✧ Registration Fee:

Faculty & Scientists from Research Organizations	Rs. 2,000/-
Participants from Industry / Consultancy Firms	Rs. 4,000/-
Students & Scholars • Without award of Grade • With award of Grade	 Rs. 500/- Rs. 1,000/-
Faculty/Industry participants from abroad	US $ 100
Students from Abroad	US $50

The Registration fee includes instructional materials and video recorded lectures

Important Dates:

- Last Date for Registration: 10th June 2022
- Announcement of Selection: 11th June 2022

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	**GIAN NITW**
Account No & Bank	**62447453600, SBI**
Branch & Code	**NIT Warangal, 20149**
IFSC Code **MICR Code** **SWIFT Code**	**SBIN0020149,** **506002030,** **SBININBBH14**

Candidates registering early will be given preference in short listing process. For any queries regarding registration of the course, please contact the **Course Coordinator:**

Dr. P. Rathish Kumar
Professor of Civil Engineering,
NIT, Warangal – 506004, Telangana
Tel: +91 870 2462136 (O)
+91 9849 670 437
+91 8332 969 250
Email: rateeshp@nitw.ac.in, rateeshp@gmail.com
URL: https://nitw.ac.in/faculty/id/16209/

✧ About GIAN Course:

Ministry of Human Resource Development (MHRD), Government of India (GoI) 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 of higher learning and is ranked among the top Technical education institutions in India. There are 14 Departments offering Eight Undergraduate Programs and 31 Post-graduate programs besides Doctoral and Post-Doctoral programs. About 6000 students across the country and about 500 International students' study in the campus. It is a fully residential campus sprawling over 250 acres with excellent Infrastructure
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 3 km away from Kazipet railway station and 12 km away from Warangal railway station.

✧ About the Department

The Department of Civil Engineering offers B.Tech in Civil Engineering, Seven M.Tech programs including Engineering Structures and a PhD program. The Department is a recognized QIP Centre since 1978. It has well established and well-equipped laboratories with experienced faculty engaged in teaching, research, capacity building activities and industry extension services. Faculty members represent several policy making and professional bodies. The Department has liaison with reputed industries and R&D organizations. The Engineering Structures Division was introduced in the year 1968.

GIAN GLOBAL INITIATIVE OF ACADEMIC NETWORKS

MHRD Govt. of India

One Week
GIAN Course on

Advanced Non-Destructive Testing Methods for Material Characterization and Condition Assessment of Structures

June 13-18, 2022

Call for Registration and Participation

International Faculty
Dr.Udaya B.Halabe, Ph.D., P.E.
Professor and Faculty Advisor for SEIGSC-WVU,
Department of Civil & Environmental Engineering
WEST VIGINIA UNIVERSITY
Morgantown, West Virgnia
U.S.A.

Course Coordinator
Prof. P. Rathish Kumar
Head, Civil Engineering Department

National Institute of Technology Warangal
Telangana, India

✧ Overview of the Course:

A reliable structural condition assessment heavily relies on rigorous observations, and collecting accurate data that can adequately describe the existing condition of the structure. However, this does not provide any information about the properties of materials, or hidden sub-surface defects. Modern Non-destructive Testing (NDT) techniques can play an important role in establishing material properties, detecting and mapping subsurface defects, and assessing the in-situ condition of structural components in buildings and bridges. A multi-technology approach using different NDT methods can help engineers in various engineering applications, and in different ways. This course focuses on the application of four non-destructive testing techniques: Infrared Thermography, Digital Tap Testing, Ultrasound, and Ground Penetrating Radar. These techniques have been chosen because they offer instrumentation that is portable and easy to use in the field environment. Moreover, these techniques are found to be effective in numerous cases of field applications that will be presented in this course.

✧ Course Objectives:

The primary objectives of this course are:

(i) Review the basic theory, instrumentation, data analysis procedure for modern nondestructive testing techniques including infrared thermography, digital tap testing, ultrasound and ground penetrating radar.

(ii) Study applications of NDT techniques for various types of material characterization and subsurface defect detection and mapping (in Concrete, Steel, Timber, and FRP Composites).

(iii) Provide exposure to real-life applications of NDT techniques to Buildings and Bridges with case studies.

(iv) Enhance understanding and capability of participants in the area of NDT condition assessment.

✧ International Faculty:

Dr. Udaya B. Halabe is a Professor of Civil and Environmental Engineering (CEE) at West Virginia University (WVU), Morgantown, WV. He received M.S. and Ph.D. degrees in Civil/Structural Engineering from the Massachusetts Institute of Technology (MIT). He received M.Tech degree in Civil/Structural Engineering from IIT Kanpur and B.E.(Civil) degree from University of Roorkee. Dr. Halabe has directed Ph.D. and M.S. level student research in the area of nondestructive testing (NDT) using Ground Penetrating Radar, Infrared Thermography, Ultrasound and Digital Tap Testing techniques.

