SELF ASSESSMENT REPORT (SAR)

Submitted to

NATIONAL BOARD OF ACCREDITATION, NEW DELHI

By

Name of Programme : Diploma in Instrumentation

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 **Instrumentation Engineering**

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

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

About Vidya Prasarak Mandal, Thane

Vidya Prasarak Mandal (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.

About the Polytechnic

Vidya Prasarak Mandal's Polytechnic Thane, the Self-financed Institute, was started by the Management in the year1983. 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 Programs. 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.

Polytechnic Journey so far…….

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

Major Achievements

Year	Activity
1983	Polytechnic started with four Diploma Programs – **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.
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 eligible Programs, 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/- AICTE MODROBS 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 from Deparment of Information Technology.**
2006	**ISTE Best student Award to Mr. Ramiz Pojee from Department of Information Technology.**
2006	Installation of **Automatic Weather Stations (AWS)**, developed and maintained by **India Meteorological Department (IMD)** Government of India.
2008	**ISTE Best Project Award for Shashank Singh and team** for Project on **Secu-OS** guided by **Dr. Usha Raghavan from department of Information Technology.**
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 Programs.
2013	**IOSH, UK Graduate Membership Accreditation** for Advance Diploma in Industrial Safety Program.
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**.
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** 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 Award for Best Project** .
2016	**Dr. (Mrs.) G. S. Ingawale, Sr. Lecturer** received **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 **44th ISTE National Annual convention**.
2014	**Mrs. Sujata M. Gupte, Controller of Examination** placed **Second Position 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.**
2009	**Dr. Usha Raghavan received Best Paper Award for the paper titled 'Using Aqueous foams for synthesis of CdS Nano particles'** at National Conference '**Think Quest'** at BGIT, Mumbai
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

Legends

Course Names	
ENG	English
EPH	Basic Science(Physics)
ECH	Basic Science(Chemistry)
BMS	Basic Mathematics(Chemistry)
EGG	Engineering Graphics
CMF	Computer Fundamentals
CMS	Communication Skills
APH	Applied Science (Physics)
ACH	Applied Science(Chemistry)
EEX	Elements of Electronics
EMS	Engineering Mathematics
DLS	Development of Life Skills
EEW	Electronic Workshop
EIM	Electronic Instruments & Measurements
EEN	Electrical Engineering
EDC	Electronics Devices and Circuits β
PDT	Principles of Digital Techniques
PIC	Programming in C
PP-I	Professional Practices-I
EST	Environmental Studies
IME	Industrial Measurements
PEL	Power Electronics
LIC	Linear Integrated Circuits
PCS	Principles of Communication Systems
VB	Visual Basic
PP-II	Professional Practices-II
CHN	Computer Hardware & Networking
MIC	Microcontroller
CSY	Control Systems
AIN	Analytical Instrumentation
PIN	Process Instrumentation
BSC	Behavioral Science
EDP	EDP & Project
PP	Professional Practices - III
MAN	Management
PCS	Process Control Systems

IAU	Industrial Automation
ESY	Embedded Systems
BIN	Biomedical Instrumentation
SSO	Simulation Software
IPR	Industrial Project
Department Names	
CH	Chemical Engineering
CO	Computer Engineering
EPS	Electrical Power System
IE	Industrial Electronics
IF	Information Technology
IS	Instrumentation
MU	Medical Electronics
MSBTE	Maharashtra State Board of Technical Education
RBTE	Regional Board of Technical Education
ISTE	Indian Society for Technical Education
ED	Entrepreneurship Development
OR	Oral Assessment
TW	Term Work Assessment
PR	Practical Assessment
SEM	Semester
FYIS	First Year Instrumentation
SYIS	Second Year Instrumentation
IS	Third Year Instrumentation
Other Institute names used in proforma	
RAIT	Ramrao Adik Institute of Technology
L&T	Larson and Tubro Limited
MPCOE	Mahrshi Parshuram College of Engineering
ATI	Advance Training Institute
RCF	Rashtriya Chemicals and Fertilisers
Miscellaneous	
SAP	System Application Products
SCADA	Supervisory Control And Data Acquisition System
ICT	Information and communication technologies
PLC	Programmable Logic Controller
GC	Gas Chromatography
Engg	Engineering

SAR Contents

PART A: Institutional Information

1. Name and Address of the Institution	**:**	Vidya Prasarak Mandal's Polytechnic Building No. 1, 'Jnanadweepa', College Campus, Chendani Bunder Road, Thane (W) - 400601 (MS), India.
2. Name and Address of the Directorate of Technical Education	**:**	**Directorate of Technical Education,** 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
Dr. BedekarVidyaMandir (Aided)	**1957**	Junior K.G to SSC	Thane
Sau. A.K. Joshi English Medium School (Unaided)	**1976**	Junior K.G to SSC	Thane
K.G. Joshi & N.G. Bedekar College of Arts & Commerce College	**1969**	HSC, B.A, B.Com, BMM, BMS, B.Lib., M.Lib., M.A, M.Com, Ph.D., Community College	Thane
B.N. Bandodkar College of Science	**1969**	HSC, B.Sc, B.Sc(IT), M.Sc, M.Sc(IT)	Thane
T.M.C Law College	**1972**	LLB	Thane
Dr. V.N. Bedekar Institute of Research & Management Studies	**1973**	MMS, PGDM	Thane
V.P.M's Advanced Study Centre	**1996**	Applied Analytical Chemistry, Regulatory Affairs, Gardening & Landscape Designing,Applications Of Statistics, Hospital administration	Thane
V.P.M's Polytechnic, Information Technology Centre	**2000**	ADCSSAA, Industrial Safety, Energy Management, Certifcate courses - MS-CIT, Tally ERP9, Programming in C	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 Defence 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 Parshruram College of Engineering	**2012**	CivilEngg, ComputerEngg, ElectricalEngg, Electronics and Communications, InstrumentationEngg, MechanicalEngg	Velneshwar, Ratngiri

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

S.No	Program Name	Year of Commencement	Intake Capacity	Increase in Intake, if any	Year of Increase	AICTE Approval	Accreditation Status*
1	Diploma in Chemical Engineering (CH)	1983	60	2005	30	Yes	Yes*
2	Diploma in Electrical Power Systems (EP)	1983	30	1997	60	Yes	Yes*
3	Diploma in Industrial Electronics (IE)	1983	60	-	-	Yes	Yes*
4	Diploma in Instrumentation (IS)	1983	30	2011	60	Yes	Yes*
5	Diploma in Information Technology (IF)	2000	30	2002	60	Yes	No
6	*Diploma in Computer Engineering (CO)	2002	40	2003	60	Yes	No
7	*Diploma in Medical Electronics (MU)	2004	60	-	-	Yes	No

- **First NBA Accreditation for 3 Years Period w.e.f. 19-03-2004**

8. Programs to be considered for Accreditation vide this application

S. 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 2015-16		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	20	20	21	21	22	22
	F	12	12	13	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	10	10
	F	36	36	41	41	39	39
Faculty in Sciences & Humanities	M	0	0	01	01	01	01
	F	07	07	06	06	06	06
Non-teaching Staff	M	11	11	12	12	07	07
	F	17	17	20	20	21	21

10. Total number of Students

Items	CAY 2015-16	CAYm1 14-15	CAym2 13-14
Total no. of boys	700	646	754
Total no. of girls	404	418	473
Total no. of students	1104	1064	1227

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.) Usha Raghavan**

Designation : **Head Information Technology Department**

Mobile No. : **9920735746**

Email id : **usharagha@gmail.com**

PART B : Criteria Summary

Name of the program : Diploma in Instrumentation

Criterion No.	Criterion	Marks/Weightage
Program Level Criteria		
1.	Vision, Mission, 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 Contribution	**150**
6.	Facilities 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 Institute

- Ensuring Skill development through Quality Technical Education.

Mission of the Institute

- Imparting creative learning by Innovative Methodologies to expose the talents by the way of MSBTE Curriculum.
- Develop Technical Skills and Professional Ethics with Entrepreneurial spirit through conducive environment.
- Cultivate lifelong learning skills to face challenges with Innovation.

Vision of the Department

Develop technologically sound Instrumentation engineers and equip them with the needed skill-sets to effectively work in industry and interact with various stake holders at national and global level.

Mission of the Department

- Develop a culture of innovation and entrepreneurship by excellence in instructions and practicals by equipping students to perform their duties and responsibilities adequately.
- Promote productive collaborations among industry, academia and alumni, both past and present.
- Facilitate an intellectually challenging and supportive environment conducive to learning, dissemination of technology and provide innovative and cost effective solutions to the industry.
- Sensitize students to become socially aware about their explicit and implicit duties and responsibilities in a multi-cultural and multi-national environment.

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

1 Identify, develop and adopt innovative approaches in the delivery of teaching-learning practices as per guidelines of MSBTE

2 Provide suitable environment and other life skills to keep pace with fast changing technology and industrial scenario.

3 Assimilate and demonstrate the theory and practical knowledge along with industrial exposure for providing solutions to real life problems through project work.

4 Encourage and foster the all round development of students by encouraging them to participate in curricular and co-curricular activities as outlined in MSBTE curriculum.

5 Uphold and reinforce the qualities of head and heart to build competent engineers in keeping with the traditions of their professional, societal and ethical values.

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

Vision, Mission and PEOs are published and disseminated among stake holders in the following ways:-

1. The department has two dedicated **notice boards** which carry the vision, Mission and PEOs of the department.
2. Vision, Mission and PEOs are also displayed on all notice boards of the **labs**.
3. Various workshops are conducted by the department for skill upgradation by inviting industry personnel. On successful completion of it, **certificates** are awarded to the students which carry the department vision.
4. The **term work** file of every student carries the vision, mission and PEOs of the department.
5. The **website** of the college – **http://www.vpmthane.org/polywebnew/index.html**
6. The official **email** of the staff carries the department vision in the footer

7. One day **seminar** is conducted every year for the students on varied topics including the latest trends and technological advancements. Participation certificates are issued at the end of seminar which carries the department vision.
8. The **banners** displayed during the competitions and guest lectures organized by the department, carry the department vision
9. **Project reports** submitted by the final year students carry the department vision in every copy.
10. The **teacher's subject files** and laboratory files carry the department vision, mission and PEOs
11. Important **notices** issued by the department to students or other departments, displays the vision of the department.

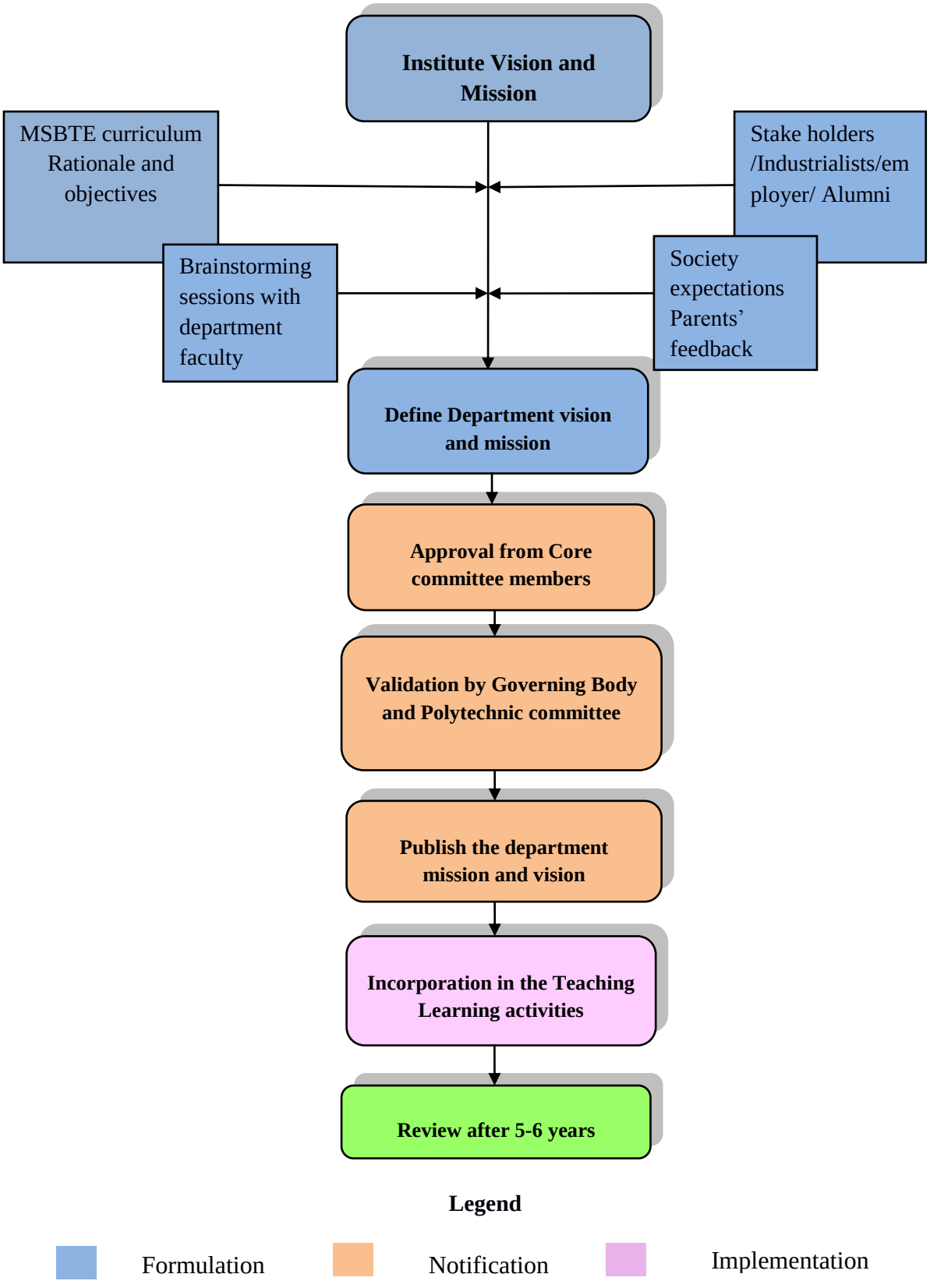
1.4. State the process for defining the Vision and Mission of the Department, and PEOs of the program (15)

Process for defining vision and mission of the department and PEOs of the program

Formulation: To formulate vision and mission, brainstorming sessions of the department faculty were conducted to form a draft copy of vision and mission. It was then aligned with the Institute vision and mission .The feedback given by Alumni and Industrialists were taken into consideration. The suggestions given by the Parents were taken into account while formulating the Program Educational Objectives. Benchmarking of the formulated vision and mission was done with Institutions of good repute and was refined further. A core committee consisting of heads of all the departments of the Polytechnic along with the Principal was formed to assess the vision and mission formulated of each department.

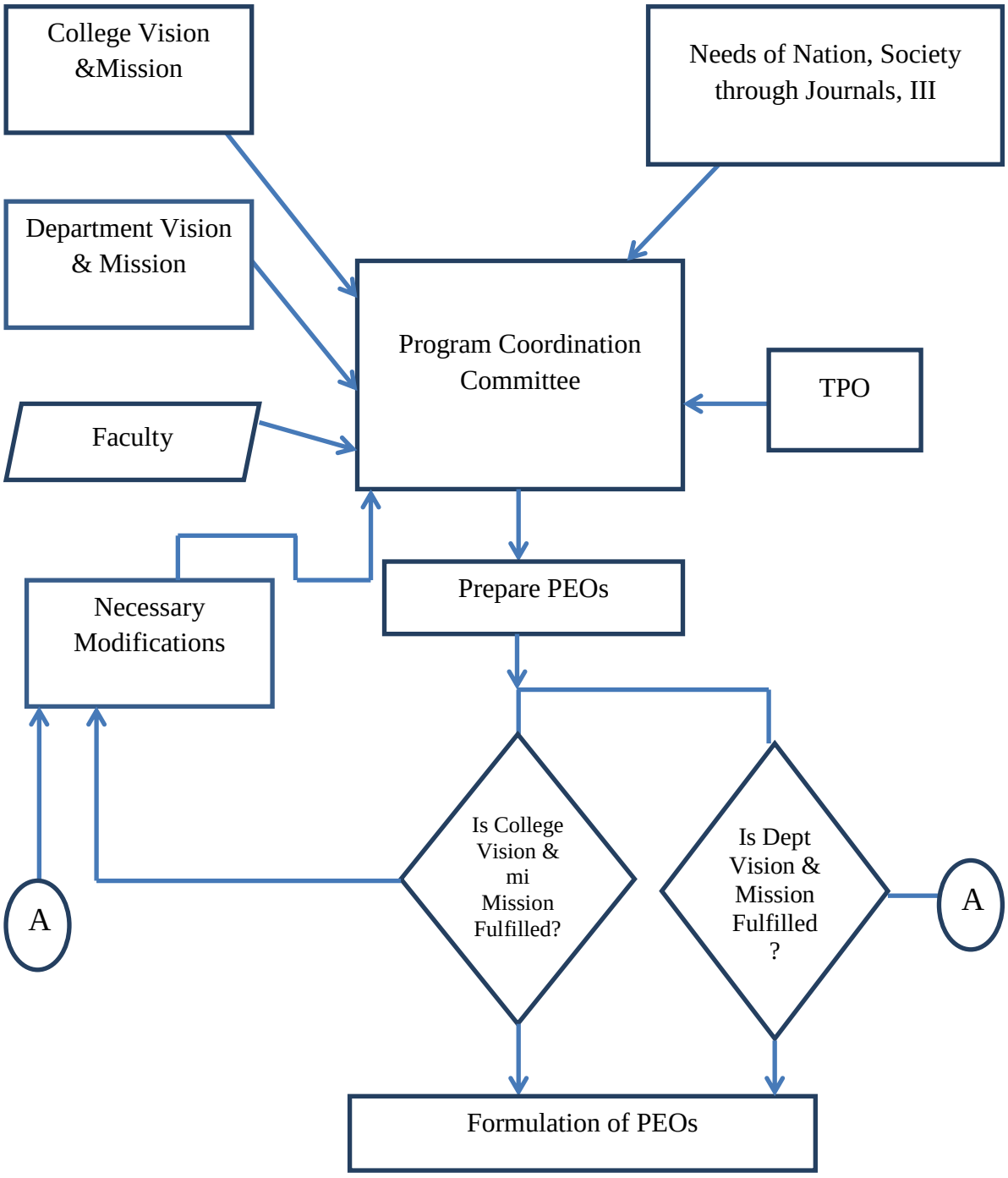
Notification: The vision, mission and PEOs were put for necessary approval in the governing body and Polytechnic committee meetings. It was conveyed to all the department staff.

Implementation: Faculty advised to work in the given direction to implement the same. It may be suitably revised after 5 years during curriculum revision.



Process for defining PEOs

After finalizing the department vision and mission, the core committee in consultation with an industrialist who is also a member of board of studies in MSBTE and Mumbai university formulated the PEOs of the program. Inputs of Alumni and faculty were also taken into consideration. It was then aligned with the Institute as well as department vision and mission statements and appropriate changes were made to prepare the final five statements of PEOs.



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

PEO statements	M1	M2	M3	M4
PEO1: Identify, develop and adopt innovative approaches in the delivery of teaching-learning practices as per guidelines of MSBTE.	3	2	3	1

Justification

- Mission 1 strongly supports PEO1, as objective is to develop culture of innovation and entrepreneurship .
- To accomplish PEO1, support of academia, alumni and Industries is vital for the department, hence mission 2 moderately supports PEO1
- To realize PEO1, a supportive environment for understanding of new technology and innovative teaching learning methodologies to develop students' reasoning ability is a must, hence mission 3 highly supports PEO1.
- (Mission 4) slightly supports in achieving PEO1 as global concern.

PEO statements	M1	M2	M3	M4
PEO2: Provide suitable environment and other life skills to keep pace with fast changing technology and industrial scenario.	3	3	3	2

Justification

- To be able to adapt to the technological advancements and changes, students should possess certain life skills for which he needs to be innovative, have an entrepreneurial approach (Mission 1), should be able to come up with pioneering solutions to industrial problems (Mission 3) and keep himself abreast of the latest developments in the subject of interest (Mission 2)hence Mission 1,2 and 3 strongly support PEO2.
- When adapting to any change the student should not compromise in his duties as a responsible citizen, hence mission 4 moderately supports PEO2.

PEO statements	M1	M2	M3	M4
PEO3: Assimilate and demonstrate the theory and practical knowledge along with industrial exposure for providing solutions to real life problems through project work.	3	3	3	3

Justification

- A project work in the final year reflects the innovative ideas of the students and his ability to apply all the theory and practicals that he learnt during 3 years including information gathering from various sources like Industrial visits, guest lectures etc. Hence, all the mission statements strongly support PEO3.

PEO statements	M1	M2	M3	M4
PEO4: Encourage and foster the all round development of students by encouraging them to participate in curricular and co-curricular activities as outlined in MSBTE curriculum	2	2	2	3

Justification

- Mission 1, 2 and 3moderately support to achieve PEO4 with respect to effective communication skills, leadership qualities (M1), exposure to industrial culture(M2), faculty interaction(M3).
- Along with sound technical knowledge, student should be aware of his duties in society as well as globally for which interaction with peers, society is necessary and hence Mission 4 highly support to achieve PEO4.

PEO statements	M1	M2	M3	M4
PEO5: Uphold and reinforce the qualities of head and heart to build competent engineers in keeping with the traditions of their professional, societal and ethical values.	2	3	3	3

Justification

- Mission 1 is moderately consistent with PEO5 as to be competitive, engineer has to be innovative.
- To imbibe professional and ethical values in the student, interactions with industries, guests, discussions with faculty etc, are all necessary to strengthen their technical skills and interest; hence Mission 2, 3 and 4 highly supports PEO 5.

CRITERION 2	Program Curriculum and Teaching – Learning Processes	200

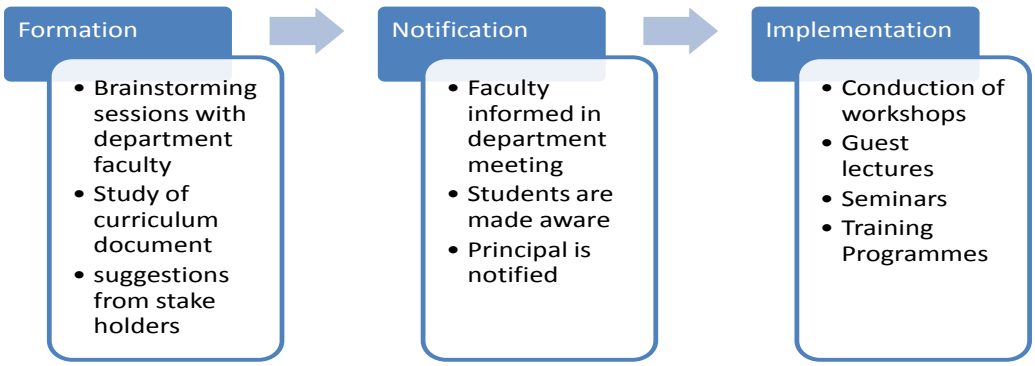
2.1. Program Curriculum (50)

2.1.1. State the process used to identify extent of compliance of the Board curriculum for attaining the Program Outcomes (POs) and Program Specific Outcomes (PSOs) as mentioned in Annexure I. Also mention the identified curricula gaps, if any (30)

The MSBTE revises curriculum every 5 years taking into account the feedback from Alumni, Industrialists and academicians. It is done scientifically by following Bloom's taxonomy. Teacher's guide is prepared for major subjects and orientation workshops are taken for faculty across the state. Despite this rapid technological changes necessitate conduction of technical workshops/seminars and training programs to bridge the gap.

