SELF ASSESSMENT REPORT

submitted to

NATIONAL BOARD OF ACCREDITATION,NEW DELHI
By

Name of the Programme:
Diploma in Mechanical Engineering

Dr. B.B.A.GOVT.POLYTECHNIC ,
Karad(D.P.),Madhuban Dam Road,
U.T. OF DADRA & NAGAR HAVELI-396240
Department of Technical Education,
Administration of Dadra & Nagar Haveli(U.T.),
GOVT.OF INDIA

Approved by All India Council for Technical Education
Affiliated to Gujarat Technological University, Ahmedabad

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PART A: Institutional Information

1.Name and Address of the Institution: Dr. B.B.A. Government Polytechnic,

Address: Karad(D.P.), Madhuban Dam Road,

Behind Electric Sub Station, U.T. of Dadra &Nagar

Haveli, Pin:396240,INDIA.

2.Name and Address of the Directorate of Technical Education: Director of Technical Education,

PWD Complex, Silvassa, U.T. of Dadra & Nagar

Haveli,Pin-396230

3.Year of Establishment: 1994

4.Type of Institution:

University	☐
Deemed University	☐
Autonomous	☐
Affiliated	☑
Any other(please specify)	☐

5. **Ownership status**

Central Government	☑
State Government	☐
Government Aided	☐
Self financing	☐
Trust	☐
Society	☐

Section 25 Company ☐

Any other(Please specify) ☐

Provide Details:

6.**Other Academic Institutions of the Trust/Society/etc., if any:** Not applicable

Name of the Institution	Year of Establishment	Programs of study	Location
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Note: Add rows as required

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

Sl. No.	Program Name	Year of Commencement	Intake Capacity	Increase in Intake, if any	Year of Increase	AICTE Approval	Accreditation status
1	Diploma in Mechanical Engg.	1994	60	90	2011	Yes	Applying First time
2	Diploma in Electrical Engg.	1994	60	90	2011	Yes	Applying First time
3	Diploma in Civil Engg.	1994	60	60	-----	Yes	Applying First time

. Write appropriate option from the list:

. Applying first time (√ **)**

.Granted provisional accreditation for two years for the period(specify period)

. Granted provisional accreditation for five years for the period(specify period)

.Not accredited (Specify visit dates, year)

. .Withdrawn(Specify visit dates, year)

.Not eligible for accreditation

.Eligible for accreditation

.Eligible but not applied

8.Programs to be considered for accreditation vide this application:

S.No.	Program Name
1	Diploma in Mechanical Engineering

2	Diploma in Electrical Engineering
3	Diploma in Civil Engineering

9.Total Number of Employees:

A. Regular *Faculty and Staff:

Items		CAY(2016-17)		CAYm1(2015-16)		CAYm2(2014-15)	
		Min	Max	Min	Max	Min	Max
Faculty in Engineering & Technology	M	10	10	11	11	11	11
	F	02	02	02	02	02	02
Faculty in Science & Humanities	M	01	01	01	01	01	01
	F	01	01	01	01	01	01
Non Teaching staff	M	13	13	13	13	13	13
	F	02	02	02	02	02	02

B. Contractual Staff (Not covered in Table 9.A)

Items		CAY(2016-17)		CAYm1(2015-16)		CAYm2(2014-15)	
		Min	Max	Min	Max	Min	Max
Faculty in Engineering & Technology	M	10	10	10	10	10	10
	F	04	04	04	04	04	04
Faculty in Science & Humanities	M	02	02	02	02	02	02
	F	01	01	01	01	01	01
Non Teaching staff	M	12	12	12	12	01	01
	F	01	01	01	01	01	01

10.Total Number of students:

Items	CAY(2016-17)	CAY m1(2015-16)	CAY m2(2014-15)
Total no. of Boys	645	612	640
Total no. of girls	104	86	80
Total no. of students	749	698	720

11.Contact Information of the Institution and NBA Coordinator:

I. Head of the Institution:

Name: Priyanka Kumari (DANICS)

Designation: Principal, Dr. B.B.A. Govt. Polytechnic, Karad(D.P.), U.T. of Dadra & Nagar Haveli

Mobile No: +91-7069198485

Email id:pksonulal@gmail.com

II. NBA Coordinator, if designated:

Name: Dr. Bikram Keshori Dandapat

Designation: Lecturer (Selection Grade) & HOD, Mechanical Engineering Department

Dr. B.B.A. Govt. Polytechnic, Karad(D.P.), U.T. of Dadra & Nagar Haveli

Mobile No.: +91-8460259963

Email Id: bikramkeshori_d@yahoo.com

LIST OF EMPLOYEES WORKING IN THE
DR. B.B.A. GOVERNMENT POLYTECHNIC, KARAD (D.P.)
during
Academic Years:2014-2016

Sr. No.	Name & Designation
Group "A"	
01	Shri C.S. Rao, Lect. in Mech. Engg.
02	Dr. B.K. Dandapat, Lect. in Mech. Engg.
03	Shri Swapnil S.Shrawge, Lect. in Mech. Engg.
04	Shri B. Moharana, Lect. in Mech. Engg.
05	Shri P.V. Gadge, Lect. in Prod. Engg.
06	Shri D.L. Sahu, Lect. in Civil Engg.
06	Dr. B. Jha, Lect. in Civil Engg.
08	Shri K.B. Patel, Lect. in Civil Engg.
09	Shri R.N.D. Sarma, Lect. in Civil Engg.
10	Shri S. Mishra, Lect. in Electrical Engg.
11	Smt. C.N. Desai, Lect. in Electrical Engg.
12	Shri A.K. Swain, Lect. in Electrical Engg.
13	Smt. M.G. Desai, Lect. in Electronics
14	Shri S. Chennappa, Lect. in Computer Engg.
15	Dr. J.B. Rana, Lect. in Chemistry
16	Shri D.N. Shinde, Lect. in Maths
Group "B"	
17	Shri P.N. Parmar, Office Superintendant
Group "C"	
18	Shri B.H. Chauhan, Sr. Store Keeper
19	Shri P.U. Vyas, Accountant
20	Shri Tonny L. Naronha, Jr. Steno
21	Shri A.L. Dhodi, UDC
22	Shri A.M. Harijan, LDC
23	Smt M.S. Desai, Asstt. Librarian
24	Shri M.B. Rohit, W.I
25	Shri B.S. Korda, W.I
26	Shri S.C. Patel, W.I
Group "D"	
27	Shri V.L. Patel, Laboratory Attendant
28	Shri R.J. Varli, Mali
29	Shri C.N. Harijan, Sweeper
30	Smt. S.V. Egde, Peon

31	Shri A.N. Solanki, Watchman

Sr. No.	Name & Designation
Short Term Contract Lecturers	
32	Shri A. D. Desai, Lect. in Physics
33	Shri S. M. Chavan, Lect. in English
34	Shri M. S. Billiwala, Lect. in Civil Engg.
35	Smt K. R. Jadeja , Lect. in Electrical Engg.
36	Shri J. K. Rohit, Lect. in Electrical Engg.
37	Shri Vishal Dhoke, Lect. in Mechanical Engg.
38	Shri Dipan Patel, Lect. in Mechanical Engg.
39	Smt H. H. Parmar, Lect. in E&C Engg.
40	Smt A. N. Patel, Lect. in E&C Engg.
41	Shri S. S. Mecwan, Lect. in Computer Engg.
42	Shri S. N. Solanki, Lect. in Computer Engg.
43	Shri A. A. Patil, Lect. in Computer Engg.
44	Shri B. K. Doshi, Lect. in I.T.
45	Smt U. C. Patel, Lect. in I.T.
Short Term Contract Multi Tasking Staff	
46	Ms. Nisha M. Shingda, MTS
47	Shri Ajay S. Patel, MTS
Short Term Contract Lab. Assistant / Lab. Technician	
48	Shri Suraj Mahala, Lab. Assistant
49	Shri Vad Ritesh B., Lab. Technician
50	Shri Bij Prakash B., Lab. Technician
Short Term Contract Workshop Instructor (Turner)	
51	Shri Dalu Nadge, W.I. (Turner)
Short Term Contract Lab. Attendant	
52	Shri Akshay Solanki, Lab. Attendant
53	Shri Patel Anilbhai M., Lab. Attendant
54	Shri Dodia Shailesh, Lab. Attendant
55	Shri Kamdi Kalpesh, Lab. Attendant
56	Shri Santoshbhai Gangoda, Lab. Attendant
57	Shri Bij Jitubhai, Lab. Attendant
58	Shri Mali Vikram, Lab. Attendant

Part B

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

1.1 Vision and Mission

(List and articulate the vision and mission statements of the institute and department)

The Vision of the Dr.B.BA.Govt.Polytechnic :

The establishment of Dr. B.B.A. Govt. Polytechnic, at Dadra and Nagar Haveli will help the UT Administration to meet its man power needs and also in development of tribal regions. Moreover, the Territory must have a Polytechnic of its own to meet the aspirations of the local people, by transforming the students to be technically skilled managers, innovative leaders and environmentally receptive citizens.

The Mission of Dr.B.BA.Govt.Polytechnic :

1. To implement holistic approach in curriculum and pedagogy through Industry Integrated Interactions to meet the needs of Global Engineering Environment.

2.To develop students with knowledge, attitude and skill of employability, entrepreneurship (Be Job creators than job seekers), research potential and professionally ethical citizens.

The Vision of the department of Mechanical Engineering is:

To provide excellence knowledge and enrich the problem solving skills of the students in the field of Mechanical Engineering with a focus to prepare the students for industry need, carry out research, recognized as innovative leader, responsible citizen and improve the environment.

The Mission of* Mechanical Engineering *Department is:

*Prepare the students with strong fundamental concepts, analytical capability, problem solving skills. Create an ambience of education through faculty training, self learning, sound academic practices and research endeavors.

*Provide opportunities to promote organizational and leadership skills in students through various extra- curricular and co-curricular events.

*To make the students as for as possible industry ready to enhance their employability in the industries.

*To improve department industry collaboration through internship program and interaction with professional society through seminar/workshops.

*Imbibe social awareness and responsibility in students to serve the society and protect environment

1.2 Program Educational Objectives

The Program Educational Objectives (PEOs) of the department of Mechanical Engineering Department are given below:

PEO1: To provide the imperatives knowledge of science and engineering concepts fundamental for a Mechanical Engineer professional and equip the proficiency of fundamentals of Mechanical

Engineering and practical skills needed in workshop practice, CAD-CAM, Thermal Engineering for competent problem solving ability.

PE02: To inculcate ability in creativity & design of Mechanical Components and impart knowledge and skills for analyze, design, test and implement various machineries of Mechanical Engineering

PE03: To exhibit leadership capability, triggering social and economical commitment and inculcate community services and protect environment

PEO4: Pursue higher education, research or entrepreneurship.

1.3 Indicate where the Vision, Mission and PEOs are published and disseminated among stakeholders

The Vision and the Mission of the Department are the fundamental bedrocks for its activities. The entire program offered by the Department follow these.

1.3.1 Indicate how and where the Vision and Mission are published and disseminated The Mission and Vision are published and disseminated through

College website- www.drbbagpks.org

HOD Chamber
Notice Boards of the department
Library

Department Laboratories

Department Corridor

1.3.2 State how and where the PEOs are published and disseminated

Dissemination of PEOs

The PEOs are published and disseminated through

College Website

Notice Boards of the department

Library

Department Laboratories

Department Corridor

HOD Chamber

1.**3.3 List the stakeholders of the program**

The stakeholders of the program are

Students

Alumni

Faculty Members

Parents

Employers

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

1.4.1 Mention the process for defining Vision and Mission of the department

The process for defining Vision and Mission of the department was discussed in the department level and it was established through a consultative process involving the stakeholders of the department, the future scope of the department and the societal requirements as shown in

1.4.1. In establishing the vision and mission of the department, the following steps were followed:

Step 1: Vision and Mission of the Institution are taken as basis

Step 2: Views are taken from stakeholders of the department such as students, faculty members, parents, Employers and alumni.

Step 3: The views about the vision and mission of the department are formulated by the team of faculty members of the department.

Step 4: The vision and mission are analyzed and reviewed to check the consistency with the vision and mission of the department at the college level by NBA Committee

Step 5: Finally the Principal, Dr. B.B.A. Govt. Polytechnic approve the vision and mission of the department.

1.4.2 State the process for establishing the PEOs

(Describe the process that periodically documents and demonstrates that the PEOs are based on the needs of the program various stakeholders.)

In establishing the vision and mission of the department, the following steps were followed

* The department draws upon constituents input to construct and periodically revise our PEO's. Data are collected from constituents in various ways, some formal, systematic, and some not. We have learned that some modes of input are much more effective than others in generating useful information, and constantly improving our processes for gathering input from constituencies in response to these experiences.

* The Program Educational Objectives are established through a consultation process involving the core constituents such as: **Student, Alumni, Faculty, Employers and Parents.** The PEOs are established through the following process steps.

Step 1: Vision and Mission of the college are taken as basis.

Step 2: Vision and Mission of the department are taken as a basis to interact with various stakeholders.

Step 3: The program coordinator collects the views of the stakeholders.

Step 4: On considering the views that were collected from the stakeholders, the PEOs are formulated by the team of senior faculty members identified for the program.

Step 5: The PEOs are represented before the Mechanical Department faculties for additional inputs to improvise the program

Step 6: Finally approves the PEOs.

1.4.2.1 The following are the various assessment process used to assess the attainment of PEOs.

Lesson plan/Curriculum

NBA – quality Cell

Student feedback

Faculty Feedback

Employer Feedback

Workshops/ Guest Lectures/ Seminars

Assessment Process	Assessment Criteria	Data collection frequency	Responsible Entity
Principal	Course content to meet industry requirements and to pursue higher Studies	Once in a Year	College Level
Lesson Plan	Content Delivery	Once in a semester	Department
College level NBA Committee	Improvements and Suggestions	Once in a Semester	College level

Workshops/ Guest Lectures/ Seminars	Cutting edge Technology	Frequently Conducted with at least 1 per semester	Department
Attendance Log Book	Conduct of classes	Thrice in a semester (I,II & III internals)	HOD
Feedback	Assess Quality	Once in a year/Semester	College/Department
	Suggestions		

M1=Prepare the student with strong fundamental concepts, analytical capabilities and skills

M2= Create ambience education through faculty training, self learning, sound academic practices.

M3=Provide opportunities to promote organisational leadership and skills of students through various extracurricular activities and events.

M4=To make the students as far as possible industry ready to enhance their employability in the Industries.

M5=Imbibe social awareness and responsibility in students to serve the society and protect environment

PEO1: To provide the imperatives knowledge of science and engineering concepts fundamental for a Mechanical Engineer professional and equip the proficiency of fundamentals of Mechanical Engineering and practical skills needed in workshop practice, CAD-CAM, Thermal Engineering for competent problem solving ability.

PE02: To inculcate ability in creativity & design of Mechanical Components and impart knowledge and skills for analyze, design, test and implement various machinaries of Mechanical Engineering

PE03: To exhibit leadership capability, triggering social and economical commitment and inculcate community services and protect environment

PEO4: Pursue higher education, research or enterpreneurship.

1.5 Establish consistency of PEO's with Mission of the Department

PEO Statements	M1	M2	M3	M4	M5
PEO1	3				
PEO2	3			3	2
PEO3		2	3		3
PEO4	3	3	2		2

1;slight(low) 2: Moderate(medium) 3:Substantial(high)

1.5.1. Justify the academic factors involved in achievement of the PEOs

Listed below are the factors that are involved in the attainment of the PEOs.

*Curriculum and Syllabi

*Lesson Plan

*Course File

*Assessment

*Feedback

Curriculum and Syllabi :

The various courses for each program were selected in accordance with the PSOs of the program. The courses both regular and elective were mapped along with the achievement of the PSO and accordingly distributed among the various semesters of the program. The Syllabi for the courses are designed in line with the principles of outcome based education and prime objective of attainment of the PSOs.

