DIRECTORATE OF TECHNICAL EDUCATION

GOVERNMENT OF GUJARAT

Dr. S. & S.S. Ghandhy College of Engg. & Tech., Surat

Affiliated to

GUJARAT TECHNOLOGICAL UNIVERSITY

Mechanical Engineering Department Booklet

Year 2019-20

MECHANICAL ENGINEERING DEPARTMENT

ABOUT DEPARTMENT:

Mechanical Engineering Department established in 1958, is one of the pioneering departments of Dr. S. & S. S. Ghandhy College Of Engineering And Technology, Surat. Institute is running under Directorate of Technical Education, Government of Gujarat. Diploma Mechanical engineering program is approved by All India council for technical education (AICTE), New Delhi and is affiliated to Gujarat Technological University, Ahmedabad.

Mechanical engineering is an engineering branch that combines physics and mathematics principles with material science to design, analysis, manufacture, and maintain mechanical systems. The mechanical engineering field requires an understanding of core areas including mechanics, dynamics, thermodynamics, material science, structural analysis and electricity. In addition to these core principles, mechanical engineers use tools such as computer aided design (CAD), computer aided manufacturing (CAM) to design and analyze manufacturing plants, industrial equipment, heating and cooling equipments and robotics. It is the branch of engineering that involves the design, production, and operation of machinery.

STUDENT INTAKE/YEAR

Name of Department	Year	Student Intake	AICTE APPROVAL
Mechanical Engineering	1958	30	YES
	1994	90	YES
	2001	60	YES
	2002	120	YES
	2004	125	YES
	2008	185	YES

DURATION OF PROGRAM

03 years, 06 semesters.

ENTRY LEVEL

1. 10th Standard Pass (1st Sem. Entry)
2. Certificate course of duration 2 years from TEB /NCVT/GCVT/IGTR (3rd Sem. Entry)

ADMISSION

Admission through Central Admission Committee for Professional Diploma Courses on the basis of state level merit List. For More information visit **www.acpdc.co.in**

VISION:

- "To achieve excellence in Mechanical Engineering education for modern industrial requirements with societal and environmental concerns."

MISSION:

- To prepare the students with strong fundamental concept, analytical capabilities and Technical skills.
- To provide the students with academic environment of excellence, leadership and life-long learning required to be competent.
- To inculcate professional skills and ethical values among young minds with societal and environmental concerns.
- To expose students to industries with industry - institute - interaction programs to enhance employability.

PROGRAM EDUCATIONAL OBJECTIVES (PEOs):

The program in Mechanical Engineering will prepare students

- PEO -1 Students will have knowledge of Science and Engineering principles to the emerging areas of Mechanical Engineering for employability, higher studies and handle realistic problem.
- PEO -2 To produce diploma holders who will perform their duties with societal, economical and environmental concern for contribution towards the sustainable growth of nation.
- PEO -3 To inculcate students with technical, professional and entrepreneurial skills with high level of integrity and professional ethics as an individual as well as team.

PROGRAM SPECIFIC OUTCOMES (PSOs):

Diploma Mechanical engineer will be able to:

- PSO -1 Our diploma mechanical engineer will be able to design and develop various products with the help of software tools.
- PSO-2 Our diploma mechanical engineer will be able to work as a maintenance engineer in various sections of industries.
- PSO-3 Our diploma mechanical engineer will be able to acquire technical and managerial skill which is helpful for supervision of manufacturing processes, sales and marketing of technical products.

PROGRAM OUTCOMES (POs)

1. **Basic and Discipline specific knowledge:** Apply knowledge of basic mathematics, science and engineering fundamentals and engineering specialization to solve the engineering problems.

2. **Problem analysis:** Identify and analyse well-defined engineering problems using codified standard methods.

3. **Design/ development of solutions:** Design solutions for well-defined technical problems and assist with the design of systems components or processes to meet specified needs.

4. **Engineering Tools, Experimentation and Testing:** Apply modern engineering tools and appropriate technique to conduct standard tests and measurements.

5. **Engineering practices for society, sustainability and environment:** Apply appropriate technology in context of society, sustainability, environment and ethical practices.

6. **Project Management:** Use engineering management principles individually, as a team member or a leader to manage projects and effectively communicate about well-defined engineering activities.

7. **Life-long learning:** Ability to analyse individual needs and engage in updating in the context of technological changes.

