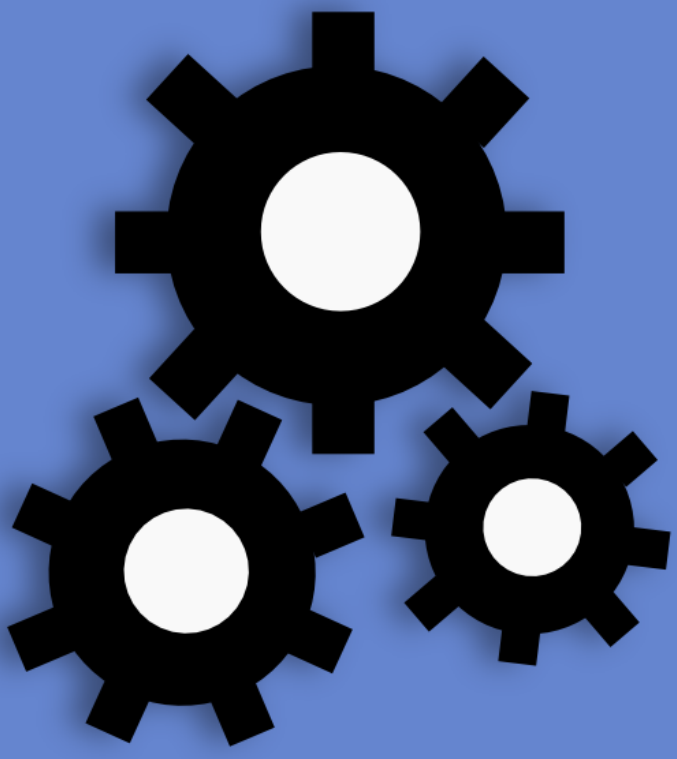
Government Engineering College, Modasa

Newsletter

June 2020

MECHANICAL ENGINEERING DEPARTMENT



Government Engineering College, Modasa

ABOUT THE INSTITUTE

Government Engineering College, Modasa was established in 1984 under the Directorate of Technical Education, Gujarat State, Gandhinagar in North Gujarat region with a view to spread out technical education in the region and hence promote industrial development. The institute was affiliated with Hemchandracharya North Gujarat University (HNGU), Patan from 1984 to 2007. The institute is affiliated to Gujarat Technological University; Ahmedabad from 2008.It is recognized by All India Council for Technical Education (AICTE), New Delhi.

The institute was started with two undergraduate courses, with an intake of 60 each. At present it runs seven under graduate courses and two post graduate courses. Each department has well established laboratories, computer centers and well qualified staff.

VISION AND MISSION

VISION OF THE INSTITUTE

To be a Leading Institution on Ensuring Academic Excellence, Research, Nurturing Innovation and Entrepreneurial Attitude to produce competent technocrats for service to Nation.

MISSION OF THE INSTITUTE

- To be a student centric institute imbibing experimental, innovative and lifelong learning skills, addressing societal problems.
- To create a conductive ecosystem for research, innovation and extension services.
- To inculcate entrepreneurial attitude and values amongst learners.
- To collaborate with Industries and other institutions to strengthen symbiotic relations.
- To mentor aspiring Institutions to unleash their potential, towards nation building.

MECHANICAL ENGINEERING DEPARTMENT

Mechanical Engineering Department was established since inception of the institute and is considered as one of the concrete pillars of Government Engineering College, Modasa. The department offers Bachelor of Engineering in Mechanical with an intake capacity of 150 students. The department has highly qualified faculty members and all the laboratories are equipped with latest technology equipments/instruments. The department provides teaching in the area of thermodynamics, fluid mechanics, fluid power engineering, heat transfer, refrigeration and air conditioning, design and dynamics of mechanical systems etc. Department of mechanical engineering has a vision to prepare determined, innovative, inventive, self esteemed and goal oriented mechanical engineers with good technical knowledge, proper analytical and communication skill.

Department of Mechanical and Automobile Engineering emphasize on developing technical skills and creating awareness about needs of industries through industry institute interaction, technical seminars, workshops and technical training etc. Students are encouraged to think innovatively through project works related to mechanical engineering by providing all kind of support for overall personality development.

VISION AND MISSION OF THE DEPARTMENT

VISION

Build a strong teaching-learning and research environment to prepare determined, innovative, inventive, self-esteemed and goal oriented mechanical engineers with good technical knowledge, analytical and soft skill.

