



POORNIMA

COLLEGE OF ENGINEERING

Affiliated to RTU, Kota • Approved by AICTE & UGC under 2(f) • Accredited by NBA



DEPARTMENT OF CIVIL ENGINEERING

FDP

On

**‘Earthquake Resistant Design of Concrete & Steel
Moment Resisting frame Buildings’**

Session_2019-20

A
Post Detail Report of
TEQIP-III RTU (ATU) SPONSORED
Five Days FDP
On
**“Earthquake Resistant Design of Concrete &
Steel Moment Resisting frame Buildings”**

September 21-25, 2020

Coordinated by
Mr. Divya Vishnoi
Ms. Supriya Bansal
Organized by



Department of Civil Engineering

Poornima College of Engineering

Jaipur, Rajasthan- (India)

&

Rajasthan Technical University, Kota


Dr. Mahesh Bunde
B.E., M.E., Ph.D.
Director
Poornima College of Engineering
ISI-0, FIICO Institutional Area
Sitapura, JAIPUR

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1. FDP BROCHURE

PCE ORGANIZING COMMITTEE

Mr. Pankaj Dhemla	Vice-Principal, PCE
Dr. Rekha Nair	Dean I Year, PCE
Mr. Balwan Seshma	Assistant Professor & HOD, PCE
Dr. Harshwardhan Singh Chouhan	Associate Professor, PCE
Dr. Shilpi Jain	Associate Professor, PCE
Mr. Arpit Singh Bhadoriya	Assistant Professor, PCE
Mr. Lokesh Kumar Prajapat	Assistant Professor, PCE
Mr. Rahul Khandelwal	Assistant Professor, PCE
Mr. Dinesh Sharma	Assistant Professor, PCE
Mr. Rituraj Singh Rathore	Assistant Professor, PCE
Mr. Jitendra Kumar	Assistant Professor, PCE
Mr. Vikas Sharma	Assistant Professor, PCE
Mr. Vishal Chourasiya	Assistant Professor, PCE

RESOURCE PERSONS

The resource person for the FDP will be eminent professors and experts in the area of Earthquake Resistant and Construction from IITs, NITs and other esteemed institutions.

ELIGIBILITY

This course is open to all the Faculty Members of AICTE Approved Institutions, Research Scholars, and Persons working in R&D organizations or Industry. Number of participants for FDP is limited. All the sessions will be conducted online only.

IMPORTANT DATES

Last date of receipt of application	September 15, 2020
Intimation of selection by mail	September 16, 2020
FDP duration	September 21-25, 2020



REGISTRATION AND FEE PARTICULARS

- There is no registration fee for faculty from AICTE approved Institutions, Participants from Industry, and Research Scholars.
- Registration for the program may be done by filling the Registration Form online, Reg. Link: <https://tinyurl.com/yxck6sex>



CORRESPONDENCE

Prof. (Dr.) A.K. Dwivedi
Event Coordinator (RTU)
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Mr. Divya Vishnoi
Event Coordinator (PCE)
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Ms. Supriya Bansal
Event Coordinator (PCE)
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Venue

Department of Civil Engineering
Poornima College of Engineering
ISI-6, RIICO Institutional Area, Sitapura, Jaipur, Rajasthan 302022
www.pce.poornima.org






TEQIP-III SPONSORED
Faculty Development Program
on
Earthquake Resistant Design of Concrete & Steel Moment Resisting frame Buildings
September 21-25, 2020



Organized by

Rajasthan Technical University, Kota
&
Department of Civil Engineering



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Dr. Mahesh Bundele
 B.E., M.E., Ph.D.
 Director
 Poornima College of Engineering
 ISI-6, RIICO Institutional Area
 Sitapura, JAIPUR

ABOUT TEQIP-III

The Project, third phase of Technical Education Quality Improvement Programme (referred to as TEQIP-III) is fully integrated with the Twelfth Five-year Plan objectives for Technical Education as a key component for improving the quality of Engineering Education in existing institutions with special consideration for Low Income States and Special Category States and support to strengthen few affiliated technical universities to improve their policy, academic and management practices.

RAJASTHAN TECHNICAL UNIVERSITY

Rajasthan Technical University (RTU) is located in Kota in the state of Rajasthan. It was established in 2006 by the Government of Rajasthan. The University currently affiliates about 129 Engineering Colleges, 4 B.Arch., 41 MCA Colleges, 95 MBA Colleges, 44 M.Tech. Colleges and 3 Hotel Management and Catering Institutes. The University aims to provide quality technical education which may help Rajasthan in its technical development and will boost technical environment in the country.

POORNIMA COLLEGE OF ENGINEERING

Poomima College of Engineering (PCE), established as a brand of technical education in the year 2000, has its own glorious legacy of leading the young engineers to the mammoth sky of success. Its accomplishments forecast its journey through the hardships and its triumph over them one after another. PCE left no stone unturned since its establishment in turning the glorious vision into unbelievable reality providing the platform for knowledge and research and their practical implementations in different engineering professional prospects. Glorious glimpses of PCE:



- Highly recognized and renowned affiliated technical institution all over Rajasthan with built up area more than 3.5 lacs square feet
- Affiliated to RTU, Kota & approved by AICTE, New Delhi
- The most preferred NBA Accredited Engineering College with running of six specializations of Engineering at UG Level (CSE, ECE, EE, ME, IT, CIV) and two at PG level (CS & VLSI)
- The only institution permitted by RTU to admit FN/PIO/Gulf students & designated as centre of excellence by IBM

DEPARTMENT OF CIVIL ENGINEERING

The Civil Engineering Department of PCE came into existence in the year 2011 with an alignment of the department's evolution with key events and technological advances for the betterment of the society and nation. At present, it has the intake of 60 students providing all the amenities of infrastructure related to knowledge, research, experiments and training of multiple professions. Poomima College of Engineering believes that Civil Engineering is an evergreen branch in the engineering profession. Therefore, the Department of Civil Engineering has renowned scholars as the faculty members for sharing the knowledge. It has been taking initiatives for the versatile enhancement of the students through the technical, cultural and sports fests since its inception.

ABOUT FACULTY DEVELOPMENT PROGRAM

A Five days Faculty Development Programme shall be organized for faculty members from different Engineering colleges across India from 21st – 25th September, 2020. Experts, across the country shall deliver the lectures on demand for understanding and exposure to earthquake engineering in design and practice of Concrete and Steel structures. These members have been contributing significantly to the improvement of the quality of Civil Engineering education. The main focus of the FDP will be on providing comprehensive knowledge about fundamental of structural dynamics, relevant to earthquake resistant structure design. Faculty will introduce about recent techniques and methods to analyse and design of Steel and Concrete for earthquake resistant frame buildings.

