

**One Week**  
**Faculty Development Program**  
**On**  
**“Earthquake Mitigation and Risk Analysis”**

**18<sup>th</sup> -23<sup>rd</sup> December 2023**

**Sponsored by**



**AICTE Training and Learning (ATAL) Academy**



**Organized By**

**IPS Academy**

**Institute of Engineering & Science**  
**(A UGC Autonomous Institute, Affiliated to RGPV)**

**Civil Engineering Department**

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## About FDP

Earthquake is one of the most destructive natural hazard that strikes community at any time with sudden impacts and little or no warning. Earthquake effects can cause damage to facilities or infrastructures buildings result in loss of life, hurt hundreds of thousands of people, and disrupt the social and economic functioning of the affected area. The effects will rise mainly due to increasing population and structures or infrastructure facilities. Although it is beyond the control of human beings to prevent the earthquake from occurring, it is likely to mitigate the outcomes and lower loss of life, injuries, and damage.

This FDP provides an opportunity for researcher in the field of earthquake mitigation and risk analysis and its various applications. This FDP also tends to provide an opportunity for academician, industry experts and research scholars to exchange and contribute their experiences and innovations about earthquake mitigation and risk analysis.

The objective of this FDP is to develop a wider understanding of earthquakes and to contribute to increased knowledge of earthquake risk reduction practices. This objective is accomplished through sessions describing earthquake hazards and vulnerabilities and presenting an integrated framework for assessing and reducing earthquake risk through implementation of earthquake risk mitigation.

### Topics to be covered

- Know-how for the development of organized approaches for earthquake mitigation
- Knowledge and skills for implementation of mitigation initiatives
- •Analysis of the need to develop multi-sectoral partnerships for successful implementation of mitigation measures
- Field exposure to ongoing mitigation work

At the end of this FDP, participant shall be able to understand knowledge pertaining to earthquake mitigation and risk analysis and familiarize with the concepts associated with it globally.

Thus, the prominent objectives of this workshop are as follows:

1. Promoting a culture of prevention, preparedness and resilience at all levels through knowledge, innovation and education.
2. Encouraging earthquake mitigation measures based on technology, traditional wisdom and environmental sustainability.
3. Ensuring efficient mechanism for identification, assessment and monitoring of earthquake risks.
4. Ensuring efficient response and relief with a caring approach towards the needs of the vulnerable sections of the society

FDP Outcomes:

1. The participation builds confidence, pride that they are able to make a difference and capabilities to pursue earthquake mitigation and preparedness and bigger development responsibilities at the local level. This leads to empowerment.
2. Community involvement in earthquake risk assessment and risk reduction planning leads to ownership, commitment and individual and concerted actions in disaster mitigation, including resource mobilization;
3. Trusting and supporting the capacity building process results in a wide range of appropriate and do-able mitigation solutions;
4. Community Based Earthquake Mitigation is cost effective, self-help and sustainable even if it is time consuming.

## **About ATAL Academy**

AICTE Training and Learning (ATAL) Academy is established with the vision “To empower faculty to achieve goals of Higher Education such as access, equity and quality”. ATAL academy will conduct a series of workshops in thrust areas identified by AICTE.

## **About the Institute**

IPS Academy, Institute of Engineering & Science A UGC Autonomous Institute, Affiliated to RGPV is one of the leading private self financing institutes devoted to imparting quality engineering education with the sole motto of “Knowledge, Skill & Values”. The institute was established in 1999 and Ranked 42 among the Top Engineering Colleges in country and 32 among the Private Engineering Colleges in country by Times of India and is top preferred institute for education amongst self financing institute in MP by CSR .

We offer 14-UG & 8-PG programs out of which UG Programmes Accredited by NBA New Delhi

## **About the Department**

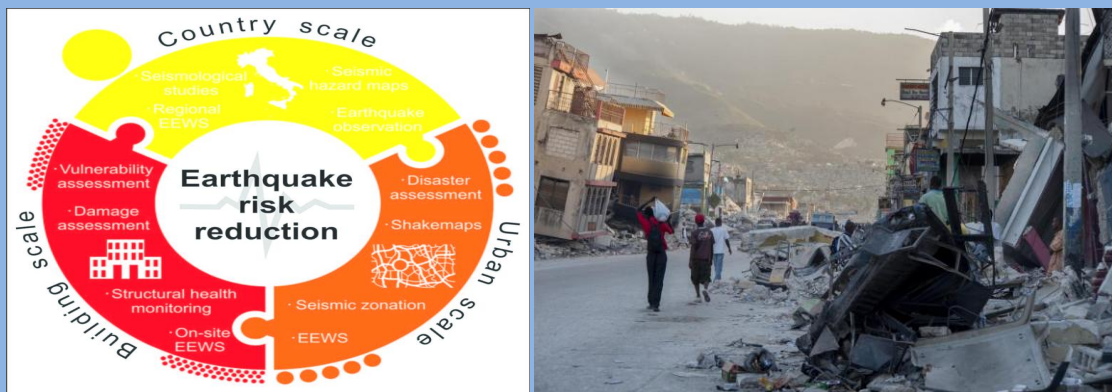
The oldest and most elegant branch of engineering profession is Civil Engineering due to the fact that is related to almost all aspects of civilization. The Department was established in 2004. Now Department has M.Tech.in Structural Engineering and Construction & Planning Management. The Department is equipped with more than 15 laboratories and computer centre for Research & Development, teaching, training & consultancy. State of art lab Heavy Structure Lab is supported twice by AICTE under MODROBS scheme. Weather Station installed by department to monitor temperature, humidity, soil moisture, wind velocity, rainfall etc. Eight Patents are published and Seven Books Published by the Department. Five Limka book records registered by the Students. UG Program is accredited by NBA New Delhi.