TEACHING SCHEME FOR DIPLOMA IN MECHANICAL ENGINEERING

SEMESTER I

SR. NO.	COURSE CODE	COURSE TITLE	TEACHING SCHEME(HOURS)			CREDITS
			THEORY	TUTORIAL	PRACTICAL	
1	3300001	BASIC MATHEMATICS	2	2	0	4
2	3300002	ENGLISH	3	2	0	5
3	3300004	ENGINEERING PHYSICS(GROUP - I)	3	0	2	5
4	3300007	BASIC ENGINEERING DRAWING	2	0	4	6
5	3300003	ENVIRONMENT CONSERVATION & HAZARD MGMT.	4	0	0	4
6	3301901	ENGINEERING WORKSHOP PACTICE	0	0	4	4
TOTAL			14	4	10	28

SEMESTER II

SR. NO.	COURSE CODE	COURSE TITLE	TEACHING SCHEME(HOURS)			CREDITS
			THEORY	TUTORIAL	PRACTICAL	
1	1990001	CONTRIBUTOR PERSONALITY DEVELOPMENT	4	0	0	4
2	3320003	ADVANCED MATHEMATICS (GROUP-2)	2	2	0	4
3	3300008	APPLIED MECHANICS	3	0	2	5
4	3321902	MATERIAL SCIENCE & METALLURGY	3	0	2	5
5	3321901	MECHANICAL DRAFTING	2	0	6	8
6	3320004	BASIC OF CIVIL ENGINEERING	0	1	2	3
TOTAL			14	3	12	29

SEMESTER III

SR. NO.	COURSE CODE	COURSE TITLE	TEACHING SCHEME(HOURS)			CREDITS
			THEORY	TUTORIAL	PRACTICAL	
1	3331901	MANUFACTURING ENGINEERING-I	3	0	4	7
2	3331902	THERMODYNAMICS	3	0	0	3
3	3331903	FLUID MECHANICS AND HYDRAULIC MACHINES	4	0	2	6
4	3331904	STRENGTH OF MATERIALS	3	0	2	5
5	3331905	APPLIED ELECTRICAL AND ELECTRONICS ENGG	3	0	2	5
6	3331906	COMPUTER AIDED MACHINE DRAWING	0	0	4	4
7	3330001	HUMAN RESOURCE MANAGEMENT	2	0	0	2
TOTAL			18	0	14	32

SEMESTER IV

SR. NO	COURSE CODE	COURSE TITLE	TEACHING SCHEME(HOURS)			CREDITS
			THEORY	TUTORIAL	PRACTICAL	
1	3341901	MANUFACTURING ENGINEERING – II	3	0	4	7
2	3341902	THERMAL ENGINEERING-I	3	0	2	5
3	3341903	THEORY OF MACHINES	4	0	2	6
4	3341904	COMPUTER AIDED DESIGN	2	0	2	4
5	3341905	METROLOGY & INSTRUMENTATION	4	0	4	8
6	3341906	PLANT MAINTENANCE AND SAFETY	3	0	2	5
TOTAL			19	0	16	35

SEMESTER V

SR. NO.	COURSE CODE	COURSE TITLE	TEACHING SCHEME(HOURS)			CREDITS
			THEORY	TUTORIAL	PRACTICAL	
1	3351901	THERMAL ENGINEERING-II	2	0	2	4
2	3351902	DESIGN OF MACHINE ELEMENT	3	0	2	5
3	3351903	MANUFACTURING ENGINEERING-III	3	0	4	7
4	3351904	INDUSTRIAL ENGINEERING	3	0	2	5
5	3351905	ESTIMATING, COSTING AND ENGINEERING CONTRACTING	2	0	2	4
6	3351906	SELF EMPLOYMENT AND ENTREPRENEURSHIP DEVELOPMENT(ELECTIVE-1)	3	0	2	5
7	3351908	PROJECT-I	0	1	3	4
TOTAL			16	1	17	34

SEMESTER VI

SR. NO.	COURSE CODE	COURSE TITLE	TEACHING SCHEME(HOURS)			CREDITS
			THEORY	TUTORIAL	PRACTICAL	
1	3361901	COMPUTER AIDED MANUFACTURING(CAM)	2	0	2	4
2	3361902	TOOL ENGINEERING	3	0	2	5
3	3361903	INDUSTRIAL MANAGEMENT	3	0	0	3
4	3361906	ELECTIVE-2	3	0	2	5
5	3361907	ELECTIVE-3	3	0	2	5
6	3361910	PROJECT-II	0	0	6	6
TOTAL			14	0	14	28