Lesson Plan :

A good curriculum and syllabi is effective only by a well planned teaching Learning Process. In order to aid this, all the faculty prepare a lesson plan well before the commencement of the classes. This includes the theory and lab courses. It involves not only the contents of the syllabi but focus is given to content beyond syllabus. This lesson plan is duly signed by the head of the department, discussed in the first class committee meeting and then circulated amongst the concerned students also.

Course File :

It is a practice to maintain a course file for each theory courses. This keeps track of all the activities carried out in the class room during the course delivery. This includes the time table, lesson plan, record of content delivery, assessment component details, sample evaluated answer scripts, marks of the continuous assessments tests and the performance analysis sheet and remedial action. The performance analysis sheet and remedial actions taken sheet provides a way for the course teacher to keep track of the students who have

not performed well and also monitor their performance in the next test. The course file also includes the internal assessment, end semester marks and statement of grades. This course file is duly monitored by the Head of the Department and maintained in the Department Library thus serving as a reference for the teachers who handle the courses.

Assessments:

The students are evaluated on the basis their performance. This evaluation is done by way of the continuous assessment tests and end semester examinations. For diploma students two continuous assessments and an end semester examination is conducted for every course. The assessment marks are displayed to the students after every test and also properly maintained. An entry of the internal marks is made in the GTU website for entry of marks by every course teacher.

Feedback:

The NBA Team at Dr. B.B.A. Govt. Polytechnic thus monitors the quality of the entire process for every course. An NBA- Quality Assurance Cell (NBA-QC) is an integral part of the system .By assuring that all the above mentioned are duly carried out the PEO's are achieved.

1.5.2. Explain how administrative system helps in ensuring the attainment of PEOs

The following administrative setup is put in place to ensure the attainment of PEOs **NBA-QC**

***Program coordinator**

***Course coordinator**

***Department Assessment Committee Program (DCP)**

Program Coordinator

1. Interacts and maintains liaison with key stake holders, students, faculty, Department Head and employer.

2. Monitor and reviews the activities of each year in program (I/III/V & II/IV/VI) independently with course coordinators

3. Schedules program work plan in accordance with specifications of program objectives and outcomes

4. Oversees daily operations and coordinates activities of program with interrelated activities of other programs, departments or staff to ensure optimum efficiency and compliance with appropriate policies, procedures and specifications given by HOD.

5. Conducts and interprets various surveys required to assess POs and PEOs.

Course Coordinator

1. Coordinates and supervise the faculty teaching the particular course in the module

2. Responsible for assessment of the course objectives and outcomes

3. Recommend and facilitate workshops, faculty development programs, meetings or conferences to meet the course outcomes

4. Analyzes results of particular course and recommends the Program coordinator and/or Head of the Department to take appropriate action

5. Liaise with students, faculty, program coordinator and Head of the Department to determine priorities and policies

National Board of Accreditation – Quality Assurance Cell (NBA-QC)

Supervises and guides the activities of department Committees and Teams.

Plans various development, delivery and assessment activities of PEOs and POs.

Prepare an outcome-based assessment plan (OBAP) with the same broad structure across all programs to assessment PEOs and PO attainment.

Act as a guiding and monitoring body for all departments committees and teams.

Assumes responsibility of assessing availability of required resources and needed for achieving PEOs and POs for each program based on the departmental Committees recommendations.

Present the results to the Principl for improvements or corrective action.

Through TPO administers the survey with external stakeholders.

Obtain results of assessment of internal and external stakeholders including analysis of student performance in tests, exams, assignments projects etc. from Assessment Committee - Programmes (ACP).

Analyze the results of the assessment and present the same to Academic Advisory Board (AAB).

Based on directions/decisions of Academic Advisory Board (AAB), initiate corrective actions in revision of PEOs and POs.

Department Assessment Committee (DAC)

Assessment Committee Program consists of Program Coordinator, Module Coordinator and faculty representatives

*Chaired by Program Coordinator, the committee monitors the attainment of PO and PEO's. Evaluates program effectiveness and proposes necessary changes

*Prepares periodic reports records on program activities, progress, status or other special reports for management key stake holders.

*Motivates the faculty and students towards attending workshops, developing projects, working models, paper publications and research

*Interact with students, faculty, Program Coordinators, Module Coordinator and outside/community agencies (through their representation) in facilitating program educational objectives.

Department Assessment Committee List

S.no	Name	Position held	Responsibilities
1	Dr B.K.Dandapat	HOD	Department In charge
2	Dr B.K.Dandapat	NBA Coordinator	NBA Incharge
3	Mr. C.S.Rao Mr.P.V.Gadge	Course outcome, Program Outcome, Program Specific Outcome	Formulation of attainment
4	Mr.B.Moharana	Continuous Improvement	Attainment of PO and PSO

Various Committee in charge of Department

Sl.No.	Committee	
1	**Time table**	Dr.B.K.Dandapat
2	**Mentor**	Dr.B.K.Dandapat
3	**Internal Test Cell**	Mr. P.V.Gadge
4	**Website Over all**	Mr. Dipan Patel
5	**Departmental Website**	Mr. Dipan Patel

6	**Symposium/ Conference/Workshop, etc**	Dr. B.K. Dandapat
7	**Professional bodies**	Dr. B.K. Dandapat
8	**Slow Learners/ Rank Holders**	Mr. Vishal Dhoke
11	**Parent- Teachers Meeting**	Mrs. C.S.Rao
12	**1st Year Co-ordinators**	Mr.C.S.Rao
13	**II year Class Teacher**	Mr. Vishal Dhoke
14	**III year Class Teacher**	Mrs. Dipan Patel
17	**Placement**	Mr. B. Moharana &P.V. Gadge
18	**Industrial visits**	Mr. Dipan Patel
20	**Newsletter**	Mr.B.moharana
21	**Cultural**	Mr. P.V. Gadge
22	**Sports**	Mr. Dipan Patel
23	**Alumni**	Mrs. B.Moharana
24	**Student Seminar/ Mini Project /Project**	Dr. B.K.Dandapat
25	**Over all Lab Coordinator /Project**	Mr.Mahendra Rohit

CRITERION 2	Program Curriculum and Teaching learning Processes	200

2.1 Program Curriculum (50)

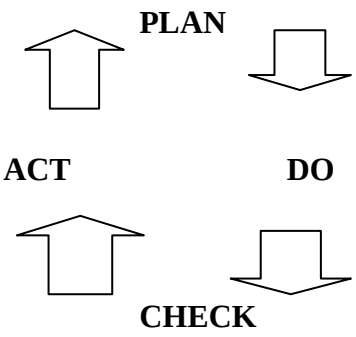
2.1.1. State the process used to identify extent of compliance of the board curriculum for attaining the program outcomes (POs)and program Specific Outcomes (PSOs)as mentioned in Annexure1.Also mention the identified Curricula gaps. If any **(30)**

A. Process used to identify extent of compliance of the University Curriculum for attaining the Program Outcomes and Program Specific Outcomes.

The Dr. B.B.A. Govt. Polytechnic, Karad (D.P.),U.T. of Dadra & Nagar Haveli is affiliated under Gujarat Technological University, Ahmedabad.

So our Programme curriculum is as per the scheme and syllabus of affiliated university(GTU). Generally Curriculum maintains the balance in the composition of basic science, humanities, professional courses and their distribution in core and elective and breadth offerings. If some components, to attain CO's/ PO's, are not included in the curriculum provided by the affiliated university then the Institution makes additional efforts to impart such knowledge by covering aspects through "CONTENTS BEYOND SYLLABUS". We add content beyond syllabus by proper "GAP analysis" process.

Quality Loop for Attaining the Program Outcomes -



(**Closing the Quality loop**)

STEPS-

(i)Plan the activity

(ii) Do it

(ii)Measure the performance

(iii)Initiate appropriate action based on what was planned and what was achieved

All the processes required for accreditation need to have the step of "closing the loop".

Steps of Gap Identification

1. A subject teacher does a thorough study of the curriculum. After discussion with other subject teachers 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.

2. Recent advances in the industry are identified with discussion between visiting faculties and departmental staff. The discussion also highlights the need for students to have knowledge of these advancements. Accordingly, symposiums, Seminars, Workshops, Training Programmes are arranged.

3. A review of curriculums offered by autonomous institutes is taken into consideration and the necessary contents are added in the seminars

List of Program Outcomes

PO1	An ability to apply knowledge of basic mathematics, science and engineering to solve the broadly defined Mechanical engineering problems.(**Basic knowledge)**
PO2	An ability to apply discipline - specific knowledge to solve broadly defined Mechanical Engineering problems.(**Discipline knowledge**)
PO3	An ability to conduct standard tests and measurements, and to conduct, analyze, and interpret experiments **(Experiments and practice)**
PO4	An ability to apply the knowledge, techniques, skills, and modern tools of their discipline to narrowly-defined engineering technology activities.**(Engineering Tools)**
PO5	Demonstrate knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to engineering practice(**The engineer and society**)
PO6	Understand the impact of the engineering solutions in societal and environmental contexts, and demonstrate the knowledge and need for sustainable development. (**Environment and sustainability**)
PO7	Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice. **(Ethics**)
PO8	Function effectively as an individual, and as a member or leader in diverse/multidisciplinary teams.(**Individual and team work)**
PO9	An ability to apply written, oral, and graphical communication in both technical and nontechnical environments and the ability to use appropriate technical

	literature **(Communication)**
PO10	Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the context of technological changes **(Life-long learning)**

List of PSO's

PS01: The program must demonstrate that diplomats can apply specific program principles to Design, fabrication, test, operation, or documentation of basic mechanical systems or processes.

PSO2: The program make diplomats design , develop, test society needed products and engage in manufacturing or processing such quality products with utmost environment safety and committed for sales of products and provide good service to customer.

At PO,PSO level(Curriculum Gap Analysis)

i. POs and PSOs are achieved through formal courses and other co-curricular and extracurricular activities.

ii. Target levels of attainment of POs and PSOs are set; program is delivered; actual attainment of POs and PSOs is determined; The loop is closed either by increasing the target level for the next cycle of the program or by planning suitable improvements in all the relevant activities to increase the actual attainment

iii. Closing the loop must be carried out, in a similar manner at the level of PEOs also.

iv. This process view of quality implicitly central to accreditation.

Process for "Curriculum GAP ANALYSIS"

Identified Curriculum Gaps

A.

1. Certain gaps like knowledge of fundamentals in Mathematics and Science (10th level) which is not covered in the curriculum but are required for studies of Diploma curriculum. They are taught in the regular class by allocating additional hours.

2. Personality is the most important virtue of the engineer. Though some aspects of personality development are covered in subjects such as Professional practices, Behavioral sciences, other essential skills such as stress management, interview techniques, importance of team work etc. are covered by inviting experts in respective fields

B. List the curricular gaps for the attainment of defined POs and PSOs.

Recommended subjects to bridge academic and industry

Formation →	Notification →	Implementation
•The Program outcomes & program specific outcomes are prepared taking Annexure I into consideration. •Allocation of course	•Recent advances, identified curricular gaps are discussed with faculty of Dr. B.B.A. Govt. Polytechnic	•Seminars •Workshops •Training •Technical Quiz

curriculum to faculty •Identification of links between various courses •Enumerate the identified curricular gaps		

2.1.2. State the delivery details of the content beyond the syllabus for the attainment of POs and PSOs (10)

CAY (2016-17)

S.No.	Gap	Action taken	Date-month year	Resource Person	No.of students present	Relevance to POs&PSOs
1	knowledge of fundamentals in Mathematics and Science(10th level) which is not covered in the curriculum	Faculties are giving special care to poor students	During whole academic year in lecture classes	(1)Shri D.N. Shinde (Lect. in Maths) (2)Shri Anand Desai, Lect. in Physics (3).Shri Sachin Chouhan, Lect. in English	30% of the class	PO1,PO, PO9
2.	Personality Development	Experts used to take lectures from Indu	During the academic session	Mr. S.S. Roy,(Entrepreneur & consultant)	60	PO1, PO9

		stry				

CAYm1(2015-16)

S.No.	Gap	Action taken	Date-month year	Resource Person	No.of students present	Relevance to POs&PSOs
1	knowledge of fundamentals in Mathematics and Science(10th level) which is not covered in the curriculum	Faculties are giving special care to poor students	During whole academic year in lecture classes	(1)Shri D.N.Shinde (Lect. in Maths) (2)Shri Anand Desai, Lect. in Physics 3.Shri Sachin Chouhan, Lect. in English	30% of the class	PO1,PO2, PO9

CAYm2(2014-15)

S.No.	Gap	Action taken	Date-month year	Resource Person	No.of students present	Relevance to POs&PSOs
1	knowledge of fundamentals in Mathematics and Science(10th level) which is not covered in	Faculties are giving special care to poor students	During whole academic year in lecture classes	(1)Shri D.N.Shinde (Lect. in Maths) (2)Shri Anand Desai, Lect. in Physics	30% of the class	PO1,PO2, PO9

	the curriculum			3.Shri Sachin Chouhan, Lect. in English		

B. Delivery details of content beyond syllabus

Library/internet assignments on contemporary issues.

Additional laboratory experiments

Pre-placement Training

Training on Soft skills and value add programs

Creative /Projects

Guest lectures

Workshops/conference

Industrial Visits

C. Mapping of content beyond Syllabus with the PO's & PSO's

PO'sTopics	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
Pre-placement Training							√	√	√	
Training on Soft skills								√	√	√
Creative / Hobby Projects			√	√	√	√				
Guest lectures	√	√								
Workshops	√	√	√	√						
Industrial Visits	√	√				√				

PSOs Topics	PSO1	PSO2
Pre placement Training	√	
Training on soft skills		
Creative/Hobby Projects	√	
Guest lectures	√	
Workshops	√	√
Industrial visits	√	√

2.2 Teaching Learning Process (150)

2.2.1 Describe processes followed to improve quality of teaching and learning (25)

A. Adherence to Academic calendar (Institute and Department calendar)**:**

From the GTU (University)calendar of events a department calendar of events is derived which is specific to the department.

Lesson plan with course objectives and course outcomes are prepared by the subject handling faculty before the commencement of the semester and is dually approved by the Head of the department and made available to the students. Lesson plan is published by the GTU website foe syllabus. According to the lesson plan, work done has been inculcated in the academic file to ensure coverage of syllabus dually monitored by Head of the department.

Maintenance of Course files:

For each course, a course file is prepared by the concerned faculty. The course file consists of following items.

Teaching plan:

Teaching plans for each and every course are prepared by the faculty. Whole syllabus is divided into 6 units and 42 lectures as per the teaching scheme prescribed by the university.

The course objectives are defined for each course in line with the POs.

Lesson plan

Lesson plans are prepared for each lecture in the teaching plan by the faculty before the commencement of the semester and it is duly approved after careful examination by the Head of the Department and made available to the students.

The lesson plan encompasses the learning outcomes and the assessment of outcomes.

Question Bank:

Question banks are prepared for each topic in the course based on the course objectives and considering the nature of the university question papers. The previous question papers of University are also maintained in the course files.

Assignment questions list and test question papers along with key solutions are included in the course files

B. Use of Various instructional methods and pedagogical initiatives: Lecture method and Interactive learning:

The faculty use chalk and board and audio visual aids in teaching. Students are also encouraged to actually interact during the lecture hour by getting the doubts clarified on the spot. faculty using models , charts for interactive teaching

Project-based learning:

During the period of study in the 6th to 8th semester, many real time projects are given to the students and they are guided by both faculty and Industry/Research personnel.

Computer-assisted learning:

The College has required number of computers, printers, projectors. These are effectively used for teaching. The students are also encouraged to prepare PPTs as the assignments and tutorials. Many final year projects are completed through the use of Cmputers.

