SELF ASSESSMENT REPORT (SAR)

Submitted to

NATIONAL BOARD OF ACCREDITATION, NEW DELHI

By

Name of Programme : Diploma in Information Technology

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 **Information Technology**

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

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 Programmes. Polytechnic, its students and staff have won awards at State and National level regularly. Institute is a trust worthy partner of Affiliating body Maharashtra State Board of Technical Education, Mumbai as a Project Institute for Curriculum Revision, Faculty Training lab Manual Development, Conduct of Semester Exams, Academic Monitoring, Career Fair and other activities. Institute has upgraded its Infrastructure, Faculty, Equipment's, and Teaching

Learning process from time to time to meet changing technology needs and industry expectations.

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

Polytechnic Journey so far…….

Major Achievements

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

Year	Activity
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 Programmes, w.e.f 17/3/2004 for the period of 3 years.
2004	One-day National Seminar on **Pollution of Water Bodies in Urban Area** on 8th August 2004 supported by **AICTE, New Delhi**.
2004	Start of Diploma in **Medical Electronics**.
2005	Visit of Infosys founder **Mr. N.R. Narayanamurthy** as a Key Note Speaker at the Conference Challenges to Indian Multinationals.
2005	Received **AICTE Grant of Rs. 5,00,000/- 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 Department 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.**

Year	Activity
2009	**District Level Energy Park** developed with the partial grant of Rs.4.75 lakhs from **Ministry of New and Renewable Energy**, New Delhi.
2009	**Prof. D.K. Nayak, Principal** received **Fulbright-Hays Federal Assistance Award of U.S. Department of State** at Salzburg Seminar Session 463 on Greening the Minds: Universities, Climate Leadership, and Sustainable Futures, **Salzburg, Austria** for the paper title **Renewable Energy Efforts - Special Focus on reduction of Global Warming.**
2009	Start of **Advance Diploma in Energy Management & Audit**
2011	Start of **Entrepreneurship Development Cell.**
2012 & 2013	**MSBTE Letter of Appreciation for Excellent Academic Performance** in all the Diploma and Two Advance Diploma Programmes.
2013	**IOSH, UK Graduate Membership Accreditation** for Advance Diploma in Industrial Safety Programme.
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.**

Year	Activity
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**.

Year	Activity
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

Sr No.	Date & Year	Name of Conference
1	08.08.2004	Pollution of Water Bodies in Urban Area
2	27.08.2005 28.08.2015	Alternative Energy Sources
3	08.12.2006 09.12.2006	Geo – Informatics.
4	03.02.2007	Innovations in Safety, Health and Environment.
5	05.01.2008	Latest Trends in Nano Technology
6	18.102008	Corrosion Prevention through advanced technologies.
7	10.01. 2009	Biometrics, RFID and Emerging Technologies for Automatic Identification
8	19.09.2009	Advancements in Medical Instrumentation.
9	10.10. 2009	Safety Practices for Peace, Productivity and Profits
10	03.07.2010	Broader Perspectives of Language, Thinking and Technology
11	23.10. 2010	Technology – a Strategy for Safety in Infrastructure
12	20.08. 2011	Future Power Systems for Green & Clean World
13	15.10. 2011	Progress and Prosper through Entrepreneurs & Intrapreneurs
14	05.01. 2013	Emerging Trends in Solar Technologies
15	04.01 2014	Process Safety Management
16	16.01.2015 17.01.2015	Next Generation Electronics
17	07.02.2015	Industry Expectation from safety Managers
18	10.12.2015	Life Safety - Today & Tomorrow
19	17.12.2016	Environment, Health & Safety

List of Courses for Information Technology (IF)				
Year / Sem	**Course**	**Course-Code**	**Course Name**	**Subject Code**
Semester I	**C101**	**ENG**	English	17101
	C102	**EPH**	Basic Science (Physics)	17102
	C103	**ECH**	Basic Science (Chemistry)	17103
	C104	**BMS**	Basic Mathematics	17104
	C105	**EGG**	Engineering Graphics	17001
	C106	**CMF**	Computer Fundamentals	17002
	C107	**WPI**	Basic Workshop Practice (Computer Group)	17007
Semester II	**C201**	**CMS**	Communication Skills	17201
	C202	**APH**	Applied Science (Physics)	17210
	C203	**ACH**	Applied Science (Chemistry)	17211
	C204	**PIC**	Programming in 'C'	17212
	C205	**BEL**	Basic Electronics	17213
	C206	**EMS**	Engineering Mathematics	17216
	C207	**DLS**	Development of Life Skills	17010
	C208	**WPD**	Web Page Designing	17013
Semester III	**C301**	**AMS**	Applied Mathematics	17301
	C302	**DSU**	Data Structure Using 'C'	17330
	C303	**ETE**	Electrical Technology	17331
	C304	**RDM**	Relational DatabaseManagement System	17332
	C305	**DTE**	Digital Techniques	17333
	C306	**GUI**	Graphical User Interface (GUI)Programming	17026
	C307	**PPO**	Professional Practices-I	17027
Semester IV	**C401**	**EST**	Environmental Studies	17401
	C402	**CHM**	Computer Hardware &Maintenance	17428
	C403	**DCN**	Data Communication & Networking	17430
	C404	**MAP**	Microprocessor and programming	17431
	C405	**OOP**	Object Oriented Programming	17432
	C406	**AMT**	Applied Multimedia Technology	17041
	C407	**PPT**	Professional Practices-II	17042
Semester V	**C501**	**OSY**	Operating System	17512
	C502	**SEN**	Software Engineering	17513
	C503/ C503 E	**ISE/ MAT**	Information Security/ Multimedia and Animation Techniques	17518/ 12180
	C504	**JPR**	Java Programming	17515
	C505	**CTE**	Communication Technology	17519
	C506	**BSC**	Behavioural Science	17075
	C507	**NMA**	Network Management and Administration	17061
	C508	**PPT**	Professional Practices-III	17062
Semester VI	**C601**	**MAN**	Management	17601
	C602/ C602 E	**MCO/ DCN**	Mobile Computing	17632/ 12267
	C603	**OOM**	Object Oriented Modeling and Design	17625
	C604	**AJP**	Advanced Java Programming	17630
	C605	**STE**	Scripting Technology	17099
	C606	**IPR**	Industrial Project	17097
	C607	**EDE**	Entrepreneurship Development	17098

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
Maharashtra State, India.

2. Name and Address of the Directorate of Technical Education : Directorate of Technical Education, Mumbai, Maharashtra State, 3,Mahapalika Marg, Post Box No.1967, Mumbai - 400001.

3. Year of Establishment : **1983**

4. Type of the Institution :

University	☐	
Deemed University	☐	
Autonomous	☐	
Affiliated	☑	**Maharashtra State Board of Technical Education, Mumbai**
Any Other	☐	

5. Ownership Status :

Central Government	☐	
State Government	☐	
Government Aided	☐	
Self-Financing	☑	**Educational Trust**
Trust	☐	
Society	☐	
Section 25 Company	☐	
Any Other (Please Specify)	☐	

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

Name of the Institution	Year of Establishment	Programs of Study	Location
V.P.M's Dr. Bedekar Vidya Mandir Marathi Medium School (Aided)	1957	Junior K.G to SSC	Thane
V.P.M's K.G. Joshi College of Arts and N.G. Bedekar College of Commerce	1969	HSC, B.A, B.Com, BMM, BMS, B.Lib., M.Lib., M.A, M.Com, Ph.D., Community College	Thane
V.P.M's B.N. Bandodkar College of Science	1969	HSC, B.Sc, B.Sc(IT), M.Sc, M.Sc(IT)	Thane
VPM's Thane Municipal Corporation (TMC) Law College	1972	LLB	Thane
V.P.M's Sau. A.K. Joshi English Medium School (Unaided)	1976	Junior K.G to SSC	Thane
V.P.M's Advanced Study Centre	1996	Applied 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, Certificate courses - MS-CIT, Tally ERP9, Programming in C	Thane
V.P.M's Dr. V.N. Bedekar Institute of Research & Management Studies	2005	MMS, PGDM	Thane
V.P.M's Centre for Foreign Language Studies	2008	Certificate courses in French, German, Japanese, Chinese (Mandarin)	Thane
V.P.M's Department of Defense and Strategic Studies	2008	Publications on Internationalization of Education	Thane
V.P.M's Academy of International Education and Research	2009	Educational tour to UK, Singapore, Participation in International Competitions	UK, China, Brazil, Sweden
V.P.M's Maharshi Parshuram College of Engineering	2012	Civil Engg, , Electrical Engg, Electronics and Communications, Instrumentation Engg, Mechanical Engg	Velneshwar, Ratnagiri, Maharashtra

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

Sr. No.	Program Name	Year of Commencement	Intake Capacity	Year of Change in Intake	Increase/ Decrease	AICTE Approval	Accre-ditation 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)**	**2001**	**30**	**2002**	**60**	**Yes**	**No**
6	Diploma in Computer Engineering (CO)	2002	40	2003	60	Yes	No
7	Diploma in Medical Electronics (MU)	2005	60			Yes	No

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

8. Programs to be considered for Accreditation vide this application

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

9. Total number of Employees :

A. Regular*faculty and Staff

Items		CAY 2015-2016		CAYm1 2014-2015		CAYm2 2013-2014	
		Min	Max	Min	Max	Min	Max
Faculty in Engineering & Technology	M	02	02	02	02	02	02
	F	12	12	12	12	12	12
Faculty in Sciences & Humanities	M	01	01	01	01	01	01
	F	02	02	02	02	02	02
Non-teaching Staff	M	19	20	21	20	20	22
	F	10	12	12	13	13	13

M – Male, F – Female

*** Means –**

1. Full time on roll with prescribed pay scale. An employee on contract for a period of not less than two years AND drawing consolidated salary equal or more than applicable gross salary shall only be counted as a regular employee.
2. Prescribed pay scales mean pay scales notified by the AICTE/Central Govt. and implementation as prescribed by the State Govt. In case State Govt. prescribes lesser consolidated salary for a particular cadre then same will be considered as reference while counting faculty as a regular faculty.

B. Contractual Staff

Items		CAY 2015-2016		CAYm1 2014-2015		CAym2 2013-2014	
		Min	Max	Min	Max	Min	Max
Faculty in Engineering & Technology	M	05	05	05	05	09	09
	F	34	36	35	38	33	36
Faculty in Sciences & Humanities	M	0	0	01	01	01	01
	F	06	06	05	06	06	06
Non-teaching Staff	M	11	11	08	12	07	06
	F	12	14	10	10	09	11

M – Male, F - Female

10. Total number of Students

Items	CAY 2015-2016			CAYm1 2014-2015			CAym2 2013-2014		
	R	T	G	R	T	G	R	T	G
Total no. of boys	673	30	**703**	610	29	**639**	775	25	**800**
Total no. of girls	370	31	**401**	397	28	**425**	397	30	**427**
Total no. of students	**1043**	**61**	**1104**	**1007**	**57**	**1064**	**1172**	**55**	**1227**

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

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

i. Head of the Institution

Name : **Prof. D.K. Nayak**

Mobile No. : **9004690478**

Email id : **dknayak@vpmthane.org**

ii. NBA coordinator

Name : **Dr. (Mrs.) Usha Raghavan**

Designation : **Head Information Technology Department**

Mobile No. : **9920735746**

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

PART B: Criteria Summary

Name of the program: INFORMATION TECHNOLOGY

Criterion No.	Criterion	Marks/Weightage
Program Level Criteria		
1.	Vision, Mission and Program Educational Objectives	**50**
2.	Program Curriculum and Teaching –Learning Processes	**200**
3.	Course Outcomes and Program Outcomes	**100**
4.	Student's Performance	**200**
5.	Faculty Information and Contributions	**150**
6.	Facilities and Technical Support	**100**
7.	Continuous Improvement	**75**
Institute Level Criteria		
8.	Student Support Systems	**50**
9.	Governance, Institutional Support and Financial Resources	**75**
Total		**1000**

Self-Assessment Report (SAR)

CRITERION 1	**Vision, Mission and Program Educational Objectives**	**50**

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

Institute Vision & Mission:

Vision

Ensuring skill development through Quality Technical Education.

Mission

- **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.**

Programme Vision & Mission:

Vision

Train world class technically skilled manpower needed for the continuous development of our nation.

Mission

M1. Create intellectually talented IT professionals with entrepreneurial skills.

M2. Provide the hands-on skills required for life-long professional development.

M3. Provide IT infrastructure and connectivity to facilitate the best learning environment.

M4. Inculcate the habit of self learning to enhance the employability.

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

Develop the ability to establish peer recognized expertise in the discipline and apply the Technology for creating value by formulating and solving problems of interest.

1. Develop expertise to meet the needs of the employer by using Mathematical foundation, Algorithmic principles & implementing and evaluating systems and processes.
2. Demonstrate the ability to engage in the profession to meet global needs through effective Communication skills, Professional practices and commitment to working in Teams.
3. Develop the ability to engage in sustained learning and Professional improvement opportunities to adapt to Scientific, Technological and Societal changes.
4. Promote Life-long learning, codes of Professional ethics and inculcate Entrepreneurial mindset.

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

Vision, Mission and Program Educational Objectives published :

Sr No.	Publication detail	Internal Stakeholder	External Stakeholder
1	Institute and departmental pages of the website www.vpmthane.org	√	√
2	Departmental e-newsletter "IconnecT"	√	
3	Departmental files/ Termwork/ Project report	√	
4	Proceedings of the seminar/ symposium	√	√
5	Curriculum Implementation and Assessment Norms(CIAAN) Register given to teachers.	√	

Vision, Mission and Programme Educational Objectives Disseminated :

Sr No.	Dissemination detail	Internal Stakeholder	External Stakeholder
1	HOD cabin	√	√
2	Departmental notice boards	√	√
3	Faculty Room	√	√
4	Classroom	√	√
5	Laboratories	√	√

Internal Stakeholders: VPM Management, Teaching Staff, Non- Teaching Staff, Present Students

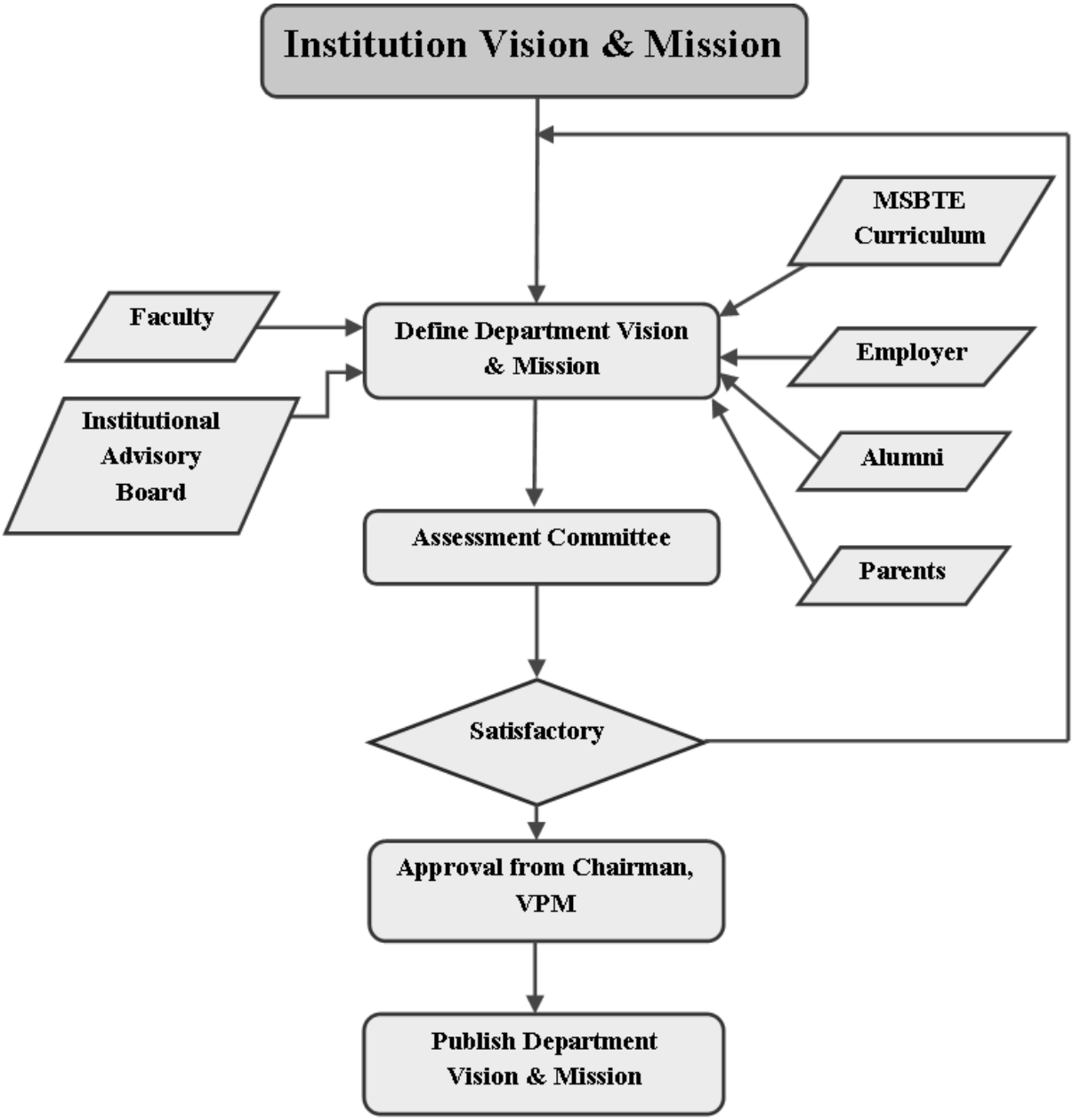
External Stake holders: Parent, Alumni, Employers, Industries

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

Process of establishing Vision & Mission:

- The Principal along with Heads of the department forms a core team of faculty members for developing the Vision and Mission statement of the department in alignment with Vision and Mission of the institution.
- The core team takes into consideration various aspects like Course Knowledge, Changing Technology, Professional skills, Ethics and Entrepreneurial Skills.
- The expectations of MSBTE are taken into consideration. The MSBTE, while framing the curriculum, takes the expectations of Industry & Academia to match the global needs. Accordingly the Vision, Mission are formulated.

- First draft of the Vision & Mission is prepared.
- Brainstorming session with teaching faulty of the department is organized.
- A feedback/suggestion is taken from Alumni, Parents, Industry professionals and an Assessment Committee consisting of Heads of department.
- These suggestions are incorporated and then approved in the Polytechnic Committee Meeting by the Chairman, Vidya Prasarak Mandal, Thane.

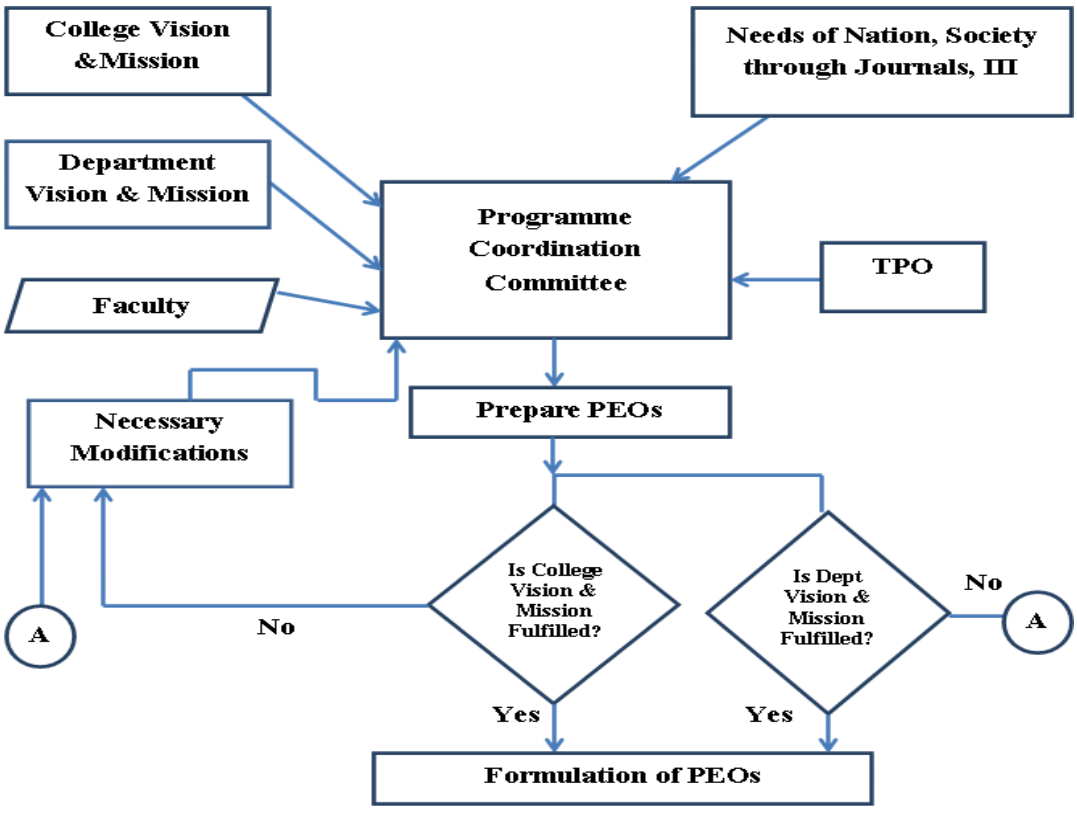


Process of establishing PEOs:

The PEOs are the broad statements stating the objectives of the programme. These objectives help in fulfilling the mission of the department. These objectives are framed in line with the MSBTE curriculum & current industry requirement. The industry needs are gauged by interaction with visiting/ industry faculty and the TPO (Training and Placement Officer). The Alumni also contribute to understand the adequacy of PEOs.

Steps:

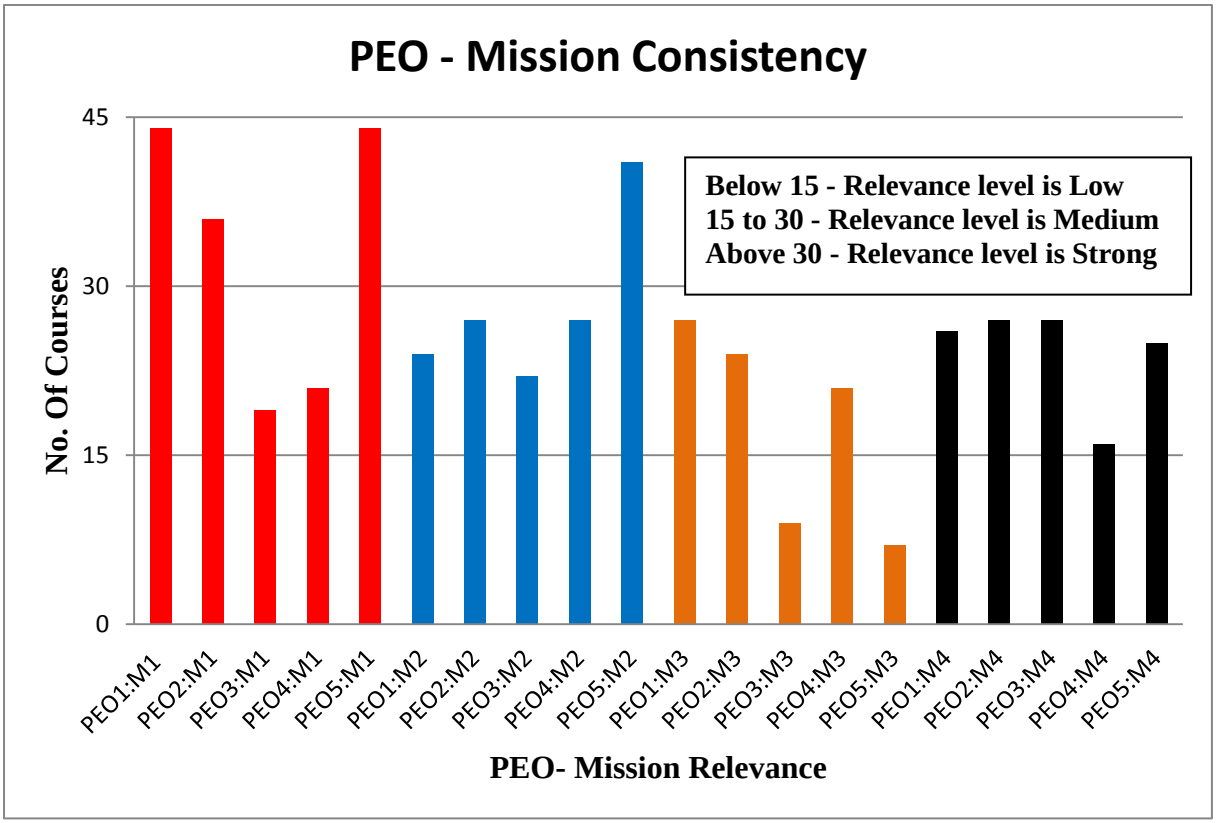
- The needs of the Nation and Society are identified through Journals, Industry Institute Interaction (III).
- PEOs are established by coordination committee of department.
- PEOs are communicated to faculty of the department and their suggestions are taken
- Final approval of the PEOs by the coordination committee.



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

PEO/M	M1 Intellectually talented IT professionals	M2 Life-long professional development.	M3 Infrastructure and connectivity	M4 Self learning ability
PEO1: Develop the ability to establish peer recognized expertise in the discipline and apply the Technology for creating value by formulating and solving problems of interest.	3	2	2	2
PEO2: Develop expertise to meet the needs of the employer by using Mathematical foundation, Algorithmic principles & implementing and evaluating systems and processes.	3	2	2	2
PEO3: Demonstrate the ability to engage in the profession to meet global needs through effective Communication skills, Professional practices and commitment to working in Teams.	2	2	1	2
PEO4: Develop the ability to engage in sustained learning and Professional improvement opportunities to adapt to Scientific, Technological and Societal changes.	2	2	2	2
PEO5: Promote Life-long learning, codes of Professional ethics and inculcate Entrepreneurial mindset.	3	3	1	2

Justification:



PEO1- M1: An intellectually talented IT professional will be recognized for his expertise among his peers and also will be able to solve problems. There is a **"Strong "**relation between the PEO1 and M1.

PEO1- M2: Application of technology for creating value results in lifelong professional development. However, regular updations to advancements in IT need to be addressed to. The consistency between PEO1 and M2 is **"Medium"**

PEO1- M3: Good infrastructure and connectivity provides an environment for developing the requisite skills/ expertise in IT. The ever changing technological advancements keep the connectivity needs dynamic. The consistency between PEO1 and M3 is **"Medium".**

PEO1- M4: Development of thinking ability for problem solving stimulates the self learning ability. The course outcomes are not fully problem solving based. Hence PEO1 and M4 have "Medium" relevance.

PEO2-M1: A strong foundation in Mathematics and Algorithms is essential for the successful implementation of project in IT profession. There is a **"Strong"** relevance.

PEO2- M2: Expertise in Mathematics and Algorithmic principles facilitates professional development. The development of a project is based on the effective implementation of the algorithms. The relevance is **"Strong"**

PEO2- M3: A good infrastructure and connectivity will give an opportunity to search information and incorporate them in a given task which helps in meeting the needs of an employer. The relevance is **"Medium"**

PEO2-M4: The ability to evaluate processes needs self learning skills since all processes are not similar and they need to be evaluated differently. The relevance is **"Medium".**

PEO3- M1: Most of the IT projects in the industry have team members working on various modules. Developing cordial relationship with team members and to be able to communicate from time to time is essential for IT professionals. The relevance is **"Medium".**

PEO3- M2: Networking with people in the field will enhance the visibility among the IT professionals and assure professional development. Communication is one of the attributes for professional development. The relevance is **"Medium"**

PEO3- M3: State of the Art Infrastructure and connectivity helps in developing good communication skills. The consistency between PEO3 and M3 is **"Low"**

PEO3-M4: The ability to learn by self can be drastically effective by communication skills and developing good professional practices. The course outcomes of some of the courses support development of professional practices. The relevance is **"Medium".**

PEO4-M1: On completion of the program students adapt to scientific technological changes which characterizes an IT professional. For this they need to engage in sustained learning. The relevance is **"Medium"**.

PEO4-M2: Sustained Learning & professional improvements will help in lifelong professional development. Performing mini projects and micro projects will develop the ability to engage in sustained learning. The consistency between PEO4 and M2 is **"Medium".**

PEO4-M3: Good system configuration and internet bandwidth enables the ability to learn new things and adapt to Scientific & Technological changes. The relevance is **"Medium"**.

PEO4-M4: Competency can be evaluated by the professional improvements undergone. The self learning ability provides triggers to participate in learning new / advance technologies. The relevance is **"Medium"**.

PEO5-M1: Inculcating the ethical codes at a young age facilitates in becoming successful IT professional. The relevance is **"Strong"**.

PEO5-M2: Having an Entrepreneurial mindset with ethical practices in place can encourage development of successful enterprise. The relevance is **"Strong"**.

PEO5-M3: Infrastructure and connectivity do not have much relevance in inculcating entrepreneurial mindset or lifelong learning. The relevance is **"Low"**.

PEO5-M4: An entrepreneur should be in a position to diversify the area of interest. This needs to skill of learning by experience or self learning. The relevance is **"Medium"**.

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).

PROGRAMME OUTCOMES (POs):

IT diploma Engineers will be able to:

1. Demonstrate basic knowledge in mathematics, science and engineering.

2. Demonstrate the ability to formulate and apply IT based knowledge to solve Engineering problems

3. Demonstrate the ability to design and conduct experiments, interpret and analyze data and report results.

4. Demonstrate the ability to model a live problem or a project that meets desired specifications and requirements using appropriate tools.

5. Have an understanding of the impact of engineering on society, health, safety and legal issues and incorporate them in engineering solutions.