The Civil Engineering Department with its multifaceted faculty continues to maintain and cultivate its strong links with the infrastructural industry and academic and research institutions both within and outside the country.



## Course Contents

- Learning's from Past Earthquakes
- Seismic Microzoning
- Earthquake Prediction
- Risk Assessment
- Engineering Measures and Loss Reduction
- Experimental Investigation
- Seismic Performance Assessment of Structures
- Pushover Analysis
- Time History Analysis
- Fragility Curves
- Strengthening of Existing Structures
- Mitigation Techniques
- Liquefaction
- Soil Structure Interaction



## Tentative Schedule of Technical Sessions

### BASIC AICTE ATAL FDP/CPDP

(18<sup>th</sup> December – 23<sup>rd</sup> December, 2023)

DAY	Date/ Time	9:00-9:30	9:30-12:00	12:0-1:00	1:00-2:00	2:00-4:30	4:30-5:30
DAY-1	18/12/2023 (Monday)	Inauguration	Dr. Surya Prakash	Article Discussion	Lunch	Dr. Neelima Satyam	Experimental investigation on member using uniaxial shake table
DAY-2	19/12/2023 (Tuesday)		Dr. Vasily Golubev	Article Discussion	Lunch	Dr. R.K Khare	Experimental investigation on models using Biiaxial shake table
DAY-3	20/12/2023 (Wednesday)		Dr. Hemant B. Kaushik	Article Discussion	Lunch	Dr. Sandip Das	Experimental investigation on models using Biiaxial shake table
DAY-4	21/12/2023 (Thursday)		Major Dr. C.S Sanghvi	Article Discussion	Lunch	Mr. Yogesh V. Kshirsagar	Experimental investigation on models using hydraulic actuator
DAY-5	22/12/2023 (Friday)		Industrial Visit		Lunch	Dr. Guru Prakash	Experimental investigation on models using hydraulic actuator
DAY-6	23/12/2023 (Saturday)		Dr. Lalit Borana	Reflection Journal	Lunch	MCQ, Feedback and Interaction	Valedictory Session

## **Chief Patron**

Ar. Achal K. Choudhary  
President, IPS Academy, Indore

## **Patron**

Dr.A.G.Kothari  
Advisor, IPS Academy  
Institute of Engg.& Sc.

Dr.Archana Keerti Chowdhary  
Principal, IPS Academy  
Institute of Engg.& Sc.

## **Advisory Committee**

Dr.Rakesh Khare  
Dr.Neelima Satyam  
Dr. Keerti K.Chowdhary

Dr.A.N.Patel  
Dr. Vasily Golubev  
Dr. Amit Sharma

## **Members**

Dr.Devaanshi Jagwani  
Mr.Harshit Jain  
Mr. Rajesh Chaturvedi  
Mr. Apoorv Sharda  
Mr.Arpit Sethiya  
Mr. Lalitesh Sinha  
Ms. Pallavi Gupta

Dr.Veena Bauntial  
Ms.Richa Jain  
Dr Ashish Nim  
Mr. Diwakar Singh  
Mr.Harish Dwivedi  
Mr. Praveen Devra  
Ms. Anjuri Shrivastava

Registration: <https://atalacademy.aicte-india.org/signup>

**No Registration Fee.**

## **Coordinator**

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## **Co- Coordinator**

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\*Identify potential Resource Persons with Expertise and Experience from Academia, Industry

S.No.	Name	Topic
1	Dr. Surya Prakash NIDM, Delhi (Professor, NIDM Delhi)	Geotechnical Risk Management
2	Dr. Neelima Satyam (Professor & Head, Department of Civil Engineering IIT Indore	Ground Response Analysis
3	Dr. Vasily Golubev (Head & Senior Research Scientist Moscow Institute of Physics & Technology, Russia)	Dynamic Problems in Spatially Heterogeneous Media: The Grid- Characteristic Method
4	Mr. Yogesh V. Kshirsagar Sahajayoga Meditation Practioner and Trainer AICTE ATAL	Stress management (Sahaj Yoga)
5	Dr. RK Khare, Professor & Dean (Academics) Shri G.S.I.T.S, Indore	Seismic Hazard Analysis
6	Major Dr. C.S Sanghvi, Professor and Head, L.D College of Engg, Ahmedabad	Labs
7	Dr. Hemant B. Kaushik, Professor & Head, Department of Civil Engineering IIT Guwahati	Influence of ground motion variation on seismic response and fragility of RC frames.
8	Dr. Sandip Das, Associate Professor Department of Civil Engineering IIT Guwahati	Lateral Load Behavior of Traditional Assam-Type Wooden Housing
9	Dr. Guru Prakash (Assistant Professor, Department of Civil Engineering IIT Indore	Damage detection and prognosis
10	Dr. Lalit Borana, Associate Professor Department of Civil Engineering IIT Indore	Soil-Structure Interaction