SMART class Room

Faculty are using SMART class room to interactive session. projector is used for demonstration ,video (NPTEL),audio of classes

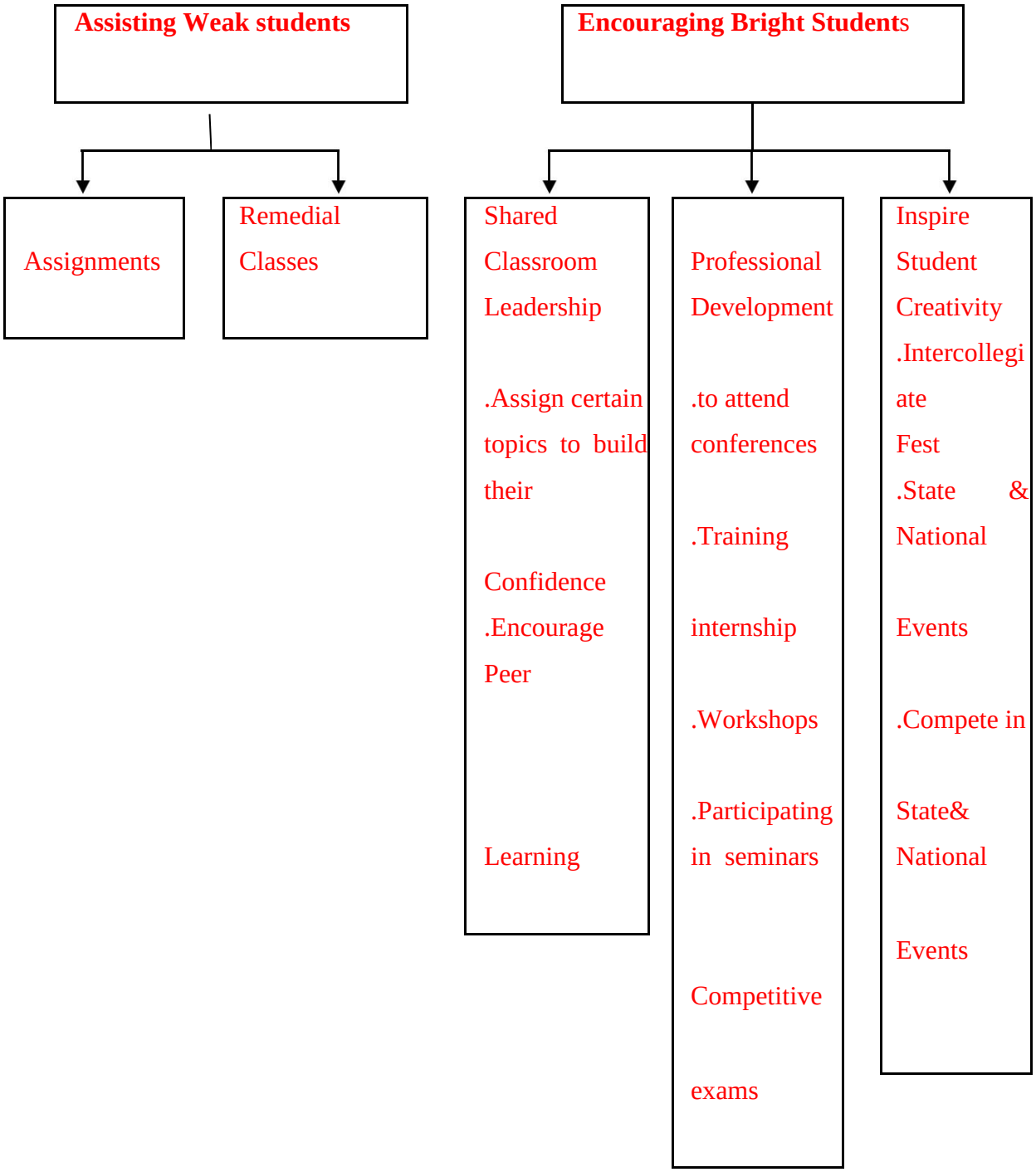
C. Methodologies to support weak students and encourage bright students: Guidelines to identify weak students

The Counselors regularly conduct meetings regarding progress of their mentees and are responsible to identify students who scored less than 60% marks in their internals. Under the HOD direction, the students Counselors evaluates the progress card of those students who score below 60% marks in three or more subject and below 75% attendance are considered as **academically weak students** and same is also intimated to their parents.

MENTORING SYSTEM

Identification Criteria	Actions taken
Students scoring less than 60% of marks in Internal Assessment.	1. Student counselor follows their progress regularly advising students about attending classes, making up classes missed, and getting additional help. 2. Intimating parents to counsel their wards. 3. Conduction of remedial classes
Diploma students who entered with less basics of mathematics	Conduction of remedial classes.
Students who fail in semester exams	Conduction of extra classes to those who failed in previous semester subjects.

Process for Encouraging bright Students and Assisting Weak Students



D. Quality of classroom teaching:

The following innovative teaching methods are adopted by the faculty:

*Computers are used for teaching purposes and internet facility is available to students and faculty.

*Faculty members are taking advantage of sources like National Programme on Technology Enhanced Learning (NPTEL), internet sources for effective teaching.

*Smart Board, LCDs etc. are used for teaching purposes.

*Online availability of various journals in the internet.

*Well structured lesson plans are prepared / revised for all theory and practical courses on a period to period basis, scrutinized by HODs and made available in the website for student's access.

E. Conduct of Experiments:

Students carry out more than the required number of experiments, beyond the minimum specified by the University. All laboratory have excellent facilities. For the experiments detailed instruction manuals are provided. The observations are checked and verified by faculty and record books are maintained systematically. Two faculty members and one instructor are assigned for each practical class.

F. Continuous Assessment in laboratory:

Continuous assessment system is also implemented for assessment of laboratory work. The assessment is done on the basis of submission of laboratory records, understanding of the experiment through oral viva voce questions and participation in performing the experiment. Neatness of the laboratory record book is also given weightage in the assessment.

G. Student feedback of teaching learning process and actions taken:

At the end of the semester, all the students are required to fill a feedback-form apprising the faculty using a scale of 1 (high) through 10 (low).

Lecture classes are monitored by senior Professors and the HoD of the Department. They give constructive comments to improve the quality of teaching and the teaching- learning process.

Counseling by the respective HoD for those faculty members who have secured low scores and negative comments, if any, in the feedback. This motivates them to improve their skills and abilities.

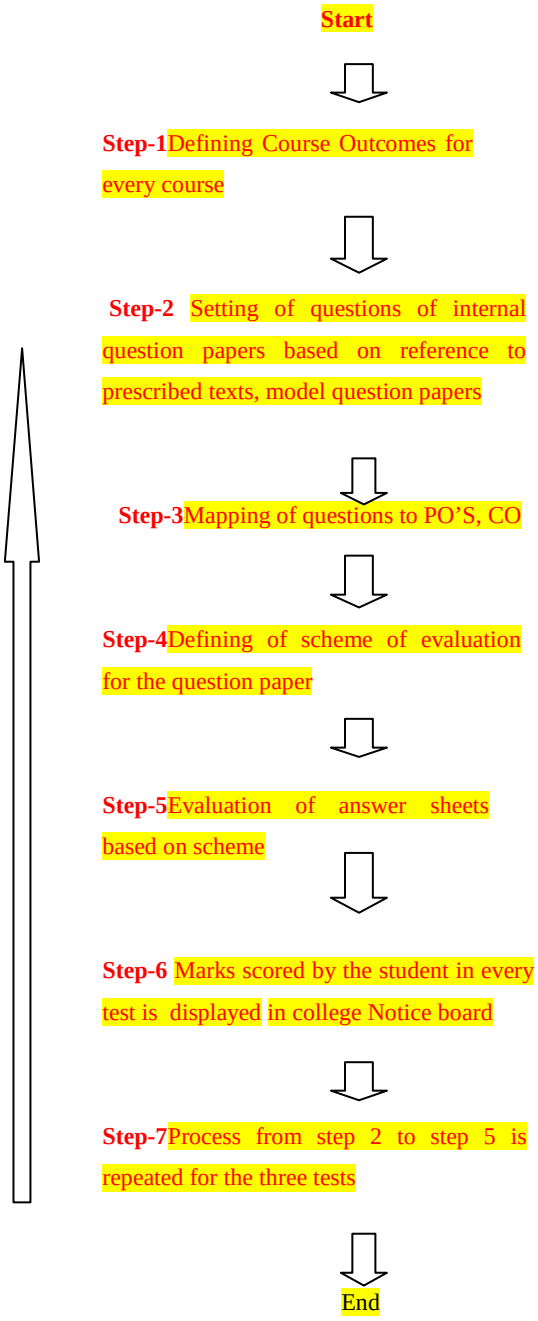
If required training / orientation programmes are conducted by professional experts to master the skills of the faculty members in the nuances of teaching, thus improving the efficiency of teaching-learning process.

2.2.2 Quality of Internal Semester Question Papers, Assignments and Evaluation (15)

(Mention the initiatives, implementation details and Analysis of Learning levels related to quality of Semester question papers, assignments and evaluation)

A .Process for Internal Semester Question Paper setting and evaluation and effective process implementation:

In a semester, there are three tests. Each of the test consists of descriptive questions as well as quizzes. The average of the best two tests is considered for final internal assessment.



Process of Internal Semester Question Paper setting and evaluation

Blooms Taxonomy is followed while setting the internal exam question papers where the following strategy is applied.

The internal test consists of 50 % of subjective questions

B. Process to ensure questions from outcomes/learning level perspectives

Each question is mapped with CO's PO's & Blooms taxonomy (BT) levels .Student who answered to particular question is taken into consideration and average of all students marks is taken for CO -PO attainment

C. Evidence of COs Coverage in class test/Mid-term test

Individual student's Answer book is evaluated and question answered by student is mapped with CO's and PO's

D. Quality of assignment and its relevance to CO's

After the completion of every unit assignment questions will be given to students, and student has to write it & submit within a week and each question is mapped with CO's .So the students will be able to understand course outcome of particular subject.

2.2.3. Quality of Experiments (15)

1. The Mechanical Engineering Department is well equipped with different laboratories like Material Testing lab., Thermal Engineering laboratory, CAD/CAM lab and Workshop.

2. The Experiments are carried out by concerned subject lecturer with the help of labratory assistant/Technician and lab attendant.

3. The journal is written by students after the experiment was done. The evaluation of Lab. records are done in a continuous evaluation manner.

4. The jobs in workshop practice like fitting, smithy and welding is changed every year. Accordingly new drawings are given for making the new job.

5. The Machine shop where Manufacturing Engineering-I,II & III, Design of Machine Elements and Industrial Engg. Practicals being done, is well maintained ,so that students will perform the experiments without any difficulty and accidents.

6. The maintenance of different machines and equipments are periodically done by lab instructors and attendants for better quality of experiments by students.

7. Logbook is maintained by the laboratories throughout the year.

8. CAD/CAM laboratory is well equipped with Software for learning and practice.

9. The requirements of consumables for laboratory is given before time, so that Practicals will be conducted smoothly.

10. The repair & maintenance related requirement of laboratory is also communicated to Principal, periodically.

2.2.4. Quality of Student Projects and Report writing (25)

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

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

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

4. The faculties encourage the students to carry out in house projects and support will be provided with all necessary software and hardware.

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

6. The faculties encourage students to publish their project work in reputed journals/conferences.

Evaluation scheme for final year Project

*A project coordinator is appointed by the Head of the department who is responsible for planning, scheduling and execution of all the activities related to the student project work.

*New innovative ideas are born for project work Skills or abilities of students improved.

*Knowledge on various aspects of project management were developed Confidence level of the students was boosted.

*Improved teamwork spirit

*Implementation and deployment of the project for social benefits. Document preparation and presentation.

*More tendencies to showcase their project work in project exhibition were observed.

A. Identification of projects and allocation methodology to Faculty Members. (3)

*Projects are identified to relevant context. The need for the project and the end users of the project are verified for the current context.

* The problem definition with their requirements and constraints are verified.

*The knowledge, methodology, skill set and interest of the students to implement the project are considered to undertake the projects.

*Faculties of higher cadre are allocated as guides to guide the student's project.

*Each project team varies from two to four students.

*Faculty profile should match with the domain of the student's project.

*Students are also given choice to choose their guide that matches their project domain.

B. Types and relevance of the projects and their contribution towards attainment of PO's.

Current academic projects are mapped to POs and PSOs.

Each project is evaluated with internal marks and are graded according to their project quality and with their contribution towards attainment of PO's.

C. Process for monitoring and evaluation.

*Project students should meet their respective guide weekly once and asked to explain their progress they have done in their project in that week.

*They should submit project progress report weekly once and to get approved by the respective guide.

*The project guides will evaluate the report submitted by the students and help them to go with project work.

*Project guide will each assess each student in team and make them work in right way.

*The faculty members of Mechanical Engineering Department are responsible for making the regulations for evaluation and for complete evaluation process

*All the faculty members act as respective Guides for group of students as per 5th and 6th semester projects of GTU syllabus.

*The GTU guidelines are followed in evaluation of projects.

Phase – 1

(PROJECT-I) 5th Semester

Sl.No.	Performance Indicator	Marks(PA)
1	Title & Feasibility(Problem Identification)	(20)
2	Abstract & Depth of Knowledge	(20)
3	Presentation and Viva	(20)
ESE=40 (End Semester Exam marks) (External examination)	PA=60 (Practical marks) (Internal Examination/Guide)	**Total=100**

Phase – 2

(PROJECT-II)6th Semester

Sl.No.	Performance Indicator	Marks(PA)
1	Implementation /Execution	25
2	Results	25
2	Final report	30
4	Overall presentation	10
ESE=60 **(External examiner)**	**PA=90** **(Internal Examiner/Guide)**	**Total=150**

D. Process to assess individual and team performance

*Project progress seminars are conducted once in every month by the team of their respective guide and senior faculty members.

*The project seminar should be given by all the project team members according to the division of project.

*Each student in the project team is assessed to their skill set to deliver the seminar, explain the concept and way to make project assess team to understand their work.

*Each individual and team performance is purely based on this project seminar presentation and the viva voice and progress work they show to their guide.

E. Quality of completed projects/working prototypes

Final project demo for the working prototype and the report are evaluated by a team of their respective guide, and HOD.

The projects are evaluated and are awarded internal assessment marks and are graded according to the project contribution towards attainment of PO's and PSO's.

Best Project Evaluation scheme

- Innovations recognize the need for lifelong learning,
- Contemporary issues, organization of the report,
- Listening to and answering questions,
- Publications and internal and external marks,
- Project exhibition results

2.2.4. Industry interaction and Industry internship/Training (30)

Initiatives related to industry interaction

MOU's with Industries:

MOU's was done with industries to emphasize on

(a) Internship

(b) Project Workshop for Students

(c) Industrial Visits

(d) Students specific Training

(e) Faculty Development Program

Sl.no	Company Name	Date
1.	Kitech Industries India Ltd.,Rakholi, Dadra & Nagar Haveli-396240	09/06/2015
2.	Raj Petro Specialities Pvt.Ltd,Dadra & Nagar Haveli-396240	15/06/2015

Many invited talks and seminars from industry resource persons are arranged and department invites the participant from various department and also participants from other colleges.

Initiatives related to Industry Internship / summer training

The students are encouraged to take internship program during their semester break. Faculty members give their guidelines, suggestions and scope and contact details of an internship. They also help the students by interacting with the industrial experts, provide the students recommendation letters and other necessary supports. The alumni who are working in the industries and request them to provide necessary guidelines and supports for their junior's internship.

A. Industry training/tours for Students

Industry visits are organised every year in the respective course of studies.As silvassa is having mre than 3000 industries , it is a good experience for students to visit industry.

D. Student Feedback on Initiative

After Each visit we will take student feedback on programme /industrial visit on initiative taken. feedback is considered to do further improvement for the same .

2.2.6. Information access Facilities and student centric learning Initiatives (15)

The e-learning facilities are available at Dr. B.B.A. Govt. Polytechnic for students as well as faculties. The Institution has access to many e- journals .Also Institution of Engineers(I.E.) has given life membership to the Institution. Faculties and students can access to study materials, research papers, etc. of I.E.

2.2.7. New Initiatives for embedding Professional skills (15)

For developing specialized skill development including communication, professional and core employability skills classes on Professional Practices, Development of Life Skills & Entrepreneurship Development are conducted.

Professional Practice is enhanced in several fields-

*__Effective communication__ is more than just exchanging information with others. It involves teamwork, decision making, and problem solving. It enables the students to communicate even negative or difficult messages without creating conflict or destroying trust.

It is achieved in several ways-

* Interacting with peers to share thoughts

* Prepare notes on given topic.