OBJECTIVES OF THE FDP

- To make the faculty team about behaviour of concrete and steel structure during earthquake.
- To introduce the provision of designs and ductile detailing of structures with reference to Indian standards.
- To motivate and develop confidence on use of recent techniques and methods to analyse and design of Steel and Concrete for earthquake resistant frame buildings.

COURSE MODULES

- Seismic resistant design philosophy – choice of form and material
- Design for seismic loads – displacement and curvature ductility requirements, Ductility demand of frames using static collapse mechanism and dynamic analysis
- Response spectra, elastic and inelastic spectra for MDOF structures

- Variation of ductility demand over height of multistorey building
- Concept of soft storey, Detailing of reinforcement for specific ductility demand and Effect of confinement
- BIS code based design procedures for analysis, design and ductile detailing of buildings
- Overview of Earthquake Resistant Design of Steel MRF Buildings
- Design and Detailing of Steel MRF Buildings for Earthquake Effects as per IS 800 : 2007
- Design of a Steel MRF Building as per Current Code
- Draft Provisions for Earthquake Resistant Design of Concrete and Steel

FDP COMMITTEE

CHIEF PATRON

Prof. (Dr.) R. A. Gupta
Hon'ble Vice Chancellor, RTU Kota

PATRON

Dr. Mahesh M. Bunde
Principal & Director, Poomima College of Engineering

RTU EVENT COORDINATOR

Prof. (Dr.) A.K. Dwivedi (RTU, Kota)

RTU (ATU) TEQIP-III COORDINATOR

Prof. (Dr.) Dharendra Mathur

RTU (ATU) TEQIP-III COMMITTEE

Dr. Harish Sharma	Nodal officer
Prof. D. K. Sambariya	Nodal Officer (Procurement)
Dr. S. D. Purohit	Nodal Officer (Finance)
Dr. Irum Alvi	Conference
Mr. Santosh Sharma	Expert Lecture
Mr. Anshul Bansal	GATE & Induction
Mr. Dinesh Kumar	Workshop

HOST INSTITUTE COORDINATORS

Mr. Divya Vishnoi	Assistant Professor
Ms. Supriya Bansal	Assistant Professor

2. PROGRAMME OUTLINE



RAJASTHAN TECHNICAL UNIVERSITY, KOTA

(Poornima College of Engineering, Jaipur)

TEQIP-III RTU (ATU) SPONSORED

Five Days TEQIP-III Sponsored Online Faculty Development Programme

On

Earthquake Resistant Design of Concrete & Steel Moment Resisting frame Buildings
(September 21-25, 2020)



SCHEDULE OF ONLINE FDP

DAY-1 (Monday, September 21, 2020)	
09:45 AM - 10:20 AM	Inauguration Function of FDP <ul style="list-style-type: none"> • Prof. (Dr.) R.A. Gupta , Hon'ble Vice Chancellor , RTU Kota (Chief Guest) • Prof. (Dr.) Dharendra Mathur, RTU (ATU) TEQIP-III Coordinator (Guest of Honour) • Prof. (Dr.) O.P. Chhangani, Hon'ble Vice Chancellor, Apex University (Guest of Honour) • Prof. (Dr.) A.K. Dwivedi , RTU Event Coordinator • Ar. Rahul Singhi, Director Poornima Group • Dr. Mahesh Bunde, Director & Principal, Poornima College of Engineering, Jaipur • Mr. Pankaj Dhemla, Vice Principal , Poornima College of Engineering, Jaipur • Mr. Balwan Sheshma, HOD,CE, Poornima College of Engineering
10:30AM - 12:00 PM	Session-I Topic: Seismic Resistant Design Philosophy – Choice of Form and Material Resource Person: Prof.(Dr.) O.P. Chhangani , Hon'ble Vice Chancellor, Apex University
12:00 PM- 1:30 PM	LUNCH BREAK
1:30 PM- 3:00 PM	Session-II Topic: Evaluation of Seismic Forces and Seismic Analysis Methods Resource Person: Prof. (Dr.) Suhasini N. Madhekar, Professor, College of Engineering, Pune

DAY-4 (Thursday, September 24, 2020)	
10:30 AM - 12:00 PM	Session-VII Topic: BIS Code Based Design Procedures for Analysis, Design and Ductile Detailing of buildings. Resource Person: Dr. Rama Shanker, Associate Professor, MNNIT Allahabad
12:00 PM- 3:30 PM	LUNCH BREAK
3:30 PM- 5:00 PM	Session-VIII Topic: Design and Detailing of Steel MRF Buildings for Earthquake Effects as per IS 800: 2007 Resource Person: Dr. Anupam Rawat, Assistant Professor, MNNIT Allahabad

DAY-5 (Friday, September 25, 2020)	
10:30 AM - 12:00 PM	Session-IX Topic: Seismic Vibration Control of Tall Building Resource Person: Prof.(Dr.) B.P. Suneja, Dean Academics , RTU Kota
12:00 PM- 1:30 PM	LUNCH BREAK
1:30 PM- 3:00 PM	Session-X Topic: Seismic Resistant Analysis of Berthing Structures Including Soil Structure Interaction Resource Person: Dr. Seeram Madhuri, Assistant Professor, NIT Jamshedpur
3:00 PM - 3:30 PM	Valedictory Session and Vote of thanks
3:30 PM - 4:00 PM	Assessment Quiz

Prof. (Dr.) A.K. Dwivedi
RTU Coordinator

Mr. Divya Vishnoi
Host Institute Coordinator

Ms. Supriya Bansal
Host Institute Coordinator

Dr. Mahesh Bunde
Head of Institute


Dr. Mahesh Bunde
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3. EXPERT DETAILS

Dr. O.P. Chhangani

Hon'ble Vice Chancellor, Apex University,

opchhangani@yahoo.com

Professor Om Prakash Chhangani is a well-known scholar in the Structural Engineering within the area of Civil Engineering. He has contributed significantly in the utilization of fly ash within the state. He has more than 35 years of UG and 15 years of PG teaching experience. He has traveled extensively in Europe (Hungary, Czechoslovakia, Germany, France, Austria, Switzerland and Italy). He has participated in publication of European Committee du Beton manual on deflection calculation in slabs and currently a member of the Bureau of Indian standards on Earthquake resistance Design of Bridges and Retaining wall. His contributions on fly ash were also appreciated by college and erstwhile Engineering College Kota was awarded Business Council letter of appreciation for college activity to promote fly ash products.

He was instrumental in bringing TEQIP project to the state of Rajasthan in its II phase. He has authored numerous articles in journals of repute and delivered keynote lectures and expert lectures on subjects of Civil Engineering. He has contributed in curriculum development and courses formulation in PG programmes of University of Rajasthan and Rajasthan Technical University Kota. He has extensive administrative experience of working in different capacities in academic institutions within the state. He had been the Director University College of Engineering and Pro Vice-Chancellor at Rajasthan Technical University, Kota. He has worked as Director, Apex Group of Institutions as well as Director General of the Group. Currently he is the Vice Chancellor of the Apex University.



