

**GOVERNMENT ENGINEERING COLLEGE, MODASA**



**MECHANICAL ENGINEERING DEPARTMENT**

# Newsletter

[ JUNE 2021 ]



## 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 undergraduate 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 conducive 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 120 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. This department has two wings, one at Workshop Building and another at New Academic Building i.e. Building No. 6



# VISSION 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
1	Dr. U. V. Shah	Professor & Head
2	Prof. N. V. Bora	Associate Professor
3	Dr. M. I. Vyas	Associate Professor
4	Prof. S. P. Patel	Associate Professor
5	Dr. B. C. Khatri	Associate Professor
6	Prof. K. P. Prajapati	Assistant Professor
7	Prof. R. B. Shah	Assistant Professor
8	Prof. S. P. Patel	Assistant Professor
9	Prof. M. J. Vanjara	Assistant Professor
10	Prof. M. M. Madhikar	Assistant Professor
11	Prof. P. R. Parekh	Assistant Professor
12	Prof. P. R. Panchal	Assistant Professor
13	Prof. K. S. Banker	Assistant Professor
14	Prof. P. K. Gajjar	Assistant Professor
15	Prof. P. M. Mistri	Assistant Professor
16	Prof. H. R. Prajapati	Assistant Professor
17	Prof. M. G. Patel	Assistant Professor
18	Prof. H. I. Chaudhari	Assistant Professor
19	Prof. J. C. Gamit	Assistant Professor
20	Prof. Y. M. Bhoya	Assistant Professor
21	Prof. R. B. Gadhavi	Assistant Professor
22	Prof. R. N. Bodar	Assistant Professor
23	Prof. A. R. Patel	Assistant Professor
24	Prof. S. A. Bhatia	Assistant Professor
25	Prof. J. R. Bhavsar	Assistant Professor
26	Prof. S. L. Ghanchi	Assistant Professor
27	Mr. V. A. Bhavsar	Instructor Turner
28	Mr. I. R. Kalasva	Instructor Fitter
29	Mrs. Y. A. Kazi	Lab Assistant
30	Mrs.H.M.Vankar	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, Plumbing 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.



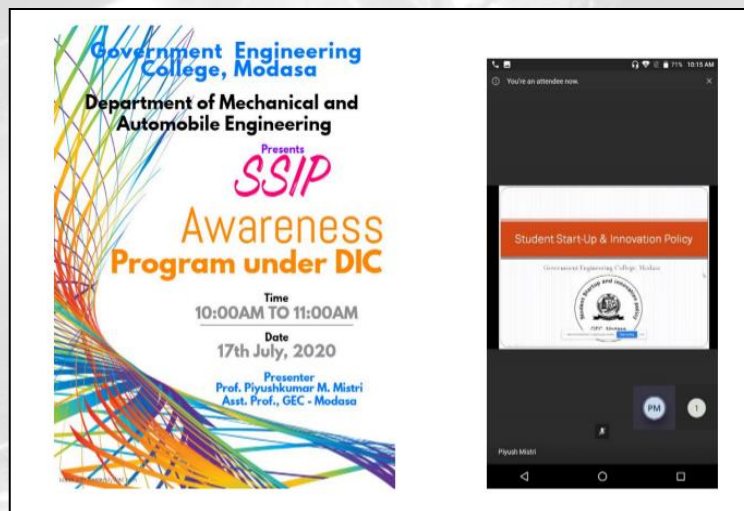
### Heat Transfer Lab:

This lab course is primarily being offered to the III Year B.E. Mechanical Engineering Students to make them understand the principles of i.e. conduction, convection, Radiation boiling and Condensation modes of heat transfer and principles of Refrigeration and Air Conditioning. laboratory is equipped with the set up of Pin Fin Apparatus, Heat transfer in Natural convection, Composite Wall Apparatus etc.