ELECTIVE-2,3:
GROUP-1(MANUFACTURING ENGINEERING)

1. **3361904: MANUFACTURING SYSTEMS**
2. **3361905: FABRICATION TECHNOLOGY**

GROUP-2(THERMAL ENGINEERING) 1. **3361906: POWER PLANT ENGINNERING** 2. **3361907: THERMAL SYSTEM AND ENERGY EFFICIENCY**				
GROUP-3(FLUID ENGINEERING) 1. **3361908: HYDRAULIC SYSTEMS** 2. **3361909: PNEUMATIC SYSTEMS**				

BRIDGE COURSE For C2D STUDENTS

SEMESTER I (Bridge Course)

SR. NO.	COURSE CODE	COURSE TITLE	TEACHING SCHEME(HOURS)			Total Hrs (L+T+P)
			THEORY L	TUTORIAL T	PRACTICAL P	
1	C300001	BASIC MATHEMATICS	14	10	0	24
2	C300002	ENGLISH	21	10	0	31
3	C300004	ENGINEERING PHYSICS (GROUP-1)	21	0	14	35
4	C300003	ENVIRONMENT CONSERVATION & HAZARD MANAGEMENT	28	0	0	28
TOTAL			84	20	14	118

SEMESTER II (Bridge Course)

SR. NO.	COURSE CODE	COURSE TITLE	TEACHING SCHEME(HOURS)			Total Hrs (L+T+P)
			THEORY L	TUTORIAL T	PRACTICAL P	
1	C320003	APPLIED MATHEMATICS (GROUP-2)	14	10	0	24
2	C300008	APPLIED MECHANICS	21	0	14	35
3	C321902	MATERIAL SCIENCE AND METALLURGY	21	0	14	35
4	C321901	MECHANICAL DRAFTING	14	0	42	56
5	C320004	BASIC OF CIVIL ENGINEERING	0	5	14	19
TOTAL			70	15	84	169

For more details regarding syllabus, examination scheme etc., kindly visit **www.gtu.ac.in**

INFRASTRUCTURE

Mechanical Engineering Department is equipped with well-ventilated classrooms with adequate flexible furniture. Department is equipped with well equipped laboratories. Details of various labs are given below.

Computer Aided Design Laboratory

Computer Aided Design (CAD) laboratory is utilized for developing the skill of handling the various 2D and 3D modeling software for the subjects CAMD(Computer aided manufacturing & design) and CAD(Computer aided drafting) . This laboratory has well maintained computer systems and modeling softwares for drafting the parts. Laboratory exercises include modeling of 2D and 3D geometries as per

the assigned dimensions of the parts

Computer Aided Manufacturing Laboratory

Computer Aided Manufacturing (CAM) laboratory is utilized for delivering the practical knowledge of CNC machines for the subject CAM. This lab has two CNC machines, both are vertical machining centers. In this laboratory, students perform the machining of parts using CNC part programming as per the assign Job.

Mechanical Workshop

The workshop of mechanical engineering department includes laboratories/ shops related to subjects like Manufacturing Engineering, Engineering Workshop Practice, Fundamental of Mechanical Engineering, Projects, etc.

The work shop is equipped with following main machines/equipments/tools

- All Geared head lathe machine
- Shaping Machine
- Pillar drilling machine
- Hydraulic hacksaw machine
- Grinder
- Circular Metal cutting hacksaw machine
- Spot welding machine
- Single phase arc welding machine

Fluid Mechanics and Hydraulic Machines Laboratory (FMHM)

Fluid mechanics is the branch of physics concerned with the mechanics of fluids and the forces on them. It has applications in a wide range of disciplines, including mechanical, civil, chemical and biomedical engineering, geophysics, oceanography, astrophysics, and biology. Hydraulic machines use liquid fluid power to perform work. Heavy construction vehicles are a common example. In this type of machine, hydraulic fluid is pumped to various hydraulic motors and hydraulic cylinders throughout the machine and becomes pressurized according to the resistance present

Thermal Engineering Laboratory

Thermal Engineering laboratory is utilized for developing the skill of analyzing performance of IC Engines, Boilers, determining COP of Refrigeration systems etc. for the subjects Thermal Engineering. This laboratory has highly furnished models, cut sections and test rigs.

COMPUTING FACILITIES

Department is equipped with adequate computing facilities. ICT tools like Laptop, projector, speakers are frequently used in classrooms to enhance the teaching learning process. Free Access Namo-Wifi facility available at department.

