facility for practical & project sessions	Enhancing computer proficiency	PO-1 PO-4 PO-5 PO-7 PO-8 PO-10 PSO-1 PSO-3 PSO-4
7	Waste Recycling bucket	Department	Waste management	For encouraging importance of recycling of used materials	Achievement of carbon footprint	PO-6 PO-7 PSO-2 PSO-3
8	Department Library and e-library	Hard copy and soft copy of Teachers guide, PPTs, QP sets, QB of Course. Refer .books, Notes, CDs, Transparency	To provide separate learning/ teaching resources To provide previous year QP sets, QB To refer project reports of previous batch	For preparing teaching material, Handouts. For planning of TH/PR session contents. For preparing assignments	Teaching / learning process	PO-5 PO-7 PO-8 PO-10 PSO-1 PSO-3 PSO-4
9	Visual Graphics Charts Display chart in each lab,	Safety charts , Energy saving slogans, Laboratory Instructions	To get the visual aspect of Equipment/machine To obey instructions in laboratories	For recalling /remembering vital concepts For remembering safety measures	Recalling skill of students Teaching /learning process	PO-1 PO-2 PO-3 PO-8 PSO-1 PSO-2 PSO-4

6.5. Laboratories: Maintenance and overall ambiance (10)

Each lab is assigned with to Lab In-Charges - one teaching faculty & one Instructor/Lab Assistant to look after procurement of equipments, planning of practical schedules for different courses and looking after daily working schedules. Also they carryout testing & maintenance work and dead stock checking responsibilities. For maintenance work is carryout by skilled lab technician & skilled computer Hardware Professional.

Department is carrying out following maintenance program with objectives …..

- To take care of minor faults.
- To avoid the major breakdowns of equipments.
- To avoid inconvenience in practical sessions.
- To increase the performance & life of machines.

Sr. No.	Type of Maintenance	Schedule	Actions
1	Preventive Maintenance -1 (Major level)	End of Even sem. Maintenance 15^{th} March to 5^{th} April	- Checking insulation resistance - Oiling /greasing - Checking main panel board & table panel boards. - Checking brush pressure & condition - Checking Mechanical loading system - Maintenance: Maintained by Skilled lab technician & Skilled computer Hardware Professional
2	Routine Maintenance-2	Starting of odd sem. 15^{th} June to 5^{th} July	- Testing of motors - Observing noise level
3	Routine Maintenance-2	Mid of Odd sem. 15^{th} Aug to 5^{th} Sept	- Overall inspection of table panels - Removal of Dust Dirt
4	Preventive Maintenance-2 (Major level).	End of Odd sem./starting of Even sem. 1^{st} Dec to 15^{th} Dec	- Tightness of terminals - Lamp bank Maintenance - Checking physical conditions of brushes, slip-rings, starters etc. - Observing coupling , foundation packing
5	Routine Maintenance-1	Mid of Even Sem. 15^{th} to 28^{th} Feb	- Overall inspection of table panels - Removal of Dust Dirt
6	Trouble shooting	- Whenever faults occur immediate action will be taken by Lab. in-charges and Technician	

Ambiance: Overall good ambiance of each laboratory has been maintained by providing

- sufficient free space for at ease movements
- Adequate Illumination level & ventilation
- Laboratory discipline and Safety Instructional charts safety
- All safety facilities and first aid.
- Adequate Storage for Equipments & shelf for student's bags.

- Vigilance of Lab. in-charges.
- Disciplined environment to imbibe professional ethics

6.6. Availability of computing facility in the department (10)

No. of Computer terminals	Students Computer Ratio	Details of Networking	Details of Printers, Scanners etc.
17 terminals =12 Comp. Lab + 3 Lab. + 2 Depart. office	1 PC / 2students / 20 students/batch	32MBPs In-tech internet leased line connection All PCs are connected in LAN Ethernet with 100 MBPs	Printer- 02 (HP LaserJet 1020-office) (HP LaserJet 1008-Comp.Lab.) Scanner -01 (HP Scan jet G2410) Laptop -01 Notepad -01 Personal Computers- 14

Details of Legal Software		
System Software	**Application Software**	
Windows 7 Professional Windows 8 Enterprise Windows Server 2003 Windows Server 2008 Data Centre Windows XP Professional Linux Ubuntu	Office 2003 Office Professional Plus 2007 Office Professional Plus 2010 Office Professional Plus 2013 VB6 SPJ Microcontroller MSBTE-AUTOCAD Media player(VLC)	CA Antivirus for Windows Corel DRAW Graphics Student Information System Quick Heal End Point Security 15

6.7. Language lab (Availability and Utilization) (10)

No. of Computer Terminals	Student Computer Ratio	No. of hours per week	Beneficiaries
10	2:1	02	All Students

Details of Learning Resources

Sr. No.	Skill	Resources Available	No. of CD
1	Vocabulary	**Mega English Course** Effective Word power and Right Expression Franklin International www.mindpowerindia.com	CD 1 to 4
2	Expressions	**Mega English Course** Effective Word power and Right Expression	CD 1 to 4

Sr. No.	Skill	Resources Available	No. of CD
		Franklin International www.mindpowerindia.com	
3	Spoken English	**Mind Power Spoken English Institute** Spoken English and Effective Communication (with Spoken English and Effective Communication Book)	CD 1 to 2
		Mega English Course Spoken English (with Spoken English Practice Book)	CD 1 to 2
4	Presentation Skills	Video of Presentations	Oxford University Press - CD
5	Body Language	CDs on Personality Development and Soft Skills	Oxford University Press - CD
6	Listening Skills	CDs on Enhancing Listening & Conversational Skills.	Oxford University Press - CD

Activities Conducted

- Make posters depicting different aspects of body language & write an assignment on the same
- Role play or Skit presentation (4 to 5 students)
- Diagrammatical representation of communication cycle using 8 to 10 different communication situations and stating the different elements involved in it.
- Graphical communication using pie chart and bar graph.
- Describing 2 technical objects.
- Group Discussion, Job Interviews, Body Language & Presentations.

CRITERION 7	Continuous Improvement	75

7.1. Actions taken based on the results of evaluation of each of the POs & PSOs (25)

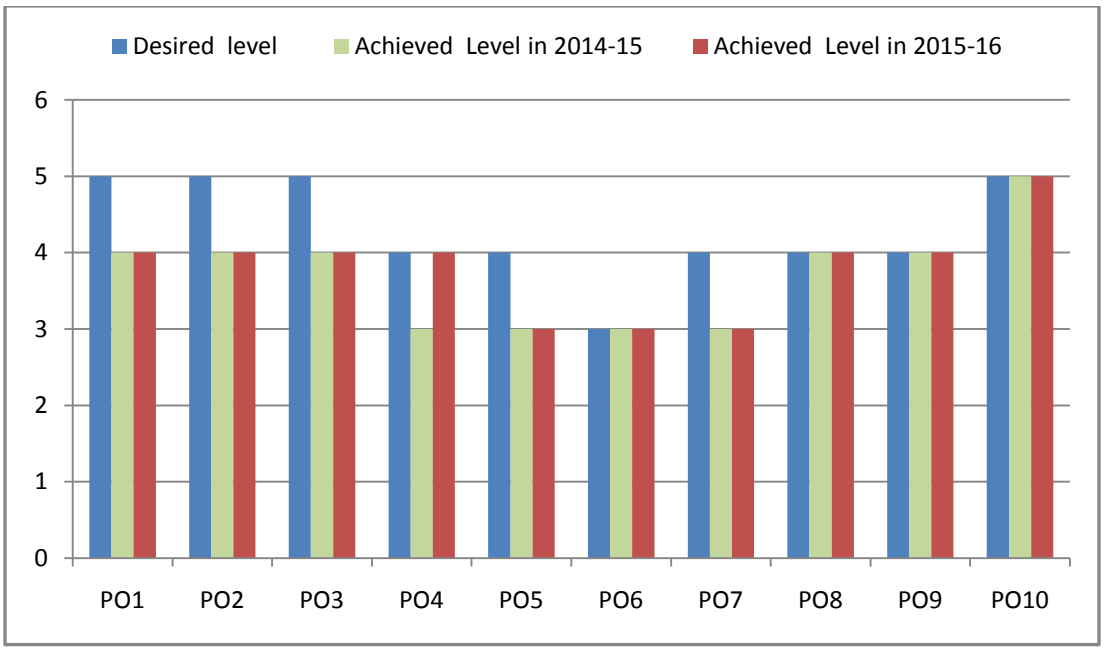
By relating Course Outcomes with POs and PSOs in criterion 3.1, the target level is determined. The measurement of attainment levels of COs is done through board examinations and internal assessments in criterion 3.2.The net attainment level of POs and PSOs is done by direct and indirect methods in criterion 3.3. The comparison between target level and attainment level for last two batches (G scheme) is shown in the following table.

To achieve the target level, the following actions are taken with reference to table 3.3.2.

The objective behind these actions was

- To enhance outcome of students' centric activities
- To improve teaching learning process to raise the course attainment level.
- To emphasize professional skills, ethics and societal needs.
- To give more exposure to industrial environment.

POs Attainment Levels and Actions for improvement – 2015-16



The above graph shows the comparison between attainment levels of POs for the year 2014-15 and 2015-16 for the G Scheme curriculum.

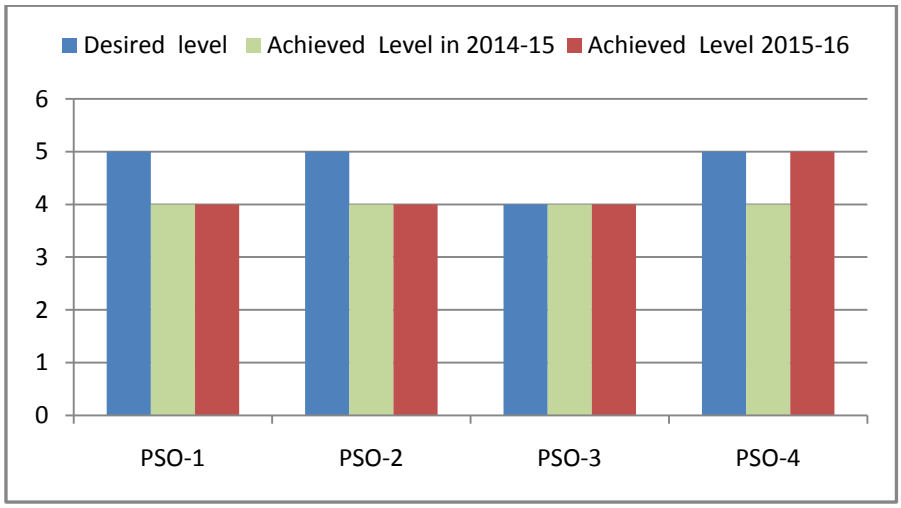
POs	Target Level	Attainment Level	Observations
PO-1: Engineering knowledge: Ability to apply the knowledge of mathematics, science, and engineering.			
PO-1	TL-5	AL-4	Students are applying the basic knowledge with less confidence. In a course of Mathematics & Science, Applied mechanics, Elem. Of mechanical Engg. student performance has been low with respect to some COs.
To achieve target level **Action taken1: Assignments:** Implementation of Assignments based on question banks prepared by teacher for all courses. **Action taken 2: Learning material:** Provided course material to first year students as references. For higher class students material for some courses is made available in e-Library / in the form of notes. **Action taken 3: Mentoring:** Personal attention & counseling for weak students to uplift their confidence through mentoring system. **Action taken 4: Understanding Level:** To raise the understanding level, teachers explain the concept with day-to-day examples for core courses.			
PO-2: Problem analysis: Ability to identify and analyze complex power system problems.			
PO-2	TL-5	AL-4	Students are applying analytical skill not as much as required for systematic approach.
To achieve target level **Action taken1:Brainstorming Technique:** To develop the analytical skill and to improve conceptual knowledge brainstorming technique is adopted by teachers. **Action taken 2: Writing a technical paper:** Students of higher classes are guided to write a technical paper related to core subjects with systematic approach. **Action taken 3: Creation of platform:** Department provided an opportunity to students by organizing state level paper presentation competition to enhance their investigative skills. **Action taken 4: Problem Assignments:** More assignments on analytical based core courses are taken by the teachers.			