6. Have the confidence to apply engineering solutions taking the societal and environmental needs into consideration.

7. Demonstrate an understanding of their professional and ethical responsibilities in engineering field.

8. Work in diverse/ multidisciplinary teams without compromising on integrity and credibility.

9. Communicate effectively in both verbal and written forms.

10. Be capable of self education and clearly understand the value of life-long learning in the context of ever-changing IT field.

PROGRAMME SPECIFIC OUTCOMES (PSOs):

IT diploma Engineer will be able to

1. Identify and analyze computer problems and prepare algorithmic/ system model for the solution to the problem.

2. Select appropriate hardware and software tools to develop circuits/ secure code / program.

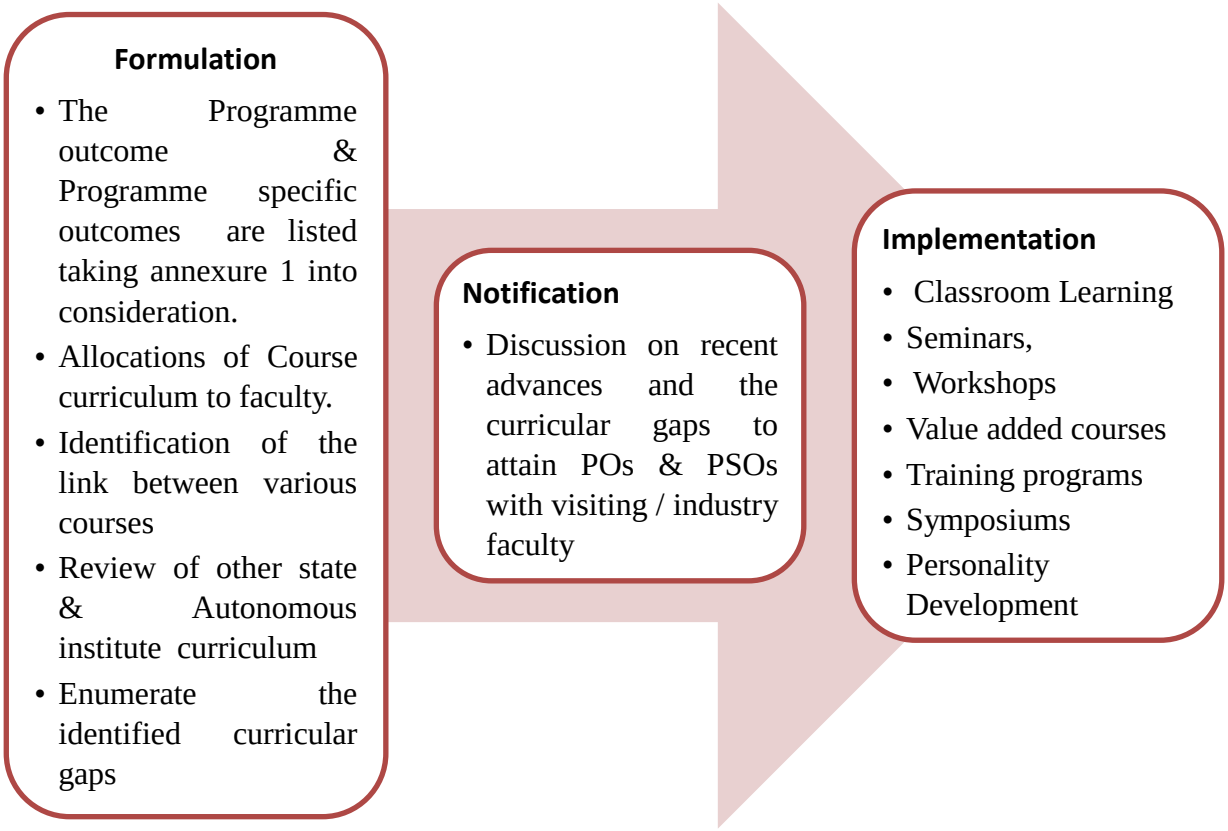
3. Test, debug and troubleshoot the developed solution to the problem.

4. Provide assistance at client's side through proper installation & documentation.

The institute is affiliated to **Maharashtra State Board of Technical Education (MSBTE).** MSBTE revises its curriculum every 5 years taking feedback from all the stakeholders like Industry, Alumni, Institutes and Subject experts. It is based on System's approach. This takes care of the curricular gaps present in the previous curriculum & thus minimizes the gaps.

However, with growing technology, it is very difficult to satisfy all the needs of the industry through curricula. A system is evolved to identify these gaps.

- A thorough study of the curriculum is done by subject teachers and a common platform is created wherein the link between various subjects is discussed. The curricular and knowledge gaps are identified and the strategy to overcome these gaps is arrived at.
- The visiting faculty in the department has regular interactions with the faculty members and suggests the recent advances in the industry and also highlights the need for students to have knowledge of these advancements. Accordingly, symposiums, Seminars, Workshops, Training programmes, Technical Quiz programme are arranged.
- A review of curricula offered by other states & Autonomous institutes are taken and the necessary contents are added in the seminars.



Identified Curricular Gaps

A. Classroom Learning: Certain gaps like knowledge of Op-amps which is not covered in the curriculum are taught in the regular class by allocating additional hours.

B. Value Added Courses: Certain application based solutions needed for final year project are addressed by conducting value added courses at the mid semester & End semester.

C. Seminars/ Workshop/ Training: Latest developments in the Technology are conducted through Seminars, Workshops and Trainings.

D. Personality Development: Personality traits are very important for an Engineer on Job. Though the subject of Professional Practices & Behavioural Science deal with these aspects, other essential skills such as stress management, Interview techniques, working in teams are dealt with by inviting experts in those areas of specialization.

2.1.2. Contents beyond the Syllabus (20)

Academic Year 2015-2016

Sr. No	Gap	Action Taken	Date	Resource Person with Designation	No. of students	Relevance to POs & PSOs
1	B	Hands-on Training Program on .Net technology	08.06.2015 To 13.06.2015	Mrs. Swati Joshi, Faculty, IF Department	18	PO: 1 - 10 PSO: 2, 3
2	B	Android Application development Programme	09.12.2015 To 18.12.2015	Mr. Deepak Kolhe, Appeteria Technologies	14	PO: 1 – 10 PSO: 2, 3
3	B	Seminar on" Working with Eclipse IDE"	02.01.2016	Mr. Nitesh Tawade	TY	PO: 2,3, 6,10 PSO: 1,3
4	A	Op-Amps	During classroom Instruction	Dr. Usha Raghavan	SY	PO: 1,3,10 PSO: 3
5	D	Seminar on "Stress Management"	24.07.2015	Mrs. Suchitra Naik	TY	PO: 6 -10 PSO: 4
6.	C	OFDM	20.08.2015	Mrs. Santhi M.L	TY	PO: 1,3,10 PSO: 3
7.	C	SMACS	28.09.2015	Mrs. S. K. Shukla	SY	PO: 2,4 ,5,6,7 PSO:1

Academic Year 2014-2015

Sr. No	Gap	Action Taken	Date	Resource Person with Designation	No. of students	Relevance to Pos & PSOs
1	B	Android Application development Programme.	16.06.2014 to 21.06.2014	Mr. Deepak Kolhe, Appeteria Technologies	19	PO: 1-5, 7-10 PSO: 1 - 4
2	C	Cloud Computing	04.03.2015 to 05.03.2015	Mr. Manish Kumar Jain, Corporate Trainer.	51	PO: 1,2,6,9,10 PSO: 1 - 4
3	C	SAP	25.11.2014 to 02.12.2014	MSBTE approved SAP training	10	PO: 2,4,6,7, 9, 10 PSO: 4
4	A	Op-Amps	Classroom Instruction	Dr. Usha Raghavan	SY	PO: 1,3,10 PSO: 3
5	D	Stress Management	23.09.2014	Ms. Vedavati Paranjape	TY, SY	PO: 6 -10 PSO: 4

Academic Year 2013-2014

Sr. No	Gap	Action Taken	Date	Resource Person with Designation	No. of students	Relevance to POs & PSOs
1	C	Personality Development	12.08.2013 & 14.08.2013	Mr. Harshal Sahasrabudhe	130	PO: 7 - 10
2	D	Email System	06.07.2013	Mr. Satish Mahajan	70	PO: 7 - 10
3	C	Ethical Hacking	15.07.2013	India Can, Thane	60	PO: 5,6,7,10 PSO: 2,3
4	A	Op-Amps	During classroom Instruction	Dr. Usha Raghavan	SY	PO: 1,3,10 PSO: 3
5	B	Multimedia and Animation Techniques- 3D Max.	18.09.2013	Mr. Mahesh Karkera & Mr. G. Ram	SY	PO:1,2,4 - 10 PSO: 1- 3

2.2 Teaching Learning Process (150)

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

A departmental ***academic calendar*** is prepared in accordance with the MSBTE calendar. ***Teaching Plan and Laboratory Plan*** is prepared by the staff to plan and complete the theory and practical in the given time frame. In order to standardize the process of curriculum implementation and assessment, MSBTE has evolved with CIAAN (Curriculum Implementation And Assessment Norms). These norms are religiously followed by all the faculty members to facilitate the proper implementation of teaching learning process. Keeping the pedagogical initiatives in mind, teaching learning process is effectively implemented in the following ways:-

- **Teacher Centered Learning**

  Teacher delivers the lectures to teach new concepts and theory aspects through not only conventional chalk/board method but also through demonstrations of ***Models, charts etc. and also through ICTs. Videos, flash presentations, Power Point Presentations***, are a

part of every subject teacher's lecture delivery plan to help the students visualize and understand the concepts better.

- **Student Centered learning**

  Students develop ***hands- 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.

  Poster exhibitions, group discussions and student presentations (By allotting one topic to a group of 3-4 students) are held every year. A ***major project*** helps develop a working model of a problem by integrating the course outcomes of various courses and reinforces the concepts learnt in the diploma programme. Students are taken *fo**r industrial visits and technical exhibitions*** which provide industry based learning. ***In-plant training*** is encouraged so that student develops an understanding of industrial requirements and get a feel of industry environment.

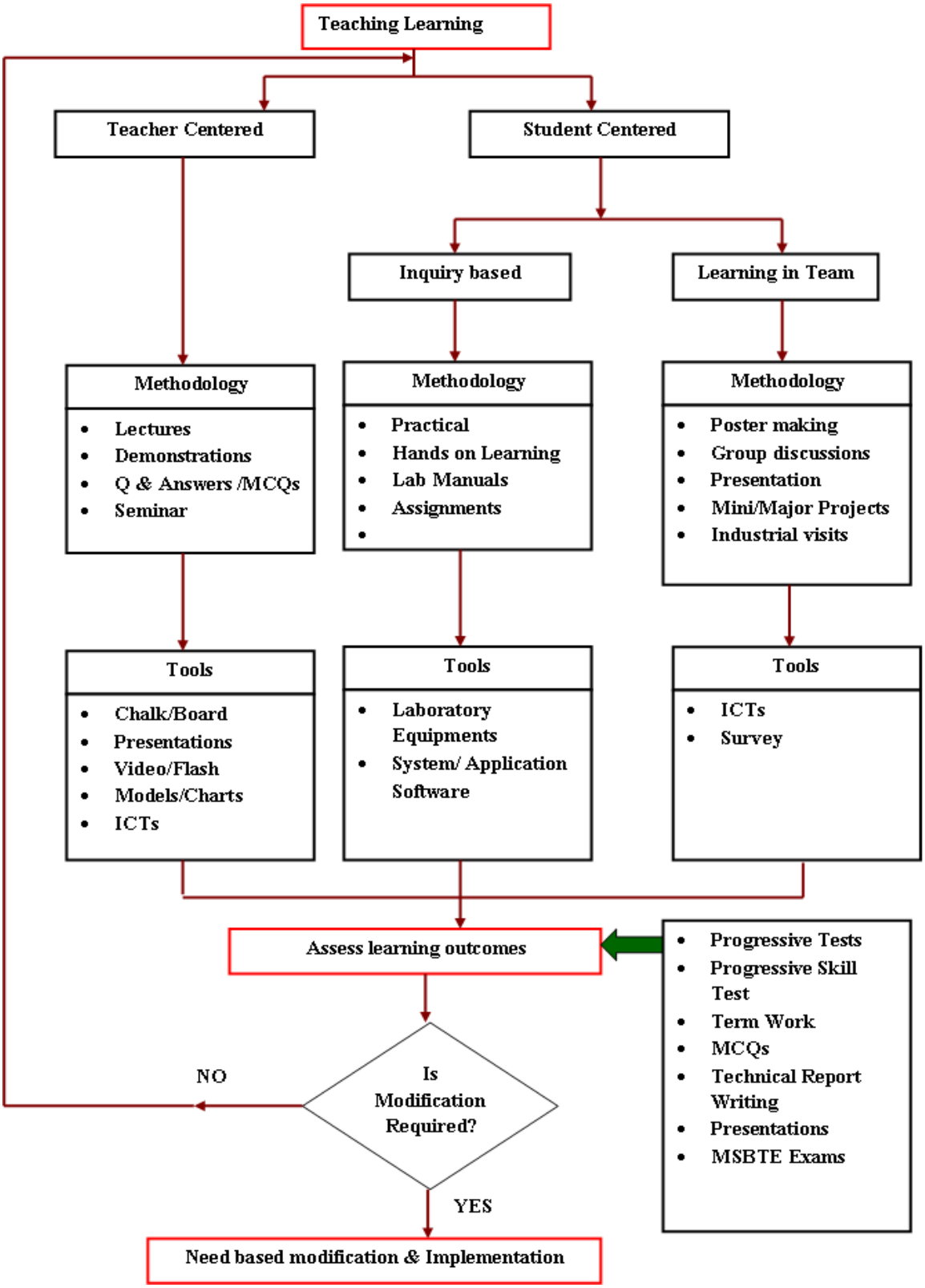
  Counseling and Mentoring through various sessions are organized to motivate the students.

  Bright students are motivated to participate in various ***quiz and Technical paper presentation competitions*** to develop professional and soft skills. Free ***Book bank*** facility is extended to the toppers of every class in recognition of their achievements and also to the reserved category students. A very nominal fee is charged to other students. Weak students are guided through ***Remedial lectures***.

  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.

  At the end of the practical session students are evaluated on the basis of MCQs, based on Cognitive, Psychomotor and Affective Domain.

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)

Sr. No	Parameter	Initiative taken	Skills developed
1.	**Semester Exam**	Solving Previous Exam Question Papers Chapter-wise Question Bank Problem Solving sessions	• Ability to answer repeated questions • Facilitates the preparation for exams • Minimize guessing • Focuses on ability to apply.
2.	**Class Test**	Setting structured Questions Questions with verbs differentiate, distinguish, compare, etc. are included	• Recall factual knowledge • Organize the knowledge • Present the knowledge in logical sequence. • Enhance the ability to analyze two different situations. • Make the students understand the similarity between 2 systems.
3.	**Practical Sessions**	Use of Laboratory Manual MCQs in each experiment	• Helps in attempting certain questions • Enriches the scope of learning • Improves cognitive ability • Provides reliable measurement of scores • Provides the students to Self-Evaluation.
4.	**Assignments**	Chapter-wise assignments given	• Enhances better understanding of concepts • Facilitates preparation for semester exams

2.2.3. Quality of Experiments (15)

Sr. No	Parameter	Initiative taken	Skills developed	Relevance to Programme Outcomes
1.	**Practical Session**	Use of Laboratory manuals Continuous assessment ICT supported sessions, Demo kits MCQs & Orals	• Correlation between Theory & Practical • Motor skills • Debugging & Troubleshooting • Drawing inference • Communication Skills • Self-Evaluation	All POs and PSOs.
2.	**Additional Practices beyond curriculum**	• Experiments /Mini projects • Programs	• Ability to design solutions/code to simple real time problems • Improves logical thinking • Debugging	All POs and PSOs.

Sample List of experiments with relevance to Course Outcomes:

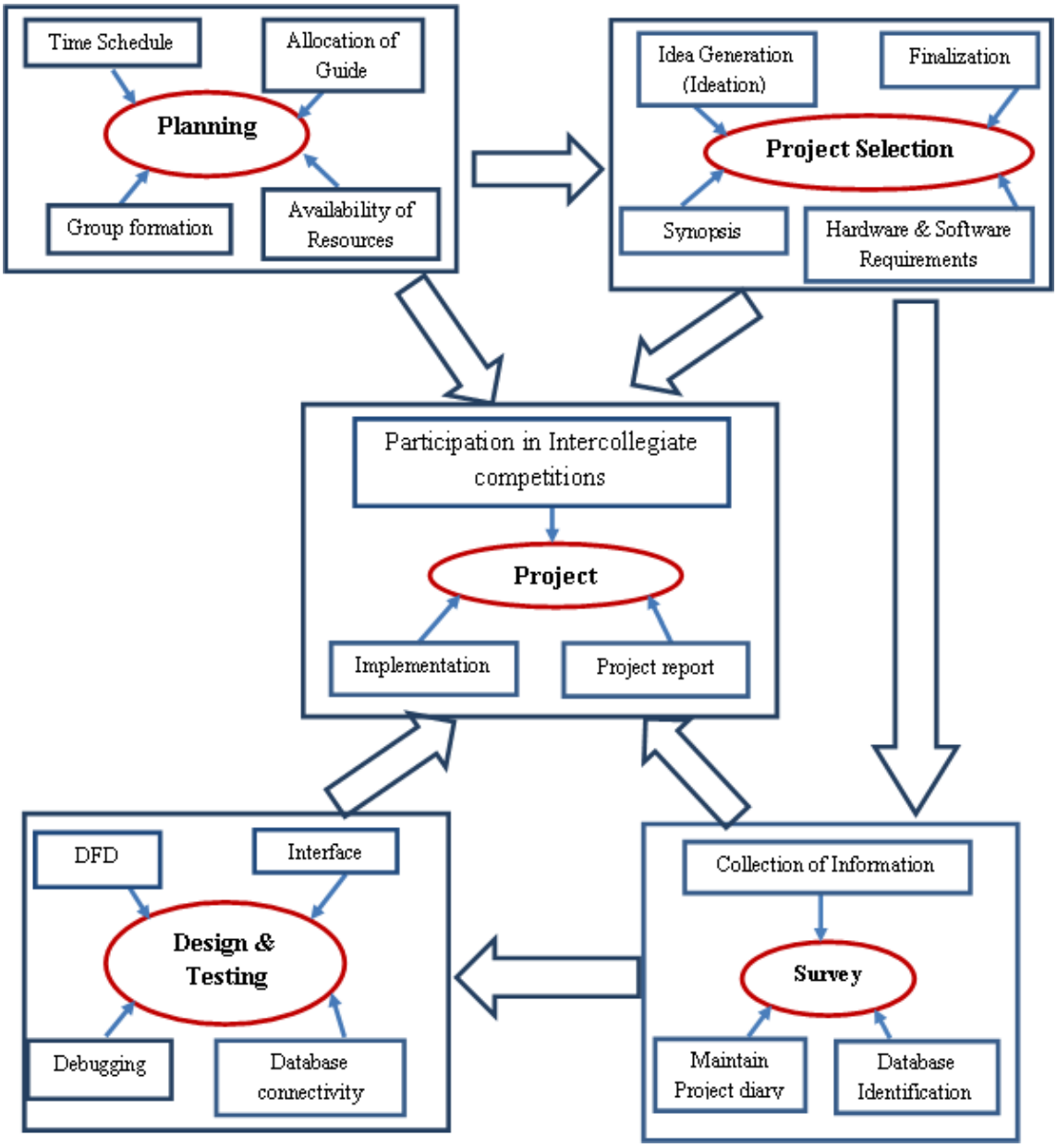
Course Name :IF4G					MSBTE Course Code: OOP(17432)					
SEMESTER: FOURTH					TYPE OF ASSESSMENT: TW/OR/PR: TW/PR					
Experiment No.	Title	Type			CO1	CO2	CO3	CO4	CO5	CO6
		Study	Performance	Mini Project	Implement C++ programming structure	Create classes,objects in C++.	Implement Constructor & Destructor	Implement the Reusability using Inheritance	Write programs using Pointer with Array,String and Object	Implement the concept of Polymorphism
1	Prograom to accept & display data for exchanging values of two variables.	√			√				√	
2	Program to declare a class and display data for one object.		√		√	√				
3	Program to declare a class 'employee' . Accept and display the data for three objects.		√		√	√	√			
4	Program to show how static member is shared by multiple objects of the same class.		√				√		√	
5	Program to find out the mean value of a given number using friend function		√			√	√		√	
6	Program to print students details using constructor and Destructor		√			√	√		√	
7	Program to find prime number using default argument in constructor		√				√	√	√	
8	Program to find out the payroll system using single level inheritance		√			√	√		√	
9	A. Program to find students details using multiple inheritance. B. Program to compute total marks of student using virtual base class.		√			√	√		√	√
10	Program to evaluate the largest number of an array using pointer.		√			√	√		√	
11	Program to search a character in a string using pointer.		√				√	√	√	
12	Program to input and display code and price for two items using pointer to object.		√				√	√	√	
13	Program to display roll_no and name of student using 'this' pointer.		√				√	√	√	
14	Program to using function overloading to calculate volume of cube, cylinder & rectangular box.		√				√	√	√	√
15	Program to overload unary '-' operator		√				√	√	√	
16	Program to display the output using the virtual function.		√				√	√	√	

Course Name :IF3G					MSBTE Course Code:GUI (17026)					
SEMESTER: THIRD					TYPE OF ASSESSMENT: TW/OR/PR: TW/PR					
Experiment No.	Title	Type			CO1	CO2	CO3	CO4	CO5	CO6
		Study	Performance	Mini Project	Use VB environment, project forms and controls.	Use data types, arrays, message box, operators, loop statements in program.	Work with controls and events	Use module, class module, MDI, Menu editor and Graphics.	Work with List view,Tree view, Rich Text Box, Windows common controls	Connect database to front end and generate reports.
1	GUI Environment- Visual Basic	√			√				√	
2	Application to perform mathematical operations using Textbox, Labels and CommandButton.		√			√	√		√	
3	Application to use date, Time, String, MathematicalFunction		√			√	√		√	
4	Application using chart and grid control.		√				√	√	√	
5	Directory, Drives, File List and Dialog box control		√			√	√		√	
6	Timer control using command button and Text Box.		√			√	√		√	
7	Text Editor with Menu having Cut, Copy, Paste Replace Text RTF Control.		√				√	√	√	
8	MDI form		√			√	√		√	
9	Create a Database application using different database controls		√			√	√		√	√
10	Create a crystal report and fetch record		√			√	√		√	√
11	Develop a Mini Project.			√			√	√	√	√

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

Major group projects during final year Diploma is assigned to the students and the implementation is ensured through following processes.

- Planning
- Selection
- Survey
- Design and Testing
- Execution
- Documentation



- Every final year student undertakes project which is spread over a period of two semesters.
- A group of 4-5 students are formed in the 5th semester and a faculty is allotted as a guide to these groups.
- Groups select multiple topics in their area of interest and considering latest trends/demand in the industry or benefit for the society.

- Under the guidance of faculty and industry professional, the group finalizes the project topic.
- The student performs literature survey and maintains a diary showing the weekly updates on the project.
- Project Synopsis is prepared and submitted at the end of the fifth Semester.
- The logical and physical design of the project is done in the sixth semester during the allotted hours in the time table with the guidance of respective guides, faculty and industry professional.
- An exhibition of the projects developed is organized in the last week of February and best projects are recognized and sent for various other inter collegiate competitions.
- A final project report is prepared with proper documentation of design and installation procedures.

Prize Winning Projects for the past 3 years:

Sr. No.	Project Name	Type	Guide	Achievement
1	Personalization of Android	Software	Mrs. Sarika Wagh	**First prize** in DYP-ProEX Inter-Polytechnic Project Competition 2014, D.Y.Patil Institute of Technology, Nerul.
2	Woman Security Watch	Hardware & Software	Dr. Usha Raghavan	**Third Prize** in National Level Project Competition "Tantragyan" 2014, Lokamanya Tilak College of Engineering, Navi Mumbai

List of projects and their relevance with respect to POs and PSOs

Academic Year 2015-2016:

Sr. No	Project Name	Hardware interfacing and software	Pure Software	Project Guide	POs										PSOs			
					1	2	3	4	5	6	7	8	9	10	1	2	3	4
1	Smart Chair	√		Dr.Usha Raghavan	1	3	1	3	2	3	1	3	2	2	3	3	3	2
2	Smart Tutor		√	Dr.Usha Raghavan	1	3	1	3	3	3	2	3	3	2	3	3	3	2
3	KATTY'z Food Website		√	Mrs. Swati M. Joshi	1	1	3	3	2	3	3	3	1	2	3	3	3	3
4	Interior Decorator's Web site		√	Mrs. Rutuja Tendulkar	1	3	3	3	3	3	3	3	3	3	3	3	3	3
5	Smart Gym		√	Mrs. RadhikaKamath	1	2	1	2	3	1	3	3	3	2	3	3	2	3
6	Online Job Interview		√	Mrs. Gauri Bobade	2	1	2	1	3	1	3	2	1	1	2	3	3	3
7	Online Blood Bank		√	Mrs. Gauri Bobade	1	2	1	2	3	3	1	1	3	2	2	3	3	3
8	Timetable software		√	Mrs. Archana Kalia	1	2	3	3	3	3	1	1	1	3	2	2	3	3
9	Digital locker		√	Mrs. Archana Kalia	1	2	3	3	3	3	1	1	1	3	2	2	3	3
10	3D Gaming		√	Mrs. Shubhangi Bajaj	2	3	3	1	2	3	3	3	1	2	3	3	3	2
11	Attendance system		√	Mrs. Shubhangi Bajaj	2	3	2	1	2	3	2	3	1	2	3	3	3	2
12	Student Query Track		√	Mr. Dilipkumar Pandey	1	2	1	2	2	3	2	3	1	3	2	3	2	3
13	Security Management		√	Mr. Dilipkumar Pandey	1	1	1	2	3	3	2	2	1	2	2	2	3	3
14	M-Tracker		√	Mr. Prashant Rayarikar	2	1	1	1	3	2	1	2	1	2	2	3	3	2
15	Hospital Management		√	Mr. Prashant Rayarikar	2	1	2	3	2	2	2	1	2	2	3	3	2	3
16	Easy Alms		√	Mrs. RadhikaKamath	1	3	1	2	3	3	2	3	3	2	3	1	3	2

Academic Year 2014-2015:

Sr. No	Project Name	Hardware interfacing and software	Pure Software	Project Guide	POs										PSOs			
					1	2	3	4	5	6	7	8	9	10	1	2	3	4
1	Insurance System		√	Mrs. Radhika Kamath	2	1	1	3	2	2	2	3	3	3	3	2	3	3
2	online shopping website		√	Mrs. Swati Joshi	1	2	3	2	3	2	2	-	1	3	2	3	3	3
3	QR magic box		√	Mrs. Lavanya Sangewar	-	2	2	2	2	3	2	-	-	2	2	2	3	3
4	Notice App		√	Mrs. Rutuja Tendulkar	1	2	1	3	2	2	2	3	3	2	2	3	3	2
5	Control of Home Appliances using voice detection	√		Dr.Usha Raghavan	2	3	-	1	3	2	1	1	3	2	-	3	3	3
6	Heart rate monitor App		√	Mrs. Archana K.	-	2	3	3	3	3	-	-	-	3	2	2	3	3
7	Online medical portal		√	Ms. Gauri Pawar	1	3	2	2	2	3	3	1	1	3	2	2	1	2
8	Dream job		√	Mrs. Radhika Kamath	-	1	2	2	2	1	2	3	3	3	2	2	2	3
9	Secure Voting		√	Mrs. Shubhangi Bajaj	1	2	1	3	3	3	2	3	3	1	2	2	3	1
10	Sixth sense technology	√		Mrs. Rutuja Tendulkar	2	2	2	3	1	2	1	3	3	2	2	3	3	1
11	Line follower	√		Mrs. Swati Joshi	1	3	3	1	1	2	1	3	3	1	2	2	2	3
12	Universal PC suite		√	Mr. Dilip Kumar Pandey	1	3	2	3	1	1	1	1	2	3	2	3	3	3

Academic Year 2013-2014:

Sr. No	Project Name	Hardware interfacing and software	Pure Software	Project Guide	POs										PSOs			
					1	2	3	4	5	6	7	8	9	10	1	2	3	4
1	Electricity Saver	√		Ms. Priyanka Mahajan	1	2	1	3	2	3	2	3	3	2	2	3	3	3
2	Image Encryption System		√	Ms. Vibha Paradkar	2	3	2	3	2	1	1	3	3	2	2	3	3	1
3	Antivirus		√	Mrs. Vaishali Khachane	1	3	2	3	3	2	2	3	3	2	3	3	3	2
4	Online Musical Store		√	Mrs. Sarika Wagh	1	3	1	2	1	3	2	3	3	2	3	3	3	1
5	Digifeed System		√	Ms. Vibha Paradkar	1	2	2	3	2	2	2	3	2	2	2	2	3	3
6	E-ticketing system		√	Ms. Priyanka Mahajan	1	2	2	3	2	2	3	3	3	2	3	3	3	2
7	Gtech	√		Dr. Usha Raghavan	2	3	2	3	2	3	1	1	3	2	3	3	3	3
8	Multiuser chat System		√	Mrs. R. G. Tendulkar	1	2	1	3	2	3	3	3	3	2	3	3	3	2
9	Mobile Jammer	√		Dr. Usha Raghavan	2	3	1	3	3	3	2	1	3	2	1	3	3	3
10	Woman Security Watch	√		Dr. Usha Raghavan	2	3	1	3	3	3	2	1	3	2	1	3	3	3
11	Auto Attendance System	√		Mrs. Radhika Kamath	2	3	3	3	2	2	2	3	3	3	2	3	3	3
12	Data Encryption		√	Ms. Gauri Pawar	2	2	2	1	3	2	2	2	1	3	3	1	1	2
13	Online FIR Register		√	Mrs. Vaishali Khachane	-	3	2	3	2	3	3	3	3	2	1	2	3	2
14	Login Using Finger Print	√		Mrs. Swati Joshi	1	3	2	2	3	2	3	3	2	3	2	3	2	3
15	Personalization of Android		√	Mrs. Sarika Wagh	1	2	2	1		1	2	3	3	1	1	2	2	2
16	Online Book Store		√	Ms. Gauri Pawar	1	3	2	2	2	3	3	1	1	3	2	2	1	2
17	Virtual Electrical switching	√		Mrs. Swati Joshi	1	3	2	2	3	3	3	3	2	3	2	2	3	3
18	Library Mngt System		√	Mrs. Radhika Kamath	1	2	2	3	2	2	2	3	2	2	2	2	3	3
19	GSM Based LAN Monitoring	√		Mrs. R. G. Tendulkar	1	3	2	2	3	2	3	3	2	3	2	3	2	3

