

## About GDEC

GIDC Degree Engineering College (GDEC) is a joint venture of Government of Gujarat and Gujarat Industrial Development Corporation established in 2012 under Public Private Partnership (PPP) mode and managed by GIDC Education Society (GES). Institute is approved by All India Council of Technical Education (AICTE) and affiliated to the Gujarat Technological University (GTU). The institute offers UG courses in Mechanical, Civil, Automobile, Computer and Electrical disciplines. The institute has qualified, experienced faculty and staff to take up the responsibility of knowledge transfer, excellent infrastructure in environment friendly atmosphere, fully equipped laboratories with latest technology that helps the students to grow in current competitive era and become industry ready. The institute is aimed to explore undergraduate Engineering Education in Navsari District for the students with the tools they need to succeed professionally, including a comprehensive subject knowledge based in four years of rigorous classroom study, hands-on involvement in academic and industry research projects and practical experience through internships in industry.

## About the Mechanical Engineering Department

The department of Mechanical Engineering offers B. E. in mechanical engineering. The department has an energetic team of highly qualified, dedicated and experienced faculty in order to contribute to the technical education as a whole and helps to mould young engineers by igniting in their minds the flame of inquisitiveness. The department impart quality engineering education through sound theoretical knowledge, hands-on laboratory as well as computational skills and exposure to technological advances in the outside world. The department has well-equipped laboratories:

- Basic Mechanical,
- Machines and Mechanisms,
- Fluid and Hydraulic,
- Metrology,
- Materials and Metallurgy,
- Renewable Energy,
- Dynamics and Vibration,
- Heat Transfer,
- CAD/CAM,
- Refrigeration and Air Conditioning Central Mechanical Workshop

GIDC Degree Engineering College  
Abrama, Navsari (Gujarat)  
(Managed by GIDC Education Society)



Online Faculty Development Programme  
on

## Metallurgical Testing and Failure Analysis of Metals

(13.09.2021 - 17.09.2021)

under the aegis of



AICTE Training And Learning Academy

Organized by

Department of Mechanical Engineering,  
GIDC Degree Engineering College

- : Address : -

Block No.997, Village Abrama, Tal. Jalalpore  
Dist. Navsari- 396406.Gujarat, India.  
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## Theme of the Course

In the context of current developments of advanced scientific phenomenon and their utilization in the action of complex engineering machines, an extraordinary demand has been imposed by design engineers on the materials that suit the need of interaction among the elements of safety, reliability, and economics of production, and even those of art and aesthetics. Under these constraints, it is essential that the design engineer takes into account the possibility or probability of failure and suitable measures to avoid them totally or to minimize the damages if they become inevitable. Failure analysis thus comes into real time test which plays a significant role in achieving the target of high system/ structure reliability at a low cost and high safety factor. An analysis of the in-process and service failures yields valuable information about their causes and the measures to be taken in design, manufacture, quality assurance and maintenance so as to reduce or avoid such failures. The primary objective of this course is to offer a common platform to researchers from industry, R & D organization and academic institutes, who are working in different mechanical and metallurgical sub domains with huge involvement of metal failure analysis. The course briefly discusses the fundamentals of metallurgical failure, why do materials fail, failure investigation and prevention, as well as the fracture mechanism and corrosion related failures. The knowledge gained allows the professional to design the product that will be less prone to metallurgical failures.

## Topics to be covered

The course will cover the following domains.

- Introduction to failure and fracture
- Fundamentals of metallurgy
- Metal properties and failures
- Types and characteristics of defects
- Mechanical and metallurgical testing
- Concept and mechanism of failure
- Techniques of failure analysis and quality control
- Case studies

## Organizing Committee

**Patron:** Prof. Dr. N.D. Sharma, Principal, GDEC

**Coordinator:** Prof. Dr. H. S. Patil, Prof. & Head, MED

**Co-Coordinator:** Dr. D. C. Patel, Asso. Prof., MED

**Committee Members:**

- Asst. Prof. A.M. Nayak
- Asst. Prof. H.B. Patel
- Asst. Prof. B.H. Gajera
- Asst. Prof. H.C. Rana
- Asst. Prof. B.S. Naik

## Who should attend?

The faculty members of the AICTE approved institutions, Ph.D/PG Scholars, participants from Government, Industry and staff of host institutions.

## Registration

There is no registration fee. Registration acceptance will be on first come first serve basis. E-certificate will be given to only those participants having minimum 80% attendance and 60% marks in test conducted by the coordinator on last day. Registration link:

<https://atalacademy.aicte-india.org/signup>

For any query contact: **Mr. B. H. Gajera(9925713504)**  
**Mr. H. C. Rana(8980338825)**

## Key Speakers

- **Dr. U. Kamachi Mudali**, Vice Chancellor, VIT Bhopal University & Formerly Distinguished Scientist, Department of Atomic Energy(DAE), Chief Executive & Chairman of Heavy Water Board, Mumbai; Director, Materials Chemistry & Metals Fuel Cycle Group & Associate Director, Corrosion Science & Technology Group, Indira Gandhi Centre for Atomic Research, Kalpakkam
- **Dr. Vakil Singh**, Emeritus Professor, Department of Met. Engg., IIT (BHU), Varanasi
- **Dr. G. S. Mahobia**, Associate Professor, Dept. of Met. Engg., IIT (BHU), Varanasi
- **Dr. Sanjay N.Soman**, Former Professor & Head, Met. & Mat. Engg. Dept., MS University, Baroda
- **Dr. K. Srinivasa Rao**, Professor, Met. Engg. Dept., A.U.CoE(A), Andhra University, Visakhapatnam
- **Dr. Jyoti V. Menghani**, Asso. Professor, MED, SVNIT, Surat
- **Dr. S. B. Arya**, Assistant Professor, Met. & Mat. Engg. Dept., NITK, Surathkal
- **Dr. B. J. Chauhan**, Head & Associate Professor, Met. & Mat. Engg. Dept., MS University, Baroda
- **D. R. Lodhari**, Associate Professor, Met. & Mat. Engg. Dept., MS University, Baroda
- **Dr. P. K. Nanavati**, Asst. Professor, Met. Dept., Government Engineering College, Gandhinagar
- **K. H. Patel**, Asst. Prof., Met. Dept., MSU, Baroda

**Prof. Dr. H. S. Patil**

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