He has authored or co-authored over 180 technical papers, research reports, and book chapters related to condition assessment of civil infrastructure including concrete, steel, composites and timber structural components, and detection of pipes buried in soil. Dr. Halabe teaches a graduate level course on ND Evaluation of Materials and Structures at WVU. He is a Fellow of American Society of Civil Engineers (ASCE), the Structural Engineering Institute (SEI) and the American Society for Nondestructive Testing (ASNT). He serves as member of the American Concrete Institute (ACI) and the American Society for Engineering Education (ASEE). Dr. Halabe received the College Outstanding Teacher Award, James M. Robbins National Excellence in Teaching Award presented by Chi Epsilon, Outstanding Civil Engineering Educator of the Year Award from West Virginia Section of ASCE. He is a recipient of Outstanding Advisor Award from the Benjamin M. Statler College of Engineering and Mineral Resources at WVU. Dr. Halabe is a member of Chi Epsilon and Tau Beta Pi. He is a licensed P.E. in the State of West Virginia.

✧ Indian Faculty:

Dr. P. Rathish Kumar is a Professor of Civil Engineering at NIT, Warangal. He pursued his M.Tech and Ph.D. in NIT Warangal and Doctor of Engineering and Post Doc in Japan. He keeps interest in the thrust areas of sustainable concrete making materials, structural health monitoring and repair and rehabilitation of structures. He has guided 8 Doctoral students, 68 Masters and 34 Bachelors and at present 13 doctoral students are working under his guidance. He has handled projects supported by Japanese Govt. and at present he is the co-investigator of an IMPRINT project on Digital Image Correlation sanctioned by MHRD, India. He has authored/co-authored 226 papers including SCI/Scopus and other Peer Reviewed International and National Journals and Conferences. He received several awards/Scholarships including Aftab Mufti Medal, Excellent Paper Award twice, Monbusho Scholarship, JSPS Post-Doc Scholarship, Best Engineering Researcher Award at NITW, Danish Govt. Scholarship, Italy Government Post-Doctoral Scholarship, Heritage Scholarship under Erasmus Mundus, Distinguished Alumnus Award, Slovakian Govt. Scholarship and the ASEM-DUO-India Fellowship. Prof. Kumar is a member of the Research Advisory Council member of the National Council for Cement and Building Materials (NCCBM), Hyderabad for the past four years. He has representation in several BIS committees like CED-4, preparation of Handbook on lime, revision of IS 2542-1978 and IS 712-1984.

Prof. Udaya Halabe
(International Faculty)

Prof. P. Rathish Kumar
(Indian Faculty)

✧ Who can participate?

This program is open to the Faculty, Post graduate students, Field Engineers and Research Scholars working in the areas of Structural / Construction Engineering from various Institutes. Civil Engineers working in Industries, Consultancy firms, R&D laboratories 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 enrol 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 "**Advanced Non-Destructive Testing Methods for Material Characterization and Condition Assessment of Structures"** from the list and click on save option. Complete your registration by clicking on **Confirm Course**.

Stage-3: Shortlisted candidates will Pay the Registration fee after the confirmation of their shortlisting/selection for the program

One Week
GIAN Course on

Advanced Non-Destructive Testing Methods for Material Characterization and Condition Assessment of Structures

(June 13-18, 2022)

Date	Time (IST)	Description of Topic	L/T/P	Faculty
June 13, 2022 Mon	8:30 - 9:30 AM	Importance and need of NDT Equipment	L1	**UBH**
	9:45 - 10:45 AM	Review of advanced NDT Methods for Condition Monitoring of structures	L2	**UBH**
	11:00– 12:00Noon	Causes of Deterioration in civil infrastructure -Durability related issues	L3	**PRK**
	2:00 – 4:00 PM	Condition survey and damage assessment of structures	L4	**PRK**
June 14, 2022 Tue	8:30 - 9:30 AM	Basics of Digital Tap Testing	L5	**UBH**
	9:45 - 10:45 AM	Laboratory studies on Digital Tap Testing	L6	**UBH**
June 15, 2022 Wed	8:30 - 9:30 AM	Case studies on field applications of Digital Tap Testing	L7	**UBH**
	9:45 - 11:45 AM	Basics of Infrared Thermography	L8	**UBH**
June 16, 2022 Thu	8:30 - 9:30 AM	Case studies on field applications of Infrared Thermography	L9	**UBH**
	9:45 - 10:45 AM	Digital Tap Testing Vs Thermography Comparison and Analysis	L10	**UBH**
June 17, 2022 Fri	8:30 - 9:30 AM	Basics of Ultrasonic Testing-Theory and Practice	L11	**UBH**
	9:45 - 10:45 AM	Ultrasonic approach for NDT of Civil Infrastructure	L12	**UBH**
	11:00 – 1:00 PM	Tutorial-1	T1	**PRK/UBH**
June 18, 2022 Sat	8:30 - 9:30 AM	Case studies on field applications of Ultrasonic methods of Testing	L13	**UBH**
	9:45 - 10:45 AM	Basics of Ground Penetrating Radar Theory and Practice	L14	**UBH**
	11:00–12:00 Noon	Tutorial-2	T2	**UBH/PRK**
	6:00 - 7:00 PM	Inspection and Condition Assessment using Ground Penetrating Radar	L15	**UBH**
	7:00 - 8:00 PM	General Course Summary and Evaluation	-	**UBH**