Department faculty is asked to study the curriculum document thoroughly and verify the links between all subjects. If the pre requisites for studying the subjects are not satisfied, it is noted down. The missing links are also identified. alumni insights during alumni meets also yields some topics of technological advancements.

The faculty and students are made aware of these gaps and the Principal is informed. Various training programs, workshops, seminars, guest lectures and industrial visits are then organized throughout the year to fill these gaps to a large extent.



2.1.2 Contents beyond the Syllabus (20)

CAY (2015-16)

Sr No	Gap	Action Taken	Date-Month-Year	Resource Person with Designation	No. of students present	Relevance to POs & PSOs
1	Installation Practices of Field Instruments	Guest Lecture	28/8/2015	Mr. Sagar Jorapur Sr. Marketing Engineer, Emerson Corporation,	62	PO1, PO4, PO9, PO10, PO5, PSO1, PSO3
2	Detail Engineering	3 Days workshop	6/1/2016 - 9/1/2016	Mr. Santosh Patil, Director , Suchi Engineers	62	PO1, PO8, PO9, PO10, PSO3, PSO5
3	Industrial Applications of PLC	2 Days workshop	4/4/2016-5/4/2016	Supertech Instrumentation Services Pvt. Ltd.	62	PO1,PO2, PO10,PO5, PSO3, PSO4

CAY *m1*(2014-15)

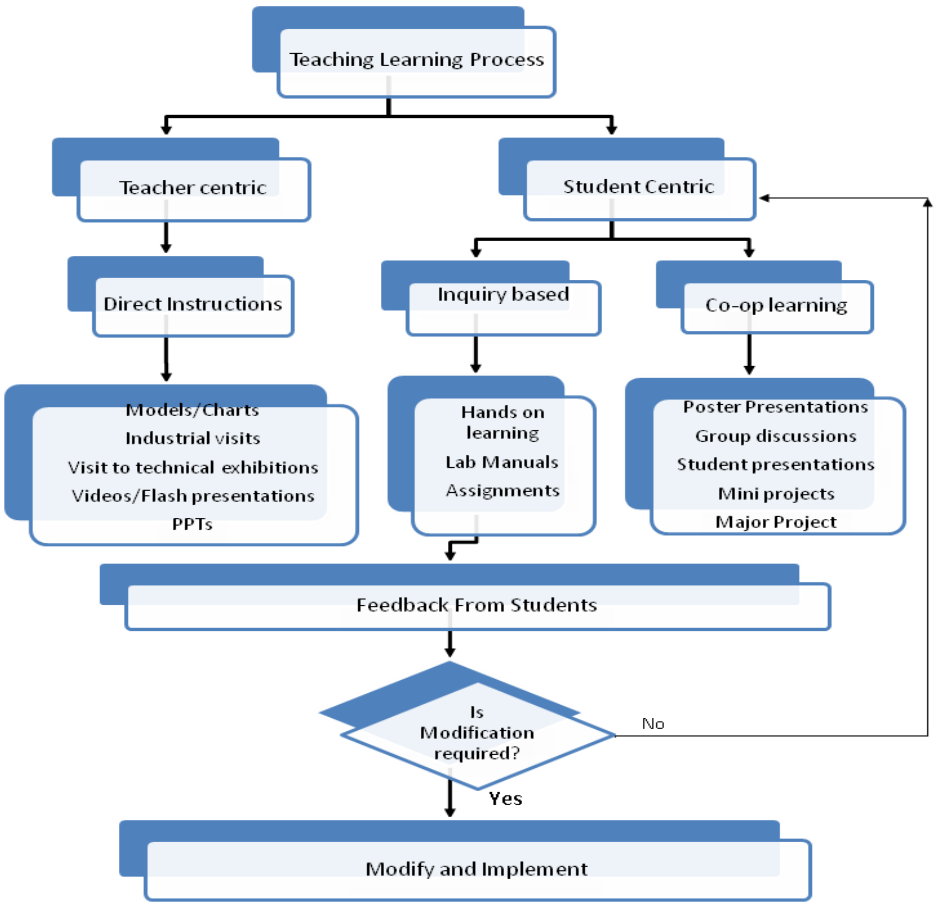
Sr No	Gap	Action Taken	Date-Month-Year	Resource Person with Designation	No. of Students Present	Relevance to Pos & PSOs
1	Installation Practices	Guest lecture	31/1/2015	Mr. Vivek Koshti Instrumentation Engineer, Jacob Engineering, India Ltd.	40	PO1PO4, PO9,PO10, PO5,PSO1, PSO3
2	Detail Engineering	3 Days workshop	14/2/15, 15/2/15, 28/2/15, 1/2/15	Mr. Santosh Patil, Director , Suchi Engineers	40	PO1,PO8, PO9,PO10, PSO3, PSO5
3	PLC/SCADA	3 Days workshop	12/2/2015, 13/2/2015 and 14/2/2015	Supertech Instrumentation services Pvt. Ltd.	40	PO1,PO2, PO10,PO5, PSO3, PSO4

CAY *m2* (2013-2014)

Sr. No	Gap	Action Taken	Date-Month-Year	Resource Person with Designation	No. of students present	Relevance to Pos & PSOs
1	Analytical Instrumenta-tion	Guest lectures	3/8/2013	Mr. Ajit Paranjape, Executive Director, LabIndia.	71	PO1, PO4, PO5, PO6, PO10, PSO1
2	Embedded systems	Guest lectures	1/2/2014	Mr. Amol Sakhalkar Director, Digel Systems	71	PO2, PO3, PO10 PSO, PSO3

2.2 Teaching Learning Process (150)

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



A department *academic calendar* is prepared in accordance with the MSBTE calendar. *Teaching Plan and laboratory plan* are prepared by the staff to plan and complete the theory and practicals in the given time frame. Keeping the pedagogical initiatives in mind, teaching learning process is effectively implemented in the following ways:-

- Teacher Centric Learning
- Student Centric learning
    - Inquiry based
    - Co-op learning

Teacher delivers the lectures to teach new concepts and theory aspects through not only conventional black board and chalk method but also through demonstrations of *models charts etc. and also during industrial visits, exhibition visits* etc.

Videos, flash presentations, PPTs, are a part of every subject teacher's lecture delivery plan to help the students visualize internal construction details or working of certain machines/equipments and systems like motors, control valves, Coriolis and Vortex flow measurement principles etc. Sometimes *role play* is introduced to retain the concepts in the long term memory. For courses where the students are expected to memorize spellings of some complex words, (e.g. in Biomedical course), *crossword puzzles* are developed by the teacher as an innovative method to help them learn.

Students develop *hand on skills* during practical of almost all courses under the supervision and guidance of subject teacher and lab assistant. *Lab manuals* are also available for majority of the courses to aid learning. Self learning also takes place through *assignments* given after completion of a topic for all courses.

It has been observed that students learn better through peers and therefore, group activities like *Poster exhibitions, group discussions and student presentations* (By allotting one topic to a group of 3-4 students) are held every year.

Mini projects in some courses are done by the students to hone the practical skills. A *major project* helps to reinforce the all the concepts learnt in the diploma program including project management techniques, to prepare a working model.

In addition, *weak students* are identified by the teachers and are grouped with bright students and such a mix group of 8-10 students are allotted to each faculty to *mentor* and pay personal attention to each student. If required, some of them are referred to the professional *counselor* who visits college twice a week.

Bright students are motivated to participate in various *quiz and paper presentation competitions* to develop professional and soft skills. Free *Book bank* facility is extended to the toppers of every class as an incentive and to the reserved category students and at very nominal fees to others. *Entrepreneurship Development cell* caters to those students who are desirous of having a start up later in life. *Spoken tutorials, value added courses* are conducted for all the students.

At the end of the practical session students are evaluated on the basis of MCQs asked, their performance, ability to observe and tabulate the results and marks are recorded in their manuals/journals. Teacher's feedback is taken from 50% students during each semester and teachers are conveyed to incorporate the suggestions.

Overall feedback of the current students is taken at the end of the academic year.

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

1. Question Paper has questions that are structured such that the student will be able to

   a. Recall factual knowledge

   b. Organize the knowledge

   c. Present the knowledge in logical sequence.

2. Question Paper has problem solving tests which includes

   a. Minimize guessing

   b. Measure learning objective that focuses on ability to apply.

3. Questions with verbs differentiate, distinguish, compare, etc. are included so as to

   a. enhance the ability to analyze two different situations.

   b. make the students understand the similarity between 2 systems.

4. Guidelines, specification table and sample test papers are followed in setting the question papers.

5. Model answers available on the website are circulated among the students to enhance the quality of assignments.

2.2.3. Quality of Experiments (15)

I. The laboratory manuals are learning resources prepared by subject experts from various institutes affiliated to MSBTE under the guidance of educational consultants. They include

   a) Student activities
   b) Questions for confirmation of learning
   c) Conclusion
   d) Application of each experiment

   These attributes are relevant to curriculum objectives

II. Similar methods/procedures are followed for the subjects for which laboratory manuals are not provided by MSBTE.

III. MCQ tests are taken after completion of every lab experience, which

   a. improves cognitive ability
   b. provides reliable measurement of scores
   c. provides the students to self evaluation.

IV. The assessment of lab manuals/Journals is done considering cognitive, Psychomotor and affective skills and domains.

2.2.3. Quality of Experiments (15)

Course Name: Process Instrumentation **MSBTE Course Code: (17540)**

Semester: Fifth **Type of Assessment: TW/PR**

Exp No.	Title	Type			CO 1	CO 2	CO 3	CO 4	CO 5	CO 6
		S	P	M						
1	Identify the elements of process feedback loop like temperature/pressure/level /flow	✓			✓	✓				
2	Measurement and transmission of any one process variable using Electronics transmitter.		✓			✓			✓	
3	Calibration of any one transmitter (temperature, Pressure, DP)		✓			✓	✓		✓	
4	Verification of various diagnostic features of SMART Transmitter.		✓			✓	✓		✓	
5	Identify and interpret display devices on different control panels using trainer set up/ in industry.	✓			✓			✓		
6	Draw control room layout & list out ergonomic considerations.	✓						✓		✓
7	Monitoring of various process parameters on DAS/Data Logger system.		✓			✓			✓	

Exp No.	Title	Type			CO 1	CO 2	CO 3	CO 4	CO 5	CO 6
		S	P	M						
8	Plot any one process parameter w. r. t. time using recorder (strip chart or XY recorder).		✓			✓			✓	
9	Study of sequence of operations in alarm annunciator.		✓			✓		✓	✓	
10	Conversion of standard signal using I/P or P/I convertor		✓			✓			✓	

Legend: S-Study P-Performance M-Mini Project

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

A group of 4 students is formed for doing the project work in the final year. Projects are selected keeping in mind the overall application of all the courses that they learn in the previous semesters. A thorough project search is done in the electronics magazines and websites to come up with the novel concepts of Instrumentation related applications. A guide is allotted to 2-3 groups to assist them in their work. Every year 1 project is selected based on industrial application as per the inputs given by industrial person. In the year 2013-14 and 2014-15 student projects won the third and second rank respectively in the best project competition of "ISTE-Narsee Monjee Best Project work done by Polytechnic students of Maharashtra State". Year wise list of projects along with the fulfillment of POs is given below for 3 years.

Quality of the project is measured in terms of consideration to factors including environment, safety, ethics, cost, type (application, product, research, review etc.)

Processes related to project identification, allotment, continuous monitoring, evaluation including demonstration of working prototypes and enhancing the relevance of projects.

Initiatives

1. The student's projects are selected in line with department mission, vision and Program outcomes.

2. Students are provided with brief idea of various fields for selecting the project ideas.

3. The list of previous year projects is displayed at notice board which ensures no repetition of project work and also encourages students to enhance the previous works.

4. The faculties encourage the students to carry out in house projects and all the necessary support is provided.

5. The faculties encourage students to participate in project exhibitions. The project exhibition is aimed to provide common platform to exhibit their innovations and their work towards excellence in latest technology.

The **term work** marks are awarded based on the following performance indicator

- Literature survey
- Presentation
- Participation in Project competitions
- Quality of Project Report

The final assessment is based on

- Presentation
- Demo of the prototype
- Questionnaire

Projects undertaken during Academic year 2015-16 and their relevance to POs and PSOs

Academic Year 2015-16		Relevance to POs										Relevance to PSOs				
S.No.	**Project Title**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**1**	**2**	**3**	**4**	**5**
1	Automated Green House	2	3	3	2	3	3	2	2	3	2	3	3	3	1	3
2	Wireless Patient Monitoring System	2	3	3	3	3	2	2	2	3	2	2	3	3	1	3
3	Smart Cane for Blind People	2	2	3	3	3	2	2	2	3	2	2	3	3	1	3
4	Automatic Solar Grass Cutter	2	2	3	3	2	3	2	2	3	2	2	3	3	1	3
5	Dual Axis Solar Tracker	2	2	3	3	2	3	2	2	3	2	3	3	3	1	3
6	Android Controlled Robotic Arm Vehicle	3	3	2	3	2	2	2	2	3	2	3	3	3	1	3
7	Temperature Control Of Liquid Process Tank	3	3	2	2	3	2	2	2	3	2	3	3	3	1	3
8	Automatic Car System	3	3	2	2	2	3	2	2	3	2	2	3	3	1	3
9	Automatic Liquid Dispensing Based On Colour	3	3	2	3	2	2	2	2	3	2	3	3	3	1	3
10	Agricultural Automation	2	3	2	2	3	3	2	2	3	2	2	3	3	1	3
11	GSM Based Vehicle Detection System	2	2	3	2	2	2	2	2	3	2	2	3	3	1	3
12	Laser Communication	2	2	3	2	2	2	2	2	3	2	3	3	3	1	3
13	Footstep Power Generator	3	2	2	3	2	3	2	2	3	2	2	3	3	1	3
14	Underground Cable Fault Detector	2	2	3	2	2	2	2	2	3	2	3	3	3	1	3
15	Finger Print Based Attendance	3	2	3	2	2	1	2	2	3	2	3	3	3	1	3
16	Speed Control of DC Motor using Android via Bluetooth	2	3	2	2	2	1	2	2	3	2	3	3	3	1	3

Projects undertaken during Academic year 2014-15 and their relevance to POs and PSOs

Academic Year 2014-15		Relevance to POs										Relevance to PSOs				
S. No.	**Project Title**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**1**	**2**	**3**	**4**	**5**
1	Coin Based Mobile Charger	2	2	3	2	2	2	3	2	3	3	3	3	3	2	3
2	Automated Car Washing System using PLC	3	3	2	2	2	3	3	2	3	3	3	3	3	3	3
3	Temperature Controller	3	3	2	3	3	3	3	2	3	2	3	3	3	3	3
4	Programmable Bell Timer	2	2	3	2	2	2	3	2	3	2	3	3	3	2	3
5	Water Level Controller	3	3	2	3	2	3	3	2	3	2	3	3	3	3	3
6	Smart Card Based Prepaid Energy Meter	3	3	3	2	3	3	3	2	3	3	3	3	3	3	3
7	Thermostat Life Cycle Test	3	3	2	2	2	3	3	2	3	3	3	2	2	3	3
8	Home Automation	3	3	2	2	2	3	3	2	3	3	3	3	3	3	3
9	LPG Gas Leakage Detector	2	3	2	3	3	3	3	2	3	2	3	2	3	2	3
10	Smart Highways	3	3	3	2	2	3	3	2	3	3	3	3	3	3	3

Projects undertaken during Academic year 2013-14 and their relevance to POs and PSOs

Academic Year 2013-14		Relevance to POs										Relevance to PSOs				
S. No.	**Project Title**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**1**	**2**	**3**	**4**	**5**
1	Automated Car Parking System	3	3	2	3	3	3	3	2	3	3	3	3	3	3	3
2	Cell Phone Operated Land Rover	3	2	3	3	2	3	3	2	3	3	3	3	3	2	3
3	Digital Step Km-Counter	2	2	3	2	2	3	3	2	3	3	2	3	3	2	3
4	Automatic Railway Gate Control System	3	3	2	3	3	3	3	2	3	3	3	3	3	3	3
5	Smart Energy	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
6	SCADA Simulation Of Blending Process	3	3	2	3	3	2	3	2	3	3	3	3	3	3	3
7	Micro Controller Based Line Follower Robot	3	3	3	3	3	3	3	2	3	3	3	3	3	2	3
8	Ultrasonic Distance Meter	3	3	2	3	2	2	3	2	3	3	2	2	3	3	3
9	Home Automation Using GSM	3	3	2	3	3	3	3	3	3	3	3	3	3	3	3
10	Automatic Valve Control	3	3	2	2	3	2	3	2	3	3	2	3	3	3	3
11	RFID Based Toll Plaza System	3	3	3	2	3	3	3	2	3	3	3	3	3	2	3
12	Gas Leakage Detector	3	3	2	3	3	3	3	3	3	3	3	3	3	2	3
13	Linear Variable Differential Transformer	2	3	3	2	2	2	3	3	3	3	3	3	3	2	3
14	Touchscreen Controlled Wheel Chair	3	3	3	3	3	2	3	2	3	3	3	3	3	3	3
15	Vehicle Tracking System using GSM	3	3	3	2	3	3	3	2	3	3	3	3	3	3	3

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

Various activities are initiated for improving the technical skills and all round development of the students

Guest Lectures 2015-16				
Name of Expert	**Designation**	**Topic**	**Semester**	**Date**
Ms.Akshata Sonpatki	Counselor, Joshi - Bedekar College of Arts and Commerce, Thane	Need of counseling	Third	07/7/2015
Mrs. Radhika Kamath	Lecturer, VPM's Polytechnic, Thane	Digital India	Third Fifth	15/7/2015
Mr. V. A. Valawalkar	Sr. Lecturer, VPM's Polytechnic, Thane	Thane Creek	Third Fifth	20/7/2015
Mr. Kishor Shirdande	Volunteer of Sarpmitra team	Myths around snakes	Third Fifth	22/7/2015
Ms. Akshata Sonpatki	Counselor, Joshi - Bedekar College of Arts and Commerce, Thane	Need of Counseling	Fifth	09/7/2015
Mr. Uday Yadkikar	Management Consultant, Re discover Yourself	Entrepreneur	Fifth	24/7/2015 25/7/2015
Mr. Omkar Joshi	Research Scholar, Aston University, UK	Computer Peripherals	Fifth	30/7/2015
Mr. Sagar Jorapur	Sr. Marketing Engineer, Emerson Corporation India	Instrumentation	Fifth	28/8/2015
Dr.Abhay Morajkar	Assistant professor, B.N. Bandodkar College of Science, Thane	Electrophoresis	Fifth	10/9/2015
Mr. Santosh patil	Director, Suchi Engineers	Detail Engineering	Sixth	6/1/2016
Mr. Dhananjay Bhavsar	Sr. Manager, Siemens Ltd.	Basics of Industrial Measurement	Fourth	16/1/2016
Swami Amrutvadan	Swami Narayan Temple , Dadar	Goal Setting	Fourth Sixth	14/1/2016
Online broadcast Velneshwar	VPM's Polytechnic, Thane	Skill Development	Fourth	13/1/2016
Mr. Dhananjay Bhavsar	Sr. Manager, Siemens Ltd.	Applications of transducers in Industrial Measurement	Fourth	06/2/2016
Mr. Narendra Apte	Proprietor NDA Consultancy & Engg. Services	Piping And Instrumentation Diagram	Sixth	12/2/2016

2014-15				
Name of Expert	**Designation**	**Topic**	**Semester**	**Date**
Mr. Sanatkumar Madake	Asst. Manager - Electronic Cell, Prod Centre ,L&T Ltd, Powai	Basics of PLC	Fifth	20/7/2014
Mr. Santosh Patil	Director, Suchi Engineers	Detail Engineering	Fifth	23/9/2014
Mr. Prashant Karmalkar	Founder and Managing Partner., Circular Angle	Entrepreneurial Journey	Third	24/9/2014
Mr. Vivek Koshti	Instrumentation Engineer, Jacob Engineering	Installation Practices	Fifth	31/1/2015
Dr.(Mrs.) Usha Raghavan	HOD, IF Department, VPM's Polytechnic, Thane	Nanotechnology and its Diverse Applications	Fourth	3/1/2015
Mr. Omkar Joshi	Research Scholar Aston University, UK	Artificial Heart	Sixth	6/1/2015
Prof. V.S. Bhakre	Ex. Marketing Manager (Head), Ciba Geigy	Motivation	Sixth	27/1/2015
Mrs. Suhasini Shukla	HOD, CO Department, VPM's Polytechnic, Thane	Cloud Computing in instrumentation	Sixth /Fourth	29/1/2015
Mr. T. V. Mohite Patil	HOD, MU Department, VPM's Polytechnic, Thane	MRI Techniques	Sixth	21/2/2015
Prof. V.S.Bhakre	Ex. Marketing Manager (Head), Ciba Geigy	Project Management	Sixth	16/2/2015
Mrs. Santhi Lugudva	Lecturer, IE Department, VPM's Polytechnic, Thane	Mobile Antenna Radiation	Fourth	21/2/2015
Mr. Rajesh Shah	Director, Nice Consultancy	P & ID	Sixth	10/3/2015

2013-14				
Name of Expert	**Designation**	**Topic**	**Semester**	**Date**
Mr. Hrishikesh Kelkar	Deputy Chief Engineer, Burns & Mc Donnell India	Instrumentation in industries	Fifth	20/07/2013
Mr. Ajit Paranjape	Executive Director, Lab India	Analytical Instrumentation	Fifth	3/8/2013
Mr Vivek Koshti	Instrumentation Engineer, Jacob Engineering	Installation Practices	Fifth	17/08/2013
Mrs. Santhi Lugudva	Lecturer, IE Department, VPM's Polytechnic, Thane	Cell tower Radiation Hazards and Solution	Fifth	11/9/2013
Ms. Vedvati Paranjpe	Counselor, Joshi - Bedekar College of Arts and Commerce, Thane	Stress of Exam	Third	31/1/2014
Prof. V. S. Bhakre	Ex. Marketing Manager (Head), Ciba Geigy	Motivation	Sixth	14/2/2014
Mr. Amol Sakhalkar	Director, Diegel Systems	Embedded System	Sixth	1/2/2014

2) Entrepreneurship Development Cell

VPM's polytechnic has the privilege to start an Entrepreneurship development cell in the academic year 2011-12. In today's world, the number of engineers passing from engineering schools every year is a very large .Providing jobs to these engineers by various agencies is a huge herculean task. Hence we find under- employment in our country. There is a need for students to know the nitty- gritty of starting an enterprise of their own. They will not only work on an area of their interest, but may also create employment for few others. 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.

Academic Year 2012-13

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.

Young future entrepreneurs of the cell showing their innovative, creative products made out of straw and pins, through their team work.