Dr. Suhasini N. Madhekar

Professor, College of Engineering, Pune

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Dr. Suhasini N. Madhekar is currently working as Professor of Applied Mechanics, in the Department of Civil Engineering at College of Engineering Pune (COEP). She obtained her doctorate degree from Indian Institute of Technology (IIT) Bombay. The subject of her


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research was ‘Seismic Control of Benchmark Highway Bridge’. Her PhD thesis is published in book form by LAP LAMBERT Academic Publishing GmbH and Company, Germany. Her current research interests include structural dynamics and vibration control, bridge engineering and protection of structures from earthquake. She is a supervisor of students for doctoral research. She is FIE (India) and life member of ISTE, ISSE, INDIAN ASTR, IIBE and ICI.

Dr. Madhekar has published a book on ‘Seismic design of RC buildings - Theory and Practice’, co-authored by Mr. Sharad Manohar. The book is of international repute, published by Springer. The book was awarded the ‘Best book of the year - Useful to consultants’, in 2015, by Association of Consulting Civil Engineers, India. She has published international journal papers, conference papers and book chapters. Dr. Madhekar has delivered invited lectures in different educational institutes in India. She is also invited as examiner for evaluation of masters and PhD theses by different universities. Dr. Madhekar is recipient of the Excellence in Teaching Award at College of Engineering Pune, the ‘COEP Star Award’.



Dr. Nitin Singh is currently working as an Associate Professor in Department of Electrical Engineering, MNNIT Allahabad, Prayagraj, India. He is an alumnus of Motilal Nehru National Institute of Technology Allahabad, India. His primary areas of research are Power System Planning, Electricity markets, Artificial Intelligence, implementation of optimization algorithms and machine learning techniques for power system optimization. He has published more than 45 publications in International Journals and in Proceedings of International Conferences of repute. He is serving as reviewer of several Scopus, SCI and E-SCI-indexed journals. He has organized several international conferences under the banner of IEEE and Springer. He is Member of IEEE, member of IEEE Computational Intelligence Society, Power Energy Society, and Industrial Application society. He is currently serving as Secretary, IEEE Joint Chapter of Industrial Electronics/ Power Electronics /Control System at MNNIT Allahabad. Dr. Nitin Singh is currently working as an Associate Professor in Department of Electrical Engineering, MNNIT Allahabad, Prayagraj, India. He is an alumnus of Motilal Nehru National Institute of Technology Allahabad, India. His primary areas of research are Power System Planning, Electricity markets, Artificial Intelligence, implementation of optimization algorithms and machine learning techniques for power system optimization. He has published more than 45 publications in International Journals and in Proceedings of International Conferences of repute. He is serving as reviewer of several Scopus, SCI and E-SCI-indexed journals. He has organized several international conferences under the banner of IEEE and Springer. He is Member of IEEE, member of IEEE Computational Intelligence

Society, Power Energy Society, and Industrial Application society. He is currently serving as Secretary, IEEE Joint Chapter of Industrial Electronics/ Power Electronics /Control System at MNNIT Allahabad

Dr. Rama Shanker

Associate Professor, M. N. N. I. T. Allahabad

ramashanker@mnnit.ac.in

Dr. Rama Shanker is currently working as an Associate Professor in the Civil Engineering Department at MNNIT Allahabad. He did his masters and Ph.D. from IIT Delhi. His major research areas are Structural Health Monitoring (SHM), Soft Computing, Sensor System for SHM, Structural Dynamic, Soil Structure Interaction. He is involved in various testing and consultancy works including Design of various multi-storey residential and commercial buildings.

He has guided 10 research scholars towards their doctoral thesis, 5 on-going and 20 postgraduate students for their master's thesis. He has published numerous research papers in international/national journals and conference proceedings. He is also life time member of Indian Concrete Institute.



Dr. Keshav Kumar Sharma

Assistant Professor, National Institute of Technology, Jamshedpur

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Dr. Keshav Kumar Sharma is currently working as an Assistant Professor in the Civil Engineering Department at NIT Jamshedpur. He did his masters and Ph.D. from MNNIT Allahabad. His major research area is Design and Analysis of high rise buildings under the Seismic actions. He has published numerous research papers in the same area in international/national journals and conference proceedings. He is involved in various testing and consultancy works including design of bridges and multi-story Residential/Commercial buildings.



Dr. P. C. Ashwin Kumar

Assistant Professor, Indian Institute of Technology, Roorkee

pcashwin.feq2018@iitr.ac.in

Dr. P. C. Ashwin Kumar is currently working as an Assistant Professor in the Civil Engineering Department at IIT Roorkee. He did Ph.D. from IIT Delhi and masters from IIT Madras. His research interests include Seismic analysis and design of steel structures, Seismic retrofitting of structures, large scale testing of structures and Finite element modeling of structures. He is also a life member of ISET and affiliate member of ASCE.



Dr. Anupam Rawat

Assistant Professor, MNNIT Allahabad

anupam@mnnit.ac.in

Dr. Anupam Rawat is currently working as an Assistant professor in the Civil Engineering Department at MNNIT Allahabad. He did his masters and Ph.D. from MNNIT Allahabad. His major research areas are Structural Health Monitoring, Ferro-cement, Pavements, Soil-pavement interaction. He has published numerous research papers in the same area. He is also a Member in team for Inspection of Grossly Polluting Industries (GPIs) by third part technical institute funded under National Mission for Clean Ganga (NMCG) 'Namami Gange' Programme. April-July 2018.



Dr. B. P. Suneja

Professor, Rajasthan Technical University, Kota

bpsuneja@rtu.ac.in

Dr. B. P. Suneja is a Professor in the Civil Engineering Department of Rajasthan Technical University, Kota. Presently he is also working as the Dean, Faculty of Engineering and Architecture in the University and also as University coordinator for Universal Human Value Programs and Induction Programs of AICTE. He is also convener for New Education Policy-2020 for RTU.

He graduated from MBM Engg. College, Jodhpur in 1984 and later acquired his M. Tech. in 1992 and Ph. D. degree in 1997 both from IIT, Delhi. He is the life member of various professional and academic bodies. He is Vice-Chairman of Indian Building Congress, Kota Regional Centre.

He has to his credit more than 30 research papers in reputed international and national journals and in international and national conferences. His area of interest is Earthquake Disaster management. He has been one of the state resource persons for national disaster management program and has trained about 150 field engineers through short term disaster management programs.

His 35 years teaching experience also includes working in various important capacities like controller of examinations, Dean student welfare, Head of the Civil Engineering Department and Head Training and Placement of RTU.




