



Centre for Continuing Education

(QIP Programme – Sponsored by AICTE)

Indian Institute of Science, Bengaluru – 560012, Karnataka, India

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QIP SHORT TERM COURSE ON “FREE & OPEN SOURCE GEOSPATIAL TECHNOLOGIES (FOSS4G) FOR NATURAL RESOURCES MANAGEMENT”



27 - 31 MAY 2019

Introduction

Capacity building under QIP initiative. The demand for spatio-temporal data analysis has gained momentum with the government's push for digital India. There is lack of professionals in these disciplines, particularly of those with a vast knowledge of the practical utilization of these technologies. This necessitates knowledge augmentation of in-service professionals particularly of teaching faculty in colleges and universities.

Course Objective: Knowledge augmentation (advancements in spatial informatics, remote sensing data analysis, modelling and Geo Visualisation) for in-service professionals.

Course Contents:

Geographical Information Systems: Introduction, Historical development, from the real world to GIS, basic data models, Geo-references and co-ordinate systems, basic spatial analysis and modeling, GIS implementation and project management, GIS issues and prospects.

GIS Perspectives: Environmental research, the state of GIS for environmental research, the state of GIS for environmental problem-solving, GIS and environmental modeling.

Understanding the scope of FOSS4G: Its relationship to environmental modeling and natural resources management.

Data models and data quality: problems and prospects.

GIS in environmental modeling: Hydrological modeling, urban dynamics, biological/ecological modeling, disaster management and risk modeling.

Principles of Remote Sensing: Spectral characteristics of earth's surface, spatial data pre-processing, classification, accuracy assessment, land use land cover analysis, change detection, biophysical modeling.

Remote sensing and GIS integration: Applications to resources inventorying, monitoring and management. Ground truth data. Digital image processing image classification.

Concept of environment: Economic benefits of remote sensing the geographical uses of remote sensing, sensors for environmental monitoring.

Applications of Remote Sensing: Water in environment in environment, soil and landforms, urbanization, design of Smart Cities, Ecology, Conservation and resource management, Land/land cover dynamics, Urban sprawl analysis, Hazards and disasters, Coastal zone management. **Case studies would highlight the application of these concepts in natural resources management.**

Selected participants would learn basic concepts of GIS, remote sensing data classification, integration of remote sensing information with GIS, database development and if time permits spatial data modelling and geo-visualisation, geo-server, etc.

Lectures: Lectures will be delivered by Institute faculty members and **guest faculty (IIT, IIIT-B, IIIT-H, IIRS, GOOGLE ENGINE)**. Sessions - 60% lectures and 40% hands on training (selected participants need to bring **laptop with mouse**)

FOSS4G Course Co-ordinator:

Dr. T.V. Ramachandra (tvr@iisc.ac.in), FIE, FNIE obtained Ph.D. in Ecology and Energy from Indian Institute of Science. At present, Coordinator of Energy and Wetlands Research Group (<http://ces.iisc.ernet.in/energy>), at Centre for Ecological Sciences (CES). He is a recipient of Energy Engineer award (2018, 2009) of Association of Energy Engineers (USA), Satish Dhawan Young Scientist Award, 2007 of Karnataka State Government, Rotary Exemplars 2017- Citizen Extraordinaire award (Rotary Club of Bangalore), Karnataka State Parisara Award, 2017-18, GoK, Khadri Achuthan Memorial Samvahana Award (Environment) 2018, on World Communicators Day by PRCL. TVR's research interests are in the area of Geoinformatics, landscape dynamics and modelling, aquatic ecosystems, Western Ghats ecology, energy systems, renewable energy, energy conservation, energy planning, environmental engineering education research and curriculum development at the tertiary level. He has published over 305 research papers in reputed peer reviewed international and national journals, 62 book chapters, 333 papers in the international and national symposiums as well as 18 books. His publications are archived at: <https://scholar.google.co.in/citations?hl=en&user=Wohlfa8AAAAJ>, https://www.researchgate.net/profile/T_V_Ramachandra/publications; <http://ces.iisc.ernet.in/foss>;

Eligibility:

The course is meant for teachers of engineering colleges recognized by All India Council for Technical Education (AICTE) who send their applications through proper channel. There is no course fee for them. Selected teachers will be paid TA at actuals subject to the limit of Three tier AC train/bus fare by the shortest route from the place of work to Bengaluru and back. However, the maximum TA payable is Rs.3000/-. They will be provided with a daily allowance of Rs.500/- (for 5 days only) towards boarding and lodging as per QIP rules, and will be supplied with the course material. The lodging charges will be Rs.300/- per day. Local participants will be paid DA @ Rs.150/- per day for 5 days. The total number of seats are limited to 70 for applying and 35 candidates will be selected for the course.

Fees

In addition, non-sponsored AICTE approved college teachers and other self-support teachers, scientists from research labs, practicing engineers from industries and other interested are eligible. They should pay the fees online along with the application as under.

Faculty: 10000+18% GST INR

Government Agencies: 10000+18% GST INR

Industry Participants: 15000+18% GST INR

Students (maximum 5): 10000 + 18% GST INR

They will be entitled to participate in the course and receive the course material. Single room accommodation is available on the Institute campus at the Hoysala House. The participants have to request in advance along with the registration form for such accommodation. The lodging charges will be Rs.1000/-+18%GST per day for self-support college teachers and Rs.1500+18%GST per day for Industry /Government/NGO participants / consultants, subject to availability of accommodation.

Course fee [with accommodation (if required) charges] to be paid online along with the application @ <http://iisc.online/qip/home.html>

For More Details Contact

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Apply online at: <http://iisc.online/qip/home.html>

QIP 2019-20



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Co-ordinator

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Last Date to Apply:

9 May 2019

**Intimation of
Selection**

13 May 2019