Academic Year 2013-14

No of Students Enrolled of Instrumentation:22

Details of the Program	Name of the Speaker	Date
Entrepreneurial Motivation	Dr Ajay Tamhane	23/8/ 2013
Curiosity, self analysis & proactive approach in a day to day life	Mr Kamal Kapoor Vice President , Zuventus	31/8/ 2013
How to be successful in Corporate world	Mr. Sudhir Warde, HR Head L & T	
Art of Presentation	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.	
Innovation & Entrepreneurship	Dr. Arun Pande	
Entrepreneurship Camp Awareness of MSME Entrepreneurship in Computer, IT & Electronics Financial Planning	Faculty from MSME, Mumbai Juhi Sinha, Mr Prasad Kulkarni Mr Pushkar Kumar,	7/9/ 2013

Academic Year 2014-15

No of Students Enrolled of Instrumentation:15

Details of the Program	Name of the Speaker	Date
Entrepreneurial Motivation	Dr. Ajay Tamhane Consultant	15/9/ 2014
Communication Skills	Mr Kamal Kapoor Vice President , Zuventus	3/3/2015
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	
Incubation Idea- Project	Dr Usha Raghavan	Dec 2014- Apr 2015

Mr.Divyesh S Jain, TYIS, crowned RYLA Prince

Miss. Natalie D Biwadkar, TYIS crowned as RYLA Princess

Academic Year 2015-16

No of Students Enrolled of Instrumentation:18

Details of the programme	Name of the speaker	Date
Entrepreneurship Opportunity for Engineers	Pratapsinh K. Desai President, ISTE, New Delhi	10/9/ 2015
"Startup Entrepreneurship"- The journey begins!!	**Mr. Ram Bhogale**, Director, Nirlep Group of Companies	26/1/ 2016
	Mr. Deepak Ghaisas, Chairman of Gencoval strategic services Pvt. Ltd	
Incubation Idea- Project	Dr Usha Raghavan	Dec 2015- Apr 2016
Start Up Programme- On Campus training	Industry/ Academic Professionals	March onwards

3) Internship

With effect from June 2016, students of second and third year were placed in industries for 1 month internship as per the circular of MSBTE. Almost all students of Instrumentation program were placed as per the list given below

SYIS 2015-16

Roll No.	Company Address	No. of Students Placed	Duration
1	Active Systems, 212, Ashok Service Industrial Estate, LBS Road, Gokul Nagar ,Thane (W), 400601	1	4 weeks
2	Delux Akzonable Pvt. Ltd, Koperkhairane, Navi Mumbai	2	4 weeks
3	Mast aviation Pvt. Ltd., Sonawala Road, Goregaon (E), Mumbai 400063	2	4 weeks
4	Maxitherm Boilers Pvt. Ltd., R- 718-A, TTC, Industrial Area, Thane Belapur Road, Rabale, Navi Mumbai	4	4 weeks
5	Meco Instruments Pvt. Ltd., Plot No. EL-1, MIDC Electronic Zone, TTC Industrial Area, Mahape, Navi Mumbai 400710.	4	4 weeks

Roll No.	Company Address	No. of Students Placed	Duration
6	ONGC, Nagaon, Uran, Navi Mumbai 400702	1	4 weeks
7	Precious Instruments, Wagale Industrial Estate, Thane (W) 400604	2	4 weeks
8	Ravi Electrical Pvt. Ltd., Ramnagar Road no. 28, Wagale Estate, opp. EMCO, Thane (W) 400604	1	4 weeks
9	Robo lab, Children take centre, B-02, Devendra Apartment, Sahyog Mandir Road, Naupada, Thane (W) 400604	2	4 weeks
10	Rotex Manufacters and Engineers Pvt. Ltd., Manpada Road, Dombivali (E) 421204	1	4 weeks
11	S.S.Natu Plastics and Metals pvt. Ltd, Plot no.A-207, Road no.29, Ambika Nagar 2, Wagle Industrial Estate, Thane (W),400604	5	4 weeks
12	Sierra Instrumentation and controls, AB/14, Nandanvan Industrial Estate, LBS Marg, Teen Hath Naka, Thane (W) 400604	3	4 weeks
13	Spectra Lab Instruments Pvt. Ltd., W- 446, Rabale MIDC , Navi Mumbai- 400701	5	4 weeks

TYIS 2015-16

Roll No.	Company Address	No. of Students Placed	Duration
1	Active System, 112, Bhagtani Enclave, Bhandup Sonapur Lane, LBS Marg, Bhandup (W), 400078	1	4 weeks
2	Allans Medical Systems Pvt. Ltd, 1, Thakur Lane, NSS Rd, Asalpha Village , Ghatkopar (W), 4 00086	5	4 weeks
3	Bharat Bijlee, No. 2 , Thane Belapur Road, Airoli Navi Mumbai,400708	1	4 weeks
4	Ceat Tyres Pvt. Ltd. , Subhash Nagar Road, Bhandup Industrial Area, Bhandup (W), Mumbai 400078	2	4 weeks
5	Century Rayon, P.B. No. 22, Shahad-421103	5	4 weeks
6	Forbes And Company Ltd., Saki Powai Road, Chandiwali, Mumbai 400072	1	4 weeks
7	Godrej Industries Limited Ambernath, Plot No. N-73,	2	4 weeks

Roll No.	Company Address	No. of Students Placed	Duration
	Ambernath Industrial Area, Ambernath (E)		
8	Krutika Instrumentation Services, Balkum Pada No.3 Bhoir House, Balkum Thane	1	4 weeks
9	Lotus Global Pvt. Ltd., B1 Unit No.1, Jay Bhagvan Compound, Vahuli, Post Padgha, Bhiwandi, Thane	2	4 weeks
10	Mast Aviation Pvt. Ltd., Sonawala Road, Goregaon (E), Mumbai400063	2	4 weeks
11	Miraj, 108 Anand Laxmi Chembers, First Floor,Dada Patil Wadi Marg, ,Thane (W)	4	4 weeks
12	MM Automation,A-01 ,Kalu Apartment Santosh Nagar , Pune Link Rd, Kalyan (E)	3	4 weeks
13	Naresh Electricals Engg. Fabricators, A-8, Hariyali Ind Centre, LBS Marg, Vikroli (W), Mumbai 400083	1	4 weeks
14	National Peroxide Ltd. ,Village Vadavali, N. R. C. Road, Post Mohone, Kalyan	3	4 weeks
15	Nice Consultancy, Office No.14, Amrapali Society, Dr. Lazrus Rd, Charai Naka Thane (W)	3	4 weeks
16	Padmavati Pulp And Paper Mills, C-706, Neelkanth Business Park, Nathani Rd, Vidyavihar W, Mumbai400086	1	4 weeks
17	Perfect Instrumentation Controls,64, New Modella Industrial Premices, Padawal Nagar, Wagle Estate Thane 400604	1	4 weeks
18	RCF Ltd, Administrative Building, Mahul Road, Chembur, Mumbai 400074.	2	4 weeks
19	Safetech Industries, A-5,Sheetal Arcade, Chittarajan Das Road, Opp Sukhi Jeevan Soc, Ramnagar, Dombivli	1	4 weeks
20	Shubham Electronics Pvt. Ltd., Plot No. EL -126, Electronic Zone, Ttc Industial Area, MIDC, Mahape, Navi Mumbai 400710	2	4 weeks

Roll No.	Company Address	No. of Students Placed	Duration
21	Siemens Kalwa-Thane Plant, MIDC INDL Area, Airoli, Navi Mumbai, Maharashtra 400708	2	4 weeks
22	Suchi Engg, Shop1, Jalaram Ashish, CHS,Ltd, G. B. Road, Charai ,Thane	3	4 weeks
23	Sudarshan Patil Industries, STM Rd No. 21Y, Plot No. A 235, Wagale Industrial Estate ,Thane (W)	1	4 weeks
24	Supertech Instrumentation Services (India) Pvt. Ltd, Thane	1	4 weeks
25	Surgicare India, 1, Shankar Sadan, D. R. Road, Charai, Thane (W) 400601	1	4 weeks
26	Veol Medical Technologies Pvt. Ltd, A-747, MIDC, Pawane, Ttc Ind .Area, Koperkhairane ,Navi Mumbai	2	4 weeks
27	Vinati Orgainics Limited , Plot No.A-20, MIDC, Industrial Area, Lote Parshuram Taluka Khed, Dist. Ratnagiri, 415722	1	4 weeks
28	Vital Electronics And Manufacturing Co., EL-104, Electronic Zone , TTC Industrial Area, Mahape, Navi Mumbai 400710	3	4 weeks

4) Visits

Seeing is believing! Industrial visits are an integral part of technical education and therefore to reinforce the theoretical aspects of the curriculum**,** around 3 industrial visits are arranged for the second and third year students per semester. Division wise list of visits for last 3 years is given below.

2015-16

Date	Class	Name of the Industry	Subject	Accompanying Staff
5/8/2015	TYIS	B. N. Bandodkar Science college, Thane	AIN	Mrs. Sheetal Mhatre
22/8/2015 5/9/2015	TYIS	Century Rayon, Shahad	PIN, PCS, IME,INA	Ms. Selva Hepshibha Ms. Dhanashree Satamkar Ms. Priyanka Khilare Mr.Kiran Bhide
26/8/2015	TYIS	Automation 2015 , Goregaon	PIN, PCS, INA	Mrs. V.A. Joshi Ms. Priyanka Khilare Mr. Sanjay Bhore
25/8/2015	SYIS	Automation 2015, Goregaon	PPO and IME	Ms. Selva Hepshibha Ms.Karishma Sanil
12/9/2015	SYIS	S.S.Natu plastics & metals PVT.LTD, Thane	EEN,PPO	Mrs. Sheetal Mhatre Ms. Dhanashree Satamkar
6/10/2015	SYIS	Meco Instruments pvt. Ltd, Mahape	EIM, EEN	Mrs. Sheetal Mhatre Ms. Dipashri Yadav
7/2/2016	SYIS	Gauges bourdon Pvt. Ltd, Navi Mumbai	IME	Ms. Dhanashree Satamkar Ms. Kanchan Shrikhande
12/2/2016	SYIS	Maharashtra nature Park	EST	Ms. Priyanka Khilare Mr.Kiran Bhide

2014-15

Date	Class	Name of the Industry	Subject	Accompanying Staff
10/9/2014 12/9/2014	TYIS	Speedline Aerosol Ltd. ,Andheri(E)	PPT,PIN ,PCS CSY	Mrs. Sheetal Mhatre Ms. Selva Hepshibha Ms. Archana Gupte Mrs. Shivani Soni
10/9/2014	TYIS	B. N. Bandodkar Science college, Thane	AIN	Mrs. Sheetal Mhatre
10/10/2014	SYIS	Vital Electronics and Manufacturing co.(Vemco), Mahape	PPO,EE X,EDC	Mrs. Sheetal Mhatre Mrs. Shivani Soni
23/1/2015	TYIS	High speed Sattelite base VSAT network, Yeur ,Thane	EDP, PCS	Mrs. V. A. Joshi Ms. Deepti Mestry
2/2/2015	SYIS	Maharashtra Nature Park, Sion	EVT	Mrs. Sheetal Mhatre Mrs. Shivani Soni Ms. Selva Hepshibha Ms. Asmita Kadam
18/2/2015	TYIS	Medical Electronics Department	BMI	Ms. Deepti Mestry Ms. Ashwita Pawar
26/2/2015	SYIS	Computer Engineering Department	PCS	Mrs. Shivani Soni Ms. Selva Hepshibha Ms. Asmita Kadam Ms. Ashwita Pawar
28/2/2015	TYIS	V. E.S. Polytechnic, Chembur	PCS	Mrs. Shivani Soni Mrs. V. A. Joshi

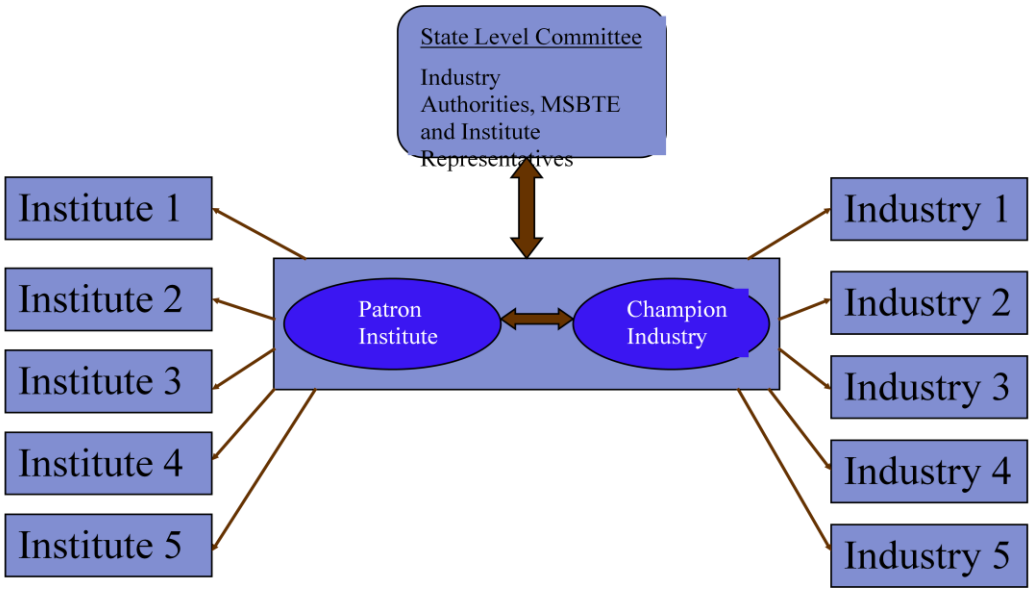
2013-14

Date	Class	Name of the Industry	Subject	Accompanying Staff
31/08/13	SYIS	S.S Natu Plasic & Metals Pvt Ltd	EEN	Mrs. Sheetal Mhatre Mrs. Mohini Jadhav
23/09/13	TYIS SYIS	Automation 2015 , Goregaon	PIN, PCS, IME,INA	Mrs. V.A. Joshi Mr. Sanjay Bhore
17/08/13	TYIS	Esses consulting Engineering	PPT,PIN, PCS	Mrs. V.A. Joshi Mr. Sanjay Bhore
18/1/14	TYIS	Coca Cola Beverages India Pvt. Ltd. Factory, Wada	IAU, PIN, PCS	Mrs. S.D. Khandagle Ms. Pooja Patil

5) Hub & Spoke Model

Under this scheme, launched by MSBTE, a champion Industry and Patron Institute (Hub) is identified and several Institutes and Industries are connected to it like spokes. Industrial visits, expert guest lectures are organized under this model, which would otherwise become difficult for an individual institute to organize.

L & T Institute of technology is identified as champion institute and L & T Ltd. industry as champion Institute



Topic	Name of L&T expert	Details	Date
Basics Of PLC	Mr. Sanat kumar Madake	Asst. Manager - Electronic Cell, Production Centre	10/7/ 2014
What Industry expects from an Engineer	Mr. Vipul Bhagat	Campus Connect Lead, L& T Powai	09/2/2016

6) Value added courses

No board or university curriculum can adequately cover all areas of importance or relevance. It is important for institutions to supplement the curriculum to make students better prepared to meet industry demands as well as develop their own interests and aptitudes. Our college offers a wide variety of short term certificate courses which are conducted after class hours or during semester breaks. These courses are conducted by professionals and industry experts and help students stand apart from the rest in the job market by adding further value to their resume. The topics are selected based on the inputs given by the alumni and industrialists.

Value Added Courses conducted by the Department

Date	Course	No. of participants	Conducted by
18/6/2015-30/7/2015 30 hours (Sat and Sun)	Aurdino	3	IE Department
27/11/14 - 2/12/2014	SAP	08	CO Department
10/12/2015 - 16/12/2015		03	CO Department
12/2/2015-14/2/2015	PLC and SCADA	38	IS Department
6/2/ 2016-7/2/2016	PLC Programming	62	IS Department
27/12/14 17/1/2015 31/1/2015 1/2/2015	Embedded systems and applications	6	Diegel Systems and IS Department

7) Industry Training for Staff

Every curriculum change incorporates addition of topics/ subjects related to latest technological developments. Sometimes the faculty may not be well versed with these contents. Hence, MSBTE takes the initiative of organizing industrial training programs for the faculty of polytechnic of all diploma programs. Depending on the content, the duration could be 2-3 days to 1 week. Nothing is charged from the faculty.

2015-16

Name of Staff	Organiser	Venue	Topic	Duration
Mrs. Sheetal Mhatre	St.Xavier Technical Institute , Mahim	Aplab Ltd, Thane	Electronic Equipments	13/08/2015-14/08/2015
Ms. Kanchan Shrikhande	St.Xavier Technical Institute , Mahim	Aplab Ltd, Thane	Electronic Equipments	13/08/2015-14/08/2015
Mrs. S. D. Khandagle	RCF Ltd, Chembur	RCF, Chembur	Instrumentation	7/9/2015-11/9/2015
Mrs. S. D. Khandagle	Education through ICT	IIT Bombay	Environmental Studies	2/6/2015-12/6/2015
Mrs. Sheetal Mhatre Mrs. S. D. Khandagle Mrs. V. A. Joshi	ATI, Chunabhatti	ATI, Chunabhatti	Gas Chromatography	18/11/2015-20/11/2015
Ms. Karishma Sanil	Joshi Bedekar college of Arts and Commerce	Joshi Bedekar college of Arts and Commerce	Indian Cinema	8/1/2016-9/1/2016
Ms. Selva Hepshiba	Shah and Anchor	Shah and Anchor	MATLAB	4/1/2016-8/1/2016
Ms. Kanchan Shrikhande	St.Xavier Technical Institute , Mahim	St.Xavier Technical Institute , Mahim	Control System	11/1/2016-15/1/2016
Mrs. Sheetal Mhatre	NITTTR	Somaiya Polytechnic, Vidyavihar	Induction Training Phase - I	16/5/2016-27/5/2016
Mrs. V. A. Joshi	NITTTR	NITTTR, Pune	'I' Scheme Draft	28/4/2016-29/4/2016
Mr. S. C. Bhore	St. Xavier Technical Institute , Mahim	Aplab Ltd, Thane	Operation and getting the best from Lab instruments	29/1/2016-30/1/2016

2014-15

Name of Staff	Organiser	Venue	Topic	Duration
Mrs. Sheetal Mhatre	RBTE, Pune	RBTE, Pune	sample paper development for G scheme	6/6/2014, 7/6/2014
Mrs. Sheetal Mhatre	MSBTE	Agnel Polytechnic, Navi Mumbai	CUTP on 'Simulation Software'	15/12/2014-19/12/ 2014
Mrs. V.A.Joshi Mhatre	RBTE, Pune	RBTE, Pune	sample paper development for G scheme	6/6/2014, 7/6/2014
Ms. Selva Hepshibha	MSBTE	L & T ,Powai	Industrial training	15/12/2014-19/12/ 2014
Mrs. V.A.Joshi	MSBTE	Thakur Polytechnic, Kandivali	CUTP on 'Simulation Software'	22/12/2014-27/12/2014
Mrs. S. D. Khandagale	MSBTE	MSBTE, Mumbai	sample paper development for g scheme, Subject: CHN	11/6/2014 - 13/6/2014
Mrs. S. D. Khandagale	MSBTE	RAIT, Nerul	Hands training on MATLAB and its applications	6/3/2015 to 8/03/2015
Mrs. S.D. Khandagale	MSBTE	Siemens, Kalwa	Training program on step 7 and SCADA	15th to 19th December 2014

2013-14

Name of Staff	Organiser	Venue	Topic	Duration
Ms Dipti Mestry	MSBTE	G.P.Mumbai, Bandra	Digital Signal Processing	02/08/13 to 03/08/13
Mr. Mayur Shringare	Industry Institute Partnership Cell, MSBTE	Relience , Dahanu	Thermal power plant	21/08/13 to 23/08/13
Mrs. Sheetal Mhatre	MSBTE	Shah and Anchor Kachchi Polytechnic, Chembur	Implementation G scheme (EEN)	24/06/2013
Mrs. Sheetal Mhatre	MSBTE	Shah and Anchor Kachchi Polytechnic, Chembur	Implementation G scheme (PDT)	27/06/2013

Mrs. Sheetal Mhatre	MSBTE	VPM's Polytechnic, Thane	Implementation G scheme (LIC)	27/12/2013
Mrs. Sheetal Mhatre	RBTE, Pune	RBTE, Pune	Teacher Guide and sample paper development for g scheme	9/12/2013-10/12/2013 19/12/2013-20/12/2013
Mrs. Shivani Pulse	MSBTE	Shah and Anchor Kachchi Polytechnic, Chembur	Implementation G scheme (EIM)	26/06/2013
Ms Dipti Mestry	MSBTE	Shah and Anchor Kachchi Polytechnic, Chembur	Implementation G scheme (EDC)	28/06/2013
Mrs.V.A.Joshi Mrs. Sheetal Mhatre, Mrs. S.D. Khandagale,	Digel Systems	VPM's Polytechnic, Thane	Embedded Systems	9/9/2013-13/9/2013

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

Following information access facilities are provided to the students by college

1. Department Library

Besides the institute library, the department has a well stocked library in the department. Students also have access to internet in the college library/department for information search related to assignments or project work.

Academic Year	No. of Books
2015-16	264
2014-15	196
2013-14	115

2. Book Bank

This book bank facility is available for all Students. Four to five books as per curriculum are issued to students for the whole semester and taken back after semester examination is over. Three toppers from each class as well as SC/ST category Students can avail this facility free of cost and rest of the students are charged a nominal amount Rs. 200/-.

3. Access to other Libraries in Campus

VPM”s Polytechnic Library make every effort to ensure the Library collection meets students’ and staff ‘s needs but if library doesn't hold the item Student need, the other libraries in campus may provide the solution using OPAC.

An online public access catalog (often abbreviated as OPAC or simply library catalog) is an online database of materials held by a library or group of libraries. Users search a library catalog principally to locate books and other material available at a library. OPAC is the gateway to library's collection.

4. Multimedia/flash/video

Multimedia contains many kinds of data (images, motion, sounds, text) in a complementary fashion so learning can be adjusted more easily than with other tools. With video, the students has more control over the information they receives and it provides additional opportunity for deeper learning by being able to stop, rewind, fast-forward, and replay content as many times as needed.

5. PPT

PPT can help teachers to get their points to be explain in better way and help students to learn more efficiently. PowerPoint has become very popular because it's easy to learn, widely available, Easy to understand the subject.

6. CD/DVD

CD/DVD contains large amount of data in the form of video, documents and audio . Students can take back up from computer and store it in DVD.

7. Transparencies

Transparency is a thin sheet of transparent flexible material onto which figures can be drawn. These are then placed on an overhead projector for display.

8. E-notes

E-notes are prepared by some faculty on some topics of the course assigned to them. E notes are sent to the students by emails. It helps students to complete assignments and study for exams besides saving time in the class room.

9. Spoken tutorial

It is MHRD project under IIT-B which helps the students to get certified in various programming subjects through tutorials and videos. Training on scilab, an open source software developed by IIT was conducted under this initiative.

10. Websites:

Many websites are suggested by MSBTE in Curriculum for better learning of the course. Websites includes educational video tutorials, instructional lectures, do-it yourself guides, self-help tutorials, interactive presentations, animated explanations and many more. It helps students to develop learning skills.

Facilities	Year/Sem	Subject	Beneficiaries	Remarks
Multimedia/ flash/ video	TY	PIN, PCS,MIC,ESY	All TY students	Videos and flash files are shown to the students
	SY	EEG	ALL SY students	Videos and flash files are shown to the students
PPT's	TY	MIC,AIN	All TY students	PPT's are shown to the students in class room while teaching
	SY	EEN, LIC	ALL SY Students	
	FY	EEX	ALL FY Students	

CD/DVD	TY	PIN, PCS	ALL TY students	Videos and flash files are shown to the students
Transparencies	TY	AIN,MIC,PIN,CHN	All TY Students	Display in the form of presentation
	SY	EEN,LIC,EDC,EIM,	ALL SY students	Diagrams are shown to the students
e-notes	TY	PIN, MIC, PCS	ALL TY students	e notes are emailed to the students by respective teacher.
	SY	EEN, PDT	ALL SY Students	
Spoken Tutorial	TY	SCILAB	ALL TY students	Students trained through virtual class room of IIT
Websites	FY,SY,TY	ALL SUBJECTS	All Students	Internet facility is made available to the students to refer websites

2.2.7. New Initiatives for embedding Professional Skills (15)

1. Stress Management

To cope up with the demanding schedule of the semester, students tend to get stressed which hampers their performance. Therefore, some activities are conducted during Professional practices course to minimize it and guest lectures are also conducted

2. Counseling

Students admitted in the polytechnic are of very vulnerable age and tend to get carried away very easily. Sometimes they are unable to cope up with the peer pressure and unable to handle emotional turmoil and therefore, their performance deteriorates. Therefore, a counselor is appointed by the institute to address these issues.

