

Course Overview

The intensive and aggressive human activity has created serious problems that can lead to irreversible consequences, and not in the distant future, if humanity does not take up the mind. Presently there are a lot of polluted places in the world, but the most dangerous consequences of human exposure to the environment represent the gold processing enterprises, which form vast territories, the so-called tailings. What danger do they pose to the environment? In such places several sources of environmental pollution are localized, among them are pore waters, solid re-deposition materials and vapor-gas stream. So, all these media are components of the biosphere and each of these subsystems contributes to the local, regional and global transport, which includes the spread of pollutants through atmosphere, hydrosphere and lithosphere flows, accompanied by the transformation of substances. In this connection it is very important to study these environs in dynamics taking into account the possible converting of the substances. This knowledge will bring an understanding on what is happening in such systems in order to build a strategy to prevent their degradation and destruction.

The course will consist of a set of assigned readings, daily written briefs on the readings, daily small group presentations on the assigned material, and facilitated lectures and discussions by the instructor and invited speakers. The course will include field trips to several facilities that illustrate the issues of sustainability covered in class. Students will complete a small-group course project report and presentation on a related topic. Each student will keep a daily log in a hard cover notebook of their thinking on sustainability and human needs over the course of the project. Students completing the course will understand contemporary global challenges, and be able to evaluate technologies and public policies to counter the challenges faced by the biosphere.

Course Objectives

The goal of this course is to enable students to evaluate critically and systematically, the global challenges in the biosphere in the 21st Century. This will be achieved by the following objectives:

1. Exposure of participants to the dangerous phenomena in atmosphere, hydrosphere, lithosphere and their possible consequences.
2. Creating representations about transformation and transport of the substances in natural and disturbed ecosystems.
3. Providing information on approaches and methods for the study of natural environments.
4. Formation an impression of the real problems in the biosphere as a whole and the ideas to prevent disasters.

Target Group

1. Student at all levels (B.Tech/MTech/PhD) and Faculty from reputed academic institutions and technical institutions can benefit from this program as the credit course.
2. Engineers, working officials of NGOs, and researchers in the field of water resources can attend to this course.
3. Student, teachers and working officials of SAARC countries can also attend to this course.

How to Register?

Stage -1

Web(Portal) Register:

Visit GIAN Website at the link:
<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 him/her with life time registration to enroll in any number of the GIAN courses offered.

Stage -2

Course Registration (Through GAIN Portal):

Log in to the GIAN portal and create user ID and password. Now login in and click on '**Course Registration**' option given at the top of the registration form. Select the course titled **Biosphere – Contemporary Global Challenges** from the list and click on '**Save**' option. Confirm your registration by Clicking on '**Confirm Course**'.

Registration Fees

Students Participants without/with Grading	Rs. 1000/ Rs. 2000
Faculty (Internal & External) & Scientists	Rs. 4,000
Persons from Industry / Consultancy firms	Rs. 8,000
Foreign Students	USD 100
Other Foreign Participants	USD 200

The above fee include all instructional materials, computer use for tutorials and assignments, laboratory equipment usage charges, free internet facility. The participants will be provided with accommodation on payment basis.

Selection and Mode of Payment

Selected candidates will be intimated through Email. They have to remit the necessary course fee to the Bank as per the details given below. Outstation participants requiring accommodation and boarding facilities have to pay Rs.4000/- in addition to the course fee.

Account Name	GIAN NITW
Account Number	62447453600
Bank	State Bank of India, REC Branch, NIT Warangal
Branch Code	20149
IFSC	SBIN0020149
MICR Code	506 004 011
SWIFT Code	SBHYINBB018

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

Number of participants for the course will be limited to fifty.

For any queries regarding registration of the Course, please contact the Coordinator

