



One-Week Hands-On Training Program on “Uses of Advanced Instruments in Civil Engineering Projects” (11th July – 17th July, 2022)

The Department of Science and Technology, Government of India, has given the responsibility to IIT (ISM) Dhanbad to build human resources and its knowledge capacity using open access science and technology infrastructure through the scheme "*Synergistic Training Program Utilizing the Scientific and Technological Infrastructure (STUTI)*". Thus, under DST-STUTI programme of IIT (ISM) Dhanbad, a one-week hands-on training program on "*Uses of Advanced Instruments in Civil Engineering Projects*" was organized from 11th July to 17th July, 2022 at Department of Civil Engineering, IIT (BHU), Varanasi.

This training program was coordinated by Prof. Pabitra Ranjan Maiti and Prof. Supriya Mohanty, Department of Civil Engineering, IIT (BHU) and Prof. Sarat Kumar Das, Department of Civil Engineering, IIT (ISM) Dhanbad. This program includes thirty participants (Faculty/Research Scholar) from various universities/colleges in India, with no more than three from the same university/college.

Highlights of the Day-1 (Dated: 11th July, 2022)

The first day of the training program began with a brief introduction to the program's purpose and significance. The introduction energized the participants' interest in science and engineering. The participants were then given a welcome kit that included a bag, a note pad, a power kit (pen, pencil, eraser, and sharpener), and a program pamphlet.

Following that, two consecutive lectures were scheduled, with a relatively short tea break in between. The first lecture (from 10:00 AM to 11:30 AM) was based on the fundamentals of structural dynamics and was delivered by Dr. Pabitra Ranjan Maiti, IIT (BHU), and the second lecture (from 11:45 AM to 01:15 PM) was based on the measurement techniques by using the sensors and was delivered by Dr. Mahendra Kumar Pal, IIT (BHU).

Next, after the lunch break, a practical demonstration (from 02:15 PM to 05:15 PM) on the DAQ system was provided by Dr. Pabitra Ranjan Maiti and Dr. Mahendra Kumar Pal.

Highlights of the Day-2 (Dated: 12th July, 2022)

Similarly, on the second day, two lectures were conducted. The first lecture (from 10:00 AM to 11:30 AM) was focused on the methods of material testing and was delivered by Dr. Kshitij Kumar



Yadav, IIT (BHU), and the second lecture (from 11:45 AM to 01:15 PM) was focused on concrete mix design & uses of UTM/CTM and was delivered by Dr. Sasankasekhar Mandal, IIT (BHU).

Next, after the lunch break, a practical demonstration (from 02:15 PM to 05:15 PM) on UTM/CTM was provided by Dr. Kshitij Kumar Yadav and Dr. Sasankasekhar Mandal.

Highlights of the Day-3 (Dated: 13th July, 2022)

On the third day, two lectures were conducted. The first lecture (from 10:00 AM to 11:30 AM) was based on the field tests in geotechnical engineering and was delivered by Dr. Arun Prasad, IIT (BHU), and the second lecture (from 11:45 AM to 01:15 PM) was based on the measurement of dynamic properties of soil and was delivered by Dr. Supriya Mohanty, IIT (BHU).

Following the lunch break, a practical demonstration (from 02:15 PM to 05:15 PM) on the cyclic triaxial testing facility was provided by Dr. Arun Prasad and Dr. Supriya Mohanty.

Highlights of the Day-4 (Dated: 14th July, 2022)

Similarly, two lectures were given on the fourth day. Dr. Supriya Mohanty, IIT (BHU), delivered the first lecture (from 10:00 AM to 11:30 AM) and Dr. Manas Chakraborty, IIT (BHU), delivered the second lecture (from 11:45 AM to 01:15 PM) on the measurement of shear wave velocity of soil and unsaturated soil mechanics concepts, respectively.

Next, after the lunch break, a practical demonstration (from 02:15 PM to 05:15 PM) on the bender element testing facility was provided by Dr. Supriya Mohanty and Dr. Manas Chakraborty.

Highlights of the Day-5 (Dated: 15th July, 2022)

On the fifth day, two lectures were conducted. The first lecture (from 10:00 AM to 11:30 AM) was focused on the basics of 3D mapping using unmanned aerial vehicle and was delivered by Dr. Satya Prakash, and the second lecture (from 11:45 AM to 01:15 PM) was focused on the fundamentals of GNSS and was delivered by Dr. Vikash Srivastava, IIT (BHU).

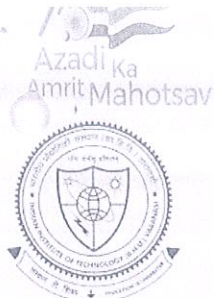
Next, after the lunch break, a practical demonstration (from 02:15 PM to 05:15 PM) of the unmanned aerial vehicle with different sensors was provided by Dr. Satya Prakash and Dr. Vikash Srivastava.



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Department of Science and Technology
Ministry of Science and Technology
Government of India
DST, Govt of India



IIT (BHU), Varanasi

Highlights of the Day-6 (Dated: 16th July, 2022)

Similarly, two lectures were given on the sixth day. Dr. Pabitra Ranjan Maiti, IIT (BHU), delivered the first lecture (from 10:00 AM to 11:30 AM), and Dr. Prabhat Kumar Singh Dikshit, IIT (BHU), delivered the second lecture (from 11:45 AM to 01:15 PM) on measurement techniques by hydraulic bench and river meanderings, respectively.

Next, after the lunch break, a laboratory demonstration (from 02:15 PM to 05:15 PM) on hydraulic bench and river meanderings was provided by Dr. Pabitra Ranjan Maiti and Dr. Prabhat Kumar Singh Dikshit.

Highlights of the Day-7 (Dated: 17th July, 2022)

Similarly, on the seventh day (the last day of the training program), two lectures were conducted. The first lecture (from 10:00 AM to 11:30 AM) was based on the methods of seismic waves measurement techniques and was delivered by Dr. Samim Mustafa, IIT (BHU) and the second lecture (from 11:45 AM to 01:15 PM) was based on the methods of ground response analysis and was delivered by Dr. Supriya Mohanty, IIT (BHU).

Next, after the lunch break, a practical demonstration (from 02:15 PM to 05:15 PM) on the strong motion accelerograph was provided by Dr. Samim Mustafa and Dr. Supriya Mohanty.

Following that, the certificate distribution took place, followed by a closing speech. Throughout the training programme, a formal discussion environment was established for the exchange of scientific and technological knowledge.

Prof. Sagar Pal
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Co-Coordinator (DST-STUTI)

Prof. Sarat Kumar Das
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