POs	Target Level	Attainment Level	Observations
PO-3: Design/development of Solutions: Ability to design and develop technical solutions for public health and safety.			
PO-3	TL-5	AL-4	Students are to be prepared to develop solutions for engineering problems with safety measures.
To bridge the gap between target & attainment level **Action taken 1: Importance of Basic knowledge:** Teachers highlight the use of basic core courses for developing technical solutions. **Action taken 2: Practical:** Enforce students to carry-out the practical sessions with safety measures by understanding the Environmental issues. **Action taken 3: Expert Sessions:** Extra lectures on Industrial Safety & Environmental Issues are arranged.			
PO-4: Modern tool Usage: Ability to create, select and apply appropriate techniques, resources, and IT tools with an understanding of limitations.			
PO-4	TL-4	AL-4	Department needs to continue for exposure of students towards advance technology and IT tools.
To sustain target level **Action taken 1: Training:** Training programs are organised on advance technology, such as PCB making, Spoken Tutorial, Microcontroller, Automation, and Solar Technology. **Action taken 2: Vacational In-plant training:** Students are placed for 3-4 weeks In-plant training program during summer vacation. **Action taken 3: More no. of Industrial visits:** Industrial Visits are arranged to make aware of advance tech. And IT tools adopted in industries. **Action taken 4: Use of IT Tools in Projects:** Students are encouraged to inculcate use appropriate resources and IT tools in their project.			
PO-5: Project management and finance: Ability to apply the principles of management and professional skills in projects.			
PO-5	TL-4	AL-3	Students are able to exercise managerial principles and professional skills.
To achieve target level **Action taken 1: Students Projects:** Students are encouraged to undertake application oriented or case study projects to realize their fundamental and core knowledge with systematic approach. **Action taken 2: Professional Skills:** Imbibe the professional skills through discipline, endurance of department			

<table>
<tr><th>POs</th><th>Target Level</th><th>Attainment Level</th><th>Observations</th></tr>
<tr><td colspan="4">calendar, time-table, submission of assignments/termwork etc.
Action taken 3: Extra-curricular activities:
Opportunities are provided to students to develop managerial / professional skills through organising various activities.</td></tr>
<tr><td colspan="4">PO-6: Environment and sustainability:
Ability to participate in sustainable development of societal & environmental issues.</td></tr>
<tr><td>PO-6</td><td>TL-3</td><td>AL-3</td><td>Students are able to handle tasks related to environmental issues and sustainable development.</td></tr>
<tr><td colspan="4">To persist achieved target level
Action taken 1: Awareness:
Continued to Celebrate 'Renewable energy day 'and 'Energy conservation week' by conducting competitions and awareness programs.
Action taken 2: Environmental friendly Projects:
Continue to compel students to relate their Projects with Energy conservation, Environmental issues and its sustainability.
Action taken 3: Display board:
Create awareness of News related to societal & environmental issues through Paper cuttings displayed on Notice Board.</td></tr>
<tr><td colspan="4">PO-7: Professional Ethics:
Committed to professional ethics along with norms of engineering practice.</td></tr>
<tr><td>PO-7</td><td>TL-4</td><td>AL-3</td><td>Students are able to pursue professional ethics.</td></tr>
<tr><td colspan="4">To prolong achieved target level
Action taken 1: Emphasize Engineering Norms:
Students are enforced to follow safety and technical norms during theory and practical sessions of all courses.
Action taken 2: Seminars:
Field expert's lecturers are arranged to know the engineer's responsibilities and Professional Ethics.
Action taken 2: Time Management Tool:
Students are compelled to follow departmental calendar to understand the importance of time / schedule as a professional.</td></tr>
<tr><td colspan="4">PO-8: Individual and team work:
Ability to work efficiently as an individual or as a member or leader of team.</td></tr>
<tr><td>PO-8</td><td>TL-4</td><td>AL-4</td><td>Students are able to work as good member in team.</td></tr>
<tr><td colspan="4">To realize the target level
Action taken 1: Extracurricular activities:
Students organise activities independently in a group (Electro fact, Electro vision).</td></tr>
</table>

POs	Target Level	Attainment Level	Observations
Action taken 2: Energy Management Cell: Students handle the responsibility of societal related activities in a group. **Action taken 3: Group work:** Students are encouraged to form their group for various activities and also for studies. **Action taken 4: Dept. Information on:** www.epsdept.wordpress.com(initiation) News Letter: -- Electro-e-news			
PO-9: Communication: Ability to communicate effectively with the engineering community& society.			
PO-9	TL-4	AL-4	Effectiveness in communication has to be enhanced with time.
To sustain the target level **Action taken 1: Extra and Co-curricular Activities:** These activities will create understanding about importance of communication. **Action taken 2: In-plant Training:** Participation in TP provides opportunity to enhance effective communication with engineering community. **Action taken 3: Magazine:** Students are involved in publication of departmental activities through news bulletins.			
PO-10: Life-long Learning: Ability to engage in life-long learning in changing technological era			
PO-10	TL-5	AL-5	Students need enhancement to increase their Life-long Learning skills.
To keep up the target level **Action taken 1: Learning beyond syllabus:** Arrange LBS lectures every week. **Action taken 2: Learning environment:** Built up the learning environment which inherits information search from various sources. **Action taken 3: Adoption of Innovative teaching methodologies:** Teachers have undergone training program organised by MSBTE, IIT-B. **Action taken 4: Seminars** Create awareness of need of up-gradation of knowledge through Seminar Electro vision			

PSOs Attainment Levels and Actions for improvement – 2015-16



The above graph shows the comparison between attainment levels of PSOs for the year 2014-15 and 2015-16 for the G Scheme curriculum.

PSOs	Target Level	Attainment Level	Observations
PSO-1: Strong foundation in engineering science and technology for a successful career.			
PSO-1	TL-5	AL-4	Students are able to shoot trouble by practical experience only.
To achieve target level **Action taken 1: Teaching-Learning:** To improve the knowledge related to Basic core courses, extra efforts taken during teaching process with relevance of the course. More stress is given on skill development. **Action taken 2: Hands on skills:** Students are allowed to repair their home appliances during w/s practical and participate in departmental maintenance work. **Action taken 3: Objective oriented programmes:** Each program organized has an objective of developing professional skills of Students. **Action taken 4: Project Area:** Department encourages students to select projects which are related to advanced areas in core engineering.			

PSOs	Target Level	Attainment Level	Observations
PSO-2: Core knowledge to address social & environmental issues with engineering solutions.			
PSO-2	TL-5	AL-4	Students are applying analytical skill not as much as required for systematic approach.
To achieve the target level **Action taken 1: Student Project:** Encourage to select the project related to social issues. **Action taken 2: Learning tools:** Faculty member use IT tools such as videos, flash presentations, PPTs to elaborate the topics related to basics and core courses.			
PSO-3: Professional skill & ethical values to work as collaborators and innovators.			
PSO-3	TL-5	AL-4	Students need some practical exposure to design safety circuits.
To achieve the target level **Action taken 1: Recalling Technique:** Faculty recalls the knowledge of basics and fundamentals learned in lower semesters. **Action taken 2: Safety Measures:** Imbibed the safety norms and systems through display charts in laboratories. **Action taken 3: Safety-Professional Skills:** Faculty highlights the use of protection systems to develop as a professional skill. **Action taken 4: Field Exposure:** In summer vacation students undergo training program / internship specifically in maintenance section so that they will get exposure to the protection system.			
PSO-4: Engagement in lifelong learning for professional development.			
PSO-4	TL-5	AL-5	Student has to develop knowledge with changing technology.
To sustain the target level **Action taken 1: Training Programs:** Organised training programs related to advance technology (awareness level) such as Microcontroller, Industrial Automation, PCB fabrication & Design. **Action taken 2: Resource Search** Encouraged to collect extra knowledge while undertaking projects. **Action taken 3: Public Exposure** Encouragement for participation in technical paper presentation and project competition.			

7.2. Improvement in Success Index of Students without the backlog (10)

Items	2015-16 LPB*	2014-15 LPBm1	2013-14 LPBm2
Success index (from 4.2.1)	**0.236**	**0.354**	**0.164**
Justification	• Changes in Lateral entry admission criteria • Increase in number of lateral entry • Students' tendency to leave the programme because of personal/family reasons • More drop level at First year • Intricacy in getting through courses like Maths & Applied Mechanics • Detained because of poor attendance (MSBTE Rule no.OG 4-a)	• Change of curriculum (G scheme) • Drop rate at First year is high • Detained because of poor attendance (MSBTE Rule no. OG 4-a) • Mass failure in final year subject	• Last batch of E-Scheme curriculum • OTO(One Time Opportunity) batch so rise in no. of students with more backlog • Higher drop level at first year and second year

*Latest Passed out Batch and m1 & m2 indicate Minus one year and Minus 2years respectively.

$$Success\ rate\ Index\ (SI) = \frac{No.of\ students\ who\ have\ passed\ from\ the\ program\ without\ backlog}{No.of\ students\ admitted\ in\ the\ FY of\ that\ batch\ and\ admitted\ in\ lateral\ entry}$$

Assessment shall be based on improvement trends in success indices. Marks are awarded accordingly.

7.3. Improvement in Placement and Higher Studies (10)

Assessment is based on improvement in

- **Placement: number, quality placement, core industry, pay packages etc.**

Items	2015-16 LPB*	2014-15 LPBm1	2013-14 LPBm2
Number of enrolled	61	60	73
Number of passed	49	36	63
Number of admitted in premier institutions	35	34	58
Number of registered for placement	7	2	5
Quality Placement	1	1	3
Core Industry	Ind Coil Transformers, Wagle Estate, Thane	L & T Pvt.Ltd, Mahape	PARLE Vile Parle East, Mumbai,
Pay Packages	12000/pm	17,000/pm	12,000/pm
Number of self employed	2	1	1
Placement index (from 4.6)	0.832	0.608	0.880
Justification	More students interested in jobs because of financial condition	More first class and distinction and so going to higher education is more	Students with one time opportunity are interested in job because of more no of years spent in college

- **Higher studies: admissions in premier institutions**

Placement and Higher Studies for last three years (2013-14, 2014-15, 2015-16)

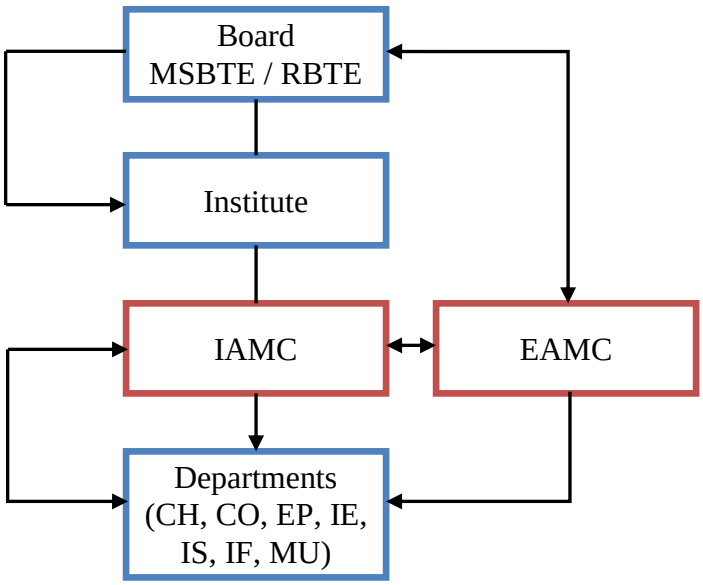
Academic Year	No. of students passed	Total Students joined higher studies	Admitted to premier colleges	Admitted to other colleges
2013-14	58	58	33 (56.89%)	25 (43.10%)
2014-15	35	34	23 (67.64%)	11 (32.35%)
2015-16	49	42	30(71.4%)	12 (28.57%)

7.4. Improvement in Academic Performance in Final Year (10)

Assessment is based on improvement in:

Items	2015-16 LPB*	2014-15 LPBm1	2013-14 LPBm2
Academic Performance index (from 4.3)	**AP1 =5.531**	**AP1 =4.234**	**AP2 =6.026**
Justification	• More failure in one of course (PE) in 6TH Sem. end exam • Heavy Course contents of PE course • Introduction of On-Line exam for Management course • Due to backlogs	• Mass failure in one of course (PE) in 6th Sem. end exam • Heavy Course contents of PED • Poor performance of lateral admitted students • Introduction of On-Line exam for Management course • Due to backlogs	• End of curriculum of E-scheme • One Time Opportunity (OTO) given by Board

7.5. Internal Academic Audits to Review Complete Academics & to Implement Corrective Actions on Continuous Basis (10)



As per CIANN of Board, we have Internal Academic Monitoring Committee (IAMC). This committee follows the guidelines provided by Academic Committee through MSBTE and ensures its implementation for all the departments in the institute.

- IAMC shall carryout monitoring once in each semester prior to visit of External Academic Monitoring Committee (EAMC).
- External Academic Monitoring of institute above 5 yrs. will be conducted once in year. i.e. in second semester.
- If department receives "Excellent remark" then EAM is conducted after one year. But IAM is conducted every year.
- Members of IAMC and EAMC shall provide guidance to the faculties of department in improving the process.
- Department has Academic Monitoring In-charge and she along with class teachers & faculties takes corrective action and monitors the implementation process for improvement.
- For sustainable effectiveness of action HOD takes oral feedback from students and faculties.

Following is the outcome of Internal Academic Audits and External Academic Audit for last three years.

Items	2015-16	2014-15	2013-14
Internal Academic Audit	**90 / 100**	**84 / 100**	**80 / 100**
External Academic Audit	Excellent	Very Good (Change in criteria)	No EAA because received Excellent remark in 2012-13

7.6. New Facility created in the program (10)

Assessment is based on improvement in

Items	CAY 2015-16	CAY*m1* 2014-15	CAY*m2* 2013-14	CAY*m3* *2012-13*
New Facility Created	• Waste management activities • Group studies • Electro-finish (finishing school) • Spoken Tutorial • Use of ICT in teaching • Internship for students	• Motor skill development program • Electro vision-(one day seminar) • Student counseling cell • Solar TV in machine lab. for video display • Inception of e-Library	• LBS lectures • Mentoring system • Summer in-plant training-(opt for course exemption) • Electro dreams phase-I (project synopsis presentation) • Electro dreams phase-II (project model presentation)	• Computer lab • TP –PCB making • Electro Facts (poster exhibition of electrical fundamentals) • Energy management cell • Entrepreneurship Development cell

New Career option introduced by Department:

As outcome of National conference on Alternative Energy Sources in 2007, department took initiative to design curriculum of **Advance Diploma in Energy Management and Audit.** Institute influenced MSBTE to initiate a new programme under their affiliation which was implemented in 2009.

