

Overview of the Course

The past two decades have witnessed revolutionary changes in the way thermodynamics is taught, researched and practiced. The emphasis is now on system analysis and thermodynamic optimization, not only in the mainstream of engineering but also in physics, biology, economics and management. The methods of exergy analysis, entropy generation minimization and thermo-economics are the most visible and established forms of this change. The concept of exergy belonged to the field of fundamental thermo physical science or to the applied engineering sciences, such as thermo mechanical and chemical engineering. Exergy analysis is a method that uses the conservation of mass and conservation of energy principles together with the second law of thermodynamics for the analysis, design and improvement of energy and other systems. Today there is a much stronger emphasis on exergy aspects of systems and processes. As a result of these recent changes and advances, exergy has gone beyond thermodynamics and become a new distinct discipline because of its' interdisciplinary character as the confluence of energy, environment and sustainable development. The course will therefore provide a systematic approach of exergy techniques for various systems and processes as well as highlight how energy resources can be utilized in societies.

The course provides detailed information on energy and exergy analysis. Starting with fundamental principles and basic aspects of energy, entropy and exergy along with applications to drying, power plants, cryogenic

systems, crude oil distillation and fuel cells will be covered in the course. Participants will be able to solve problems related to exergy analyses in the practical sessions. The course would help the participants to develop skills in model formulation, analysis and solution of the model equations which will be helpful for further successful performance enhancement of any system.



Dr. Ibrahim Dincer is Professor in Department of Automotive, Mechanical and Manufacturing Engineering, University of Ontario Institute of Technology, Canada. His research areas include: Drying, Energy and exergy analyses, Energy conversion and management, Hydrogen and fuel cell systems, Refrigeration, Renewable energies and Thermodynamics. Prof. Dincer has served as Editor-in-chief/Editorial Board Member for several journals which include: International Journal of Energy Research, International Journal of Exergy, etc. Prof. Dincer has guided 72 Masters, 76 PhD and 61 PDF students and currently 8 Masters, 11 PhD and 4 PDF students are working under his guidance. Prof. Dincer has completed about 62 research projects totaling more than \$6,165,000 and involved in more than 200 project reports. Multiple patents filed by Prof. Dincer are under active consideration. Prof. Dincer is Vice President for Strategy in International Association for Hydrogen Energy (IAHE) and Vice-President for World Society of Sustainable Energy Technologies (WSSET). Prof. Dincer has published 808 papers in refereed journals, 404 Papers in Refereed Proceedings in International Conferences, 22 Refereed Edited Books and Proceedings, 120 Refereed Book Chapters/Contributions and has 20,000 Citations.

Who can participate?

This program is open to the Faculty, PG and Research students of Chemical, **Mechanical and allied Engineering disciplines** from various Institutes. Practicing Engineers from industries can also participate.

How to Register?

Stage-1: Web Portal Registration: Visit <http://www.gian.iitkgp.ac.in/GREGN/index> and create login User ID and Password. Fill up the blank registration form and do web registration by paying Rs. 500/- online through Net Banking/Debit/Credit card. This provides the user with life time registration to enroll in any number of GIAN courses offered.

Stage-2: Course Registration:

Login to the GIAN portal with the user ID and Password already created in Step 1. Click on Course Registration option at the top of Registration form. Select the Course titled "Exergy Analysis of Industrial Processes" from the list and click on Save option. Confirm your registration by clicking on Confirm Course.

Registration Fee:

Faculty	Rs. 4,000/-
Participants from Industry /Research Organizations	Rs. 10,000/-
Students & Research Scholars	Rs. 1,500/- Rs. 2,000/-
• Without award of Grade	
• With award of Grade	
Students from abroad	\$ 300

Boarding & Lodging Fee:

Faculty, Participants from Industry /Research Organizations	Rs. 4,000/- Accommodation -Visitors Block
Student & Research Scholar	Rs. 2,500/- Accommodation -Institute Hostel

Selection and Mode of Payment

Selected candidates will be intimated through e-mail. They have to remit the necessary registration fee (**Mandatory for all**) and boarding & lodging fee (**if required**) to the Bank as per the details given below:

Account Name	GIAN NITW
Account No.	62447453600
Bank	State Bank of India
Branch	REC Warangal (NIT Campus)
Branch Code	20149
IFSC	SBIN0020149
MICR Code	506002030
SWIFT Code	SBININBB018

Candidates registering early will be given preference in short listing process.

For any queries regarding registration of the course, please contact the National Coordinators:

Dr. V. Ramsagar & Prof. A. Sarath Babu
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National Institute of Technology
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About GIAN Course

MHRD, Govt. of India has launched an innovative program titled “Global Initiative of Academic Networks (GIAN)” in higher Education, in order to garner the best international experience. As part of this, internationally renowned Academicians and Scientists are invited to augment the Country’s academic resources, accelerate the pace of quality reforms and elevate India’s scientific and technological capacity to global excellence.

About the Institute and Warangal

National Institute of Technology, Warangal (NITW) formerly known as RECW is the first among seventeen RECs set up in 1959. Over the years, the Institute has established itself as a premier Institution in imparting technical education of a very high standard, leading to B.Tech, M.Tech and Ph.D. programs in various specializations of Science and Engineering streams.

Warangal is known for its rich historical and cultural heritage. It is situated at a distance of 140 km from Hyderabad. Warangal is well connected by rail and road. National Institute of Technology, Warangal campus is 2 km away from Kazipet railway station and 12 km away from Warangal railway station.

ABOUT THE DEPARTMENT

The Department of Chemical Engineering was established in the year 1964 and celebrated Golden Jubilee year in the year 2014. The Department offers B.Tech in Chemical Engineering, M.Tech in Chemical Engineering & Process Control and Ph.D programs. Currently, the Department has 18 faculty members with expertise in different research areas. The Department has conducted a number of GIAN courses both in Phase-I and Phase-II.



A Five Day
GIAN Course on

**Exergy Analysis of Industrial
Processes**

11 - 15 February, 2019

Call for Registration and Participation

International Faculty

Prof. Ibrahim Dincer

Department of Automotive, Mechanical and
Manufacturing Engineering
University of Ontario Institute of Technology,
Canada.

National Expert

Dr. V. Siva Reddy

Professor & Energy Auditor
School of Mechanical Engineering,
RGM CET, Nandyal, A.P.

National Coordinators

Prof. A Sarath Babu

Dr. V Ramsagar

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