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

Program Details	Academic Year		
	2015-2016	2014-2015	2013-2014
Industry Based Training	02	02	--
Guest Lectures by Industry Professionals	15	07	08
Industrial Visit	05	05	03
Internship	34 (TY) 33 (SY)	--	--

Academic Year 2015-2016:

Sr. No	Program Details	Date	Resource Person with Designation	No. of students	Relevance to POs & PSOs
Industry Based Training					
1	.Net Programming	08.06.2015 to 13.06.2015	Mrs. Swati Joshi, Faculty ,IF Dept.	18	PO: 1,2,3,4,7,8,9,10 PSO: 1-4
2	Android Programming	09.12.2015 to 18.12.2015	Mr. Deepak Kolhe, Appeteria Technologies	14	PO: 1-5,7-10 PSO: 1-4
Guest lectures by Industry professionals					
1	Shared Code	03.07.2015	Ms. Ketaki Joshi, Pop-Up Technologies, Thane	TY	PO:1-7, 9,10 PSO: 3, 4
2	Personality Development	18.08.2015	Mr. Harshal Sahasrabudhe, Freelancer	SY	PO: 7,8,9
3	SDLC	28.08.2015	Mr. Nitesh Tawade, Sr. Developer, BNP Paribas	TY, SY	PO: 2,4,5,6,7 PSO: 1, 2
4	Data Centre Management	28.08.2015	Mr. Rajeev Sharma, VFS Global Services	TY, SY	PO: 1-4 PSO: 3
5	Business Trends	28.08.2015	Mr. Vinay Hinge, Partner, VH Consulting	TY, SY	PO: 2,4,5,6
6	Project Management	28.08.2015	Mr. Satish Mahajan, Regional Manager, VFS Global Services	TY, SY	PO: 2,4,5,6,7 PSO: 1,2
7	Information Security	28.08.2015	Mr. Rajesh Acharekar, IS Auditor, VFS Global Services	TY, SY	PO: 1,2,4 -10 PSO: 3,4
8	Networking	11.09.2015	Mr. Swapnil Dalvi CMS IT Services Pvt. Ltd.	TY	PO: 2,6,7 PSO: 3
9	Working with Eclipse IDE	02.01.2016	Mr. Nitesh Tawade Sr. Developer, BNP Paribas	TY	PO: 2,3,4,10 PSO: 3
10	Know Yourself	29.01.2016	Rashmi Prabhu, Freelancer	SY	PO: 7,8,9

Sr. No	Program Details	Date	Resource Person with Designation	No. of students	Relevance to POs & PSOs
11	Open Source Technology	02.03.2016	Amod Narvekar, Mozilla Representative	SY,TY	PO: 2, 3, 4, 5, 6, 7, 10 PSO : 2
12	IOT		Naman Singh, Duck Duck Go Rep.		PO: 2,6,7,10 PSO: 2
13	Ethical Hacking		Saurabh Patil Corporate Trainer, Wipro		PO: 2, 5,6,7,10 PSO :2,3
14	Soft Skills Development		Rahul Kanojia Diplomads Professional Services Pvt. Ltd.		PO: 7,8,9
15	Engineer Your life	11.03.2016	Rashmi Prabhu, Freelancer	FY	PO: 7,8,9

Industrial visit

Sr. No.	Course	Date	Name of Industry	No. of students	Relevance to POs & PSOs
1	MCO	20.02.2016	MTNL, CETTM, Powai	TY	PO: 1,2,5,6,9 PSO: 4
2	PP3 &PP5	28.08.2015	CDAC, Pune	SY	PO: 1,5,6, 7, 10
3	CTE	1.10.2015, 08.10.2015	Doordarshan, Worli	TY	PO: 1,2, 5, 6, 9 PSO: 2
4	EST	20.02.2016	More Farms, Vangani	SY	PO: 1,5, 6, 7, 9, 10
5	DLS	28.02.2016	Enviro-Vigil for Bio Waste Management, Kalwa	FY	PO: 1,5,6

Internships

Academic Year 2015-2016:

Course : TYIF		
Sr. No.	**Name of the Company**	**No. of Interns**
1	Accenture	1
2	Asa Technology	4
3	Avinash interior and decorators	3
4	Convergys India Services private limited	1
5	EMC Executive Management Consultant	1
6	Golden Swan Country Club	2
7	Hindustan Coca-cola Beverages pvt. Ltd	1
8	S3 Softech Solutions	1
9	Sakshi Telecom	3
10	Smarts System	10
11	SSA Techknowlogies Pvt. Ltd	1
12	VFS Global Services PVT. Ltd	1
13	Vida Technologies	3
14	web portal.in	1
15	WorleyParsons India Pvt. Ltd	1
	Total	**34**
Class :SYIF		
Sr. No	**Name of the Company**	**No. of Interns**
1	ABC Designs	1
2	Aerus Infotech	4
3	Antique solutions	1
4	Capgemini India Pvt.ltd	2
5	Convergys India Services private limited	2
6	Elegant Network Service pvt.ltd	1
7	Hill Constructions, Builders & Developers	2

Class :SYIF		
Sr. No	**Name of the Company**	**No. of Interns**
8	Infinity Cube	3
9	InfoWorld	2
10	Jennifer Infocoms pvt. Ltd	1
11	Orbit Infotech	2
12	Sinhgad Institute of Business Management	2
13	Swan solutions & services Pvt ltd	1
14	Smarts System	2
15	TSV Enterprises	1
16	Vida technologies	1
17	Warden surgical Co.Pvt.Ltd	1
18	Webian Technologies	2
19	WebXpress	1
	Total	**33**

Academic Year 2014-2015:

Sr. No	Action Taken	Date	Resource Person with Designation	No. of students	Relevance to POs & PSOs
Industry Based Training					
1	Android Programming	16.06.2014 to 21.06.2014	Mr. Deepak Kolhe, Appeteria Technologies	19	PO: 1-5, 7-10 PSO: 1-4
2	Cloud Computing	04.03.2015 to 05.03.2015	Mr. Manish Kumar Jain, Corporate Trainer	51	PO: 2,4,5,6 PSO: 1,3
Guest lectures by Industry professionals					
1	Network Security	19.07.2014	Mr. Satish Mahajan Deputy GM-IT(Corporate)	TY	PO: 1,2,4-7, 9,10 PSO: 3, 4

Sr. No	Action Taken	Date	Resource Person with Designation	No. of students	Relevance to POs & PSOs
2	Secure programming	06.08.2014	Ms. Geeta Singh	TY,SY	PO: 1,2,4-7, 9,10 PSO: 3, 4
3	Secure Coding	13.01.2015	Ms. Debika Booines Quik Technologies	TY	PO: 1,2,4-7, 9,10 PSO: 3, 4
4	IT Securities and career guidance	13.01.2015	Quik Technologies	SY	PO: 1,2,4-7, 9,10 PSO: 3, 4
5	Personality Development	07.02.2015	Mr. Harshal Sahasrabudhe Free Lance Trainer	SY	PO: 7,8,9
6	Virtualization	12.02.2015	Mr. Rakesh Varde Capgemini	TY	PO:1,2, 4-7, 9,10 PSO: 3, 4
7	Mobile Operating System.	24.02.2015	Mr. Rakesh Varde Capgemini	TY	PO:1,2, 4-7, 9,10 PSO: 3, 4

Industrial Visits

Sr. No.	Course	Date	Name of Industry	No. of students	Relevance to POs & PSOs
1	MCO	21.08.2014	MTNL, CETTM, Powai	TY	PO: 1,2,5,6,9
2	PP3	26.08.2014	Godrej & Boyce, Vikhroli	SY	PO: 1,2,4,9
3	CTE	08.01.2015 & 15.01.2015	Doordarshan, Worli	TY	PO: 1,2,5,6,9
4	EST	30.01.2015	Save Farm, Dahanu	SY	PO: 1 ,5, 6, 7, 9,10
5	DLS	28.02.2015	Enviro-Vigil for Bio Waste Management, Kalwa	FY	PO: 1,5,6

Academic Year 2013-2014:

Sr. No	Action Taken	Date	Resource Person with Designation	No. of students	Relevance to POs & PSOs
Guest lectures by Industry professionals					
1	Email System	06.07.2013	Mr. Satish Mahajan Deputy GM-IT(Corporate)	TY	PO: 1,2,9,10
2	Ethical Hacking	15.07.2013	Indian Can, Thane	SY	PO: 1,2,4-10 PSO: 3,4
3	Network Security	03.08.2013	Mr. Satish Mahajan Deputy GM-IT(Corporate)	TY	PO: 1,2,4-10 PSO: 3,4
4	Personality Development	12.08.2013 & 14.08.2013	Mr. Harshal Sahasrabudhe	SY & TY	PO: 7,8,9
5	Virtual Private Network	31.08.2013	Mr. Satish Mahajan Deputy GM-IT(Corporate)	TY	PO: 1,2,4-10 PSO: 3,4
6	Use of photography for an engineer	13.08.2013	Ms. Swapnali Mathkar	SY	PO: 5,6,10
7	Biodiversity & its Conservation	12.02.2014	Mr. Bharat Godambe Center project head, Paryavaran Dakshata	SY	PO: 1,5,6,7,9
8	Expectations of an IT industry	22.02.2014	Mr. Rizwan Naikwadi, IBM	TY	PO: 5,6,7,10 PSO: 1,2
Industrial Visit					
Sr. No.	**Course**	**Date**	**Name of Industry**	**No. of students**	**Relevance to POs & PSOs**
1	PP3	20.09.2013	Godrej & Boyce	SY	PO: 1,2,4,9
2	MCO	30.09.2013	MTNL,CETTM, Powai	TY	PO: 1,2,5,6,9
3	EST	25.01.2013	More Farms, Vangani	SY	PO: 1,5,6,7,9,10

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

Following information access facilities are provided to the students by college:

1) 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 have more control over the information they receive and it provides additional opportunity for deeper learning by being able to stop, rewind, fast-forward, and replay content as many times as needed.

2) E-Presentations: Presentations can help teachers to get their points to be explained in better way and help students to learn more effectively. PowerPoint is easy to learn, widely available, easy to understand the subject.

3) CD/DVD: Books are available in the digital form. These CD/DVD books contain video, audio along with text. This facilitates student learning.

4) Transparencies: Transparency helps teacher to explain diagrammatic concepts with ease.

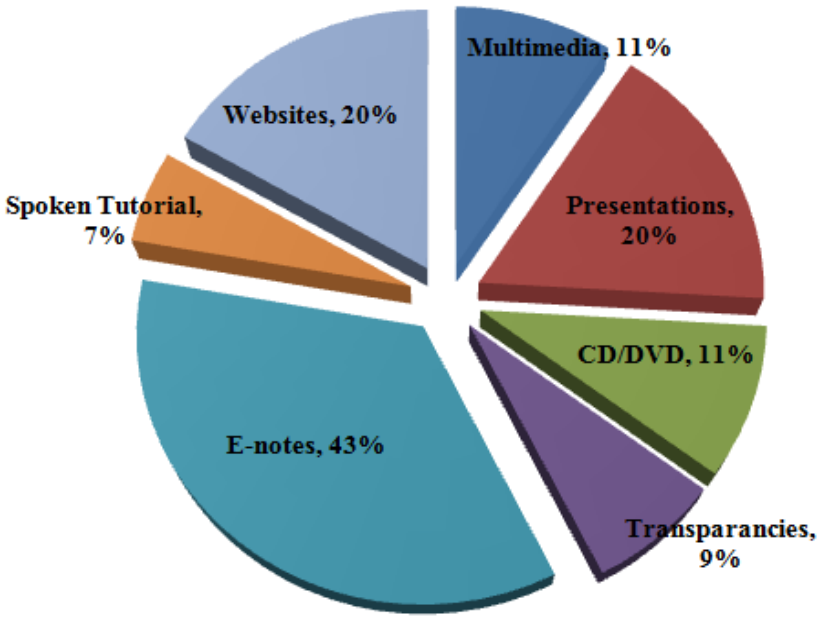
5) E-notes: E-Notes help students to complete assignments and study for exams. E- Notes are sent to the students by emails.

6) Spoken tutorial: It is a MHRD project under IIT-B which helps the students to get certified in various programming subjects through tutorials and videos.

7) Websites: 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. Many websites are suggested by MSBTE in Curriculum.

The above tools are used to deliver the content of various courses pertaining to the programme.

The chart below indicates the percentage of courses that utilize the above mentioned tools.



2.2.7 New Initiatives for embedding Professional Skills (15)

Sr. No.	Activity	Skill developed
1	**National Level Conferences**	Team work, Event management, Report writing, Time Management
2	**Paper presentation**	Information Search, Structured writing, Communication , Concentration development
3	**Quiz**	Alertness, Assertive skill, Building confidence, Ethics
4	**Project Exhibition**	Working in Team, Task Management, presentation skills, Time management, Leadership
5	**Seminar**	Listening, Interaction, Group management
6	**Workshop**	Psychomotor skills, Troubleshoot
7	**Value Added Programme**	Psychomotor skills, Debugging, Teamwork
8	**PPT Competition**	Presentation skill, Information search, Time management, Creativity
9	**Certification Programmes**	Self learning
10	**Poster presentation**	Creativity, Information Search

Sr. No.	Activity	Skill developed
11	**Essay Competition**	Structured writing, widespread knowledge, Thinking
12	**Debate competition**	Oratory skills, listening, Overall Personality development
13	**Entrepreneurship Development**	Risk taking ability, Thinking , Employability skills

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

A. Co-Curricular Activities:

Program Details	Number of events		
	Academic Year		
	2015-2016	2014-2015	2013-2014
Value Added Courses / Workshops	03	03	01
Competitions / Certifications	02	03	04
Guest Lectures	16	11	11
Visits	05	05	04
Project Exhibition & Competition	01	01	02
Paper Presentation	06	01	03
Quiz Competition	03	01	01
Poster Competition	--	02	03
Code Debugging	01	--	01
PowerPoint Competition	01	01	01

Academic Year 2015-2016:

Sr. No	Activity	Topic	Resource Person/Industry	Beneficiaries
1.	**Value Added Courses / Workshops**	Android Training (5days)	Mr. Deepak Kolhe, Appeteria Ltd.	14
		.Net programming	Mrs. Swati Joshi	18
		Entrepreneurship Development (1 day)	ED Cell, V.P.M.'s Polytechnic	SY-TY ED cell members
2.	**Competitions / Certifications**	Power Point	Environment Protection	SY & TY
		Quiz	Technical quiz	SY & TY
3.	**Guest Lectures**	Counseling	Ms. Akshata Sonpataki, Psychology Dept., K.G. Joshi College	TY
		Shared Code	MS. Ketaki Joshi, Pop-up Technologies, Thane	SY & TY
		Stress Management	Mrs. Suchitra Naik, H.O.D. Psychology Dept., K.G. Joshi College	SY & TY
		SCADA	Mr. Vaibhav Kharat, Lecturer, EPS Dept.	FY
		Personality Development	Mr. Harshal Sahasrabudhe, Free Lance Trainer	TY
		OFDM	Mrs. Santhi M.L. Senior Lecturer, IE Dept.	TY
		Networking	Mr. Swapnil Dalvi, CMS IT Services Pvt. Ltd.	SY

Sr No	Activity	Topic	Resource Person/Industry	Beneficiaries
3	**Guest Lectures**	SMACS	Mrs. S. K. Shukla HOD, CO Dept	TY & SY
		Working with Eclipse IDE	Mr. Nitesh Tawade, Sr. Developer, BNS Paribas	TY
		Know Yourself	Rashmi Prabhu, Freelancer	SY
		Open Source Technology	Amod Narvekar, Mozilla Representative	SY,TY
		IOT	Naman Singh, Duck Duck Go Rep.	
		Ethical Hacking	Saurabh Patil Corporate Trainer, Wipro	
		Soft Skills Development	Rahul Kanojia Diplomads Professional Services Pvt. Ltd.	
		Engineer Your life	Rashmi Prabhu, Freelancer	FY
		Stress Management	Mrs. Geetali Ingawale Incharge, Library & Information Centre,	TY
4.	**Visits**	Mobile Communication	MTNL, CETTM, Powai	TY
		CDAC, Pune	C-DAC (Head Quarters) Pune University Campus	SY
		Communication Techniques	Doordarshan, Worli	TY
		Environmental Science	"Save Farm" - Dahanu	SY
		Environmental Science	Prakruti Park for Bio Waste Management, Kalwa	FY
		Digital Communication and Networking	Server Room, V.P.M.'s Polytechnic, Thane	TY

Sr No	Activity	Topic	Resource Person/Industry	Beneficiaries
5.	**Project Exhibition & Competition**	Industrial Projects	Judge- Mr. Mahesh Yadav Senior Consultant, Accenture, Mumbai	TY

6. Professional Skills Development

Sr. No	Type of Competition	Venue	Level	No. of Participants
1	**Paper Presentation**	Abhinav Edu. Society's College of Engg., Satara (MSBTE)	State	2
		V.P.M.'s Polytechnic, Thane (Rajiv Gandhi Renewable)	State	2
		Engineer's Day V.P.M.'s Polytechnic, Thane	Inter-Collegiate	2
		Tech Talk-2016 V.P.M.'s Polytechnic, Thane	Inter-Collegiate	3
		Babasaheb Gawade Institute of Technology,	Inter-Collegiate	2
		Thakur Polytechnic	Inter-Collegiate	16
2	**Quiz Competition**	Shah & Anchor Kutchhi Polytechnic	Inter-Collegiate	15
		Thakur Polytechnic	MSBTE	1
		V.P.M.'s Polytechnic, Thane (Online)	Institute	1
3	**Code Debugging / Implementation**	Shah & Anchor Kutchhi Polytechnic	Inter-Collegiate	6
4	**Technical Writing**	Bharati Vidyapeeth Inst. Of Technology	State	1

Academic Year 2014-2015:

Sr. No	Activity	Topic	Resource Person/Industry	No. of Students
1.	**Value Added Courses/Work shops**	Android Application Development (5days)	Mr. Deepak Kolhe-Appeteria Ltd.	19 students of TY
		Cloud Computing (2days)	Mr. Manish Kumar Jain, IFC3 – Neuromancer	50 students from FY, SY, TY
		Entrepreneurship Development (1 day)	ED Cell, V.P.M.'s Polytechnic	ED cell members from SY and TY
2.	**Competitions/ Certifications**	Poster	Communication, Networking	SY & TY
		Quiz	Technical quiz	SY & TY
		Code-Uncode	Quik Technologies & EC Council	SY & TY
3.	**Guest Lectures**	Network Security	Mr. Satish Mahajan, VFS Global Services	TY
		Secure Programming	Ms. Geeta Singh, EC Council	SY & TY
		Stress Management	Ms. Vedavati Paranjape	SY & TY
		Thane Creek	Mr. V. Walavalkar	FY
		Enabled Instrumentation	Mrs. V. A. Joshi	TY
		Personality Development	Mr. Harshal Sahasrabudhe	TY
		Smart Home Automation	Mrs. S.S. Kulkarni	SY
		Virtualization	Mr. Rakesh Vardhe Capegemini	TY & SY
		MRI – Magnetic Resonance Imaging	Mr. T. V. Mohite Patil	TY
		IT Securities and career guidance	Quik Technologies	SY
		Mobile Operating System	Mr. Rakesh Vardhe Capegemini	TY

Sr. No	Activity	Topic	Resource Person/Industry	No. of Students
4.	**Visits**	Mobile Communication	MTNL, CETTM, Powai	TY
		CAD/CAM	Tooling Division, Godrej & Boyce, Vikhroli	SY
		Communication Techniques	Doordarshan, Worli	TY
		Environmental Science	"Save Farm" - Dahanu	SY
		Development of Life Skills	Prakruti Park for Bio Waste Management, Kalwa	FY
5.	**Project Exhibition & Competition**	Industrial Projects	Judge- Mr. Abhijeet Kale, HOD, Dept. of IT, B. N. Bandodkar College of Science	TY

6.	**Professional Skills Development**			
Sr. No	**Type of Competition**	**Venue**	**Level**	**No. of Students**
1	**Paper Presentation**	Bhausaheb Vartak Polytechnic, Vasai	State	1
2	**Quiz Competition**	Bhausaheb Vartak Polytechnic, Vasai	State	2
3	**Poster Presentation**	VPM's Polytechnic, Thane	Institute	4
		VPM's Polytechnic, Thane	National	4

Academic Year 2013-2014:

Sr. No	Activity	Topic	Resource Person/Industry	No of Students
1.	**Value Added Courses/ Workshops**	Cloud Computing (2days)	Mr. Manish Kumar Jain, IFC3 – Neuromancer	50 students from FY, SY, TY
2.	**Competitions/ Certifications**	Power Point	Communication, Networking & Next Generation Electronics	SY & TY
		Quiz	Technical quiz	SY & TY
		Poster	Departmental level & ISTE conducted on Engineers Day	SY & TY
3.	**Guest Lectures**	Email System	Mr. Satish Mahajan, VFS Global Services	TY
		Ethical Hacking	India Can, Thane	SY & TY
		Value Systems & Work Systems in Life	Mr. Shirsathe	SY & TY
		Network Security	Mr. Satish Mahajan, VFS Global Services	TY
		Personality Development	Mr. Harshal Sahasrabuddhe	SY & TY
		Use of Photography for an Engineer	Ms. Swapnali Mathkar	SY
		Virtualization	Mr. Rakesh Vardhe	TY & SY
		Virtual Private Network	Mr. Satish Mahajan, VFS Global Services	TY
		Biodiversity & its Conservation	Mr. Bharat Godambe	TY
		Expectations of an IT industry	Mr. Rizwan Naikwadi	TY

Sr. No	Activity	Topic	Resource Person/Industry	Beneficiaries
4.	**Industrial Visits**	Mobile Communication	MTNL, CETTM, Powai	TY
		CAD/CAM	Tooling Division, Godrej & Boyce, Vikhroli	SY
		Data Communication & Networking	Doordarshan, Worli	SY
		Environmental Science	More Nursery, Vangani	SY
5.	**Project Exhibition & Competition**	Computer Peripherals	SY students	FY,SY,TY
		Industrial Projects	Judge- Mr. Nitesh Tawade Sr. Developer BNP Paribas	TY

6.	**Professional Skills Development**			
Sr. No	**Type of Competition**	**Venue**	**Level**	**No. of Participants**
1	**Project Competition**	D. Y. Patil Institute of Technology, Nerul	**Winner** Regional	4
2	**Paper Presentation**	ASPIRE 2K13 at RAIT	National	4
		'Aneeksha'14' held at K. J. Somaiya Polytechnic	State	3
		WINGS 2014 at S.S. Jondhale Polytechnic, Asangaon, Thane.	State	2
3	**Quiz Competition**	VPM's Polytechnic, Thane	**Winner** Institute	2
4	**Poster Presentation**	VPM's Polytechnic, Thane	**Winner** Institute	2
		VPM's Polytechnic, Thane	Institute	10
		VPM's Polytechnic, Thane	National	9
5	**Code Debugging**	Equinox -2K14 SES's, Dr. N. Y. Tasgaonkar Polytechnic	Institute	2
6	**PowerPoint Presentation**	VPM's Polytechnic, Thane	Institute	2

B. Extra Curricular Activities

Program Details	Number of participations		
	Academic Year		
	2015-16	2014-15	2013-14
Cultural	04	07	07
Sports	05	04	05

Academic Year 2015-16

Sr. No	Name of Event / Competition	Name of Students	Prize Achievements
Cultural Events			
1	Dance (Group)	Aditya Dighe and Group(SYIF)	Second Prize
	Dance (Solo)	Aditya Dighe (SY)	First Prize
	Dance (Solo)	Nisha Khubchandani (TY)	Participation
	Mehendi	Prachi Shinde (TY)	First prize
2	**Sports**		
	Football	TYIF Team	Runner up
	Cricket	SYIF Team	Winner
	Chess	SY, TY	Participation
	Carrom	SY,TY	Participation
	Table Tennis	SY,TY	Participation

Academic Year 2014-2015:

Sr. No.	Name of Event / Competition	Name of Students	Prize Achievements
Cultural Events			
1	Extempore	KomalVadavale(TYIF)	First Prize
	Nail Art Competition	Sneha Keny(TYIF)	First Prize
		Samruddhi Jadhav(TYIF)	Second Prize
	T-Shirt Painting Competition	Nikita Gaikwad(TYIF)	First Prize
		Snehal Bansode(SYIF)	Second Prize
	Pot Painting Competition	Nikita Gaikwad(TYIF)	Second Prize
		Snehal Bansode(TYIF)	Consolation
	Funfair Food	Chetan Chumbale (TYIF) Sneha Keni(TYIF) Samrudhhi Jadhav(TYIF) Rashmi Kangane (TYIF)	First Prize
	Hair Style Competition	Nikita Gaikwad(TYIF)	First Prize
	Singing (Solo)	Mayuri Rathod(TYIF)	First Prize
Sports			
2	Cricket	SYIF & TYIF Team	Participation
	Chess	SY, TY	Participation
	Carrom	SY,TY	Participation
	Table Tennis	Nihar Karle (TYIF)	Winner

Academic Year 2013-14:

Sr. No	Name of the Event / Competition	Name of the Student	Prize / Achievements
Cultural Events			
1	Nail Art	Nikita Gaikwad (SY)	First
	Tie King and Saree Queen	Chaitanya Joglekar Aishwarya Thengal (TYIF)	Winners
	Dance (Solo)	Utkarsha Kale (TYIF)	First
		Priya Azad (TYIF)	Third
	Dance (Group)	Neha Chavan (TYIF) Priya Azad (TYIF)\ Vishakha Chavan (TYIF)	Consolation

Sr. No	Name of the Event / Competition	Name of the Student	Prize / Achievements
1	Singing	Chaitanya Joglekar (TYIF)	Consolation
	Traditional Dress	Pooja Bhave (TYIF)	Third
	English Extempore	Anirudha Patil (TYIF)	First
	Fun-Fair(Games)	Ashutosh Bichave Ankit Bhangare Hemant Pathare (FYIF)	Third
	Photography	Nihar Karle (SYIF)	First
		Akash Shete(SYIF)	Second
Sports			
2	100 m Running Race	Mayuri Humane (SYIF)	First Prize
		Rasika Shinde (SYIF)	Second Prize
	Cricket	SYIF & TYIF Team	Participation
	Chess	SY, TY	Participation
	Carrom	SY,TY	Participation
	Table Tennis	SY,TY	Participation

CRITERION 3	Course Outcomes and Program Outcomes	100

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

3.1.1. Course Outcomes (05)

Semester I

C 106 : Computer Fundamentals CMF 17002

C106.1	Enumerate the Hardware components and Software components of Computer.
C106.2	State functions of Operating system as the interface to computer system.
C106.3	Describe use of Windows 7 Desktop , drives ,folders , files and its accessories
C106.4	Install a printer.
C106.5	Create Tables and use of Mail Merge and Macros in Microsoft office Word
C106.6	Use File managers,Spreadsheet,Presentation software's and Internet.

Semester II

C 204: Programming in 'C' PIC 17212

C204.1	Draw flowchart and write algorithms for sample program
C204.2	Declare variables, constants and operators and to use formatted input and formatted output.
C204.3	Write and execute programmes using single dimensional, multidimensional array and string.
C204.4	Write and execute program using function call and function type.
C204.5	Write and execute the program using command-line argument and using structure
C204.6	Use pointers, declaring pointer variable, initialization and pointer arithmetic in program.

Semester III

C302: Data Structure Using 'C' DSU 17330

C302.1	Develop algorithms.
C302.2	Apply searching and sorting algorithm on data.
C302.3	Implement the concept of Stack and Queue with different operation on data.
C302.4	Implement the concept of Linked List.
C302.5	Implement the concept of Tree.
C302.6	Implement the concept of Graph and Hashing Technique.

Semester IV

C402: Computer Hardware & Maintenance CHM 17428

C402.1	Identify the components of the motherboard, peripheral devices and interfacing ports of a PC.
C402.2	Describe working principle of various storage devices.
C402.3	Describe the construction and working of various display devices.
C402.4	Identify the different input/ output devices, describe their construction and working principle
C402.5	Connect the power supply to the computer and diagnose the fault.
C402.6	Use PC software and hardware diagnostic tools.

Semester V

C 508: Professional Practices-III PPT 17062

C508.1	Search Information & knowledge from different resources.
C508.2	Write the reports of Industry Visits & Guest Lectures.
C508.3	Deliver Seminars on a given topic.
C508.4	Interact with each other through group discussion.
C508.5	Present the feedback of various activities.
C508.6	Solve puzzles and problems through Aptitude test

Semester VI

C 605: Scripting Technology STE 17099

C605.1	Configure and manage web server.
C605.2	Write java script using various components.
C605.3	Write client side validation code with java script.
C605.4	Use JSP objects.
C605.5	Use JSP tags.
C605.6	Access Database through JSP with JDBC.