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Dr. Seeram Madhuri

Assistant Professor, National Institute of Technology, Jamshedpur

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Dr. Seeram Madhuri is currently working as an Assistant professor in the Civil Engineering Department at NIT Jamshedpur. She did her masters and Ph.D. from IIT Madras. Her major research area is Dynamics of Offshore Structures. She has published numerous research papers in the same area. She received best paper award at IGC-2006 for the paper titled “Effect of Soil Structure Interaction Analysis Methods on Estimation of Natural Period of Berthing Structures”.



4. SCREENSHOTS OF ONLINE SESSION

Date 21 September 2020

Inaugural Session

Poornima College of Engineering has organized a five days Faculty development Programme on Earthquake Resistant Design of Concrete & Steel Moment Resisting frame Buildings. This programme was inaugurated by Chief Guest Prof. R.A. Gupta, Hon.ble Vice Chancellor RTU Kota, Prof. Dhirrendra Mathur, RTU (ATU) TQIP-III Coordinator, Prof. O.P. Chhangani Vice Chancellor Apex University, Jaipur, Prof. B.P. Suneja Dean Academics Engineering and Architecture RTU Kota, Prof. A.K. Dwivedi, RTU FDP Coordinator, Prof. Mahesh Bunde, Director, PCE, Mr. Pankaj Demla and Mr. Divya Vishnoi.

Programme was preceded with welcome note by our Vice Principal Mr. Pankaj Dhemla. He welcomed our Chief Guest Prof. R.A. Gupta. He also briefed the importance of Earthquake resistant structures for faculty members, researchers, and students.

Prof. O.P. Chhangani also highlights the importance of such Faculty development Programme and Prof. B.P. Suneja discuss about the importance of construction of Structure for Earthquake Resistant. Also Prof. A.K. Dwivedi, RTU Event Coordinator, welcomed to all the participants and told about the FDP program. There are 134 participants were registered from various renowned institutes of Rajasthan and India.


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Inaugural Session (FDP on Earthquake Resistant Design of Concrete & Steel Moment Resisting frame Bu (2020-09-20 at 21:23 GMT-7)

The screenshot shows a Zoom meeting interface. On the left, a presentation slide titled "Welcome Address" is displayed. The slide features a portrait of Mr. Pankaj Dhemla, Vice Principal of Poornima College of Engineering, and an image of a podium. The slide number is 1. On the right, a video feed shows a participant wearing a headset and a blue shirt. The Zoom toolbar is visible at the bottom.

This screenshot is similar to the one above, showing the same "Welcome Address" slide. The participant in the video feed is identified as Dinesh Sharma. The Zoom interface and toolbar are also visible.

Inaugural Session (FDP on Earthquake Resistant Design of Concrete & Steel Moment Resisting frame Bu (2020-09-20 at 21:23 GMT-7)




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Prof. (Dr.) B.P. Suneja

- Dr. B. P. Suneja is a Professor in the Civil Engineering Department of Rajasthan Technical University, Kota. Presently he is also working as the Dean, Faculty of Engineering and Architecture in the University and also as University coordinator for Universal Human Value Programs and Induction Programs of AICTE. He is also convener for New Education Policy-2020 for RTU.
- He graduated from MBM Engg. College, Jodhpur in 1984 and later acquired his M. Tech. in 1992 and Ph. D. degree in 1997 both from IIT, Delhi.
- He is the life member of various professional and academic bodies.
- He is Vice-Chairman of Indian Building Congress, Kota Regional Centre.



Bharat Suneja

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About the FDP



Prof. (Dr.) A.K. Dwivedi
FDP Coordinator
Rajasthan Technical University, Kota



Prof Arvind Kumar Dwivedi

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Prof. (Dr.) O.P. Chhangani

- He has authored numerous articles in journals of repute and delivered keynote lectures and expert lectures on subjects of Civil Engineering. He has contributed in curriculum development and courses formulation in PG programmes of University of Rajasthan and Rajasthan Technical University Kota.
- He has extensive administrative experience of working in different capacities in academic institutions within the state. He had been the Director University College of Engineering and Pro Vice-Chancellor at Rajasthan Technical University, Kota. He has worked as Director, Apex Group of Institutions as well as Director General of the Group. Currently he is the Vice Chancellor of the Apex University.



Om Prakash Chhangani

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Inaugural Session (FDP on Earthquake Resistant Design of Concrete & Steel Moment Resisting frame Bu (2020-09-20 at 21:23 GMT-7)

Press **Esc** to exit full screen

Vote of Thanks



Mr. Divya Vishnoi
Assistant Professor
Poornima College of Engineering



22:54 / 26:57

Meeting interface showing participants and chat.

Participants (25):

- Ishtwar Chandra Vidya Sagar
- Pallavi Mishra
- Hemant Kommineni
- Ayush Goyal
- Saran Thelja
- Supriya Bansal
- learn easy
- Antha vijay
- Muthayan Uma
- Dr. J. Prakash Anil Jose
- Ipsandeep Singh
- Dr. Nikul Ramanna
- Nishank Agrawal
- Tanu kumawat
- swati achra
- Vikas Sharma
- vinay singh
- Ramanuj Jadhari
- Mr. P. Ravikumar Associate Pro...
- Meena Tekriwal
- Ipsandeep Singh
- Teekam Singh
- Supriya Bansal
- Dr. J. Prakash Anil Jose

Chat (12):

- Supriya Bansal 3:02 PM
Attendance link for session 2: <http://tiny.cc/vayvax>
- You 3:16 PM
Participants can write their question here or they can ask in QA session.
- Dr. J. Prakash Anil Jose 3:26 PM
Excellent session. Thank You madam kindly share the ppt madam prakashanulose11@gmail.com
- PRASHANT SHARMA 3:27 PM
Thanks mam
- Anandhabu Malayali 3:28 PM
Thank you mam valuable session
- You 3:28 PM
We will share by email and whats app group.
- Dr. J. Prakash Anil Jose 3:29 PM
kindly add me in whatsapp group @9438056483


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Session 1

Session-1 (Seismic resistant design philosophy – Choice of form and material) (2020-09-20 at 22:11 GMT-7)

Press **Esc** to exit full screen

Issues in R.C.C. Structures

- Reversal of Forces: Tension/Compression
- Slab Rigid Diaphragm Action
- Weak Beam-Strong Column
- Flexure Failure Preferred
- Beam Column Joint
- Soft Storey
- Short Column Effect
- Detailing of Members

Click to add notes

Slide 2 of 65 "Movement Top" English (United States)

Om Prakash Chhangani

REC LIVE Suhasini Madhekar is presenting

Inaugural Session (FDP on Earthqua... X)

People (50) Chat (3)

Add people Host controls

Divya Vishnoi (You)