Prof M CHANDRA SEKHAR

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Course Faculty



Dr. Olga Shuvaeva, Professor in Chemistry at Novosibirsk State University (Novosibirsk, Russia). She is an expert in Analytical & Environmental Chemistry, mainly focused in elements transformation & transport in natural and technogenic systems. She is a member of Academic Council of Natural Sciences Department at NSU, a member of Dissertation Council of Nikolaev Institute of Inorganic Chemistry, Invited Expert of Federal Service for Supervision of Natural Resources (Siberian Dt.) and a member of the Scientific Council on Analytical Chemistry of Russian Academy of Sciences, Siberian Branch. Her administrative experience include Leading Research Scientist at Nikolaev Institute of Inorganic Chemistry, SB, RAS (Academic Affairs), Head of Environmental Chemistry Chair, Natural Sciences Department, NSU Novosibirsk, Professor, Student Training at Natural Sciences Department, NSU, Chairman of the Examination Committee at Dostoevsky Omsk State University. She is Invited participant in Research Discussion at the University of Tianjin (China), involved in Cooperative Research Program between the School of Chemical Engineering and Technology at Tianjin University and NSU as Principal Investigator, act as supervisor of research training for the scholar from Warwick University (UK) on the basic techniques in speciation analysis, act as a Chairperson in 11th International Phytotechnology Conference, annually appointed as a Jury Chairman in International Ecological Student Conference at NSU, Invited member of the Organizing Committee of OMICS International Conferences on Past and Present Research Systems of Green Chemistry in USA. She is an author of more than 90 publications in domestic and international scientific journals and acts as reviewer in international journals, delivered lectures as adviser in Workshops and Training Schools and visited several countries (Japan, China, USA, Germany, Finland, Switzerland, Sweden, France, Italy, Greece) for presentation of the lectures and research materials, participation in workshops, etc.



Dr Chandra Sekhar is Professor in Civil Engineering at National Institute of Technology Warangal. He is an expert in the areas of water quality, waste treatment and environmental impact assessment. He is BoS Member for no of universities like JNTUA, JNTUH, SVU, KU, etc., and Governing Body Member for few Engg.Colleges. He is also Member for Expert Committee on Environmental Flows in Krishna – Godavari Rivers. He has lot of administrative experience as Registrar, NITW, Director (Academic), Institute for Electronic Governance, Govt of AP, Head, Training & placements, etc. He has coordinated several workshops, seminars, continuing education programs. Authored a text Book titled Environmental Science, which is prescribed text book in SVU, NITW, KU, etc. He has number of publications to his credit. He was invited for Research Discussions at the University of Essen and Technical University of Vienna. Invited by UN to teach a course on Environmental Engg. at the Prestina Summer Univ. He was offered the prestigious Scholarships by the Max Plank Institute, Hamburg and DCAMM (Danish Center for Applied Mathematics and Mechanics) International Graduate Research School, Denmark. He was invited for two World Wide Water - Junior Environmental Scientists (WWW – JES) Workshops at Water University, Paris. Awarded Gold Medal and Memento for Best Contribution as Team Leader in the Janmabhoomi Programme involving peoples' participation. He traveled widely across the globe on teaching, research and other consignments. The list includes Japan, Germany, USA, France, Netherlands, UK, Ireland, New Zealand, Australia, Kuwait, Denmark, Austria, Singapore, etc.

About GIAN Courses

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 into our system. As a 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 Civil Engineering Department, NITW

The Department of Civil Engineering has been one of the pioneering academic departments of the National Institute of Technology, Warangal since the inception of the institute in 1959. The Department has well qualified, experienced and motivated faculty members. The Department of Civil Engineering with four divisions offers an undergraduate program in Civil Engineering and seven postgraduate programs. All the programs are accredited by NBA. The Department has experienced faculty and well established laboratories. The Department has collaborating with major government departments, Industries and R&D organizations.

About the Institute and Warangal

National Institute of Technology (formerly Regional Engineering College), Warangal is the first among 17 RECs setup as joint venture of the Government of India and the state government. Over the years the college has established itself as a premier Institution imparting technical education of a very high standard leading to the B. Tech degrees in various branches of engineering and M. Tech and Ph. D programs in various specializations. With a view to give further impetus to the technological education, the Central Govt. upgraded the RECs into NITs, and conferred the Deemed to be University status. The Institute is well known for its dedicated faculty, staff and the state-of-the art infrastructure conducive to a healthy academic environment. The Institute is constantly striving to achieve higher levels of technical excellence. Evolving a socially relevant and yet internationally acceptable curriculum, implementing innovative and effective teaching methodologies and focusing on the wholesome development of the students are our concerns.

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 campus is 2 Km. away from Kazipet railway junction and 12 Km. away from Warangal railway station. Participants are advised to alight either at Kazipet or Warangal depending upon the train of travel. The local weather during December is cold. The average temperature will be about 30^o C during day and about 20^o C during night. The nearest International Airport is Rajiv Gandhi International Airport, Hyderabad.



One Week GIAN
ONLINE Course
On

Biosphere - Contemporary Global Challenges

February 22 - 26, 2021

Call for Registration and
Participation

International Faculty

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Novosibirsk State University
NOVOSIBIRSK, RUSSIA

Coordinator
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Organized by

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