* Conducting Seminars

* Conducting Group Discussions

* Guest lectures on Communication Skills

* Preparing report on industrial visits, expert lectures

* **Personality development** means enhancing and grooming one's outer and inner self to bring about a positive change to your life. Each individual has a distinct persona that can be developed, polished and refined. This process includes boosting one's confidence, improving communication and language speaking abilities, widening ones scope of knowledge, developing certain hobbies or skills, learning manners.

***Industrial training** provided to the students after 4th and 6th Semester helps the students in gaining knowledge. It also allows them to work on real world problem and develops confidence in them.

***Information search**-Everybody can become more effective when it comes to searching of information. Research suggests that metacognitive strategies including planning, monitoring and self-regulating actions could enhance individual search in research database. Students are provided with different topics related to different fields of study.

* **Industrial visits** -Industrial visit has its own importance in a career of a student who is pursuing a professional degree. It is considered as a part of college curriculum.

Industrial visits provide students an insight regarding internal working of companies. We know theoretical knowledge is not enough for making a good professional career. With an aim to go beyond academics, industrial visit provides student a practical perspective on the world of work. It provides students with an opportunity to learn practically through interaction, working methods.

***Mentoring** --Mentoring is to support and encourage people to manage their own learning in order that they may maximize their potential, develop their skills, improve their performance and become the person they want to be. Mentoring is a powerful personal development and empowerment tool. It is an effective way of helping people to progress in their careers and is becoming increasing popular as its potential is realized.

* **Counseling** is about talking to someone who understands what depression is and what can help. Counselors are professionally trained to work with people on their personal and emotional issues, including depression and suicide. Counseling offers an opportunity to talk confidentially

to someone impartial, so students are free to explore your true feelings and be supported without judgment.

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

Different programs were organised by students. Competitions like Drawing, Debate etc, held every year for the overall growth of students.

Annual Sports meet held around in the month of February every year during semester break. Annual Day is also celebrated, where prize distribution ceremony event is organised in different fields like sports, Semester Topper of the departments, etc. Navratri is famous festival of the region(Gujarat) which is celebrated during September-October every year in the college premises.

3 COURSE OUTCOMES AND PROGRAM OUTCOMES

3.1. Establish the correlation between the courses and the Program Outcomes (POs) and Program Specific Outcomes (PSOs) (20)

Programme Outcomes

By the culmination of this program, the Diploma holder acquires the ability to

1. An ability to apply knowledge of basic Mathematics, science and Engineering to solve the broadly defined Mechanical Engineering problems.(Basic Knowledge)
2. An ability to apply discipline-specific knowledge to solve broadly defined Mechanical engineering problems.(Discipline knowledge)
3. An ability to conduct standard tests and measurements and to conduct, analyze and interpret experiments.(Experiment and practices)
4. An ability to apply the knowledge, techniques, skills and modern tools of their discipline to narrowly-defined engineering technology activities.(Engineering tools)
5. Demonstrate knowledge to asses societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to engineering practice.(The Engineer &society)
6. Understand the impact of engineering solutions in societal and environmental contexts, and demonstrate the knowledge and need to sustainable development.(Environment and sustainability)
7. Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice(Ethics)
8. Function effectively as an individual, and as a member or leader in diverse/multidisciplinery teams.(individual and team work)
9. An ability to apply written ,oral and graphical communication in both technical and nontechnical environments and the ability to use appropriate technical literature.(Communication)
10. Recognise the need for and have the preparation and ability to engage independent and life-long learning in the context of technological changes.(Lifelong learning)

The curriculum for Mechanical Engineering is set by Gujarat Technological University. The courses in the curriculum are such that they satisfy all the objectives and outcome defined for the program.

List of PSO's

*The Program must demonstrate that diplomas can apply specific program principles to design, fabrication, test, operation or demonstration of basic Mechanical systems or processes.

*The program make diplomas design, develop, test society needed products and engage in manufacturing or processing such quality products with utmost environment safety and committed for sales of products and provide good service to customer.

Correlation between POs PSO's

PO's	PSO1	PSO2
PO-1	3	
PO-2	2	
PO-3	2	
PO-4	2	2
PO-5		2
PO-6		1
PO-7		
PO-8		2
PO-9		2
PO-10		2

3.1.1. Course Outcomes(SAR should include course outcomes of one course from each semester of study ,however, should be preparesd for all courses) (05)
Note: Number of outcomes for a course is expected to be around 6.

Course	Name of course	Statement (Course outcomes)
C101	Applied Mathematics-I (ist semester)	On completion of this course a successful candidate will be able to: 1. Develop a fundamental understanding of Matrix, Eigen values, Eigen vectors, diagonalized form of a given matrix and also reduce the quadratic form of a matrix to its canonical form. 2. Understand the application of derivatives in more than one variable and also find the derivatives higher orders. 3. Have a fundamental understanding of double integration, triple integration and visualize the concept of volume in 3-dimensional space. 4. Understand the concept of linear differential equation of the second order and modeling a differential equation from their applications. 5. Find the Laplace transform and its inverse Laplace transform of a function and to solve a differential equation using Laplace transform
C102	English(1st semester)	On completion of this course a successful candidate will 1. Use grammatically correct sentence in day to day communication 2. Use correct pronunciations and intonations. 3. Recapitulate orally the facts or ideas presented by the speaker 4. Speak briefly on a given topic fluently and clearly 5. Face oral examinations and interviews 6. Comprehend the given passages and summarize them.
C103	Environment	On completion of this course a successful candidate will

	Conservation & Hazard Management (Code: 3300003)	be able to do the following- 1.Take care of issues related to environment conservation and disaster management while working as diploma engineer. 2. Enhance knowledge about engineering aspects of Environment 3. State the major causes of air, water and noise pollution 4. Explain the concepts of waste management and methods of Recyling 5. Describe the working of large wind turbines 6. Describe the salient features of solar thermal and PV systems
C104	Engineering Physics (Group-1) (Code: 3300004)	On completion of this course a successful candidate will 1. Apply principles and concepts of Physics for solving various Engineering Problems 2. Define inertia, momentum and impulse of force 3.Comprehend the concept of elasticity and Define Stress, Strain and Elastic limit. 4.Comprehend the phenomenon of surface tension and its applications 5. 4.2Explain modes of Transmission of heat and their Applications 6. Comprehend the concept of wave motion
C105	Basics Engineering Drawing (Code: 3300007)	On completion of this course a successful candidate will i. Prepare engineering drawings manually with given geometrical dimensions using prevailing drawing standards and drafting instruments. . ii. Visualize the shape of simple object from orthographic views and vise versa.

		3. Develop the ability to draw polygons, circles and lines with different geometric conditions 4.Able to draw engineering curves with proficiency an speed as per given dimensions 5. Draw the projection of points, lines and planes with Different conditions. 6. Find out true shape and size of a inclined line or plane
C106	Engineering Workshop Practice (Code: 3301901)	On completion of this course a successful candidate will 1. Follow preliminary safety rules in workshop 2. Select appropriate fitting tools for the required application 3. Select appropriate tin smithy tool for the required application 4. Prepare the simple job as per specification using carpentry tools. 5. Prepare the simple job as per specification using pipe fitting tools. 6. Prepare the simple jobs as per specification using proper metal joining and cutting method.
201	CONTRIBUTOR PERSONALITY DEVELOPMENET Code-1990001	*On completion of this course a successful candidate will be able to* 1. face life challenges with confidence. 2. grow as a good human being. 3. communicate in a better way . 4. Develop personality .
C202	Advance Mathematics (Group-2) (Code: 3320003)	On completion of this course a successful candidate will be able to: 1. Find the equation of line using the different forms

		2. Solve the problem of function using the concept of Limit. 3. Apply the differentiation to Velocity, Acceleration and Maxima & Minima 4. .Apply the Integration for finding Area and Volume 5. Measure Dispersion in given data 6. Apply concepts of calculus or suitable mathematical tool to solve given engineering problems.
C203	Applied Mechanics(code-3320003) (2nd Semester)	On completion of this course a successful candidate will 1. Analyze a system of forces and find the direction of the resultant motion of the particle or body upon which it acts 2. Analyze any system which is in equilibrium by considering each body separately and apply the equilibrium analysis. 3. Analyze any beam, truss or framed structure. 4. Locate the centroid, centre of mass and gravity and moment of inertia of areas and physical bodies. 5. Given a problem in Engineering Dynamics, identify the most appropriate solution technique. 6. Apply equations for straight line motion to solve problems with variable acceleration 7. Solve plane curvilinear motion problems in 3 different coordinate systems. 8. Analyze dynamic problems using work energy and impulse momentum techniques.
C204	Material Science and Metallurgy (Code: 3321902)	On completion of this course a successful candidate will be able to: 1. Explain effects of cooling rate, grain size on materials properties

		2. Draw and Interpret TTT curves and Iron carbon diagram 3. Identify various ferrous metals and alloys based on composition and properties for prescribed application 4. Select the non metallic material for given simple machine elements 5. Select proper electrolysis process for surface coating. 6. List areas of powder metallurgy application
C205	Mechanical Drafting (Code: 3321901)	On completion of this course a successful candidate will be able to: 1. . Draw isometric and multi views of an object 2. Draw sectional view/s of an objec 3. Draw intersectional view/s of an object. 4. Develop the surface requirement of given application 5. a. Use & Interpret drafting symbols. 6. Draw & interpret weld joints, piping layout and duct drawings
C206	Basic of Civil Engineering (Code: 3320004)	On completion of this course a successful candidate will To supervise the simple civil engineering tasks related to own branch's integrated tasks**.**
C301	MANUFACTURING ENGINEERING - I (Code: 3331901)	On completion of this course a successful candidate will 1. Explain the basic manufacturing processes. 2. Identify and explain various metal working processes. 3. Suggest appropriate casting method suitable for a given industrial component. 4. Suggest appropriate moulding method suitable for a given non metal industrial compone 5. Identify the area of applications of a particular joining

		process. 6. Practice standard safety norms during any joining process.
C302	THERMODYNAMICS (Code: 3331902)	On completion of this course a successful candidate will 1. Explain Zeroth law of thermodynamics. 2. Apply first law of thermodynamics to real life situations 3. Calculate amount of heat transfer, work transfer & internal energy associated with the process 4. Apply second law of thermodynamics in real life problems 5. Identify thermodynamic processes in a cycle. 6. Solve simple examples of power producing cycle
C303	Fluid Mechanics & Hydraulic Machines (3rd semester)	On completion of this course 1. Be able to convert units of any parameter between three systems of units, understand the physical properties and characteristic behavior of fluids, and the basic principles of fluid mechanics. 2. Be able to describe and interpret the behavior and Fluid Mechanics performance of fluid at rest. 3. Be able to describe and interpret the behavior and performance of fluid in motion. 4. Be able to describe the behavior and performance of fluid when the fluid is flowing through the pipe. 5. Be able to derive the dimensions of different fluid parameters. 6. Be able to apply similitude and modelling principles and techniques to solve problems in hydraulics

C304	Strength of Material (Code: 3331904)	On completion of this course a student will be able to 1. Evaluate Material Properties Under Longitudinal , Lateral Loads & Thermal variation 2. Compute Moment of Inertia of Symmetric & asymmetric structural sections 3. D raw Shear Force & Bending Moment Diagram for Statically Determinate Beams 4. Use ‘ Theory of Bending’ to compute stresses in Beams 5. Determine deflection induced in Statically Determinate Beams 6. Calculate Load carrying capacity of Column & Strut
C305	APPLIED ELECTRICAL AND ELECTRONICS. (Code: 3331905)	On completion of this course a student will be able to 1. Define the terms associated with magnetic circuits 2. Define the terms: Electromotive force, current, voltage, resistance, and conductance. 3. State the specifications of electrical materials and select the components for simple applications. 4. Explain the working of single phase transformer 5. State the line and phase values for star and delta connections of transformers. 6. Describe the working of optical fibres from opto-isolation point of view
C306	COMPUTER AIDED MACHINE DRAWING (Code: 3331906)	On completion of this course a student will be able to 1. Prepare production drawings using computer and relevant software and following standards codes and norms. 2. Interpret drafting, tolerance and geometrical symbols in given production drawings.

		3. Prepare and plot 2D production machine drawings using AutoCAD (Mechanical). 4. Prepare assembly drawing of mechanical components with codes, standards and symbols using AutoCAD (Mechanical) 5. Prepare 2D parametric drawings of simple machine components using Pro/E or Solid Edge 6. Appreciate AutoCAD (Mechanical) environment in context to production drawings
C307	human resource management (Code: 3330001)	On completion of this course a successful candidate will be able to 1.Appreciate importance of human resource 2. Identify human motivation 3. Appreciate values and ethics for relationships 4. Analyse self for interpersonal behaviour. 5. Develop subordinates by motivations & training. 6. Resolve conflicts
C401	MANUFACTURING ENGINEERING - II (Code: 3341901)	On completion of this course a student will be able to 1. Explain mechanics of cutting. 2. Classify and explain working of basic machine tools with kinematics. 3. Observe and conclude the effect of varying tool materials, cutting parameters and work piece materials. 4. Interpret and select tool and tool holder designation system. 5. Identify the machine tool and select cutting parameters for given job. 6. Make the job as per given manufacturing drawing.
C402	THERMAL	On completion of this course a student will be able to 1. Determine steam properties and dryness fractions.

	ENGINEERING- I (Code: 3341902**)**	2. Classify and explain boilers, boiler mountings and accessories. 3. Determine boiler performance based on given specific parameters. 4. Explain working of steam prime movers. v. Identify the elements and processes of steam condensers and cooling towers. 5. Operate air compressors and observe the parameters affecting the performance. 6 Calculate heat transfer for given heat transfer system.
C403	THEORY OF MACHINES (Code: 3341903)	On completion of this course a student will be able to 1. Draw inversions and determine velocity and acceleration of different mechanisms. 2. Construct different types of cam profile for a given data. 3. Calculate loss of power due to friction in various machine elements. 4. Solve problems on power transmission. 5. Construct turning moment diagram. 6. Calculate balancing mass and its position. vii. Identify different types of vibration, their causes and remedies.
C404	CAD(Computer aided Design)(code-3341904) (4th semester)	On completion of this course a student will be able to 1. Students will get an idea about comprehensive concepts of the design aspects and its importance in computer assisted design and manufacture. 2. Students can understand and use the principles of Computer aided part programming. 3. Students will be able to examine technologies those have been developed to automate manufacturing

		operations. 4. By studying about CAD students will be able to visualize three dimensional objects and that will enable them to design new products 5. Prepare simple surface model using AutoCAD. 6. Prepare solid model of industrial parts and its assembly using parametric modeling software.
C405	METROLOGY & INSTRUMENTATION (Code: 3341905)	On completion of this course a student will be able to 1. Measure the given mechanical elements and assemblies using linear and angular analog /digital measuring instruments. 2. Check geometrical accuracy of given application. 3.Explain surface roughness checking instruments. 4. Measure and derive important dimensions of various thread forms and gears. 5. Select and use non destructive testing methods. vi. Check the dimensions using the gauges. 6. Select and measure variables using appropriate sensors and transducers.
C406	PLANT MAINTENANCE AND SAFETY (Code: 3341906)	On completion of this course a student will be able to 1.Describe functions of maintenance department Recognize troubles in mechanical elements. 2. Assemble, dismantle and align mechanisms in sequential order. 3.Carry out plant maintenance using tri-bology, corrosion and preventive maintenance 4. Manage maintenance operations satisfactorily by following safety rules. 5. Explain methods of corrosion prevention 6. Overhaul of mechanical components and electrical

		motor
C501	Thermal .Engineering-II code-3351901) (5th semester)	On completion of this course a student will have 1. Analyze performance of ICEs by operating them and observing changes in thermodynamic properties during each stroke of ICEs (and by using thermodynamic diagrams.) 2. List characteristics and properties of alternate fuels used for ICEs. 3. Analyse the performance of Vapour Compression Refrigeration System (VCRS), by operating them and observing the changes in properties of refrigerant during each process on VCRS (and using thermodynamic charts/diagrams.) 4. Explain working of various air-conditioning equipments and aids including ducts and fans 5. Carryout maintenance task by using suitable tools and equipment 6.Explain working of various air-conditioning equipment
C502	DESIGN OF MACHINE ELEMENTS (COURSE CODE: 3351902)	*On completion of this course a student will have* 1. Identify various failures and calculate resisting areas of machine elements. 2. Use preferred numbers and standardization to select element/element dimension. 3. Design machine element subjected to: a: Direct stresses. b: Bending stresses. c: Twisting stresses. d: Combined stress. 4. Design of thin and thick cylinder pressure vessel. 5. Select appropriate bearing for given

		situation/application. 6. Calculate important bearing characteristics..
C503	MANUFACTURING ENGINEERING-III (COURSE CODE: 3351903)	*On completion of this course a student will have* 1. Explain working of grinding, super finishing, gear cutting, broaching, threading, non-conventional and advance machining methods with kinematics and coolant/ lubrication systems stating functions of each element. 2. Interpret designation system / method of cutting tools and tool holders used on machine tools. 3. Set the machine and mount the job, cutting tools and tool holders correctly. 4. Select appropriate cutting tools, work holding devices and cutting parameters for the given work piece. 5. Outline the process and produce the job/product as per given drawing/ specification. 6.Produce the part as per given drawing/specifications by adopting conventional machine tools and/or non-conventional machining processes using optimum process parameters, safe working procedures, suitable work & tool holding devices and appropriate cutting tools. 7. Plan and supervise manufacturing operations at a shop floor of machine tools based manufacturing industries
C504	INDUSTRIAL ENGINEERING (COURSE CODE: 3351904)	*On completion of this course a student will be able to* 1. Improve productivity using work study and method study techniques. 2. Analyze work content and calculate standard time in a given situation.