Aakash Duhan

Abhay Srivastava

Abhishek Singh

Aditi Bansal

Astha vijay

Ayush Goyal

Charu Tikku

Dr. KRISHNA KAMAL DAS

Dr. Nakul Ramanna

Modeling of Buildings

- Vertical loads : DL and LL
- Horizontal loads : Wind and earthquake
- Structures have very high resistance in vertical direction, not in the horizontal direction.
- For vertical loads, horizontal framing is important : Slabs, beams
- For Lateral loads : vertical members are important : MRF, SMRF, shear walls

Inaugural Session (FDP on Eart... ^

Turn on captions

Suhasini Madhekar is presenting

Session 2

Session-2 (Evaluation of seismic forces and Seismic analysis methods) (2020-09-21 at 01:01 GMT-7)

TEQIP-III SPONSORED ONLINE FACULTY DEVELOPMENT PROGRAM

ON


"EARTHQUAKE RESISTANT DESIGN OF CONCRETE & STEEL MOMENT RESISTING FRAME BUILDINGS"

"Evaluation of seismic forces and Seismic analysis methods "


Session-II

Monday, Sept. 21, 2020,


1:30 PM



Dr. Suhasini N. Madhekar
College of Engineering, Pune



Rajasthan Technical University, Kota
&
Poornima College of Engineering, Jaipur



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Supriya Bansal

Session-2 (Evaluation of seismic forces and Seismic analysis methods) (2020-09-21 at 01:01 GMT-7)

Press Esc to exit full screen

Dr. Suhasini N. Madhekar
Professor, College of Engineering, Pune



Dr. Suhasini N. Madhekar is currently working as Professor of Applied Mechanics, in the Department of Civil Engineering at College of Engineering Pune (COEP). She obtained her doctorate degree from Indian Institute of Technology (IIT) Bombay. The subject of her research was 'Seismic Control of Benchmark Highway Bridge'. Her PhD thesis is published in book form by LAP LAMBERT Academic Publishing GmbH and Company, Germany. Her current research interests include structural dynamics and vibration control, bridge engineering and protection of structures from earthquake. She is a supervisor of students for doctoral research. She is FIE (India) and life member of ISTE, ISSE, INDIAN ASTR, IIBE and ICI.

Dinesh Sharma(6372)

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Session-2 (Evaluation of seismic forces and Seismic analysis methods) (2020-09-21 at 01:01 GMT-7)

Faculty Development Program on

Earthquake Resistant Design of Concrete & Steel

Moment Resisting Frame Buildings


(21 - 25 September 2020)

Evaluation of Seismic Forces and

Seismic Analysis Methods



Suhasini N. Madhekar
College of Engineering Pune

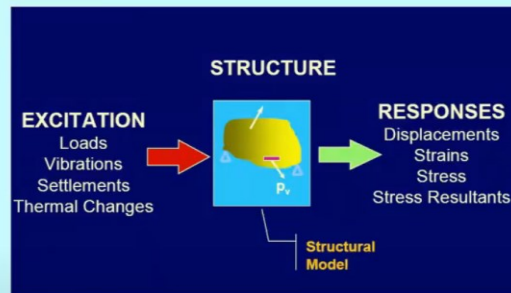


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Suhasini Madhekar


Dr. Mahesh Bunde
B.E., M.E., Ph.D.
Director
Poornima College of Engineering
ISI-0, FIICO Institutional Area
Shalpur, JAIPUR

The need for Structural Model



- * Real structure can only be **load tested** to determine the response.
- * We can only analyse the **model** of a structure.
- * We therefore need tools to **model** the structure and to **analyse** the model.

21



Suhasini Madhekar

Time histories

- Time history (EQ signature) – Unique for a particular site.
- Consider suite of time histories. Minimum 11 time histories – Mean value of the response
- Consider time histories that represent seismo-tectonic characteristics of the site under consideration.
- Bhuj : Milestone EQ for revision of IS 1893.
- Ahmedabad : ~ 300 km away from Bhuj : Low-hazard zone: New buildings collapsed – Old survived
- PGA Bhuj - Amplified to ~ 15-18 times at Ahmedabad

60





Suhasini Madhekar

Date 22 September 2020

Session 3

Dr. Rama Shanker
Associate Professor, M. N. I. T. Allahabad

Dr. Rama Shanker is currently working as an Associate Professor in the Civil Engineering Department at MNNIT Allahabad. He did his masters and Ph.D. from IIT Roorkee. His major research areas are Structural Health Monitoring (SHM), Soft Computing, Sensor System for SHM, Structural Dynamic, Soil Structure Interaction. He is involved in various testing and consultancy works including Design of various multi-storey residential and commercial buildings.




Divya Vishnoi

Session-3 (Response Spectra, elastic and inelastic spectra for MDOF structures) (2020-09-21 at 22:01 GMT-7)

Overview of Presentation

- Introduction
- Response Spectra
- Elastic Spectra
- Inelastic Spectra
- Importance of Spectra in Earthquake Resistant Design
- Conclusions



RamaShanker Associate Professor

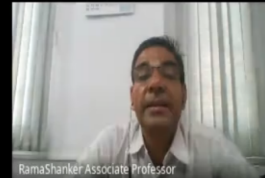
Response Spectrum

$$m\ddot{y} + c\dot{u} + ku = 0$$

$$m\ddot{y}_D + ku = 0$$

$$S_a = -\omega^2 S_D$$

$$S_v = \omega S_D = \frac{S_a}{\omega}$$



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ALLAHABAD

6

Application

The design horizontal seismic coefficient A_h for a structure shall be determined by the following expression:

$$A_h = \frac{Z I S_a}{2 R g}$$



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15

Session 4



Session-4 (Importance of ductile detailing, Ductility requirements and Ductility demand of beam col (2020-09-22 at 01:01 GMT-7)

Press **Esc** to exit full screen


Faculty Development Program on
Earthquake Resistant Design of Concrete & Steel Moment
Resisting Frame Buildings

Importance of Ductile Detailing, Ductility Requirements
and Ductility Demand of Beam Column Joints

22nd September 2020


 **Suhasini N. Madhekar**
College of Engineering Pune 


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Diya Vishnoi

Session-4 (Importance of ductile detailing, Ductility requirements and Ductility demand of beam col (2020-09-22 at 01:01 GMT-7)

Column Failures




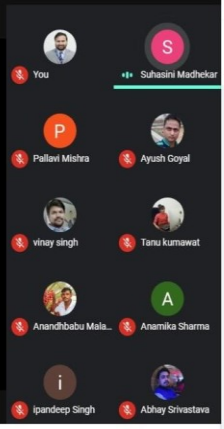

Suhasini Madhekar

REC LIVE **S** Suhasini Madhekar is presenting

Session-3 (Response Spectra, elast...