3. Group Discussions

As a part of their professional Practices course, final year students are involved in many activities for development of professional skills. Topics of group discussion are given in advance by the faculty related to current affairs so that students can come prepared for discussion. This activity helps them to develop leadership skills besides being abreast with the latest happenings in the country and in the world.

4. Debate

This activity develops the thinking ability of students, their communication skills as well as presentation skills. They learn how to present their views effectively

5. Aptitude test

In almost all the placements, an aptitude test is conducted prior to interview. A software is developed in house for conducting the test and and is well liked by the students

6. Information search

- Various activities are conducted throughout the year which motivates students to do extensive information search**.** A theme is selected every year and students are made to prepare posters on the subject in groups
- Assignments and projects (mini/Major)given to students also requires information search for which facilities are available in the department as well as Library

7. Presentation Competition

Second and third year students are encouraged to participate in paper/project presentation competitions organized by various polytechnics throughout the year. This helps them to interact with their peers from polytechnics of Maharashtra besides building the competitive spirit, presentation and communication skills.

8. Interview techniques

Guest lectures are conducted on the topic for the benefit of those all the students whether they wish to go for jobs immediately after diploma or after graduation. Useful tips and inputs are given by the experts in the field

9. Working in Team

A team helps in completing the task efficiently and quickly. A team understands the strength and weakness of each member and shares the workload accordingly. It promotes the sense of achievement, equity and synergy where the sum is greater than the parts.

- Guest lectures are conducted on the subject to understand the importance of teamwork
- Certain activities are conducted as a part of curriculum wherein the students are assigned jobs to be prepared in a group. They experience on the job need of good team work while executing the job.

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

1. Cultural

After the odd semester exams, students look forward to cultural activities as a welcome change from the routine. Various competitions like singing, dancing, traditional day, sketching, rangolis etc are conducted on under this spread over a week.

2. Sports

Sports is not only a great stress buster but also develops many qualities like team work, sportsman spirit etc. Many individual and group sports competitions are conducted for all the students.

3. Magazines

A college magazine-Innovision is published towards the end of the semester which explores the creative side of the students. Technical as well as non-technical articles, poems, essays are published in all the three languages- English, Hindi, Marathi. It also contains other useful information like names and photos of toppers, department results and other activities, winners of various competitions etc.

4. Paper presentation/Tech quiz/Project/Poster presentation

Paper/poster presentation, quiz competition etc. are conducted inter department as well as inter-college wise for the students as a part of Engineers' Day celebrations and as departmental activities

5. NCC

The science college in the campus has a NCC unit and few keen students are allowed to take part in NCC activities and are permitted to attend camps organized by them.

CRITERION 3	Course Outcomes and Program Outcomes	100

3.1 Establish the co relation between the courses and the POs and the PSOs

3.1.1 Course outcomes

I Semester English 17101

Sr. No.	Course Outcome Statements
C101.1	Apply grammatical rules to form correct sentence
C101.2	Develop vocabulary
C101.3	Comprehend text and answer the questions
C101.4	Enhance thinking and expression of idea
C101.5	Develop language skills
C101.6	Provide exposure to develop students LSRW skills

II Semester Applied Physics 17210

Sr. No.	Course Outcome Statements
C202.1	Illustrate laws and principles of electrical circuits
C202.2	Use various networks such as Wheatstone's bridge and potentiometer
C202.3	Comprehend semiconductor physics and working of P-N junction diode.
C202.4	Apply photoelectric effect for photo voltaic cell, solar cell
C202.5	Define and apply properties of LASER and X-rays for different applications
C202.6	Define properties of nano particles and applications of nano technology

III Semester Applied Mathematics 17301

Sr. No.	Course Outcome Statements
C301.1	Apply derivatives to find slope, maxima, minima and radius of curvature.
C301.2	Apply integral calculus to solve different engineering problems.
C301.3	Apply the concept of integration for finding area.
C301.4	Apply differential equation for solving problems in different engineering fields.
C301.5	Identify elementary aspects of probability theory.
C301.6	Apply probability theory to solve problems related to the production process.

IV Semester Industrial Measurements 17434

Sr. No.	Course Outcome Statements
C402.1	Recognize the nature and working of instrumentation system used in industrial & general applications.
C402.2	Classify physical parameters along with their measurement units
C402.3	Comprehend the measurement principles of different types of transducers
C402.4	Measure various physical parameters using transducers.
C402.5	Select transducer based on application.
C402.6	Connect different transducers with measuring systems.

V Semester Process Instrumentation 17540

Sr. No.	Course Outcome Statements
C505.1	Be acquainted with Instrumentation applied to small processes.
C505.2	Handle process equipments such as transmitter, convertor, DAS and recorder used for process applications
C505.3	Perform calibration of transmitter
C505.4	Prepare the layout of control panels & control rooms.
C505.5	Perform trouble-shooting, fault-finding and testing of different equipments in process industries
C505.6	Identify hazardous area locations.

VI Semester Process control system 17663

Sr. No.	Course Outcome Statements
C602.1	Identify various process control systems in industries
C602.2	Infer P & I diagram for different processes
C602.3	Demonstrate principle of operation of control valves , controllers and DCS system
C602.4	Differentiate between different advanced control schemes
C602.5	Be acquainted with different unit operations in industries
C602.6	Select appropriate controllers & control scheme for processes.

3.1.2 A. CO-PO Matrices of courses selected in 3.1.1 (5)

I Semester English 17101

CO \ PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
C101.1	1	2	1	1	1	2	1	3	3	2
C101.2	1	2	1	2	1	1	2	3	3	2
C101.3	1	2	2	2	1	1	2	3	3	2
C101.4	2	1	2	2	1	2	2	2	3	2
C101.5	1	1	2	2	2	1	2	3	3	2
C101.6	-	1	1	1	1	2	2	3	3	2
Total	6	9	9	10	7	9	11	17	18	12
Correlation level	**1**	**2**	**2**	**2**	**2**	**2**	**2**	**3**	**3**	**2**

II Semester Applied Physics 1721

CO \ PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
C202.1	3	2	3	2	1	1	-	3	-	2
C202.2	3	3	3	2	2	1	-	3	-	3
C202.3	3	3	3	3	1	1	1	3	2	3
C202.4	3	3	3	3	1	2	1	3	2	3
C202.5	3	3	3	3	2	2	2	3	2	3
C202.6	3	3	3	3	2	2	2	3	2	3
Total	18	17	18	16	9	9	6	18	8	17
Correlation level	**3**	**3**	**3**	**3**	**2**	**2**	**1**	**3**	**2**	**3**

II Semester Applied Mathematics 17301

CO / PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
C301.1	3	3	-	1	1	1	-	1	-	1
C301.2	3	3	2	1	1	1	-	1	-	1
C301.3	3	3	2	1	1	1	-	1	-	1
C301.4	3	3	-	1	-	-	-	1	-	1
C301.5	3	3	-	2	1	-	-	1	1	-
C301.6	3	3	-	2	1	-	-	1	1	-
Total	18	18	4	8	5	3	-	6	2	4
Correlation level	**3**	**3**	**1**	**2**	**1**	**1**	**-**	**1**	**1**	**1**

IV Semester Industrial Measurements 17434

CO / PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
C402.1	1	1	1	2	2	1	1	2	2	2
C402.2	2	2	-	-	-	-	-	2	1	2
C402.3	3	3	2	2	2	-	1	2	2	3
C402.4	3	3	3	2	2	1	2	3	2	2
C402.5	2	3	2	3	3	2	2	3	1	2
C402.6	3	3	3	3	3	2	3	3	2	2
Total	14	15	11	12	12	6	9	15	10	13
Correlation Level	**3**	**3**	**2**	**2**	**2**	**1**	**2**	**3**	**2**	**3**

V Semester Process Instrumentation 17540

CO / PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
C505.1	1	1	-	1	2	3	3	2	2	2
C505.2	1	2	3	2	2	2	1	2	2	2
C505.3	3	3	2	1	2	-	1	2	2	2
C505.4	2	2	2	2	2	2	2	1	2	1
C505.5	3	3	3	2	2	2	3	2	2	1
C505.6	2	1	2	2	3	3	3	2	1	1
Total	12	13	12	10	13	12	13	11	11	9
Correlation levels	**2**	**3**	**2**	**2**	**3**	**2**	**3**	**2**	**2**	**2**

VI Semester Process control system 17663

CO / PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
C602.1	1	1	1	1	2	2	2	3	2	3
C602.2	1	1	-	1	3	1	2	3	3	3
C602.3	2	2	2	1	2	1	1	3	2	3
C602.4	2	2	2	3	2	3	2	3	3	3
C602.5	1	2	1	1	3	3	3	3	2	3
C602.6	-	1	2	3	2	3	2	3	3	3
Total	7	9	8	10	14	13	12	18	15	18
Correlation levels	**2**	**2**	**2**	**2**	**3**	**3**	**2**	**3**	**3**	**3**

3.1.2 B. CO-PSO Matrices of courses

I Semester English 17101

CO \ PO	PSO1	PSO2	PSO3	PSO4	PSO5
C101.1	1	1	1	1	2
C101.2	1	1	1	1	2
C101.3	1	1	1	1	2
C101.4	1	1	1	1	2
C101.5	1	1	1	1	2
C101.6	1	1	1	1	2
Total	6	6	6	6	12
Correlation level	**1**	**1**	**1**	**1**	**2**

II Semester Applied Physics 1

CO \ PO	PSO1	PSO2	PSO3	PSO4	PSO5
C202.1	2	1	2	1	1
C202.2	1	1	1	1	1
C202.3	3	1	3	1	1
C202.4	3	1	3	2	2
C202.5	2	1	2	1	1
C202.6	2	1	1	1	1
Total	13	6	12	7	7
Correlation level	**3**	**1**	**2**	**2**	**2**

III Semester Applied Mathematics 17301

CO \ PO	PSO1	PSO2	PSO3	PSO4	PSO5
C301.1	2	3	1	2	-
C301.2	-	2	1	1	-
C301.3	-	2	1	-	1
C301.4	-	1	2	-	1
C301.5	-	-	-	1	-
C301.6	-	-	-	1	1
Total	2	8	5	5	3
Correction level	**1**	**2**	**1**	**1**	**1**

IV Semester Industrial Measurements 17434

CO \ PO	PSO1	PSO2	PSO3	PSO4	PSO5
C402.1	2	2	1	1	2
C402.2	3	3	-	-	2
C402.3	3	3	1	1	2
C402.4	3	3	2	1	2
C402.5	3	3	2	1	1
C402.6	3	3	3	2	3
Total	17	17	9	6	12
Correlation Level	**3**	**3**	**2**	**1**	**2**

V Semester Process Instrumentation 17540

CO \ PO	PSO1	PSO2	PSO3	PSO4	PSO5
C505.1	2	3	2	2	2
C505.2	2	3	1	2	2
C505.3	3	3	1	1	2
C505.4	2	2	2	1	2
C505.5	1	2	1	1	2
C505.6	2	2	1	1	2
Total	12	15	8	8	12
Correlation levels	**2**	**3**	**2**	**2**	**2**

VI Semester Process control system 17663

CO \ PO	PSO1	PSO2	PSO3	PSO4	PSO5
C602.1	2	2	1	2	3
C602.2	1	1	2	2	3
C602.3	1	2	2	3	3
C602.4	2	2	2	3	3
C602.5	2	2	3	2	3
C602.6	3	2	2	2	3
Total	11	11	12	14	18
Correlation levels	**2**	**2**	**2**	**3**	**3**

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

Course-PO Matix of all courses(Target Levels)											
Course	**Course-Code**	**PO 1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO 7**	**PO 8**	**PO 9**	**PO 10**
C101	**ENG(17101)**	1	2	2	2	2	2	2	3	3	2
C102	**EPH(17102)**	3	2	0	2	2	2	2	2	2	2
C103	**ECH(17103)**	3	2	2	2	1	1	1	1	1	2
C104	**BMS(17104)**	2	2	1	1	-	-	-	1		2
C105	**EGG(17001)**	1	1	1	1	-	-	-	-	-	1
C106	**CMF(17002)**	3	2	3	2	1	1	1	2	2	3
C107	**WPX(17005)**	2	2	3	2	1	1	1	1	1	2
C201	**CMS(17201)**	1	1	1	3	2	1	2	3	3	3
C202	**APH(17210)**	3	3	3	3	2	2	1	3	2	3
C203	**ACH(17211)**	3	3	3	2	2	3	2	3	1	3
C204	**EEX(17215)**	3	3	3	3	3	3	2	2	1	2
C205	**EMS(17216)**	3	3	3	1	-	-	-	2	-	-
C206	**DLS(17010)**	3	2	2	3	2	2	3	2	2	2
C207	**EEN(17014)**	2	2	3	2	2	2	2	2	3	3
C301	**AMT(17301)**	3	3	1	2	1	1	-	-	1	1
C302	**EIM-(17317)**	3	2	3	3	1	1	2	1	1	2
C303	**EEN(17318)**	2	2	3	3	1	2	1	2	1	3
C304	**EDC(17319)**	3	3	3	3	2	2	1	2	2	2
C305	**PDT(17310)**	2	2	3	3	1	1	1	2	2	3
C306	**PIC(17020)**	1	1	1	1	1	1	1	1	1	2
C307	**PPO(17021)**	3	3	2	1	3	3	2	3	3	3

Course	Course-Code	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10
C401	**EVS(17401)**	3	3	2	3	3	3	3	3	2	3
C402	**IME(17434)**	3	3	2	2	2	1	2	3	2	3
C403	**PEL(17444)**	3	3	3	3	3	2	2	2	2	2
C404	**LIC(17445)**	2	3	3	3	2	1	1	2	2	3
C405	**PCS(17472)**	2	3	2	3	3	3	2	3	2	2
C406	**VBA(17043)**	1	1	1	1	1	1	1	1	1	1
C407	**PPT(17044)**	1	1	1	1	1	2	2	2	3	2
C501	**CHN(17533)**	2	2	2	3	3	2	3	2	3	3
C502	**MIC(17534)**	2	3	2	3	2	2	2	3	2	3
C503	**CSY(17538)**	2	3	2	3	2	2	2	3	2	3
C504	**AIN(17539)**	3	3	3	3	3	3	2	2	2	3
C505	**PIN(17540)**	2	3	2	2	3	2	3	2	2	2
C506	**BSC(17075)**	1	1	1	2	3	2	3	3	3	3
C507	**EDP(17066)**	2	2	2	3	2	3	3	3	3	3
C508	**PPT(17068)**	3	3	2	2	3	2	2	3	3	3
C601	**MAN(17601)**	1	1	1	2	3	2	2	2	3	3
C602	**PCS(17663)**	2	2	2	2	3	3	2	3	3	3
C603	**INA(17664)**	2	3	3	3	2	2	2	3	3	3
C604	**ESY(17664)**	2	2	2	3	3	2	3	3	3	3
C605	**BIN(17665)**	3	3	3	3	3	3	3	2	3	3
C606	**SSO(17807)**	2	2	3	2	2	1	2	2	2	3
C607	**IPR(17808)**	3	3	3	3	3	2	3	3	3	3
Average		2.26	2.26	2.26	2.26	2.26	2.26	2.26	2.26	2.26	2.26
Attainment Level		4	4	4	4	4	3	3	4	4	5

3.1.3. Program level Course-PSO matrix of all courses INCLUDING first year courses

Course-PSO Matix of all courses(Target Levels)						
Course	**Course-Code**	**PSO1**	**PSO2**	**PSO3**	**PSO4**	**PSO5**
C101	**ENG(17101)**	1	1	1	1	2
C102	**EPH(17102)**	2	2	1	2	3
C103	**ECH(17103)**	3	2	2	2	3
C104	**BMS(17104)**	3	3	2	1	3
C105	**EGG(17001)**	1	1	1	1	2
C106	**CMF(17002)**	2	3	3	3	3
C107	**WPX(17005)**	1	3	1	1	3
C201	**CMS(17201)**	3	2	2	3	2
C202	**APH(17210)**	3	1	2	2	2
C203	**ACH(17211)**	2	1	3	1	1
C204	**EEX(17215)**	3	3	2	1	3
C205	**EMS(17216)**	3	2	2	1	1
C206	**DLS(17010)**	2	2	3	3	1
C207	**EEN(17014)**	2	2	3	3	3
C301	**AMT(17301)**	1	2	1	1	1
C302	**EIM-(17317)**	3	3	2	2	3
C303	**EEN(17318)**	2	2	1	1	3
C304	**EDC(17319)**	3	3	2	2	3
C305	**PDT(17310)**	2	3	3	3	3
C306	**PIC(17020)**	1	1	2	2	3
C307	**PPO(17021)**	2	2	2	1	3

Course	Course-Code	PSO1	PSO2	PSO3	PSO4	PSO5
C401	**EVS(17401)**	1	-	-	-	1
C402	**IME(17434)**	3	3	2	1	2
C403	**PEL(17444)**	2	3	2	2	3
C404	**LIC(17445)**	2	3	3	2	3
C405	**PCS(17472)**	3	3	3	2	3
C406	**VBA(17043)**	2	1	1	1	2
C407	**PPT(17044)**	1	-	-	-	2
C501	**CHN(17533)**	1	2	2	1	2
C502	**MIC(17534)**	1	3	2	2	3
C503	**CSY(17538)**	2	3	2	1	2
C504	**AIN(17539)**	3	3	2	1	2
C505	**PIN(17540)**	2	3	2	2	2
C506	**BSC(17075)**	1	-	-	-	2
C507	**EDP(17066)**	1	-	-	-	2
C508	**PP3(17068)**	1	-	-	-	2
C601	**MAN(17601)**	1	1	1	1	1
C602	**PCS(17663)**	2	2	2	3	3
C603	**INA(17664)**	1	2	2	3	3
C604	**ESY(17664)**	1	1	3	2	3
C605	**BIN(17665)**	2	2	2	1	3
C606	**SS0(17807)**	1	1	1	2	2
C607	**IPR(17808)**	3	3	3	3	3
Average		2.26	2.26	2.26	2.26	2.26
Attainment Level		3	4	4	3	4

3.2. Attainment of Course Outcomes (40)

3.2.1 Describe the attainment processes used to gather the data upon which the evaluation of course outcome is based. (10)

The following processes have been undertaken to assess whether the course outcomes have been achieved.

Class tests: Two class tests are conducted in each semester a sprescribed by the MSBTE academic calendar

The teacher guide document provided by MSBTE, suggests the topics to be covered lecture wise and the portions to be completed before each test.

Sample question papers suggesting weight-age of curriculum to be included in the question paper is made available in the teacher guide document. Question papers are set accordingly.

After assessing the test papers in both the tests, course outcome is assessed by determining the number of students who have achieved "Pass" marks in the said subject. Accordingly, attainment of course outcome is assessed.

MSBTE Examinations:

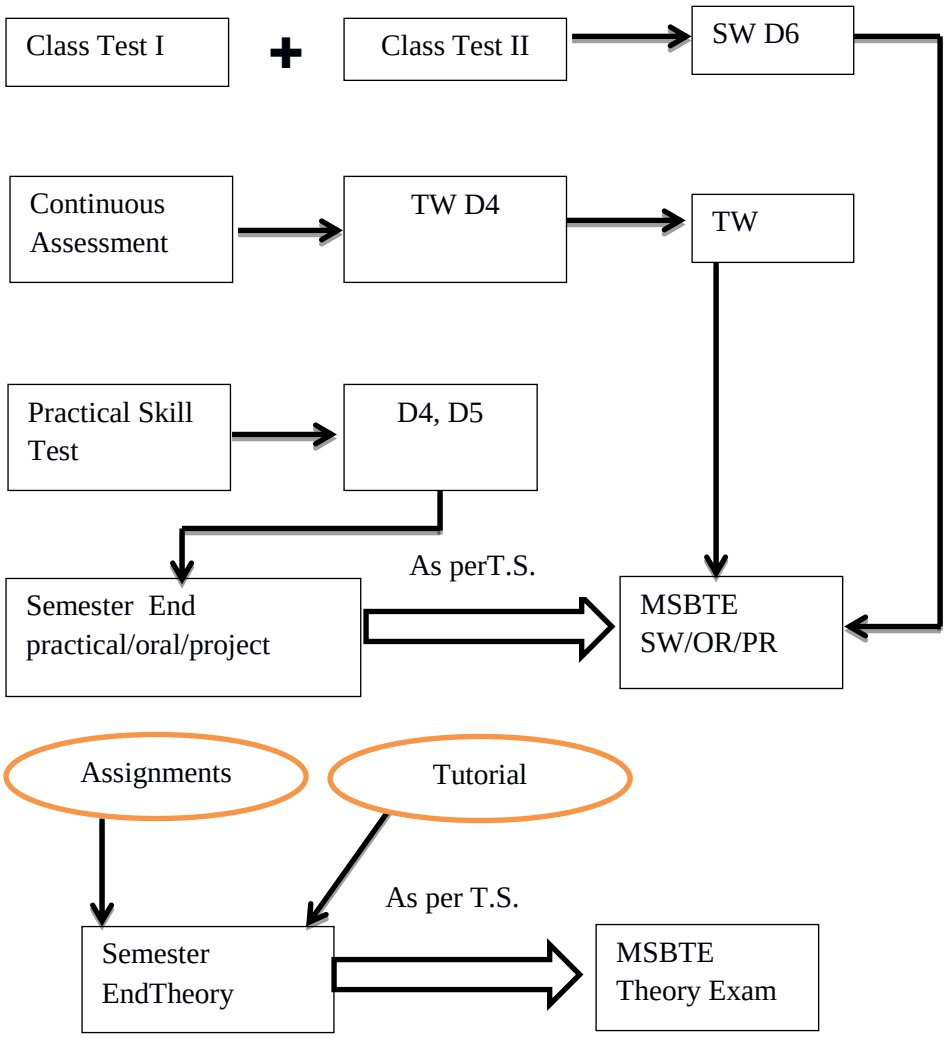
In the Teaching Examination scheme of MSBTE, the subjects have 3 components namely Theory exams, Practical/ oral exams, and Term work.

The marks obtained in all the 3 components are added and the attainment level of course outcome is determined by assessing the number of students who have achieved "Pass" marks.

The question paper in board examinations are set according to the specification table which gives the weight-age of the topic and the level of questions that should be asked in that topic as per Bloom's Taxonomy (Revised). Also a question paper profile is provided which specifies the marks, level and the topic from which the questions are to be set. These aspects of the question paper address to the course outcome and determine whether attainment levels are achieved.

Besides these processes, Mini projects are allotted to the students and they are indicative of the assessment of course outcome.

MCQs are given to the students after performance of each experiment to evaluate the learning which is indicative of the course outcome. These answers are recorded and based on the number of questions the student has responded correctly continuous assessment marks are given.