DEPARTMENT LIBRARY

Many reference books for mechanical engineering are available in department library. Students can access the books as per their will and convenience.

FACULTY DETAILS

Sr. No.	Name of Faculty	Designation	Qualification	Teaching Experience
1	Mr. N. A. Sangani	H.O.D.	M.E Mech.	27 yrs.
2	Mr. S. M. Kank	Lecturer	B.E.Mech.	27 yrs.
3	Mr. D.B. Patel	Lecturer	M.Tech.	14yrs.
4	Mr. T. B. Patel	Lecturer	M.E.Mech.	13yrs.
5	Mr. K. C. Patel	Lecturer	M.Tech.	14 yrs.
6	Mr. A. D. Dhangar	Lecturer	M.E.Mech.	11yrs.
7	Mrs. B. C. Shah	Lecturer	M.Tech.	11yrs.
8	Mr.K. D. Chaudhari	Lecturer	B.E .Mech.	04yrs.
9	Mr.H. S. Chaudhari	Lecturer	M.Tech.	04 yrs.
10	Mr.J.J.Gopani	Lecturer	B.E. Mech.	06 yrs.
11	Mr.M.H.Koladiya	Lecturer	B.E. Mech.	03 yrs.
12	Mr.B.D.Shankar	Lecturer	B.E. Mech.	06 yrs.
13	Mr. A M Ambaliya	Lecturer	M.E. Mech.	06 yrs
14	Mr.A. S. Solanki	Lecturer	B.E. Mech.	03 yrs.
15	Mr. A. A. Patel	Lecturer	B.E. Mech.	07 yrs.
16	Mr.H.V.Gohil	Lecturer	M.Tech.	14 yrs.
17	Mr.V.C.Prajapati	Lecturer	B.E. Mech.	06 yrs.

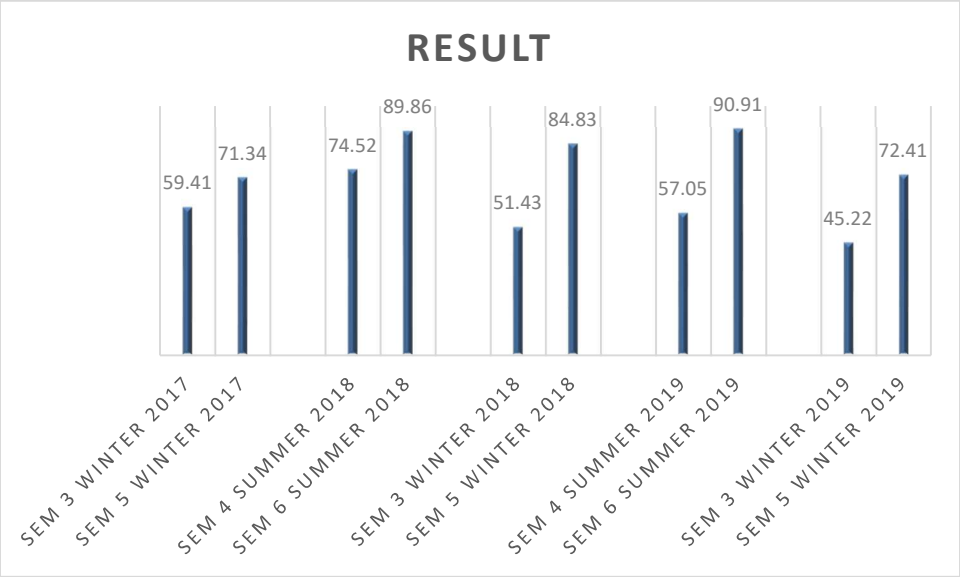
18	Miss.S.D.Tiwari	Lecturer	M.E.Mech.	03yrs.
19	Mr.S.K.Teraiya	Lecturer	M.Tech	03 yrs.
20	Miss.M.I.Oza	Lecturer	B.E. Mech.	10yrs.
21	Miss.A.R.Rana	Lecturer	M.E.Mech.	03yrs.
22	Mr. G V Patel	Lecturer	B.E. Mech.	10yrs.
23	Mr S N Vasava	Lecturer	B.E. Mech.	03yrs.
24	Ms. A I Patel	Lecturer	M.E.Mech.	03yrs.
25	Mr. N .S. Karuskar	Lecturer	B.E. Mech.	03yrs.
26	Mr. B C Chaudhari	Lecturer	B.E. Mech.	03yrs.
27	Mr.D. D. Patel	Lecturer	B.E. Mech.	10yrs.
28	Mr.S. A. Shaikh	Lecturer	B.E. Mech.	06yrs.
29	Mr.V. L. Miyani	Lecturer	B.E. Mech.	06yrs.
30	Mr.J. H. Ramani	Lecturer	B.E. Mech.	06yrs.