Main objectives

- To create awareness of energy conservation in Society
- To create Energy Managers and Energy Auditors

Benefits of the programme

- Diploma pass outs from Polytechnic are directly eligible to continue their education with this programme.
- Working Professionals from various industries were benefitted from this programme.
- Pass outs of the programme can directly appear for Energy Manager, Energy Auditor exams of BEE (Bureau of Energy Efficiency).

Course Approval Details

Sr. No.	Course Code	Course Name	Duration	Intake	DTE Approval Letter No.	Year of Approval
1	ER	Advance Diploma in Energy Management and Audit	1 ½ Year	60	10/Non-AICTE/Approval/2009/676 dated 15 SEP 2009	2009

Department coordinated the Academic sessions of this programme since last seven years. Practical experience shared by Energy Managers and Energy Auditors provides field exposure to students.

No. of Students Enrolled – ER

Academic Year	Students Enrolled	Revenue Generated (in Rs.)
2013-2014	13	298350.00
2014-2015	13	298350.00
2015-2016	15	344250.00

On an average, the performance output of this programme is between 70 to 100%.

Institute Level Criteria

CRITERION 8	Student Support System	50

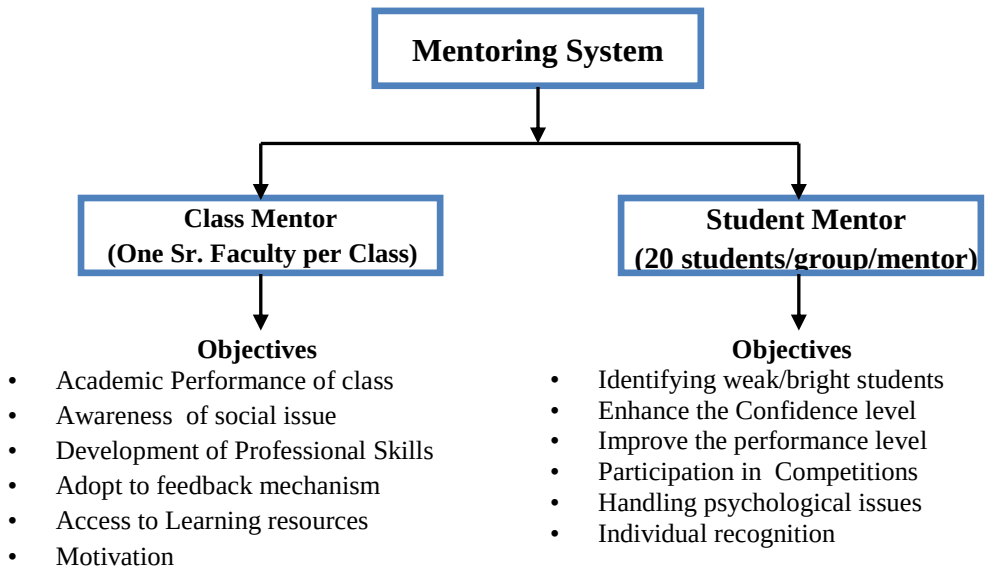
8.1. Mentoring System to help at individual level (10)

Polytechnic has an established Mentoring System to take care of the students for their Academic, Personality development and to make them best suited to the professional career. The mentor system was started, recognizing the need new young generation to have a support, counselor and confidante on the campus. The main objective was to develop a better rapport between the student and the teachers.

Nature of mentoring: Guidance for course work specific/Laboratory specific; Support for soft-skill development; Advice for career development; balancing the academic and personal issues.

In this system each teacher is assigned mentorship for a small group of student. A close watch on individual student's behavior by mentors leads to check the need for assistance. The interactions with them help the mentors to have a comprehensive evidence of their activities, academic co-curricular achievements & problems. The teacher meets her wards informally outside class hours. The mentor ascertains the strengths & weaknesses of the students. Students are also guided regarding their career options.

Counseling is done at the personal level by HOD, if required through the Counselor



appointed by the Institute to overcome problems faced by students.

8.2. Feedback Analysis and Reward/ Corrective measures taken, if any (10)

A. Feedback collected for all the Courses: YES

A standard feedback questionnaire is collected from the students for each courses including laboratory sessions.

B. The feedback collection process:

- Feedback Questionnaire is prepared to improve teaching learning process based on preparation, presentation, personal attention and healthy learning atmosphere.

V.P.M.'S Polytechnic, Thane

Department of Electrical Power System

FEEDBACK FORM (Academic year 2016-17)

Subject : Name of Teacher:-

Dear Students

We believe in quality technical education. Hence we want to improve teaching –learning process, which will help you to excel your career. Hence we request you to give sincere opinion about teaching process adopted by teachers.

Instruction: - As per your opinion, tick mark the gradation for given points. **Ex**.- Excellent **G**- Good **S** – Satisfactory **US** – Unsatisfactory

	Subject →	ECA				SAP				PSA				ACM				IES-II			
S.N	Qualities	Ex (4)	G (3)	S (2)	US (1)	Ex (4)	G (3)	S (2)	US (1)	Ex (4)	G (3)	S (2)	US (1)	Ex (4)	G (3)	S (2)	US (1)	Ex (4)	G (3)	S (2)	US (1)
1	Preparation for lesson																				
2	Organization of topics																				
3	Depth of knowledge																				
4	Methods adopted for teaching																				
5	Enthusiasm in teaching																				
6	Stress on important topics																				
7	Speed adjustment in teaching as per requiremen																				
8	Practical exposure																				
9	Writing skill on blackboard																				
10	Use of learning resources (OHP, Models, Charts etc.)																				
11	Stimulate students thinking skill																				
12	Fulfillment of queries																				
13	Assessment & comments on assignments																				

- Feedback is collected within few weeks into the Semester to permit adequate time to ensure improvement (if necessary) in performance of teachers.
- Feedback of all subject teachers is taken to monitor student's acceptance.
- Below and above average students are identified and explained the objectives of the feedback process.
- In Free atmosphere, HOD collects the feedback form from participating students.

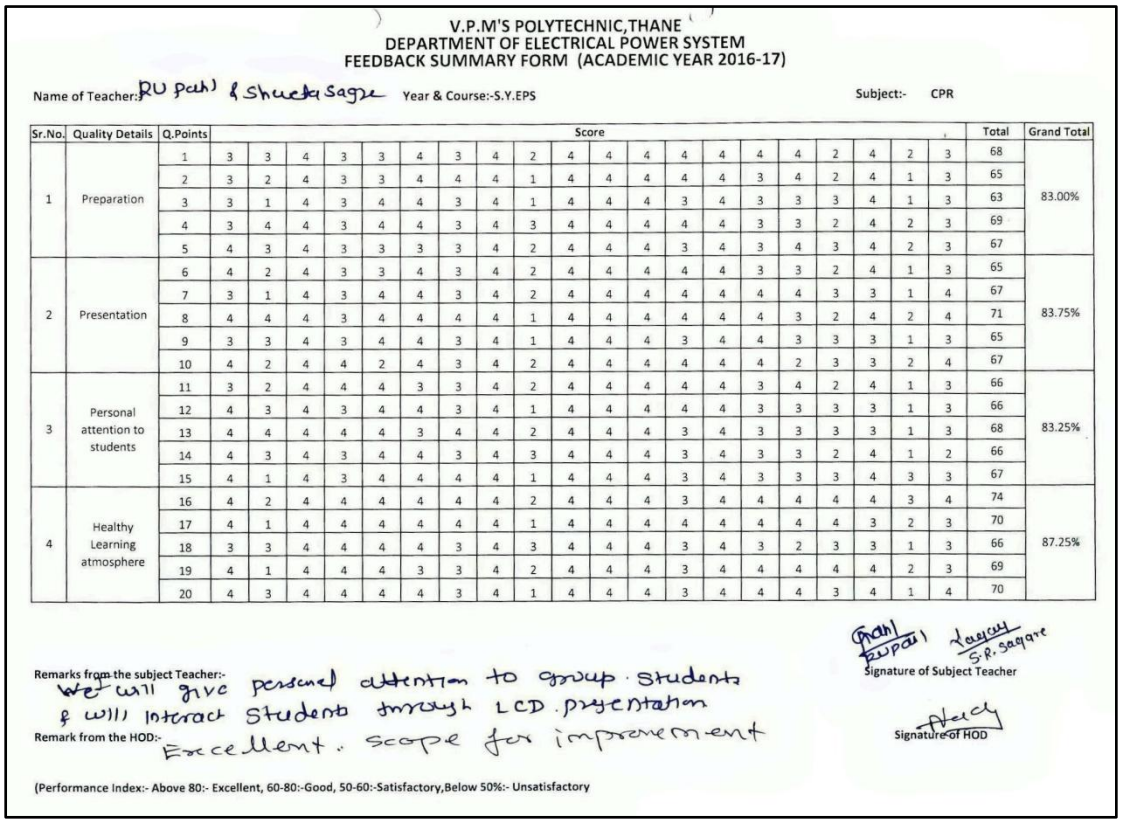
C. Average percentage of students who participate:

Considering below and above average students, total 30 to 50% of strength of the class participate in the feedback process.

D. Feedback Analysis Process

- Collected Feedback Questionnaire is scrutinized by the Head of department.
- The feedback is quantified.

- All the parameters mentioned in the feedback form are analyzed.
- Teaching abilities with respect to each item and comprehensive ability of the teachers is analyzed. All the comments of the students in the feedback for mare communicated to the respective faculty members along with their feedback score to know strengths / weaknesses and to improve teaching skills.
- The Indices obtained and areas for improvement are informed to subject teachers by respective HOD's.
- Feedback mechanism is focused to ensure best Teaching Learning practices.



V.P.M'S POLYTECHNIC,THANE
DEPARTMENT OF ELECTRICAL POWER SYSTEM
FEEDBACK SUMMARY FORM (ACADEMIC YEAR 2016-17)

Name of Teacher:- RU Patil & Shweta Sagre Year & Course:-S.Y.EPS Subject:- CPR

Sr.No.	Quality Details	Q.Points	Score																			Total	Grand Total
1	Preparation	1	3	3	4	3	3	4	3	4	2	4	4	4	4	4	4	2	4	2	3	68	83.00%
		2	3	2	4	3	3	4	4	4	1	4	4	4	4	4	3	4	2	4	1	3	65	
		3	3	1	4	3	4	4	3	4	1	4	4	4	3	4	3	3	3	4	1	3	63	
		4	3	4	4	3	4	4	3	4	3	4	4	4	4	4	3	3	2	4	2	3	69	
		5	4	3	4	3	3	3	3	4	2	4	4	4	3	4	3	4	3	4	2	3	67	
2	Presentation	6	4	2	4	3	3	4	3	4	2	4	4	4	4	4	3	3	2	4	1	3	65	83.75%
		7	3	1	4	3	4	4	3	4	2	4	4	4	4	4	4	4	3	3	1	4	67	
		8	4	4	4	3	4	4	4	4	1	4	4	4	4	4	4	3	2	4	2	4	71	
		9	3	3	4	3	4	4	3	4	1	4	4	4	3	4	4	3	3	3	1	3	65	
		10	4	2	4	4	2	4	3	4	2	4	4	4	4	4	4	2	3	3	2	4	67	
3	Personal attention to students	11	3	2	4	4	4	3	3	4	2	4	4	4	4	4	3	4	2	4	1	3	66	83.25%
		12	4	3	4	3	4	4	3	4	1	4	4	4	4	4	3	3	3	3	1	3	66	
		13	4	4	4	4	4	3	4	4	2	4	4	4	3	4	3	3	3	3	1	3	68	
		14	4	3	4	3	4	4	3	4	3	4	4	4	3	4	3	3	2	4	1	2	66	
		15	4	1	4	3	4	4	4	4	1	4	4	4	3	4	3	3	3	4	3	3	67	
4	Healthy Learning atmosphere	16	4	2	4	4	4	4	4	4	2	4	4	4	3	4	4	4	4	4	3	4	74	87.25%
		17	4	1	4	4	4	4	4	4	1	4	4	4	4	4	4	4	4	3	2	3	70	
		18	3	3	4	4	4	4	3	4	3	4	4	4	3	4	3	2	3	3	1	3	66	
		19	4	1	4	4	4	3	3	4	2	4	4	4	3	4	4	4	4	4	2	3	69	
		20	4	3	4	4	4	4	3	4	1	4	4	4	3	4	4	4	3	4	1	4	70	

Remarks from the subject Teacher:- We will give personal attention to group students & will interact students through LCD presentation

Remark from the HOD:- Excellent. Scope for improvement

Signature of Subject Teacher

Signature of HOD

(Performance Index:- Above 80:- Excellent, 60-80:-Good, 50-60:-Satisfactory,Below 50%:- Unsatisfactory