## DEPARTMENTAL ACTIVITIES AND EVENTS

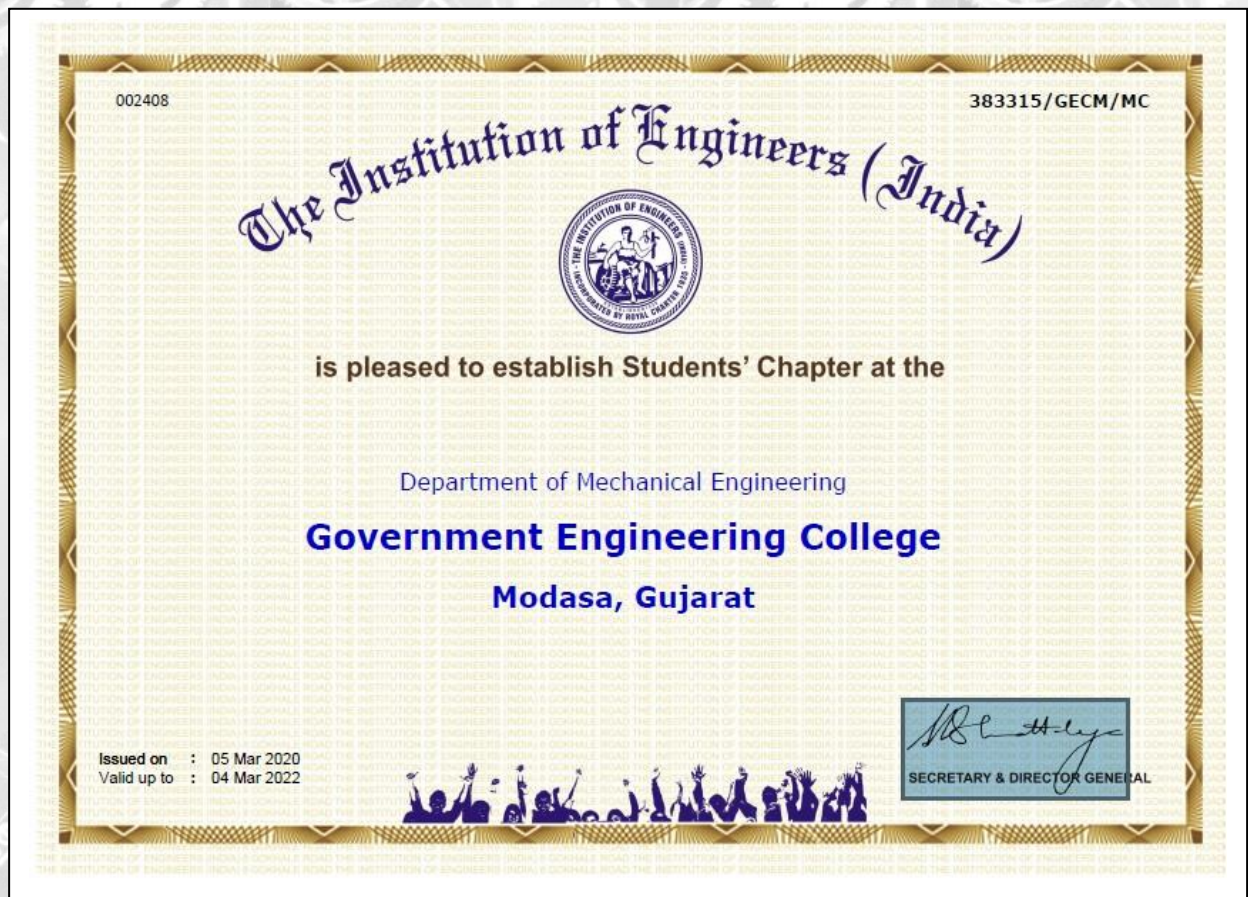
### SSIP Awareness Program for Mechanical Department students

The Department of Mechanical Engineering has Organized Student Startup and Innovation Policy Awareness Program on 17th July, 2020 under Design Innovation Center (DIC) spoke, GTU. The program was coordinated by Prof. P. M. Mistri, Assistant Professor and DIC Co-coordinator 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. 55 students have actively participated in the program through Microsoft Team. Prof. P. M. Mistri has covered all the aspects related to Start-up, Innovation, Intellectual Property Rights and he has also mention how to get the financial assistance at GEC Modasa for any Innovative Idea. Please find below the details of the program.