Athens (1999) EQ and Christchurch (2011) EQ





People (30) **Chat (1)**

Add people **Host controls**

Diya Vishnoi (You)
Abhay Srivastava
Aditi Bansal
Anamika Sharma
Anandbabu Malayali
Astha vijay
Ayush Goyal
Charu Tikku
Dr. KRISHNA KAMAL DAS
Dr. Nakul Ramanna

Session-3 (Response Spectra, ...
Turn on captions
Suhasini Madhekar is presenting


Dr. Mahesh Bunde
B.E., M.E., Ph.D.
Director
Poornima College of Engineering
ISI-6, FIICO Institutional Area
Shilapura, JAIPUR

Good Design Features

Distribution of mass and stiffness

- Should be fairly uniform in plan and elevation

Structural members

- Proportioning – Strong column and weak beam
- Large cantilevering portions should be avoided

Structural material

- Should sustain many stress reversals
- Should deform without failure

10

S

Suhasini Madhekar

REC LIVE S Suhasini Madhekar is presenting

Session-3 (Response Spectra, elasti... X

People (50) Chat (4)

Suhasini Madhekar
Supriya Bansal
SURENDER BISHNOI
Suresh Kumar
Suresh Maliya
swati achra
Taniya Pallwal
Tanu kumawat
Teekam Singh
Tushar Sharma(6382)
vinay singh
Vishal Kumar Chaurasia

16

Session-3 (Response Spectra, ...

Turn on captions

Suhasini Madhekar is presenting

Small displacement at collapse
Damage
Large displacement at collapse
Damage
All damage in one storey
Damage distributed in all storeys
(Weak Column Strong Beam) :: SWAY Mechanism
Poor
(Strong Column Weak Beam) :: BEAM Mechanism
Good

Date 23 September 2020

Session 5

Session-5 (Concept of soft storey and Detailing of reinforcement for specific ductility demand, E (2020-09-22 at 22:02 GMT-7))

TEQIP-III SPONSORED ONLINE FACULTY DEVELOPMENT PROGRAM

ON

"EARTHQUAKE RESISTANT DESIGN OF CONCRETE & STEEL MOMENT RESISTING FRAME BUILDINGS"

"Concept of soft storey and Detailing of reinforcement for specific ductility demand, Effect of confinement"

Session-V

Wednesday, Sept. 23, 2020,

10:30 AM

Dr. Keshav Kumar Sharma
National Institute of Technology
Jamshedpur

Rajasthan Technical University, Kota
&
Poornima College of Engineering, Jaipur

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Join meeting

Dr. Keshav Kumar Sharma

Session-5 (Concept of soft storey and Detailing of reinforcement for specific ductility demand, E (2020-09-22 at 22:02 GMT-7))

3. Unconfined cover concrete thickness:

As the load is increased, the unconfined concrete in the cover portion of the column will begin to spall, when the compressive strain in concrete reaches about 0.003 to 0.005, resulting in loss of strength. This loss will be considerable when the area of unconfined concrete cover is a larger proportion of the total concrete. Hence this effect has to be included in the confinement provisions, by specifying the ratio A_g/A_c , where A_g is the gross area and A_c is the area of confined core (the normal range for this ratio is 0.7-0.81). The fact that A_g/A_c will be directly proportional to A_g/A_c has been confirmed using moment curvature studies. However, ACI (as well as IS 13920) equations, as shown earlier, were set up to equate the coexistent capacity of cover concrete to strength gain in the core, rather than considering the effect of A_g/A_c on lateral deformation capacity. Hence ACI and IS codes have a factor

Figure 3. Confinement of concrete in rectangular or square columns

K

Keshav Kumar Sharma

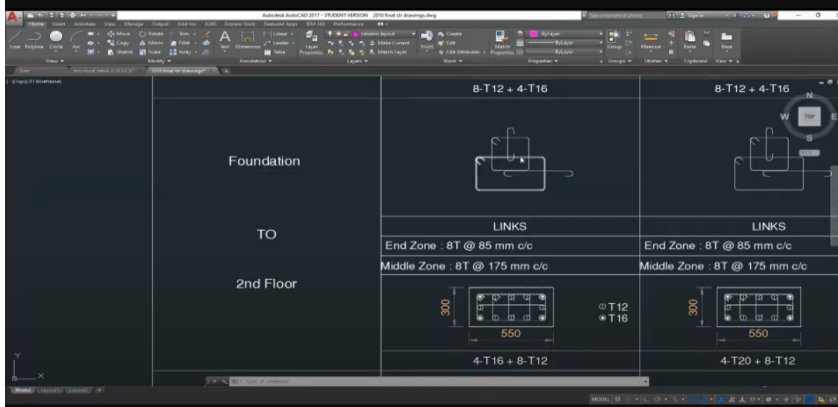
Session-5 (Concept of soft storey and Detailing of reinforcement for specific ductility demand, E (2020-09-22 at 22:02 GMT-7))

Figure 4. Detailing of reinforcement for specific ductility demand, E

K

Keshav Kumar Sharma

Session-5 (Concept of soft storey and Detailing of reinforcement for specific ductility demand, E (2020-09-22 at 22:02 GMT-7)



K
Keshav Kumar Sharma

REC LIVE K Keshav Kumar Sharma is presenting

Session-5 (Concept of soft storey a... X

People (33) 25 Chat (2)

Add people Host controls

Divya Vishnoi (You)

Aditi Bansal

anubhav rai

Astha vijay

Ayush Goyal

Charu Tikku

Dr. KRISHNA KAMAL DAS

Dr. Nakul Ramanna

Dr.J.Prakash Anil Jose

Hemanth Kommineni

Turn on captions Keshav Kumar Sharma is presenting

Sagging Moment = 280 kN-m
(Monolithic Construction, Beam will be Designed as T-beam)
Assuming $x_u < D_f$ $f_y < f_{yk}$ $x_{u,max}$
Limiting Capacity, $M_u = 0.87 f_y A_{st} d \left(1 - \frac{A_{st} f_y}{b d f_{yk}} \right)$
 $D_f = 125 \text{ mm}$ (slab depth)
 $x_u = \text{Actual depth of NA}$
 $x_{u,max} = \text{Limiting depth of NA}$
 $= 0.48 x_d$
 $= 255 \text{ mm}$

Session 6

Session-6 (Overview of Earthquake Resistant Design of Steel MRF Buildings) (2020-09-23 at 00:59 GMT-7)

TEQIP-III SPONSORED ONLINE FACULTY DEVELOPMENT PROGRAM
ON
"EARTHQUAKE RESISTANT DESIGN OF CONCRETE & STEEL MOMENT RESISTING FRAME BUILDINGS"
"Overview of Earthquake Resistant Design of Steel MRF Buildings"

