

Overview of course

The course introduces the use of connected sensors for IoT based Remote Water Quality Testing and Reporting the data to the cloud, and even the alarm can be raised if there is considerable contamination in the water bodies especially in the state of Telangana which leads to Water-borne diseases. The course also introduces the basic principles of Internet of Things (IoT), design, infrastructure, connectivity and the core concepts of IoT such as sensing, processing and reporting the data to the cloud.

Course Contents

The course is designed to introduce low cost, reliable and real-time solutions for Cloud enabled based Remote Water Testing, Monitoring and Analysis with IoT enabled Smart Services and Application Interfaces. Usage of Connected Sensors in IoT based Remote Water Testing and Monitoring will have following advantages-Early intervention in case of contamination, Real-time information to customers, authorities and citizens, Environmental care and monitoring of ecological resources, Valuable help to comply with water quality regulations, etc. The participants will identify the need for IoT based Remote Water Testing and explore various application areas of IoT in Water Testing and Analysis. Also the course will introduce various sensors used in Water Testing, IoT hardware platforms, networking topologies, protocols (CoAP, 6LoWPAN, REST, MQTT, HTTP etc.) and cloud platforms. Participants will go through case studies, schematics, design methodologies and infrastructure details. Participants will be proposed to design and execute a real-time parameter Monitoring project based on the concepts and principles and expected to complete the project within additional off-time tutorials days.

Foreign Faculty



Shivakumar Mathapathi

Industry Advisor- Senior Design Project- Department of Electrical Engineering, Santa Clara University, CA. He has over 25 years of experience in product development, design and faculty. Mathapathi is a seasoned

technologist, entrepreneur, instructor and practitioner on the Internet of Things (IoT) with extensive experience as lead faculty, lab-practice and mentorship in executing smart city, smart agriculture, assisted living and other IoT related projects. He has designed study programs and academic syllabus for The IoT course. He led capstone design project at Cal Poly (part of California State University) to design and develop IoT cloud platform needed for smart city.

National Coordinator



Dr Raju Bhukya has received Ph.D. degree in Computer Science and Engineering from the National Institute of Technology Warangal, Telangana State (India). Currently he is working as an Assistant Professor at the same institute since 2006. He has published

several papers in international journals and conferences. His research areas includes Bioinformatics, Agri-Informatics, Data mining, DNA Data optimization and DNA data compression, Molecular Data Analysis and pattern matching.

Who can Participate?

Executives, engineers and researchers from manufacturing, service and government organizations including R&D laboratories. Student students at all levels (BTech/MSc/MTech/PhD) or Faculty from reputed academic institutions and technical institutions UG, PG, Ph.D students and Faculty members of Computer Science and Engineering, Biotechnology, Chemistry, Chemical Electronics and Communication

and Electrical Engineering branches. The IoT workshop is designed to help City officials, Municipality officials, Water Testing Scientists and Researchers, Cloud data scientist, Business manager who are planning to adopt and deploy Remote Water Testing System, Hospitals, Electronic device manufacturers and Software Industries. The workshop also helps for startups, medium and large companies to learn the current trend, technologies and implementation strategy for IoT enabled Remote Water Testing and Monitoring.

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 “**Smart Tap–IoT enabled Water Quality Testing and Analysis using Sensor and Cloud**” 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 1000/-
Students with award of Grade	Rs.2000/-
Students from abroad	\$ 300

The Registration fee includes instructional materials, tutorials, laboratory and computer use and free internet facility. The participants from academic/research institutes and Industry will be provided with boarding and lodging on additional payment of Rs. 4,000/- in Visitors Block on sharing basis. Students & Research Scholars will be provided with boarding and lodging in Institute Hostels on additional payment of Rs.2,000/.

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:	62447453600
Bank	State Bank of India
Branch	REC Warangal (NIT Campus)
Branch code	20149
IFSC	SBIN0020149
MICR Code	506002030
SWIFT Code	SBININBBH14

Outstation participants requiring accommodation and boarding facilities have to pay Rs. 4,000/- in addition to the course fee.

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

For any queries regarding registration of the course, Please contact the National Coordinator:

Dr. Raju Bhukya

Assistant Professor,

Department of Computer Science & Engineering,
National Institute of Technology, Warangal-04, TS.

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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 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. 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 Computer Science and Engineering (CSE) offers B.Tech course in CSE, M.Tech courses in CSE, Information Security (IS) and Master of Computer Applications (MCA).The Department has liaison with reputed industries and R&D organizations like Microsoft, IBM, Oracle, Accenture, Infosys, TCS, EMC2, C-DAC, Motorola, NIC, Sun Micro Systems, SPSS and tie up with IISc in certain areas. The department has MOU with TCS ,Infosys, IBM,C-DAC for training the students and faculty on latest technologies and Research and development activities. Department has associated in E&ICT Academy project sanctioned by Department of Electronics and Information Technology, Govt of India to train faculty from Engineering/MCA/Polytechnic Streams.



MHRD
Govt. of India

सत्यमेव जयते

**A Ten days GIAN Course
On
Smart Tap–IoT enabled Water Quality Testing
and Analysis using Sensor and Cloud**

November 20 – 29, 2017

Call for Registration and Participation

Resource Person

Shivakumar Mathapathi

National Institute of Standards & Technology
USA

National Coordinator

Dr. Raju Bhukya

**Department of Computer Science &
Engineering**

**National Institute of Technology
Warangal – 506 004, Telangana
India**