## THE INSTITUTION OF ENGINEERS STUDENTS CHAPTER

Mechanical Engineering Department has established Institution of Engineers Students Chapter on 5th March 2020. Inauguration of Student Chapter Institute of Engineers (India) of Civil (383315/GECM/CE) and Mechanical (383315/GECM/MC) Engineering Department and Webinar on “Engineering Architectural Drawing” in association with The Institution of Engineers (India) Gujarat State Centre and Water Management Forum (WMF) Ahmedabad was organized at Government Engineering College, Modasa On 10th September 2020 @ 11:30AM on Google Meet.



## ❖ Awareness Program On “Road Safety and First Aid (108):

Department of Mechanical and Automobile Engineering organized an seminar for the awareness on Road safety and First aid(108) on 17.02.2021 (Wednesday) under Design Innovation Center(DIC),Modasa,in collaboration with Regional Transport Office Modasa and 108 Emergency Department Modasa. Seminar started at 11:30 a.m. and total 34 students from both departments have participated considering the Covid-19 Guidelines provided by Gujarat Govt. Dr. U.V. Shah, Prof. & Head of the Department, Prof. P.M. Mistri (Asst. Prof. Mechanical Engg. Dept.) and Prof. K.V. Vaghela ( Asst. Prof. Automobile Engg. Dept.) coordinated Sub inspector , RTO and his team and Project coordinator,108 Emergency dept and his team to make success of this seminar.



## TRAINING ATTENDED BY FACULTY

Sr. No.	Name of faculty & Designation	Title of training	From	To	Venue
1	Dr. Utpal Vindodchandra Shah	W-3 Course outcomes and domains of learning	14/6/2020	14/6/2020	Online Webinar by NITTTR, Bhopal
2	Dr. Utpal Vindodchandra Shah	W-6 Development and use of rubric for effective assessment	28/06/2020	28/06/2020	Online Webinar by NITTTR, Bhopal
3	Prajapati Hirenkumar Rameshbhai	Comprehensive online intellectual property rights (IPR)	6/7/2020	14/9/2020	Gujarat Student Startup and Innovation Hub ( i - Hub )
4	Gamit Jigar Chhanabhai	UDAYAM (Unlimited Digital Advanced Yearlong Academic	28/7/2020	18/8/2020	Knowledge Consortium of Gujarat
5	Gamit Jigar Chhanabhai	Comprehensive online intellectual property rights (IPR)	6/7/2020	14/9/2020	Gujarat Student Startup and Innovation Hub ( i - Hub )
6	Gamit Jigar Chhanabhai	Latex	2/10/2020	31/10/2020	CiC3 & Design Innovation Centre(DIC), GTU
7	Gamit Jigar Chhanabhai	Teacher Support Program	5/11/2020	5/11/2020	Cambridge Assessment-English
8	Patel Mitalkumar Gulabbhai	Green Technology & Sustainability Engineering	21/9/2020	25/9/2020	A D Patel Institute of Technology, V V Nagar

<b>Sr. No.</b>	<b>Name of faculty &amp; Designation</b>	<b>Title of training</b>	<b>From</b>	<b>To</b>	<b>Venue</b>
9	Patel Mitalkumar Gulabbhai	UDAYAM (Unlimited Digital Advanced Yearlong Academic	28/7/2020	18/8/2020	Knowledge Consortium of Gujarat
10	Patel Mitalkumar Gulabbhai	Comprehensive online intellectual property rights (IPR)	6/7/2020	14/9/2020	Gujarat Student Startup and Innovation Hub ( i - Hub )
11	Patel Mitalkumar Gulabbhai	Latex	2/10/2020	31/10/2020	CiC3 & Design Innovation Centre(DIC), GTU
12	Patel Mitalkumar Gulabbhai	Teacher Support Program	5/11/2020	5/11/2020	Cambridge Assessment-English
13	Rahulkumar Bipinchandra Shah	UDAYAM (Unlimited Digital Advanced Yearlong Academic	28/7/2020	18/8/2020	Knowledge Consortium of Gujarat
14	Rahulkumar Bipinchandra Shah	Comprehensive online intellectual property rights (IPR)	6/7/2020	14/9/2020	Gujarat Student Startup and Innovation Hub ( i - Hub )
15	Rahulkumar Bipinchandra Shah	Green Technology & Sustainability Engineering	15/12/2020	19/12/2020	L.D. College of Engineering, Ahmedabad
16	Bhoya Yogeshkumar Madhubhai	Comprehensive online intellectual property rights (IPR)	6/7/2020	14/9/2020	Gujarat Student Startup and Innovation Hub ( i - Hub )