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

Sem-I						
COURSE	**Course-Code**	**No. of Students**	**Set Standard**	**No.of students having standard set level**	**% of students having greater than std.set level**	**Attainment Level**
C101	ENG	34	50	30	89	5
C102	EPH	34	60	21	62	3
C102	ECH	34	60	21	62	3
C103	BMS	34	40	13	39	1
C104	EGG	34	40	34	100	5
C105	CMF	34	30	34	100	5
C106	WPX	34	20	34	100	5
Sem II						
C201	CMS	34	60	29	86	5
C202	APH	34	60	23	68	3
C203	ACH	34	60	23	68	3
C204	EEX	34	70	24	71	4
C205	EMS	34	40	10	30	1
C206	DLS	34	10	33	98	5
C207	EEW	34	20	33	98	5
Sem-III						
C301	AMS	47	40	22	47	1
C302	EIM	47	60	40	86	5
C303	EEN	47	50	31	66	3
C304	EDC	47	60	39	83	5
C305	PDT	47	60	40	86	5
C306	PIC	47	10	46	98	5
C307	PPO	47	20	46	98	5

Sem IV						
COURSE	**Course-Code**	**No. of Students**	**Set Standard**	**No. of students having standard set level**	**% of students having greater than std. set level**	**Attainment Level**
C401	EST	46	30	45	98	5
C402	IME	46	50	40	87	5
C403	PEL	46	60	40	87	5
C404	LIC	46	70	38	83	5
C405	PCS	46	60	42	92	5
C406	VBA	46	10	46	100	5
C407	PPT	46	20	46	100	5
Sem V						
C501	CHN	62	30	62	100	5
C502	MIC	62	70	60	97	5
C503	CSY	62	70	62	100	5
C504	AIN	62	50	59	96	5
C505	PIN	62	70	62	100	5
C506	BSC	62	10	62	100	5
C507	EDP	62	10	62	100	5
C508	PPT	62	50	62	100	5
Sem VI						
C601	MAN	62	20	58	94	5
C602	PCS	62	50	62	100	5
C603	IAU	62	60	62	100	5
C604	ESY	62	70	62	100	5
C605	BIN	62	50	62	100	5
C606	SSO	62	40	62	100	5
C607	IPR	62	40	62	100	5

CO attainment through internal assessment Academic year:2015-2016						
Sem-I						
COURSE	**Course-Code**	**No,of Students**	**Set Standard**	**No.of students having standard set level**	**% of students having greater than std.set level**	**Attainment Level**
C101	ENG	34	20	19	56	2
C102	EPH/ECH	34	20	13	39	1
C103	BMS	34	20	9	27	1
Sem II						
C201	CMS	34	20	13	39	1
C202	APH/ACH	34	20	18	53	2
C203	EEX	34	20	13	39	1
C204	EMS	34	20	15	45	1
Sem-III						
C301	AMS	47	20	27	58	2
C302	EIM	47	20	32	69	3
C303	EEN	47	20	38	81	5
C304	EDC	47	20	39	83	5
C305	PDT	47	20	37	79	4
Sem IV						
C401	EST	46	20	41	90	5
C402	IME	46	20	42	92	5
C403	PEL	46	20	34	74	4
C404	LIC	46	20	34	74	4
C405	PCS	46	20	35	77	4
Sem V						
C501	CHN	62	20	52	84	5
C502	MIC	62	20	43	70	3
C503	CSY	62	20	55	89	5
C504	AIN	62	20	47	76	4
C505	PIN	62	20	46	75	4
Sem VI						
C601	MAN	62	20	57	92	5
C602	PCS	62	20	44	71	4
C603	IAU	62	20	59	96	5
C604	ESY	62	20	54	88	5
C605	BIN	62	20	50	81	5

3.2.2- Analysis

Academic year:2015-2016

Course	Course-Code	No.of Students	Attainment Level of class test	20% of Attainment level	Attainment Level of board exam	80% of Attainment Level	Attainment Level
Sem-I							
C101	ENG	34	2	0.4	5	4	4.4
C102	EPH	34	1	0.2	3	2.4	2.6
C102	ECH	34	1	0.2	3	2.4	2.6
C103	BMS	34	1	0.2	3	2.4	2.6
C104	EGG	34	5	1	5	4	5
C105	CMF	34	5	1	5	4	5
C106	WPX	34	5	1	5	4	5
Sem II							
C201	CMS	34	1	0.2	5	4	4.2
C202	APH	34	2	0.4	3	2.4	2.8
C203	ACH	34	1	0.2	3	2.4	2.6
C204	EEX	34	1	0.2	4	3.2	3.4
C205	EMS	34	5	1	1	0.8	1.8
C206	DLS	34	5	1	5	4	5
C207	EEW	34	5	1	5	4	5
Sem-III							
C301	AMS	47	2	0.4	1	0.8	1.2
C302	EIM	47	3	0.6	5	4	4.6
C303	EEN	47	5	1	3	2.4	3.4
C304	EDC	47	5	1	5	4	5
C305	PDT	47	4	0.8	5	4	4.8
C306	PIC	47	5	1	5	4	5
C307	PPO	47	5	1	5	4	5

Sem IV							
Course	**Course-Code**	**No.of Students**	**Attainment Level of class test**	**20% of Attainment level**	**Attainment Level of board exam**	**80% of Attainment Level**	**Attainment Level**
C401	EST	46	5	1	5	4	5
C402	IME	46	5	1	5	4	5
C403	PEL	46	4	0.8	5	4	4.8
C404	LIC	46	4	0.8	5	4	4.8
C405	PCS	46	4	0.8	5	4	4.8
C406	VBA	46	5	1	5	4	5
C407	PPT	46	5	1	5	4	5
Sem V							
C501	CHN	62	5	1	5	4	5
C502	MIC	62	3	0.6	5	4	4.6
C503	CSY	62	5	1	5	4	5
C504	AIN	62	4	0.8	5	4	4.8
C505	PIN	62	4	0.8	5	4	4.8
C506	BSC	62	5	1	5	4	5
C507	EDP	62	5	1	5	4	5
C508	PPT	62	5	1	5	4	5
Sem VI							
C601	MAN	62	5	1	5	4	5
C602	PCS	62	4	0.8	5	4	4.8
C603	IAU	62	5	1	5	4	5
C604	ESY	62	5	1	5	4	5
C605	BIN	62	5	1	5	4	5
C606	SSO	62	5	1	5	4	5
C607	IPR	62	5	1	5	4	5

Attainment Level Evaluation Criteria

To measure course outcome attained through board examination and class tests (internal evaluation) , set standard is kept at 40% of total marks of a particular course. Attainment levels are decided by the percentage of students getting more marks than the set standard.

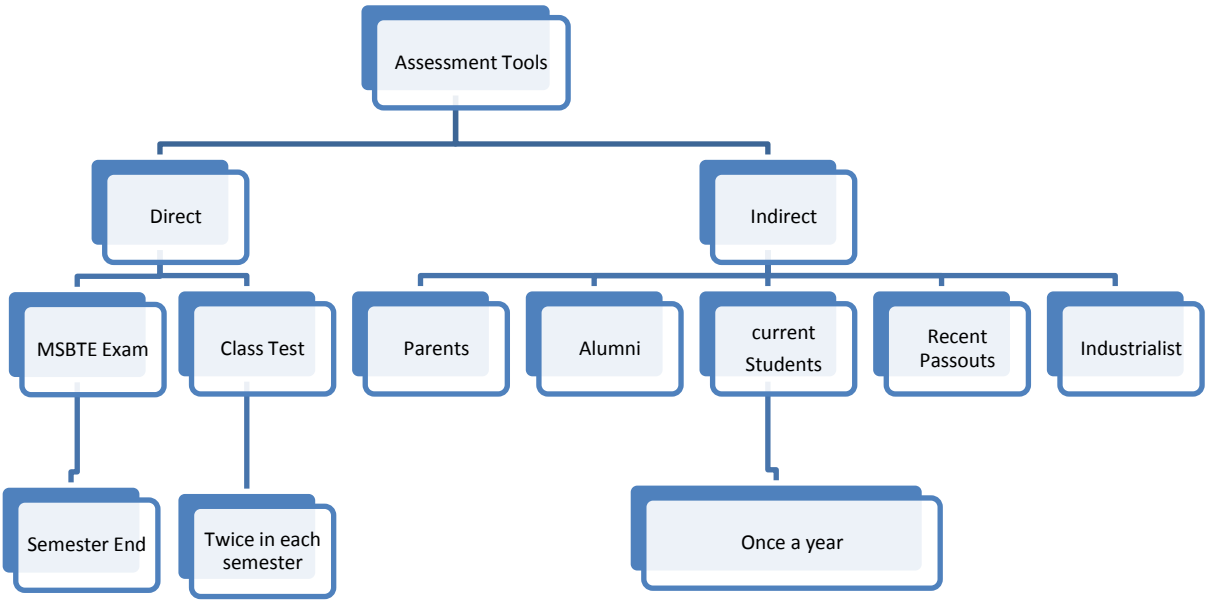
Attainment Level	Attainment Value Range
5	More than 80% students achieving the set standard
4	71% to 80% students achieving the set standard
3	61% to 70% students achieving the set standard
2	51% to 60% students achieving the set standard
1	Less than 50% students achieving the set standard

For academic year 2015-16, set standard was raised to 50%

3.3 Attainment of Program outcomes and Program Specific out comes(40)

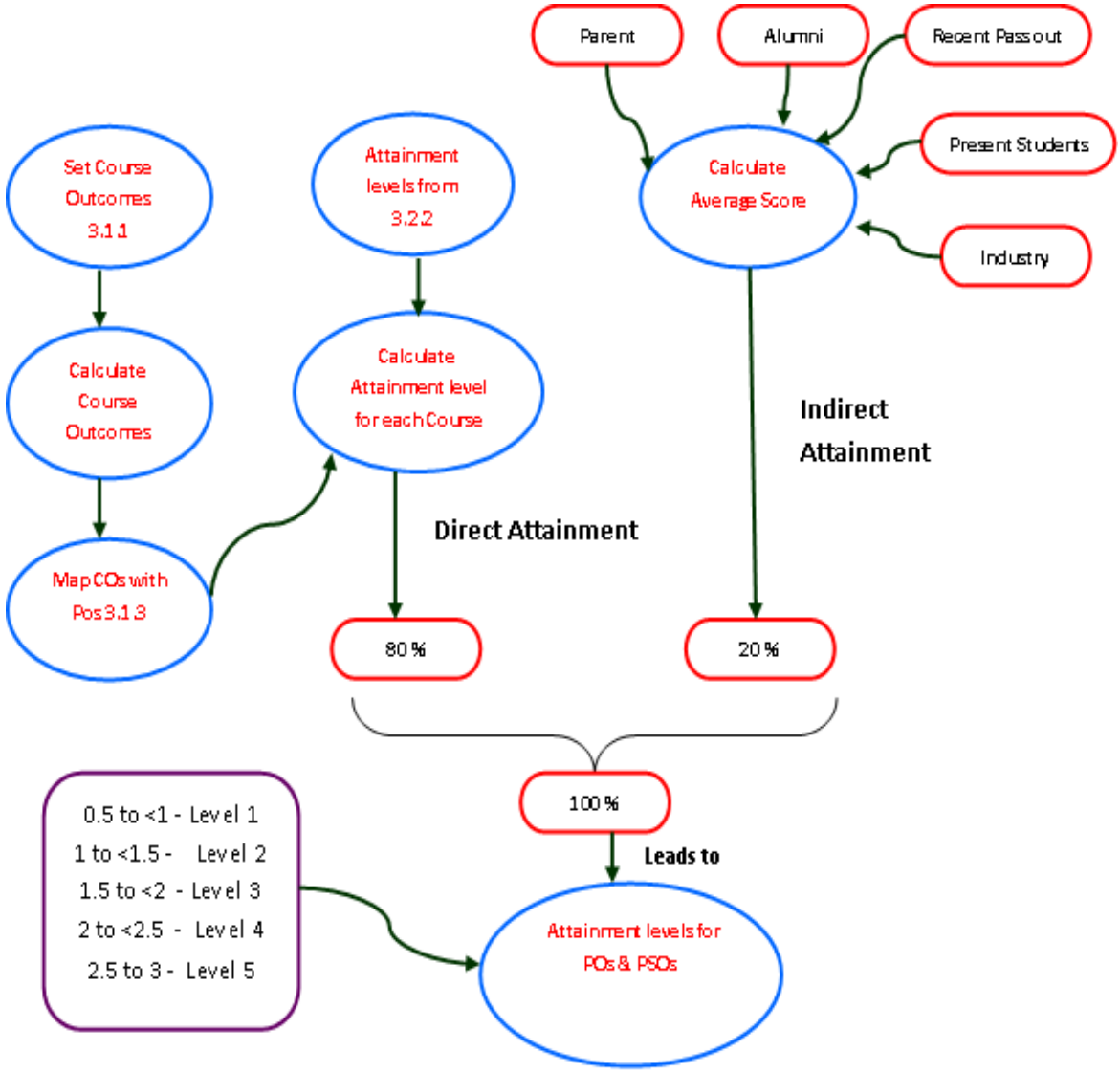
3.3.1. Describe assessment tools and processes used for assessing the attainment of each POs and PSOs as mentioned in Annexure 1 (10)

Assessment Tools:



- Assessment Tools are broadly classified as Direct Assessment Tools and Indirect Assessment Tools.
- The Direct Assessment Tools include MSBTE Examination and Progressive Tests. The MSBTE Examinations include three components Theory, Practical/Oral and Term work.
- A Continuous Assessment as per CIAAN norms of MSBTE includes MCQs, Seminars, and Industrial Visits as part of the Term Work component. A Progressive Skill Test to assess the hands-on skill is included in the Practical/Oral Component. Also, the Project work showing integration of Course Outcomes is assessed in the final semester. MSBTE exams are conducted at the end of the semester.

- Two Progressive tests are conducted, one in the middle of term and other in end term. The questions are set according to the Course Outcomes. Assignments based on Course Outcomes are given, which helps the students to improve their performance in the tests. These test marks of all the subjects contribute for the "Sessional" component of MSBTE exam.
    - Indirect Assessment tools include feedback from various stakeholders like Present Students, Alumni, Parents, Recent Pass Outs, and Employers. This feedback is taken once in a year.



- The curriculum document of MSBTE is prepared taking the industry needs into consideration.
- An Industry survey is conducted on a state level and subject experts are invited to prepare the content detailing of Theory and Laboratory work.
- The implementation strategy of Curriculum includes the incorporation of education Philosophy (Blooms Revised Taxonomy) and a training given to the faculty across the state of Maharashtra.
- The subject teacher identifies 5-6 course outcomes as given in Table 3.1.1 in the SAR.
- Course Outcomes are then mapped with the Program Outcomes & Program Specific Outcomes. Correlation levels are entered and the overall Course Outcome is calculated.
- All the Outcomes of various Courses are mapped with the POs and PSOs & correlation levels are entered in CO-PO/ CO-PSO Matrix.
- The Course Outcomes are measured through MSBTE Board Examinations by setting standards and calculating the number of students scoring above the set standard. The Course Outcomes are also measured through Progressive Tests. These are considered as Direct Attainment.
- 80% of the direct attainment levels are calculated.
- For Indirect Attainment, the average scores of the feedback taken from various stakeholders is taken.
- 20% of the score is considered for calculation of Attainment Levels.
- The Direct & Indirect attainment levels of POs & PSOs are added and attainment levels are calculated.

Course wise attainment for 3 years

Net attainment level of each course is calculated as

Net Attainment level = (80% of MSBTE exam attainment + 20% of internal attainment levels.

Sr. No	Course	Course code	Net attainment 2015-16	Net attainment 2014-15	Net attainment 2013-14
1	ENG	C101	4.4	4.4	4.6
2	EPH	C102	2.6	2.6	2.6
3	ECH	C102	2.6	1	1.8
4	BMS	C103	2.6	1	2.2
5	EGG	C104	5	5	5
6	CMF	C105	5	5	5
7	WPX	C106	5	5	5
8	CMS	C201	4.2	4.4	4.4
9	APH	C202	2.8	2.6	4.4
10	ACH	C203	2.6	1	4.4
11	EEX	C204	3.4	1.8	1
12	EMS	C205	1.8	2.2	1.4
13	DLS	C206	5	5	5
14	EEW	C207	5	5	5
15	AMS	C301	1.2	1.4	1
16	EIM	C302	4.6	2.6	3.4
17	EEN	C303	3.4	2.8	3
18	EDC	C304	5	3.8	3.2
19	PDT	C305	4.8	2.4	3.6
20	PIC	C306	5	5	5
21	PPO	C307	5	5	5
22	EST	C401	5	4.8	1.8
23	IME	C402	5	4	4.8
24	PEL	C403	4.8	3.6	4.8
25	LIC	C404	4.8	3.8	5

Sr. No	Course	Course code	Net attainment 2015-16	Net attainment 2014-15	Net attainment 2013-14
26	PCS	C405	4.8	2	4.6
27	VBA	C406	5	5	5
28	PPT	C407	5	5	5
29	CHN	C501	5	5	**Last year of E scheme**
30	MIC	C502	4.6	5	
31	CSY	C503	5	5	
32	AIN	C504	4.8	5	
33	PIN	C505	4.8	5	
34	BSC	C506	5	5	
35	EDP	C507	5	5	
36	PPT	C508	5	5	
37	MAN	C601	5	4.8	
38	PCS	C602	4.8	4.4	
39	IAU	C603	5	4.2	
40	ESY	C604	5	4.2	
41	BIN	C605	5	4.2	
42	SSO	C606	5	5	
43	IPR	C607	5	5	

3.3.2. Provide results of evaluation of each PO & PSO (30)

PO Attainment (2015-16)

Course	Course-Code	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
C101	ENG(17101)	0.36	0.72	0.72	0.72	0.72	0.72	0.72	1.08	1.08	0.72
C102	EPH(17102)	0.6	0.4	-	0.4	0.4	0.4	0.4	0.4	0.4	0.4
C103	ECH(17103)	0.6	0.4	0.4	0.4	0.2	0.2	0.2	0.2	0.2	0.4
C104	BMS(17104)	0.4	0.4	0.2	0.2	-	-	-	0.2	-	0.4
C105	EGG(17001)	1	1	1	1	-	-	-	-	-	1
C106	CMF(17002)	3	2	3	2	1	1	1	2	2	3
C107	WPX(17005)	2	2	3	2	1	1	1	1	1	2
C201	CMS(17201)	0.84	0.84	0.84	2.52	1.68	0.84	1.68	2.52	2.52	2.52
C202	APH(17210)	1.56	1.56	1.56	1.56	1.04	1.04	0.52	1.56	1.04	1.56
C203	ACH(17211)	1.56	1.56	1.56	1.04	1.04	1.56	1.04	1.56	0.52	1.56
C204	EEX(17215)	2.04	2.04	2.04	2.04	2.04	2.04	1.36	1.36	0.68	1.36
C205	EMS(17216)	0.6	0.6	0.6	0.2	-	-	-	0.4	-	0.4
C206	DLS(17010)	3	2	2	3	2	2	3	2	2	2
C207	EEN(17014)	2	2	3	2	2	2	2	2	3	3
C301	AMT(17301)	0.6	0.6	0.2	0.4	0.2	0.2	-	0.2	0.2	0.2
C302	EIM-(17317)	2.04	1.36	2.04	2.04	0.68	0.68	1.36	0.68	0.68	1.36
C303	EEN(17318)	1.04	1.04	1.56	1.56	0.52	1.04	0.52	1.04	0.52	1.56
C304	EDC(17319)	2.04	2.04	2.04	2.04	1.36	1.36	0.68	1.36	1.36	1.36
C305	PDT(17310)	1.04	1.04	1.56	1.56	0.52	0.52	0.52	1.04	1.04	1.56
C306	PIC(17020)	1	1	1	1	1	1	1	1	1	2
C307	PPO(17021)	3	3	2	1	3	3	2	3	3	3
C401	EVS(17401)	2.52	2.52	1.68	2.52	2.52	2.52	2.52	2.52	1.68	2.52
C402	IME(17434)	2.04	2.04	1.36	1.36	1.36	0.68	1.36	2.04	1.36	2.04
C403	PEL(17444)	2.04	2.04	2.04	2.04	2.04	1.36	1.36	1.36	1.36	1.36

C404	**LIC(17445)**	1.04	1.56	1.56	1.56	1.04	0.52	0.52	1.04	1.04	1.56
C405	**PCS(17472)**	1.36	2.04	1.36	2.04	2.04	2.04	1.36	2.04	1.36	1.36
C406	**VBA(17043)**	1	1	1	1	1	1	1	1	1	1
C407	**PPT(17044)**	1	1	1	1	1	2	2	2	3	2
C501	**CHN(17533)**	1.84	1.84	1.84	2.76	2.76	1.84	2.76	1.84	2.76	2.76
C502	**MIC(17534)**	1.84	2.76	1.84	2.76	1.84	1.84	1.84	2.76	1.84	2.76
C503	**CSY(17538)**	1.84	2.76	1.84	2.76	1.84	1.84	1.84	2.76	1.84	2.76
C504	**AIN(17539)**	2.76	2.76	2.76	2.76	2.76	2.76	1.84	1.84	1.84	2.76
C505	**PIN(17540)**	1.76	2.64	1.76	1.76	2.64	1.76	2.64	1.76	1.76	1.76
C506	**BSC(17075)**	1	1	1	2	3	2	3	3	3	3
C507	**EDP(17066)**	2	2	2	3	2	3	3	3	3	3
C508	**PPT(17068)**	3	3	2	2	3	2	2	3	3	3
C601	**MAN(17601)**	0.6	0.6	0.6	1.2	1.8	1.2	1.2	1.2	1.8	1.8
C602	**PCS(17663)**	1.84	1.84	1.84	1.84	2.76	2.76	1.84	2.76	2.76	2.76
C603	**INA(17664)**	1.84	2.76	2.76	2.76	1.84	1.84	1.84	2.76	2.76	2.76
C604	**ESY(17664)**	1.84	1.84	1.84	2.76	2.76	1.84	2.76	2.76	2.76	2.76
C605	**BIN(17665)**	2.76	2.76	2.76	2.76	2.76	2.76	2.76	1.84	2.76	2.76
C606	**SSO(17807)**	2	2	3	2	2	1	2	2	2	3
C607	**IPR(17808)**	3	3	3	3	3	2	3	3	3	3
Average		**1.66**	**1.71**	**1.69**	**1.77**	**1.70**	**1.53**	**1.63**	**1.74**	**1.75**	**1.95**
80% of Direct Attainment		**1.33**	**1.36**	**1.36**	**1.42**	**1.36**	**1.22**	**1.30**	**1.39**	**1.40**	**1.56**
20% Indirect Attainment		**0.6**	**0.6**	**0.6**	**0.6**	**0.6**	**0.6**	**0.6**	**0.6**	**0.6**	**0.6**
Total Attainment		**1.93**	**1.96**	**1.96**	**2.02**	**1.96**	**1.82**	**1.90**	**1.99**	**2.00**	**2.16**
Final attainment level		**3**	**3**	**3**	**4**	**3**	**3**	**3**	**3**	**3**	**4**

PSO Attainment (2015-16)