E. Basis of Reward / Corrective measures

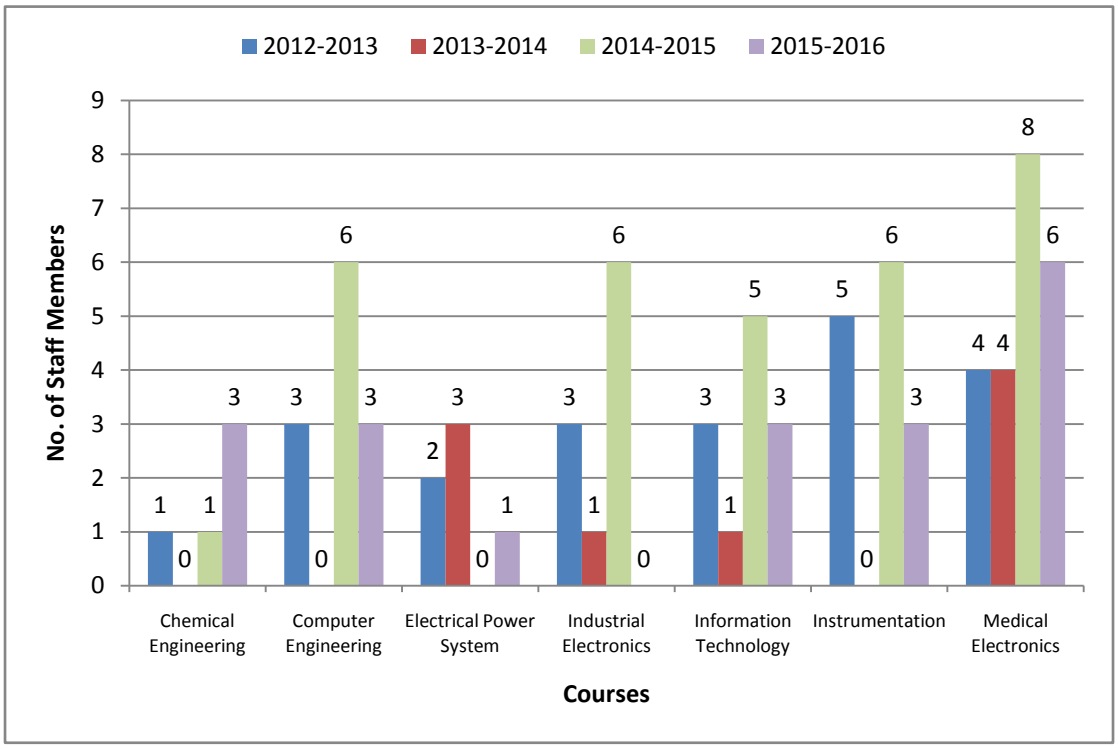
Corrective Measures

- Departments ensure availability of teachers for every course at the start of academic year.
- Complete Course plan and notes of the respective subjects are kept ready by the teachers.
- The freshly introduced teachers attend Two day workshop (Induction Training) by the Principal and HOD's to understand the basics of Effective Teaching.
- Monthly meeting of staff members is held on first Saturday of every month to provide important inputs and improve interaction among the staff members.

Reward for Better Performance - Certificate of Appreciation (100% Result)

The staff members with 100% result in Winter & Summer MSBTE Theory subjects are felicitated for their achievement on 5th September of subsequent year.

Sr. No.	Course Name	No. of Staff Members			
		2012-2013	2013-2014	2014-2015	2015-2016
1	Chemical Engineering	1	**0**	1	3
2	Computer Engineering	3	**0**	6	3
3	**Electrical Power System**	**2**	**3**	**0**	**1**
4	Industrial Electronics	3	**1**	6	0
5	Information Technology	3	**1**	5	3
6	Instrumentation	5	**0**	6	3
7	Medical Electronics	4	**4**	8	6
Total		**21**	**9**	**32**	**19**



The staff members with special contributions are being appreciated during Faculty meetings, Training programmes and Conferences.

The staff members with exceptional contribution in organizing various activities, Journal publications and other achievements are recommended for Best Teachers Awards of State Government, ISTE and other authorities/organizations.

F. Indices used for measuring quality of teaching and learning

Sr. No.	Quality Details	Q. Points	Point Details
1	Preparation	1	Preparation for lesson
		2	Organization of topics
		3	Depth of knowledge
		4	Methods adopted for teaching
		5	Enthusiasm in teaching
2	Presentation	1	Stress on important topics
		2	Speed adjustment in teaching as per requirement
		3	Practical exposure
		4	Writing skill on blackboard
		5	Use of learning resources (OHP, Models, Charts etc.)
3	Personal attention to students	1	Stimulate students thinking skill
		2	Fulfillment of queries
		3	Assessment & comments on assignments
		4	Willingness to solve difficulties outside the class
		5	Personal attention
4	Healthy Learning atmosphere	1	Punctuality
		2	Sense of humor
		3	Development of ethics
		4	Creating conducive environment for learning
		5	Class control

G. Corrective Measures

- The teachers whose performance needs improvement are counseled by the respective HOD's about their expected areas of enhancement.

Academic Year	CH		EP		IE		IS		IF		CO		MU		Total	
	T	C	T	C	T	C	T	C	T	C	T	C	T	C	T	C
2012-13	11	2	**16**	**0**	14	1	10	2	12	0	16	0	12	0	**95**	**5**
2013-14	11	2	**15**	**0**	14	0	16	1	12	1	16	0	12	0	**100**	**4**
2014-15	11	1	**16**	**0**	13	0	15	1	12	0	16	0	11	0	**98**	**2**
2015-16	11	2	**15**	**0**	13	0	15	1	12	1	16	0	10	0	**96**	**4**

- T - Total Staff including Humanities
- C - Corrective Action Taken

8.3. Feedback on facilities (5)

Students Feedback collection

Institute has adequate Infrastructure for Lectures, Practical, Tutorials, Library, Wash Rooms, Canteen Etc. Feedback Form is prepared to understand Stake holder's Views to find out scope for further improvement. Feedback from 82 students is taken for 15 parameters which are quantified as under:

Facilities	Score (%)
College Campus, Security	**93.09**
Class Rooms	**85.77**
Laboratory Equipment's, Conduct of Practical, Project etc.	**89.02**
Library, Reading Rooms, Home Issue, Book Bank, Periodicals, Journals	**95.12**
Teaching Faculty, Mentoring	**96.34**
Opportunity for Co-curricular activities	**81.30**
Computing Facilities, Internet	**80.89**
Seminar, Conference Halls	**92.28**
Training and Placement Assistance	**77.64**
Industrial Visits & Guest Lectures	**89.02**
Scope for Value Addition Programmes	**81.30**
Office; Administrative Staff Support for Admission, Fees payment, Railway/Bus concession, Bonafide and Other certificates	**86.99**
Wash rooms, Drinking Water facility	**76.82**
Campus Stores, Duplicating facility	**78.86**
First Aid Facility	**85.02**

- **Corrective action taken based on the Feedback and Comments:**

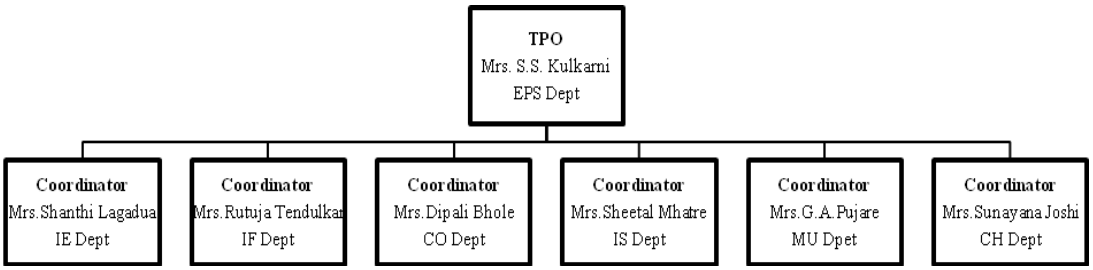
The Feedback indicated that the students are by and large satisfied with the currently available facilities. The maintenance of the existing infrastructure is done on regular basis. Sports and Cultural competitions are held during the Semester Break. Institute is planning to provide more recreational area and facilities to students without compromising on Academic activities.

Based on the Feedback Analysis and suggestions for improvement following measures are taken.

Suggestions for improvement	Measures Undertaken
Washroom improvement	Work is in progress
Improvement in Canteen services	Instructions are given to Canteen
E-Classroom	Seminar room with Audio-Visual facilities provided
Playground	Made available to the students in the mornings and evenings.

8.4. Career Guidance, Training and Placement Cell (20)

Organizational Chart



Objectives and Features

- Strong liaison with industry.
- Each department has a Placement Coordinator who reports to TPO in organizing Training & Placement activities.
- Approach industries for internship training and placement needs.
- Training activities for soft skills and interview techniques.
- Create awareness among students regarding available career options and help them in identifying their career objectives.
- Take feedback from industry and provide inputs for curriculum.

1. FACILITY

- Guest Lectures from Industry and academics for career guidance
- Hub & Spoke model of MSBTE
- Industrial visits to give exposure to faculty and students
- Industry related projects

Facilities of last 3 years

Activity	2015-16	2014-15	2013-14
Career Guidance Lectures	12	16	12
Hub & Spoke Lectures (MSBTE)	02 Seminar + 1 Ind. Visits	01 Seminar + 2 Ind. Visits	*
Industry Visits	48	37	27
Industry related projects	11	04	02

*Hub & Spoke activity was initiated by MSBTE during the year 2014-15.

2. MANAGEMENT

- **Placements**

  Companies/Recruiters criteria for placement conduct Aptitude Test, Group Discussion, Interview and Medical Test. This criterion varies depending upon the Company and no. of vacancies.

- **Internships**

  Internship is a period of work experience offered by an employer to give students exposure to the Industrial environment, often within a specific Organization related to the field of study and interest.

  On the job experience gives opportunity to apply theoretical knowledge to practical applications.

  From academic year 2015-16, MSBTE has made it mandatory for Fourth and Sixth Semester students to undergo internship of 4 weeks in the Summer vacation.

Benefits of Internship

- Transition from Classroom learning to Work experience.
- Explore of Career options based on interests and abilities.
- Develop leadership abilities and acquire new skills.
- Improve Self Confidence, Communication and skills to work in team.
- Help to develop sense of responsibility and trust.

Placement and Internship details for last 3 years

<table>
<tr><th>Activity</th><th colspan="2">2015-16</th><th colspan="2">2014-15</th><th>2013-14</th></tr>
<tr><td>No. of Campus Placements</td><td colspan="2">13</td><td colspan="2">9</td><td>8</td></tr>
<tr><td>Industries Interacted for Placement</td><td colspan="2">14</td><td colspan="2">10</td><td>8</td></tr>
<tr><td rowspan="8">No. of Industries for Internships</td><td>IE</td><td>15</td><td>IE</td><td>--</td><td rowspan="8">Internship activities started from the year 2014-15</td></tr>
<tr><td>IS</td><td>13</td><td>IS</td><td>01</td></tr>
<tr><td>EP</td><td>15</td><td>EP</td><td>10</td></tr>
<tr><td>IF</td><td>20</td><td>IF</td><td>--</td></tr>
<tr><td>CH</td><td>15</td><td>CH</td><td>--</td></tr>
<tr><td>MU</td><td>19</td><td>MU</td><td>02</td></tr>
<tr><td>CO</td><td>24</td><td>CO</td><td>--</td></tr>
</table>

No. of Interns in Summer 2016

Branch	Second Year	Third Year	Total
Chemical Engineering	14	19	33
Electrical Power Systems	**20**	**31**	**51**
Instrumentation	33	58	91
Industrial Electronics	38	39	77
Medical Electronics	13	33	46
Computer Engineering	67	66	133
Information Technology	31	34	65
		Total	**496**

3. EFFECTIVENESS

MOUs with Institutes and Industries

- **UKIERI Project**

VPMs Polytechnic, Thane signed the MOU for a collaborative research on Artificial Heart with the Aston University U.K. in October 2012. Mrs. Kirti Agashe, HOD Industrial Electronics, VPM's Polytechnic, Thane is Indian Principal Investigator and Mr. Omkar Joshi, Researcher/Lecturer, Industrial Electronics Department is conducting the research. Dr. Mark Prince, Lecturer, ME+D, Aston University is working as U.K. principal Investigator. As a part of the MOU, Mrs. Kirti Agashe and Mr. Omkar Joshi visited Aston University U.K. to discuss the project progress and to conduct experiments at Aston University during January – February 2013.

This research program has received the UKIERI (UK India Education & Research Initiative) collaborative research funding.

- **MOU with Northern College – Ontario, Canada was signed on 15th June 2009.The purpose is to facilitate students for higher studies and employment opportunities in Canada.**

In addition to the above International MOU, individual departments have signed MOU with the local industries and organizations for mutual exchange and sharing of knowledge, manpower, training etc.

These MOU's have aided to enhance the Industry interaction of the Institute for Placement and Internship. The faculty is benefitted through industrial exposure for hands-on training as well as latest updates in technology.

