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Faculty Development Programme organized by Civil Engineering Department 2019-2020

Faculty Development Programme on ‘Application of Remote Sensing (RS) and GIS in Civil Engineering’, on 19th, 20th and 21st December, 2019

A three-day Faculty Development Programme on ‘Application of Remote Sensing (RS) and GIS in Civil Engineering’ was organized by the Department of Civil Engineering, MVJCE, on 19th, 20th and 21st December, 2019, in Seminar Hall 6. Faculty members, Research Scholars and Students of the Civil Engineering Department from various colleges participated in this programme. The objective of the session was to provide a practical and broad outlook of recent developments in the area of Remote Sensing and GIS related to different applications in Civil Engineering, and to expose the Faculty/Research Scholars/Students to the emerging trends in GIS and Remote Sensing.

The programme started with the arrival of the dignitaries on the dais. The dignitaries present were Chief Guest Dr. M K Nagaraj [Senior Professor (Retd.), Department of Applied Mechanics - National Institute of Technology, NIT, Suratkal], Dr. Nagaraj Sitaram [Principal, MVJCE], Dr. Mahabaleshwarappa [Dean-Academic, MVJCE] and Prof. Muralidhara R [Head of Civil Engineering Department, MVJCE]. The Master of Ceremonies was Prof. Apoorva Kiran [Assistant Professor, Department of Civil Engineering, MVJCE]. The Inauguration started with an invocation song by M. Tech - Transportation Engineering students. A brief introduction about the schedule for the three-day FDP was given by Dr. D S Manu [Associate Professor, Department of Civil Engineering, MVJCE]. Prof. R Muralidhara [Head, Department of Civil Engineering, MVJCE] gave the welcome address, giving a brief introduction about the Chief Guest and Keynote speaker, Dr. M K Nagaraj. Dr. Nagaraj Sitaram, Principal, MVJCE, welcomed the Keynote speaker with a plant sapling, after which the programme was inaugurated with the lighting of the lamp by the Chief Guest Dr. M K Nagaraj, Dr. Nagaraj Sitaram, and Prof. R Muralidhara.

The opening remarks were given by our Principal Dr. Nagaraj Sitaram. He stated that GIS can be linked to many activities pertaining to forecast, like natural calamities, weather report,

surveying, map preparation etc. Dr. Mahabaleshwarapa Dean-Academic, MVJCE, addressed the gathering. He added that there are no limitations for GIS and it has applications in all fields. It can also be used for the protection and preservation of environment, agricultural production enhancement etc.

Session I - System Approach in RS and GIS, by Dr. M K Nagaraj

He explained about RS and GIS. RS and GIS are data-intensive. Large number of data and boundary conditions are required, to give as input. The output which is delivered can be developed as 3D modelling. The objectives must be very clear for the interpretation. Dr. Nagaraj explained about the simple system and complex system. Simple system has a unique solution and is generally non-iterative. Complex system is iterative, it has four methods for analyzing, such as using existing equation, using statistical data, doing experimentation and going with fundamental equations or laws. Dr. Nagaraj also threw light on deterministic system and stochastic system. The applications are wide, such as in hydrological design, transportation problems, ecology and bio-diversity, natural resource management, cartography, geology and communication.

At the end of the session, Dr. Nagaraj was honoured by Prof. R Muralidhara, HOD, Civil Engineering.

Session II - Basics of Remote Sensing & GPS Applications, by Dr. M S Ganesh Prasad, Professor, Department of Civil Engineering, National Institute of Engineering, Mysuru.

Prof. Dakshayani, Assistant Professor, Department of Civil Engineering. MVJCE, gave a brief introduction about the session speaker, Dr. M S Ganesh Prasad.

Dr. Ganesh Prasad, explained about spatial data, i.e. the data obtained from surveying, global positioning system, photogrammetry, remote sensing, automated cartography, GIS and digital terrain modelling. He elaborated on data acquisition, which can be collected from field observation, in-situ measurement and land surveying. His presentation also covered electromagnetic remote sensing, which explained about energy and its absorption, and reflection by the surface materials of the earth. The presentation also touched upon different aspects such as snow, soil and water and their reflection of energy. He explained about satellites, sensors and satellite image.

At the end of the session, Prof. R Muralidhara honoured the speaker Dr. M S Ganesh Prasad.

Session III - GIS for Engineering and Construction, by Mr. Prasanth K, Manager-Presales, ESRI, India.

Mr. Prasanth gave a brief description about recent trends in geospatial technology - like the rise of machine learning and artificial intelligence, analytical tools for everyone, big data and Internet Of Things, indoor navigation, Building Information Model (BIM) with virtual / augmented reality, deploying enterprise GIS cloud solutions etc. GIS is a complete SAAS (Software As A Solution). GIS has wide applications in infrastructure, such as in Engineering, survey, operation and planning. Planning has many steps such as site analysis, economic analysis, regulator compliances, and environmental impact analysis.

Day 2, Session I - Map Digitization by MapInfo, by Prof. N Vetrivel, Assistant Professor, Department of Civil Engineering, MVJCE

A brief introduction about the speaker was given by Prof. Apoorva Kiran, Assistant Professor, Department of Civil Engineering, MVJCE.

MapInfo Professional is a comprehensive computer mapping tool that enables the user to perform 'Complex Geographic Analysis' such as accessing our remote data, dragging and dropping map objects into applications, creating thematic maps that emphasize pattern in our data. The software was installed by all the participants in their laptops, and hands-on training was given by Prof. N Vetrivel, for preparing a thematic map.