MISSION

To equip mechanical engineering graduates to face challenges of industries, society and nation by

- **Providing domain knowledge through qualified, experienced and trained faculties in healthy environment.**
- **Developing technical skills and creating awareness about needs of industries by encouraging entrepreneurial attitude.**
- **Encouraging graduates to think innovatively through project works with professional ethical practices.**
- **Providing all kinds of support for overall personality development.**

MECHANICAL WORKSHOP

Mechanical Workshop building strengthens the department to achieve its vision and missions. This building has many facilities where students can apply their cognitive skills and develop new skills. Mechanical workshop has facilities like Lathes, milling machine, drilling machines, shaper machines etc upon which students in team performs various machining processes. Workshop building envelopes some advance technology like CNC machine, advance turning machines, computerized engine test setup etc. Overall, Mechanical workshop pumps the enthusiasm in the student's hearts and provides a platform for their development.

FACULTY AND STAFF

SR NO	FACULTY NAME	DESIGNATION	QUALIFICATION
1	Dr. U. V. Shah	Associate Professor & Head	Ph.D.
2	Prof. N. V. Bora	Associate Professor	M.E.
3	Dr. M. I. Vyas	Associate Professor	Ph.D.
4	Prof. S. P. Patel	Associate Professor	M.E
5	Dr. B. C. Khatri	Associate Professor	Ph.D.
6	Prof. K. P. Prajapati	Assistant Professor	M.E.
7	Prof. R. B. Shah	Assistant Professor	M.Tech
8	Prof. S. P. Patel	Assistant Professor	M.E.
9	Prof. M. J. Vanjara	Assistant Professor	M.E.
10	Prof. M. M. Madhikar	Assistant Professor	M.Tech.
11	Prof. P. R. Parekh	Assistant Professor	M.E.
12	Prof. P. R. Panchal	Assistant Professor	M.E
13	Prof. K. S. Banker	Assistant Professor	M.E
14	Prof. P. K. Gajjar	Assistant Professor	M.E.
15	Prof. P. M. Mistri	Assistant Professor	M.E.
16	Prof. H. R. Prajapati	Assistant Professor	Ph. D.
17	Prof. M. G. Patel	Assistant Professor	M.Tech.
18	Prof. H. I. Chaudhari	Assistant Professor	M.E.
19	Prof. J. C. Gamit	Assistant Professor	M.Tech.
20	Prof. Y. M. Bhoya	Assistant Professor	M.E.
21	Prof. R. B. Gadhavi	Assistant Professor	B.E.
22	Prof. R. N. Bodar	Assistant Professor	B.E.
23	Prof. A. R. Patel	Assistant Professor	B.E.
24	Prof. S. A. Bhatia	Assistant Professor	B.E.
25	Prof. J. R. Bhavsar	Assistant Professor	B.E.
26	Prof. D. N. Patel	Assistant Professor	M.E.
27	Prof. S. L. Ganchi	Assistant Professor	M.E.
28	Mr. V. A. Bhavsar	Instructor Turner	
29	Mr. I. R. Kalasva	Instructor Fitter	
30	Mrs. Y. A. Kazi	Lab Assistant	
31	Mr. N. N. Solanki	Hamal	

LABORATORIES

Fluid Mechanics and Fluid Power Engineering Lab:

This laboratory is equipped with all modern turbo machines and fundamental test set up like pumps, fans, Pelton wheel turbine test set up, Francis turbine test rig, Centrifugal pump test rig, Reciprocating pump test rig, test set up for impact etc. These equipment's provide a detailed knowledge to the students to understand various fluid properties.

Refrigeration and Air Conditioning Lab:

This laboratory houses the vapor compression refrigeration system, air conditioning, heat pump setup, refrigerator to determine the most crucial performance parameters of RAC devices. This lab plays a very important role to understand various refrigeration cycles used in domestic as well as Industrial purpose.

CAD/CAM Lab:

This laboratory emphasizes on computer aided design and manufacturing, quality control and measurement too. It also provides various activities in nonconventional manufacturing, flexible manufacturing system and automation. This lab is equipped with CNC turning centre, 5 axis robot and other equipment's required as per syllabus.

Workshop and Machine Shop Lab:

Workshop has various facilities like Machine shop, Carpentry shop, Fitting shop, Welding shop, Smithy shop, Pluming shop, Foundry shop etc. to cater to hands on experience for the students. For manufacturing process, this workshop has a more no. of lathe machine, drilling machine, shaper machine, shearing machine etc.

LABORATORIES

Internal Combustion Engine Lab:

This laboratory is equipped with modern instruments like modern internal combustion engine test rig, diesel smoke meter, variable compression ratio engine test rig, five gas exhaust gas analyzers etc. In this lab, performance optimization of engine parameters like power, fuel consumption and emissions etc are being taught to the students.