Course	Course-Code	PSO1	PSO2	PSO3	PSO4	PSO5
C101	**ENG(17101)**	0.36	0.36	0.36	0.36	0.72
C102	**EPH(17102)**	0.4	0.4	0.2	0.4	0.6
C103	**ECH(17103)**	0.6	0.4	0.4	0.4	0.6
C104	**BMS(17104)**	0.6	0.6	0.4	0.2	0.6
C105	**EGG(17001)**	1	1	1	1	2
C106	**CMF(17002)**	2	3	3	3	3
C107	**WPX(17005)**	1	3	1	1	3
C201	**CMS(17201)**	2.52	1.68	1.68	2.52	1.68
C202	**APH(17210)**	1.56	0.52	1.04	1.04	1.04
C203	**ACH(17211)**	1.04	0.52	1.56	0.52	0.52
C204	**EEX(17215)**	2.04	2.04	1.36	0.68	2.04
C205	**EMS(17216)**	0.6	0.4	0.4	0.2	0.2
C206	**DLS(17010)**	2	2	3	3	1
C207	**EEN(17014)**	2	2	3	3	3
C301	**AMT(17301)**	0.2	0.4	0.2	0.2	0.2
C302	**EIM-(17317)**	2.04	2.04	1.36	1.36	2.04
C303	**EEN(17318)**	1.04	1.04	0.52	0.52	1.56
C304	**EDC(17319)**	2.04	2.04	1.36	1.36	2.04
C305	**PDT(17310)**	1.04	1.56	1.56	1.56	1.56
C306	**PIC(17020)**	1	1	2	2	3
C307	**PPO(17021)**	2	2	2	1	3

Course	Course-Code	PSO1	PSO2	PSO3	PSO4	PSO5
C401	**EVS(17401)**	0.84	-	-	-	0.84
C402	**IME(17434)**	2.04	2.04	1.36	0.68	1.36
C403	**PEL(17444)**	1.36	2.04	1.36	1.36	2.04
C404	**LIC(17445)**	1.04	1.56	1.56	1.04	1.56
C405	**PCS(17472)**	2.04	2.04	2.04	1.36	2.04
C406	**VBA(17043)**	2	1	1	1	2
C407	**PPT(17044)**	1	-	-	-	2
C501	**CHN(17533)**	0.92	1.84	1.84	0.92	1.84
C502	**MIC(17534)**	0.92	2.76	1.84	1.84	2.76
C503	**CSY(17538)**	1.84	2.76	1.84	0.92	1.84
C504	**AIN(17539)**	2.76	2.76	1.84	0.92	1.84
C505	**PIN(17540)**	1.76	2.64	1.76	1.76	1.76
C506	**BSC(17075)**	1	-	-	-	2
C507	**EDP(17066)**	1	-	-	-	2
C508	**PPT(17068)**	1	-	-	-	2
C601	**MAN(17601)**	0.6	0.6	0.6	0.6	0.6
C602	**PCS(17663)**	1.84	1.84	1.84	2.76	2.76
C603	**INA(17664)**	0.92	1.84	1.84	2.76	2.76
C604	**ESY(17664)**	0.92	0.92	2.76	1.84	2.76
C605	**BIN(17665)**	1.84	1.84	1.84	0.92	2.76
C606	**SSO(17807)**	1	1	1	2	2
C607	**IPR(17808)**	3	3	3	3	3
Average		**1.37**	**1.59**	**1.49**	**1.34**	**1.81**
80% of direct assessment		**1.09**	**1.27**	**1.19**	**1.07**	**1.45**
20% of Indirect Attainment		**0.6**	**0.6**	**0.6**	**0.6**	**0.6**
Total Attainment		**1.69**	**1.87**	**1.79**	**1.67**	**2.05**
Final Attainment Level		**3**	**3**	**3**	**3**	**4**

Attainment Level Evaluation Criteria

Attainment Level	Attainment Value Range
5	>= 2.5
4	2 to 2.5
3	1.5 to 2
2	1 to 1.5
1	<1

PO-PSO attainment levels of last 3 years

PO/PSO			2015-16		2014-15		2013-14	
POs	Target Value	Target Level	Average value	Attainment level	Average value	Attainment level	Average value	Attainment level
PO1	2.26	4	1.93	3	1.96	3	2.06	4
PO2	2.26	4	1.93	3	1.96	3	2.06	4
PO3	2.26	4	1.93	3	1.96	3	2.06	4
PO4	2.26	4	1.93	3	1.96	3	2.06	4
PO5	2.26	4	1.93	3	1.96	3	2.06	4
PO6	2.26	4	1.93	3	1.96	3	2.06	4
PO7	2.26	4	1.93	3	1.96	3	2.06	4
PO8	2.26	4	1.93	3	1.96	3	2.06	4
PO9	2.26	4	1.93	3	1.96	3	2.06	4
PO10	2.26	4	1.93	3	1.96	3	2.06	4
PSOs								
PSO1	1.91	3	1.69	3	1.71	3	1.83	3
PSO2	1.91	3	1.69	3	1.71	3	1.83	3
PSO3	1.91	3	1.69	3	1.71	3	1.83	3
PSO4	1.91	3	1.69	3	1.71	3	1.83	3
PSO5	1.91	3	1.69	3	1.71	3	1.83	3

Indirect Attainment Of Program (POs)2015-16										
Program Outcomes										
Feedback Of	**PO 1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO 7**	**PO 8**	**PO 9**	**PO 10**
Parent	3.2	3.25	3.5	3.1	3.4	3.25	3.3	3.3	3.25	3.55
Alumni	3.65	3.55	3.8	3.45	3.35	3.4	3.65	3.3	3.3	3.55
Current Students	3.25	3.2	3.8	3.35	3.4	3.55	3.05	3.25	3.55	3.55
Recent Passout	3.25	3.25	3.4	3.25	3.45	3.65	3.65	2.9	3.5	3.75
Industry Expert	3.55	3.27	3.55	3.27	3.55	3.18	3.82	3.45	3.27	3.55
Total	16.90	16.52	18.05	16.42	17.15	17.03	17.47	16.20	16.87	17.95
Attainment Level	3	3	3	3	3	3	3	3	3	3
20% 0f the attainment level	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6

Indirect Attainment Of Program Specific Outcomes (PSOs)2015-16					
Program Specific Outcomes					
Feedback Of	**PSO1**	**PSO2**	**PSO3**	**PSO4**	**PSO5**
Parent	3.35	2.9	3.1	3.25	3.4
Alumni	3.55	3.75	3.5	3.45	3.55
Current Students	3.35	3.55	3.3	3.25	3.65
Recent Passout	3.5	3.35	3.4	3.3	3.4
Industry Expert	3.55	3.55	3.64	3.64	3.45
Total	17.30	17.10	16.94	16.89	17.45
Attainment Level	3	3	3	3	3
20% of the attainment level	0.6	0.6	0.6	0.6	0.6

CRITERION 4	Students' Performance	200

Intake Information

Item	2015-16	2014-15	2013 – 14
Sanctioned Intake strength of the program (N)	63	63	63
Total number of students, admitted through state level counseling (N1)	30	28	45
Number of students, admitted through Institute level quota (N2)	4	6	12
Number of students, admitted through Lateral Entry (N3)	10 (2016-17)	19 (2015-16)	25 (2014-15)
Total number of students, admitted in the program (N1 + N2 + N3)	44	53	82

Successfully passed students without backlogs

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	44	10	0	0
CAYm1(2014 - 15)	53	12	(12+5)=17	0
CAYm2 (2013 - 14)	82	20	(16+4)=20	(15+4)=19
CAY m3 (2012 - 13)	66	25	(24+4)=28	(21+3)=24
CAYm4 (2011 - 12)	67	30	(23+1)=24	(23+1)=24

Successfully passed students with ATKT

Year of Entry	N1 + N2 + N3 As Defined Above	Number of Students who have successfully passed with ATKT		
		I Year	II Year	III Year
CAY (15-16)	44	9	0	0
CAY m1(2014 - 15)	53	10	(8+4)=12	0
CAYm2 (2013 - 14)	82	19	(16+9)=25	(6+9)=15
CAYm3 (LYB) (2012 - 13)	66	16	(11+2)=13	(6+2)=8
CAYm4 (LYBm1) (2011 - 12)	67	17	(9+2)=11	(7+2)=9

4.1 Enrolment Ratio(20)

Academic Year	Enrollment Ratio (N1+N2)/N	Marks
2015-16	34/63=53.96	8
14 – 15	34/63=53.96	8
13 – 14	57/63=90.47	20

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)

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

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 batch 2015-16	Latest passed batch 2014 - 15	Latest passed minus 1 batch 2013 - 14
Total number of Students (admitted through state level counseling + admitted through institute level quota + admitted through lateral Entry) (N1 + N2 + N3)	82	66	67
Number of students who have passed without backlog in the stipulated period	19	24	24
Success Index	0.23	0.36	0.36
Average SI	0.32		
Success rate	**40*0.32=12.8**		

4.2.2. Success rate with backlog in stipulated period of study (20)

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

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

--Success rate = 20 × Average SI

Item	Latest batch 2015-16	Latest passed batch 2014-15	Latest passed minus 1 batch 2013-14
Total number of Students (admitted through state level counseling + admitted through institute level quota + admitted through lateral Entry) (N1 + N2 + N3)	82	66	67
Number of students who have pssed without backlog in the stipulated period	34	32	33
Success Index (SI)	0.41	0.48	0.49
Average SI	0.46		
Success rate	**Success rate=20*0.46=9.28**		

4.3 Academic Performance in final Year(15)

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

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

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

Academic Performance Level =1.5 x Average API

Academic Performance	CAY 2015-16	CAYm1 2014-15	CAYm2 2013-14
Mean of CGPA or mean percentage of all successful students(X)	7.15	7.02	6.82
Total number of successful students(Y)	40	38	51
Total Number of students appeared in the examination(Z)	62	40	59
API = x* (Y/Z)	4.61	6.67	5.90
Average API = (AP1 + AP2 +AP3)/3	5.72		
Academic Performance level	8.59		

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

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

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

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

Academic Performance	CAY 2015-16	CAY m1 2014 - 15	CAYm2 2013 - 14
Mean of CGPA or mean percentage of all successful students(X)	7.06	6.68	6.20
Total number of successful students(Y)	29	25	34
Total Number of students appeared in the examination(Z)	46	70	58
API = x* (Y/Z)	4.45	2.39	3.64
Average API =(AP1 + AP2+AP3)/3	3.49		
Academic Performance level	6.98		

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

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

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

Academic Performance	CAY 2015-16	CAY m1 2014 - 15	CAYm2 2013 - 14
Mean of CGPA or mean percentage of all successful students(X)	6.17	9.46	6.61
Total number of successful students(Y)	11	12	20
Total Number of students appeared in the examination(Z)	33	34	56
API = x* (Y/Z)	2.06	2.6	2.4
Average API = (AP1 + AP2 +AP3)/3	2.35		
Academic Performance Level	5.88		

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 2014-2015	Latest passed batch Minus 2 2013-2014
Total number of final year students(N)	62	40	59
Total Number of students placed in companies or Government Sector(X)	5	1	4
Number of students admitted to higher studies(Y)	35	39	40
1.25X + Y	41.25	40.25	45
Placement Index: (1.25X +Y)/N	0.66	1.00	0.76
T = Average of (1.25X +Y)/N	0.81		
Assessment = 40 X T (To be limited to 40)	32.46		

4.7. Professional Activities (20)

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

- One day National conference on topic related to safety is held every year
- One day seminar for second and third year students is organized by the department
- Guest lecture and Industrial visits are organized every year for the students
- Special Days like Yoga day, Environment Day, Patriotic day, Swachhata divas are celebrated with enthusiasm in the department.

ISTE Chapter Activities

Year	Activity
2013-14	Content updating Program on "**Emerging Trends in Process Industries**" was conducted for lab assistants for various institutes of Maharashtra between **8th to 12th October, 2013**
	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**.
	One day National Conference on " Process Safety Management on January 4th, 2014
	State level Quiz competition **Polytronics -14,** sponsored by MSBTE was conducted on **7th February, 2014**
	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** Three staff members and Nine Students participated in the competition at the Zonal level **Ms. Ismat Fatima Rizvi** (1st), **Mrs. Sujata M. Gupte** (2nd) and **Ms. Amisha Mistry** received 3rd prize,From students section Mr. Gaurav Kadam received 1st prize.Mrs S. M. Gupte and Ms Ismat Fatima Rizvi received National level prize ISTE,RMC 14-15)
	Swachtha Abhiyan on **20th December 2014**. Students and staff participated in a cleanliness drive around Thane railway station.
	One day **National conference on Industry Expectation** from safety Managers on **7th February, 2015**
	Women's Day Celebration on **7th March 2015**. Guest **Mrs. Sujata**

	Soparkar MD, Integrated Thane, Dr. Rashmi Karandikar, DCP, Thane. Dr Rashmi Karandikar (DCP, Thane) spoke on protection of women and gave the message that Every women should be alert and have ability to protect herself. Mrs Sumedha V. Bedekar had a informative and interactive session with the audience. Dr. Maithee M. Gadgil (Gynecologist) spoke on Importance of Health and Hygiene.
2015-16	EPS Department celebrated **Renewable Energy Day** by conducting State Level Technical Paper Presentation Competitions on **21st August 2015.** Chapter was inaugurated on the occassion of Teacher's day**, 5th September 2015.**
	On the Occasion of Engineers Day Celebration on **15th September 2015** ISTE Student Chapter organized Essay Competition, Poster presentation competition(Competition was held on the topics of Carbon foot print, space solar Technology,5 pen PC Technology, Mathematics of safety and Power point presentation competition((Competition was held on topics-Renewable energy Technology, Advancement in Engineering Field, 3D Password and Robotics.
	Received **ISTE NarseeMonjee Student Project Award** by Sharaddha Kamble, Vishal Raut, MohakBengale, 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** 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.
	One day National conference on "**Life Safety - Today & Tomorrow**" on **19th December, 2015.**
	A program 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 program.
	State level Paper presentation competition **Polytronics -16,** sponsored by MSBTE was conducted on **5th March, 2016**

	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 programs for **Women's Day celebration** on **8th March 2016** were conducted by **Mrs. Iravati 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.

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

- A college magazine-**Innovision** is published towards the end of the semester which explores the creative side of the students. Technical as well as non-technical articles, poems, essays are published in all the three languages- English, Hindi, Marathi. It also contains other useful information like names and photos of toppers, department results and other activities, winners of various competitions etc.
- **Conference proceedings**- A conference is conducted every year and the article/paper of each speaker is published in the form of proceedings.

CRITERION 5	Faculty Information and Contributions	150

Faculty Information (2016-17)

S. No.	Name of the Faculty Member	Qualification, Board and Year of Graduation	Designation & date of Joining the Institute	Distribution of Teaching Load (Odd Sem)			Academic Research		Years Of Experience	
				I	II	III	RPP*	ME/ Phd*	AC*	IN*
1	Mrs. V.A.Joshi (Exclusive)	M.E. Instrumentation & Control, Mumbai University, 2006	H.O.D. 2/7/1990	0.00	0.00	1.00	5	_	26	_
2	Mrs. S. D. Khandagle (Exclusive)	M.E.(Pursuing) B.E.Instrumentation , Pune University, 1997	Lecturer, 1/7/2000	0.19	0.24	0.57	13	_	16	3
3	Mrs.Sheetal Mhatre (Exclusive)	M.E. Instrumentation & Control), Mumbai University, 2013	Lecturer, 15/12/2008	0.00	0.37	0.26	5	_	14	_
4	Ms. Kanchan Shrikhande (Exclusive)	M.E.Instrumentation & Control, Mumbai University, 2016	Lecturer, 15/06/2015	0.00	0.57	0.43	1	_	1	_
5	Ms. Priyanka Khilare (Exclusive)	M.E. Electronics, Mumbai University, 2014, B.E. (Instrumentation), 2011	Lecturer, 1/07/2015	0.20	0.35	0.45	5	_	2	_
6	Ms. Karishma Sanil (Exclusive)	B.E. Instrumentation, Mumbai University, 2015	Lecturer, 1/8/2015	0.24	0.33	0.43	1	_	1	_
7	Mr. V. A. Walavalkar (Shared)	M.Sc. Chemistry, Mumbai University, 1990	Selection grade Lecturer, 16/07/1990	0.33	0.00	0.00	_	_	28	_
8	Mrs. S.M. Gupte (Shared)	M.Sc. Maths, Mumbai University, 1987	Selection grade Lecturer, 4/8/1987	0.28	0.00	0.00	_	_	29	_
9	Ms Dipika Kolambe (Shared)	M.A. B.Ed ,Mumbai University, 2011	Lecturer, 1/8/2015	0.28	0.00	0.00	_	_	2	_
10	Mrs. Raji Nair (Shared)	M.Sc. Physics, Mumbai University, 2005	Lecturer, 1/7/2007	0.33	0.00	0.00	2	_	10	_
11	Ms. Seema Kale (Shared)	M.E.(Pursueing)Mechanical Mumbai University, B.E. (Mechanical) , Shivaji university, 2013	Lecturer, 1/8/2016	0.33	0.00	0.00	_	_	1	1
12	Ms. Apurva Sawant(Shared)	M.E .(Pursuing), B.E. (Biomedical), Mumbai University, 2013	Lecturer, 1/7/2013	0.00	0.00	0.06	1	_	3	_
13	Ms. Pooja Pawar (Shared)	M.E.(Pursuing), B.E. Biomedical Engineering, Mumbai ,2012	Lecturer, 2/7/2012	0.28	0.00	0.00	1	_	3	_

Faculty Information (2015-16)

S. No.	Name of the Faculty Member	Qualification, Board and Year of Graduation	Designation & date of Joining the Institute	Distribution of Teaching Load (%)			Academic Research		Years Of Experience	
				I	II	III	RPP*	ME/ Phd*	AC*	IN*
1	Mrs. V.A.Joshi (Exclusive)	M.E. Instrumentation & Control, Mumbai University, 2006	H.O.D. 2/7/1990	0.00	0.00	1.00	5	_	25	_
2	Mrs. S. D. Khandagle (Exclusive)	M.E.(Pursuing), B.E.Instrumentation , Pune University, 1997	Lecturer, 1/7/2000	0.07	0.23	0.70	12	_	15	3
3	Mrs.Sheetal Mhatre (Exclusive)	M.E. Instrumentation & Control, Mumbai University, 2013	Lecturer, 15/12/2008	0.05	0.48	0.40	5	_	13	_
4	Ms.Selva Hepshibha (Exclusive)	M.E. Instrumentation & Control, Mumbai University, 2015	Lecturer, 1/7/2014	0.00	0.00	1.00	1	1	1	2
5	Ms. Kanchan Shrikhande (Exclusive)	M.E.Instrumentation & Control , Mumbai University, 2016	Lecturer, 15/06/2015	0.21	0.68	0.11	1	1	_	_
6	Ms. Priyanka Khilare (Exclusive)	M.E. (Electronics), Mumbai University, 2014	Lecturer, 1/07/2015	0.00	0.59	0.41	4	_	1	_
7	Ms. Karishma Sanil (Exclusive)	B.E. (Instrumentation), Mumbai University, 2015	Lecturer, 1/08/2015	0.08	0.49	0.43	1	_	_	_
8	Mr. Kiran Bhide (Exclusive)	B.E. (Biomedical), Mumbai University, 2012	Lecturer, 1/8/2015	0.26	0.23	0.37	_	_	_	1
9	Mr. V. A. Walavalkar (Shared)	M.Sc. Chemistry, Mumbai University, 1990	Selection grade Lecturer, 16/07/1990	0.33	0.00	0.00	_	_	27	_
10	Mrs. S.M. Gupte (Shared)	M.Sc. Maths, Mumbai University, 1987	Selection grade Lecturer, 4/8/1987	0.13	0.10	0.00	_	_	28	_
11	Mrs. V.Y. Sonavane (Shared)	M.A. Pune University, 2004	Lecturer, 1/7/2007	0.31	0.00	0.00	_	_	10	_
12	Mrs. Raji Nair (Shared)	M.Sc. Physics, Mumbai University, 2005	Lecturer, 1/7/2007	0.33	0.00	0.00	1	_	9	_
13	Mrs. Komal Tajane (Shared)	B.E(Mechanical)	Lecturer, 1/7/2015	0.33	0.00	0.00	_	_	1	_
14	Ms. Pooja Pawar (Shared)	M.E.(Pursuing), B.E. Biomedical Engineering, Mumbai ,2012	Lecturer, 2/7/2012	0.28	0.17	0.00	1	_	3	_
15	Ms. Apurva Sawant(Shared)	B.E. (Biomedical), Mumbai University, 2013	Lecturer, 1/7/2013	0.33	0.00	0.17	1	_	2	_
16	Prof. D.K. Nayak (Shared)	Ph.D.(Thesis submitted) ,M.E.(computer Engineering),Mumbai University ,1991	Principal, 1/8/1985	0.00	0.00	0.08	_	_	30	_

Faculty Information (2014-15)

S. No.	Name of the Faculty Member	Qualification, Board and Year of Graduation	Designation & date of Joining the institution	Distribution of Teaching Load (%)			Academic Research		Years Of Experience	
				I	II	III	RPP*	ME/ Phd*	AC*	IN*
1	Mrs. V.A.Joshi (Exclusive)	M.E. (Instrumentation & Control), Mumbai University, 2006	H.O.D. 2/7/1990	0.00	0.12	0.88	4	–	24	
2	Mrs. S. D. Khandagle (Exclusive)	M.E.(Pursuing) (Instrumentation), B.E.(Instrumentation) , Pune University, 1997	Lecturer, 1/7/2000	0.00	0.29	0.71	11	–	14	3
3	Mrs.Sheetal Mhatre (Exclusive)	M.E. (Instrumentation & Control), Mumbai University, 2013	Lecturer, 15/12/2008	0.00	0.51	0.49	4	–	12	
4	Ms. Dipti Mestry (Exclusive)	B.E. Instrumentation, Mumbai University,2003	Lecturer, 3/7/2007	0.00	0.57	0.43	1	–	7	
5	Ms. Shivani Soni (Exclusive)	B.E. Instrumentation, Gujarat University, 2003	Lecturer, 1/7/2013	0.00	0.61	0.39	–	–	1	5
6	Ms. Archana Gupte (Exclusive)	M.E. Electronics, Mumbai University, 2014	Lecturer, 1/10/2013	0.52	0.38	0.10	–	–	1	
7	Ms. Selva Hepshibha (Exclusive)	B.E, Instrumentation, Mumbai University, 2010	Lecturer, 1/7/2014	0.11	0.39	0.50	–	–	–	2
8	Mrs. V.Y. Sonavane (Shared)	M.A. Pune University, 2004	Lecturer, 1/7/2007	0.25	0.00	0.00	–	–	9	
9	Mrs. Raji Nair (Shared)	M.Sc. Physics, Mumbai University, 2005	Lecturer, 1/7/2007	0.33	0.00	0.00	–	–	8	
10	Mr. V. A. Walavalkar (Shared)	M.Sc. Chemistry, Mumbai University, 1990	Selection grade Lecturer, 16/07/1990	0.33	0.00	0.00	–	–	26	
11	Mrs. Bhavana Jadhav (Shared)	B.E. Civil, Nagpur University,2009	Lecturer, 1/7/2014	0.33	0.00	0.00	–	–	–	
12	Mrs. S.M. Gupte (Shared)	M.Sc. Maths, Mumbai University, 1987	Selection grade Lecturer,4/8/1987	0.13	0.10	0.00	–	–	27	
13	Ms. Pooja Pawar(Shared)	B.E. Biomedical Engineering, Mumbai ,2012	Lecturer, 1/7/2012	0.00	0.50	0.00	–	–	2	
14	Ms. Apurva Sawant(Shared)	B.E. (Biomedical), Mumbai University, 2013	Lecturer, 1/7/2013	0.39	0.17	0.11	–	–	1	