		3. Apply Statistical Quality Control tools in a given situation. 4. Select material handling equipment. 5. Apply Ergonomics for human comfort at work place. 6. Appreciate the emerging trends in industrial engineering.
C505	ESTIMATING, COSTING AND ENGINEERING CONTRACTING (COURSE CODE: 3351905)	*On completion of this course a student will have* 1. Calculate material cost of given component/product. 2. Identify and estimate elements of cost in various processes. 3. Perform break even analysis to calculate break even quantity. 4. Investigate the problem of cost and suggest their solution using cost reduction techniques. 5. Interpret given model of balance sheet and profit loss account. 6. Prepare simple engineering contracts.
C506	SELF EMPLOYEMENT AND ENTREPRENEURSHIP DEVELOPMENT (COURSE CODE: 3351906)	*On completion of this course a student will have* 1. Identify entrepreneurial quality. 2. Develop the ability to select potential areas for self-employment. 3. Select appropriate agencies for technical and financial support. 4. Prepare project setup planning and project report. 5. Explain SWOT analysis and strategies to achieve goals.

		6. Identify risk factors of project and their remedial measures.
	PROJECT-I (CourseCode-3351908)	*On completion of this course a student will be able to* 1.identify IDP(Industry defined problems)/UDP(User defined problems) for their project work 2.develop leadership quality 3.To work in a team or group to achive a certain goal/target 4.Do market survey for different articles to be used in the project 5.prepare logbook containing everyday contribution in the project work 6.prepare project report for their part-1 of final year project
C601	COMPUTER AIDED MANUFACTURING (CAM) (COURSE CODE: 3361901)	*On completion of this course a student will be able to:* 1. Identify different axes, machine zero, home position, controls and features of CNC machines. 2. Select, mount and set cutting tools and tool holders on CNC. 3. Prepare part programmes using ISO format for given simple components with and without use of MACRO, CANNED CYCLE and SUBROUTINE using ISO format. 4. Interface software application for auto part programming. 5. Select required operating parameters, appropriate tools, tool holders, accessories and consumables for manufacturing a given job on CNC. 6. Manufacture simple jobs using CNC part

		programming.
C602	TOOL ENGINEERING (COURSE CODE: 3361902)	*On completion of this course a student will have* 1. Re-sharpen given cutting tool. 2. Select proper tool for given manufacturing operation 3. Interpret designation system of cutting tool and tool holder. 4. Select locating and clamping devices for given component. 5. Select and design jig and fixture for given simple component. 6. Classify and explain various press tools and press tools operations
C603	INDUSTRIAL MANAGEMENT (COURSE CODE: 3361903)	*On completion of this course a student will have able to:* 1. Interpret given organization structure, culture, climate and major provisions of factory acts and laws. 2. Explain material requirement planning and store keeping procedure. 3. Plot and analyze inventory control models and techniques. 4. Prepare and analyze CPM and PERT for given activities. 5. List and explain PPC functions. Recognize organization structure, human resource issues in industries and major provisions of factory acts. 6. Plan, use, monitor and control resources optimally and economically.

C604	POWER PLANT ENGINEERING (COURSE Code: 3361906 **)**	*On completion of this course a student will have able to:* 1. Identify elements and their functions of steam, hydro, diesel, nuclear, wind and s olar power plants. 2. Operate equipments of different power plants. 3. Analyze economics of power plants and list factors affecting the power plants 4. Determine performance of power plants based on load variations. 5.Project potential of wind and solar pow er in India 6.Apply knowledge of mechanical engineering related to power generation systems, their control and economics in different type of power plants for their operation and maintenance
C605	Thermal Systems and Energy Efficiency (Code:3361907).	*On completion of this course* 1. Students will be able to get an idea about the basic concepts of different types of engines. 2. Knowledge of various thermal systems. 3. The Energy efficient measures for every thermal system can be well understood by the students. 4. Students will get an idea about the subject and well informed about the practical application of different formulae from an engineering point of view 5. Select available energy sources in a given situation. 6. Determine boiler performance based on energy efficiency parameters. 7. Analyze performance of furnace for a particular application. 8. Determine the performance of heat exchanger in a given situation. 9. Calculate load of HVAC systems.

C606	PROJECT - II (COURSE CODE: 3361910)	*On completion of this course student will be able to*: 1. Plan and identify materials, processes and other resources optimally. 2. Develop innovative and creative ideas. 3. Develop leadership, interpersonal skill and team work.4.. Develop sense of environmental responsibility. 5. Purchase raw material/standard parts. 6. Interpret the drawings, manufacture, assemble, inspect & if necessary modify the parts/unit/assembly of the project work. 7. Familiar with fast changes in technology. 1. Plan, use, monitor and control resources optimally and economically. 8. Identify the problem and apply innovative, creative and logical approach for problem solving.

3.1.2 CO-PO Matrices of courses selected in 3.1.1(six matrices to be mentioned; one per semester from 1st to 6th semester)(5)

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
C101	√	√							√	√
C203	√	√	√	√	√	√	√	√		√
C302	√	√	√	√	√	√	√	√		
C401	√	√	√	√	√	√	√	√		
C504	√	√	√	√	√	√	√	√	√	
C606	√	√	√	√	√	√	√	√	√	√

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

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
C101	√	√							√	√
C102		√			√	√			√	
C103						√	√			
C104	√		√	√	√	√	√	√	√	
C105	√	√	√	√	√			√		

C106		√	√	√	√	√	√	√	√	
C201	√	√								
C202	√	√	√	√			√			
C203	√	√	√	√	√	√	√	√		√
C204					√	√	√	√	√	√
C205	√	√					√			
C206	√				√	√		√		
C301	√	√	√	√	√			√	√	√
C302	√	√	√	√	√	√	√	√		
C303	√	√	√	√	√	√	√	√		
C304	√	√	√	√	√	√	√	√		
C305	√		√	√	√	√	√			
C306	√	√	√	√						
C401	√	√	√	√	√	√	√	√		
C402	√	√	√	√	√	√	√	√		
C403	√	√	√	√	√	√	√	√		
C404	√	√	√	√	√					
C405	√	√	√	√	√		√	√		
C406	√	√	√	√	√		√	√	√	√
C501	√	√	√	√	√	√		√		
C502	√	√	√	√				√		
C504	√	√	√	√	√	√	√	√	√	
C505	√				√		√			
C506					√			√	√	√
C601	√	√	√	√	√			√		√
C602	√	√	√	√				√		
C603	√				√	√	√	√	√	√
C604	√	√	√	√	√	√	√	√	√	
C605	√	√	√	√	√	√	√			
C606	√	√	√	√	√	√	√	√	√	√

Course	PSO1	PSO2
C101	√	√
C102		√
C103		√
C104	√	√
C105	√	√
C106	√	√
C201	√	√
C202	√	√
C203	√	√
C204		√

C205	√	√
C206		√
C301	√	√
C302	√	√
C303	√	√
C304	√	√
C305		√
C306	√	√
C401	√	√
C402	√	√
C403	√	√
C404	√	√
C405	√	√
C406		√
C501	√	√
C502	√	√
C503	√	√
C504		√
C505		√
C506		√
C601	√	√
C602	√	√
C603		√
C604	√	√
C605	√	√
C606	√	√

3.2Attainment 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)**

Assessment Tools

Direct Assessments

* Semester End Exams (SEE) conducted by GTU and evaluated by GTU

* As the information on performance in SEE on each student in individual COs is not available, the Institution/Department has to take that attainment (%marks/CGPA) for all COs of the course is the same.

*Continuous Internal Evaluation (CIE)

*The proportional weightage of CIE: SEE is 30:70

*The number of assessment instruments used for CIE is decided by the instructor and/or Department and sometimes by GTU.

*Project /Project Reports

*Lab Records

Indirect Assessments

*Instructor evaluation Reports

*Department performance Reports

*Employers survey

3.2.2. Record the attainment of course outcomes of all courses with respect to set attainment levels **(30)**

S: Set level, A: attainment level

Note: Programs may decide their weightages for University exams and Internal assessment with due justification.

Course code	Semester	Course Name	CO attainment level					
			CAY(2016)		CAY(2015)		CAY(2014)	
			S	A	S	A	S	A
C-106	1	Engg.Workshop Practice	60%	100	60%	100	60%	100
C-205	2	Mechanical Drafting	60%	42.30	60%	55.40	60%	23.68
C-304	3	Human Resource Management	60%	59.45	60%	75.75	60%	66.15
C-401	4	Manufacturing Engg.-II	60%	63.66	60%	80.00	60%	97.36
C-504	5	Industrial Engineering	60%	85.71	60%	63.66	60%	65.00
C-605	6	Thermal Systems &Energy efficiency	60%	82.76	60%	73.68	60%	78.57

3.3 **Attainment of Program outcomes & Program Specific outcomes(40)**

3.3.1.Describe assessment tools and processes used for assessing the attainment of each POs and PSOs as mentioned in Annexure1(10)

*The students expected to be reasonably proficient with each of the program outcomes

*The achievement of program outcomes are assessed with the help of course outcomes of the relevant courses through different methods.

*The final grading is based on mid-semester and final-semester and internal assessment.

*The results are documented and maintained by the G.T.U.(University) for all its affiliated Institutes.

*The results are displayed on GTU website so that the students and their parents have an easy and all time access to the progress of students.

Assessment			
Direct Assessment		**Indirect Assessment**	
Theory	Term work	Parents	Recent pass out students,Alumnies
Oral	practical	Industry	Current students
SEMESTER END	SEMESTER MID, SEMESTER END	ONCE IN A YEAR	

PSOs

*The Program must demonstrate that diplomas can apply specific program principles to design, fabrication, test, operation or demonstration of basic Mechanical systems or processes.

*The program make diplomas design, develop, test society needed products and engage in manufacturing or processing such quality products with utmost environment safety and commited for sales of products and provide good service to customer.

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

Sem	Course Name	PO1	PO2	PO3	PO4	PO 5	PO 6	PO 7	PO 8	PO9	PO1 0	PSO1	PSO2
Ist	C101	3	2					1		1	1	2	2
	C102		2			2	2			3			
	C103					3	3	3		3			
	C104	3		3	1	1	1	1	1			1	1
	C105	3	2	3	3	2	2	2	1			2	2
	C106		2	3	3	2	2	2	2			3	3
IInd	C201	3	2	3	3	3	3	1	1			2	2
	C202	3	2	3	3	2	2	2	1	2		2	
	C203	3	2	2	2	2	2	3	3	2	2	2	
	C204					3	3	3	3	3	3		
	C205	3	2									2	
	C206	3		2	2	2	2	2	2	1		1	2
IIIrd	C301	2	3	3	3	2	2	2	2		2	2	3
	C302	2	3	3	3	2	2	1	1			2	2
	C303	2	3	3	3	3	3	2	2	2		2	3
	C304	2	3	3	3	2	2	1	2	2		2	3
	C305	2		3	3	2	2	2	1	2			2
	C306	2	3	3	3	1	1	1	1			2	2
IV th	C401	2	3	3	3	2	2	2	3			3	3
	C402	2	3	3	3	2	2	1	2	2		3	2
	C403	2	3	2	2	1	1	1	1			3	2
	C404	2	3	3	3	2	2	1	1			3	2
	C405	2	3	3	3	2	2	2	3	2		3	3
	C406	2	3	2	2	2	2	3	3	2	3		2
Vth	C501	3	3	3	3	2	2	1	2	1		2	2
	C502	2	3	3	3	1	1	1	1	2		3	2
	C503	2	3	3	3	2	2	2	3				3
	C504	2	3	2	2	2	2	2	3	1			3
	C505	2		1		2	2	3	1	3	3		2
	C506					2	2	3	3	3			3
VIth	C601	2	3	3	3	2	2	1	1		1	2	2
	C602	2	3	3	3	1	1	2	1			2	2
	C603	1	1			3	3	3	3	3	3		
	C604	2	2	2	2	2	1	3	3	2		3	3
	C605	2	3	2	2	2	2	2	1	2		3	3
	C606	3	3	3	3	3	3	3	3	3	3	3	3
Direct attainment		71/ 30= 2.36	76/ 29=2. 62	78/ 29=2 .68	75/ 28=2 .67	69/ 34= 2.0 2	68/ 34= 2.0	64/ 34= 1.8 8	61/ 32= 1.9 0	47 /22= 2.13	21/9 =2.3 3	60/26 =2.30	69/29 =2.37
Indirect Attainm		2	2	2	2	2	2	2	2	2	2	2	2

ent													
Total Attainment score= 80% of Direct attainment + 20% of Indirect Attainment		2.2	2.49	2.54	2.53	2.01	2.00	1.90	1.92	2.10	2.26	2.24	2.29

.

Criterion4	**Students performance**	**200**

Intake Information

Item	CAY(2016)	CAYm1(2015)	CAY m2(2014)
Sanctioned intake strength of the program(N)	90	90	90
Total number of students ,admitted through state level councelling	-----	-----	----
Number of students admitted through Institute level quota(N2)	82	80	82
Number of students ,admitted through lateral entry(N3)	----	-----	----
Total number of students admitted in the program (N1+N2+N3)	82	80	82

Year of Entry	N1+N2+N3 (As defined above)	Number of students who have successfully passed without backlogs in any year of study		
GTU Summer exam		I Year	II Year	IIIYear
CAY(2016)	82	15	22	30
CAY m1(2015)	80	19	08	23
CAYm2(LYB)*(2014)	82	08	17	18
CAY(LYB m1)(2013)	89	No record	No record	32
CAY (LYBm2)(2012)	90	No record	No record	12

Year of Entry	N1+N2+N3 (As defined above)	Number of students who have successfully passed (Students having backlogs in stipulated period of study)		
GTU Summer exam		Ist Year	IInd Year	IIIrdYear
CAY(2016)	82	61	38	10
CAY m1(2015)	80	55	42	22
CAYm2(LYB)*(2014)	82	58	21	11
CAY(LYB m1)(2013)	89	No record	No record	No record
CAY (LYBm2)(2012)	90	No record	No record	No record

4.1 Enrolment Ratio

Enrolment ratio=N-=N1+N2/N

Sl.No.	2016-17	2015-16	2014-15
Enrolment Ratio=N	0.91=91%	0.88=88%	0.91=91%

Item Students enrolled at the first year level on average basis during the period of assessment	Marks
>=90% students	20
>=80% students	18
>=70% of students	16
>=60% of students	12
>=50%students	08
<50% students	0

4.2Success rate in stipulated period of the program

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

SI=(Number of students who have passed from the program without backlog)/(Number of students admitted in the first year of that batch and admitted in 2nd year of lateral entry)

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

Successrate without backlogs in any year of study =40xAverage SI

Item	Latest passed batch	Latest passed batch	Latest passed batch

	(2016) admitted in 2013	minus 1 Batch(2015)admitted in 2012	minus 2 Batch(2014) admitted in 2011
Total number of students (admitted through state level counseling + admitted through Institute level quota+admitted throughlateral entry) N1+N2+N3	89	90	59
Number of students who have passed without backlogs in the stipulated period	30	23	18
Success Index(SI)	30/89=0.361	23/90=0.287	18/59=0.3
Average SI	0.316		

Success rate=40x0.316=**12.64**

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

SI= (Number of students who have passed from the program without backlog)/(Number of students admitted in the first year of that batch and admitted in 2nd year of lateral entry)

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

Success rate =20xAverage SI

Item	Latest passed batch admitted in 2013	Latest passed batch minus 1 Batch(2015) admitted in 2012	Latest passed batch minus 2 Batch(2014) admitted in 2011
Total number of students (admitted through state level councelling+admitted through Institute level quota+admitted throughlateral entry) N1+N2+N3	89	90	59
Number of students who have passed with Backlogs in the stipulated period	10	22	13
Success Index(SI)	10/83=0.12	22/80=0.2558	13/60=0.216
Average SI	0.1972		

Success rate =20xAverage SI=20 x 0.1972=3.9453

Note: If 100% students clear without any backlog then also total marks scored will be 60 as both 4.2.1 and 4.2.2. will be applicable simultaneously.