<b>Sr. No.</b>	<b>Name of faculty &amp; Designation</b>	<b>Title of training</b>	<b>From</b>	<b>To</b>	<b>Venue</b>
17	Bhoya Yogeshkumar Madhubhai	Computational Fluid Dynamics	18/6/2020	20/6/2020	Bharatiya Vijnan Mandali
18	Bhoya Yogeshkumar Madhubhai	UDAYAM (Unlimited Digital Advanced Yearlong Academic	28/7/2020	18/8/2020	Knowledge Consortium of Gujarat
19	Milapkumar Mohanbhai Madhikar	Comprehensive online intellectual property rights (IPR)	6/7/2020	14/9/2020	Gujarat Student Startup and Innovation Hub ( i - Hub )
20	Milapkumar Mohanbhai Madhikar	UDAYAM (Unlimited Digital Advanced Yearlong Academic	28/7/2020	18/8/2020	Knowledge Consortium of Gujarat
21	Banker Kapildev Sevantilal	Comprehensive online intellectual property rights (IPR)	6/7/2020	14/9/2020	Gujarat Student Startup and Innovation Hub ( i - Hub )
22	Kiran Prabhakar Prajapati	Comprehensive online intellectual property rights (IPR)	6/7/2020	14/9/2020	Gujarat Student Startup and Innovation Hub ( i - Hub )
23	Samruddhi Patel	Comprehensive online intellectual property rights (IPR)	6/7/2020	14/9/2020	Gujarat Student Startup and Innovation Hub ( i - Hub )

