

## Overview of the Course

The growing global energy demand, combined with the pressing need to combat climate change, has heightened the demand for innovative and sustainable energy solutions. Machine learning provides a robust set of tools to tackle these challenges by enabling efficient energy management, optimizing the integration of renewable energy, and driving the transition to a net-zero carbon future. This course is especially relevant in today's context, where the urgent need for sustainable approaches in energy management is paramount. Machine learning plays a crucial role in optimizing energy usage, enhancing the efficiency of renewable energy sources, and accelerating progress towards a net-zero carbon economy. Through international collaborations, students will engage with global experts and gain insights into cutting-edge research and practical applications in sustainable energy.

This proposed course offers a comprehensive exploration of the intersection between machine learning and sustainable energy systems. It is designed to equip students with the skills and knowledge necessary to contribute to a more sustainable future by leveraging AI for energy efficiency, renewable energy integration, and grid optimization. By combining the disciplines of computer science engineering and sustainable energy systems, the course fosters interdisciplinary collaboration and drives innovative solutions.

## Objectives

Objectives of the course include, a) To develop AI-driven solutions for sustainable energy systems that contribute to the SDGs.

b) To optimize urban energy infrastructure using machine learning techniques c) To foster interdisciplinary collaboration between computer scientists and energy experts d) To equip students with practical skills in applying AI to energy challenges e) To promote innovation and sustainability in energy solutions.

## Learning Outcomes

(a) To design and implement machine learning models for energy optimization. (b) Apply AI techniques to address real-world energy problems. (c) To contribute to sustainable development through AI-powered solutions. (d) To collaborate effectively with experts from different fields. (d) To develop innovative and sustainable energy solutions.

## Resource Person



Prof. Dr. Mohan Lal Kolhe is a full professor in smart grid and renewable energy at the Faculty of Engineering and Science of the University of Agder (Norway). He is a leading renewable energy technologist with three decades of academic experience at the international level and previously held academic positions at the world's prestigious universities, eg, University College London (UK / Australia), University of Dundee (UK); University of Jyväskylä (Finland); Hydrogen Research Institute, QC (Canada); etc. In addition, he was a member of the Government of South Australia's first Renewable Energy Board (2009-2011) and worked on developing renewable energy policies.

For further details: <https://www.uia.no/om-uia/ansatte/mohank/>

## Who can participate?

This program is open to the Faculty, Research scholars, and PG/UG students of Electrical, Electronics, and Computer Science Engineering from academic Institutions. Practicing Engineers from industries can also participate. Scientists and researchers from Government Research Organizations.

## How to Register?

Interested candidates may apply online by clicking the below Google link:

<https://forms.gle/CumPZRz5w5dUji6j7>

Candidates registering early will be given preference in the shortlisting process.

## REGISTRATION FEE:

Students & Research Scholars	Rs. 1,000/-
Faculty (Internal & External) and Scientists from R&D Labs	Rs. 1,250/-
Persons working in Industry/ Consultancy firms	Rs. 1,500/-
Students from abroad	\$ 50
Faculty/Scientists/Industry Persons from abroad	\$ 100

*Note: Rs 500/- shall be charged extra for grading.*

The Registration fee includes instructional materials, tutorials, internet facility, working lunch, tea, and snacks. The registration amount is inclusive of GST as per institute norms. Assistance for accommodation and food will be offered to participants upon request, at additional cost. Participants shall not be entitled for any TA/DA.

## Selection and Mode of Payment

Selected candidates will be intimated through e-mail. They have to remit the necessary course fee to the Bank as per the details given below.

Account Name	DIRECTOR RESEARCH ACCOUNT
Account No.	62266262236
Bank	State Bank of India
Branch	NIT Branch, Warangal
Branch Code	20149
IFSC	SBIN0020149
MICR Code	506002030
SWIFT Code	SBININBBH14

For any queries regarding registration of the course and accommodation, please contact the Course Coordinators:

### Dr. Mohammad Farukh Hashmi

Department of Electronics & Communication Engineering

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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. programmes in 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 Electronics and Communication Engineering is one of the country’s largest ECE departments among all NITs in India. The department of ECE offers a broad range of programs that include undergraduate (B.Tech) and postgraduate (M.Tech) in Electronics Instrumentation, VLSI System Design, Communication Systems and research (PhD) programs. Some of the recent sponsored project undertaken by the department includes Radar Emitter Identification using Neural Networks sponsored by DLRL, Hyderabad and Special Manpower Development in VLSI sponsored by MIT-Govt. of India.



A five Day  
GIAN Course on

**Sustainable AI: Employing Machine Learning for Sustainable Technology Development**

**17 – 21 Feb, 2025**

**Call for Registration and Participation**

**International Faculty**

**Prof. Mohan Lal Kolhe**

Faculty of Engineering and Science,  
University of Agder, Norway

**Course Coordinators**

**Dr. Mohammad Farukh Hashmi**

**Department of Electronics and  
Communication Engineering  
National Institute of Technology  
Warangal – 506 004  
India**