4.3 Academic Performance in final year (15)

Academic performance level=1.5xAverage API (academic performance index)

API=(Mean of final year Grade point average of all successful students on a 10 point scale) x(successful students /number of students appeared in the examination)

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

Academic performance	CAY(2016)	CAYm1(2015)	CAY m2(2014)
Mean of CGPA or Mean percentage of all successful students(x)	7.014	7.30	6.985
Total number of successful students(y)	19	16	12
Total number of students appeared in the examination(z)	29	38	20
API=x*(y/z)	AP1= 4.595	AP2=3.0736	AP3=4.191
Average API=(AP1+AP2+AP3) /3	3.9532		

Academic Performance level=1.5 x Average API=1.5x3.9532=5.9298

4.4 Academic performance in second year(20)

academic performance level=2.0*Average API

API=(Mean of second year Grade point average of all successful students in second year /10)x(successful students /number of students appeared in the examination)

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

**As per GTU(University) academic norms the student having total 04 backlogs after 4th sem. exam(2nd year) will be promoted to final(3rd) year. Therefore total successful students are mentioned as per the total=04 backlogs after 4th semster(2nd year) exam.*

Academic performance	CAY(2016-17)	CAYm1(2015-16)	CAY m2(2014-15)
Mean of CGPA or Mean percentage of all successful students(x)	Data not available **7.0(appx.)	Data not available **7.0(appx.)	Data not available **7.0(appx.)
Total number of successful students(y)	(49)	(37)	(40)
Total number of students appeared in the examination(z)	60	50	38
API=x*(y/z)	AP1=7.0x(49/60) =5.71	AP2=7.0x(37/50) =5.18	AP3=7.0x(38/38) =7.0
Average API=(AP1+AP2+AP3) /3	5.963		

As CGPA data of students other than pass outs are not provided by GTU as a consolidated list, approximately 7.0 CGPA is considered for calculation for **2nd year from the average CGPA of data of final year pass out students of last 03 years,i.e.,2016,2015,2014.

Academic Performance level=2.0 x Average API=2.0x5.963=11.926

4.5 Academic performance in **First year**

academic performance level=2.0*Average API

API=(Mean of second year Grade point average of all successful students in first year /10)x(successful students /number of students appeared in the examination)

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

*(*As per GTU(University) academic norms the student having total 04 backlogs after 2nd sem. exam(1st year) will be promoted to 3rd semester(2nd year). Therefore total successful students are mentioned as per the total=04 backlogs after 2nd semster(1st year) exam.)*

Academic performance	**CAY(2016-17)**	**CAYm1(2015-16)**	**CAY m2(2014-15)**
Mean of CGPA or Mean percentage of all successful students(x)	Data not available **7.0(appx.)	Data not available **7.0(appx.)	Data not available **7.0(appx.)
Total number of successful students(y)	15(82)	19(66)	08(65)
Total number of students appeared in the examination(z)	76	74	76
API=x*(y/z)	AP1=7.0	AP2=7.0x(66/74) =6.2432	AP3=.0x(65/76) =5.986
Average API=(AP1+AP2+AP3) /3	6.4097		

As CGPA data of students other than pass outs are not provided by GTU as a consolidated list, approximately 7.0 CGPA is considered for calculation for **2nd year from the average CGPA of data of final year pass out students of last 03 years,i.e.,2016,2015,2014

Academic Performance level=2.0 x Average API=2.0x6.4097=12.8194

4.6 Placement and Higher Studies(40)

Assessment points =40X(1.25X +Y)/N where, X=Number of students placed in companies or Government sector through on/off campus recruitment

Y=Number of students admitted to higher studies

N= Number of final year students

Item	Latest passed batch (2016)	Latest pased batch minus 1 (2015)	Latest passed batch minus 2 (2014)
Total no. of final year students	30	23	18
No. of students placed in companies or Govt.Sector(X)	06	------	------
No. of students admitted to higher studies(Y)	08	-----	-----
1.25X + Y	15.5	----	----
Placement index(1.25X + Y/N)	0.5166	-----	-----
T=Average of (1.25X + Y)/N	0.5166 (As the data of 2014,2015 is not available)	----	-----
Assessment=40x T(To be limited to 40)	**40*0.5166=20.666**		

***** The pass out students data for placement and higher studies for 2016-17 is collected from GTU academic cell of the Institution, where students mentioned their preference.

4.7 Professional activities(20)

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

The institution has became member of AMIE(Associate member of Institution of Engineers) in 2016.

The institute organises Project Melas from 2016 ,where Mechanical Engineering final year projects have been displayed for the public and Industry.

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

No such activity done yet at the Institution level.

CRITERION 5	Faculty Information and Contributions	150

Faculty Information: CAY 2016-17

Name of the Faculty Member	Qualification, Board and year of Graduation	Designation of Teaching load(%)joining the Institution	Distribution of Teaching load(%)			Academic Research		Years of Experience
			I year	II year	III year	Research paper publications	Faculty receiving M.Tech/Ph.D.during the assesment year	
Shri C.S.Rao	M.Tech .. (Automobile Engg.)-1995,AMIE-(Mech. Engg.)	Lecturer in Mechanical Engg. D.O.J.: 06/04/2000	30	40	30	----	-----	20 years(Teaching)
Dr.B.K. Dandapat	Ph.D. (Engg.)-2011-Jadavpur University, INDIA	Lecturer in Mechanical Engg. D.O.J.: 28/04/2000	__	40	60	---	------	20 years (Teaching)
Shri S.S.Shrawge	M.E.(Mech.Engg.)-2010	Lecturer in Mechanical Ebgg. D.O.J.:13/03/2000	20	40	40	----	-----	19 years(Teaching)
Shri B.Moharana	M.E.(Mech.Engg.)-2016 NITTTR, Chandigarh	Lecturer in Mechanical Engg. D.O.J.:27/04/2000	20	40	40	01	M.E.-2016	20 years(Teaching)

Shri P.V.Gadge	M.Tech .(Machine Design) -2002- SVNIT, Nagpur,	Lecturer in Production Engg. D.O.J.: 26/06/2000	20	40	40	---	---	19 years(Teaching)
Shri Dipen Patel (on contract basis)	B.E.(Mech.Engg.)- 2006- Dr.Babasaheb Ambedkar Marathwada Univ, Maharastra	Lecturer in Mechanical Engg. D.O.J.: 16/01/2012	30	40	30	----	----	05 years(Teaching)
Shri Vishal Dhoke (on contract basis)	B.E.(Mech.Engg.),- 2008- Sant. Gadge Baba Amrabai University MBA- Jaipur National University	Lecturer in Mechanical Ebgg. D.O.J.: 16/01/2012	20	40	40	---	----	05- years(Teaching) 03 years- (Industry)
Shri Sohil Khalani (on contract basis)	B.E.(Prod.Engg.)- 2007,Bhavnagar Univers	Lecturer in Mechanical Engg. D.O.J.: 16/01/2012	30	40	30	---	---	04 years- Industry 05 years- Teaching

	ity, Gujarat							
Shri D.N.Shinde	M.Sc.(Maths)-Pune University-1989	Lecturer in Mathematics D.O.J.: 08/06/2001	17	--	--	----	-----	27 years (Teaching)
Shri A.D.Desai	M.Sc.(Physics)-1993	Lecturer in Physics D.O.J.: 01/07/1994	17	--	--	---	----	22 years(Teaching)
Shri S.M. Chouhan	M.A.(English)-PuneUniversity-2011	Lecturer in English D.O.J.: 26/02/2015	17	--	--	---	---	05years(Teaching)
Shri M.S Billiwala	B.E.(Civil Engg.), SardarPatel University-2012	Lecturer in Mechanical Engg. D.O.J.: 16/01/2012	---	20	--	---	----	04 years8 months(Teaching)

Faculty Information: CAY m1 2015-16

Name of the Faculty Member	Qualification, Board and year of Graduation	Designation of Teaching & joining the Institution	Distribution of Teaching load(%)			Academic Research		Years of Experience
			I ye	II ye	III ye	Research paper	Faculty receiving	

			ar	ar	ar	publications	M.Tech/Ph.D.during the assesment year	
Shri C.S.Rao	M.Tech.(Automobile Engg.)-1995	Lecturer in Mechanical Engg. D.O.J.: 06/04/2000	50	20	30	---	---	19 years(Teaching)
Dr.B.K. Dandapat	Ph.D.(Engg.)-Jadavpur University-2011	Lecturer in Mechanical Engg. D.O.J.: 28/04/2000	--	40	60	---	----	19years (Teaching)
Shri S.S.Shrawge	M.E.(Mech. Engg.),-2010,Maharastra	Lecturer in Mechanical Engg. D.O.J.: 13/03/2000	20	40	60	---	-----	18 years(Teaching)
Shri B.Moharana	M.E.(Mech. Engg.), NITTTR, Chandigarh	Lecturer in Mechanical Engg. D.O.J.: 27/04/2000	30	30	40	-----	----	19 years(Teaching)
ShriP.V. Gadge	M.Tech.(Machine Design), 2002-SVNIT,Nagpur	Lecturer in Production Engg. D.O.J.: 26/06/2000	30	40	30	---	-----	18 years(Teaching)
Shri Dipen	B.E.(Mech.Engg.)-2006-	Lecturer in Mechanical	20	40	60	---	------	04 years(Te

Patel	Dr.Babasaheb Ambedkar Marathwada Univ, Maharastra	Ebgg. D.O.J.: 16/01/2012						aching)
Shri Vishal Dhoke	B.E.(Mech.Engg.),-2008-Sant. Gadge Baba Amrabai University MBA-Jaipur National University	Lecturer in Mechanical Ebgg. D.O.J.:16/01/2012	20	40	40	----	----	04-years(Teaching) 03 years-(Industry)
Shri Sohil Khalani	B.E.(Prod.Engg.)-2007,Bhavnagar University, Gujarat	Lecturer in Production Ebgg. D.O.J.: 16/01/2012	20	40	60	-----	-------	04 years-Industry 04 years-Teaching
Shri D.N.Shinde	M.Sc.(Maths)-Pune Universiy-1989	Lecturer in Mathematics D.O.J.: 08/06/2001	17	--	--	----	-----	26 years (Teaching)
Shri A.D.Desai	M.Sc.(Physics)- Gujarat Univesity-1993	Lecturer in Physics D.O.J.: 01/07/1994	17	--	--	---	----	21 years(Teaching)
Shri	M.A.(Englis	Lecturer in	17	--	--	---	---	04years(

S.M. Chouhan	h)-PuneUniversity-2011	English D.O.J.: 26/02/2015						Teaching)
Shri M.S Billiwala	B.E.(Civil Engg.),SardarPatel University-2011	Lecturer in Mechanical Engg. D.O.J.: 16/01/2012	---	20	--	---	----	03 years8 months(Teaching)

Faculty Information: CAY m2 2014-15

Name of the Faculty Member	Qualification,Board and year of Graduation	Designation of Teaching load(%)joining the Institution	Distribution of Teaching load(%)			Academic Research		Years of Experience
			I year	II year	III year	Research paper publications	Faculty receiving M.Tech/Ph.D.during the assesment year	
Shri C.S.Rao	M.Tech.(Automobile Engg.-1995	Lecturer in Mechanical Ebgg. D.O.J.: 06/04/2000	40	30	30	---	----	18 years(Teaching)
Dr.B.K. Dandapat	Ph.D.(Engg.)-Jadavpur University-2011	Lecturer in Mechanical Ebgg. D.O.J.: 28/04/2000	--	40	60	-----	------	18 years (Teaching)
Shri S.S.Shrawge	M.E.(Mech. Engg.)-oct 2010	Lecturer in Mechanical Ebgg. D.O.J.:13/03/2000	--	40	60	-----	------	17 years(Teaching)
Shri B.Moharana	M.E.(Mech. Engg.),NITTTR,Chadigarh	Lecturer in Mechanical Ebgg. D.O.J.:27/04/2000	20	40	40	------	-------	18 years(Teaching)

ShriP.V. Gadge	M.Tech.(Machine Design),SV NIT,Nagpur	Lecturer in Production Ebgg. D.O.J.: 26/06/2000	20	40	40	----	----	17 years(Teaching)
Shri Dipen Patel	B.E.(Mech.Engg.)-2006-Dr.Babasaheb Ambedkar Marathwada Univ, MH,	Lecturer in Mechanical Ebgg. D.O.J.: 16/01/2012				-----	----	03 years(Teaching)
Shri Vishal Dhoke	B.E.(Mech.Engg)Sant. Gadge Baba Amrabai University-.),-2008-MBA-Jaipur National University	Lecturer in Mechanical Ebgg. D.O.J.: 16/01/2012	20	40	40	----	-----	03-years(Teaching) 03 years-(Industry)
Shri Sohil Khalani	B.E.(Prod.Engg.)-2007,Bhavnagar University, Gujarat	Lecturer in Production Ebgg. D.O.J.: 16/01/2012	30	30	40	-----	-----	03 years-Industry 03 years-Teaching
Shri D.N.Shinde	M.Sc.(Maths)-Pune University-1989	Lecturer in Mathematics D.O.J.: 08/05/2001	18	--	---	---	----	25 years(Teaching)
Shri A.D.Desai	M.Sc.(Physics)-Gujarat Univesity-1993	Lecturer in Physics D.O.J. :08/05/1996	18	---	---	---	---	20 yars(Teaching)
Shri S.C.Chouhan	M.A.(English)-Pune University-2011	Lecturer in English D.O.J.: 26/02/2015	18 %	--	--	--	---	03 years(Teaching)
Shri M.Billiwal	B.E.(Civil Engg.)	Lecturer in Civil Engg. D.O.J.: 16/01/2012	---	20	---	---	----	02 years 8 month(Teaching)

5.1 Student faculty ratio(SFR)(15)+ Availability of HoD(5)**; (20)**

S.F.Ratio=N/F; F=No. of Faculty=(a+b-c) for every assessment year

a=Total no. of fulltime regular faculty serving fully to all years of this program

b=Total no. of full-time equivalent regular faculty (considering fractional load) serving this program from other programs

c=Total no. of fulltime equivalent regular faculty(considering fractional load) of this program serving other programs

Year	N	F=(a+b-c)	SFR=N/F
CAY(2016)	90+180=270	(08+05-02=11	24.54:1
CAYm1(2015)	90+180=270	(08+05)-02=11	24.54:1
CAYm2(2014)	90+180=270	(08+5)-02=11	24.54:1
Average SFR			24.54:1

a=8,**b=05**(01-Physics,01=Maths,01=Elect.Engg.,01=Civil Engg.,01=English),

c=02(01=Elect.Engg.,01=Civil Engg.)