Session-VI
Wednesday, Sept. 23, 2020,
1:30 PM

Dr. P. C. Ashwin Kumar
Indian Institute of Technology,
Roorkee

Rajasthan Technical University, Kota
&
Poornima College of Engineering, Jaipur

Supriya Bansal

Session-6 (Overview of Earthquake Resistant Design of Steel MRF Buildings) (2020-09-23 at 00:59 GMT-7)

INDIAN INSTITUTE OF TECHNOLOGY ROORKEE

Steel Moment Resisting Frames

by
P. C. Ashwin Kumar

DEPARTMENT OF EARTHQUAKE ENGINEERING
INDIAN INSTITUTE OF TECHNOLOGY ROORKEE

ashwin.kumar

Session-6 (Overview of Earthquake Resistant Design of Steel MRF Buildings) (2020-09-23 at 00:59 GMT-7)

Introduction

- Steel moment frames have been in use for more than one hundred years

Home Insurance Building, Chicago, 1884

Gusset plate, angles, rivets, built-up beam and column sections

Empire State Building

Post World War II Rolled 'I', 'H' sections

1960-70, Testing

1988 UBC, Special Moment Resisting Frames

Post-1980, Reduction in Redundancy

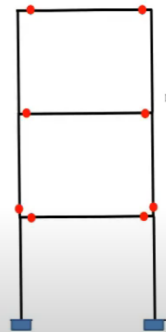
1994, Northridge Earthquake

Welded unreinforced flange - bolted web, 1970

ashwin.kumar

Dr. Mahesh Bunde
B.E., M.E., Ph.D.
Director
Poornima College of Engineering
ISI-06, FIICO Institutional Area
Shalpur, JAIPUR

Fun Questions



Acceptable?!?



Un-favorable Seismic Behavior

- **Beam:**
 - ✓ Excessive local buckling can result in strength loss and ultimately fractures associated with low-cycle fatigue
 - **Remedy:**
 - Use of highly compact section
 - Provision of lateral bracing in the zones of anticipated plastic hinging
- **Beam to Column Connection:**
 - ✓ Fractures in or around welds
 - ✓ Fractures in highly strained base material
 - ✓ Fractures at weld access holes
 - ✓ Net section fractures at bolt holes
 - ✓ Shearing and tension failure of bolts
 - ✓ Bolt bearing and block shear failures
 - **Remedy:**
 - Prequalifying connections

Session-5 (Concept of soft storey a... X

People (41) Chat (4)

- Abhay Srivastava
- Aditi Bansal
- Anamika Sharma
- ashwin kumar (Presentation)
- ashwin kumar
- Ayush Goyal
- bharat nagar
- Charu Tikku
- Dr. KRISHNA KAMAL DAS
- Dr. Nakul Ramanna
- Dr. J. Prakash Anil Jose
- Hemanth Kommineni

Date 24 September 2020

Session 7

Session-7 (BIS code based design procedures for analysis, design and ductile detailing of buildings (2020-09-23 at 22:03 GMT-7))

TEQIP-III SPONSORED ONLINE FACULTY DEVELOPMENT PROGRAM
ON
"EARTHQUAKE RESISTANT DESIGN OF CONCRETE & STEEL MOMENT RESISTING FRAME BUILDINGS"
"BIS code Based Design Procedures for Analysis, Design and Ductile Detailing of Buildings"

Session-VII
Thursday, Sept. 24, 2020,
10:30 AM

Dr. Rama Shanker
MNNIT Allahabad

Rajasthan Technical University, Kota
&
Poornima College of Engineering, Jaipur

RamaShanker Associate Professor

REC LIVE

Session-7 (BIS code based design p...

People (37) 16 Chat (7)

Add people Host controls

Divya Vishnoi (You)
Aakash Duhan
Aditi Bansal
Anamika Sharma
Anupam FACULTY
Anupam FACULTY (Presentation)
ashuvendra singh
Asha vijay
Ayush Goyal
Charu Tikku

Rectangular Hollow Sections (RHS)

- Rectangular hollow sections, either hot-rolled or fabricated by welding four plates are used in buildings and bridge piers.
- The sections used in buildings have relatively low width-thickness ratios of component plates but are subjected to higher axial load ratios (ratio of applied axial load to squash load) as compared to the sections used in bridge piers.

M/M_p

P/P_y

Fig. Interaction behaviour of rectangular hollow section

Session-7 (BIS code based des... Turn on captions Present now

Session-7 (BIS code based design procedures for analysis, design and ductile detailing of buildings (2020-09-23 at 22:03 GMT-7))

PRESENTATION: RamaShanker Associate Professor

BIS code based design procedures for analysis, design and ductile detailing of buildings

by
Dr. Rama Shanker
(Associate Professor)

MOTILAL NEHRU NATIONAL INSTITUTE OF TECHNOLOGY
ALLAHABAD

CIVIL ENGINEERING DEPT.

RamaShanker Associate Professor

Dr. Mahesh Bundele
B.E., M.E., Ph.D.
Director
Poornima College of Engineering
ISI-6, FIICO Institutional Area
Shalpur, JAIPUR

Ductile Detailing Consideration

- The top as well as bottom reinforcement shall consist of at least two bars throughout the member length.
- The maximum steel ratio on any face at any section shall not exceed 0.025
- The positive steel at joint face must be at least equal to half of the negative steel at any face.
- The minimum dimension of the column member shall not be less than 300 mm.
- Spacing of hoops used as special confining reinforcement shall not exceed $\frac{1}{4}$ of minimum member dimension but not be less than 75 mm nor more than 100 mm.

R

RamaShanker Associate Professor

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15

Session 8

Session-8 (Design and Detailing of Steel MRF Buildings for Earthquake Effects as per IS 800 : 2007) (2020-09-24 at 03:03 GMT-7)

TEQIP-III SPONSORED ONLINE FACULTY DEVELOPMENT PROGRAM
ON
"EARTHQUAKE RESISTANT DESIGN OF CONCRETE & STEEL MOMENT RESISTING FRAME BUILDINGS"
"Design and Detailing of Steel MRF Buildings for Earthquake Effects
as per IS 800 : 2007"

Session-VIII
Friday, Sept. 24, 2020,
3:30 PM



Dr. Anupam Rawat
MNNIT Allahabad



Rajasthan Technical University, Kota
&
Poornima College of Engineering, Jaipur





Supriya Bansal

REC LIVE

Load and Load Combinations

12.2.1

- Earthquake loads shall be calculated as per IS: 1893 (Part 1), except that the reduction factors recommended in 12.3 may be used.
- IS: 1893 Part 1 (Criteria for Earthquake Resistant Design of Structures) suggests methods of calculating the earthquake loads. The Response Reduction factors given in Table 7 of IS 1893 are to be followed in all situations except in cases of:
 - a) Braced Frame system (for OCBF, SCBF, EBF) and
 - b) Moment Frame system (for OMF and SMF).
- For these cases the Response Reduction Factor should be considered as per Table 23 of the Code.
- However Table 7 of IS: 1893 deals with Concentric, Eccentric and Moment resisting frames in Steel. Table 23 deals in much detail on the same types of frames.
- Conclusion: For Steel frames Table 23 covers most of the types of frames.