3.1.2. 1 CO-PO matrices of courses selected in 3.1.1 (5)

Semester I

C 106 : Computer Fundamentals CMF 17002

COURSE OUTCOME	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
C106.1	1	1	2	1	1	2	1	-	-	2
C106.2	-	2	1	2	-	-	1	-	-	2
C106.3	-	2	1	2	-	-	1	-	-	2
C106.4	-	-	-	-	2	-		-	-	2
C106.5	-	2	2	2	-	-	1	-	-	2
C106.6	1	1	2	1	1	2	1	-	-	2
C106	2	8	8	8	4	4	5	0	0	12
	1	**2**	**2**	**2**	**1**	**1**	**1**	**0**	**0**	**2**

Semester II

C 204: Programming in 'C' - PIC - 17212

COURSE-OUTCOME	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
C204.1	-	3	2	2	-	-	-	-	-	1
C204.2	-	3	2	2	-	-	-	-	-	1
C204.3	-	3	2	2	-	-	-	-	-	1
C204.4	-	3	2	2	-	-	-	-	-	1
C204.5	-	3	2	2	-	-	-	-	-	1
C204.6	-	3	2	2	-	-	-	-	-	1
C204	-	18	12	12	-	-	-	-	-	6
	-	**3**	**2**	**2**	**-**	**-**	**-**	**-**	**-**	**1**

Semester III

C302: Data Structure Using 'C' - DSU - 17330

COURSE-OUTCOME	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
C302.1	1	3	3	3	-	-	2	1	2	1
C302.2	1	3	3	3	-	-	2	1	3	2
C302.3	1	3	3	3	-	-	2	1	3	2
C302.4	1	3	3	3	-	-	2	1	3	2
C302.5	1	3	3	3	-	-	2	1	3	2
C302.6	1	3	3	3	-	-	2	1	3	2
C302	6	18	18	18	-	-	12	6	17	11
	1	**3**	**3**	**3**	**-**	**-**	**2**	**1**	**3**	**2**

Semester IV

C402: Computer Hardware & Maintenance - CHM - 17428

COURSE-OUTCOME	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
C402.1	-	2	3	2	1	2	1	1	2	2
C402.2	2	3	3	3	1	2	2	-	1	1
C402.3	-	3	2	2	2	2	-	-	1	1
C402.4	-	3	3	2	2	2	-	-	2	-
C402.5	-	2	3	3	2	-	-	1	2	2
C402.6	-	3	3	3	2	2	1	2	2	3
C402	2	16	17	15	10	10	4	4	10	9
	1	**3**	**3**	**3**	**2**	**2**	**1**	**1**	**2**	**2**

Semester V

C 508: Professional Practices-III - PPT - 17062

COURSE-OUTCOME	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
C508.1	-	-	-	-	1	1	-	3	3	3
C508.2	-	-	-	-	2	-	3	3	3	2
C508.3	-	-	-	-	1	-	-	3	3	3
C508.4	-	-	-	-	3	2	3	3	3	2
C508.5	-	-	-	-	-	-	-	3	3	2
C508.6	-	-	-	-	-	-	-	3	3	2
C508	-	-	-	-	7	3	6	18	18	14
	-	**-**	**-**	**-**	**2**	**1**	**1**	**3**	**3**	**3**

Semester VI

C 605: Scripting Technology - STE - 17099

COURSE-OUTCOME	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
C605.1	3	2	2	2	-	-	-	1	2	2
C605.2	3	2	2	3	-	-	-	1	2	2
C605.3	2	2	3	2	-	-	-	2	2	3
C605.4	2	3	2	2	-	-	-	1	2	2
C605.5	3	2	2	3	-	-	-	2	2	2
C605.6	3	3	2	1	-	-	-	3	2	2
C605	16	14	13	13	-	-	-	10	12	13
	3	**3**	**3**	**3**	**-**	**-**	**-**	**2**	**2**	**3**

3.1.2. 2 CO-PSO matrices of courses selected in 3.1.1

Semester I

C 106 : Computer Fundamentals

CMF 17002

COURSE-OUTCOME	PSO1	PSO2	PSO3	PSO4
C106.1	2	2	2	2
C106.2	2	1	2	1
C106.3	1	2	1	2
C106.4	2	1	2	1
C106.5	2	1	1	2
C106.6	2	1	2	1
C106	11	8	10	9
	2	**2**	**2**	**2**

Semester II

C 204: Programming in 'C'

PIC 17212

COURSE-OUTCOME	PSO1	PSO2	PSO3	PSO4
C204.1	3	2	3	-
C204.2	3	2	3	-
C204.3	3	2	3	-
C204.4	3	2	3	-
C204.5	3	2	3	-
C204.6	3	2	3	-
C204	18	12	18	-
	3	**2**	**3**	-

Semester III

C302: Data Structure Using 'C'

DSU 17330

COURSE-OUTCOME	PSO1	PSO2	PSO3	PSO4
C302.1	1	1	1	1
C302.2	3	3	2	1
C302.3	3	3	2	1
C302.4	3	3	2	1
C302.5	3	3	2	1
C302.6	3	3	2	1
C302	16	16	11	6
	3	**3**	**2**	**1**

Semester IV

C402: Computer Hardware & Maintenance

CHM 17428

COURSE-OUTCOME	PSO1	PSO2	PSO3	PSO4
C402.1	2	3	3	3
C402.2	2	2	2	2
C402.3	2	2	2	2
C402.4	2	2	2	2
C402.5	3	2	3	3
C402.6	3	3	3	3
C402	14	14	15	15
	3	**3**	**3**	**3**

Semester V

C 508: Professional Practices-III

PPT 17062

COURSE-OUTCOME	PSO 1	PSO 2	PSO 3	PSO 4
C508.1	-	-	-	2
C508.2	-	-	-	2
C508.3	-	-	-	2
C508.4	-	-	-	1
C508.5	-	-	-	1
C508.6	1	1	1	-
C508	1	1	1	8
	1	**1**	**1**	**2**

Semester VI

C 605: Scripting Technology

STE 17099

COURSE-OUTCOME	PSO1	PSO2	PSO3	PSO4
C605.1	3	2	3	1
C605.2	1	2	3	2
C605.3	2	2	3	1
C605.4	2	3	3	1
C605.5	1	2	2	2
C605.6	1	2	2	3
C605	10	13	16	10
	2	**3**	**3**	**2**

3.1.3. Program level Course-PO matrix of all courses INCLUDING First Year Courses (10)

CO - PO-PSO Mapping from 3.1.3															
Course	Course-Code	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PS01	PS02	PS03	PS04
C101	ENG							1	1	3					1
C102	EPH	2			1	1	1	1			1	1	1		
C103	ECH	1							1						1
C104	BMS	3		2								3			3
C105	EGG	2				1	1	3		1	1	1			1
C106	CMF	1	2	2	2	1	1	1			2	2	2	2	2
C107	WPI	1	1	1	1	2	1	1			2	2	2	2	2
C201	CMS						1			3					1
C202	APH	1			2	1	1		1		1	1	1	1	1
C203	ACH	1				1	1		1	1				1	1
C204	PIC		3	2	2						1	3	2	3	
C205	BEL	2	2	2	1				1	1	1	2	2	1	
C206	EMS	3	2	2	1							1	1		
C207	DLS			1			1	1	1	2	1				1
C208	WPD	1	1	1	1	1	1	1	1	2	1	1	2	2	2
C301	AMS	1	2	3	2	1	1	2	1	1	3	1			
C302	DSU	1	3	3	3			2	1	3	2	3	3	2	1
C303	ETE	2	3	3	1	2	2	1	1	1		2			1
C304	RDM	1	3	3	3		2	2	1		2	1	2	3	1
C305	DTE	3	3	3	3	1	1	1	1	2	1	2	3	3	1
C306	GUI	3	2	2	2	2	2	2	2	2	2		3	2	1
C307	PPO			1		2	3	3	3	3	3	2	1		2
C401	EST	2	1	2	1	2	2	2	2	2	3	2			
C402	CHM	1	3	3	3	2	2	1	1	2	2	3	3	3	3
C403	DCN	1	2	3	3			1	1		2	1	2	3	3
C404	MAP	1	2	3	2				2	1	1	2	1	2	2
C405	OOP	1	3	3	3			1	1	1	2	1	3	3	1
C406	AMT	2	2	2	2	2	3	3	2	2	2	1	1	1	1
C407	PPT		1	1	2		1	1	2	1	1	1	1	1	2
C501	OSY	3	3	3	3	1	1	1	2	2	3	2	1	1	1
C502	SEN	1	3	2	2	1		1			1	2	2	2	2
C503/ C503 E	ISE/ MAT	3	3	2	3	2	2	2	2	2	3	1	1	1	1
C504	JPR		3	2	2						2	3	2	3	
C505	CTE	2	3	3	3	2	1	1	1	2	2	2	3	3	2
C506	BSC	2	3	2	2	3	3	3	2	3	2	1	1	1	2
C507	NMA	1	3	3	3	3	2	2	1	1	2	2	1	2	3
C508	PPT					2	1	1	3	3	3	1	1	1	2
C601	MAN	1	3	3	2	3	2	3	1	1	2	2	1	1	2
C602/ C602 E	MCO/ DCN	1	3	3	3	3	2	2	1	2	2	3	3	2	1
C603	OOM	3	3	2	3	2	2	2	2	2	2	2	2	3	2
C604	AJP		3	2	2						2	3	2	3	
C605	STE	3	3	3	3				2	2	3	2	3	3	2
C606	IPR	2	2	2	2	2	2	2	2	2	3	3	3	3	3
C607	EDE				1	1	1		2	2	2	1		1	2
Avearge out of 3		1.74	2.47	2.29	2.14	1.74	1.57	1.65	1.48	1.87	1.92	1.816	1.88	2.03	1.67
Avearge out of 5		3	4	4	4	3	3	3	2	3	3	3	3	4	3

3.2. Attainment of Course Outcomes (40)

3.2.1. Describe the assessment 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.

Progressive Tests:

- Two progressive tests are conducted in each semester – one in mid semester and the other in the end of the semester.
- The teacher guide document provided by MSBTE, suggests the topics to be covered lecture wise and the portions to be completed before each test. Teacher guide is strictly followed.
- 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.
- The course outcomes of the subject are taken into consideration while setting the question paper.
- 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 Board 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.
- After completion of 80% of practical exercises, a Progressive skill test is conducted and the performance of the students is evaluated and included for the final assessment of practical marks.
- 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.

Sample Specification table and Question paper profile used for MSBTE examination provided in the Teacher's guide is as follows.

6.3.1 Specification Table:

Course Name: Computer Engineering group **Course Code: CO/CM/IF/CW/CD**

Semester: Fifth for CO/CM/IF/CW and Sixth for CD

Title of the Subject: Java Programming **Subject Code: 17515**

R – Remember U – Understand A – Analyse/Apply

SPECIFICATION TABLE

Level / Chapter /Topic	Levels from Cognition Process Dimension			Total Marks
	R	U	A	
1	4(4)	4(4)	8	16(8)
2	4(4)	12	8(4)	24(8)
3	-	8(6)	4	12(6)
4	-	8	8(8)	16(8)
5	4	8(6)	8(4)	20(10)
6	4	8(4)	-	12(4)
Total	16(8)	48(20)	36(16)	100(44)

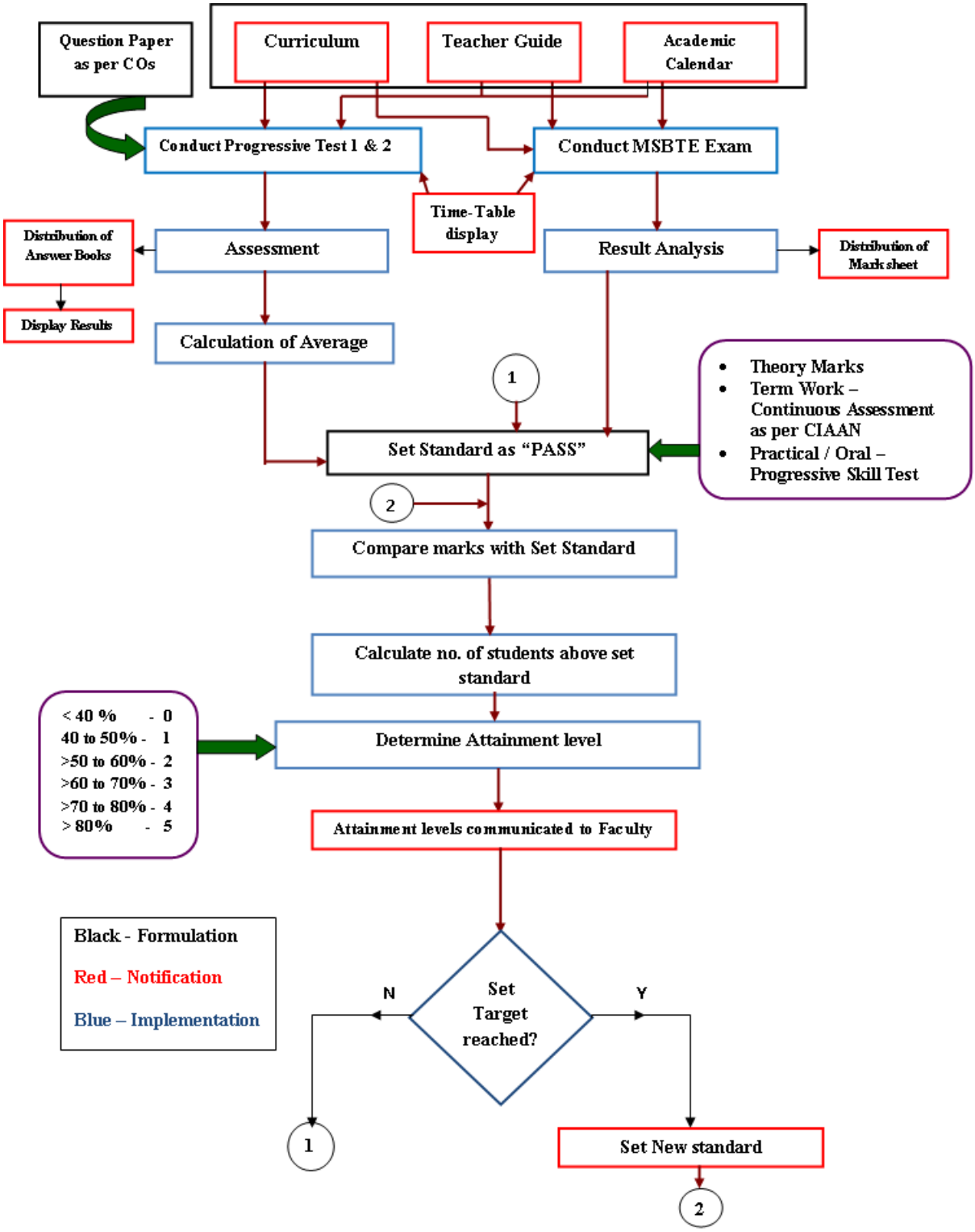
6.3.2 QUESTION PAPER ROFILE:

Course Name: Computer Engineering Group **Course Code: CO/CM/IF/CW/CD**

Semester: Fifth for CO/CM/IF/CW and Sixth for CD

Title of the Subject: Java Programming **Subject Code: 17515**

Q. No.	Bit 1			Bit 2			Bit 3			Bit 4			Bit 5			Bit 6			Option
	T	L	M	T	L	M	T	L	M	T	L	M	T	L	M	T	L	M	
01(a)	1	R	4	6	R	4	1	R	4	4	U	4							
01(b)	2	U	6	3	U	6													
02	2	A	8	3	U	8	5	A	8										
03	2	R	4	1	A	4	6	U	4	5	R	4	2	R	4				
04(a)	1	U	4	4	U	4	1	U	4	6	U	4							
04(b)	5	U	6	2	U	6													
05	4	U	8	4	A	8	5	U	8										
06	2	A	4	6	U	4	5	A	4	3	A	4	1	A	4				


Question Paper as per COs
Curriculum
Teacher Guide
Academic Calendar
Conduct Progressive Test 1 & 2
Conduct MSBTE Exam
Time-Table display
Distribution of Answer Books
Assessment
Result Analysis
Distribution of Mark sheet
Display Results
Calculation of Average
1
Theory Marks
Term Work – Continuous Assessment as per CIAAN
Practical / Oral – Progressive Skill Test
Set Standard as "PASS"
2
Compare marks with Set Standard
Calculate no. of students above set standard
< 40 % - 0
40 to 50% - 1
>50 to 60% - 2
>60 to 70% - 3
>70 to 80% - 4
> 80% - 5
Determine Attainment level
Attainment levels communicated to Faculty
Black - Formulation
Red – Notification
Blue – Implementation
N
Set Target reached?
Y
1
Set New standard
2

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

Measuring Course Outcomes attained through board examinations

Board Exams		Academic Year 2015-16		Academic Year 2014-15		Academic Year 2013-14	
COURSE	Course-Code	Percentage of students above Set Standard	Attainment Level	Percentage of students above Set Standard	Attainment Level	Percentage of students above Set Standard	Attainment Level
		Semester I No. of students : 60		Semester I No. of students : 62		Semester I No. of students : 61	
C101	ENG	96.67	5	91.93	5	96.72	5
C102	EPH	83.33	5	85.48	5	85.24	5
C103	ECH	83.33	5	85.48	5	85.24	5
C104	BMS	83.33	5	64.51	3	72.13	4
C105	EGG	98.33	5	96.77	5	100.00	5
C106	CMF	100	5	100	5	100.00	5
C107	WS	100	5	100	5	100.00	5
		Semester II No. of students : 59		Semester II No. of students : 59		Semester II No. of students : 60	
C201	CMS	100	5	96.61	5	100	5
C202	APH	96.6	5	69.49	3	91.66	5
C203	ACH	96.6	5	69.49	3	91.66	5
C204	PIC	88.1	5	66.10	3	91.66	5
C205	BEL	89.8	5	64.40	3	66.66	3
C206	EMS	78.0	4	74.57	4	58.33	2
C207	DLS	100	5	100.00	5	100.00	5
C208	WPD	100	5	100.00	5	100.00	5
		Semester III No. of students : 72		Semester III No. of students : 72		Semester III No. of students : 71	
C301	AMS	48.61	1	43.05	1	35.21	0
C302	DSU	86.11	5	86.11	5	84.50	5
C303	ETE	61.11	3	61.11	3	66.19	3
C304	RDM	90.28	5	66.66	3	77.46	4
C305	DTE	66.67	3	86.11	5	67.60	3
C306	GUI	100	5	100.00	5	98.59	5
C307	PPO	100	5	100.00	5	100.00	5
		Semester IV No. of students : 72		Semester IV No. of students : 70		Semester IV No. of students : 70	
C401	EST	100	5	100.00	5	97.14	5
C402	CHM	84.72	5	72.85	4	91.42	5
C403	DCN	90.28	5	70.00	3	74.28	4
C404	MAP	86.11	5	85.71	5	70.00	3
C405	OOP	93.06	5	88.57	5	90.00	5
C406	AMT	100	5	98.57	5	100.00	5
C407	PPT	100	5	100.00	5	100.00	5
		Semester V No. of students : 65		Semester V No. of students : 52		Semester V No. of students : 67	
C501	OSY	98.46	5	100.00	5	92.53	5
C502	SEN	100	5	98.07	5	77.61	4
C503, C503 E	ISE, MAT	100	5	94.23	5	85.07	5
C504	JPR	100	5	100.00	5	97.01	5
C505	CTE	95.38	5	100.00	5	88.05	5
C506	BSC	100	5	100.00	5	Course Not Available in E Scheme	
C507	NMA	100	5	100.00	5	100.00	5
C508	PPT	100	5	100.00	5	100.00	5
		Semester VI No. of students : 65		Semester VI No. of students : 52		Semester VI No. of students : 62	
C601	MAN	100	5	100.00	5	94.36	5
C602, C 602 E	MCO, DCN	100	5	100.00	5	95.77	5
C603	OOM	98.46	5	100.00	5	94.36	5
C604	AJP	100	5	100.00	5	97.18	5
C605	STE	100	5	100.00	5	Course Not Available in E Scheme	
C606	IPR	100	5	100	5	100.00	5
C607	EDE	100	5	100	5	100.00	5

Measuring CO attainment through Internal Assessments:

Class Test		Academic Year 2015-16		Academic Year 2014-15		Academic Year 2013-14	
COURSE	Course-Code	Percentage of students above Set Standard	Attainment Level	Percentage of students above Set Standard	Attainment Level	Percentage of students above Set Standard	Attainment Level
		Semester I No. of students : 60		Semester I No. of students : 62		Semester I No. of students : 61	
C101	ENG	80.00	4	79.03	4	80.32	5
C102	EPH	80.00	4	56.45	2	77.04	4
C103	ECH	90.00	5	79.03	4	86.88	5
C104	BMS	83.33	5	61.29	3	75.4	4
C105	EGG	No Class Test					
C106	CMF						
C107	WS						
		Semester II No. of students : 60		Semester II No. of students : 59		Semester II No. of students : 60	
C201	CMS	78	4	79.66	4	90	5
C202	APH	85.0	5	55.93	2	66.66	3
C203	ACH	81.7	5	59.32	2	68.33	3
C204	PIC	66.7	3	55.93	2	66.66	3
C205	BEL	58.3	2	59.32	2	83.33	5
C206	EMS	81.7	5	66.1	3	63.33	3
C207	DLS	No Class Test					
C208	WPD						
		Semester III No. of students : 72		Semester III No. of students : 72		Semester III No. of students : 71	
C301	AMS	58.33	2	50	1	45.07	1
C302	DSU	69.44	3	51.38	2	66.19	3
C303	ETE	63.88	3	55.55	2	61.97	3
C304	RDM	70.83	4	72.22	4	49.29	1
C305	DTE	52.77	2	45.83	1	46.47	1
C306	GUI	No Class Test					
C307	PPO						
		Semester IV No. of students : 72		Semester IV No. of students : 70		Semester IV No. of students : 70	
C401	EST	84.72	5	91.42	5	92.85	5
C402	CHM	73.61	4	57.14	2	67.14	3
C403	DCN	72.22	4	61.42	3	74.28	4
C404	MAP	56.94	2	51.42	2	67.14	3
C405	OOP	68.05	3	55.71	2	70.00	3
C406	AMT	No Class Test					
C407	PPT						
		Semester V No. of students : 65		Semester V No. of students : 52		Semester V No. of students : 67	
C501	OSY	81.53	5	100.00	5	50.6	2
C502	SEN	69.23	3	86.53	5	61.44	3
C503, C503 E	ISE, MAT	90.76	5	94.23	5	59.03	2
C504	JPR	90.76	5	96.15	5	49.39	1
C505	CTE	69.23	3	100.00	5	57.83	2
C506	BSC	No Class Test				Course Not Available in E Scheme	
C507	NMA	No Class Test					
C508	PPT						
		Semester VI No. of students : 65		Semester VI No. of students : 52		Semester VI No. of students : 62	
C601	MAN	98.46	5	98.07	5	70.42	4
C602, C 602 E	MCO, DCN	96.92	5	92.30	5	78.87	4
C603	OOM	81.53	5	82.69	5	74.64	4
C604	AJP	72.3	4	100.00	5	73.23	4
C605	STE	No Class Test				Course Not Available in E Scheme	
C606	IPR	No Class Test					
C607	EDE						
C608 E	PPS	Course Not Available in G Scheme		Course Not Available in G Scheme		No Class test	

Consolidated CO Attainment of three years: (80% of MSBTE + 20% of Class Test)

		Attainment Level		
Course	Course-Code	2015-16	2014-15	2013-14
C101	ENG	4.8	4.8	5
C102	EPH	4.8	4.4	4.8
C103	ECH	5	4.8	5
C104	BMS	5	3	4
C105	EGG	5	5	5
C106	CMF	5	5	5
C107	WPI	5	5	5
C201	CMS	4.8	4.8	5
C202	APH	5	2.8	4.6
C203	ACH	5	2.8	4.6
C204	PIC	4.6	2.8	4.6
C205	BEL	4.4	2.8	3.4
C206	EMS	4.2	3.8	2.2
C207	DLS	5	5	5
C208	WPD	5	5	5
C301	AMS	3	1	0.2
C302	DSU	4.6	4.4	4.6
C303	ETE	3	2.8	3
C304	RDM	4.8	3.2	3.4
C305	DTE	2.8	4.2	2.6
C306	GUI	5	5	5
C307	PPO	5	5	5
C401	EST	5	5	5
C402	CHM	4.8	3.6	4.6
C403	DCN	4.8	3	4
C404	MAP	4.4	4.4	3
C405	OOP	4.6	4.4	4.6
C406	AMT	5	5	5
C407	PPT	5	5	5
C501	OSY	5	5	4.4
C502	SEN	4.6	5	3.8
C503/ C503 E	ISE/ MAT	5	5	4.4
C504	JPR	5	5	4.2
C505	CTE	4.6	5	4.4
C506	BSC	5	5	
C507	NMA	5	5	5
C508	PPT	5	5	5
C601	MAN	5	5	4.8
C602/ C602 E	MCO/ DCN	5	5	4.8
C603	OOM	5	5	4.8
C604	AJP	4.8	5	4.8
C605	STE	5	5	
C606	IPR	5	5	5
C607	EDE	5	5	5
C608 E	PPS			5

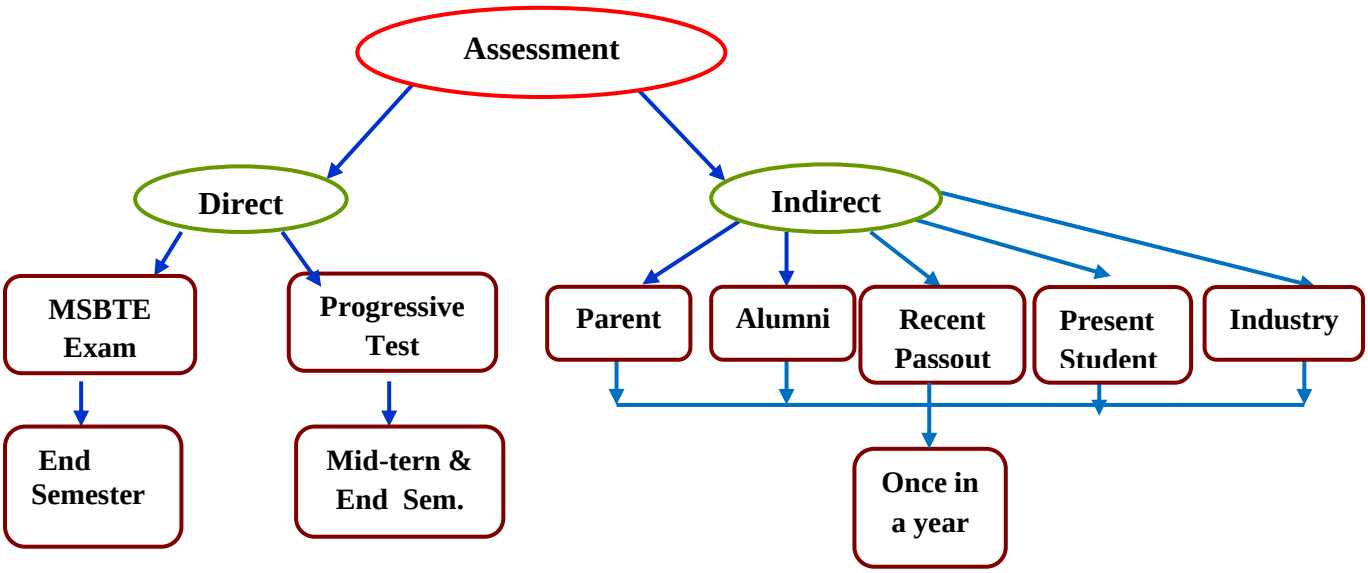
3.3. Attainment of Program Outcomes & Program Specific Outcomes (40)

For the attainment of POs & PSOs the following course delivery methods contribute as given in the table below.

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3	PSO4
Classroom Lecture	√	√	√				√		√		√	√		√
Laboratory Session	√	√	√	√		√	√	√	√	√	√	√	√	√
Assignments	√	√	√	√					√	√	√	√		
Projects	√	√	√	√	√	√	√	√	√	√	√	√	√	√
PR/OR	√	√	√						√		√	√	√	
Seminars		√			√		√		√	√				√
Visits		√			√	√	√		√	√				√
E-learning Resources/Notes	√	√		√					√	√	√	√		√

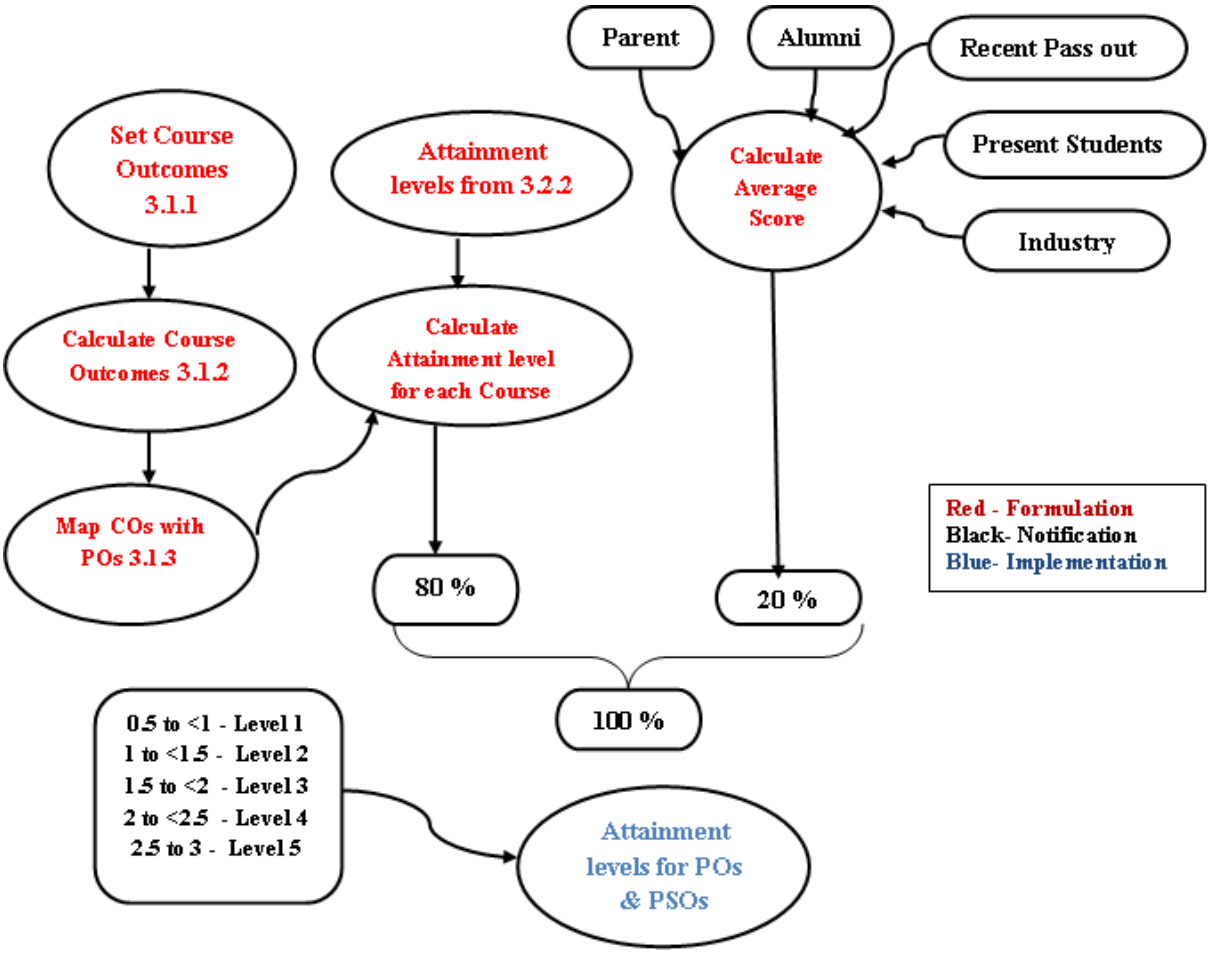
3.3.1. Describe Assessment tools and processes used for assessing the attainment of each POs and PSOs as mentioned in Annexure 1 (10)

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 (Curriculum Implementation And Assessment) 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.