MOUs of various Departments

Sr. No.	Department	Name of Company for MOU
1	Electrical Power Systems	Shrihans Electricals Pvt. Ltd, Taloja
		Aditya Vidyut Pvt. Ltd., Bhiwandi
2	Industrial Electronics	Digele Systems, Mahim, Mumbai
		Shri Sai Works Power Division Dombivali
		Ecomation Systems ,Thane
3	Information Technology	Appeteria.com, Dombivli
		QUICKTECH, Thane
4	Computer Engineering	Techknow Pvt. Ltd, Thane
		Learning Pixels, Thane
5	Instrumentation	Supertech, Thane
		Suchi Engineers, Thane
6	Medical Electronics	Vighnaharta Sales & services, Bhiwandi
7	Chemical Engineering	Suchi Engineers, Thane
		Thakkar Dyechem Industries, Badlapur, Thane
		Process Units Engineers and Manufacturers, Dombivli, Thane

The Industry Interaction has helped to place desirous Diploma students as well as Internship of the students during the Second and Third year vacations.

8.5. Entrepreneurship Cell/Technology Business Incubator (5)

Project Coordinator – Dr. Usha Raghavan

VPM's Polytechnic has the privilege to start an Entrepreneurship Development Cell in the academic year 2011-12. The entrepreneurship Development cell proposes to encourage, motivate and provide training for the students who wish to become Entrepreneurs later in life. Entrepreneurship Development Cell strives to inspire and generate a culture of innovation which will help students and budding entrepreneurs to realize their own enterprise.

Creativity out of straw & pin

Activity of Entrepreneurship Development Cell

Details of the Programme	Name of the Speaker
Academic Year 2015-16	**No. of Students Enrolled: 80**
Entrepreneurship Opportunity for Engineers 10th Sept 2015	Pratapsinh K. Desai President, ISTE, New Delhi
"Startup Entrepreneurship"- The journey begins!! 26th Jan 2016	**Mr. Ram Bhogale**, Director, Nirlep Group of Companies
	Mr. Deepak Ghaisas, Chairman, Gencoval strategic services Pvt. Ltd
Academic Year 2014-15	**No. of Students Enrolled: 80**
Entrepreneurial Motivation 15th Sept 2014	Dr. Ajay Tamhane Consultant
One day workshop-3rd March 2015	
Communication Skills	Mr. Kamal Kapoor Vice President , Zuventus
Motivational Leadership	Dr. Roopali Deshpande Director of Forever Young-The Anandee Movement
Time management	Dr. Lata Shetty Management Consultant & Corporate Trainer
Team Building	Mr. Vijayakumar Menda, Manager, Disha Services
Creativity	Mr. Vipul Kukreja, Corporate Trainer
Leadership qualities	Dr. Ulhas Kolhatkar, MD, D.Ch
Academic Year 2013-14	**No. of Students Enrolled: 86**
Entrepreneurial Motivation 23rd Aug 2013	Dr. Ajay Tamhane
One day workshop -31st Aug 2013	
Curiosity, self analysis & proactive approach in a day to day life	Mr. Kamal Kapoor Vice President , Zuventus
How to be successful in Corporate world	Mr. Sudhir Warde HR Head L & T
Art of Presentation	Mr. Prashant Likhite
Team Building Games & Six thinking Hat Activity	Mr. Vipul Kukreja, Corporate Trainer & Ms. Sonal Athvankar HR, L&T Infotech
Need for innovation	Mr. Vijay Dodeja Partner of Western India Pvt. Ltd.

Details of the Programme	Name of the Speaker
Innovation & Entrepreneurship	Dr. Arun Pande
Entrepreneurship Camp - 7th Sept. 2013 Awareness of MSME, Entrepreneurship in Computer, IT & Electronics, Financial Planning	Faculty from MSME, Mumbai Ms. Juhi Sinha Mr. Prasad Kulkarni Mr. Pushkar Kumar

Success Story

Iyer Vijay Sainathan has started a partnership chemical firm with 4 other members along with higher studies. Aman S. Tiwari & Mukul V. Tilak have started a food website which had over 20,000 hits. They have also gone for higher studies.

CRITERION 9	Governance, Institutional Support and Financial Resources	75

9.1. Organization, Governance and transparency (25)

9.1.1. Vision and Mission of the Institute (5)

Vision : Ensuring skill development through Quality Technical Education.

Mission : Imparting creative learning by innovative methodologies to expose the talents by the way of MSBTE (Maharashtra State Board of Technical Education) curriculum.

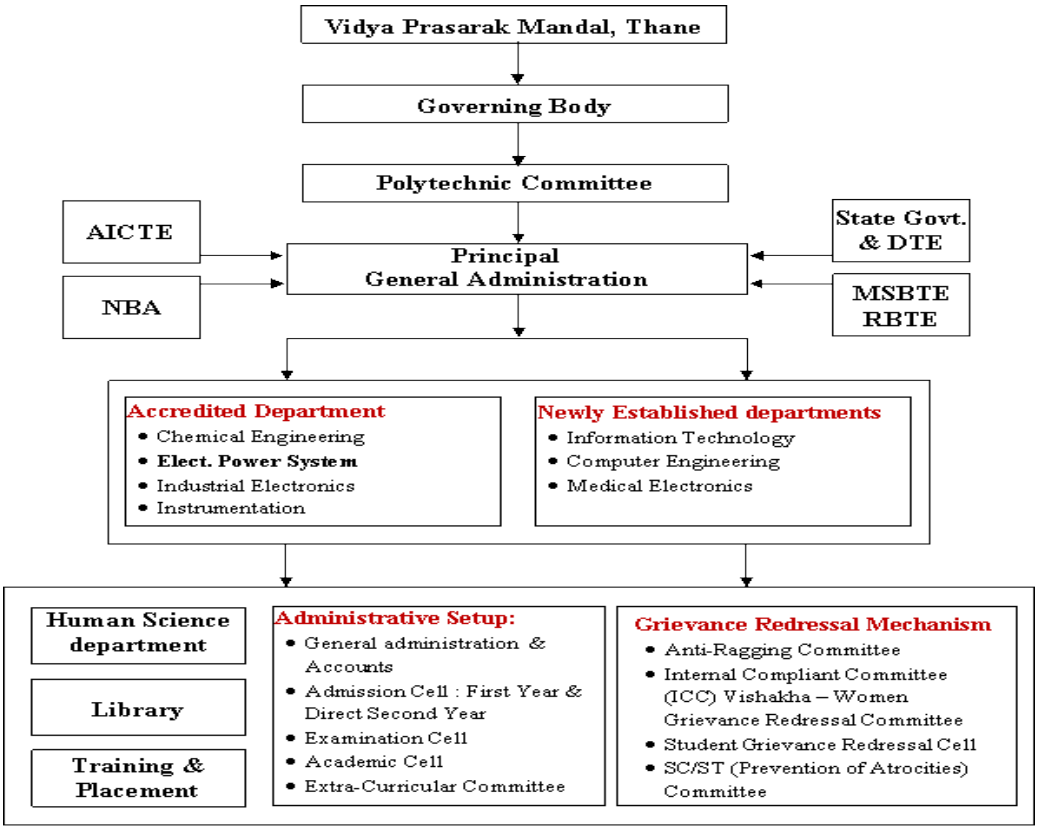
Mission objectives are,

M– 1 : Develop technical skills and professional ethics with entrepreneurial spirit through conducive environment.

M– 2 : Cultivate lifelong learning skills to face challenges with innovation.

9.1.2. Governing body, administrative setup, functions of various bodies, define rules procedures, recruitment and promotional policies. (5)

Organisational Structure



A. Governing Body and Functions of various Bodies

Present Governing Body Members

1.	Dr. V.V. Bedekar	Chairman
2.	Sri. M.Y. Gokhale	Member - Chairman TBSB Bank, Thane
3.	Sri. U.B. Joshi	Member – Vice Chairman TBSB Bank, Thane
4.	Sri. J.N. Kayal	Member – Former Scientist BARC, Mumbai
5.	Sri. A.C. Joshi	Member – MD Ornate Chemicals Ltd. Thane
6.	Dr. Ramesh U.	AICTE Nominee – Regional Officer, RO, Mumbai
7.	Dr. D.D. Kale	Member Academician, Former HOD, ICT, Mumbai
8.	Prof. P.A. Naik	Jt. Director- DTE, RO, Bandra, Mumbai
9.	Prof. V.D. Vaidya	Dy. Secretary, MSBTE, R.O., Mumbai
10.	Sri. C.S. Limaye	Member-Industrialist–MD, Supertech Instruments, Thane
11.	Dr. Siddhan S.	Member-Industrialist–MD, Laxmi Chemicals Ltd., Chennai
12.	Prof. D.K. Nayak	Principal & Secretary
13.	Mr. V.A. Walavalkar	Member - Teaching Staff
14.	Mrs. S.S. Kulkarni	Member - Teaching Staff

The Governing Body is constituted as per the guidelines of AICTE, New Delhi.

The first meeting of the Governing Body was held on 8th August 1995.

Functions of Governing Body

- The Governing Body is the Supreme body responsible for the management of the Institution.
- To consider the recommendation of sub-committee in respect of Infrastructure, Equipment's, Library resources, Staff and Finance for the Academic year. The sub-committee includes Heads and In-charges of Departments, Office and Library on a continuous basis.
- To approve the proposed Recurring and Nonrecurring Budget estimates of various departments and other sections.
- To scrutinize and accept Audited statement of account of each year.
- To approve the Teaching and Non-teaching staff posts as per the Institution load requirements.
- To consider and make provisions for meeting the General and Specific conditions laid down by AICTE, State Government, DTE, MSBTE, NBA and monitor the progress in fulfilling the conditions.
- To consider the report of the Principal on the status of Admissions.

- To consider the report and the proposals of the Principal on Academic performance of the staff and students. Recommend necessary remedial measures if needed.
- To approve proposals of the Principal to enhance academic atmosphere in the Institution.
- To consider proposals for expansion of educational activities to be made to AICTE, DTE, MSBTE such as change of Course, increase/decrease in intake capacity.
- Any other important policies and decisions in the future interest of the Institution.

Schedule of Sub-committee meeting held in the last 3 years

Sr. No.	Date of Meeting	Main Points discussed to place before GB/PC	Members Present
1	23rd Jan 2013	Formation of various committees. Anti-Ragging Squad, Anti-Ragging Committee, Women Grievance Redressal Committee, Grievance Redressal Cell.	10
2	16th Feb 2013	Academic Monitoring, Winter 2012 Results, Unit test II/PST, Disha Magazine, Polytechnic Magazine.	10
3	11th March 2013	MSBTE Practical/Theory Exam, Stock taking,Pending fees payment by SY/TY Students, Staff Recruitment.	10
4	14th Aug 2013	MSBTE Hub-Spoke Model, SSS final Fees approval	6
5	14th Dec 2013	AICTE mandatory disclosures, International Conference 'Bhaskara-900'	7
6	14th Feb 2014	Library Automation using Open source KOHA software, Value Addition Programmes	7
7	7th Aug 2014	FY Schedule, Plan for Unit test-I, Lectures and Practical's planning, Preparation for NBA	7
8	6th Sept. 2014	Admission Statistics 2014-2015, Status of Academic progress of all the departments, Conference preparations	3
9	10th July 2015	First & Second year Admission Status, Delegation of Responsibilities to staff in the Department, National Conference, Remedial Session data and progress, Alumni Meet.	10
10	8th Sept. 2015	MSBTE Enrollment, Exam Form filling, Teaching Staff Load review,	6

Sr. No.	Date of Meeting	Main Points discussed to place before GB/PC	Members Present
		Journal/Conference publications.	
11	21st Oct. 2015	Finalizing Disallowed candidates W-15 Exam, Various Proposals, Scholarship.	7
12	21st Jan. 2016	W-2015 Result Analysis, NBA Proposal submission, AICTE-EOA, Academic Monitoring, Budget 2016-2017.	9
13	10th Aug. 2016	Recurring, Non-Recurring and Maintenance Budgets.	7

The Meetings of Governing Body are held twice in a year(March and September)

Schedule of Governing Body Meetings held during last 3 Years

Sr. No.	Year	Particulars	Date	Venue	Total Members Present
1	2016-17	33rdMeeting	8th September 2016	Board Room	11
2	2015-16	32nd Meeting	4th March 2016	K.V. Vaze Hall	13
		31stMeeting	10th September 2015	Board Room	10
3	2014-15	30thMeeting	13th March 2015	K.V. Vaze Hall	06
		29th Meeting	23rd September 2014	Board Room	11
4	2013-14	28th Meeting	15th March 2014	K.V. Vaze Hall	12
		27th Meeting	14th September 2013	Board Room	11

B. Polytechnic Committee

The Polytechnic committee is the local committee formed for implementation of the policies of the Management and Governing Body. This committee was formed in the year 1987 to monitor the day-to-day activities as well as for the staff participation in managing the academic and administrative functions.