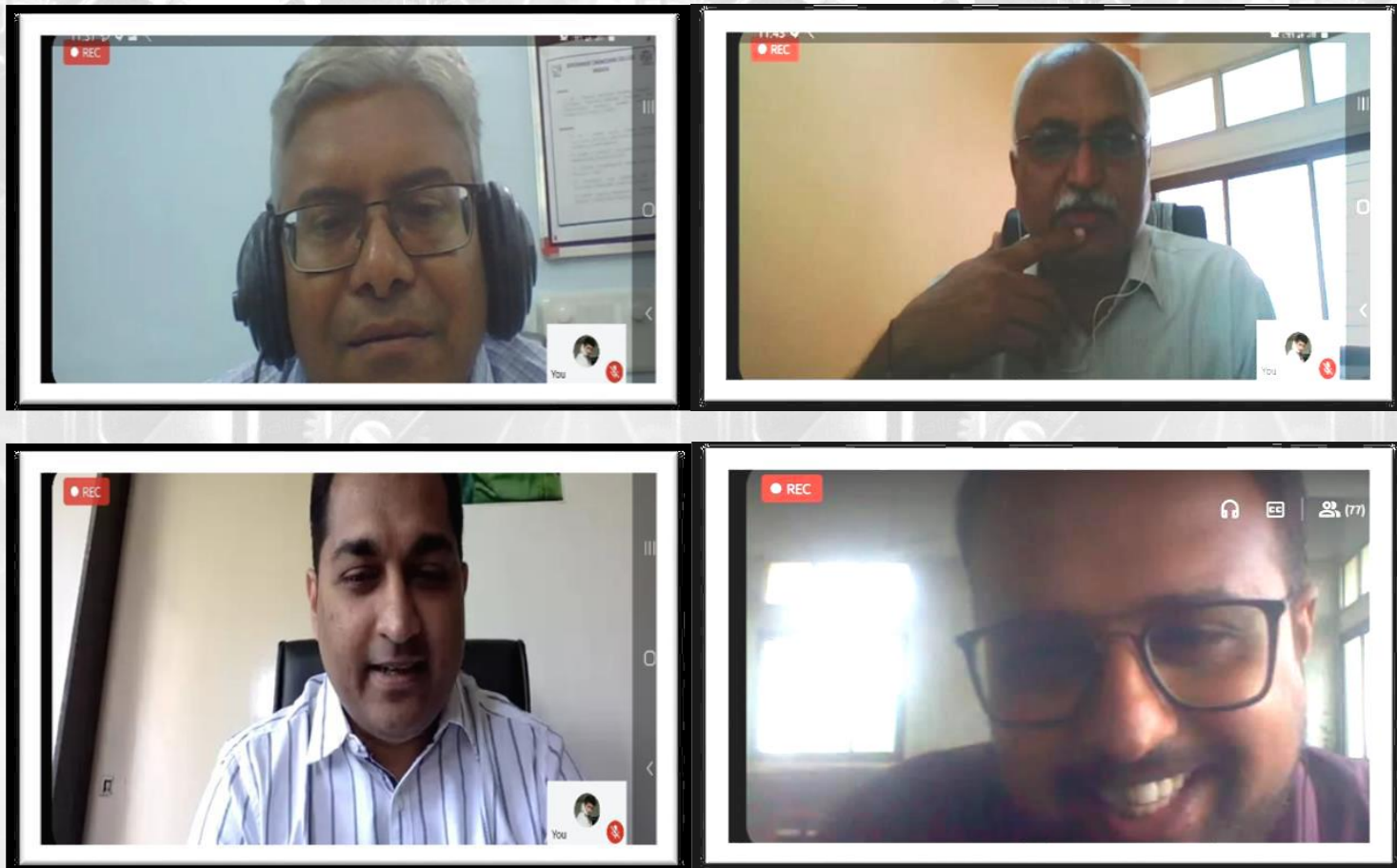
Sr. No.	Name of faculty & Designation	Title of training	From	To	Venue
24	Samruddhi Patel	UDAYAM (Unlimited Digital Advanced Yearlong Academic	28/7/2020	18/8/2020	Knowledge Consortium of Gujarat
25	Nisha Bora	Comprehensive online intellectual property rights (IPR)	6/7/2020	14/9/2020	Gujarat Student Startup and Innovation Hub ( i - Hub )
26	Nisha Bora	UDAYAM (Unlimited Digital Advanced Yearlong Academic	28/7/2020	18/8/2020	Knowledge Consortium of Gujarat
27	Mistri Piyushkumar Manubhai	Effective Engineering Teaching in Practice	Jan 2021	Feb 2021	NPTEL - AICTE FDP (Online)

## PAPERS PRESENTED /PUBLISHED

Sr. No.	Name of Faculty	Title of Paper Presented/Published	Seminar/ Conference	SSN/ ISBN No.
1	Prof.Nisha Bora	Passive heat transfer augmentation techniques to enhance the performance of solar collectors	International Journal of Innovative Research in Technology	Vol 7 , Issue 1 , June 2020
2	Prof.Nisha Bora	Performance enhancement of solar collector by geometric modifications on the heated surface, use of solar selective coatings and nano-fluids	International Advanced Research Journal in Science, Engineering and Technology	Vol 7 , Issue 5 , June 2020
3	Dr. H R Prajapati	Estimation of SCF for a plate with hole under axial tension loading	International Conference on Innovations in Smart Technology, Advanced Materials and Communication Engineering	

❖ **Webinar:**

Design Innovation Centre, Spoke Government Engineering College, Modasa and Mechanical Engineering Department organized a webinar on “Design thinking as strategic tool for innovation and creating startup” on 6th October, 2020 for the students to get benefits of Design Innovation Centre (DIC) – Modasa Spoke.