Attainment Process:



- 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 are 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.

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

Academic Year 2015-2016

Course	Course-Code	CO Attainment	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PS01	PS02	PS03	PS04
C101	ENG	4.8							1.0	1.0	2.9					1.0
C102	EPH	4.8	1.9			1.0	1.0	1.0	1.0			1.0	1.0	1.0		
C103	ECH	5	1.0							1.0						1.0
C104	BMS	5	3.0		2.0								3.0			3.0
C105	EGG	5	2.0				1.0	1.0	3.0		1.0	1.0	1.0			1.0
C106	CMF	5	1.0	2.0	2.0	2.0	1.0	1.0	1.0			2.0	2.0	2.0	2.0	2.0
C107	WPI	5	1.0	1.0	1.0	1.0	2.0	1.0	1.0			2.0	2.0	2.0	2.0	2.0
C201	CMS	4.8						1.0			2.9					1.0
C202	APH	5	1.0			2.0	1.0	1.0		1.0		1.0	1.0	1.0	1.0	1.0
C203	ACH	5	1.0				1.0	1.0		1.0	1.0				1.0	1.0
C204	PIC	4.6		2.8	1.8	1.8						0.9	2.8	1.8	2.8	
C205	BEL	4.4	1.8	1.8	1.8	0.9				0.9	0.9	0.9	1.8	1.8	0.9	
C206	EMS	4.2	2.5	1.7	1.7	0.8							0.8	0.8		
C207	DLS	5			1.0			1.0	1.0	1.0	2.0	1.0				1.0
C208	WPD	5	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	2.0	1.0	1.0	2.0	2.0	2.0
C301	AMS	3	0.6	1.2	1.8	1.2	0.6	0.6	1.2	0.6	0.6	1.8	0.6			
C302	DSU	4.6	0.9	2.8	2.8	2.8			1.8	0.9	2.8	1.8	2.8	2.8	1.8	0.9
C303	ETE	3	1.2	1.8	1.8	0.6	1.2	1.2	0.6	0.6	0.6		1.2			0.6
C304	RDM	4.8	1.0	2.9	2.9	2.9		1.9	1.9	1.0		1.9	1.0	1.9	2.9	1.0
C305	DTE	2.8	1.7	1.7	1.7	1.7	0.6	0.6	0.6	0.6	1.1	0.6	1.1	1.7	1.7	0.6
C306	GUI	5	3.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		3.0	2.0	1.0
C307	PPO	5			1.0		2.0	3.0	3.0	3.0	3.0	3.0	2.0	1.0		2.0
C401	EST	5	2.0	1.0	2.0	1.0	2.0	2.0	2.0	2.0	2.0	3.0	2.0			
C402	CHM	4.8	1.0	2.9	2.9	2.9	1.9	1.9	1.0	1.0	1.9	1.9	2.9	2.9	2.9	2.9
C403	DCN	4.8	1.0	1.9	2.9	2.9			1.0	1.0		1.9	1.0	1.9	2.9	2.9
C404	MAP	4.4	0.9	1.8	2.6	1.8				1.8	0.9	0.9	1.8	0.9	1.8	1.8
C405	OOP	4.6	0.9	2.8	2.8	2.8			0.9	0.9	0.9	1.8	0.9	2.8	2.8	0.9
C406	AMT	5	2.0	2.0	2.0	2.0	2.0	3.0	3.0	2.0	2.0	2.0	1.0	1.0	1.0	1.0
C407	PPT	5		1.0	1.0	2.0		1.0	1.0	2.0	1.0	1.0	1.0	1.0	1.0	2.0
C501	OSY	5	3.0	3.0	3.0	3.0	1.0	1.0	1.0	2.0	2.0	3.0	2.0	1.0	1.0	1.0
C502	SEN	4.6	0.9	2.8	1.8	1.8	0.9		0.9			0.9	1.8	1.8	1.8	1.8
C503/ C503 E	ISE/ MAT	5	3.0	3.0	2.0	3.0	2.0	2.0	2.0	2.0	2.0	3.0	1.0	1.0	1.0	1.0
C504	JPR	5		3.0	2.0	2.0						2.0	3.0	2.0	3.0	0.0
C505	CTE	4.6	1.8	2.8	2.8	2.8	1.8	0.9	0.9	0.9	1.8	1.8	1.8	2.8	2.8	1.8
C506	BSC	5	2.0	3.0	2.0	2.0	3.0	3.0	3.0	2.0	3.0	2.0	1.0	1.0	1.0	2.0
C507	NMA	5	1.0	3.0	3.0	3.0	3.0	2.0	2.0	1.0	1.0	2.0	2.0	1.0	2.0	3.0
C508	PPT	5					2.0	1.0	1.0	3.0	3.0	3.0	1.0	1.0	1.0	2.0
C601	MAN	5	1.0	3.0	3.0	2.0	3.0	2.0	3.0	1.0	1.0	2.0	2.0	1.0	1.0	2.0
C602/ C602 E	MCO/ DCN	5	1.0	3.0	3.0	3.0	3.0	2.0	2.0	1.0	2.0	2.0	3.0	3.0	2.0	1.0
C603	OOM	5	3.0	3.0	2.0	3.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	3.0	2.0
C604	AJP	4.8		2.9	1.9	1.9						1.9	2.9	1.9	2.9	
C605	STE	5	3.0	3.0	3.0	3.0				2.0	2.0	3.0	2.0	3.0	3.0	2.0
C606	IPR	5	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	3.0	3.0	3.0	3.0	3.0
C607	EDE	5				1.0	1.0	1.0		2.0	2.0	2.0	1.0		1.0	2.0
Direct Attainment			1.6	2.3	2.1	2.0	1.7	1.5	1.6	1.4	1.8	1.8	1.7	1.8	1.9	1.6
80% of direct attainment			1.3	1.8	1.7	1.6	1.3	1.2	1.3	1.1	1.4	1.5	1.4	1.4	1.5	1.3
Indirect Attainment			3	3	3	3	3	3	3	3	3	3	3	3	3	3
20% of Indirect			0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
100% attainment			1.9	2.4	2.3	2.2	1.9	1.8	1.9	1.7	2.0	2.1	2.0	2.0	2.1	1.9
Attainment Level			**3**	**4**	**4**	**4**	**3**	**3**	**3**	**3**	**4**	**4**	**3**	**4**	**4**	**3**

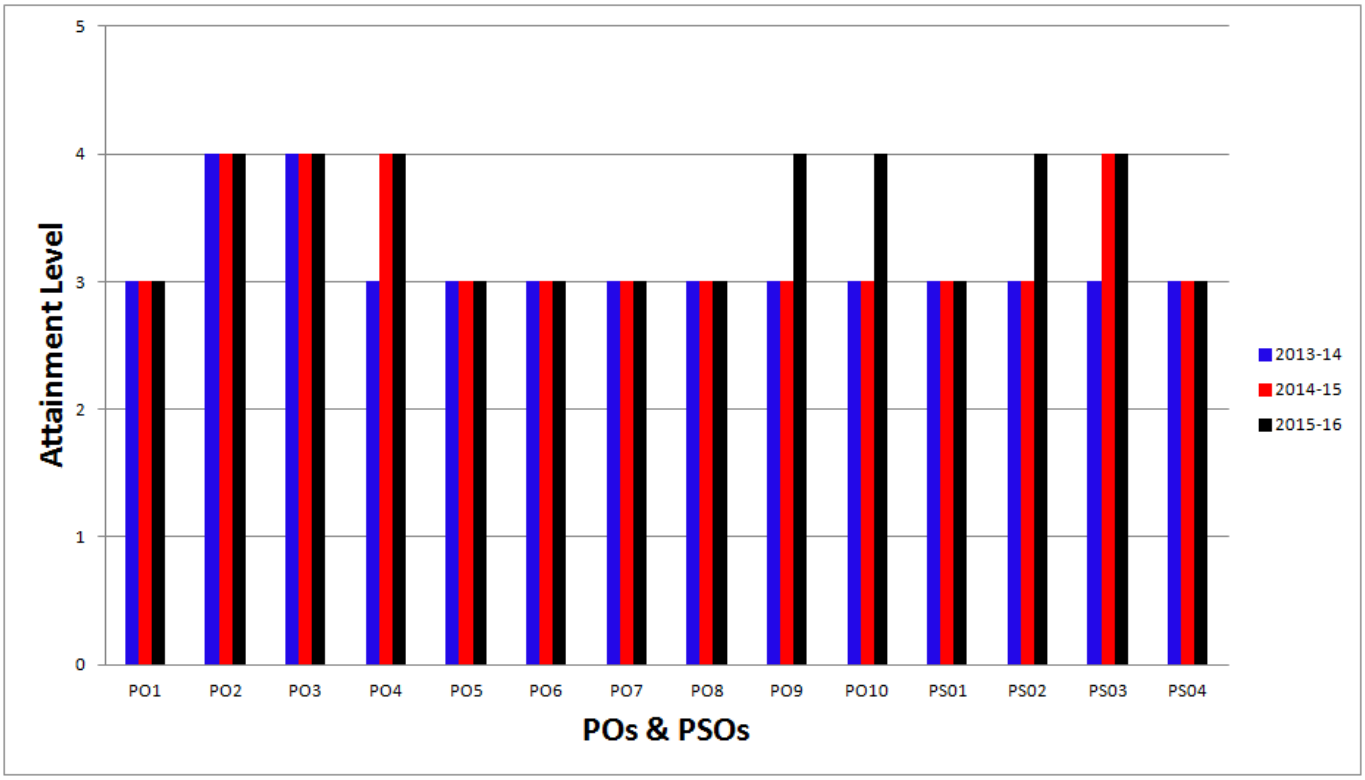
Academic Year 2014-2015

Course	Course-Code	CO Attainment	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PS01	PS02	PS03	PS04
C101	ENG	4.8							1.0	1.0	2.9					1.0
C102	EPH	4.4	1.8			0.9	0.9	0.9	0.9			0.9	0.9	0.9		
C103	ECH	4.8	1.0							1.0						1.0
C104	BMS	3	1.8		1.2								1.8			1.8
C105	EGG	5	2.0				1.0	1.0	3.0		1.0	1.0	1.0			1.0
C106	CMF	5	1.0	2.0	2.0	2.0	1.0	1.0	1.0			2.0	2.0	2.0	2.0	2.0
C107	WPI	5	1.0	1.0	1.0	1.0	2.0	1.0	1.0			2.0	2.0	2.0	2.0	2.0
C201	CMS	4.8						1.0			2.9					1.0
C202	APH	2.8	0.6			1.1	0.6	0.6		0.6		0.6	0.6	0.6	0.6	0.6
C203	ACH	2.8	0.6				0.6	0.6		0.6	0.6				0.6	0.6
C204	PIC	2.8		1.7	1.1	1.1						0.6	1.7	1.1	1.7	
C205	BEL	2.8	1.1	1.1	1.1	0.6				0.6	0.6	0.6	1.1	1.1	0.6	
C206	EMS	3.8	2.3	1.5	1.5	0.8							0.8	0.8		
C207	DLS	5			1.0			1.0	1.0	1.0	2.0	1.0				1.0
C208	WPD	5	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	2.0	1.0	1.0	2.0	2.0	2.0
C301	AMS	1	0.2	0.4	0.6	0.4	0.2	0.2	0.4	0.2	0.2	0.6	0.2			
C302	DSU	4.4	0.9	2.6	2.6	2.6			1.8	0.9	2.6	1.8	2.6	2.6	1.8	0.9
C303	ETE	2.8	1.1	1.7	1.7	0.6	1.1	1.1	0.6	0.6	0.6		1.1			0.6
C304	RDM	3.2	0.6	1.9	1.9	1.9		1.3	1.3	0.6		1.3	0.6	1.3	1.9	0.6
C305	DTE	4.2	2.5	2.5	2.5	2.5	0.8	0.8	0.8	0.8	1.7	0.8	1.7	2.5	2.5	0.8
C306	GUI	5	3.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		3.0	2.0	1.0
C307	PPO	5			1.0		2.0	3.0	3.0	3.0	3.0	3.0	2.0	1.0		2.0
C401	EST	5	2.0	1.0	2.0	1.0	2.0	2.0	2.0	2.0	2.0	3.0	2.0			
C402	CHM	3.6	0.7	2.2	2.2	2.2	1.4	1.4	0.7	0.7	1.4	1.4	2.2	2.2	2.2	2.2
C403	DCN	3	0.6	1.2	1.8	1.8			0.6	0.6		1.2	0.6	1.2	1.8	1.8
C404	MAP	4.4	0.9	1.8	2.6	1.8				1.8	0.9	0.9	1.8	0.9	1.8	1.8
C405	OOP	4.4	0.9	2.6	2.6	2.6			0.9	0.9	0.9	1.8	0.9	2.6	2.6	0.9
C406	AMT	5	2.0	2.0	2.0	2.0	2.0	3.0	3.0	2.0	2.0	2.0	1.0	1.0	1.0	1.0
C407	PPT	5		1.0	1.0	2.0		1.0	1.0	2.0	1.0	1.0	1.0	1.0	1.0	2.0
C501	OSY	5	3.0	3.0	3.0	3.0	1.0	1.0	1.0	2.0	2.0	3.0	2.0	1.0	1.0	1.0
C502	SEN	5	1.0	3.0	2.0	2.0	1.0		1.0			1.0	2.0	2.0	2.0	2.0
C503/ C503 E	ISE/ MAT	5	3.0	3.0	2.0	3.0	2.0	2.0	2.0	2.0	2.0	3.0	1.0	1.0	1.0	1.0
C504	JPR	5		3.0	2.0	2.0						2.0	3.0	2.0	3.0	0.0
C505	CTE	5	2.0	3.0	3.0	3.0	2.0	1.0	1.0	1.0	2.0	2.0	2.0	3.0	3.0	2.0
C506	BSC	5	2.0	3.0	2.0	2.0	3.0	3.0	3.0	2.0	3.0	2.0	1.0	1.0	1.0	2.0
C507	NMA	5	1.0	3.0	3.0	3.0	3.0	2.0	2.0	1.0	1.0	2.0	2.0	1.0	2.0	3.0
C508	PPT	5					2.0	1.0	1.0	3.0	3.0	3.0	1.0	1.0	1.0	2.0
C601	MAN	5	1.0	3.0	3.0	2.0	3.0	2.0	3.0	1.0	1.0	2.0	2.0	1.0	1.0	2.0
C602/ C602 E	MCO/ DCN	5	1.0	3.0	3.0	3.0	3.0	2.0	2.0	1.0	2.0	2.0	3.0	3.0	2.0	1.0
C603	OOM	5	3.0	3.0	2.0	3.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	3.0	2.0
C604	AJP	5		3.0	2.0	2.0						2.0	3.0	2.0	3.0	
C605	STE	5	3.0	3.0	3.0	3.0				2.0	2.0	3.0	2.0	3.0	3.0	2.0
C606	IPR	5	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	3.0	3.0	3.0	3.0	3.0
C607	EDE	5				1.0	1.0	1.0		2.0	2.0	2.0	1.0		1.0	2.0
Direct Attainment			1.51	2.16	1.96	1.88	1.61	1.43	1.51	1.35	1.75	1.74	1.59	1.69	1.81	1.47
80% of direct attainment			1.21	1.73	1.57	1.5	1.29	1.14	1.21	1.08	1.4	1.39	1.27	1.35	1.45	1.17
Indirect Attainment			3	3	3	3	3	3	3	3	3	3	3	3	3	3
20% of Indirect			0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
100% attainment			1.8	2.3	2.2	2.1	1.9	1.7	1.8	1.7	2.0	2.0	1.9	2.0	2.0	1.8
Attainment Level			**3**	**4**	**4**	**4**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**4**	**3**

Academic Year 2013-2014

Course	Course-Code	CO Attainment	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PS01	PS02	PS03	PS04
C101	ENG	5							1.0	1.0	3.0					1.0
C102	EPH	4.8	1.9			1.0	1.0	1.0	1.0			1.0	1.0	1.0		
C103	ECH	5	1.0							1.0						1.0
C104	BMS	4	2.4		1.6								2.4			2.4
C105	EGG	5	2.0				1.0	1.0	3.0		1.0	1.0	1.0			1.0
C106	CMF	5	1.0	2.0	2.0	2.0	1.0	1.0	1.0			2.0	2.0	2.0	2.0	2.0
C107	WPI	5	1.0	1.0	1.0	1.0	2.0	1.0	1.0			2.0	2.0	2.0	2.0	2.0
C201	CMS	5						1.0			3.0					1.0
C202	APH	4.6	0.9			1.8	0.9	0.9		0.9		0.9	0.9	0.9	0.9	0.9
C203	ACH	4.6	0.9				0.9	0.9		0.9	0.9				0.9	0.9
C204	PIC	4.6		2.8	1.8	1.8						0.9	2.8	1.8	2.8	
C205	BEL	3.4	1.4	1.4	1.4	0.7				0.7	0.7	0.7	1.4	1.4	0.7	
C206	EMS	2.2	1.3	0.9	0.9	0.4							0.4	0.4		
C207	DLS	5			1.0			1.0	1.0	1.0	2.0	1.0				1.0
C208	WPD	5	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	2.0	1.0	1.0	2.0	2.0	2.0
C301	AMS	0.2		0.1	0.1	0.1			0.1			0.1				
C302	DSU	4.6	0.9	2.8	2.8	2.8			1.8	0.9	2.8	1.8	2.8	2.8	1.8	0.9
C303	ETE	3	1.2	1.8	1.8	0.6	1.2	1.2	0.6	0.6	0.6		1.2			0.6
C304	RDM	3.4	0.7	2.0	2.0	2.0		1.4	1.4	0.7		1.4	0.7	1.4	2.0	0.7
C305	DTE	2.6	1.6	1.6	1.6	1.6	0.5	0.5	0.5	0.5	1.0	0.5	1.0	1.6	1.6	0.5
C306	GUI	5	3.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		3.0	2.0	1.0
C307	PPO	5			1.0		2.0	3.0	3.0	3.0	3.0	3.0	2.0	1.0		2.0
C401	EST	5	2.0	1.0	2.0	1.0	2.0	2.0	2.0	2.0	2.0	3.0	2.0			
C402	CHM	4.6	0.9	2.8	2.8	2.8	1.8	1.8	0.9	0.9	1.8	1.8	2.8	2.8	2.8	2.8
C403	DCN	4	0.8	1.6	2.4	2.4			0.8	0.8		1.6	0.8	1.6	2.4	2.4
C404	MAP	3	0.6	1.2	1.8	1.2				1.2	0.6	0.6	1.2	0.6	1.2	1.2
C405	OOP	4.6	0.9	2.8	2.8	2.8			0.9	0.9	0.9	1.8	0.9	2.8	2.8	0.9
C406	AMT	5	2.0	2.0	2.0	2.0	2.0	3.0	3.0	2.0	2.0	2.0	1.0	1.0	1.0	1.0
C407	PPT	5		1.0	1.0	2.0		1.0	1.0	2.0	1.0	1.0	1.0	1.0	1.0	2.0
C501	OSY	4.4	2.6	2.6	2.6	2.6	0.9	0.9	0.9	1.8	1.8	2.6	1.8	0.9	0.9	0.9
C502	SEN	3.8	0.8	2.3	1.5	1.5	0.8		0.8			0.8	1.5	1.5	1.5	1.5
C503/ C503 E	ISE/ MAT	4.4	0.9	1.8	1.8	1.8	0.9	0.9	0.9	0.9	0.9	1.8	0.9	0.9	0.9	0.9
C504	JPR	4.2		2.5	1.7	1.7						1.7	2.5	1.7	2.5	
C505	CTE	4.4	1.8	2.6	2.6	2.6	1.8	0.9	0.9	0.9	1.8	1.8	1.8	2.6	2.6	1.8
C506	BSC	Course Not Available in E Scheme														
C507	NMA	5	1.0	3.0	3.0	3.0	3.0	2.0	2.0	1.0	1.0	2.0	2.0	1.0	2.0	3.0
C508	PPT	5					2.0	1.0	1.0	3.0	3.0	3.0	1.0	1.0	1.0	2.0
C601	MAN	4.8	1.0	2.9	2.9	1.9	2.9	1.9	2.9	1.0	1.0	1.9	1.9	1.0	1.0	1.9
C602/ C602 E	MCO/ DCN	4.8	1.9	2.9	1.0	1.9	1.9	1.9	1.9	1.0	1.0	1.9	1.9	1.9	1.0	1.0
C603	OOM	4.8	2.9	2.9	1.9	2.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.9	1.9
C604	AJP	4.8		2.9	1.9	1.9						1.9	2.9	1.9	2.9	
C605	STE	Course Not Available in E Scheme														
C606	IPR	5	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	3.0	3.0	3.0	3.0	3.0
C607	EDE	5				1.0	1.0	1.0		2.0	2.0	2.0	1.0		1.0	2.0
C608 E	PPS	5	1.0	1.0	1.0	1.0	1.0	1.0	2.0	3.0	3.0	2.0	1.0	1.0	1.0	2.0
Direct Attainment			1.41	1.97	1.78	1.73	1.51	1.38	1.42	1.37	1.71	1.65	1.59	1.6	1.74	1.52
80% of direct attainment			1.13	1.57	1.43	1.38	1.21	1.11	1.14	1.1	1.37	1.32	1.27	1.28	1.39	1.21
Indirect Attainment			3	3	3	3	3	3	2	3	3	3	3	3	3	3
20% of Indirect			0.6	0.6	0.6	0.6	0.6	0.6	0.4	0.6	0.6	0.6	0.6	0.6	0.6	0.6
100% attainment			1.7	2.2	2.0	2.0	1.8	1.7	1.5	1.7	2.0	1.9	1.9	1.9	2.0	1.8
Attainment Level			3	4	4	3	3	3	3	3	3	3	3	3	3	3

- **Chart Showing Attainment of POs & PSOs using CO attainment levels for Three years:**



CRITERION 4	Students' Performance	200

Intake Information:

Item	Academic Year 2015-2016	Academic Year 2014-2015	Academic Year 2013-2014
Sanctioned intake strength of the program (*N*)	60+3*	60+3*	60+3*
Total number of students, admitted through state level counseling (**N1**)	48+3*	48+3*	48+3*
Number of students, admitted through Institute level quota (**N2)**	11	11	11
Number of students, admitted through lateral entry (**N3**)	12 Admitted in 2016-17	20 Admitted in 2015-16	11 Admitted in 2014-15
Total number of students admitted in the Program (**N1+N2+N3**)	**62+12 = 74**	**62+20=82**	**62+11=73**

*** - TFWS (Tuition Fees Waiver Scheme)**

Transferred students:

Item	Academic Year 2015-2016	Academic Year 2014-2015	Academic Year 2013-2014
Number of students transferred to Third Year	5	-	-
Number of students transferred to Second Year	2	2	-

Year of entry	N1+N2+N3	Number of students who have successfully passed without backlogs in any year of study		
		I Year	II Year	III Year
2015-2016	62 +12	43	-	-
2014-2015	62+20	30	45+10	-
2013-2014	62+11	36	29+4	29+4
2012-2013	77	35	23+2	23+2
2011-2012	71	26	26+3	26+2

Year of entry	N1+N2+N3	Number of students who have successfully passed		
		I Year	II Year	III Year
2015-2016		55	-	-
2014-2015	82	49	45+10	-
2013-2014	73	55	43+4	41+7
2012-2013	77	52	44+5	44+5
2011-2012	71	51	50+4	45+3

4.1. Enrolment Ratio (20)

Enrolment Ratio= (N1+N2)/N

	Academic Year 2015-2016	Academic Year 2014-2015	Academic Year 2013-2014
N	63	63	63
N1	48+3	48+3	48+3
N2	11	11	11
Enrollment Ratio N1+N2/N	**98.41**	**98.41**	**98.41**

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)

Item	Latest passed batch (2015 - 2016)	Latest passed Minus1 batch (2014 - 2015)	Latest passed Minus 2 batch (2013 - 2014)
Total number of Students (admitted through state level counseling + admitted through institute level quota + admitted through lateral Entry) (N1 + N2 + N3)	**73**	**77**	**71**
Number of students who have passed without backlog in the stipulated period	**33**	**25**	**28**
Success Index	**0.46**	**0.33**	**0.4**
Average SI	**0.4**		
Success rate = 40 * 0.4 = 16			

4.2.2. Success rate in stipulated period (20)

Item	Latest Passed Batch (2015-2016)	Latest passed batch minus 1 (2014 - 2015)	Latest passed minus 2 batch (2013 - 2014)
Total number of Students (admitted through state level counseling + admitted through institute level quota + admitted through lateral Entry) (N1 + N2 + N3)	**73**	**77**	**71**
Number of students who have passed in the stipulated period	**48**	**49**	**48**
Success Index (SI)	**0.66**	**0.64**	**0.68**
Average SI	**0.66**		
Success Rate = 20 * 0.66 = 13.2			

4.3. Academic Performance in Final Year (15)

Academic Performance	CAY (2015-2016)	CAYm1 (2014-2015)	CAYm2 (2013-2014)
Mean of CGPA or mean percentage of all successful students/10(X)	**7.38**	**7.25**	**6.63**
Total number of successful students(Y)	**51**	**48**	**65**
Total Number of students appeared in the examination(Z)	**60**	**52**	**71**
API = x* (Y/Z)	**6.28**	**6.7**	**6.07**
Average API = (AP1 + AP2 + AP3)/3	**6.35**		
Academic Performance Level =1.5 * 6.35 =9.52			

4.4. Academic Performance in Second Year (20)

Academic Performance	CAY (2015-2016)	CAYm1 (2014-2015)	CAYm2 (2013-2014)
Mean of CGPA or mean percentage of all successful students/10(X)	**7.19**	**6.38**	**6.71**
Total number of successful students(Y)	**62**	**52**	**52**
Total Number of students appeared in the examination(Z)	**72**	**71**	**71**
API = x* (Y/Z)	**6.2**	**4.68**	**4.92**
Average API = (AP1 + AP2 +AP3)/3	**5.27**		
Academic Performance Level =2 * 5.27 = 10.54			

4.5. Academic Performance in First Year (25)

Academic Performance	CAY (2015-2016)	CAYm1 (2014-2015)	CAYm2 (2013-2014)
Mean of CGPA or mean percentage of all successful students/10(X)	**6.59**	**6.61**	**6.53**
Total number of successful students(Y)	**57**	**49**	**55**
Total Number of students appeared in the examination(Z)	**59**	**59**	**60**
API = x* (Y/Z)	**6.37**	**5.49**	**5.99**
Average API = (AP1 + AP2 +AP3)/3	**5.95**		
Academic Performance Level =2.5 * 5.95 = 14.9			

4.6. Placement and Higher Studies (40)

Item	Latest passed batch (2015-2016)	Latest passed Minus 1 batch (2014-2015)	Latest passed batch Minus 2 (2013-2014)
Total number of final year students(N)	**60**	**52**	**71**
Total Number of students placed in companies or Government Sector(X)	**2**	**0**	**1**
Number of students admitted to higher studies(Y)	**50**	**46**	**61**
1.25X + Y	**53.75**	**46**	**62.25**
Placement Index: (1.25X +Y)/N	**0.9**	**0.89**	**0.88**
T = Average of (1.25X +Y)/N	**0.89**		
Assessment Points = 40 X T	**35.6**		

4.7. Professional Activities (20)

The department has a Membership of the following professional bodies:

- Indian Society for Technical Education (ISTE)
- Computer Society of India (CSI)
- Nuclear Society of India

Professional Organization	No. of Student Members	No. of Staff members
Indian Society for Technical Education	All students of FY, SY, TY	4
Computer Society of India	Students of SY & TY	2
Nuclear Society of India	Nil	1

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

Year	Award received
2006	**ISTE Best Project Award to Mr. Rameez Pojee** and team for Project on Biometrix OS Defense Shell guided by **Dr. Usha Raghavan.**
2008	**ISTE Best Project Award for Shashank Singh and team** for Project on **Secu-OS** guided by **Dr. Usha Raghavan.**
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.**
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	**Prof. D.K. Nayak, Principal** received **ISTE Ranganathan Engineering College National Award** for **Best Polytechnic Principal** at the **44th ISTE National Annual convention**.