Present Polytechnic Committee Members

1. Dr. V.V. Bedekar Chairman
2. Sri. M.Y. Gokhale Member - Chairman TBSB Bank, Thane
3. Sri. U.B. Joshi Member – Vice Chairman TBSB Bank, Thane
4. Sri. J.N. Kayal Member – Former Scientist BARC, Mumbai
5. Prof. D.K. Nayak Principal V.P.M's Polytechnic
6. Mrs. S.S. Kulkarni Teaching Staff representative
7. Mr. C.S. Shingade Support staff representative

List of Polytechnic Committee Meetings held during last 3 Years

Sr. No.	Year	Particulars	Date	Venue	Total Members Present
1	2016-17	74th Meeting	8th September 2016	Board Room	08
2	2015-16	73rd Meeting	14th December 2015	Board Room	06
		72nd Meeting	17th July 2015	Board Room	06
3	2014-15	71stMeeting	20th December 2014	Board Room	06
		70th Meeting	30th July 2014	Board Room	06
4	2013-14	69th Meeting	14th December 2013	Board Room	05
		68th Meeting	20th July 2013	Board Room	04

Functions of Polytechnic Committee

- To maintain transparency for implementation of management policies and the decisions taken in the Governing Body.
- Various proposals as well as developmental activities are discussed before placing for approval in the Governing Body.
- The views of staff members to be considered for implementation.
- Suggestions of the staff members are considered for healthy working atmosphere.

C. Administrative Setup

General Administration and Accounts

- Maintaining the details of staff members and Service Records.
- Attendance management
- Students Data Management and related services.
- Students Fees collection and other receipts.
- Accounts management, Payroll, Statutory deductions and compliance.

Admission Cell : First Year and Direct Second Year

Stage 1

- Counselling at various Schools for SSC appearing students.
- Arranging School students visit to Polytechnic facilities.
- Guidance about the Centralized Admission Process of State Government.
- List of Essential documents to be kept ready for Admission Application registration.

Stage 2

- Facilitation Centre for Issue of Login kits with Admission Brochure.
- Assistance for submitting Online Admission forms to candidates.
- Assistance to update details during Grievance Redressal period.
- Assist Candidates to upload Institute and Course Options during CAP Rounds.
- Guidance to Students/Parents about Course details and Future prospects.
- Counseling the admission allotted students for document submission and payment of fees.
- Orient the students for Academic and Co-curricular activities.

Stage 3

- Upload admitted student's data on DTE/ MSBTE/PraveshNiyantranSamiti/AICTE Portals.
- Keep Documentation ready for Merit List verification.
- Complete the Document Verification and Merit List Approval as per DTE RO notified Schedule.

Examination Cell

The functions include

- MSBTE Enrolment of newly admitted students. Smooth conduct of all Internal and External Exams.
- Certificate Of Backlog (COB) of Direct Second Year (DSY) / Transfer Candidates.
- Examination related guidelines are forwarded to concerned staff and students from time to time.
- Maintain details of Learning Disability (LD) students for awarding applicable concessions as per MSBTE norms.
- Record Keeping and Safetyof Exam stationary and other related Inventory.
- Exam form filling of Regular and Ex-students.
- MSBTE Exam Result Analysis. Result Records.
- List of Staff with 100% results in Summer and Winter Theory Examinations.
- Intimation to staff about Result Statistics and conduct of remedial sessions in case of Poor results.

Academic Cell

- Preparation of Prospectus, Student Hand Book.
- Preparation of Annual Academic Time table.
- Schedule co-curricular activities, Guest lectures, Industrial visits, Seminars.
- Internal Academic Monitoring, Unit Test, preparation for External Academic Monitoring, Students counseling, Industrial projects etc.

Extra-Curricular Committee

- This cell organizes cultural and sports events during the semester break.
- The activities include Singing, dancing, Mehendicompetition, fun fair, Elocution, Rangoli, T-shirt painting, Saree Queen, Tie King, Traditional dress etc.
- The sports event include cricket, volley ball, Kabaddi, Chess, Carrom, Table-tennis etc.

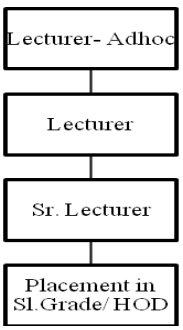
D. Defined rules, procedures, recruitment and promotional policies:

Rules, Procedures:

Vidya Prasarak Mandal, Thane had implemented service rules since the establishment of the Polytechnic in the year 1983. The rules of conduct, discipline and service conditions for the employees of Vidya Prasarak Mandal's Polytechnic, Thane have been reaffirmed by the management vide its resolution dated 4th June 2006. The copy of the rules document is made available in the office as well as with the heads of various departments. The staff members are permitted to refer to the service conditions.

Recruitment and Promotional policies:

The staff is recruited by following appropriate procedure. Annually in the month of March advertisement for the various vacancies is published in local newspaper and institute website.



The Shortlisted candidates are invited for written test and interview. The successful candidates are informed to join by completing the official formalities. The Adhoc staff members are continued in service based on their satisfactory performance in the preceding year.

Within the framework of working of the Polytechnic and Staff

promotion scheme, the regular faculty members with adequate qualification, experience, publications, Good Performance Appraisals are promoted to the next higher levels. This is done by following AICTE and the State Government norms applicable to the regular staff members from time to time.

For Administrative/Library/Support staff members the promotion is given as per the State Government policies. In addition, the staff who have upgraded their skills through Certificate or Advance Diploma programmes are given appreciation in the form of Incentive / Additional increment.

9.1.3. Decentralization in Working and Grievance redressal Mechanism (5)

A. Decentralization in Working (Administration & Decision making)

The Institute has a decentralized method of working with each staff member being held accountable for the assigned responsibilities.

Principal: Academic and Administration of the Institution.

- Provide effective leadership to the Polytechnic
- Liaison with Management, AICTE, NBA, DTE, MSBTE, Industries, Parents, Students, Alumni and other stakeholders
- Implement and monitor policies of management, decisions taken in Governing Body and Polytechnic Committee. Guide various committees and cells for effective functioning.
- Approve Academic calendar, hold faculty meetings, monitor admission, academic and exam related activities. Monitor faculty performance, resolve issues (if any) to create conducive atmosphere.
- Ensure safety and security measures of Institutional infrastructure and the resources.
- Evolve future plan and prepare for progress, development and sustainability.

Head of the Departments/In-charge: Academic and Administration of the department

- The Head of the Department is responsible for the smooth functioning of the department as per the academic calendar.
- Conduct academic co-curricular, extracurricular activities of the students of the departments.

- Monitoring the Industry Interaction for Guest faculty, Internship and Projects.
- Assign various responsibilities such as Class Teachers, Mentors, Co-curricular co-ordinatros, Academic co-ordinators, Lab In-charges etc. to Faculties and Laboratory Staff.
- The staff of the department report to the Head from time to time with the results of assignments.

B. Grievance Redressal Mechanism

Following four committees are formed for the Redressal of Grievances

1. Anti-Ragging Committee

According to the provision of All India Council Technical Education (AICTE) norms, the Principal framed the Anti-Ragging Squad during academic year 2015-2016.

List of Members of Anti-Ragging Committee

Sr. No.	Name of Faculty	Designation
1	Prof. D.K. Nayak	Chairman
2	Mrs. K.S. Agashe	Dy. Chairperson
3	Mr. S.S. Mujumdar	Member
4	Mrs. V.A. Joshi	Member
5	Dr. (Mrs.) Usha Raghavan	Member
6	Mr. T.V. Mohite-Patil	Member
7	Mrs. S.K. Shukla	Member
8	Mrs. Anice Alias	Member

Activities undertaken (Every year)

- Formation of committee by the Principal.
- Planning of meetings at the beginning of the Semester
- Preparation of Action plan for regular vigilance.
- Display of Ragging prohibition notices on all department notice boards
- Selection of the Staff representatives from each department to take rounds for prohibition of ragging.
- Regular meetings to resolve the problems, if any.
- Guiding to Institute Counselor for handling psychological issues related with ragging.

2. Internal Compliant Committee (ICC) Vishakha – Women Grievance Redressal Committee

A new section known as the 'Women Grievance Redressal Committee' (WGRC) has started functioning in the college from the academic session 2011. WGRC is formed in order to keep the healthy working atmosphere among the faculty of Polytechnic. This Cell helps women faculty and students to record their complaints and solve their problems related to resources and personal grievances. Woman Harassment complaints will be handled as per government guidelines.

List of Members of Women Grievance Redressal Committee

Sr. No.	Name of Faculty	Designation
1	Mrs. N.V. Vader	Chairperson
2	Mrs. Alpana A. Bapat	Member (NGO)
3	Mrs. K.S. Agashe	Member
4	Dr. (Mrs.) Usha Raghavan	Member
5	Mrs. S.K. Shukla	Member
6	Mrs. G.A. Pujare	Member
7	Mrs. S.D. Khandagale	Member
8	Mr. T.V. Mohitepatil	Male Member

Functional view of WGRC:

Women's Grievance Redressal committee functions with a view to look after the general well-being of the women folk in the campus. It organizes different women empowerment programmes. All women staff and students are members of the cell. Any type of sexual harassment physical, verbal or mental shall come under the purview of the cell, and it is empowered to initiate proactive actions against such offences.

Major Activities:

- Awareness of WGRC among the women students and staff in the polytechnic
- Program on "Self Defense".
- Program on Health and Hygiene
- Observe the International women's Day on 8th March

3. Student Grievance Redressal Cell

List of Members of Student Grievance Redressal Cell

Sr. No.	Name of Faculty	Designation
1	Prof. D.K. Nayak	Chairman
2	Mr. V.A. Walavalkar	Dy. Chairperson
3	Mrs. S.S. Kulkarni	Member
4	Mrs. Santhi M.L.	Member
5	Mrs. R.G. Tendulkar	Member

The Student Grievance Redressal Cell functions are:

- Invite student's suggestions for improving theory and practical teaching performances.
- Take cognizance of the request made by students about the various facilities and implement solutions.
- To resolve any conflicts among the students and to maintain a conducive environment.
- Coordinates Counseling sessions to newly admitted students to deal with Stress and other problems faced.
- Monitor Student activities to prevent untoward incidents.
- Disobedient students are being identified and are counseled to be punctual.
- To deal with any incidences involving students from time to time and report to the Principal for further action.

4. SC/ST (Prevention of Atrocities) Committee

List of Members of SC/ST (Prevention of Atrocities) Committee

Sr. No.	Name of Faculty	Designation
1	Prof. D.K. Nayak	Chairman
2	Dr. (Mrs.) G.S. Ingawale	Member
3	Mrs. R.U. Patil	Member
4	Mrs. S.D. Khandagale	Member
5	Mrs. G.A. Pujare	Member

The cell is formed to ensure fair treatment to Reserve Category staff and students. Institute's overall ambience is extremely fair for all stakeholders including students from economically weaker sections. Administration helps the students to fill scholarship forms and complete other documentation to entitle their learning at concessional fees. Students are properly informed about different scholarship schemes, deadlines etc. to avail the benefit.

- The Cell basically aims to uplift the morale of deprived section of students and staff.
- Ensure equal opportunities to all the students and staff irrespective of their background.
- Encourage and motivate through counseling and personality development programmes.
- The Cell is formed to deal with incidences (if any) and to report about individuals responsible for atrocities and suppression.

9.1.4. Delegation of Financial Powers (5)

The Institute prepares and approves Budget of the next financial year during Governing Body meeting. Head of the Institute implements the decisions taken in the Governing Body with approval from Management

The department budgets for Recurring/Non-Recurring/Maintenance activities are sanctioned by the Governing Body. Each department recommends the laboratory equipment and accessories for the year with justification. The department plans the budget as per curriculum and laboratory demands. The list of equipment's to be procured/experiments to set up as per curriculum are finalized by the departments with tentative cost within the allocated budget. The purchasing is done through the co-operative society to ensure proper price, quality, after sales service.

9.1.5. Transparency and availability of correct/ unambiguous information in public domain (5)

Academic and Administrative Transparency:

The institute website www.vpmthane.org includes exhaustive information about Polytechnic as well as other sister institutions managed by the Trust. Various notices are regularly posted including the Annual Academic Calendar.

The Academic plan is prepared by all the departments before proceeding on Summer and Winter vacations for Odd and Even Semesters. Administrative procedures are explained to new recruits in the Induction training programme at the time of joining. Every staff member as well as student is informed about academic activities and their responsibilities on regular basis through meetings.