Marks to be given proportionately from a maximum of 15 to minimum of 10 for average SFR of 20:1 to 25:1, and zero for average SFR higher than 25:1

HOD is to be over and above 1;20 ratio as per AICTE guidelines for all the assessment years ,otherwise 0 marks.

HOD=270:1(students faculty ratio N/F)

5.2. Faculty Qualifications **(20)**

FQ=2*(10X + 7Y)/F where x is no of faculty with M.Tech and y is no. of Faculty with B.Tech..

F is no. of faculty required to comply 1:20 faculty student Ratio

x=05+01=06, y=03+04=07,F=13.5

Year	**Y (B.Tech) or equivalent**	**X (M. Tech) or Ph.D(Humanity subjects)**	**F**	**FQ = 2* (10X+7Y)/F**
2016-17	06	07	13.5	8.296
2015-16	07	06	13.5	8.074
2014-15	07	06	13.5	8.074

5.3 Faculty Retention **(20)**

>=90 % faculties retained during the period of assessment (2016-17)keeping CAYm2(2014-15) as base year.

(i)total faculties in 2014-15=08, 8/8=100%

(i)total faculties in 2015-16=08, 8/8=100%

(iii)Total faculties in 2016-17=08,(one regular faculty Shri Swapnil S. shrawge expired on 05/01/2017.)

7/8x100=87.5% **(marks=15)** (if faculties considered = 07 in 2016-17)

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

Name of Faculty	Max 5 per faculty		
	CAY m2(2014)	CAY m1(2015)	CAY(2016)
Shri C.S.Rao	--	-----	---
Dr.B.K.Dandapat	----	----	04(Principal-TPO meet of BOAT, National Conference of BOAT, NPTEL Workshop at LIT, NITI AYOG Meeting)

Shri B.Moharana	-----	---	01
Shri P.V.Gadge	----	-----	01
Shri Dipan Patel	----	----	--
Shri Vishal Dhoke	-----	----	---
Shri Sohil Khalani	----	------	01
SUM	00	00	07
RF=Number of faculty required to comply with 20:1 student -faculty ratio as per 5.1	13.5	13.5	13.5
Assessment=6x sum/0.5 SRF(marks limited to 30)	00	00	6.222
Average assessment over three years (marks limited to 30)= 2.074			

5.5 Product development, consultancy ,manufacturing contracts, Testing contracts(20)

Not Applicable

5.6 Faculty performance appraisal and development system(FPADS)(30)

Annual performance appraisal Report form is being filled up by every faculty as per the latest AICTE 6th pay AICTE format.

The APR is used during CAS promotion and yearly increment given to faculties.

5.7 Implementation of Career Advancement Scheme(CAS)(10)

The CAS has been implemented at Dr. B.B.A. Govt. Polytechnic from 01.01.1996.The AICTE 5th pay CAS and AICTE 6th pay CAS has been implemented and faculties got promotion to Lecturer (Sr.Scale),Lecturer(Sel. Grade) in 5th pay AICTE.

Lecturers got promotions as per 6th pay AICTE CAS and got promotion to PB-4 with AGP=9000.

CRITERION 6	Facilities and Technical Support	100

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

Sl.No.	Class Room	Carpet Area	Seating Capacity	Availability of OHP	Other Smart facilities	Weakly utilisation
1	Room No-01	30ftx 20ft	90	01	White board with marker pen, black board	Yes ,06 days /week
2	Room No.02	30ftx 20ft	90	01	White board with marker pen, black board	Yes ,06 days /week
3	Room No-03	30ft x 20 ft	90	01	White board with marker pen, black board	Yes ,06 days /week

6.2.1Availability of adequate,well equipped Workshops to meet the curriculum requirements **(10)**

Sl.No.	Name of the Workshop	No. of students/ batch	Name of the Power tools/machine tools	Weakly utilisation	Areas in which students expected to have enhanced learning	Relevance to PO/PSO
1	Fitting Section	30	Bench vice, hammer	06 days /week	Project Room(old projects),Reading room (adjacent to library)	PO2,PO4 ,PO8,PSO1
2	Smithy Section	30	Anvil, Furnace ,Hammer	06 days /week	Project Room(old projects),Reading room (adjacent to library)	PO2,PO4 ,PO8,PSO1
3	Welding section	30	Arc welding machine, welding rod, oxyacetylene welding machine	06 days /week	Project Room(old projects),Reading room (adjacent to library)	PO2,PO4 ,PO8,PSO1
4	Machine shop	16	Single point cutting	06 days /week	Project Room(old projects),Reading room	PO2,PO4 ,PO8,PS

			tool,milling cutter,grinder, (lathe machine)turning tools		(adjacent to library)	O1

6.3. Adequate and well equipped laboratories and technical man power

Sr.No.	Name of the laboratory	No.of students per setup	Name of the important equipment	Weekly utilization status(all the courses for which lab is utilized)	Technical man power support		
					Name of the technical staff	Designation	Qualification
1	Thermal Engg. Lab	30	4Stroke Petrol Engine test Rig, 2Stroke petrol Test rig,Air compressor,Refrigeration Test Rig,Air conditioning Test Rig, Vavle timing diagram trainer	06 hrs	1.Prakash Bij	Lab. Instructor	Diploma Engg.(Mech.0
2	Workshop	20	Machine lab-Lathe m/c, milling m/c, Fitting section, smithy section	24 hrs	1.Mahendra Rohit 2.Bhagwan Korda 3.Subhash Patel 4.Dolu Nadge	**Workshop Instructors**	I.T.I
3	Material Testing lab	30	Hardness testing m/c	4 hrs	Akhsay Solanki	Lab Attendent	12th Commerce
4	CAD/CAM L ab	20	CAD design software in 16 computers	6hrs	1.Ritesh Vad	Lab. Instructor	Diploma Engg.(Mech.)

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

Sr.No.	Facility name	Details	Reasons for creating facility	Utilisation	Areas in which students are expected to have enhanced learning	Relevance to POs /PSOs
1	Models and charts	All the models of Mechanical Engg. equipments, machineries kept in ne lab	To give better understanding of the equipments, machinaries	In subjects like Fluid Mechanics, Thermal Engg., Theory of Machines, Power Plant Engg.	In all the courses of Mech.Engg. from sem-1 to sem-6	Yes
2	Old Projects of Mechanical Engg.	Better old projects of Mechanical Engg. kept for further studies	innovation of the existing Projects and learning experience for project-I and Project-II subjects	Used by present batches for innovation in the related Projects	Innovative Project work	Yes

6.5 Laboratories: Maintainence and overall ambiance(10)

Regular maintenance is done by lab technicians and lab attendant f all the laboratory of Mechanical Engineering and Workshop. Whenever any financial assistance for repair and maintenance of lab machinery is required, the Principal provide the same.

6.6Availablity of computing facility in the Department

No. of Computer Terminals	Students computer ratio	Details of legal software	Details of Networking	Details of Printers,scanners etc
18	270/18=15	CAD software	Nil	01

6.7Language Lab(10)

Not Available

CRITERION 7	Continuous Improvement	75

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

Identify the areas of weaknesses in the program based on the analysis of evaluation of POs & PSOs attainment levels. Measures identified and implemented to improve POs& PSOs attainment levels for the assessment years. Actions to be written as per table in 3.3.2.

Examples of Analysis and proposed action

sample-1- As per the rules framed for admission to Diploma courses in Dadra & Nagar Haveli to give first preference to local Domicile category candidates (Merit list separately prepared for DO category).Therefore students with poor marks in Mathematics &Science get into Diploma courses, due to which it is difficult to get 100% results in exam.

Action taken: Special care is being taken by lecturers ,for those poor students(having less % in 10th exam) so that they cope up with other students in the classroom as well as in practicals

Sample-2-In a course that had group projects it was determined that the expectations from this course about PO3(like: to meet the specifications with consideration for the public health and safety and the cultural, societal and environmental considerations) were not realized as there were no discussions about these aspects while planning and execution of the project.

Action taken-Project planning, monitoring and evaluation included in rubrics related to these aspects.

POs &PSOs Attainment levels and Actions for improvement-CAY

PO/PSO	Target Level	Attainment Level	Observations	Actions taken
(PO1)Basic Knowledge	2.36	2.2	0.16	Lecturers asked to take extra classes in

				related subjects
(PO2)Discipline Knowledge	2.62	2.49	0.13	Lecturers asked to take extra classes in related subjects
(PO3)Experiments &Practices	2.68	2.54	0.14	Lecturers & lab Technicians were directed to take extra classes in related practicals
(PO4)Engineering Tools	2.67	2.53	0.14	Purchase of required Items are placed before the higher authority
(PO5)The Engineer & Society	2.02	2.01	0.01	Students were motivated to participate in Social service activities through Engineering
(PO6)Environment and sustainability	2.01	2.0	0.01	Students are involved in plantation and swachh Bharat Abhiyan
(PO7)Ethics	1.88	1.90	--	----
(PO8)Individual and Team work	1.90	1.92	0.02	Students are motivated through Project work to work as a team for better results
(PO9)Communication	2.13	2.10	0.03	Guest lectureshad been organised by Institution

(PO10)Lifelong learning	2.33	2.26	0.07	Motivation in classrooms were given
PSO-1	2.30	2.24	0.06	Students encouraged to do better
PSO-2	2.37	2.29	0.08	Students encouraged to better

7.2 Improvement in success Index of students without the backlog **(10)**

SI=(Number of students who have passed from the program in the stipulated period of course duratio)/(Number of students admitted in the first year of that batch and admitted in 2nd year via lateral entry)Assessment shall be based on improvement trends in success indices.Marks are awarded accordingly

Item	LPB	LPB m1	LPBm2
Success Index(from criteria 4.2.1)	0.361	0.287	0.3

7.3 Improvement in placement and Higher studies **(10)**

Assessment is based on improvement in: Placement number, quality placement, core industry, pay packages etc. Higher studies: admissions in premier institutions

Item	LPB(2016)	LPBm1(2015)	LPBm2(2014)
Placement index(from criteria 4.6)	**0.5166**	---	---

7.4 Improvement in Academic performance in Final year **(10)**

Item	LPB	LPBm1	LPBm2
Academic performance index(from criteria 4.3)	4.595	3.07.36	4.191

7.5 New facility created in the program **(20)**

Item	CAY(2016)	CAY m1(2015)	CAY m2(2014)
Internet (wi fi)	W i Fi(BSNL)	No wi fi	No wifi
Guest lectures from Industry	Lecture arranged related to soft skills,Technical skills	No Guest lecture	No Guest Lecture
Expert talk in various subjects of Engineering(from IITs,NITs) approved	To be started from September-oct. 2017	-----	--------
Apprenticeship training through National Apprenticeship Training Scheme of MHRD(in coordination with Board of Apprenticeship Training(BOAT),WR,Mumbai)	Institute registered in NATS in 2016	----	----

Institute Level Criteria

Criteria 8	Student Support System	50

8.1 Mentoring System to help at individual level(10)

Professional guidance is given by inviting career counselors who have a vast experience in Industry as well as in counseling.

Communication skill workshops are being organized by inviting professionals.

lecture talks are arranged and Industry persons are invited for improvement of skills of Students.

Students also go to industry visit to get industry experience.

The institution also has registered with NATS, Ministry of HRD, Govt. of India and communicating with BOAT,(WR),Mumbai for apprenticeship training to the pass out students in nearby industry.

8.2 Feedback analysis and reward /corrective measures taken, if any(10)

Seminars organized in the Mechanical Department in almost all theory subjects aswell as in final year Project ,to build confidence in the technical aspect of the course. This is done after getting feedback of the students that they used to fail in the viva-voce exam of Gujarat Technological University.

Also this practice to talk on the dais in front of audience give them confidence to face interviews after pass out.

Reward giving system has been developed in the Institution for bright topper of every Department. Also Prize is awarded to best projects every year in every department. For participating in the Project Mela a cash prize of Rs,.2000/ is provided to the project group.

8.3 Feedback Facilities(5)

There are committees formed in the Institution for taking care of every aspect of different facilities provided to students. The committees work continuously for the benefit of students by getting feedbacks from students.

8.4 Career Guidance, Training , Placement(20)

A committee has been formed to work on training and placement of Students.

The Faculty incharge and lecturers involved for Mechanical Dept. are:

Name of Faculty	Responsibility
Dr.B.K.Dandapat	TPO, Mechanical &BOAT Overall
Shri B.moharana	Mechanical Engg.
Shri Sohil Khalani	Mechanical & Production
Shri P.V.Gadge	Mechanical & Production

Also campus placement drive is organized on 21/04/2017 for this year. The surrounding Industries are invited to participate in the placement drive for all the Department students.

Apprenticeship training to the students by NATs through BOAT, WR, Mumbai is being in a negotiation stage.

In this connection two Directors from NILERD,NITI Aayog visited Dr. B.B.A. Govt. Polytechnic on 01/04/2017.They interacted with the Faculties in the matter of Apprenticeship training and placement of the students.

The Directors are:

1.Dr.Yogesh Kumar, Joint Director, NILERD,NITI Aayog, Govt. of India, Fellow Institute of Town planners ,India

2.Marshal Birua, Assistant Director, NILERD,NITI Aayog, Govt.of India

The feedback in the official format was taken by those Directors for futher progress in the matter of better training and placement to the students.

8.5 Entrepreneurship cell/Technology Business Incubator(5)

Not available

CRITERION 9	**Governance, Institutional Support and financial Resources**	**75**

9.1 Organisation ,Governance and Transparency

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

The Vision of the Dr.B.BA.Govt.Polytechnic:

The establishment of Dr. B.B.A. Govt. Polytechnic, at Dadra and Nagar Haveli will help the UT Administration to meet its man power needs and also in development of tribal regions. Moreover, the Territory must have a Polytechnic of its own to meet the aspirations of the local people, by transforming the students to be technically skilled managers, innovative leaders and environmentally receptive citizens.

The Mission of Dr.B.BA.Govt.Polytechnic:

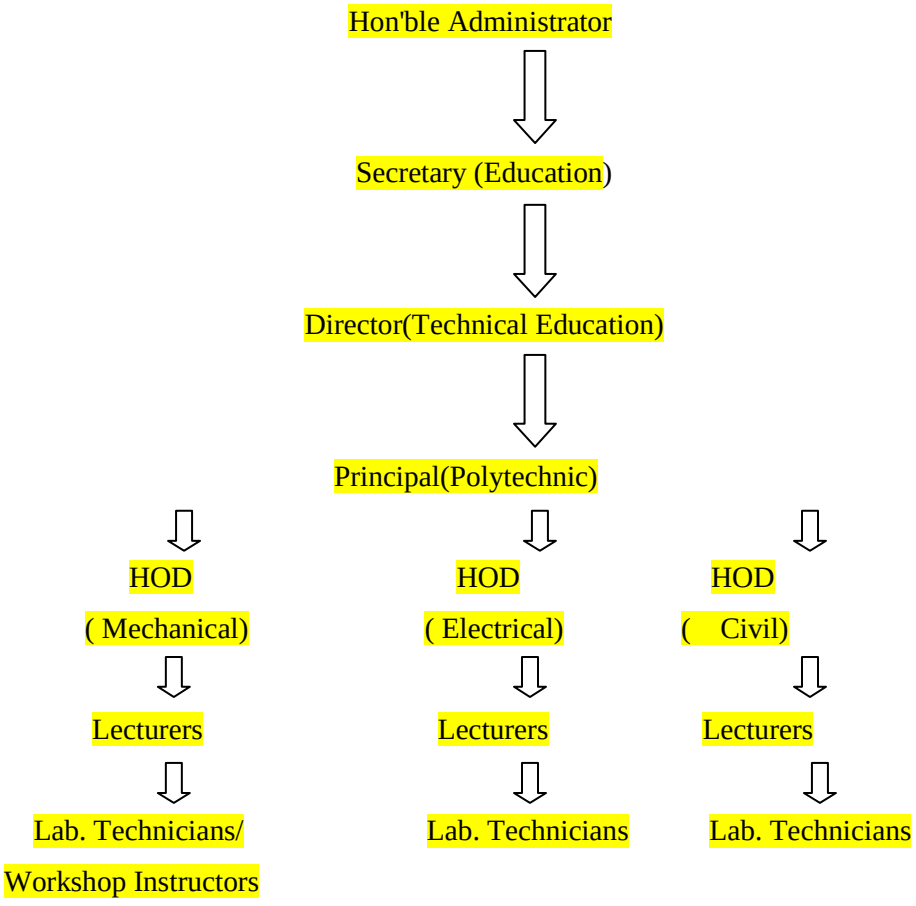
To implement holistic approach in curriculum and pedagogy through Industry Integrated Interactions to meet the needs of Global Engineering Environment.