Year	Award received
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	**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**.
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**

ISTE Chapter – Institute level

Academic Year 2015- 2016

Sr. No.	Date	Topic/Event	Details
1	21.08.2015	Renewable Energy Day	State Level Technical Paper Presentation Competition
2	15.09.2015	Engineer's day	Inter- departmental Quiz, Essay, Poster, Paper presentation competitions.
3	11.12.2015	Blood Donation camp	Organized by Institute along with HDFC bank and Plasma Blood Bank
4	26.01.2016	Startups Overview	Inauguration by 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.
5	06.03.2016	Guest Lecture on prevention of Hypertension and Diabetes	Dr. Rajendra Agarkar, Honorary Physician TIFR, Mumbai
6	08.03.2016	Women's Day celebration	Life Risk Management and Rajyoga Meditation,

Academic Year 2014- 2015

Sr. No.	Date	Topic/Event	Details
1	20.08.2014	Renewable Energy Day	State Level Technical Paper Presentation Competition
2	05.09.2014	Teachers Day	Departmental activities
3	15.09.2014	Engineer's Day	Quiz competition
4	05.12.2014	Blood Donation camp	Organized by Institute along with HDFC bank and Plasma Blood Bank
5	12.12.2014	Srinivasa Ramanujan Mathematics 2014-2015	Zonal level competition organized by ISTE New Delhi for students and staff
6	20.12.2014	Swachtha Abhiyan	Students and staff participation in a cleanliness drive around Thane railway station
7	07.03.2015	Women's Day celebration	Mrs. Sujata Soparkar MD, Integrated Thane, Dr. Rashmi Karandikar, DCP, Thane on Woman empowerment

Academic Year 2013- 2014

Sr. No.	Date	Topic/Event	Details
1	20.08.2013	Renewable Energy Day	State Level Technical Paper Presentation Competition
2	05.09.2013	Teachers Day	Inter Departmental quiz competition
3	15.09.2013	Engineer's Day	Quiz competition (final), puzzle solving, Poster competition on Safety
4	01.03.2014	Blood Donation camp	Organized by Institute along with Samarpan Blood bank
5	12.12.2014	Srinivasa Ramanujan Mathematics 2014-2015	Zonal level competition organized by ISTE New Delhi for students and staff
6	20.12.2014	Swachtha Abhiyan	Students and staff participation in a cleanliness drive around Thane railway station
7	07.03.2015	Women's Day celebration	Mrs. Sujata Soparkar MD, Integrated Thane, Dr. Rashmi Karandikar, DCP, Thane on Woman empowerment

ISTE/CSI Chapter – Department level

Academic Year 2015-2016

Sr. No.	Date	Topic/Event	Details
1	08.06.2015 to 13.06.2015	One week Hands-on Training Program on .Net	One week Hands-on Training Program on .Net was organized for second year students.
2	18.07.2015	PowerPoint Presentation Competition	Power Point Presentation Competition was organized for third year & second year students.
3	20.07.2015	Quiz Competition	Quiz Competition was organized for second year students.
4	03.08.2015	Department Newsletter	The department Newsletter was released in last week of July.
5	22.08.2015	One day Seminar **Infotech 2015**	One day seminar was conducted for the students of SY & TY.
6	05.09.2015	Poster Competition	Poster Competition was organized for third year & second year students.
7	09.12.2015 To 18.12.2015	Android programming	Training program by Deepak Kolhe.14 participants attended training for 36 hrs.
8	19.02.2016	Intercollegiate Paper Presentation **Tech-Talk 2016**	34 Papers were presented by students of various colleges.
9	19.02.2016	Intercollegiate Online Quiz Competition **Tech-Quiz 2016**	64 Student Participation from various colleges.
10	26.02.2016	Project Exhibition	Project Exhibition cum Competition of Third year students was organized. The competition was judged by Mr. Mahesh Yadav, Senior Consultant, Accenture.
11	02.03.2016	One day Seminar **TechKnow Vision 2016**	SY and TY students attended series of expert lectures.

Academic Year 2014-2015

Sr. No.	Date	Topic/Event	Details
1	16.06.2014 - 21.06.2014	Hands on Training on Android By Mr. Deepak Kolhe.	A short term course on Android was conducted for Students of third year.
2	11.07.2014	Poster Competition on Communication, Networking & Next Generation Electronics.	Poster Competition was conducted for TY & SY students.
3	12.09.2014	Technical Quiz Competition	Quiz Competition was conducted for Third & Second year students.
4	26.08.2014 & 27.08.2014	EC Council	A Code Uncode online exam was conducted for TY & SY students
5	07.02.2015	Inter-Collegiate Technical paper presentation competition "Tech-Talk"	Technical Paper presentation Competition for Third year students was organized.70 students from different colleges participated
6	27.02.2015	Project Exhibition	Project Exhibition cum Competition of Third year students was organized. The competition was judged by Mr. Abhijeet Kale, HOD, Dept. of IT, B.N. Bandodkar College of Science.
7	04.03.2015 & 05.03.2015	2-day Workshop	A 2-day workshop and hands on training on Cloud Computing was conducted for FY, SY and TY students in BRIMS Lab

Academic Year 2013-2014

Sr. No.	Year	Topic/event	Details
1	06.07.2013	Workshop on 'Electronic Instruments, Troubleshooting and Maintenance'	It was conducted by Mr. S. S. Shetty
2	20.07.2013	A session on 'Grid & Distributed Networks to handle Mammoths task'	A session conducted by by Mrs. Radhika Kamath.
3	06.09.2013	Quiz Competition	For Second & Third year students.
4	21.09.2015	A Poster Presentation Competition	It was conducted under the ISTE chapter on the occasion of "Engineers Day".
5	15.02.2014	Computer Hardware & Networking Exhibition was organized in the Department.	For all TY & SY students
6	28.02.2014	Project Exhibition	Project Exhibition cum Competition of Third year students was organized

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

List of Publications:

- College Magazine" Innovision" – Yearly Publication
- Student Handbook - Yearly Publication
- Departmental Newsletter " IconnecT" – Semester-wise Publication
- Conference Proceedings – Yearly
- Seminar Proceedings - Yearly

Publication	Year of Publication	Issue No.	Date of release	Theme/ Content	Editorial Team
College Magazine	2015 - 2016	-	March 2016	Report of all the activities, Articles by students & Staff	Principal & Staff Members
	2014 - 2015	-	February 2016		
	2013 - 2014	-	March 2016		
Student Handbook	2015 - 2016	-	Beginning of Academic Year	Oath, Institute Vision, Mission, Academic Calendar, Endowment Prizes	Principal
	2014 -2015				
	2013 - 2014				
Newsletter IconnecT (Sent as E-Newletter via Email, Blog[2016])	2015 -2016	07	August 2016	Internet Of Things	Dr. Usha Raghavan, Mrs. Radhika Kamath
		06	January 2016	Startups in India	
	2014 -2015	05	August 2015	Digital India, Wireless charging	
		04	December 2015	LI-FI Technology	
	2013 - 2014	03	March 2014	iOS 7, Survey on forged image detection techniques	
		02	September 2013	Artificial Intelligence	
		01	July 2013	3-D printing	
Conference Proceedings	2015 - 2016	18	19.12. 2015	Life Safety – Today & Tomorrow	Principal & Organizing Secretary of the Conference
	2014 -2015	17	07.02.2015	Industry Expectations from Safety Managers	
		16	16.01.15	Next Generation Electronics	
	2013 - 2014	15	04.01. 2014	Process Safety Management	
Seminar Proceedings	2015-2016	1	March 2016	Infotech 2016, Techknow Vision	Department Staff

CRITERION 5	Faculty Information and Contributions	150

Faculty Information:

Academic Year 2016-2017

Name of the Faculty Member	Qualification, Board and Year of Graduation	Designation and date of Joining the institution	Distribution of Teaching Load (%)			Academic Research		Years of experience	
			1st Year	2nd Year	3rd Year	Research Paper Publications	Faculty Receiving M.Tech/ Ph.D. during the Assessment Year	Industry	Teaching
Principal D.K. Nayak	M.E. , Mumbai University, 1991	Principal,August 1985	-	-	50.00%	Research - 3 Conferences - 23	Registered for Ph. D.	6 months	30
Dr. Usha Raghavan	PhD, Pune University, 2012	Head of Department, Year 1989	-	20%	80%	Research - 7 Conferences - 19	-	-	27
Mrs. R.G.Tendulkar	M.E, Mumbai University, 2015	Lecturer, Year 2004	9.40%	65.11%	25.58%	4	-	-	13
Mrs. Radhika Kamath	B.E Mangalore University,1995	Lecturer,July 2003	22.50%	35%	42.50%	1	-	-	20
Mrs. Swati Joshi	MCA , IGNOU, 2009	Faculty Programmer Year 2002	-	12.82%	87.18%	-	-	-	22
Mrs. Gauri Bobade	B. Tech Pune University. 2009	Lecturer, June 2010	-	72.50%	27.50%	-	Pursuing M.E.	-	7
Mrs. Archana Kalia	B.E , BPUT Odisha, 2003	Lecturer , August 2014	16.29%	79.06%	4.65%	2	-	2	5.5
Mrs. Kavita Ahire	B.E, Pune University, 2013	Lecturer, June 2016	21.05%	63.15%	15.08%	-	-	-	1.5
Mr. Prashant Rayrikar	B. E., Mumbai University 2014	Lecturer, December 2014	25%	36.12%	38.88%	1	-	1	2.5
Dr. G.S. Ingawale	Ph.D JJT University , 2016	Senior Lecturer, August 1995	33.33%	-	-	1	-	-	22
Mrs. Neelima Warade	M.Sc , Mumbai University, 2004	Lecturer, August 2016	33.33%	-	-	-	-	-	3
Mrs. Shreya Ghaisas	M.A. , Mumbai University , 2004	Lecturer, August 2011	36.11%	-	-	-	-	-	11
Ms. Fatima Rizvi	M. Sc , Mumbai University, 2009	Lecturer, Year 2011	26.66%	10.00%	-	-	-	-	5.5
Mrs. Komal Tajane	B.E.,RTMN University , 2013	Lecturer, June 2015	33.33%	-	-	1	-	-	2

Academic Year 2015 -16

Name of the Faculty Member	Qualification, Board and Year of Graduation	Designation and date of Joining the institution	Distribution of Teaching Load (%)			Academic Research		Years of experience	
			1st Year	2nd Year	3rd Year	Research Paper Publications	Faculty Receiving M.Tech/ Ph.D. during the Assessment Year	Industry	Teaching
Principal D.K. Nayak	M.E. , Mumbai University, 1991	Principal,August 1985			50.00%	Research - 3 Conferences - 23	Pursuing Ph. D.	6 months	29
Dr. Usha Raghavan	Ph.D, Pune University, 2012	Head of Department, Year 1989		20%	80%	Research - 7 Conferences - 19	-	-	26
Mrs. R.G.Tendulkar	M.E, Mumbai University, 2015	Lecturer, Year 2004	9.40%	65.10%	25.50%	4 Papers, 1 Poster	M.E.	-	12
Mrs. Radhika Kamath	B.E., Mangalore University,1995	Lecturer,July 2003	22.50%	35%	42.50%	1	-	-	19
Mrs. Swati Joshi	MCA , IGNOU, 2009	Faculty Programmer Year 2002		12.82%	87.18%	-	-	-	21
Mrs. Gauri Bobade	B. Tech Pune University. 2009	Lecturer, June 2010		72.50%	27.50%	1 Paper, 1 Poster	Pursuing M.E.	-	6
Mrs. Shubhangi Bajaj	B. E. , BAMU university, 2012	Lecturer, December 2014	28.94%	13.15%	50.00%	-	Pursuing M.E.	-	2.5
Mrs. Archana Kalia	B.E , Biju Patnaik University of Technology,Odisha, 2003	Lecturer , August 2014	16.29%	79.06%	4.65%	2	-	2	4.5
Mr.Dilipkumar Pandey	B.E., Pune University, 2013	Lecturer, December 2014	21.44%	63.28%	15.28%	-	-	1	1.5
Mr. Prashant Rayrikar	B. E., Mumbai University 2014	Lecturer, December 2014	25.00%	36.12%	38.88%	1	-	1	1.5
Dr. G.S. Ingawale	Ph.D JJT University , 2016	Senior Lecturer, August 1995	33.33%			Research - 6 Conferences-17	Ph.D	-	21
Mrs. Raji Nair	M.Sc, Mumbai University, 2005	Lecturer, June 2007	33.33%			2	-	-	9
Mrs. Shreya Ghaisas	M.A. , Mumbai University , 2004	Lecturer, August 2011	36.11%			-	-	-	10
Ms. Fatima Rizvi	M. Sc , Mumbai University, 2009	Lecturer, Year 2011	26.66%	10.00%		-	-	-	4.5
Ms. Sheetal Jagtap	B.E. , Shivaji University, 2012	Lecturer, Year 2014	33.33%			-	Registered for M.E.	-	
Mrs. Kavita Ahire	B.E, Pune University, 2013	Adjunct Faculty, February 2016	22.50%			-	-	-	1.5
Mr. Nitesh Tawade	B.Tech , Mumbai University, 2009	Adjunct Faculty, August 2015			3.33%	-	-	6	-

Academic Year 2014-15

Name of the Faculty Member	Qualification, Board and Year of Graduation	Designation and date of Joining the institution	Distribution of Teaching Load (%)			Academic Research		Years of experience	
			1st Year	2nd Year	3rd Year	Research Paper Publications	Faculty Receiving M.Tech/ Ph.D. during the Assessment Year	Industry	Teaching
Principal D.K. Nayak	M.E. , Mumbai University, 1991	Principal,August 1985			50.00%	Research - 2 Conferences - 22	Pursuing Ph. D.	6 months	28
Dr. Usha Raghavan	Ph.D, Pune University, 2012	Head of Department, Year 1989		21.42%	78.58%	Research - 5 Conferences - 18	-	-	25
Mrs. R.G.Tendulkar	B.E , Shivaji University, Kolhapur, 2003	Lecturer Year 2004		87.81%	12.19%	3 Papers ,1 Poster	Pursuing M.E.	-	11
Mrs. Radhika Kamath	B.E., Mangalore University,1995	Lecturer July 2003	21.42%	47.63%	30.95%	1	-	-	18
Mrs. Swati Joshi	MCA , IGNOU, 2009	Faculty Programmer Year 2002	7.69%	10.26%	82.05%	-	-	-	20
Ms. Gauri Pawar	B. Tech Pune University. 2009	Lecturer June 2010		13.05%	86.95%	1 Paper, 1 Poster	Registered for M.E.	-	5
Mrs. Archana Kalia	B.E , Biju Patnaik University of Technology,Odisha, 2003	Lecturer August 2014		46.88%	3.13%	1	-	2	3.5
Mrs. Priyanka Mahajan	MMS (IT), Mumbai University, 2012	Lecturer, June 2013	17.39%	26.09%	6.52%	-	-	6 months	1.5
Mrs. Pallavi Salunkhe	B.E , North Maharashtra University, 2010	Lecturer, July 2014	20.45%	25.00%	4.55%	-	-	-	1.5
Mrs. Lavanya Sangewar	M.Tech, JNTU University, 2014	Lecturer, August 2014		73.68%	26.32%	-	-	-	3
Mrs. Shubhangi Bajaj	B. E. , BAMU university, 2012	Lecturer, December 2014	9.09%		40.91%	-	Registered for M.E.	-	1.5
Mr. Prashant Rayrikar	B. E., Mumbai University 2014	Lecturer, December 2014	26.32%	18.43%	5.26%	-	-	-	6 months
Mr. Dilipkumar Pandey	B.E., Pune University, 2013	Lecturer, December 2014	20.59%	23.53%	5.89%	-	-	-	6 months
Mrs. G.S. Ingawale	M. Sc , Mumbai University, 1989.	Senior Lecturer August 1995	33.33%			Research - 6 Conferences-17	Pursing Ph.D.	5.5	20
Mrs. Raji Nair	M.Sc, Mumbai University, 2005	Lecturer, June 2007	33.33%			2	-	-	8
Mrs. Shreya Ghaisas	M.A. , Mumbai University , 2004	Lecturer, August 2011	36.11%			-	-		9
Ms. Fatima Rizvi	M. Sc , Mumbai University, 2009	Lecturer, Year 2011	26.66%	10.00%		-	-	-	3.5
Ms. Sheetal Jagtap	B.E. , Shivaji University, 2012	Lecturer, Year 2014	33.33%			-	Registered for M.E.	-	
Mr. Nitesh Tawade	B.Tech , Mumbai University, 2009	Adjunct Faculty, August 2014			3.33%	-	-	5	-

Academic Year 2013-14

Name of the Faculty Member	Qualification, Board and Year of Graduation	Designation and date of Joining the institution	Distribution of Teaching Load (%)			Academic Research		Years of experience	
			1st Year	2nd Year	3rd Year	Research Paper Publications	Faculty Receiving M.Tech/ Ph.D. during the Assessment Year	Industry	Teaching
Principal D.K. Nayak	M.E. , Mumbai University, 1991	Principal,August 1985			50.00%	Research - 2 Conferences - 21	Registered for Ph. D.	6 months	27
Dr. Usha Raghavan	PhD, Pune University, 2012	Head of Department, Year 1989	3.22%	19.36%	77.42%	Research - 5 Conferences - 18	-	-	24
Mrs. R.G.Tendulkar	B.E , Shivaji University, Kolhapur, 2003	Lecturer Year 2004	6.38%	82.97%	10.65%	3	Registered for M.E.	-	10
Mrs. Radhika Kamath	B.E., Mangalore University,1995	Lecturer July 2003	21.42%	26.20%	52.38%	1	-	-	17
Mrs. Swati Joshi	MCA , IGNOU, 2009	Faculty Programmer Year 2002			100%	-	-	-	19
Ms. Gauri Pawar	B. Tech Pune University. 2009	Lecturer June 2010		6.82%	93.18%	1	-	-	4
Mrs. Vaishali V. Khachane	B. E., North Maharashtra University	Lecturer June 2011		82.61%	17.39%	-	-	-	4
Mrs. Sarika Nitin Wagh	B. E., Pune University, 2011	Lecturer June 2012	51.21%	34.15%	14.64%	-	-	-	1.5
Mrs. Vibha Ramesh Paradkar	B. E. Information Technology	Lecturer June 2013		27.27%	22.73%	-	Registered for M.E.	-	6months
Mrs. Priyanka Mahajan	MMS (IT), Mumbai University, 2012 B.E (IT), Mumbai University, 2009	Lecturer, June 2013	34.09%	38.63%	15.90%	-	-	6 months	1
Ms. Tejaswini J. Chavan	B. E. Information Technology	Lecturer, December 2013	14.29%	30.96%	4.76%	-	Registered for M.E.	-	6months
Mrs.. G.S. Ingawale	M. Sc, Mumbai University, 1989.	Senior Lecturer August 1995	33.33%			Research - 6 Conferences-17	Pursing Ph.D.	5.5	19
Mrs. Raji Nair	M.Sc , Mumbai University, 2005	Lecturer, June 2007	33.33%			1	-	-	7
Mrs. Shreya Ghaisas	M.A., Mumbai University ,2004	Lecturer, August 2011	36.11%			-	-		8
Ms. Fatima Rizvi	M. Sc , Mumbai University,2009	Lecturer, Year 2011	26.66%	10.00%		-	-	-	2.5
Ms. Sheetal Jagtap	B.E., Shivaji University, 2012	Lecturer, Year 2014	33.33%			-	-	-	
Mr. Nitesh Tawade	B.Tech , Mumbai University, 2009	Adjunct Faculty, August 2013			3.33%	-	-	4	-

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

Year	a	b	c	N	F = (a+b-c)	SFR=N/F
2015-2016	8	2.49	0.08	204	10.41	19.5965
2014-2015	8	2.26	0	204	10.26	19.883
2013-2014	9	2.26	0.12	204	10.20	20
Average						**19.83**

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) **(Humanities & Adjunct)**
c: Total number of full time equivalent regular Faculty (considering fractional load) of this program serving other program(s)

5.2. Faculty Qualification – FQ (20)

FQ = 2* (10x +7y)/F

Where x is no. of faculty with M. Tech.

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)

Year	No. of faculty with M. Tech. (x)	No. of faculty with B. Tech. (y)	No. Of Faculty (F)	FQ = 2* (10x+7y)/F
2015-2016	3.33	7.08	10.41	15.92
2014-2015	3	7.26	10.26	15.75
2013-2014	2	9.14	10.20	16.47
Average				**16.05**

5.3. Faculty Retention (20)

2016-17		2015-16		2014-15		2013-14	
Name of the Faculty	**Load**	**Name of the Faculty**	**Load**	**Name of the Faculty**	**Load**	**Name of the Faculty**	**Load**
Principal D.K. Nayak	0.5	Principal D.K. Nayak	0.5	Principal D.K. Nayak	0.5	Principal D.K. Nayak	0.5
Dr. Usha Raghavan	1	Dr. Usha Raghavan	1	Dr. Usha Raghavan	1	Dr. Usha Raghavan	1
Mrs. R.G.Tendulkar	1	Mrs. R.G.Tendulkar	1	Mrs. R.G.Tendulkar	1	Mrs. R.G.Tendulkar	1
Mrs. Radhika Kamath	1	Mrs. Radhika Kamath	1	Mrs. Radhika Kamath	1	Mrs. Radhika Kamath	1
Mrs. Swati Joshi	1	Mrs. Swati Joshi	1	Mrs. Swati Joshi	1	Mrs. Swati Joshi	1
Mrs. Gauri Bobade	1	Mrs. Gauri Bobade	1	Ms. Gauri Pawar	1	Ms. Gauri Pawar	1
Mrs. Archana Kalia	1	Mrs. Archana Kalia	1	Mrs. Archana Kalia	1	Mrs. Vaishali V. Khachane	1
Mr. Prashant Rayrikar	1	Mr. Prashant Rayrikar	1	Mr. Prashant Rayrikar	1	Mrs. Sarika Nitin Wagh	1
Dr. G.S. Ingawale	0.33	Dr. G.S. Ingawale	0.33	Mrs. G.S. Ingawale	0.33	Mrs.. G.S. Ingawale	0.33
Mrs. Shreya Ghaisas	0.36	Mrs. Shreya Ghaisas	0.36	Mrs. Shreya Ghaisas	0.36	Mrs. Shreya Ghaisas	0.36
Ms. Fatima Rizvi	0.36	Ms. Fatima Rizvi	0.36	Ms. Fatima Rizvi	0.36	Ms. Fatima Rizvi	0.36
Mrs. Kavita Ahire	1	Ms. Sheetal Jagtap	0.33	Ms. Sheetal Jagtap	0.33	Ms. Sheetal Jagtap	0.33
Mrs. Komal Tajne	0.33	Mrs. Shubhangi Bajaj	0.92	Mrs. Shubhangi Bajaj	1	Mrs. Vibha Ramesh Paradkar	1
Mrs. Nilima Warade	0.33	Mr.Dilipkumar Pandey	1	Mr. Dilipkumar Pandey	1	Mrs. Priyanka Mahajan	1
		Mrs. Raji Nair	0.33	Mrs. Raji Nair	0.33	Mrs. Raji Nair	0.33
		Mrs. Kavita Ahire	0.22	Mrs. Pallavi Salunkhe	1	Ms. Tejaswini J. Chavan	1
				Mrs. Lavanya Sangewar	1		
				Mrs. Priyanka Mahajan	1		

The number of faculty members retained (Shown in Green) during 2013-14, 2014-15, 2015-16 - **9.71**

Average F = **10.29** (From table 5.1)

The percentage of staff retained during the assessment year 2013 - 2016 **= 9.71 / 10.29 = 94.4**

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

Sr No.	Name of the Faculty	CAY 2015-2016	CAY m1 2014-2015	CAY m2 2013-2014
1	Principal D.K. Nayak	5	5	5
2	Dr. Usha Raghavan	5	5	5
3	Mrs. R.G.Tendulkar	5	5	3
4	Mrs. Radhika Kamath		5	3
5	Mrs. Swati Joshi	5	5	
6	Mrs. Gauri Bobade	3	5	
7	Dr. G.S. Ingawale	5		
8	Mrs. Raji Nair			5
9	Mrs. Shreya Ghaisas			5
10	Mrs. Archana Kalia		3	
11	Mr. Prashant Rayrikar		3	
12	Mrs. Priyanka Mahajan		5	
13	Mr.Dilipkumar Pandey	5	3	
	Sum	33	44	26
	RF= Number of Faculty required to comply with 20:1 Student-Faculty ratio as per 5.1	10.41	10.26	10.20
	Assessment = 6 × Sum/0.5RF (Marks limited to 30)	38.04	51.46	30.59
	Final Assessment	30	30	30
	Average Assessment over three years	**30**		

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

	Name	Details	Year of Development	Beneficiaries
Product Development	Student Database Software	A .Net based software for entering the data of all the students who have taken admission in First Year and completed their Diploma.	2013-2014	All Departments
	Institute Website	Updated version of the website has been designed.	2015-2016	Institute
	MCQ On line Software	Conduct on line Inter - collegiate/ Intra-collegiate quiz competition	2015-2016	Institute
Consultancy	Curriculum Development	Faculty members of the department are involved in the Curriculum development of G scheme & I scheme of MSBTE.	2012-2015	Computer Group of Diploma Programmes, affiliated to MSBTE.
	Teacher Guide Development	Faculty members of the department are involved in the Teacher Guide development of G scheme and training faculty across the state.	2013-2015	Computer Group of Diploma Programmes, affiliated to MSBTE.
	Laboratory Manual Development	Faculty members of the department are involved in the Review of Laboratory Manual prepared by subject experts for Diploma Programmes	2013-2014	Computer Group of Diploma Programmes, affiliated to MSBTE.
	Advisory Committee	Worked as member of advisory technical committee for "Pragyanam" – An International Conference Organized by Shah & Anchor Kutchi Polytechnic, Chembur.	2014-2016	All delegates of Conference
	Conduction of On-line Exams	Faculty members of the department are involved in the conduction of online exam for Yashasvi Institute	2014-2016	Institute

	Name	Details	Year of Development	Beneficiaries
Consultancy	EOA of AICTE and development of laboratories	Faculty members have assisted in online filling of the EOA of AICTE. Also, provided guidance for developing first year laboratories.	2012-2013	VPM, Management

The department also provides consultancy for the conduction and curriculum development of the following courses

Sr. No	Programme Name	Intake	Course duration	No. of students Enrolled			Revenue Generated in 3 years (Rs.)
				2015-2016	2014-2015	2013-2014	
1	Advance Diploma in Computer Software, System Analysis and Applications	60	1 Year	09	18	00	3,37,500
2	Maharashtra State Certificate in Information Technology (MSCIT)	104	3 months	171	105	153	15,01,500
4	KLIC Certificate course in financial Tally ERP 9.0	-	3 months	34	16	5	1,92,500
5	KLIC Certificate course in C Programme	-	3 months	6	13	2	73,500
6	KLIC Certificate course in C++ Programme	-	3 months	1	-	-	3,500
7	KLIC Certificate course in Web Designing	-	3 months	3	-	-	10,500
8	KLIC Certificate course in Advance Excel	-	3 months	2	-	-	7,000
9	KLIC Certificate course in Presentation Designing	-	3 months	1	-	-	3,500
10	KLIC Certificate course in Desktop Publication (Coral Draw)	-	3 months	1	-	-	3,500
11	KLIC Certificate course in IT Hardware support	-	3 months	1	-	-	3,500

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

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

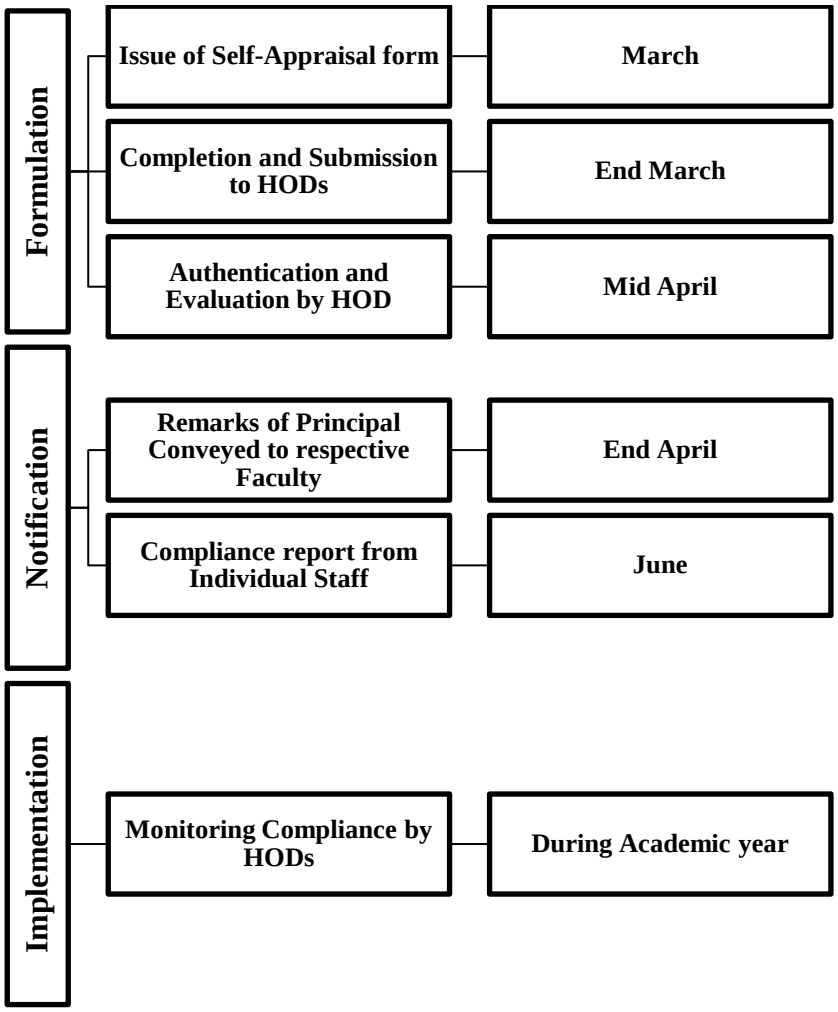
Polytechnic is following Performance Appraisal Development System with the following objectives

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 Papers in Technical Journals
9. Guidance for Innovative, Application based projects.
10. Patents
11. Specific individual achievements

5.6.2 Its Implementation and Effectiveness :

The self appraisal form is given to faculty members at the end of even semester. The key Performance indicators are addressed to in the appraisal form. The faculty fills the appraisal form and submits to the HOD. The HOD evaluates and authenticates with remarks. The forms are submitted by the HOD to the Principal. The Principal scrutinizes the forms and a feedback is conveyed to the respective faculty. A compliance report is given by the faculty member and subsequent the performance is monitored as per the compliance by the HOD. This helps the faculty to understand their strengths and weaknesses and work to achieve better in subsequent year.