9.2. Budget Allocation, Utilization and Public Accounting at Institute Level (10)

Institute level Income for last three years and current financial year

Total Income (Rs. in Lacs) CFY 2016-17*					**Actual Expenses (Rs. in Lacs) CFY 2016-17***				**Total No. of Students CFY 2016-17**	
Fee	**Govt**	**Grants**	**Other**	**Total**	**Recurring**	**Non Recurring**	**Any Other**	**Total**	**Exps Per Student (in Lacs)**	**No Of Student**
394.76	137.20	0.00	27.85	559.81	281.94	1.62	37.38	320.94	0.33	974
Total Income (Rs. in Lacs) CFY 2015-16					**Actual Expenses (Rs. in Lacs) CFY 2015-16**				**Total No. of Students CFY 2015-16**	
448.01	172.68	1.00	62.41	684.10	630.91	14.41	100.26	745.58	0.68	1104
Total Income (Rs. in Lacs) CFY 2014-15					**Actual Expenses (Rs. in Lacs) CFY 2014-15**				**Total No. of Students CFY 2014-15**	
401.73	210.38	1.30	65.11	678.52	639.53	14.98	78.11	732.61	0.69	1067
Total Income (Rs. in Lacs) CFY 2013-14					**Actual Expenses (Rs. in Lacs) CFY 2013-14**				**Total No. of Students CFY 2013-14**	
471.60	187.00	0.00	45.86	704.46	572.57	20.75	71.38	664.71	0.52	1286

*As on 30th September 2016

Table of Recurring and Non-Recurring expenses

	CFY 2016-2017 (30-09-2016)		CFYm1 2015-2016		CFYm2 2014-2015		CFYm3 2013-2014	
ITEMS	**Budget**	**Actual**	**Budget**	**Actual**	**Budget**	**Actual**	**Budget**	**Actual**
Infrastructure Built-up	201.52 (incurred before 2013)							
Library	1.00	0.15	3.00	1.66	8.00	3.26	8.00	6.04
Laboratory Equipment	12.75	1.56	13.00	12.86	24.50	11.90	24.50	14.87
Laboratory Consumables	4.05	1.28	4.90	2.52	5.25	3.83	5.25	3.78
Teaching & Non-Teaching Salary	588.50	210.48	568.20	558.34	544.00	507.34	440.00	482.79
Maintenance & Spares	61.90	46.98	127.44	81.46	67.30	116.53	117.30	77.25
R&D	3.00	-	2.00	0.72	1.00	0.85	1.00	1.33
Training & Travel	2.00	0.32	2.00	3.27	3.00	1.48	3.00	1.41
Miscellaneous Exps	-	0.08	2.00	0.11	2.00	0.15	2.00	0.22
Others	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Municipal Tax	1.50	1.64	1.50	1.57	2.50	1.35	2.50	1.35
Newspaper & Magazines	0.70	0.12	1.00	0.40	2.00	0.38	2.00	0.83
Affiliation Fee	1.05	1.05	1.00	1.05	1.00	1.05	1.00	0.70
BTE Exam Stationery	0.50	0.56	0.25	0.20	1.00	0.32	0.50	0.26
Printing Stationery	15.00	6.24	12.50	9.12	9.50	8.70	8.00	7.77
Seminar Student Registration	0.30	0.25	1.00	0.36	0.35	0.29	0.25	0.22
Staff CUTP/STTP	0.50	0.22	1.00	0.50	0.50	0.49	1.00	0.67
Uniforms	0.20	0.00	0.10	0.14	0.25	0.09	0.50	0.11
Audit Fees	0.50	0.60	0.50	0.51	0.50	0.43	0.50	0.39
Student Insurance	0.50	0.55	0.50	0.55	0.00	0.48	-	0.53
Postage	0.10	0.01	0.10	0.00	0.10	0.00	0.25	-
Advertisement	2.00	1.14	1.50	1.69	0.70	1.41	1.00	2.21
Bank Charges	0.15	0.07	0.15	0.00	0.15	0.00	0.15	0.00
Repair & Maintenance	1.00	0.01	1.00	0.15	2.00	0.27	2.00	0.11
ASG Gym Mag	2.50	0.03	2.00	1.51	2.00	2.59	2.00	2.73
I Lib Card	0.50	0.04	0.50	0.63	1.00	0.36	1.00	0.56
Water Charges	4.00	0.90	4.00	2.00	5.00	2.99	2.00	3.29
Telephone Charges	0.50	0.18	0.50	0.48	0.75	0.50	0.75	0.60
Electricity Charges	20.00	8.65	20.00	16.87	20.00	17.67	18.00	15.60
Contingencies	3.00	1.40	1.00	3.34	2.00	3.14	-	3.21
Leased Line	2.55	3.30	2.55	5.81	-	-	-	-
Professional Charges	0.40	0.00	0.40	0.40	-	0.88	-	0.35
AICTE Fee	1.00	0.00	1.00	1.00	-	1.00	-	1.00
Lab Manual	4.50	2.47	4.50	2.67	-	4.22	-	3.41
MSBTE Enrolment	0.90	0.82	0.90	1.08	-	1.09	0.50	0.90
MSBTE Exam Fee	4.03	23.60	8.00	30.41	-	32.50	-	26.72
NBA Processing Fee	10.00	5.75	20.00	-	-	-	-	0.00
ISTE Membership	0.25	0.01	0.00	0.00	-	-	-	0.00
Alumni Association	0.20	0.00	0.00	0.00	-	-	-	0.00
Repayment to IT Centre	67.50	10.00	0.00	0.00	-	-	-	0.00
Receivable for SWD	100.00	0.00	0.00	0.00	-	-	-	0.00
Seminar Exps.	-	-	-	2.78	2.50	5.10	2.50	3.50
TOTAL	919.03	330.45	809.99	746.18	708.85	732.61	647.45	664.71

9.2.1. Adequacy of budget allocation (4)

Details of budget allocated for last three years is shown in following table.

Financial Year	Budget Sanctioned In Lacs		Expenditure In Lacs			Remarks
	Non Recurring	Recurring & Maintenance	Non Recurring	Recurring	Maintenance	
2015-16	2.00	0.70	0.52	0.10	0.07	Sufficient
2014-15	2.00	0.75	0.89	0.31	0.14	Sufficient
2013-14	2.00	0.75	1.98	0.46	0.22	Adequate

- Above said expenditure is done to full fill the requirements of implementation of G-scheme curriculum and also to undertake modernization and removal of obsolesces.
- For certain experiments required apparatus was shared from other department.
- Few costly apparatus were fabricated under student's project as per requirement of practical setups.

Means of Budget Management for last three years

Financial Year	Details	Amount (in Rs. lacs)	Total (in Rs. lacs)
2013-14	Conduction of Practical of Electrical Engineering Program of for Govt. Polytechnic, Mumbai	0.15	3.13
	Advance Diploma in Energy management and audit ER programme	2.98	
2014-15	Replica Model of Distribution Transformer with all accessories	0.30	3.61
	2kVA Three phase , 220/110V, Y/Y Transformer as student's project for laboratory use	0.08	
	Sponsorship by MEDA for State level tech. paper presentation competition	0.25	
	Advance Diploma in Energy management and audit ER programme	2.98	
2015-16	Best Lab award for M/c Lab (L1)	0.50	4.29
	Sponsorship by MEDA for State level tech. paper presentation competition	0.25	
	Student's Project – Single Phasing Preventer for laboratory use	0.10	
	Advance Diploma in Energy management and audit ER programme	3.44	
	Grand Total	**11.03**	**11.03**

9.2.2. Utilization of allocated funds (4)

The Tentative Annual Budget is prepared by the Office in the month of February for the forthcoming Financial and Academic year. The Subcommittee inputs are considered for the expenses to be included under various heads. Non-recurring Budgets are allotted to purchase equipment's for new experiments or to phase out old instruments which are beyond repair. The Department Heads submit the list of equipment's and services to the Principal. The tentative budget is placed before the Governing Body Meeting held in the month of March every year for approval.

9.2.3. Availability of the audited statements on the Institute's website (2)

The Annual Balance Sheet is prepared every year audited by the Chartered Accountant. The Balance Sheet is placed in the Institute website. The hard copy of the Balance Sheets of last 3 years will be presented to the Peer Committee at the time of visit.

9.3. Program Specific Budget Allocation, Utilization (15)

Total Budget at Institute Level: For Financial Year 2016-17 (30-9-2016)

Department	Total Budget (Rs. in Lacs)		Actual Expenses (Rs. In Lacs)		
	Non Recurring	Recurring	Non Recurring	Recurring	
Chemical Engineering	1.00	0.75	-	0.68	**Total No. of Students = 974**
Electrical Power System	**2.00**	**0.75**	**0.19**	**0.13**	
Industrial Electronics	2.00	0.75	0.84	0.09	
Instrumentation	2.00	0.75	-	0.17	
Information Technology	2.00	0.75	0.32	0.07	
Computer Engineering	2.00	0.75	0.20	0.002	**Expenses Per Student Rs. 0.003**
Medical Electronics	1.00	0.50	-	0.03	
Physics	0.25	0.10	-	0.002	
Chemistry	0.25	0.30	-	0.05	
Workshop & APM	0.25	0.55	-	0.05	
Total	**12.75**	**5.95**	**1.56**	**1.28**	

Total Budget at Institute Level: For Financial Year 2015-16

Department	Total Budget (Rs. in Lacs)		Actual Expenses (Rs. In Lacs)		
	Non Recurring	Recurring	Non Recurring	Recurring	
Chemical Engineering	1.00	0.70	0.31	0.29	**Total No. of Students = 1104**
Electrical Power System	2.00	0.70	0.60	0.43	
Industrial Electronics	2.00	0.75	2.05	0.24	
Instrumentation	2.00	0.75	0.91	0.44	
Information Technology	2.00	0.70	2.15	0.28	
Computer Engineering	2.00	0.75	3.12	0.19	**Expenses Per Student Rs. 0.01**
Medical Electronics	2.00	0.75	0.96	0.23	
Physics		0.15	0.20	0.005	
Chemistry		0.25		0.02	
Workshop & APM		0.50	0.14	0.40	
Furniture office equipment			2.42		
Total	**13.00**	**6.00**	**12.86**	**2.53**	

Total Budget at Institute Level: For Financial Year 2014-15

Department	Total Budget (Rs. in Lacs)		Actual Expenses (Rs. In Lacs)		
	Non Recurring	Recurring	Non Recurring	Recurring	
Chemical Engineering	1.00	0.75	1.86	0.45	**Total No. of Students = 1067**
Electrical Power System	2.00	0.75	0.89	0.62	
Industrial Electronics	2.00	0.75	0.74	0.45	
Instrumentation	2.00	0.75	3.35	0.81	
Information Technology	2.00	0.75	3.58	0.12	
Computer Engineering	2.00	0.75	0.25	0.14	**Expenses Per Student Rs. 0.015**
Medical Electronics	2.00	0.75	1.02	0.64	
Physics	0.50	0.35		0.008	
Chemistry	0.50	0.35		0.16	
Workshop & APM	0.50	0.35		0.42	
Furniture office equipment	10.00		0.19		
Total	**24.50**	**6.30**	**11.90**	**3.83**	

Total Budget at Institute Level: For Financial Year 2013-14

Department	Total Budget (Rs. in Lacs)		Actual Expenses (Rs. In Lacs)		
	Non Recurring	Recurring	Non Recurring	Recurring	
Chemical Engineering	1.00	0.75	0.59	0.73	**Total No. of Students = 1286**
Electrical Power System	2.00	0.75	1.97	0.68	
Industrial Electronics	2.00	0.75	3.49	0.41	
Instrumentation	2.00	0.75	0.75	0.37	
Information Technology	2.00	0.75	1.85	0.13	
Computer Engineering	2.00	0.75	3.50	0.37	**Expenses Per Student Rs. 0.015**
Medical Electronics	2.00	0.75	1.70	0.46	
Physics	0.50	0.35		0.04	
Chemistry	0.50	0.35	0.08	0.16	
Workshop & APM	0.50	0.35		0.43	
Furniture office equipment	10.00		0.94		
Total	**24.50**	**6.30**	**14.87**	**3.78**	

Total Budget at the Institute Level for the below listed Items.

Items	Budgeted 30-9-16	Actual 30-9-16	Budgeted 2015-16	Actual 2015-16	Budgeted 2014-15	Actual 2014-15	Budgeted 2013-14	Actual 2013-14
Laboratory Equipment	12.75	1.56	13.00	12.86	24.50	11.89	24.50	14.87
Software	6.00	1.60	6.00	5.58	7.30	6.84	7.30	7.98
Laboratory Consumable	4.75	1.28	4.90	2.52	5.25	3.83	5.25	3.78
Maintenance & Spares	55.90	45.38	121.44	81.10	60.00	109.69	110.00	69.28
R & D	3.00	0.50	2.00	0.72	1.00	0.85	1.00	1.33
Training & Travel	2.00	0.31	2.00	3.27	3.00	1.48	3.00	1.41
Miscellaneous Expenses		0.08	2.00	0.11	2.00	0.15	2.00	0.22
Total	**84.40**	**50.72**	**151.34**	**106.16**	**103.05**	**134.73**	**153.05**	**98.87**

9.3.1. Adequacy of Budget allocation (7)

The expenses under various heads are allotted in the budget by referring to the earlier year Balance Sheet and proposed activity expenses. The procurement is done by considering specific requirement and its justified use as approved by the Governing

Body. The budget is finally implemented by considering the actual fees income of the admitted students and the reimbursement of fees of Reserve and Economically Backward students from the concerned Authorities. The fees collected is progressively invested in the Bank as per expected monthly expenses such as Salaries, Operational Overheads, Recurring and Non-recurring and maintenance expenses as well as miscellaneous expenses. Certain expenses are rescheduled if the finds are delayed from the Authorities.

9.3.2. Utilization of allocated funds (8)

Every department utilizes their allocated budget as per the plan and need. All the essential requirements of the department are fulfilled for proper Academic activities

9.4. Library and Internet (20)

Apart from Central Library each department is having internal departmental library which is exclusively used by the faculty members. All computer systems are connected through LAN with the Internet facility.

9.4.1. Quality of learning resources (hard/soft) (10)

Library and Information Centre has a collection of over 24000 books. The library is fully computerized with **Open Access KOHA software**.