For more information kindly visit **www.ssgc.cteguj.in**

TECHNICAL & SUPPORTING STAFF

Sr.No.	Name of the Technical Staff	Designation	Qualification	Date of Joining
1	Miss. R.D.Surati	Lab Assistant	Diploma Mech.	13/12/2013
2	Mr. C.M.Vasoya	Store Keeper	Diploma Mech.	08/11/2013
3	Mr. V.B.Gajrotar	Instructor	B.E Mech.	17/10/2017
4	Mr. H.M.Gamit	Instructor	B.E Mech.	14/03/2018
5	Mrs. S.T.Chavda	Lab Assistant	Diploma Mech.	13/11/2020

RESULT ANALYSIS (Result Percentage):



TRAINING & PLACEMENTS OPPORTUNITIES

Each year several companies visit our college for placement activity and many of the students are placed in the said companies. The lists of such companies that have placed our students during the 5th and 6th semester are as under:

Sr.No.	Name& Address of Training Center	No. Of Students
1	ABC BEARING LTD. BHARUCH.	1
2	BAJAJ AOTO LTD	4
3	BATLIBOI LTD	1
4	ARCELORMITTAL NIPPON(ESSAR) STEEL INDIA LTD,HAZIRA	1
5	GSECL THERMAL POWER STATION, UKAI.	1
6	GUJARAT GAS LIMITED.	7
7	INDUSIND BANK.	1
8	KRIBHCO	1
9	LARSEN AND TOUBRO LTD.	22
10	SHELL INDIA PVT LTD	1
11	SUZUKI MOTOR GUJARAT	5
12	SYSTEM ENGITECH PVT LTD.	1
13	ULTRATECH CEMENT PRIVATE LIMITED	3
14	UTTAM VALUE STEEL LTD.	3
15	UTTAM GALVA METALLICS LIMITED	1

The following is the list of industries that have undertaken campus drive in mechanical department during the last 3 years:

ABC BEARING BHARUCH.
ADANI PORT HAZIRA,SURAT. (VIJAY ENGINEERING)
AMW BHUJ
ASAHI INDIA GLASS LTD
BAJAJ AUTO LTD
BATLIBOI LTD.
BRAKES INDIA
CAD HOUSE
ESSAR STEEL INDIA LIMITED
FLEXPRO PVT LTD
GERRISHIMER TUBULAR GLASS, KOSAMBA
GSECL THERMAL POWER STATION UKAI
GUJARAT GAS LIMITED
HINDALCO INDUSTRIES LTD.
INDUSIND BANK
IOCL GUJARAT REFINERY ,VADODARA
KRIBHCO
LARSEN AND TOUBRO
PNR INDUSTRIES LTD SACHIN
SAINT GOBAIN GLASS
SHELL INDIA PVT LTD
SP3 TECHNOLOGIES LLP
SUZUKI MOTOR GUJARAT
SYNNOVA GEARS & TRANSMISSION PVT LTD.
SYSTEM ENGITECH PVT LTD.
TATA MOTORS
THEIS PRECISION STEEL PVT. LTD
ULTRATECH CEMENT PRIVATE LIMITED
UTAAM VALUE STEEL LIMITED
UTTAM GALVA METALLICS LIMITED

INSTITUTE – INDUSTRY INTERACTION

Strong institute-industry linkage is established by department to keep pace with technological advances and stay updated with dynamic behavior of industrial sector, in mutual benefit of institute and society. MoUs are done with various industries to share resources and knowledge. Industries also provide support and advice to academic program and identify best practices standards.

CO - CURRICULAR AND EXTRACURRICULAR ACTIVITIES

Series of Co-curricular and extracurricular activities like Group Disscussions, Expert lecures, Industrial visits, Tree plantation, Cleanliness drive, Yoga celebrations, Sports week, NCC and NSS activities are planned and organised in department and institute for a harmonious development of students in respect to their morality, humanity, honesty, character and health. These activities also contribute to the development of soft skills or employable skills to great extent, which are ultimately required at the world of work.

CONTACT US

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