Kinematics and Dynamics of machines Lab:

Students are greatly benefited by studying the demonstration of the Slider Crank Mechanism, Cam Follower Mechanism, Different Gears and Gear train Mechanism etc.

Automobile Engineering Lab:

This lab is facilitated by demonstrative instruments like disc brake model, multiple clutch model, cut section of carburetor, Diesel jeep of Mahindra & Mahindra, computerized wheel balancer, garage instruments, cut section of steering mechanism etc.

Automobile Workshop:

Automobile workshop has hands on experimental setup like machine shop, vehicle maintenance facility, wheel alignment checking and vehicle air condition recovery and recharging facility. Various maintenance procedures of different vehicle components, automobile garage practice skill etc are demonstrated to the students.

DEPARTMENTAL ACTIVITIES AND EVENTS

ORIENTATION

Orientation Programme for Mechanical Engineering Students was held by Prof. S. A. Bhatiya and Prof. P. R. PANCHAL on 18th July, 2019 at seminar hall 6204. The students were given information about the working of the college and University. They were taken around the college campus and made aware of locations of different departments and the laboratories in these departments. A booklet with details of the college, courses offered, intake, activities and annual report of the college was circulated to all the students.

INDUSTRIAL VISIT

The students of Mechanical branch visited nearby local areas of Modasa and various industries. This was done to make them aware about their responsibilities towards the society in general and their profession in particular.

(1) A visit to Kisan Cold Storage, Modasa was conducted on 5thFebruary, 2020 for 6th Semester Mechanical Engineering Students.

(2) A visit to Indo German Tool Room was conducted on 13th March, 2020 for 6th Semester Mechanical Engineering Students.

Activities under DIC:

Design Incubation center is a project received by GTU from MHRD, wherein, GTU is the hub and GEC Modasa is one of the spokes.

Training on Solid Works

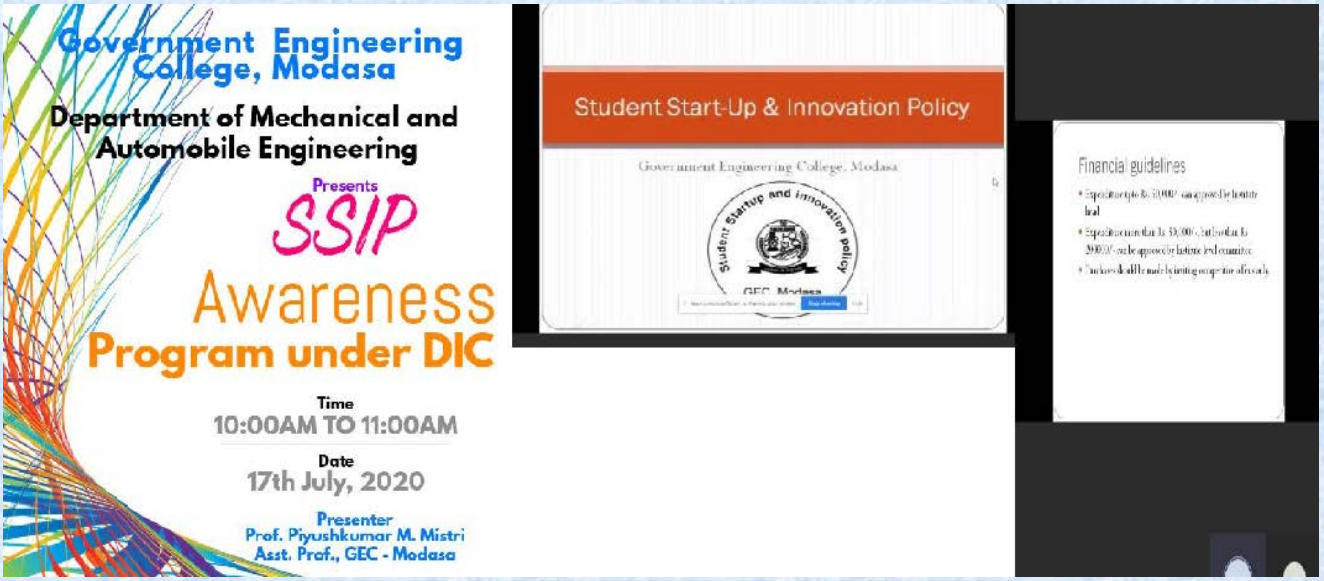
The department of Mechanical and Automobile Engineering of GEC Modasa organized a five-day Project based Online Training on Solid Works from 19th to 23rd March, 2020 for pre-final year students of Mechanical Engineering, as they had Computer Aided Design (CAD) as a subject. Training was coordinated by Prof. H R Prajapati and Dr. U V Shah, Head of Department, Mechanical Engineering under guidance of Dr. B. J. Shah, Principal GEC, Modasa in association with SAI CAD Centre Mehsana. Total 55 students registered from Mechanical Engineering by online filling Google form. For this training two trainers were provided by SAI CAD Centre along with sixty days free trial of Solid Works software to all participant students.