The Library facilities include

- Reading room with issue of text/reference books.
- Home issue of 1 book per students of First & Second year and 2 Books for Third year students.
- Book Bank facility to 400 + students every Semester. Free Book Bank sets are issued to all SC/ST and three top students of each division.
- The Library has subscription of National as well as International magazines in the relevant technological and general science areas.
- Membership for external readers including candidates appearing for competitive exams. Over 100 members register annually for this facility.
- Multimedia PCs are maintained for database and other resources access.
- The database repository DSpace is hosting the majority of research publications of the VPM Campus staff.

- Conference proceedings in the Hard and Digital copy form are available for download through our website.
- The centrally air-conditioned Reading room can accommodate over 128 students and separate area for staff research references.
- **Selected students are felicitated with Best Reader Award for their effective use of library resources throughout the year.**

Total number of Books:

Year	Total No. of Books	Titles	Book Bank Sets Issued during the year
2013-14	23238	5594	428
2014-15	24266	7029	636
2015-16	26477	8247	799

Total number of Journals and Magazines:

Year	Educational Journals		General Magazines
	National	International	
2013-14	21	3	13
2014-15	20	3	13
2015-16	20	0	12

9.4.2. Internet (10)

Key Features

- Fiber optic network backbone connecting all buildings in campus
- Free, unlimited access to internet for all stakeholders from inside the campus
- Multiple redundant leased lines for internet
- Campus Website

Details

- Name of the Internet Provider : Intech Online, VSNL, HomeNet
- Available bandwidth : 38 Mbps
- Wi Fi Availability : Yes - Reliance JioNet
- Internet access in labs, classrooms, library and offices of all Departments : Yes
- Security Arrangements : FortigateFireWall 300 C

9.5. Institutional Contribution to the Community Development (5)

1. MKCL - VPM's Polytechnic Partnership

Computer training programmes conducted for more than 3000 candidates with computer literacy through MS-CIT programme and our institute has **received Award of Appreciation for Sustained Partnership from 2004 to 2012 as an MS-CIT Authorized Learning Centre** of Maharashtra Knowledge Corporation Limited (MKCL), Maharashtra State from Local Lead Centre, Thane.

2. Continuing Education Programmes

The Advance Diploma Programmes which are offered as a part of Continuing Education Programmes is helping many working professionals to acquire and upgrade their professional qualifications for career enhancement. Our alumni are working at senior positions at BPCL, ITD Cementation, L&T, Ambuja Cement, Gammon India, Blue Star etc. The Advance Diploma in Industrial Safety programme received IOSH, UK Accreditation for Graduate Membership for the period August 2013 to August 2016.

- Advance Diploma in Computer Software, System Analysis and Applications
- Advance Diploma in Energy Management and Audit
- Advance Diploma in Industrial Safety

3. Energy Conservation Skill Development

Polytechnic has established Energy Management Cell with following objectives

- Adoption of Energy Conservation techniques by young generation
- Planning and implementation for Renewable Energy techniques
- Innovative projects with reference Energy Conservation and Environmental issues.
- CEP for Working Professionals through Advance Diploma in Energy Management and Audit

4. External Membership for Library

Polytechnic has extended Library facility for engineering students and professionals with external membership.

5. Career Fair – Technical Education

- Career Fairs provides an opportunity to the students to know various career options available after Diploma courses.
- Stalls of MSBTE, Polytechnics, Engineering Colleges, and Financial Institutions providing Educational loans.
- Expert lectures to motivate the students for future Career.
- Arranging visit of School students to Polytechnic facilities
- Visiting schools to make presentation about technology courses/careers and admission process

MSBTE Career Fair Organized/Participated

Sr. No.	Day, Month & Year	Organizer
1	4th January2014	V.P.M's Polytechnic, Thane
2	9th January 2014	S.S. Jondhale Polytechnic, Asangaon, Dist. Thane
		G.P. Vikramgad, Thane
3	15thJanuary to 17th January 2014	Manoj Shete College of Engg. & Technology,Kasara, Dist. Thane
4	28th December 2014	Yadavrao Tasgaonkar Institute of Technology, Karjat
		Pravin Patil Polytechnic, Bhayandar
5	5thJune2015	V.P.M's Polytechnic, Thane
		Sardar Vallabhai Patel Polytechnic, Borivali

6. Institutional Social Responsibilities - Activities

Faculty and students are encouraged to participate in collaboration with other organizations in carrying out social outreach programmes such as

- Vigilance Awareness Programmes under the aegis of "Central Vigilance Commission" for Eradication of Corruption in Public Life.
- Blood Donation Camp (Twice in a year)
- Tree Plantation
- Swatchha Bharat Abhiyan
- Waste Management
- Automatic Weather Station - India Meteorological Department (IMD) Government of India.

Declaration

I, Dileep Kumar Krishna Nayak, Principal V.P.M's Polytechnic, Thane (West), Maharashtra State, undertake that, the institution is well aware about the provisions in the NBA's accreditation manual concerned for this application, rules, regulations, notifications and NBA expert visit guidelines in force as on date and the institute shall fully abide by them.

It is submitted that information provided in this Self-Assessment Report is factually correct. I understand and agree that an appropriate disciplinary action against the Institute will be initiated by the NBA in case any false statement/information is observed during pre-visit, visit, post visit and subsequent to grant of accreditation

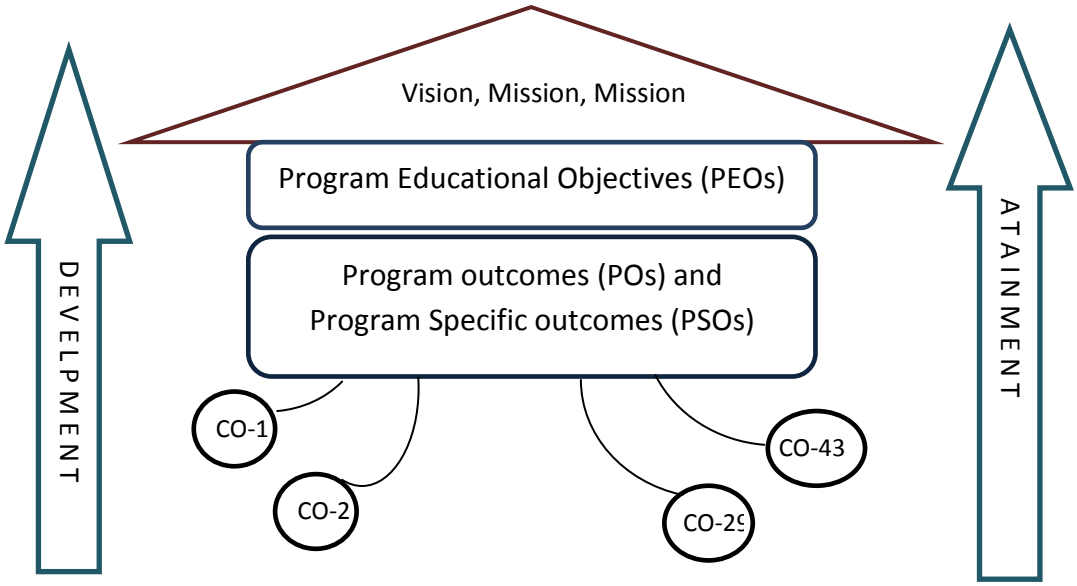
Date: 19th November 2016

Place: Thane

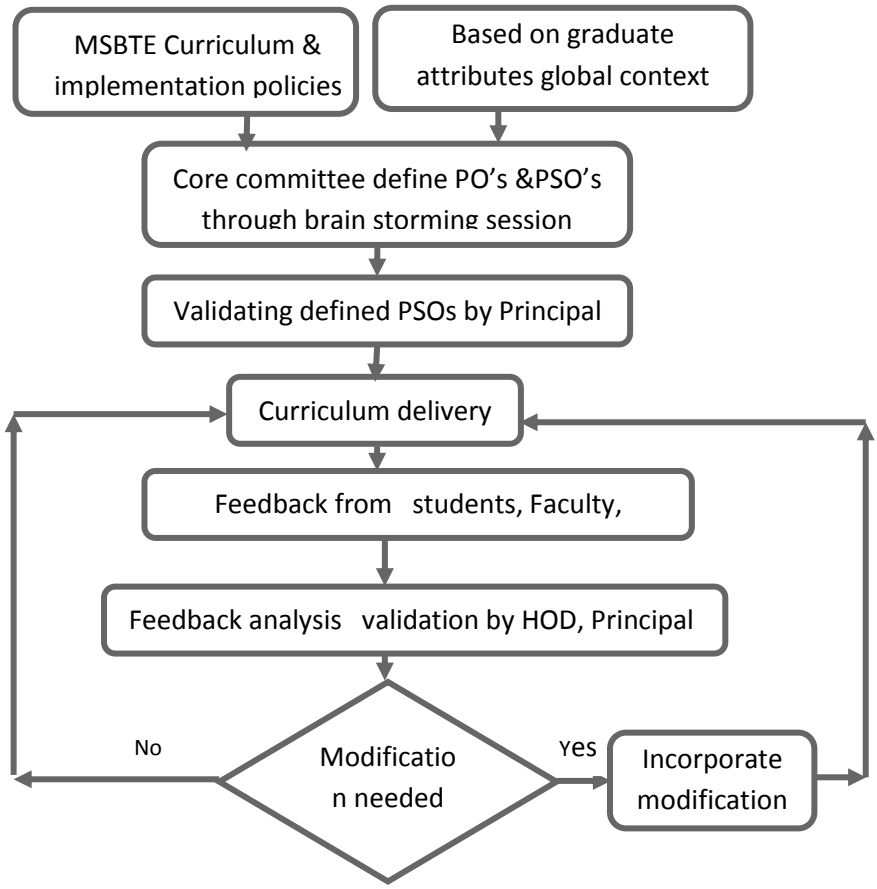
Prof. D.K. Nayak
Principal

Annexure – 1

Process to develop PO's and PSO's



Note: Our institute is affiliated to Maharashtra State Board of Technical Education (MSBTE) and curriculum of our department program is designed by the same board. Implementation of programme is done under the guide lines of board.



(A) PROGRAM OUTCOMES (POs)

The students are expected to possess the attributes listed below.

PO-1: **Engineering knowledge**: Ability to apply the knowledge of mathematics, science and core engineering.

PO-2: **Problem analysis**: Ability to identify and analyze complex power system problems.

PO-3: **Design/development of Solutions**: Ability to design and develop technical solutions for public health and safety.

PO-4: **Modern tool Usage**: Ability to apply appropriate techniques and IT tools with an understanding of limitations.

PO-5: **Project management and finance**: Ability to apply the principles of management and professional skills in projects.

PO-6: **Environment and sustainability**: Ability to participate in sustainable development of societal & environmental issues.

PO-7: **Professional Ethics**: Committed to professional ethics along with norms of engineering practice.

PO-8: **Individual and team work**: Ability to work efficiently as an individual or as a member or leader of team.

PO-9: **Communication**: Ability to communicate effectively with the engineering community& society.

PO-10: **Life-long Learning**: Ability to engage in life-long learning in changing technological era

(B) PROGRAM SPECIFIC OUTCOMES (PSOs)

Electrical Power System Diploma holders will have….

PSO-1: Strong foundation in engineering science and technology for a successful career.

PSO-2: Core knowledge to address social & environmental issues with engineering solutions.

PSO-3: Professional skill & ethical values to work as collaborator or entrepreneur.

PSO-4: Engagement in lifelong learning for professional development.

Annexure – 2

Acronyms related to Programme Curriculum

Course name	Course Abbr	Course code
1st Semester		
English	ENG	C101
Basic Physics	EPH	C102
Basic Chemistry	ECH	C103
Basic Mathematics	BMS	C104
Engineering Graphics	EGG	C105
Computer Fundamentals	CMF	C106
Basic Workshop Practice	WPC	C107
2nd Semester		
Communication Skills	CMS	C201
Engineering Mechanics	EGM	C202
Applied Physics	APH	C203
Applied Chemistry	ACH	C204
Fundamentals of Electrical Engineering	FEE	C205
Engineering Mathematics	EMS	C206
Development of Life Skills	DLS	C207
3rd Semester		
Applied Mathematics	AMS	C301
Electrical & Electronic Measurement	EEM	C302
Basic Electronics	BEE	C303
Electrical Circuits and Networks	ECN	C304
Electrical Power Generation	EPG	C305
Computer Programming	CPR	C306
Electrical Workshop	EWO	C307
Professional Practices-I	PPO	C308
4th Semester		
Environmental Studies	EST	C401
Elements of Mechanical Engineering	EME	C402
Industrial Instrumentation	IIN	C403
D.C. Machines & Transformers	DMT	C404
Industry Electrical Systems-I	IES	C405
Transmission and Distribution of Electrical Power	TDE	C406
Professional Practices-II	PPT	C407
5th Semester		
Energy Conservation & Audit	ECA	C501
Industry Electrical Systems-II	IES	C502
Switchgear & Protection	SAP	C503
Power System Analysis	PSA	C504
A.C. Machines	ACM	C505
Behavioral Science	BSC	C506
Entrepreneurship Development & Project	EDP	C507
Professional Practices - III /Industrial Training (Optional)	PPT	C508
6th Semester		
Management	MAN	C601
Testing & Maintenance of Electrical Equipments	TME	C602
Power Electronics	PEL	C603
Power System Operation & Control	PSO	C604
Renewable Energy Sources	BCS	C605
Project	PRO	C606