

About International Faculty



Dr. Thomas Oommen completed his MS in Systems Engineering from the Department of Geological Engineering at the University of Fairbanks, Alaska. He received his PhD degree in Geotechnical and Geo-environmental Engineering from Tufts University, Massachusetts, USA, in 2010. He is an Associate Professor in the Department of Geological and Mining Engineering and Sciences at Michigan Technological

University, USA. His primary research activities are the application of machine learning, image processing, and remote sensing for pre- and post-geohazard characterization. His research on landslide hazard has been supported by prominent funding agencies including NASA, NATO, and World Bank.

About the University of Kerala

One of the first 16 universities in India, the University of Kerala (currently re-accredited by NAAC with 'A' Grade) was founded as the University of Travancore in the erstwhile princely state of Travancore in 1937. This 80 years of history has produced several stalwarts occupying key positions around the globe. At present, the University has 41 departments of teaching and research. Knowledge extension being the mandate of the departments, it primarily focus on M.Sc, M.Phil and Ph.D programs. About 2000 students, which include a modest number of foreign students make the campus a lively environment, which sprawls in a 500 acre lush green campus at Kariavattom, a town 15 km away from Thiruvananthapuram, the capital of the state of Kerala. The University also has a number of thrust areas of research such as nanotechnology, Kerala studies, bioinformatics, women studies, learning difficulties, Sree Narayana studies and Gandhian studies.

About the Department of Geology

The Department of Geology, University of Kerala, India, was established in 1963. This 55-year old department has eight faculty members and has produced more than 550 post-graduate students. The department offers M.Sc, M.Phil and Ph.D programs. The thrust areas of research are plate tectonics, palaeomagnetism, planetary science, petrology, remote sensing and hydrogeology. The Department of Geology has been funded by central agencies like Department of Science and Technology, University Grants Commission and Indian Space Research Organization, and state agencies like Kerala State Council for Science Technology and Environment for establishing various infrastructural facilities. The Department of Geology works in close association with several organization in a collaborative mode. The department has an H-index of 22 and an i-10 index of 53 based on Google Citations. The Department has an active students' skill acquisition club, baptised 'Bhouma'.



GIAN Course on

'Computational Geosciences: Data to Information to Decision'

2-6 July 2018

Department of Geology
University of Kerala

Call for Registration and Participation

International Faculty

Dr Thomas Oommen

Associate Professor

Department of Geological and Mining Engineering and Sciences
Michigan Technological University
Houghton, MI, USA



Course Coordinator **Dr Sajin Kumar KS**

Assistant Professor

Department of Geology
University of Kerala

Thiruvananthapuram-695581, India
email: sajinks@gmail.com
Phone: +91 9495 83 2220

**GIAN Course
on
'Computational Geosciences:
Data to Information to Decision'**

Overview of the course

The power of computation, utilized to model and simulate geoscience data, provides us an opportunity for improved quantitative understanding of Earth systems to address the grand challenges in geoscience, and to provide decision making-tools to industry and policy-makers. The recent advent of computation as a powerful tool to analyze geoscience data is driven by the advances in three areas: availability of sensors to quickly collect a large amount of Earth observation data; developments in computational modeling, artificial intelligence, and data mining; and increased computing power. Computational geoscience utilizes the advancements in computer science to build complex non-linear models and draw spatial-temporal patterns and characteristics in large geoscience datasets. The proposed course is designed to introduce geoscientists and students at advanced levels to fundamental concepts of computing that can be used to explore data to derive information for decision making, develop complex non-linear models, explore data mining concepts, carry out spatial analysis, and perform time-series regression. The course will also provide hands-on experience using geoscience data and open source software tools. The course will be taught in a computational facility with theory and practical sessions.

Course objectives

The primary goals of the course are as follows:

- Introduce computational geoscience
- Present geoscience data measurements and sequences
- Hands-on experience in performing computational geoscience
- Introduce data mining and exploratory data analysis
- Introduce the concepts of geologic data visualization
- Familiarize students with complex non-linear models to derive the underlying relationships in the geoscience data
- Perform exploratory spatial analysis and interpolation
- Implement time-series data analysis

Who can attend

Students, Doctoral and Postdoctoral Researchers, and Faculty from Universities, Research Institutes and Industries.

How to register?

Step 1: Web portal registration

Visit <http://www.gian.iitkgp.ac.in/GREGN> 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 lifetime registration to enroll in any number of GIAN courses.

Step 2: Course registration

Login to the GIAN portal with the user ID and password already created in step 1. Click on registration option at the top of the registration form. Select the course titled 'Computational Geosciences: Data to Information to Decision' from the list and click on save option. Confirm your registration by clicking on confirm course.

Step 3: Registration

Registration fee details are as follows

*Faculty Members: INR 3,000.00
Participants from Industry/Research Organizations: INR 5,000.00
Post-graduate Students/Research Scholars: INR 1,500.00
Participants from abroad: US\$ 200.00*

The registration fee includes instructional materials, laboratory use, session tea and working lunch.

Selection and mode of payment

The number of the participants is limited to 30. Selected candidates will be intimated through email. Candidates will be requested to remit the necessary course fee through this email (Details of the bank account will be mentioned in the email). Outstation participants requiring accommodation and boarding facilities have to pay additional charges.

Note: Participants are requested to fill the registration form attached herewith and send it to the course coordinator.

Venue

Department of Geology
University of Kerala
Kariavattom PO
Thiruvananthapuram- 695 581
Kerala, India
[Email: sajinks@gmail.com](mailto:sajinks@gmail.com)
Phone: +91 471 2308403
Mobile: +91 9495 83 2220