Two experts from the SAI CAD CENTRE namely Mr. Mukesh Yogi and Mr. Setu Nandaniya delivered theory and practical sessions on all five days.

SSIP Awareness Program under DIC

The Department of Mechanical Engineering Organized a Student Startup and Innovation Policy Awareness Program on 17thJuly, 2020 under Design Innovation Center (DIC) spoke, GTU. The program was coordinated by Prof. P. M. Mistri, Assistant Professor and DIC Co-cordinator under the Guidance of Dr. U. V. Shah, H.O.D., Mechanical and Automobile Engineering Department and Coordinator of DIC Spoke at GEC Modasa, Dr. H. D. Mehta, Associate Professor and Institute SSIP Cell Coordinator and Dr. B. J. Shah, Principal, GEC Modasa.

About 55 students actively participated in the program through Microsoft Teams. Prof. P. M. Mistri covered all the aspects related to Start-up, Innovation, and intellectual



Property Rights and heal so mentioned how to get the financial assistance at GEC, Modasa for any Innovative idea.

RUSA (Rashtriya Uchhatar Shiksha Abhiyan)

RUSA is a Centrally Sponsored Scheme (C.S.S.) from MHRD for providing strategic funding under various components to attain higher levels of access, equity and excellence in the State Higher Education System with greater efficiency, transparency, accountability and responsiveness.

Government Engineering College, Modasa has been allotted grant from 2016 by Knowledge consortium of Gujarat (KCG) under RUSA component

(1) Component 9 (Equity Initiatives) of Rs. 3,93,700/-
(2) Component 12 (vocationalization of Higher Education) of Rs.10,86,956/-

Remedial classes for Engineering Graphics and Design and Basic Mechanical Engineering for Semester -1 in were conducted in December 2019 under RUSA component.

STUDENT ACHIEVEMENTS

1. Karan Sadhwani qualified in GATE-2020 exams with an All India rank of 20774.

STUDENT'S PROJECT

With a view to promote research, innovation and entrepreneurship, Education Dept. Govt. of Gujarat has implemented a student start up and innovation policy (SSIP). In this regard, the institute has received a grant of Rs. 20 lakhs through MOU between GKS and GEC, Modasa made on 13/10/2017 at Gandhinagar, Gujarat.

The following POC's have been sanctioned from Mechanical Engineering at the institute level.

Sr. No.	Year	Title	Type	Leader	Team Members	Guides
1	2019-20	Modification of Air Conditioner	PoC	Mistry Urvish	1.Mistry Urvish 2.Joshi Urvik 3.Khant Renish 4.Patel Kishan	Prof. P. M. Mistri
2	2019-20	Defence Robo Using Gesture Control	PoC	Nishad Joshi	1.Nishad Joshi 2.Gothi Ronak	Prof. P. K. Gajjar
3	2020-21	Aadhar Pay	PoC	Prajapati Shailesh Nareshbhai	1. Prajapati Shailesh 2. Varu Divyesh 3.Mishra Vimalkumar 4. Jayswal Rahul	Prof. P. M. Mistri
4	2019-20	Fabrication and modification of Jet engine and its nozzle	PoC	Shah Maunish O.	1.Maunish Shah 2.Aniket Shah 3.Abhishek Prajapati 4.Radhika Rathod	Prof. P. M. Mistri
5	2019-20	Smart irrigation system.	PoC	Prajapati Shailesh N.	1.Prajapati Shailesh 2. Darji Darsh 3. Goswami Jilgiri 4. Harshit Trivedi B. 5. Kinkar Rohini R.	Prof. P. M. Mistri

Faculties Pursuing Ph.D.