Faculty Information (2013-14)

Sr. No.	Name of the Faculty Member	Qualification, Board and Year of Graduation	Designation & date of Joining the Institute	Distribution of Teaching Load (%)			Academic Research		Years Of Experience	
				I	II	III	RPP*	ME/ Phd*	AC*	IN*
1	Mrs. V.A.Joshi	M.E. (Instrumentation & Control), Mumbai University, 2006	H.O.D. 2/7/1990	0.00	0.00	1.00	3	–	23	
2	Mrs. S. D. Khandagle	M.E.(Pursueing)(Instrumentation),B.E.(Instrumentation) , Pune University, 1997	Lecturer, 1/7/2000	0.00	0.20	0.80	10	–	13	3
3	Ms. Dipti Mestry (Exclusive)	B.E. Instrumentation, Mumbai University,2003	Lecturer, 3/7/2007	0.21	0.18	0.61	–	–	6	
4	Mrs.Sheetal Mhatre	M.E. (Instrumentation & Control), PuneUniversity, 2013	Lecturer, 15/12/2008	0.00	0.67	0.33	3	–	11	
5	Mrs. Mohini Jadhav	B.E, Instrumentation & Control, Pune University, 2011	Lecturer, 1/7/2012	0.00	0.83	0.18	–	–	1	
6	Mr. Mayur Shringare	B.E. Instrumentation, Mumbai University,2011	Lecturer, 2/7/2012	0.27	0.00	0.73	–	–	1	
7	Ms. Shivani Soni (Exclusive)	B.E. Instrumentation,Gujarat University, 2003	Lecturer, 1/7/2013	0.00	0.31	0.69	–	–	0	5
8	Ms. Archana Gupte (Exclusive)	M.E. Electronics, Mumbai University, 2014	Lecturer, 1 /10/2013	0.36	0.55	0.09	–	–	0	
9	Mrs. V.Y. Sonavane (Shared)	M.A. Pune University, 2004	Lecturer, 1/7/2007	0.42	0.00	0.00	–	–	8	
10	Mrs. Raji Nair (Shared)	M.Sc. Physics, Mumbai University, 2005	Lecturer, 1/7/2007	0.36	0.00	0.00	–	–	7	
11	Mr. V. A. Walavalkar (Shared)	M.Sc. Chemistry, Mumbai University, 1990	Selection grade Lecturer, 16/07/1990	0.33	0.00	0.00	–	–	25	
12	Mrs. S.M. Gupte (Shared)	M.Sc. Maths, Mumbai University, 1987	Selection grade Lecturer,4/8/1987	0.30	0.00	0.00	–	–	26	
13	Mrs. Sonal Garud	B.E. Civil Engg. Shivaji university , 2005	Lecturer, 2/9/2013	0.17	0.00	0.00	–	–	–	
14	Prof. D.K. Nayak	Ph.D.(Registered) ,M.E.(computer Engineering),Mumbai University ,1991	Principal, 1/8/1985	0.33	0.00	0.00	8	–	28	

Legend

- **RPP** : Research Paper Publications
- **M.E/ Ph.D** : Faculty Receiving M.Tech/ Ph.D. during the Assessment Year
- **AC**:Acadamic
- **IN**: Industrial

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

Year	N	F	SFR=N/F
2015-16	204	9.3	21.85
2014-15	204	9.3	21.84
2013-14	204	9.8	20.82

N=No. of students = First year approved intake + 2x (first year approved intake + 20% of lateral entry),

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)

5.2. Faculty Qualification (20)

Year	X	Y	F	FQ = 2* (10X+7Y)/F
2015-16	3	6.3	9.3	15.94
2014-15	2	7.3	9.3	15.29
2013-14	2	7.8	9.8	15.22

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

5.3 Faculty Retention (20)

Sr. No.	2015-16		2014-15		2013-14	
	Staff load Weightage	Faculty Name	Staff load Weightage	Faculty Name	Staff load Weightage	Faculty Name
1	1	Mrs. V.A.Joshi	1	Mrs. V.A.Joshi	1	Mrs. V.A.Joshi
2	1	Mrs. S.D.Khandagale	1	Mrs. S.D.Khandagale	1	Mrs. S.D.Khandagale
3	1	Mrs. Sheetal Mhatre	1	Mrs. Sheetal Mhatre	1	Mrs. Sheetal Mhatre
4		Mrs. Selva Hepshibha		Mrs. Selva Hepshibha		Ms. Mohini Jadhav
5		Ms. Karishma Sanil		Ms.Deepti Metry		Ms.Deepti Metry
6		Ms. Priyanka Khilare		Ms.Shivani Soni		Ms.Shivani Soni
7		Ms. Kanchan Shrikhande		Ms. Archana Gupte		Ms. Archana Gupte
8		Mr. Kiran Bhidhe		Ms. Trushali Jadhav		Mr.Mayur Shringare
9	1	Ms. V. A. Walavalkar	1	Ms. V. A. Walavalkar	1	Ms. V. A. Walavalkar
10	1	Mrs. S.M. Gupte	1	Mrs. S.M. Gupte	1	Mrs. S.M. Gupte
11	1	Mrs. V. Y. Sonavane	1	Mrs. V. Y. Sonavane	1	Mrs. V. Y. Sonavane
12	1	Mrs. Raji Nair	1	Mrs. Raji Nair	1	Mrs. Raji Nair
13		Mrs. Komal Tajane		Mrs. Bhavna Jadhav		Mrs. Sonal Garud
14	1	Ms. Apurva Sawant	0.5	Ms. Apurva Sawant(even)	0.5	Ms. Apurva Sawant
15	1	Ms. Pooja Pawar	0.5	Ms. Pooja Pawar(even)	0.5	Ms. Pooja Pawar
16	0.5	Prof. D. K. Nayak	0.5	Prof. D. K. Nayak	0.5	Prof. D. K. Nayak
Faculty Retained	9.5		8.5		8.5	
Available Faculty	15		14		14	
% Faculty Retention	63.33		60.71		60.71	
Average	**61.58**					

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

Sr. No.	Name of the Faculty	Max. 5 per Faculty		
		2015-16	2014-15	2013-14
1	Mrs. V.A.Joshi(Exclusive)	5	5	5
2	Mrs. S. D. Khandagle (Exclusive)	5	5	5
3	Mrs.Sheetal Mhatre(Exclusive)	5	5	5
4	Ms.Selva Hepshibha(Exclusive)	5	5	-
5	Ms. Kanchan Shrikhande(Exclusive)	5	-	-
6	Ms. Priyanka Khilare(Exclusive)	-	-	-
7	Ms. Karishma Sanil(Exclusive)	-	-	-
8	Mr. Kiran Bhide(Exclusive)	-	-	-
9	Ms. Dipti Mestry (Exclusive)	-	-	3
10	Ms. Shivani Soni (Exclusive)	-	-	-
11	Ms. Archana Gupte (Exclusive)	-	-	-
12	Mrs. Mohini Jadhav	-	-	-
13	Mr. Mayur Shringare	-	-	3
14	Ms. V. A. Walavalkar	-	-	-
15	Mrs. S.M. Gupte	-	-	5
16	Mrs. V. Y. Sonavane	-	-	-
17	Mrs. Raji Nair	-	-	-
18	Mrs. Komal Tajane	-	-	-
19	Ms. Apurva Sawant	5		-
20	Ms. Pooja Pawar	3	-	3
21	Prof. D. K. Nayak	-	-	-
22	Mrs. Bhavna Jadhav	-	-	-
23	Mrs. Sonal Garud	-	-	-
Sum		33	20	29
RF= Number of Faculty required to comply with 20:1 Student-Faculty ratio as per 5.1		21.85	21.84	20.82
Assessment = 6 × Sum/0.5RF (Marks limited to 30)		18.12	10.99	16.71
Average assessment over three years (Marks limited to 30) =		**15.27**		

Faculty	Industry	Role	Detail
Mrs.V.A.Joshi	L & T Ltd.	Trainer	Fresh Employees(GETs)
Mrs. S.D. Khandagle	L & T Ltd.	Trainer	Fresh Employees(GETs)
Mrs.V.A. Joshi/Mr.S.C. Bhore	MPCOE, Velneshwar	Technical expert	Mechanical lab development
Mr. S.C. Bhore	IT, Ulhasnagar	Technical expert	Fluid flow experiments for Lab set up of Instrumentation

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

Department faculty is involved in the program "Advanced diploma in Industrial Safety" and revenue generation program on "Gas Chromatography). The details for the same are given in the table below

Sr. No	Faculty	Name of the program	Year	Beneficiaries	Revenue generated (in Rs.)
1	Mrs. S.D. Khandagale	Advance Diploma in Industrial Safety	2013-2014	48	840000.00
			2014-2015	60	1050000.00
	Mrs. S.D. Khandagale		2015-2016	60	1050000.00
	Mrs. S.D. Khandagale		2016-2017	50	875000.00
2	Mrs. V.A. Joshi/Mrs. S.D. Khandagale/ Mrs.S.A. Mhatre	Gas Chromatography	2014-2015	30	1000.00
	Mrs. V.A. Joshi/Mrs. S.D. Khandagale/ Mrs.S.A. Mhatre		2015-2016	32	1000.00

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

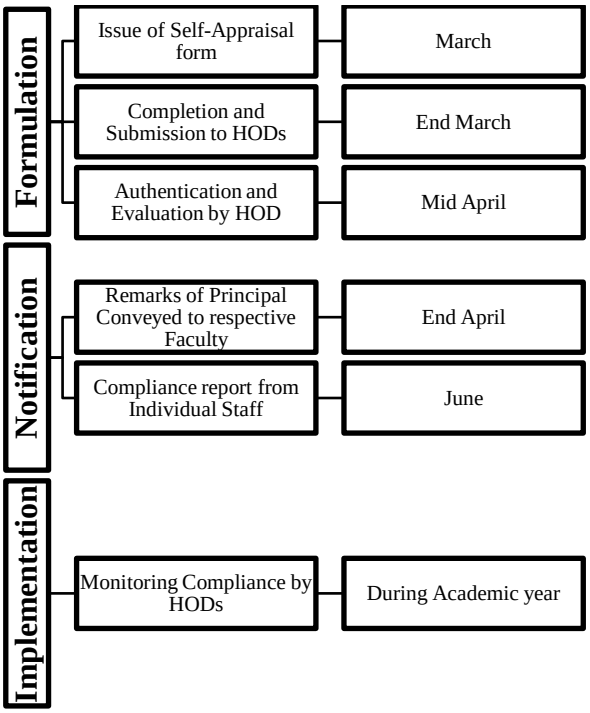
5.6.1 A well-defined system implemented for all the assessment years

Polytechnic is following Performance Appraisal Development System with the following objectives

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

5.6.2 FPADS Implementation and Effectiveness

5.6.2.1 The Activity Flow Chart



5.6.2.1Key Performance Indicators in the Self-Appraisal

1. Teaching and practical load details of Curricular, Co-curricular responsibilities
2. Course Result Analysis
3. Trainings/Workshops Organized/attended
4. Conferences/Guest lectures Organized/ attended
5. Conference Papers presented
6. Journal Papers/ Books published
7. Membership of Professional bodies
8. Awards, Innovative Projects
9. Skill Upgrades
10. Student feedback

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

5.6.2.2 FPADS implementation and its Effectiveness:

The Self-Appraisal forms submitted by Individual staff members include 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:

1. Staff are aware of Role and Responsibilities.
2. Teaching Plan with learning resources ready with every Teacher at the start of term.
3. Inculcates Outcome Based Teaching Learning process culture.
4. Motivation to participate in Content Updating as well as Industrial Training Activities.
5. Facilitates participation of Teachers in Peer Reviewed Conferences.
6. Encourages publication of Journal Papers.
7. Participation of staff in MSBTE Curriculum Revision, Career Fair and other initiatives.

8. Innovative practices in Teaching/learning, Use of ICT tools
9. Motivating students for Co-curricular activities.

Institution:

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

5.6.3 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 Programs attended					
		2013-2014		2014-2015		2015-2016	
		I	D	I	D	I	D
1	No. of Staff deputed for training organized by MSBTE/Industries	25		15		41	
2	No. of Staff training programs conducted	41		37		31	
3	No. of Staff deputed for ISTE Summer / Winter STTP Schools or QIP centers	2		08		17	
4	No. of Staff deputed for long / short course organized by NITTTR	12	1	06		04	
5	No. of Staff deputed for other programs (Conferences, Exhibitions, Career Fair etc.)	71		57		47	
Total		**151**		**123**		**140**	
Legend: I- Institute D-Department							

- 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	**14th**One Day National Conference on **Emerging Trends in Solar Technologies**	5-1-2013	• Ministry of New and Renewable Energy, New Delhi
2	**15th**One Day National Conference on **Process Safety Management**	4-1-2014	• Cinque Solution Pvt. Ltd, Andheri, Mumbai
3	**16th** Two Days National Conference on **Next Generation Electronics**	16-1-2015 & 17-1-2015	• BRNS Grant from BARC, Mumbai • MSBTE, Mumbai
4	**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, • NetelChromotographs, Thane
5	**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
6	**19th One Day National Conference on Environment, Health & Safety**	17-12-2016	• MSBTE, Mumbai • GP Parsik Bank

5.7 Implementation of Career Advancement Scheme (10)

The Career Advancement Scheme is implemented by following AICTE guidelines and individual performance, academic results, Publications and other KPI (5.6.2.1).

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 programs. 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 3 years is included in the table

Qualification	2015-16		2014-15		2013-14		2013-12	
	In Process	Completed	In Process	Completed	In Process	Completed	In Process	Completed
Ph.D.	2	-	2	1	3	-	3	1
M.E./M.Tech	1	2	17	3	16	-	7	2
Energy Manager	-	-	-	-	-	-	-	1
CP/ IT	5	2	-	5	-	-	-	-
MS-CIT	-	-	-	-	-	3	-	733
Total	**8**	**3**	**19**	**08**	**18**	**03**	**10**	**11**

Staff Members Pursuing/Completed M.E/Ph.D of the department

Sr. No.	Name of Staff	Department	Year of Admission	Qualification	Completed Year
1	Prof. D. K. Nayak	Computer Engineering	2010-2011	Ph.D.	Thesis submitted 2015 - 2016
2	Mrs. V.A. Joshi	Instrumentation and Control	2003-2004	M.E	2006-2007
3	Mrs. S.D. Khandagale	Instrumentation	2013-2014	M.E	In Progress 2016 - 2017
4	Mrs. Sheetal Mhatre	Instrumentation and Control	2009-2010	M.E	2012-13
5	Ms. Kanchan Shrikhande	Instrumentation and Control	2012-13	M.E	2015-2016
6	Ms. Priyanka Khillare	Electronics	2012-13	M.E	2014-15

CRITERION 6	Facilities And Technical Support	100

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

Room Description	Usage	Legend Name	Shared/ Exclusive	Capacity (sq.m)	Rooms Equipped with PC, Internet Book rack	(Required) Adequacy as per norms
Class room	Class room for 1st year-C02	GCIC02	Exclusive	70	Internet	66
	Class room for 2nd year-C07	GCIC07	Exclusive	80	Internet	66
	Class room for 3rd year-C08	GCIC08	Exclusive	80	Internet	66
Tutorial Room	T4	GCIT04	Exclusive	45	PC, Internet	33

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

Room Description	Usage	Legend Name	Shared/ Exclusive	Capacity (sq.m)	(Required) Adequacy as per norms
*** Workshop**	30 Hrs/ Week	GZIW01	Shared	200	200

Workshop Staff

Incharge	Designation	Jobs
Mr. A. B. Kuvar	Workshop Instructor	Carpentry
Mr. S .L. Khachane	Workshop Instructor	Fitting Plumbing
Mr. H. R. Dandavate	Lab Attendant	Welding Sheet metal

* Common

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

Sr No.	Name of the Laboratory	No .of students per 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 the technical staff	Designation	Qualification
1	Basic Electronics & Bioinstrumentation Lab **GSIL29**	20	Black Board, PC, Notice boards, charts, attached staff cabin, Fans, Lights, Telephone, Lan connectivity with internet, Cupboards	30	Mrs. Priya Talole	Lab Assistant	Diploma in Medical Electronics
2	Applied Electronics Lab **GSIL30**	20	Black Board, PC, Scanner, Overhead Projector, Notice boards, charts attached staff cabin, Fire Extinguisher, Fans, Lights, Telephone, Lan connectivity with internet, Cupboards	30	Ms. Pooja Salvi	Lab Assistant	ITI(Industrial Electronics), Pursuing Diploma in Industrial Electronics
3	Measurment & Advanced Control Lab **GSIL31**	20	White Board, PC, Printer, Department Library Cupboards, Notice board, attached staff cabin, Fans, Lights, Speaker set for PC, Telephone, Lan connectivity with internet, Cupboards	30	Mr. S.C. Bhore	Lab Assistant	Diploma in Industrial Electronics
4	Pnuematic and Hydraulic Lab **GSIL32**	20	Cv Testing set up and flow sensors	30			
5	Process Control Lab GCIT03	20	White Board, PCs, Notice board, Fans, Lights, Lan connectivity with internet	10			
6	IT 6 **GSIL33**	20	White Board, PCs, Notice board, Fans, Lights, Lan connectivity with internet	30	Ms. Pooja Salvi	Lab Assistant	ITI(Industrial Electronics), Pursuing Diploma in Industrial

Sr No.	Name of the Laboratory	No .of students per 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 the technical staff	Designation	Qualification
							Electronics
7	Electrical Measurement Lab **GPIL16**	20	Black Board, Notice boards, charts, attached staff cabin, Fans, Lights, Telephone, Lan connectivity with internet, Cupboards	30	Mrs. N. S. Nangre	Lab Assistant	Diploma In Electrical Engineering
8	Power Electronics & Industrial Electronics Lab **SEIL20**	20	Black Board, Notice boards, charts, attached staff cabin, Fans, Lights, Telephone, Lan connectivity with internet, Cupboards	30	Mrs. Vidya Hebli	Lab Assistant	ITI electronics Pursuing Diploma in Indusrial Electronics
9	Chemistry Lab **GZIL03**	20	Black Board, Notice boards, charts, attached staff cabin, Fans, Lights, Telephone, Cupboards	30	Mrs. V. D. Naik	Lab Assistant	B.Sc. Chemistry
10	Physics Lab **GZIL02**	20	Black Board, Notice boards, charts, attached staff cabin, Fans, Lights, Telephone, LAN connectivity with internet, Cupboards	30	Ms. M. M. Tatke	Lab Assistant	B.Sc. Physics
11	Electronics Lab **GUIL35**	20	Black Board, Notice boards, charts, attached staff cabin, Fans, Lights, Telephone, Lan connectivity with internet, Cupboards	30	Mr. Pradeep Mule	Lab Assistant	B. Tech Electronic Engineering

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

Sr. No.	Facility Name	Details	Reason(s) for creating facility	Utilization	Areas in which students' are expected to have enhanced learning	Relevance to Pos/PSOs
1	Gas Chromatography	To perform experiment	Training and provide in depth knowledge of GC	To Test the purity of a particular substance, or separating the different components of a mixture	Analytical Instrumentation	PO4, PO6, PO10, PSO1,PSO4
2	Industrial PLC	Training	To enhance employability	To provide training and perform practical for IE dept and IS dept.	Industrial Automation	PO3,PO4,PO6, PO10, PSO1, PSO4
3	Pictorial/ Graphics/ Charts/ Models	Subject-wise Charts available for learning	To clarify concept by visual display	Constant exposure to Visual displays help in remembering concepts for a longer time	BIN, LIC, EEX, EDC, PDT, PIN, PCS,MIC	PO3, PO4, PO6, PO10, PSO1, PSO2, PSO4
4	Internet facility	Leased lines of InTech with a speed of 32 mbps to connect all PC to internet in the campus Wi-Fi 100Mbps	Keep in touch with latest technology, surfing on internet for a specific problem	Conduct online Examinations, Spoken tutorial, Professional practices, Projects/Assignment	CMF,PIC, VBA, SSO, EST, IPR, MIC	PO2, PO4, PO5,PO7, PO8, PO10, PSO3, PSO4, PSO5

Sr. No.	Facility Name	Details	Reason(s) for creating facility	Utilization	Areas in which students' are expected to have enhanced learning	Relevance to Pos/PSOs
5	Departmental Library	Book, CDs/Project available for reference	Deep knowledge of concept using a reference book , scholarly papers & CD/DVDs	Issue book to a student for specific period	All Subjects	All Pos, PSOs
6	Laptop	Window 7	Presentation	Presentation	Life Skill Development & Technology Relevant	PO4, PO5, PO6, PO7, PO8, PO9, PO10, PSO4, PSO5
7	LCD Projector	NEC NP 200	Presentation	Presentation of animated videos, 3D images augments learning	Life Skill Development & Technology Relevant	PO4, PO5, PO6, PO7, PO8, PO9, PO10, PSO4, PSO5

6.5. Laboratories: Maintenance and overall ambiance (10)

- A dead stock register is maintained with all equipment details recorded timely
- Maintaining record of scrap.
- Timely update and upgrade software and hardware
- Issue register is maintained to record the issue details of equipments/facilities in and out of the laboratories
- One Teaching faculty and lab assistant are in-charge of the overall maintenance of lab
- As per requirement minor repairs are carried out by the Lab assistants and faculty members.