**(Invited dignitaries along with guest speaker)**

Dignitaries who were present on this occasion were:

Dr. B.J.Shah (Principal, GEC Modasa), Dr.U.V.Shah (DIC Coordinator, Associate professor and H.O.D. Mechanical Engg). Expert was invited Mr. Karmjitsinh Bihola ( MS (Product Design-USA,B.E. (Mechanical) Founder, Innodesk Designovation services, Gujarat,India). Event was coordinated by Prof. Piyushkumar Mistri (DIC Co-coordinator, Assistant professor, Mechanical Department, GEC Modasa) and Moderator Mr. Javvad Kadiwala (DIC Spoke Modasa, Project Assistant).

## ❖ Webinar:

Design Innovation Centre, Spoke Government Engineering College, Modasa and Mechanical Engineering Department organized a webinar on “Crash Investigation & Its Importance” on 13th October, 2020 for the students to get benefits of Design Innovation Centre (DIC) – Modasa Spoke.

Dignitaries who were present on this occasion were:

Expert was invited Mr. Unmit Parmarm (Crash Investigator at JP Research India Pvt Ltd). Event was coordinated by Prof.R.B.Shah (Assistant professor, Mechanical Engineering Department)

**5 Phases of a Crash**

SAFETY RESEARCH FOUNDATION

Possible Perception → Actual Perception → Point of Action → Point of Impact → Final Resting Position

**Application of Injury Research**

**Clinical applications**

- Injury severity and outcome
- Risk of disability
- Cost and Period of hospitalisation
- Infrastructure of hospitals and EMR

**Biomechanical applications**

- Improved and safer vehicle design
- Improved safety system
- Better roads and road furniture

## ❖ SSIP Awareness Program for Mechanical Department students :

Design-centered innovation is a force multiplier that help the country move-up the value chain, making Indian industry globally competitive. In this context, Ministry of Human Resource Development processes to launch a Nation initiative for design innovation in the twelfth plan.

Mechanical Engineering Department organized offline-on-campus event on 06-02-2021 that was -coordinated by Prof. P.M. Mistry and Prof. K.V. Vaghela , Speaker: Mr Nishad Joshi, and was attended by 160 participants.



**SSIP**



**Government Engineering College, Modasa**  
**Student Startup and Innovation Cell, GECM**  
**Design Innovation Centre (Spoke – GECM)**

**Cordially invites you for the**

**Webinar on**

**“Awareness of Student Startup and Innovation Policy (SSIP) and Design Innovation Centre (DIC) at GECM”**

**On 6<sup>th</sup> February 2021 @ 11:15 AM on Microsoft Team**  
**For B.E. First Year Regular and B.E. Second Year D to D students of**  
**Mechanical and Automobile Engineering, GECM**

**:Invited Guest:**



**Mr. Nishad Joshi (Er.)**  
(Alumni of GEC Modasa)  
Dosepack India LLP. (Meditab Software Inc.)  
Expert In: Mechanical Design, Robotics R&D, 3D  
Printing, Production Management

**Organized By:**

**Department of Mechanical and Automobile Engineering**  
**Government Engineering College, Modasa**

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Patron	DIC Spoke Coordinator	Institute SSIP Coordinator	Dept. SSIP Coordinator (Mech.)	Dept. SSIP Coordinator (Auto.)
<b>Dr. B. J. Shah</b> Principal GEC - Modasa	<b>Dr. U. V. Shah</b> Prof. and Head Mech./Auto. Dept. GEC-Modasa	<b>Dr. S. S. Singh</b> Professor Civil Dept. GEC-Modasa	<b>Prof. P. M. Mistry</b> Asst. Professor Mech. Dept. GEC-Modasa	<b>Prof. K. V. Vaghela</b> Asst. Professor Auto. Dept. GEC-Modasa
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### ❖ Student's Achievements:

With a view to promote research, innovation and entrepreneurship, Education Department 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.

Name of Team Leader	Name of Innovation/ Start Up	Sanctioned Amount (INR)
Thakkar Megh N.	Vibration analysis of shaft bearing mechanism	49000/-

### 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. Vanjara 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

## Change in Faculty Position

Sr. No.	Name of Faculty	Designation	Date of joining/ Date of getting relieved	New recruit/ Transfer
1	Dr. M. I. Vyas	Associate Professor	1/1/2021	Transferred to VGEC, Chandkheda