To develop students with knowledge, attitude and skill of employability, entrepreneurship (Be Job creators than job seekers), research potential and professionally ethical citizens.

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

Dr. B.B.A. Govt. Polytechnic was setup in the year 1994 after getting permission from Ministry of HRD and AICTE in 1989.The institute was under the Administration of Dadra & Nagar Haveli and Hon'ble Administrator, Dadra & Nagar Haveli, Daman & Diu is the appointing authority and Employer.

The Administrative set up is as under:



The functions of various Bodies presently working in Dr. B.B.A. Govt.Polytechnic are

Sr. No.	Responsibility & Department	Name &Designation of the main Responsible Lecturer	Name of the Committee members/Assisting Staff	Role
1	I/C HOD in Civil Engg.	Shri K.B.Patel		Department level administration,lanboratory development/upgradation,academic weekly revoiew as per GTU requirements and documentation of all activities
2	I/C HOD in Mechanical Engg.Department	Dr.B.K.Dandapat		
3	I/C HOD in Electrical Department	Shri A.K.Swain		
4	I/C HOD in Computer & .I.T.Department	Shri S.Chennappa		
5	I/C HOD in Electronics & Communicationl Department	Smt.M.G.Desai		
6	I/C Humanities &Science Subjects	Dr.J.B.Rana		
7	GTU coordinator	Dr.J.B.Rana,/Dr.B.Jha& Shri S.Chennappa	Shri Sanjay Solanki(Lect.)Shri Bhaven Doshi(Lect.)	Enrollments,Exams work,assesment,,all GTU matters
8	I/C Student section	Dr.B.Jha,Shri B.Moharana	Shri Mitesh Billiwala Shri Bhaven Doshi Shri Subhash Patel Shri Bhagwan Korda	GTU Certificates & marksheets,Admission data & documents,safe keeping & distribution,bonafide certificates etc,all students record maintainance

			MS.Nisha Shingda Shri Ritesh Vad	
9	Academic Committee	Shri K.B.Patel(Convener)	All HODs,Shri D.L.Sahu,Dr.B.Jha,Shri P.V.Gadge	Academic planning,inspection-documentation,quality aspects,students attendance& detention issue
10	Affiliation Committee	Shri S.Chennappa,Shri S.S.Shrawge & Office Supdt.	Dr.J.B.Rana Shri K.B.Patel Shri Sanjay Solanki	Affiliation documentation for extension of Approval(EOA) AICTE& GTU Affiliation
11	I/C Student CoCurricular Activity	Shi R.N.D Sharma(Coordinator)	Shri Dipen Patel(Sports) Smt.Urvi Patel& Sohil Khalan(Cultural) & Sachin Chouhan(Literary) Smt Hemangini Parmar& Suraj Mahala(Technical Events & Exhibitions)	Advance planning of all activities,students management and monitoring,students appreciation & aeard distribution
12	GTU Innovation club & Open Source Technology club	Shri R.N.D.Sharma(GIC) Dr.B.Jha(OSTC)	Shri Mitesh Billiwala Shri Vishal Dhoke Smt. K.R.Jadeja Smt.Alka Patel Shri Bhaven Doshi Shri DSanjay Solanki	Innovations in projects , as per GTU guidelines & open software workshops
13	Training & Placement Section	Dr.B.Jha Dr.B.K.Dandapat	Shri P.V.Gadge Shri B.moharana Shri Sohil Khalani Shri A.A. PatilSohit Mecwan,Smt.Alka Patel,Smt.K.R.Jadeja & Shri P.N.Parmar(O.S.)	Training,campus placements,educational & Industrial visits/Tours,Expert talk,Workshops/seminars
14	Workshop Superintendent	Shri P.V.Gadge	Shri Sohil Khalani Shri M.B.Rohit,Shri	All Workshop work upgradation etc.

			Dolu Ndge	
15	Master Time table Section	Shri D.L.Sahu Shri C.S.Rao	Shri D.N.Shinde Sohit Mecwan Shri A.D.Desai	Preparation & compiling maser time table
16	Library Committee	Mrs..M.S.Desai,Asst.Librarian-Convener Shri S.Mishra&Mrs.C.N.Desai-members	Shri Dipen Patel Smt. K.R.Jadeja	All issues of books,journals etc in library,reading section for students and staffs
17	Discipline Committee	Shri C.S.Rao-Convener & all HODs	Dr.J.B.Rana Shri A.A.Patil Smt.H.H..Parmar Shri Prakash Bij	Disciplinary issues
18	Institute Magazine Committee	Dr.B.Jha,Shri S,.chennappa	All HODs-Chief Contributors,Shri Sachin Chouhan-Language Editor	TO invite records of events from department and compile them
19	Rector, Boys Hostel	Shri R.N.D.Sharma	Shri Sachin Chouhan	Hostel issue safe keeping of college key in the campus
20	Equipment Utility Evaluation Committee	All HODs,Sr.Store Keeper & Office Superintendent	------	To verify the cases of old equipment for write off etc.
21	Institute Website monitoring & Upgradation Committee	All HODs Dr.B.Jha& Dr.J.B.Rana	Shri S.Chennappa Shri S.Mecwan	Monitoring & upgradation of website
22	I/C Computer Programmer	Shri S.Chennappa Shri S.Mecwan	Shri Sanjay Solanki Shri A.A.Patil	Develop need based computer programs for effective working & public viewing

Define Rules and Procedures

The Institute is under Govt. of India. Therefore all the Service rules are as per DOP &T guidelines. The Meetings are conducted by Principal(Polytechnic) and accordingly orders are delivered for all the Employees of the Institution. The AICTE pay scales has been implemented in the Institution effective from 01.01.1996.

The Biometric attendance has been used for the last 05 years..

The promotional policies are as per CAS of AICTE. The Direct recruitment is through U.P.S.C., New Delhi. The RR of the Institution has been published in April 2015 with some errors. The rectification of errors is now under process.

9.1.3.Decentralization in working and Grievance redressal mechanism(5)

The Order for different responsibilities are as mentioned in 9.1.The complete administrative and academic work is distributed among the Lecturers, Lab instructors, Office Superintendent. All the activities are properly monitored by Principal, Dr. B.B.A. Govt. Polytechnic.

9.1.4 Delegation of Financial Powers(5)

The Principal is also DDO of the Institution.

The HOD s are given responsibility on rotation basis from the Regular Department faculties.

No Financial power given to any HOD or Faculty.

Principal & DDO is having all the financial power.(Rs.2.5 lakh per year)

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

Principal (Polytechnic) is the Authority for any information related to Dr. B.B.A. Gov. Polytechnic, U.T of Dadra &Nagar Haveli.

9.2 **Budget Allocation, utilization and Public Accounting at Institute level(10)**

(Summary of current financial year's budget and actual expenditure incurred(for the institution exclusively)in the three previous financial years

Total income at Institute level

A.CFY(2016)

Total income in CFY			Actual expenses in CFY(Till August 2016(05 months)			Total no. of students in CFY(2016-17)
Fee	Govt. Grants	Any other sources	Recurring including salaries (Ruppees in thousands)	Non - recurring	Special projects/ Any other ,specify	Expenses per students
2511	Major Head(39737+434+3372+349+)=43892		47997	-----	----	No.=749, Expenses per students=Rs.25,094.79

B.CFYm1(2015)

Total income in CFY			Actual expenses in CFY(Till .....)			Total no.of students in CFY(2015-16)
Fee	Govt. Grants	Any other sources	Recurring including salaries	Non - recurring	Special projects/Any other ,specify	Expenses per students
4192	60700		44538	------		No.=698, Expenses per students=Rs.63808.02

C.CFYm2(2014-15)

Total income in CFY			Actual expenses in CFY(Till .....)			Total no.of students in CFY(2014-15)
Fee	Govt. Grants	Any other sources	Recurring including salaries	Non - recurring	Special projects/Any other ,specify	Expenses per students
1434	94400	---	51419	---	--	No.=720, Expenses per students=Rs.71,415.27

D.CFYm3(2013)

Total income in CFY			Actual expenses in CFY(Till .....)			Total no.of students in CFY
Fee	Govt. Grants	Any other sources	Recurring including salaries	Non - recurring	Special projects/Any other	Expenses per students

					,specify	
--	----	----	----	----	----	----

Table-Consolidated budget received -Expenditure in CFY,CFYm1,CFYm2,CFYm3

Item	Budget in CFY 2016-17	Actual expense in CFY2016-17(till Aug.2016)	Budget in CFYm1(Till)2015-16	Actual expense in CFYm1(till)	Budget in CFYm1(Till)2014-15	Actual expense in CFY(till)2014-15	Budget in CFYm1(Till)2013-14	Actual expense in CFY(till)2013-14
Infrastrcture built up	---	---	--	---	---	---	---	---
Library	---	---	--	---	---	---	---	---
Laboratory Equipment	---	---	---	---	---	---	---	---
Teaching &Non Teaching staff salary	39737 +349	16835 +144	40000 +420	35368 +355	63000 +390	44279 +360	---	---
Maintenance and spares	2921	00	5000	5276	5000	3237	-----	---
R&D	---	---	--	--	-----	----	-----	----
Training and travel	434	00	150	123	150	196	----	----
Miscellaneous expenditures	1832	1070	2000+130	805 +0	2500	1119 +45	----	-----
Others/Specify	3372	747	3000 +5000 +5000	2611 +0 +0	3000 +10000 +10000	2183 +0 +0	-----	----
Total	43892	18796	60700	44538	94400	51419	-----	----

9.2.1 Adequacy of budget allocation **(4)**

In the F.Y.2016-17,2015-16,2014-15 the budget is always more than actual expenditures

9.2.2 Utilization of allocated funds **(4)**

Maximum fund is utilized in the financial years 2016-17,2015-16,2014-15 properly.

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

The information on audited statement is available at the office of Dr. B.B.A. Govt. Polytechnic.

9.3 Program specific Budget Allocation ,Utilization **(15)**

Budget is allotted for all the Departments like Mechanical Engg., Electrical Engg., Civil Engg., etc. in a consolidated manner. The split in Budget program specific(Branchwise) document is not available.

Total Budget in CFY(2016-17):		Actual expenses in CFY(2016-17)(Till .....)		Total No.of students in CFY(2016-17):
Non Recurring	Recurring	Non Recurring	Recurring	Expenses per student
----	----	-----	----	------
----	-----	-----	-----	---

Total Budget in CFYm1:		Actual expenses in CFYm1(2015-16)		Total No.of students in CFYm1(2015-16):
Non Recurring	Recurring	Non Recurring	Recurring	Expenses per student
------	-------	------	------	-----
-----	-------	-------	-------	-------

Total Budget in CFYm2:		Actual expenses in CFYm2		Total No. of students in CFY:
Non Recurring	Recurring	Non Recurring	Recurring	Expenses per student
--------	---------	-------	--------	------
------	------	-------	------	-------
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9.3.1. Adequecy of Budget Allocation **(07)**

In the F.Y.2016-17,2015-16,2014-15 the budget is always more than actual expenditures

9.3.2 Utilization of allocated funds **(8)**

Though total Budget is prepared combined for all the Departments, maximum funds are utilized in the financial years 2016-17,2015-16,2014-15 properly. After the actual expenditure every year, the funds are surplus, which can be realised from the table at 9.2.

9.4.Library and Internet **(20)**

(It is assumed that zero deficiency report was received b the Institution, Effective availability and utilization to be demonstrated)

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

1.The Dr. B.B.A. Govt. Polytechnic is well equipped with a library.

2.The Text Books, Reference Books of Mechanical Engineering are available in both English and Gujarati Language. The students have an option to write Examination in English or Gujarati as per GTU(University) guidelines.

3.The Science journals(Hard copy),Magazines, Newspapers(National & Local) in English, Hindi, Marathi, Gujarati are available for students and faculties.

4.There is a reading room attached to the library with a capacity of around 80 persons.It is open during college Hours.

5.The e-journals of Institutions of Engineers(soft copy) are subscribed for the Students and faculties. Even Internet can be assessed through wifi (BSNL) in the Institution premises. The study material and competitive exam papers are available for students.

9.4.2. Internet **(10)**

i. Name of the internet provider- BSNL lease line, BSNL(Qfi), & Dongle of Idea Network(Backup)

ii. Available Band width : BSNL –(i)BSNL leaseline-10MBPS (ii)BSNL Qfi-2MBPS(Free wifi

by U.T. of DNH)

Idea Net setter- (3G)

iii. Wi fi availability: yes, BSNL

iv. Internet access in labs, classrooms, library

and offices of all Departments: Yes through Wi fi networks of BSNL and Dongles of Idea Network (Recharge done every month) as backup.

v. Security arrangements: The security within the campus was provided by "NEWGEN SECURITY SERVIES". The security is available for 24 hours in 03 shifts.04 security Guards and one Security supervisor is on duty for 24 hours. A total of 12 security personnel deployed by the security Agency.

9.5 Institutional Contribution to the Community Development **(5)**

1.The students and staff of Dr. B.B.A. Govt. Polytechnic performs swachta abhiyan every year by cleaning the main road between Rakholi(4 roads chowk) and Dr.B.B.A.Govt.Polytechnic Campus(02 kms) as a part of Swachh Bharat Abhiyan.

2. The students of Mechanical Engineering have done projects related to farming, green toilet, cleaning of Drainage system as part of their contribution to Society. It is a continuous process towards commitment for society.

Administration of Dadra & Nagar Haveli
(Department of Technical Education)
Dr. B.B.A. Govt. Polytechnic, Karad (D.P.),
Madhuban Dam Road-Silvassa-396240

No.EST/GPK/NBA/SAR/2017/1423 Dated: 10/10/2017

Declaration

The Head of the Institution needs to make a declaration as per the format given below:

I undertake that, the Institution is well aware about the provisions in the NBS'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: 10/10/2017

Signature

Place: Karad(D.P.)

Name: PRIYANKA KUMARI

Designation of the Head of the Institution with seal

Principal
Dr. B.B.A. Government Polytechnic College
Karad (D.P.) Silvassa
Dadra & Nagar Haveli

Annexure – 1

(A) PROGRAM OUTCOMES (POs)

The students are expected to possess the attributes listed below

PO-1: Engineering knowledge: Demonstrate the knowledge of mathematics, science and engineering.

PO-2: Discipline knowledge: Demonstrate the ability to apply computer engineering – specific knowledge to solve core and applied engineering problems.

PO-3: Experiments and practice: Demonstrate the ability to design and conduct experiments, interpret and analyze data and report results.

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

PO-5: The engineer and society: Demonstrate the ability to understand the impact of engineering on society, health, safety and legal issues and incorporate them in engineering solutions.

PO-6: Environment and sustainability: Demonstrate the ability to judge the impact of engineering solutions on the environment to achieve sustainable development.

PO-7: Ethics: Demonstrate an understanding of their professional and ethical responsibilities in engineering field.

PO-8: Individual and team work: Demonstrate the ability to function in multidisciplinary or diverse environment as a member or leader of the team.

PO-9: Communication: Develop the ability to communicate effectively with both verbal and written fluency.

PO-10: Life-long learning: Develop the ability to engage in independent and lifelong learning to adapt technological change.

PSOs

PSO1

The Program must demonstrate that diplomas can apply specific program principles to design, fabrication, test, operation or demonstration of basic Mechanical systems or processes.

PSO2

The program make diplomas design, develop, test society needed products and engage in manufacturing or processing such quality products with utmost environment safety and committed for sales of products and provide good service to customer.