Day 2, Session II - Evolution of Civil Engineering and Future Professional Paths, by Mr. S Aditya Satheesh, General Manager – Projects, M/s. CICON Engineers Pvt. Ltd., Bengaluru.

Mr. Aditya Satheesh spoke about the evolution of Civil Engineering, and the opportunities that are available for Civil Engineers. He also focused on the major mistakes that are committed in site, with real time example.

At the end of the session, he was honoured by Prof. R Muralidhara.

Day 2, Session III - Applications of GIS in Coastal/Marine Engineering, by Dr. Harish Kumar, Associate Professor, Department of Civil Engineering, Jyothi Institute of Technology, Bengaluru.

Prof. R Muralidhara welcomed the speaker with a plant sapling. Dr. Harish Kumar gave a detailed explanation about the application of GIS in Coastal / Marine Engineering, such as Eye in the Sky, remote sensing, remotely sensed data, geographical information, sedimentation, erosion, bathymetry, sea level monitoring, sea surface temperature, potential fishing zone, risk analysis of oil spillage and conservation of oceanic ecosystem. Training was given with a real time example of sea water intrusion on highways. This was explained in a detailed manner using Google Earth.

The speaker was honoured by Prof. R Muralidhara, at the end of his session.

Day 3, Application of GIS in Road Traffic Management, by Dr. Punith B Kotagi, Assistant Professor, National Institute of Engineering, Mysuru.

Dr. Punith B Kotagi spoke about the objectives of GIS in traffic management. Workflow of GIS such as collection of data, display and analysis of data and sharing of data was discussed. Using QGIS and PTV Vissim, he gave a demo about traffic management.

The speaker was honoured by Dr. Nagaraj Sitaram, Principal, MVJCE

With this, the three-day FDP came to a close, and the participants gave their feedback. Dr. Nagaraj Sitaram, Principal, MVJCE, addressed the gathering about the sessions. The Vote of thanks was delivered by Prof. R Muralidhara. He thanked the Management of MVJCE for facilitating the event, the Principal Dr. Nagaraj Sitaram for inspiring the Department, and Vice-principal Prof. Brindha M for providing great support for conducting the FDP. He thanked all the participants from the various colleges, and all the coordinators and committee members and attenders for making this three-day FDP a grand success. The FDP concluded with the National Anthem.

Outcome of the Event

Participants got exposure to the latest trends and techniques in the Civil Engineering field through GIS Software (CO5-Modern Tool Usage). They will be able to recall the basic concepts of remote sensing and GIS. They gained profound knowledge on digitization of any raster image by using MapInfo software package. The session illustrated the various applications of RS and GIS in Civil Engineering field. The programme also helped in improving the skills of the participants in usage of modern tool data collection and its applications related to Civil Engineering. (CO2-Problem Analysis, CO4-Conduct Investigation on Complex Problem).



FDP: Day 1, 19th December 2019, Dignitaries on stage. (Left to Right)- Dr Mahabaleshwarappa, Dean-Academic, MVJCE; Principal Dr Nagaraj Sitaram, MVJCE; Chief Guest Dr MK Nagaraj, Senior Professor(Retd), Department of Applied Mechanics, National Institute of Technology(NIT), Surathkal; Prof Muralidhara R, Head, Civil Engineering Department, MVJCE.



FDP: Day 1, 19th December 2019, Inauguration of the Programme by Lighting the Lamp. (Left to Right)- Dr Mahabaleshwarappa, Dean-Academic, MVJCE; Chief Guest Dr M K Nagaraj, Senior Professor(Retd), Department of Applied Mechanics, National Institute of Technology(NIT), Surathkal; Principal Dr Nagaraj Sitaram, MVJCE; Prof Muralidhara R, Head, Civil Engineering Department, MVJCE.



FDP: Day 1, 19th December 2019, Session 1, Chief Guest Dr M K Nagaraj delivering the Lecture.



FDP: Day 1, 19th December 2019, Session 1, Prof Muralidhara R, Head, Civil Engineering Department, MVJCE honouring the Chief Guest Dr M K Nagaraj.



FDP: Day 1, 19th December 2019, Session 2, Presentation by Dr. M S Ganesh Prasad, Professor, Department of Civil Engineering, National Institute of Engineering, Mysuru on Basics of Remote Sensing & GPS Applications.



FDP: Day 1, 19th December 2019, Session 3, Presentation by Mr Prashanth K, Esri India Pvt Ltd.



FDP: Day 2, 20th December 2019, Session I, Hands on training on Map Digitization using MapInfo by Prof. N Vetrivel, Assistant Professor, Department of Civil Engineering, MVJCE.



FDP: Day 2, 20th December 2019, Session 2, Presentation by Mr. S Aditya Satheesh, General Manager – Projects, M/s. CICON Engineers Pvt. Ltd., Bengaluru on Evolution of Civil Engineering and Future Professional Paths.



FDP: Day 3, 21st December 2019, Presentation by Dr. Punith B Kotagi, Assistant Professor, National Institute of Engineering, Mysuru on Application of GIS in Road Traffic Management.



FDP: Day 3, 21st December 2019, Feedback by an external participant during Valedictory function.



FDP: Day 3, 21st December 2019, Vote of Thanks by Prof Muralidhara, Head, Civil Engineering Department, MVJCE.