The Activity Flow Chart



Key Performance Indicators (KPI) in the Self-Appraisal

1. Teaching and practical load details of Curricular, Co-curricular responsibilities
2. 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; Student feedback.

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

Performance Appraisal Development System implementation and its effectiveness:

The Self-Appraisal forms submitted by Individual staff members include their academic and personal contributions for the academic year. The system helps in making sure the faculty accountability and the effectiveness is visible. It provides an insight into the below listed aspects.

Faculty:

1. Staffs are aware of their 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. Motivates Staff 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.
10. Encourages teachers to orient their course delivery processes in accordance with the requirements of the students.
11. Facilitates qualification upgradation.

Institution:

1. Better equipped and motivated human resource.
2. Competent and Peer recognized faculty.
3. Establishing credibility within the Student community and Society at large.
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 Laboratory staff are regularly deputed to attend Certificate courses, Workshops, Content Updating Training Programme (CUTP), Industrial Trainings, Industrial Visits, Industry Sponsored Exhibitions and Conferences. Such events help the staff to remain updated for Curriculum Implementation.

Details	Number of Staff Participated		
	2015-2016	2014-2015	2013-2014
Workshops	1	1	7
CUTP	1	-	-
Industrial Training	2	1	-
Industrial Visit	8	8	8
Conferences	1	3	4
Certificate Courses	4	4	1
Training Programmes	1	3	3

5.7. Implementation of Career advancement Scheme (10)

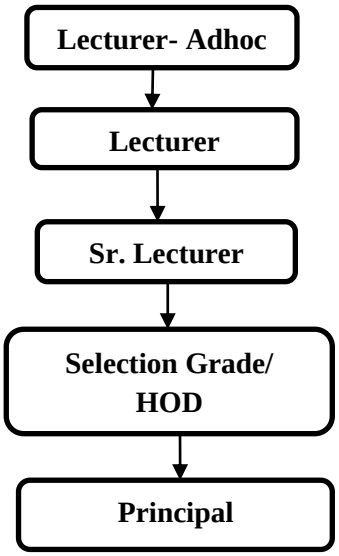
The Career Advancement Scheme is implemented by following AICTE guidelines and individual performance, academic results, Publications and other KPI .

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 approach the HOD / Principal at the start of academic year with their interest for enrolment to the PG / Advance Diploma programmes. The Academic load of such staff is adjusted to suit to their commitments. The

list of faculty members who upgraded their qualification in the last 3 years is included in the table.

Within the framework of working of the Polytechnic and Staff promotion scheme, the faculty member with adequate qualification, experiences, publications, Good Performance Appraisals are promoted to the next higher levels. In case of support staff who have upgraded their skills through Certificate or Advance Diploma programmes are given appreciation in the form of Incentive / Additional increment.

The stages of up gradation for teaching staff:



Number of Staff Members Pursuing/Completed M.E/Ph.D

Qualification	2015-2016		2014-2015		2013-2014		2012-2013	
	In Process	Completed	In Process	Completed	In Process	Completed	In Process	Completed
Ph.D.	1	1	2	-	2	-	2	1
M.E.	1	1	2	-	1	-	-	-
ADCSSAA	1	2	2	-	-	-	-	-
Total	3	4	6	-	3	00	2	1

Sr. No.	Name of Staff	Qualification	Status
1	Prof. D.K. Nayak	Ph.D.	Thesis submitted
2	Dr. Usha Raghavan	Ph.D	Completed
4	Mrs. G.S. Ingawale	Ph.D	Completed
5	Mrs. R.G. Tendulkar	M.E.	Completed
6	Mrs. Gauri Bobade	M.E	In Progress

CRITERION 6	Facilities And Technical Support	100

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

Room Description	Legend Name	Shared/ Exclusive	Capacity (sq.m)	Available Facilities
Class room	SCIC15	Exclusive	80	Black board, Benches, Fans, Lights, LAN connectivity
	SCIC16	Exclusive	80	Green graph board, Benches, Fans, Lights, LAN connectivity, OHP Projector
	SCIC17	Exclusive	80	Green graph board, Benches, Fans, Lights, LAN connectivity
Tutorial Room	FCIT04	Exclusive	55	One computer, Whiteboard, LAN connectivity, Fans, Lights, Notice board.
Seminar hall	FCIS01	Shared	340	Audio-Visual aids, Fans, Lights, benches, projector.
Auditorium	GCFA01	Shared	902	Audio-Visual aids, Fans, Lights, chairs, projector, Air Conditioner, Virtual classroom facility.

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

Name of the Laboratory	Area in Sq.m.	No. of students per setup (Batch Size)	Name of the Important equipment	Name of Staff
Basic Workshop	55	30	Server PC -1 with 9 Thin-client PC, Peripheral Devices, Keyboard, Mouse, Motherboard, Printer, Speaker & Microphone, Cables, Scanner, Hard disk	**Mrs. Kavita Ahire**

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

Name of the Laboratpry: **Software Engineering 1**							**Batch Size :20**
Sr. No.	**Name of the Important Equipment**		**Weekly utilization status**	**Name of Courses for which Lab is utilized**	Technical **Manpower support**		
	Hardware	**Software**			**Name of the technical staff**	**Designation**	**Qualification**
1	PC- With CPU, monitor, keyboard, mouse Intel Premium(6 Nos) Intel core(5 Nos) Intel (1 No) LAN connectivity with Internet, 24 Port Switch Printer- HP 2035 Laser Jet (1 No), Scanner-HP 4X Scanjet 200 Flat bed (1No)	Microsoft Windows 2007, Cryptool Version 2.0, TASM, Turbo C, Visual Basic 6.0	26	**ISE, PIC, GUI, MAP**	Mrs. Varshaa Pagnis	Lab Assistant	Diploma in Computer Engineering & ADCSSA
Name of the Laboratpry: **Software Engineering 2**						**Batch Size :20**	
2	PC- With CPU, monitor, keyboard, mouse CPU-Intel core(10),Intel Xenon(1) Projectors -2, Laptop -1, LAN connectivity with Internet, 24 Port Switch	Microsoft Windows 2007, JDK1.7, Adobe Flash, Dreamweaver, Android ADT with Eclipse IDE	26	**JPR, AMT, AJP, MCO**	Ms.Nikita Madhavi	Lab Assistant	Diploma in Computer Engineering & ADCSSA
Name of the Laboratpry: **Networking Lab**						**Batch Size :20**	
3	Intel(R) Celeron (9 no), Intel® Core (4 no), LAN connectivity with Internet, 24 Port Switch	Windows Server 2008, Oracle 9i, Turbo C++, WireShark	26	**NMA, RDB, OOP, DCN**	Mrs. Kranti Bastav	Lab Assistant	B.Com. and ADCSSA
Name of the Laboratpry: **Web Designing Lab**						**Batch Size :20**	
4	PCs 9, Intel I3 processor- 1	Ubuntu Professional 15.10	26	**WPD, DSU, OSY, IPR**	Mrs. Varshaa Pagnis	Lab Assistant	Diploma in Computer Engineering & ADCSSA
Name of the Laboratpry: **Basic Workshop/Hardware Lab**						**Batch Size :30/20**	
5	Server PC -1 with 9 Thin-client PCs, Peripheral Devices, Keyboard, Mouse, Motherboard, Printer, Speaker & Microphone, Cables, Scanner, Hard disk	Microsoft Windows, MS- Office	26	**WS, CHM, DTE**	Ms.Nikita Madhavi	Lab Assistant	Diploma in Computer Engineering & ADCSSA
Name of the Laboratpry: **Electronics Lab**						**Batch Size :20**	
6	Regulated Power Supplies, DMMs, CROs, Function Generators, Voltmeters, Ammeters, Transformers, Elelctronics Components, Demo Kits	-	30	**BEL, ETE, CTE, MCO**	Mr. S. S. Shetty	Lab Assistant	Radio Technician
Name of the Laboratpry: **Physics Lab**						**Batch Size :20**	
7	Barometer, MultiMeter, Power supply, Physical balance, Thermocouple, Spectormeter, Tunning fork set, Rheostat, Ammeter, Galvanometer, Voltmeter, Searle's apparatus Travelling microscope, Vernier caliper, Micrometer,Steam generator, Potentiometer, Bunsen photometer,	-	30	**BPH, APH**	Ms. M.M.Tatke	Lab Assistant	B.Sc.
Name of the Laboratpry: **Chemistry Lab**						**Batch Size :20**	
8	Magnetic Stirrer, pH meter,Kipp's Apparatus, Furnace,Oven,Voltmeter, Titration Apparatus, Conductivity meter	-	30	**BCH,ACH**	Mrs. V.D.Naik	Lab Assistant	B.Sc.

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	Computerised multiple choice questions test	Online Application software	• Improves cognitive ability • Provides reliable measurement of scores Faster Marking Process	• For conduction of Online mock exams and viva • Online Quiz Competition	AJP, MAN, EVS	PO2, PO3, PO4, PSO3
2	Pictorial/Graphical charts	Diagrammatic representation of different technical topics.	Better retention due to Visual display	Illustrate through concept structures	Hardware based subjects CTE, DTE, CHM, ETE, DCN	PO1, PO4, PO10, PSO2
3	Display/Demo kit	In-House developed Kits used for performing Experiments	Comprehend the theory while doing practical work.	• Performing experiments and interpret the results. • Easy troubleshooting	BEL, ETE, CTE, MCO	PO1, PO4, PO10, PSO2
4	Internet facility	Leased lines of InTech with a speed of 32 Mbps connects all devices to internet in the campus.	Information search, Self learning, keep up-to-date with latest technolgy.	•Conduct Online Exams • Spoken tutorials • Professional practrices assignments	CMF, PIC, JPR, OOP, Professional Practices, IPR	All POs and PSOs

6.5. Laboratories: Maintenance and overall ambiance (10)

Information Technology Usage Policy

For use of computing facilities at Polytechnic labs, students should strictly follow the following guidelines:

1) No student should try to install any software on any machine within institute.
2) Access of Face book, YouTube, Twitter and prohibited websites is punishable.
3) The institute machine is public machine & using it for confidential online transactions is an offence.
4) Use of pen drives that may tamper important data in machine is an offence.
5) Only safe, secure, authentic & trusted web sites should be accessed.

Maintenance of Laboratory Equipments

- One Teaching faculty and a Lab Assistant are in-charge of the overall functioning/ maintenance of each lab.
- A dead stock register is maintained with all equipment details recorded timely.
- Student register is maintained to record student entry and usage in the Laboratory.
- Issue register is maintained to record the issue details of equipments/ facilities in and out of the Laboratories.
- Regular maintenance of computers/equipment is carried out as and when required and also at the end of every semester.
- As per requirement minor repairs are carried out by the Lab assistant & Faculty Members.
- Maintenance register is maintained in the laboratories.
- Major repairs are done by the Campus Server Room technicians by following the procedure of the institute.
- Installation of the licensed software, Open source and proper Antivirus software are updated regularly.

Overall Ambiance

- All laboratories are equipped with state of art equipments to meet the requirements of curriculum.
- Laboratory manuals provided by MSBTE is followed strictly for achieving Course Outcomes.
- All laboratories are well furnished and have sufficient light, good ventilation and AC/fan arrangement.

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.
		System Software	**Application Software**	32Mbps InTech Internet Leased line connection, all PCs connected in LAN Ethernet with 100Mbps, Wi-Fi Access Points availability with limited access	Laserjet Printers -2 Scanner -1
57	**2:1**	Windows 7 Professional Windows 8 Enterprise Windows Server 2003 Windows Server 2008 Data Centre Windows XP Professional	Office 2003 Office Professional Plus 2007 Office Professional Plus 2010 Office Professional Plus 2013 Adobe Photoshop Adobe CS 4 Visual Studio 2005 Visual Studio 2008 SQL 2000 SQL 2005 SQL 2010 VB 6 Quick Heal End point Security 15		

6.7. Language lab (10)

(Availability and Utilization)

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

Details of Learning Resources

Sr. No	Skill	Resources Available	No. of CD
1	Vocabulary	**Mega English Course** Effective Word power and Right Expression Franklin International www.mindpowerindia.com	CD 1 to 4
2	Expressions	**Mega English Course** Effective Word power and Right Expression 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 different 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 & PSOs Attainment Levels and Actions for improvement – 2016-2017

POs	Target Level	Attainment Level	Observations
PO1: Demonstrate basic knowledge in Mathematics, Science and Engineering.			
PO1	**4**	**3**	Students are weak in Mathematics. It is observed through their answer books that they do not attempt all questions.
Action 1: Weekly additional classes are arranged for solving problems in Mathematics. **Action 2:** Students are asked to write formulae repeatedly in the classroom. **Action 3**: Remedial lectures are conducted where revision of curriculum is done			
PO2: Demonstrate the ability to formulate and apply IT based knowledge to solve Engineering problems			
PO2	**5**	**4**	Students need to develop better logical thinking. Many students are not able to write programs that perform faster
Action 1: Students are asked to write & execute many programs having similar logic. **Action 2**: Mini & Micro projects are given that will enhance their ability to think logically.			
PO3: Demonstrate the ability to design and conduct experiments, interpret and analyze data and report results.			
PO3	**5**	**4**	It is found that students find it difficult to correlate theory and practical and interpret the results in hardware based subjects like Basic Electronics & Digital Techniques. Students find it difficult to interpret the results in **TASM** for the subject Microprocessor
Action 1: The theory related to the practical conducted is taught once again in the laboratory **Action 2 :** To make the understanding better in Microprocessor, a different simulator which is easier to interpret can be used simultaneously along with TASM.			

POs	Target Level	Attainment Level	Observations
PO4: Demonstrate the ability to model a live problem or a project that meets desired specifications and requirements using appropriate tools.			
PO4	**5**	**4**	The students are not able to link the connection between the software learnt with the needs of a live problem. It is also found that the students do not have domain knowledge of the problem.
Action 1: Students are given more exposure to live projects through the use of various applications and its code. **Action 2:** A course on Arduino is conducted to create and model a hardware based problem.			
PO5: Have an understanding of the impact of engineering on society, health, safety and legal issues and incorporate them in engineering solutions.			
PO5	**3**	**3**	The target level and the attainment levels are equal.
Action 1: The target level is being increased in the year 2016-17.			
PO6: Have the confidence to apply engineering solutions taking the societal and environmental needs into consideration.			
PO6	**5**	**3**	Projects developed by students are not providing secure applications along with proper authentication, data validation and with real time volumes of data
Action 1: Project Guides impress upon the students, the importance of authentication and factual data in their projects. **Action:** The projects are to be tested with large data.			

POs	Target Level	Attainment Level	Observations
PO7: Demonstrate an understanding of their professional and ethical responsibilities in engineering field.			
PO7	**5**	**3**	Irregularity and improper time management of few students
Action 1: Individual Parent teacher interaction for irregular students **Action 2:** Conduction of Expert lectures on time management			
PO8: Work in diverse/ multidisciplinary teams without compromising on integrity and credibility.			
PO8	**3**	**3**	The target level and the attainment levels are equal
Action 1: The target level is being increased in the year 2016-17.			
PO9: Communicate effectively in both verbal and written forms.			
PO9	**5**	**4**	Many students taking admissions in Diploma programmes are from Vernacular medium. They face lot of problems in English Communication. Due to large use of digital media for communication, students are not having the skill of technical writing.
Action 1: Conversational English classes are taken in the First Semester. **Action 2:** Language Lab has been set up to encourage language learning. **Action 3:** All students of Third Year have been asked to write technical paper and present the same.			
PO10: Be capable of self education and clearly understand the value of life-long learning in the context of ever-changing IT field			
PO10	**5**	**4**	Students find it difficult to comprehend the technical knowledge through print media and reference books.
Action 1: Smart Books and Spoken Tutorials are introduced to make self-learning interesting.			

PSOs	Target Level	Attainment Level	Observations
PSO1: Identify and analyze computer problems and prepare algorithmic/ system model for the solution to the problem.			
PSO1	**5**	**3**	Very limited Domain Knowledge.
Action 1: Sending students for internship **Action 2**: Encourage students to develop live projects in final year diploma to understand the importance of domain knowledge.			
PSO2: Select appropriate hardware and software tools to develop circuits/ secure code / program.			
PSO2	**5**	**4**	Not able to compare the characteristics of various software tools. Do not exhibit the ability to differentiate the use of hardware components for different applications
Action 1: Reinforce the use of programming concepts in real time applications during teaching learning process **Action 2:** Discuss the hardware requirements for implementing real time applications			
PSO3: Test, debug and troubleshoot the developed solution to the problem.			
PSO3	**5**	**4**	Students do not learn the syntax of programming language Maximum students are not able to identify the run time errors.
Action 1: Display and revise syntax in each lab session. **Action 2:** Give introduction of next lab exercise in previous lab. **Action 3:** Give programs containing errors to debug in all programming courses. **Action 4:** Testing practice is given with different types of inputs			
PSO4: Provide assistance at client's side through proper installation & documentation.			
PSO4	**4**	**3**	Difficulty in expressing the technical aspects in writing Inadequate knowledge of the client's site and system Configuration
Action 1: Discuss compatible versions of system and software. **Action2**: Provide practice on Technical writing in Professional Practices.			

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

Items	LPB (2013-2014)	LPB m1 (2012-2013)	LPB m2 (2011-2012)
Success Index (from 4.2.1)	0.46	0.33	0.4

7.3. Improvement in Placement and Higher Studies (10)

Items	LPB (2013-2014)	LPB m1 (2012-2013)	LPB m2 (2011-2012)
Placement index (from 4.6)	0.9	0.89	0.88

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

Items	LPB (2013-2014)	LPB m1 (2012-2013)	LPB m2 (2011-2012)
Academic Performance Index (from 4.3)	6.28	6.7	6.07

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

Items	CAY (2015-2016)	CAY m1 (2014-2015)	CAY m2 (2013-2014)
Internal Academic Audits	89.5%	81.5%	75.5%

An internal monitoring committee consisting of heads of department and senior faculty is appointed by the principal along with the academic coordinator. This committee closely scrutinizes the Teaching Learning process, Adherence to the academic calendar, continuous assessment of students, assignments given to students and planning of various activities like

guest lectures, industrial visits, value added courses. The student feedback is also taken into consideration. This kind of monitoring helps in the smooth functioning of the department. The Internal academic audit is performed in the mid semester and is assessed on a scale of 100 points.

7.6. New Facility created in the program (10)

Items	CAY (2015-2016)	CAY m1 (2014-2015)	CAY m2 (2013-2014)
New Facility Created	1. MCQ software created for quiz competitions 2. Facility for Internship. 3. High speed Internet Connectivity 4. Blog IconnecT for technical communication. 5. Laptop	1. Data Communications and Networking Laboratory 2. Spoken tutorial facility 3. Mobile Computing Laboratory	1. Electrical Technology Lab developed. 2. Online database software developed. 3. Inception of Newsletter IconnecT Released 4. LED projector

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 is 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: 15- 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.
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 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 refer standard textbooks as well as e-learning resources to enable effective learning amongst students. Additional inputs are obtained through Training / Content Updating Programmes attended by the teachers. Regular assignments after each Topic, 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 and industrial visits.

Laboratory:

Diploma programmes Curriculum designed by MSBTE has about 40 % weightage 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 ,if any(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 teachers is analyzed. All the comments of the students in the feedback form are communicated to the respective faculty members along with their feedback score to know strengths / weaknesses and to improve teaching skills.
- The Indices obtained and areas for improvement are informed to subject teachers by respective HODs.
- Feedback mechanism is focused to ensure best Teaching Learning practices.

Sample feedback form:

V.P.M'S POLYTECHNIC, THANE		
Feedback Form		
Academic Year		
(Odd/Even Semester)		
Course: Information Technology		
Semester:		
Enter Marks for each Subject out of 5		
Sr. No.	Particulars	Subject Name
1	Is your Teacher clear and understandable in his/her explanations?	
2	Does he/she makes a genuine effort for allowing your participation in subject discussion?	
3	Does he/she stimulates your independent thinking?	
4	Is the teacher well prepared and presents the material in well-organised manner?	
5	Is the teacher enthusiastic about teaching his/her subject?	
6	Does he/she give thought to the feeling of individual student?	
7	Does he/she stress important matrial of the subject?	
8	Does he/she assess and comment on the assignments given to you?	
9	Does he/she adjusts speed of teaching as per class requirements?	
10	Does he/she shows a good sense of humour in the class?	
11	Does he/she covers the subject by giving important facts and applications?	
12	Whether teacher writes legibly on black board?	
13	Does the teacher have thorough knowledge of the subject?	
14	Does he/she is punctucal and reliable in engaging the class?	
15	Can you approach your teacher for your difficulties?	
16	Does the teacher answer your difficulties upto your satisfaction?	
17	Are your satisfied the way in which the subject portion is covered?	
18	Does the teacher give you good notes of the subject?	
19	Whether the teacher engages extra lectures against lost lectures?	
20	Do you understand the relevance of the subject to the field of Information Technology	
	Sign. of Student	

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
2012-2013	11	2	16	0	14	1	10	2	12	0	16	0	12	0	**95**	**5**
2013-2014	11	2	15	0	14	0	16	1	12	1	16	0	12	0	**100**	**4**
2014-2015	11	1	16	0	13	0	15	1	12	0	16	0	11	0	**98**	**2**
2015-2016	11	2	15	0	13	0	15	1	12	1	16	0	10	0	**96**	**4**

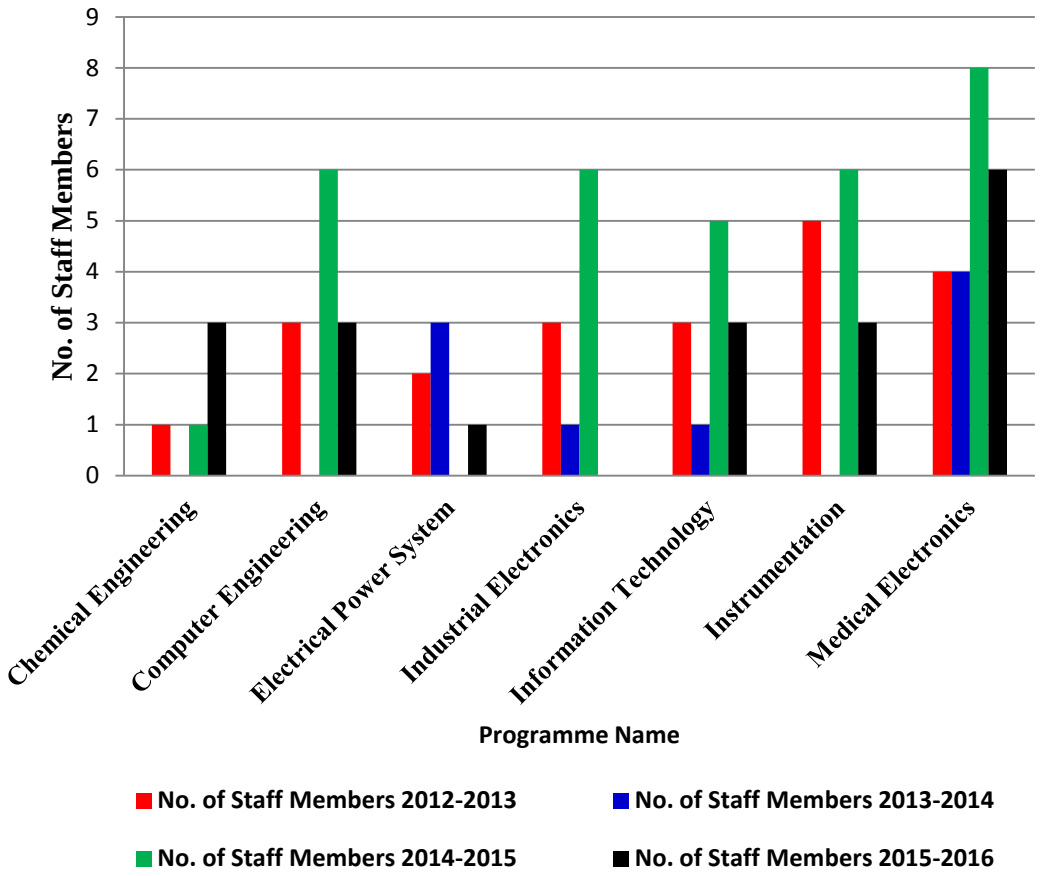
- **T - Total Staff including Humanities**
- **C - Corrective Action Taken**

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 HODs 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.

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 special contributions are being appreciated during Faculty meetings, Training programmes and Conferences.

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

Corrective Measures

The teachers whose performance needs improvement are counseled by the respective HODs 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 Views to find out scope for further improvement. Feedback from 82 students is taken for 15 parameters which are quantified as under:

Sr No.	Facilities	Score (%)
1	College Campus, Security	**93.09**
2	Class Rooms	**85.77**
3	Laboratory Equipment's, Conduct of Practical, Project etc.	**89.02**
4	Library, Reading Rooms, Home Issue, Book Bank, Periodicals, Journals	**95.12**
5	Teaching Faculty, Mentoring	**96.34**
6	Opportunity for Co-curricular activities	**81.30**
7	Computing Facilities, Internet	**80.89**
8	Seminar, Conference Halls	**92.28**
9	Training and Placement Assistance	**77.64**
10	Industrial Visits & Guest Lectures	**89.02**
11	Scope for Value Addition Programmes	**81.30**
12	Office; Administrative Staff Support for Admission, Fees payment, Railway/Bus concession, Bonafide and Other certificates	**86.99**
13	Wash rooms, Drinking Water facility	**76.82**
14	Campus Stores, Duplicating facility	**78.86**
15	First Aid Facility	**85.02**

Corrective action taken based on the Feedback and Comments:

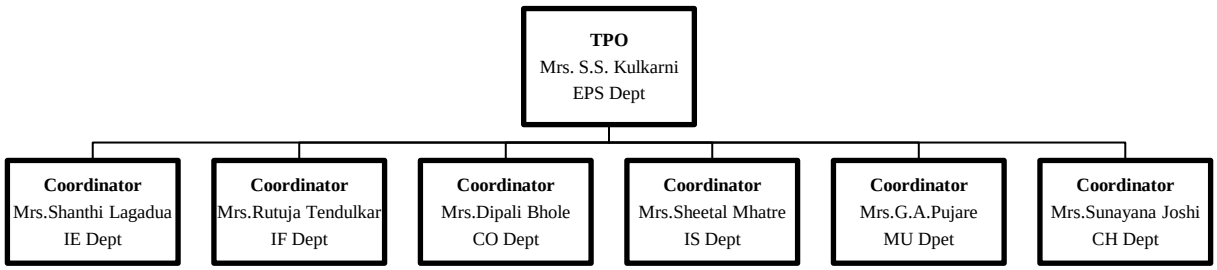
The Feedback indicated that the students are by and large satisfied with the currently available facilities. The maintenance of the existing infrastructure is done on regular basis. Sports and Cultural competitions are held during the Semester Break. Institute is planning to provide more recreational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

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

Sr. No	Suggestions for improvement	Measures Undertaken
1	Washroom improvement	Work is in progress
2	Improvement in Canteen services	Instructions are given to Canteen
3	E-Classroom	Seminar room with Audio-Visual facilities provided
4	Playground	Made available to the students in the mornings and evenings.

8.4 Career Guidance, Training and Placement Cell (20)

Organizational Chart



Objectives and Features of Training & Placement Office

- 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

Sr No.	Activity	Academic Year		
		2015-2016	2014-2015	2013-2014
1	Career Guidance Lectures	12	16	12
2	Hub & Spoke Lectures (MSBTE)	02 Seminar + 1 Ind. Visits	01 Seminar + 2 Ind. Visits	*
3	Industry Visits	48	37	27
4	Industry related projects	11	04	02

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

2. Management of career guidance , Training, Placement

- **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 during the Summer vacation.

  Benefits of Internship

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

- **Placement and Internship details for last 3 years**

Sr No.	Activity	Academic year				
		2015-2016		2014-2015		2013-2014
1	No. of Campus Placements	**13**		**9**		**8**
2	Industries Interacted for Placement	**14**		**10**		**8**
3	No. of Industries for Internships	Dept.	No. of industries	Dept.	No. of industries	
		IE	15	IE	--	*****
		IS	13	IS	01	
		EP	15	EP	10	
		IF	20	IF	--	
		CH	15	CH	--	
		MU	19	MU	02	
		CO	24	CO	--	

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

No. of Interns in Summer 2016

Sr No.	Branch	Second Year	Third Year	Total
1	Chemical Engineering	14	19	33
2	Electrical Power Systems	20	31	51
3	Instrumentation	40	55	95
4	Industrial Electronics	39	25	64
5	Medical Electronics	13	33	46
6	Computer Engineering	64	66	130
7	Information Technology	31	34	65
	Total			**484**

3. Effectiveness :

Providing training placement & career guidance activities help in establishing MOUs with industry for conducting industry based value added courses and also a platform for foreign collaboration

A. Foreign Collaboration:

i. UKIERI (UK India Education & Research Initiative) **Project**

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

ii. Northern College- Canada

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.