- Safety related instructions are given by the faculty, if any, for the practical and displayed at appropriate place in the laboratories
- Charts/ models are displayed in the labs for ease of understanding and to enhance the aesthetics

For use of computing facilities at Polytechnic Labs, student should strictly follow the following guidelines

- No Student should try to install any software on any machines within institute
- Access of face book, You Tube, Twitter and prohibited in punishable
- The institute machine is public machine and using it for confidential online transaction is an offence.
- Use of pen drives that may tamper important data in machine is an offence Only safe, secure, authentic& trusted web sites should be accessed

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

No. of Computer terminals	Students Computer Ratio	Details of Legal Software	Details of Networking	Details of Printers, Scanners etc.
13	2:1	Windows 7 Keil SCILAB VB 6 Quick Heal End point Security 15 Turbo C TSPL	32 Mbps Intec Leased line connection ,all PC's connected in LAN Ethernet with 100 Mbps .Wi Fi access points availability with limited access	Printer and scanner available in Department

6.7. Language lab (10)

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

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 Franklin International www.mindpowerindia.com	CD 1 to 4
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 diff. aspects of body language & write an assignment on the same
- Role play or Skit presentation (4to 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)

POs Attainment Levels and Actions for improvement CAY 2015-16

POs	Target Level	Attainment Level	Observations
PO 1 : Ability to apply knowledge of mathematics, science, and Engineering to identify and solve real-engineering problems			
PO 1	4	3	• Students are from vernacular medium find it difficult to comprehend the question and hence do not attempt all questions • Students with poor academic performance at entry level
Action 1: Extra lectures/tutorials/Assignments taken for English/science. Paper writing of previous MSBTE papers is made compulsory before final term work submission **Action 2**: Extra problems for practice taken/ formulas revised everyday			
PO 2 : To identify, formulate, and solve challenging Instrumentation related problems			
PO 2	4	3	• Majority of the students are not trained to think analytically during schooling
Action 1: Assignments are given to develop their logical and rational thinking. **Action 2**: Creative activities / games/quiz are conducted to enhance the reasoning abilities			
PO 3: Ability to read and interpret electronic circuit diagrams to perform experiments and analyze the results			
PO 3	4	3	• Instead of asking the difficulty, Students have a habit of mugging up circuits if they do not understand to avoid embarrassment. • They find it difficult to co-relate theory and practical
Action 1: Detailed explanation of practical is given at the beginning of the lab session **Action 2**: Mini projects are given for some courses to develop analyzing skills			
PO4: Adopting optimal engineering methodologies with an understanding of the limitations in given industrial circumstances			
PO 4	4	4	• It is explained by the faculty during the course of lectures/practical and assignments
Action 1: Feedback is taken to verify the expected outcome			
PO 5:To be a responsible Instrumentation engineer sensitive towards professional, societal, ethical and safety related issues			
PO 5	4	3	• Many students come from a very modest background (some of them first time learners in the family) and hence have never been exposed to professional or ethical behavioral conduct
Action 1: Guest lectures stressing the importance of ethics, professionalism are conducted throughout the year **Action 2**: Safety related instructions are displayed in the laboratories wherever required			

<table>
<tr><td colspan="4">PO 6:Translate the knowledge gained to solve environmental issues for sustainable development</td></tr>
<tr><td>PO 6</td><td>3</td><td>3</td><td>• The curriculum has a course on environmental science and hence, many aspects of the subject are covered as a part of theory and practical sessions</td></tr>
<tr><td colspan="4">Action 1: Multiple choice questions are given for tests and assignments to verify the learning
Action 2: Visit to Nature's park is taken every year for the second year students to understand the need for protection of environment</td></tr>
<tr><td colspan="4">PO7:To demonstrate integrity by being committed to professional ethics and responsibilities of the engineering practice</td></tr>
<tr><td>PO 7</td><td>3</td><td>3</td><td>• All the staff members are committed to professional ethics and integrity and hence the students are motivated to follow the same</td></tr>
<tr><td colspan="4">Action 1: Expert lectures on the subject is conducted to stress the importance of the subject
Action 2: Mentoring of students is done in groups</td></tr>
<tr><td colspan="4">PO 8 : Students will be empowered with an educational foundation that will prepare them for leadership roles for diverse career paths</td></tr>
<tr><td>PO 8</td><td>4</td><td>3</td><td>Majority of students take diploma route for gaining lateral entry into Engineering degree colleges and hence are not open to explore diverse career options</td></tr>
<tr><td colspan="4">Action 1: Guest lectures and seminars are conducted on varied topics to create awareness and invoke their curiosity & interest.
Action 2: Students are encouraged to visit career fair organized by MSBTE</td></tr>
<tr><td colspan="4">PO 9 :Students will learn to communicate their ideas to be effective in way in collaboration with other members of engineering teams</td></tr>
<tr><td>PO 9</td><td>4</td><td>3</td><td>• Students are from vernacular medium and find it difficult to converse in English</td></tr>
<tr><td colspan="4">Action 1: Guest lectures on communication skills are conducted. Sometimes the faculty asks the students to read English news paper daily and convey the important news
Action 2: Students are made to give presentations on topics given by the faculty individually as well as in groups on their final year project topics</td></tr>
<tr><td colspan="4">PO 10: Inspire the student to be a lifelong learner being able to meet the challenges of technological advancements</td></tr>
<tr><td>PO 10</td><td>5</td><td>4</td><td>• Students find it difficult to comprehend print media</td></tr>
<tr><td colspan="4">Action 1: Increase the industry-institute interaction in the form of Industrial visits, guest lectures, internships, projects etc.
Action 2: Encourage students to participate in paper presentation competitions, seminars etc which involve topics technological advancements.
Action 3: Visit to annual exhibition "Automation" is taken every year to see the stalls of renowned Instrumentation and automation companies which showcase latest product developments and technologies</td></tr>
</table>

PSOs Attainment Levels and Actions for improvement CAY 2015-16

PSOs	Target Level	Attainment Level	Observations
PSO1:Apply basic principles of science-physics, chemistry and mathematics for regulating industrial measurements and control			
PSO 1	3	3	• Diploma pass outs are mostly employed as technicians in the field/ shop floor and marketing where they are able to use fundamental knowledge of Physics, chemistry and Mathematics
Action 1: Prepare the students for higher level of jobs by stressing on these fundamental subjects. The target level will be suitably raised			
PSO2: Operate and calibrate various electronic field devices and Instrumentation systems on the basis of Basic electronics, Power electronics, Microcontrollers and Embedded systems concepts.			
PSO 2	4	3	• Skills of students are limited to devices mentioned in the curriculum only
Action 1: Workshop for students on calibration and Aurdino based microcontroller programming is planned **Action 2**: Internship/In plant training for all the students is targeted			
PSO3:Handle Industrial communication networks of signal transmission over various media by applying principles of communication			
PSO 3	4	3	• Students are not able to link digital communication principles with communication bus networks
Action 1: Expert lectures are arranged on Industrial communication systems and installation techniques.			
PSO4::Maintain Computer hardware and software in process control systems, such as PLC/SCADA/DCS			
PSO 4	3	3	• The curriculum gives adequate coverage of computer hardware and software which gives confidence to students for handling advanced PC based control systems.
Action 1:Being core member of curriculum revision, inclusion of latest developments in the automation field will be incorporated to keep with the technological advancements			
PSO5:Implement Project engineering techniques for achieving speedy and flawless implementation of projects.			
PSO 5	4	4	• A workshop is conducted every year by subject experts from industries which helps the students to understand various aspects of project engineering
Action 1: Case studies are given by the subject experts which the students submit as a part of assignment.			

7.2 Improvement in Success index of Students without backlog(10)

Items	LPB 2015-16	LPBm1 2014-15	LPBm2 2013-14
Success index(4.2.1)	0.23	0.36	0.36

7.3 Improvement in Placement and higher Studies(10)

Items	LPB 2015-16	LPBm1 2014-15	LPBm2 2013-14
Placement index (4.6)	0.66	1	0.76

7.4 Improvement in Academic performance in final year(10)

Items	LPB 2015-16	LPBm1 2014-15	LPBm2 2013-14
Academic performance index (4.3)	4.61290323	6.669	5.89525424

7.5 Internal Academic Audit

Items	CAY 2015-16	CAYm1 2014-15	CAYm2 2013-14
Internal Academic Audit	88	82.5	79

7.6. New Facility created in the program (10)

Items	CAY 2015-16	CAYm1 2014-15	CAYm2 2013-14
New Facility Created	• e- notes • In plant training	• Waste management • GC • Spoken tutorials	• Mentoring • ED cell

Institute Level Criteria

CRITERION 8	**Student Support Systems**	**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 admitted students are from different strata of the society and at times go through difficulties. Class teachers keep a close watch on individual student's behavior along with other mentors to check the need for assistance. Counseling to done at the personal level, through the Counselor appointed by the Institute to get the student back in to main stream learning and overcome problems faced. Motivational lectures are regularly held to maintain learning enthusiasm amongst students. Students groups are formed for studies to improve confidence and performance levels.

Type of Mentoring: Professional guidance/career advancement/course work specific/Laboratory specific/All-round.

Number of Faculty Mentors: 9 per Department

Number of students per Mentor: 20 per mentor

Frequency of Meeting: Monthly

1. Each student division has two class teachers to plan and monitor Curricular, Co-curricular and Extra-curricular activities.
2. Student attendance and Progressive test records are presented during the Parents meeting (twice in the term).
3. Remedial/Paper solving sessions are conducted towards the end of term for improving academic performance.
4. In case of students facing Concentration or Personality related problems they are guided to the Student-Counselor appointed by the Polytechnic.

5. Every effort is made for all-round personality development of students enrolled for learning.

Mentoring System: A Proctor Diary is maintained for each student with following details.

- Personal Information
- Previous Record
- Academic Performance

Professional Guidance:

The departments are well equipped with knowledgeable Human resources in the form of members of faculty who by keeping themselves of developments offer guidance to the students in addition to the classroom teaching.

Theory:

The theory subjects are taught by the respective teachers with complete preparation of the subject. This includes teaching plan, notes, PPT/Transparencies, Question Banks, Assignments and Tutorials. Faculty refers standard textbooks as well as e-learning resources to enable effective learning amongst students. Additional inputs are obtained through Training/Content Updating Programs attended by the teachers. Regular assignments after each Chapter, helps the students to understand and remember the expected concepts for necessary skills. The latest advances in the respective subjects are preferably covered through industry expert guest lectures.

Laboratory:

Diploma program Curriculum designed by MSBTE has about 40 % weight age to Theory subjects and 60% to the Practical. This approach is very much useful for skill development to acquire adequate expertise.

The Laboratories are well equipped to perform the experiments including additional ones designed by the Subject Teachers.

The list of experiments as per the curriculum needs is identified at the start of the Semester and the students are introduced to the laboratory.

The introduction of cycle of practical is provided before the conduct of experiments. Experiments are performed by a group of 2-3 students. The experimental results are verified and assessed on continuous basis.

Subject teachers design additional experiments/Mini projects for beyond the Curriculum coverage and complete understanding of the subject.

All-Round Development:

The Curriculum is developed by keeping in focus the overall Personality development for acquiring necessary skills. Each course has scope for Theory sessions, Practical, Assignments, Tutorials and Presentations by students. The subjects such as Communication skills, Development of Life Skills, Professional practices help the students to participate in curricular and co-curricular activities.

8.2 Feedback Analysis and Reward/ Corrective measures taken (10)

Feedback collected for all the Courses: YES

A standard feedback questionnaire is collected from the students.

Specify the feedback collection process:

- 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.
- Feedback Questionnaire is given and explained to the participating students.
- 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 teacher is analyzed. All the comments of the students in the feedback is communicated to the respective faculty member 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.

Teachers Feedback Analysis - Average percentage of students who participate: 50%

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**

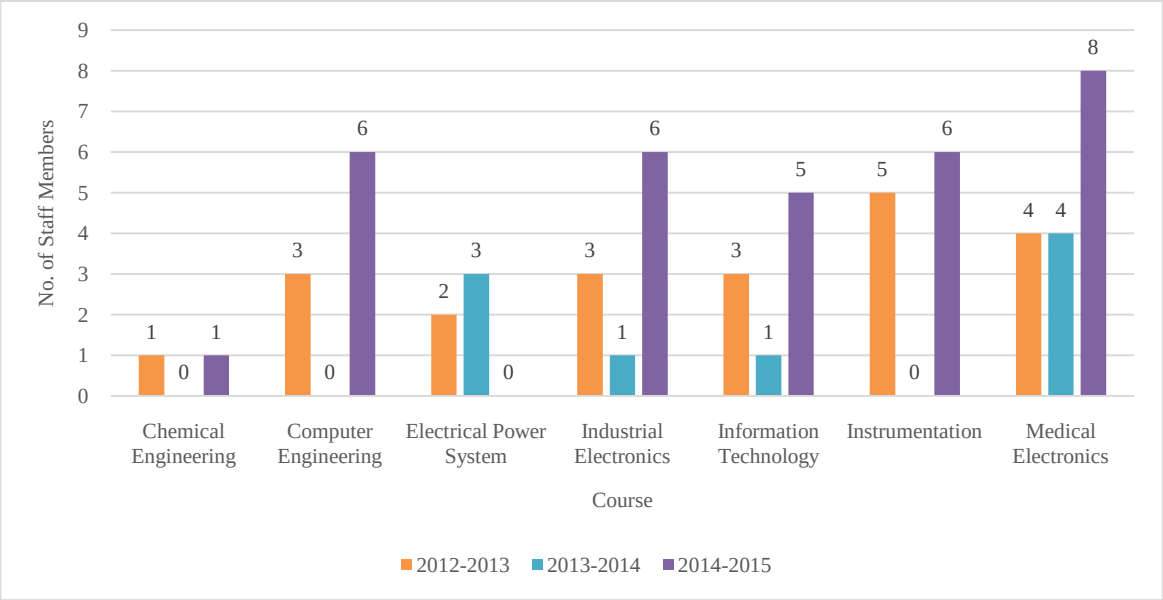
Basis of Reward / Corrective measures

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

subsequent year. The staff members with special contributions are appreciated during Faculty meetings, Training programs and Conferences.

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

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 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.

Corrective Measures

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

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 Viewsto 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 Programs	**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:**

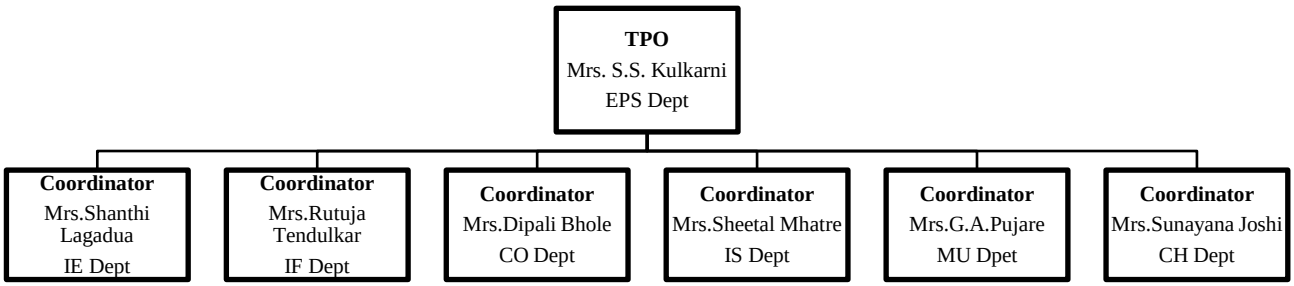
The Feedback indicated that the students are by and large satisfied with the currently available facilities. The maintenance of the existing infrastructure is done on regular basis. Sports and Cultural competitions are held during the Semester Break. Institute is planning to provide more recreational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

Based on the Feedback Analysis and suggestions for improvementfollowing 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 (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 criteria vary 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 abilitiesand 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

Activity	2015-16		2014-15		2013-14
No. of Campus Placements	**13**		**9**		**8**
Industries Interacted for Placement	**14**		**10**		**8**
No. of Industries for Internships	**IE**	**15**	**IE**	**--**	*****
	IS	**51**	**IS**	**01**	
	EP	**15**	**EP**	**10**	
	IF	**20**	**IF**	**--**	
	CH	**15**	**CH**	**--**	
	MU	**19**	**MU**	**02**	
	CO	**61**	**CO**	**--**	

*** Internship activities started from the year 2014-15.**

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	57	90
Industrial Electronics	39	25	64
Medical Electronics	13	33	46
Computer Engineering	67	66	133
Information Technology	21	31	52
		Total	**469**

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. KirtiAgashe, 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

8.4 Entrepreneurship Cell/Technology Business Incubator (5)

Polytechnic started ED Cell in the academic year 2011-2012.The Cell intends to encourage, motivate and provide training for the students who wish to become Entrepreneurs.

Entrepreneurship Development Cell strives to inspire and generate a culture of Innovation to help budding entrepreneurs to realize their potential. The objectives of the Cell are:

Short Term:

1. Train and equip students with the knowledge and resource that are needed for startups.
2. Conduct:

a. Entrepreneurship Awareness Camp (EAC).

b. Entrepreneurship Development Programs (EDP).

c. Faculty Development Programs (FDP).

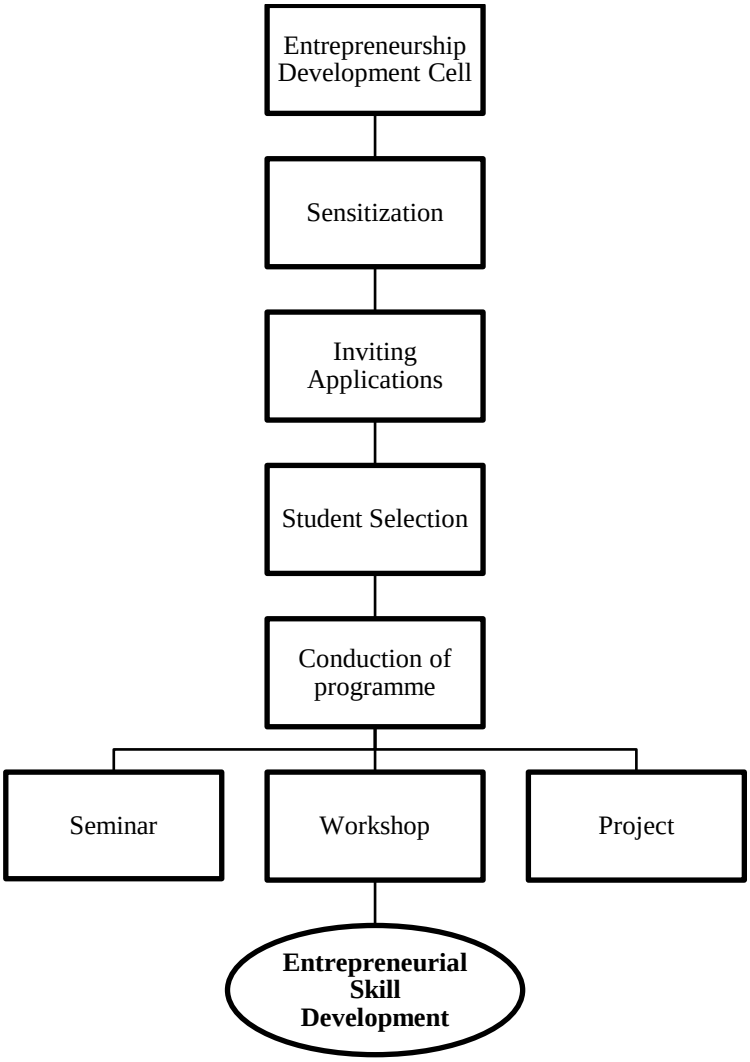
d. Skill Development Programs (SDP).

3. Conduct a variety of competitions round the year for incubating nascent ideas and providing mentorship to budding entrepreneurs.
4. Building Entrepreneurs – Orient students towards entrepreneurship since this is the phase of life where dreaming about their goals in life begins.
5. Every year **Technology Divas is** organized to bring synergy between **Industry** and **Institute**. Two original projects from each department present their ideas. The Cell tries to build relationship with few industries to take these ideas forward.

Long Term:

1. To assist students in starting industries of their own for:
    a. Product identification.
    b. Market survey, tools for market research.
    c. Preparation of project reports and technical feasibility reports
2. Consultancy and Research.
3. Training programs for industrial professionals.

Activity Chart for Entrepreneurship Development Cell



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

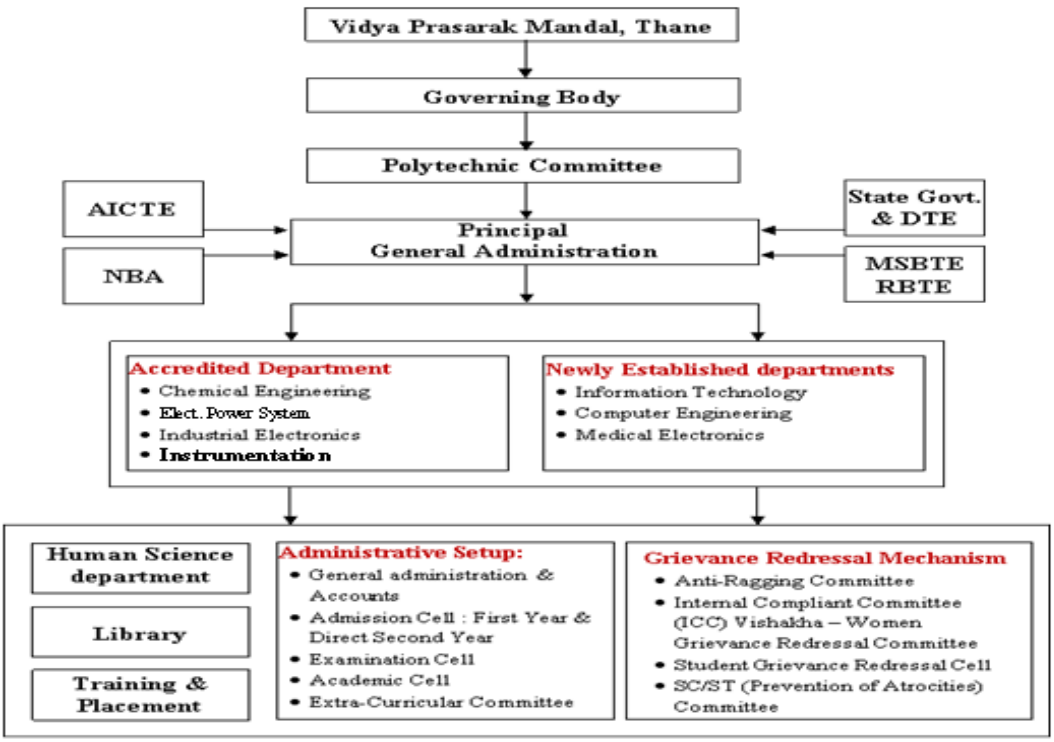
Ensuring skill development through Quality Technical Education.

Mission

- Imparting creative learning by innovative methodologies to expose the talents by the way of MSBTE (Maharashtra State Board of Technical Education) curriculum.
- Develop Technical Skills and Professional Ethics with Entrepreneurial spirit through conducive environment.
- 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)

Organizational 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	7

Sr. No.	Date of Meeting	Main Points discussed to place before GB/PC	Members Present
		software, Value Addition Programs	
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, Journal/Conference publications.	6
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

- Counseling 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, Mehendi competition, 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.

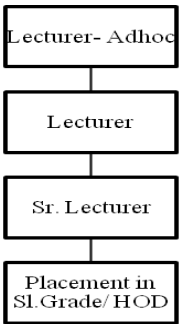
D. Defined rules, procedures, recruitment and promotional policies:

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 programs 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.) UshaRaghavan	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 programs. 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 programs.
- 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 D Space 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 : Intec Online, VSNL, Home Net
- 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 programs 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 Programs

The Advance Diploma Programs which are offered as a part of Continuing Education Programs 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 programs such as

- Vigilance Awareness Programs 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

V.P.M.'s POLYTECHNIC THANE

Prof. D.K. Nayak
Principal

Annexure

(A) Program Outcomes (POs)

PO-1 Basic knowledge : Knowledge of Mathematics, Science, and Engineering to identify and solve real-engineering problems

PO-2 Discipline knowledge : Identify, formulate, and solve challenging Instrumentation related problems.

PO-3 Experiments and practice : Read and interpret electronic circuit diagrams to perform experiments and analyze the results.

PO-4 Engineering Tools : Adopt optimal engineering methodologies with an understanding of the limitations in given industrial circumstances

PO-5 The engineer and society : A responsible Instrumentation engineer sensitive towards professional, societal, ethical and safety related issues

PO-6 Environment and sustainability : Translate the knowledge gained to solve environmental issues for sustainable development.

PO-7 Ethics : Demonstrate integrity by being committed to professional ethics and responsibilities of the engineering practice.

PO-8 Individual and team work : Be empowered with an educational foundation that will prepare them for leadership roles for diverse career paths.

PO-9 Communication : Communicate their ideas effectively in collaboration with other members of engineering teams

PO-10 Life-long learning : Be a lifelong learner being able to meet the challenges of technological advancements.

(B) Program Specific Outcomes (PSOs)

PSO-1 : Apply basic principles of science-physics, chemistry and mathematics for regulating industrial measurements and control.

PSO-2 : Operate and calibrate various electronic field devices and Instrumentation systems on the basis of Basic electronics, Power electronics, Microcontrollers and Embedded systems concepts.

PSO-3 : Handle Industrial communication networks of signal transmission over various media by applying principles of communication.

PSO-4 : Maintain Computer hardware and software in process control systems, such as PLC/SCADA/DCS.

PSO-5 : Implement Project engineering techniques for achieving speedy and flawless implementation of projects.