Sr. No.	Name of Faculty	Research Area	Ph.D. Pursued from University
1	Prof. N. V. Bora Associate Professor	Solar Thermal	Gujarat Technological University
2	Prof. S. P. Patel Associate Professor	I.C. engines	Gujarat Technological University
3	Prof. P. M. Mistri Assistant Professor	Thermal	Indus University
4	Prof. M. G. Patel Assistant Professor	Thermal	Gujarat Technological University
5	Prof. J.C. Gamit Assistant Professor	Thermal	SVNIT, Surat
6	Prof. M. J. Vanzara Assistant Professor	Thermal	IIT, Roorkee
7	Prof. K. S. Banker Assistant Professor	Manufacturing	C.U. Shah University
8	Prof. Pradip Gajjar Assistant Professor	Welding and Metallurgy Process	Gujarat Technological University
9	Prof. Pratik Parekh Assistant Professor	Manufacturing Process	Gujarat Technological University
10	Prof. Samrudhdhi Patel Assistant Professor	Vibration based fault diagnosis of Bearing	Gujarat Technological University

BOOKS PUBLISHED

Sr. No.	Name of faculty	Designation	Title of BOOK	Publication
1	Prof. H R Prajapati	Assistant Professor	Manufacturing Technology	BOOKS INDIA

PAPERS PRESENTED /PUBLISHED

Sr. No.	Name of Faculty	Title of Paper Presented/Published	Seminar/ Conference	ISSN/ ISBN No.
1	**Prof. U.V. Shah Associate Professor**	Numerical Investigation for the Determination of Equal Vibration Amplitude	International Conference on Recent Trends in Science and Technology	ISSN:2005-4238
2	**Prof N V Bora Associate Professor**	Thermal performance enhancement of solar collectors by surface geometric modifications on the heated surface, use of solar selective coatings and nano-fluids	International Advanced Research Journal in Science, Engineering and Technology	ISSN 2394-1588
3	**Prof N V Bora Associate Professor**	Passive heat transfer augmentation techniques to enhance the performance of solar collectors	International Journal of Innovative Research in Technology	ISSN:2349-6002
4	**Prof. H. R. Prajapati Assistant Professor**	Measurement of Stress Concentration Factor for Shoulder Fillet on Flat Plate under Axial Tension using Photo elasticity Method and FEA	International Journal of Innovative Technology and Exploring Engineering	ISSN:2278-3075
5	**Prof. M. J. Vanjara Assistant Professor**	Experimental investigation of mass flow rate in adiabatic capillary tube for R-32	ICTFES – 2020	
6	**Prof. P. M. Mistri Assistant Professor**	Developing a new model of existing spilt air conditioner	International Research Journal of Engineering and Technology	ISSN:2395-0072
7	**Prof. P. M. Mistri Assistant Professor**	A Scientific Pore over a Solar Cooking Systems	International Journal of Recent Technology and Engineering	ISSN:2277-3878

SEMINAR/WEBINAR ORGANIZED

1. A webinar on "**Design Thinking - a tool for Innovation**" was organized on 15th May, 2020 and was conducted by Prof. Piyushkumar Mistri.
2. A webinar on "**Project based online training on SOLIDWORKS**" was organized on 19th March, 2020 and was conducted by Prof. H.R. Prajapati.
3. A webinar on "**From snapshots to real Photography**" was organized on 27h May, 2020 and was conducted by Prof. Milap Madhikar.
4. A Seminar on "**SSIP policy awareness**" was organized on 17thJuly, 2020 and was conducted by Prof. Piyushkumar Mistri.

FACULTY ACHIEVEMENT

Prof. H. R. Prajapati, Assistant Professor in Mechanical Engineering, completed his Ph.D. from Ganpat University, Kherva on **"Investigation of optimal stress concentration factor for shoulder fillet on round bars under various loading conditions".**

Change in Faculty Position

Sr. No.	Name of Faculty	Designation	Date of joining/ Date of getting relieved	New recruit/ Transfer
1	Prof. S. P. Patel	Assistant Professor	28/01/2020	Transferred from VGEC, Chandkheda
2	Prof. J. M. Joshi	Assistant Professor	27/01/2020	Transferred to VGEC, Chandkheda
3	Prof. M. M. Madhikar	Assistant Professor	31/01/2020	Transferred from GEC, Surat


Computer & I.T. Dept.
Mechanical & Automobile Engg. Dept.
E.C. Dept.
Mechanical Workshop
Post Office
Principal Bunglow
Hostel-D
Gymkhana
Library
Staff Quarters
Helipad
Civil Engg. Dept.
PWD Store
Play Ground
Electrical Engg.Dept.
Workshop
Proposed Hostel
Hostel-B
Hostel-C
Hostel-A
Main Gate
Private Land
Private Land
To Shamlaji
State Highway No.-5
To Modasa