B.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
		QUIK TECH, Thane
4	Computer Engineering	Techknow Pvt. Ltd, Thane
		Learning Pixels, Thane
5	Instrumentation	Supertech, Thane
		Suchi Engineers, Thane
6	Medical Electronics	Vighnaharta Sales & services, Bhiwandi
7	Chemical Engineering	Suchi Engineers, Thane
		Thakkar Dyechem Industries, Badlapur, Thane
		Process Units Engineers and Manufacturers, Dombivli, Thane

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

8.4 Entrepreneurship Cell / Technology Business Incubator (5)

Polytechnic started Entrepreneurship Development 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. To train and equip the students with the knowledge and resource that is needed to build startups.
2. To conduct:

a. Entrepreneurship Awareness Camp (EAC).

b. Entrepreneurship Development Programmes (EDP).

c. Faculty Development Programmes (FDP).

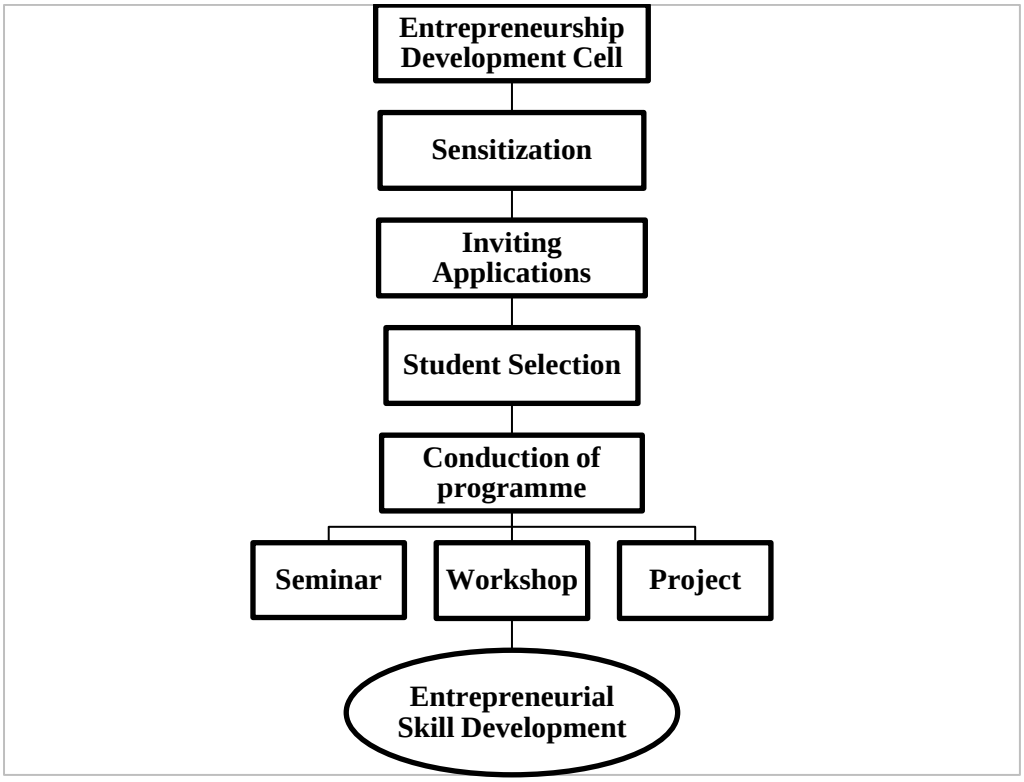
d. Skill Development Programmes (SDP).

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 Day** is organized to bring synergy between **Industry** and **Institute**. Two original projects from each department will 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.
    d. Preparing technical feasibility reports.
2. Consultancy and Research.
3. Training programmes for industrial professionals.

Activity Chart for Entrepreneurship Development Cell



Activities:

Academic Year 2015-2016

No. of student members (From IF Dept.): 20

Sr. No.	Date	Topic/Event	Name of Speaker
1	10.09. 2015	Entrepreneurship Opportunity for Engineers	Pratapsinh K. Desai President, ISTE, New Delhi
2	26.01.2016	"Startup Entrepreneurship"- The journey begins!!	Mr. Ram Bhogale, Director, Nirlep Group of Companies
3			Mr. Deepak Ghaisas, Chairman of Gencoval strategic services Pvt. Ltd
4	Dec 2015- Apr 2016	Incubation Idea- Project	Dr Usha Raghavan
5	March onwards	Start Up Programme- On Campus training	Industry/ Academic Professionals

Academic Year 2014-2015

No. of student members (From IF Dept.): 16

Sr. No.	Date	Topic/Event	Name of Speaker
1	15.09.2014	Entrepreneurial Motivation	Dr Ajay Tamhane Consultant
2	03.03.2015	Communication Skills Motivational Leadership	Mr Kamal Kapoor Vice President , Zuventus
3			Dr. Roopali Deshpande Director of Forever Young-The Anandee Movement
4		Time management	Dr. Lata Shetty Management Consultant & Corporate Trainer
5		Team Building	Mr. Vijayakumar Menda Manager, Disha Services
6		Creativity	Mr.. Vipul Kukreja, Corporate Trainer
7		Leadership qualities	Dr. Ulhas Kolhatkar, MD, D.Ch
8	Dec 2014- Apr 2015	Incubation Idea- Project	Dr Usha Raghavan

Academic Year 2013-2014

No. of student members (From IF Dept): 10

Sr. No.	Date	Topic/Event	Name of Speaker
1	23.08.2013	Entrepreneurial Motivation	Dr Ajay Tamhane
2	31.08.2013	Curiosity, self analysis & proactive approach in a day to day life &How to be successful in Corporate world	Mr Kamal Kapoor Vice President , Zuventus
3			Mr. Sudhir Warde, HR, Head L & T
4		Art of Presentation	Prashant Likhite
5		Team Building Games & Six thinking Hat Activity	Mr.. Vipul Kukreja, Corporate Trainer & Ms. Sonal Athvankar HR, L&T Infotech
6		Need for innovation	Mr. Vijay Dodeja Partner of Western India Pvt. Ltd.
7		Innovation & Entrepreneurship	Dr. Arun Pande
8	07.09.2013	Entrepreneurship Camp Awareness of MSME Financial Planning	Faculty from MSME, Mumbai Juhi Sinha Mr Prasad Kulkarni Mr Pushkar Kumar

CRITERION 9	Governance Institutional Support and Financial Resources	75

9.1 Organization, Governance and transparency (25)

9.1.1. State the Vision and Mission of the Institute (5)

Institute Vision & Mission:

Vision

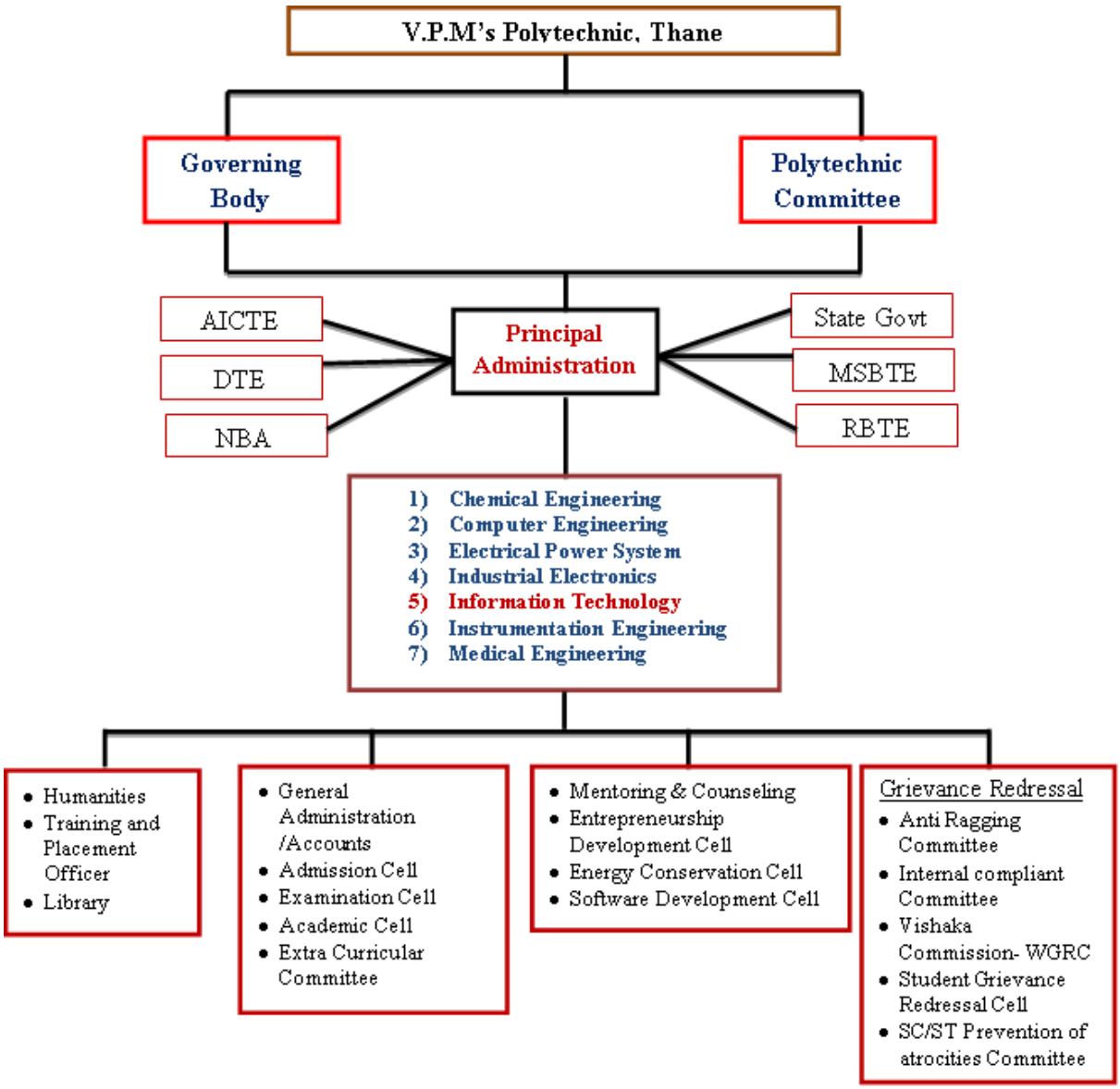
Ensuring skill development through Quality Technical Education.

Mission

- **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.**

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

Organisational chart:



9.1.2.1 Governing Body and Functions of various Bodies

Present Governing Body Members

Sr. No.	Name	Designation
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
Sr. No.	**Name**	**Designation**
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, 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 meeting held in the last 3 years

Sr. No.	Date of Meeting	Main Points discussed to place before GB/PC	Members Present
1	23.01. 2013	Formation of various committees. Anti-Ragging Squad, Anti-Ragging Committee, Women Grievance Redressal Committee, Grievance Redressal Cell.	10
2	01.02.2013	Academic Monitoring, Winter 2012 Results, Unit test II/PST, Disha Magazine, Polytechnic Magazine.	10
3	11 .03. 2013	MSBTE Practical/Theory Exam, Stock taking, Pending fees payment by SY/TY Students, Staff Recruitment.	10
4	14 .08. 2013	MSBTE Hub-Spoke Model, SSS final Fees approval	6
5	14 .12. 2013	AICTE mandatory disclosures, International Conference 'Bhaskara-900'	7
6	14 .02.2014	Library Automation using Open source KOHA software, Value Addition Programmes	7
7	07 .08. 2014	FY Schedule, Plan for Unit test-I, Lectures and Practical planning, Preparation for NBA	7
8	06 .09. 2014	Admission Statistics 2014-2015, Status of Academic progress of all the departments, Conference preparations	3
9	10 .07. 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	08 .09 2015	MSBTE Enrollment, Exam Form filling, Teaching Staff Load review, Journal/Conference publications.	6
11	21 .10. 2015	Finalizing Disallowed candidates W-15 Exam, Various Proposals, Scholarship.	7
12	21 .01. 2016	W-2015 Result Analysis, NBA Proposal submission, AICTE-EOA, Academic Monitoring, Budget 2016-2017.	9
13	10.08. 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	2016-2017	33rd Meeting	08.09. 2016	Board Room	11
2	2015-2016	32ndMeeting	04 .03 2016	K.V. Vaze Hall	13
		31st Meeting	10 .09. 2015	Board Room	10
3	2014-2015	30th Meeting	13. 03. 2015	K.V. Vaze Hall	06
		29th Meeting	23 .09. 2014	Board Room	11
4	2013-2014	28th Meeting	15 .03 2014	K.V. Vaze Hall	12
		27th Meeting	14 .09. 2013	Board Room	11

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

Sr. No.	Name	Designation
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	2016-2017	74th Meeting	08.09. 2016	Board Room	08
2	2015-2016	73rd Meeting	14.12. 2015	Board Room	06
		72nd Meeting	17.07. 2015	Board Room	06
3	2014-2015	71st Meeting	20.12. 2014	Board Room	06
		70th Meeting	30.07. 2014	Board Room	06
4	2013-2014	69th Meeting	14.12. 2013	Board Room	05
		68th Meeting	13.07. 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.

9.1.2.2 Administrative Setup:

General Administration and Accounts

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

Admission Cell : First Year and Direct Second Year

Stage 1.

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

Stage 2.

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

Stage 3:

- Upload admitted student's data on DTE / MSBTE / Pravesh Niyantran Samiti / 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 Safety of 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.

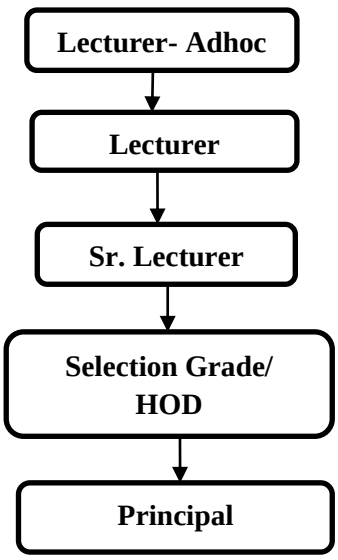
Extra-Curricular Committee

- 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.

9.1.2.3 Defined rules, procedures, recruitment and promotional policies:

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.

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 Ad-hoc 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 are given as per the State Government policies. In addition, the staff who have upgraded their skills through Certificate or Advance Diploma programmes are given appreciation in the form of Incentive / Additional increment.

9.1.3 Decentralization in Working and Grievance Redressal Mechanism (5)

9.1.3.1 Administrative Responsibilities & decentralization in Working Administrators/Decision Makers

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

Principal: Academic and Administrative Head 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:

- The Head of the Department is responsible for the smooth functioning of the department as per the academic calendar.
- The staff of the department report to the Head from time to time with the results of assignments.
- The conduct of academic co-curricular, extracurricular activities of the students of the departments.
- Monitoring the Industry Interaction for Guest faculty, Internship and Projects.

- Teachers, Laboratory Staff are assigned various responsibilities such as Class Teachers, Mentors, Co-curricular co-ordinatros, Academic co-ordinators, Lab In-charges etc. with specific list of duties. The list of duties are prepared as per the guidelines of AICTE, New Delhi.

9.1.3.2 Grievance Redressal Mechanism

Following four committees are formed for the Redressal of Grievances

A. 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.

The Squad includes chairperson, deputy chairperson and six members.

Activities undertaken (Every year)

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

List of Members of Anti-Ragging Committee

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

B. 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.

Functions of WGRC:

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

Proposed Action plan of WGRC

- Presentation about the Women redressal cell, its role & importance in the campus, objectives, functions, rights of women, constitutional remedies etc. to create awareness among the women students and staff in the campus.
- Conduct regular meetings at least once in a month.
- A two hour presentation on the topic "Self Defense".
- Observe the International women's Day on 8th March 2013.

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	Member

Grievance Reporting Procedure

- The Cell will deal with the cases / complaints of physical, verbal, mental and sexual harassment of the female teaching and non-teaching women staff of the Polytechnic.
- The Cell may form / review the guidelines / policy for redressal of the grievance as required from time to time, which may be in accordance with those issued by Supreme Court and Government Agencies.
- The Cell will provide assistance to the Faculty/Institute for taking preventive steps in the matter of gender discrimination and sexual harassment.
- Polytechnic female employee will have the right to lodge a complaint concerning sexual harassment against a male employee of the Polytechnic or the members of the Authorities of the Management, by writing a letter to the Principal of the Polytechnic or putting the complaint in the Complaint Box, which is to be placed in the Polytechnic Library /Office.
- The Complaint Box is to be opened once in a week by Secretary Member along with any other committee member. Complaint if any, is to be informed to the Chairman of the Cell.
- The complainant will be afforded full confidentiality at this stage.
- After receiving the complaint, the Chairperson shall convene a meeting of the cell, as the case may be, to deal with it.
- The Chairperson may appoint an Investigation Committee, as the case may be, after consulting with the Principal.
- Whenever the Investigation Committee is set up by the Chairman, the Convener (Chairperson of Investigating comm.) shall convene a meeting for which advance intimation will be given to the complainant.

- At the first meeting the complainant or at her request her representative shall be heard.
- The Investigation Committee shall then decide whether the complaint deserves to be proceeded with.
- The complaint will stand dropped if accordance to the committee the complainant has not been able to disclose prima-facie an offence of any type of harassment.
- In case, the Investigation Committee decides to proceed with the complaint the wishes of the complainant shall be ascertained and if the complainant wishes that a warning would suffice then the alleged offender shall be called to the meeting of the Committee, heard and if so satisfied that a warning is just and proper he may be warned about his behavior. The matter will then be treated as concluded with a recording to that effect made in the complaint Register.
- If the Investigation Committee comes to the conclusion that the accused, in case of his guilt being proved, should be imposed a major penalty, it shall make such a recommendation to the Principal of Polytechnic.

C. 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.

D. 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.

1. The Cell basically aims to uplift the morale of deprived section of students and staff.
2. Ensure equal opportunities to all the students and staff irrespective of their background.
3. Encourage and motivate through counseling and personality development programmes.
4. 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

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

9.2. 1 Institute level Income for 2013-2014, 2014-2015, 2015-2016, 2016-2017

A. Total Income at Institute level 2016-2017 (As on 30th September 2016)

	Total Income (Rs. in Lacs)					Actual Expenses (Rs. in Lacs)				Total No. of Students	
Year	Fee	Govt	Grants	Other	Total	Recurring	Non Recurring	Any Other	Total	Exps Per Student (in Lacs)	No Of Student
CFY 2016-17*	394.76	137.2	0	27.85	559.81	281.94	1.62	37.38	320.94	0.33	974
CFY m1 2015-16	448.01	172.68	1	62.41	684.1	630.91	14.41	100.26	745.58	0.68	1104
CFY m2 2014-15	401.73	210.38	1.3	65.11	678.52	639.53	14.98	78.11	732.61	0.69	1067
CFY m3 2013-14	471.6	187	0	45.86	704.46	572.57	20.75	71.38	664.71	0.52	1286

B. Recurring and Non-Recurring expenses (in lacs)

	CFY (2016-2017)		CFY m1 (2015-2016		CFY m2 (2014-2015)		CFY m3 (2013-2014)	
ITEMS	Budget	Actual (30-09-	Budget	Actual	Budget	Actual	Budget	Actual
Infrastructure Build Up	201.52 (incurred before 2013)							
Library	1	0.15	3	1.66	8	3.26	8	6.04
Laboratory Equipment	12.75	1.56	13	12.86	24.5	11.9	24.5	14.87
Laboratory Consumables	4.05	1.28	4.9	2.52	5.25	3.83	5.25	3.78
Teaching & Non-Teaching Salary	588.5	210.48	568.2	558.34	544	507.34	440	482.79
Maintenance & Spares	61.9	46.98	127.44	81.46	67.3	116.53	117.3	77.25
R&D	3	-	2	0.72	1	0.85	1	1.33
Training & Travel	2	0.32	2	3.27	3	1.48	3	1.41
Miscellaneous Exps	-	0.08	2	0.11	2	0.15	2	0.22
Others	0	0	0	0	0	0	0	0
Muncipal Tax	1.5	1.64	1.5	1.57	2.5	1.35	2.5	1.35
Newspaper & Magazines	0.7	0.12	1	0.4	2	0.38	2	0.83
Affiliation Fee	1.05	1.05	1	1.05	1	1.05	1	0.7
BTE Exam Stationery	0.5	0.56	0.25	0.2	1	0.32	0.5	0.26
Printing Stationery	15	6.24	12.5	9.12	9.5	8.7	8	7.77
Seminar Student Registration	0.3	0.25	1	0.36	0.35	0.29	0.25	0.22
Staff CUTP/STTP	0.5	0.22	1	0.5	0.5	0.49	1	0.67
Uniforms	0.2	0	0.1	0.14	0.25	0.09	0.5	0.11
Audit Fees	0.5	0.6	0.5	0.51	0.5	0.43	0.5	0.39
Student Insurance	0.5	0.55	0.5	0.55	0	0.48	-	0.53
Postage	0.1	0.01	0.1	0	0.1	0	0.25	-
Advertisement	2	1.14	1.5	1.69	0.7	1.41	1	2.21
Bank Charges	0.15	0.07	0.15	0	0.15	0	0.15	0
Repair & Maintenance	1	0.01	1	0.15	2	0.27	2	0.11
ASG Gym Mag	2.5	0.03	2	1.51	2	2.59	2	2.73
I Lib Card	0.5	0.04	0.5	0.63	1	0.36	1	0.56
Water Charges	4	0.9	4	2	5	2.99	2	3.29
Telephone Charges	0.5	0.18	0.5	0.48	0.75	0.5	0.75	0.6
Electricity Charges	20	8.65	20	16.87	20	17.67	18	15.6
Contingencies	3	1.4	1	3.34	2	3.14	-	3.21
Leased Line	2.55	3.3	2.55	5.81	-	-	-	-
Professional Charges	0.4	0	0.4	0.4	-	0.88	-	0.35
AICTE Fee	1	0	1	1	-	1	-	1
Lab Mannual	4.5	2.47	4.5	2.67	-	4.22	-	3.41
MSBTE Enrolment	0.9	0.82	0.9	1.08	-	1.09	0.5	0.9
MSBTE Exam Fee	4.03	23.6	8	30.41	-	32.5	-	26.72
NBA Processing Fee	10	5.75	20	-	-	-	-	0
ISTE Membership	0.25	0.01	0	0	-	-	-	0
Alumini Association	0.2	0	0	0	-	-	-	0
Repayment to IT Centre	67.5	10	0	0	-	-	-	0
Receivable for SWD	100	0	0	0	-	-	-	0
Seminar Exps.	-	-	-	2.78	2.5	5.1	2.5	3.5
TOTAL	919.03	330.45	809.99	746.18	708.85	732.61	647.45	664.71

9.2.1 Adequacy of budget allocated to the department (in Rs.) (4)

Sr No	Allocation Head	Budget allocation			Expenditure		
		2015-2016	2014-2015	2013-2014	2015-2016	2014-2015	2013-2014
1	Recurring Expenses	75,000.00	75,000.00	75,000.00	27,911.00	12,280.00	13,392.00
2	Non Recurring Expenses	2,00,000.00	2,00,000.00	2,00,000.00	2,14,666.00	3,57,966.00	1,84,558.00
3	Licensed software	6,00,000.00	7,30,000.00	7,30,000.00	5,56,861.00	6,83,867.00	7,97,724.00

Budget is allocated on the basis of the requisition of equipments for the department. The requisition is prepared under three heads namely, Recurring expenses, Non recurring expenses and Maintenance expenses by the head of the department. The list of equipments is given by MSBTE for the given curriculum. All the necessary equipments for the proper implementation of the curriculum are purchased. The faulty equipments/ computers are removed as scrap by following the procedures of the institute. Obsolete computers are also replaced with new computers.

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)

A. 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 Lacs**
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**	

B. Total Budget at Institute Level: For Financial Year 2015-2016

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 Lacs**
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**	

C.Total Budget at Institute Level For Financial Year 2014-2015

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 Lacs**
Medical Electronics	2.00	0.75	1.02	0.64	
Physics	0.50	0.35		0.008	

Department	Total Budget (Rs. in Lacs)		Actual Expenses (Rs. In Lacs)		
	Non Recurring	Recurring	Non Recurring	Recurring	
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**	

D. Total Budget at Institute Level For Financial Year 2013-2014

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**	

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

Items	Budgeted	Actual	Budgeted	Actual	Budgeted	Actual	Budgeted	Actual
	30-9-2016	30-9-2016	2015-2016	2015-2016	2014-2015	2014-2015	2013-2014	2013-2014
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 (07)

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 funds are delayed from the Authorities.

9.3.2 Utilization of allocated funds (08)

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.

The table below indicates the budget allocation and the utilization of funds for purchase of major equipment and maintenance.

Item	Academic Year 2015-2016 (in Lacs)	Academic Year 2014-2015 (in Lacs)	Academic Year 2013-2014 (in Lacs)
Budget allocated	**2.75**	**2.75**	**2.75**
Computers and peripherals	2.31	2.80	1.20
Teaching aids	0.22	-	0.46
Development of new laboratory	-	0.31	0.30
Maintenance	0.01	0.41	0.07
Total utilization of funds	**2.54**	**3.52**	**2.03**

9.4 Library and Internet (20)

9.4.1 Quality of learning resources

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

The Library facilities include

- Reading room with issue of text/reference books.
- Home issue of 1 book per students of First & Second year and 2 Books for Third year students.
- Book Bank facility to 400 + students every Semester. Free Book Bank sets are issued to all SC/ST and three top students of each division.
- The Library has subscription of National as well as International magazines in the relevant technological and general science areas.
- Membership for external readers including candidates appearing for competitive exams. Over 100 members register annually for this facility.
- Multimedia PCs are maintained for database and other resources access.
- The database repository DSpace is hosting the majority of research publications of the VPM Campus staff.
- Conference proceedings in the Hard and Digital copy form are available for download through our website.
- The centrally air-conditioned Reading room can accommodate over 128 students and separate area for staff research references.
- **Selected students are felicitated with Best Reader Award for their effective use of library resources throughout the year**.

A. Total number of Books:

Year	Total No. of Books	Titles	Book Bank Sets Issued during the year
2013-2014	23238	5594	428
2014-2015	24266	7029	636
2015-2016	26477	8247	799

B. 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)

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

9.5 Institutional Contribution to the Community Development (05)

1. Computer training programmes conducted for more than 3000 candidates with computer literacy through MS-CIT programme and our institute has **received Award of Appreciation for Sustained Partnership from 2004 to 2012 as an MS-CIT Authorized Learning Centre** of Maharashtra Knowledge Corporation Limited (MKCL), Maharashtra State from Local Lead Centre, Thane.
2. The Advance Diploma Programmes which are offered as a part of Continuing Education Programmes is helping many working professionals to acquire and upgrade their professional qualifications for career enhancement. Our alumni are working at senior positions at BPCL, ITD Cementation, L&T, Ambuja Cement, Gammon India, Blue Star etc. The Advance Diploma in Industrial Safety programme received IOSH, UK Accreditation for Graduate Membership for the period August 2013 to August 2016.
3. Vigilance Awareness Programmes under the aegis of "Central Vigilance Commission" for Eradication of Corruption in Public Life
4. Energy Conservation Awareness activities through Energy Management Cell.
    - Energy Conservation Skill development
    - Adoption of Energy Conservation techniques
    - 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.
5. Library facility for External members
6. Organizing and Participating in Career fairs

- 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.

MSBTE Career Fair Organized/Participated

Sr. No.	Day, Month & Year	Organizer
1	04 .01.2014	V.P.M's Polytechnic, Thane
2	09 .01 2014	S.S. Jondhale Polytechnic, Asangaon, Dist. Thane
		G.P. Vikramgad, Thane
3	15 .01.14 to17 .01 2014	Manoj Shete College of Engg. & Technology, Kasara, Dist. Thane
4	28 12 2014	Yadavrao Tasgaonkar Institute of Technology, Karjat
		Pravin Patil Polytechnic, Bhayandar
5	05 .06 2015	V.P.M's Polytechnic, Thane
		Sardar Vallabhai Patel Polytechnic, Borivali

7. Arranging visit of School students to Polytechnic facilities
8. Visiting schools to make presentation about technology courses/careers and admission process
9. V.P.M.'s Polytechnic Thane India has one of the important installations of Automatic Weather Stations (AWS), developed and maintained by India Meteorological Department (IMD) Government of India.
10. As a part of Institute Social Responsibility we conduct Blood Donation Camps twice a year.

Declaration

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

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

Date : 19th November 2016

Place : Thane

Prof. D.K. Nayak
Principal

Annexure I

1. PROGRAMME OUTCOMES (POs):

IT diploma Engineers will be able to:

1. Demonstrate basic knowledge in mathematics, science and engineering.

2. Demonstrate the ability to formulate and apply IT based knowledge to solve Engineering problems

3. Demonstrate the ability to design and conduct experiments, interpret and analyze data and report results.

4. Demonstrate the ability to model a live problem or a project that meets desired specifications and requirements using appropriate tools.

5. Have an understanding of the impact of engineering on society, health, safety and legal issues and incorporate them in engineering solutions.

6. Have the confidence to apply engineering solutions taking the societal and environmental needs into consideration.

7. Demonstrate an understanding of their professional and ethical responsibilities in engineering field.

8. Work in diverse/ multidisciplinary teams without compromising on integrity and credibility.

9. Communicate effectively in both verbal and written forms.

10.Be capable of self education and clearly understand the value of life-long learning in the context of ever-changing IT field.

2. PROGRAMME SPECIFIC OUTCOMES (PSOs):

IT diploma Engineer will be able to

1. Identify and analyze computer problems and prepare algorithmic/ system model for the solution to the problem.

2. Select appropriate hardware and software tools to develop circuits/ secure code / program.

3. Test, debug and troubleshoot the developed solution to the problem.

4. Provide assistance at client's side through proper installation & documentation.