Session-7 (BIS code based design p...

People (39) 16 Chat (7)

Add people Host controls


- Divya Vishnoi (You)
- Aakash Duhan
- Abhay Srivastava
- Aditi Bansal
- Anamika Sharma
- ANITA JANGID
- anubhav rai
- Anupam FACULTY
- Anupam FACULTY (Presentation)
- Astha vijay

Turn on captions Present now


Dr. Mahesh Bunde
B.E., M.E., Ph.D.
Director
Poornima College of Engineering
ISI-6, FIICO Institutional Area
Shilpura, JAIPUR


Date 25 September 2020

Session 9



Seismic Vibration Control of Tall Buildings

On-line F. D. P.
on




Earthquake Resistant Design of Concrete & Steel Moment Resisting Frame Buildings

(21-25 Sept. 2020)
Organized by
RTU, Kota & PCE, Jaipur
(TEQIP-III - RTU (ATU) Sponsored Activity)


Welcome

Dr. B. P. Suneja
Professor, Civil Engineering Department
Dean (Faculty of Engineering & Architecture)
Rajasthan Technical University, Kota, India
bpsuneja@gmail.com




Bharat Suneja

Session-9 (Seismic vibration Control of tall building) (2020-09-24 at 22:07 GMT-7)



Seismic Response Control Principles...

- Reduce the effect of seismic excitation.
 - Base Isolation
- Prevent a structure from exhibiting the resonant condition.
 - Base Isolation
- Transfer the vibration energy of a structure to the secondary oscillator.
 - Tuned Mass Damper Control
- Put additional damping effect to a structure.
 - Passive Damper Control
- Add a control force to a plant.
 - Actuated Mass Damper Control



Bharat Suneja

Session-9 (Seismic vibration Control of tall building) (2020-09-24 at 22:07 GMT-7)



Metropolitan Tower, New York,
1987, 68-storey

Thank you

Stay Safe
Stay Happy
Stay Healthy

Jai Hind!!

Dr. B. P. Suneja
Professor, Civil Engineering Department
Dean (Faculty of Engineering & Architecture)
Rajasthan Technical University, Kota, India
bpsuneja@gmail.com



Petronas tower, Kuala Lumpur,
1998, 88-storey.



Bharat Suneja


Dr. Mahesh Bunde
B.E., M.E., Ph.D.
Director
Poonima College of Engineering
ISI-0, FIICO Institutional Area
Shilpura, JAIPUR

Session 10

Session-9 (Seismic vibration Control)

TEQIP-III SPONSORED ONLINE FACULTY DEVELOPMENT PROGRAM

ON

"EARTHQUAKE RESISTANT DESIGN OF CONCRETE & STEEL MOMENT RESISTING FRAME BUILDINGS"

"Seismic Resistant Analysis of Berthing Structures Including Soil Structure Interaction"

Session-X
Friday, Sept. 25, 2020,
1:30 PM

Dr. Secram Madhuri
National Institute of Technology
Jamshedpur

Rajasthan Technical University, Kota
&
Poornima College of Engineering, Jaipur

People (16)

- Dr. Nakul Ramanna
- Ipandeep Singh
- Ishwar Chandra Vidya Sagar
- Meena Tekrwal
- Mr. P. Ravikumar Associate Professor ...
- PRASHANT SHARMA
- Rituraj Singh Rathore
- Rituraj Singh Rathore (Presentation)
- Seeram Madhuri
- som dutt thandi
- Supriya Bansal
- Suresh Kumar

Session-10 (Seismic resistant analysis of Berthing structures including soil structure interaction) (2020-09-25 at 01:11 GMT-7)

Planning of Berthing Structures

- Meteorological Data
 - Winds, Cyclones, Rainfall, Humidity, Temperature etc.
- Oceanographic Data
 - Tides, waves, storm surges, currents, salinity, temperature, water depth etc.
- Geological Data
 - Type of bedrock, faults, fissures, folds etc.
- Soil Data
- Seismic Data

Dr. Nakul Ramanna

Session-10 (Seismic resistant analysis of Berthing structures including soil structure interaction) (2020-09-25 at 01:11 GMT-7)

Discussions

- The separation between two adjacent units should be
 - 357 mm for 9th Cargo berth (zone V),
 - 76 mm for port craft berth (zone III) and
 - 66mm for berth no.8 (zone II).
- The deflections obtained as per IS 4651 (Part-4)-1989 seismic load combinations are observed to be about 133% more in 9th cargo berth (zone V), 13% more in port craft berth (zone III) and 10% more in berth no.8 (zone II) when compared with the deflection obtained as per IS 456 load combinations. Hence, the revision of IS 1893 and IS 456 necessitates incorporation of many of the revised codal requirements of IS 4651.

Dr S Madhuri, Assistant Professor, DCE, NIT Jamshedpur


Divya Vishnoi

Valediction Session

REC LIVE S Supriya Bansal is presenting

Aditi Bansal and 15 more 4:04 PM

Review of the FDP



Prof. (Dr.) A.K. Dwivedi
FDP Coordinator
Rajasthan Technical University, Kota

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Session-9 (Seismic vibration Control of tall buil...

Turn on captions Supriya Bansal is presenting

Participants: You, som dutt tharvi, Dinesh Sharma, Mahesh Bunde, Prof Arvind Kumar D., Ayush Goyal, Supriya Bansal, Rituraj Singh Rathore, Ishwar Chandra Vid..., Dr. KRISHNA KAMA..., Ramesh Kannan, Anamika Sharma, Ipandeep Singh, Ipandeep Singh, srava vaibhav

REC LIVE S Supriya Bansal is presenting

Rajendran Cicon and 21 more 4:08 PM



Prof. (Dr.) Mahesh M. Bunde
Director & Principal,
Poornima College of Engineering

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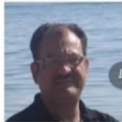
Session-9 (Seismic vibration Control of tall buil...

Turn on captions Supriya Bansal is presenting

Participants: You, som dutt tharvi, Dinesh Sharma, Mahesh Bunde, Prof Arvind Kumar D., Anamika Sharma, Supriya Bansal, Rituraj Singh Rathore, Ishwar Chandra Vid..., Dhirendra Mathur, srava vaibhav, Dr. KRISHNA KAMA..., Ramesh Kannan, vikas sharma, Dr. Nakul Ramanna

REC LIVE S Supriya Bansal is presenting

akhil maheshwari and 24 more 4:12 PM




Prof. (Dr.) Dhirendra Mathur
RTU (ATU) TEQIP-III Coordinator

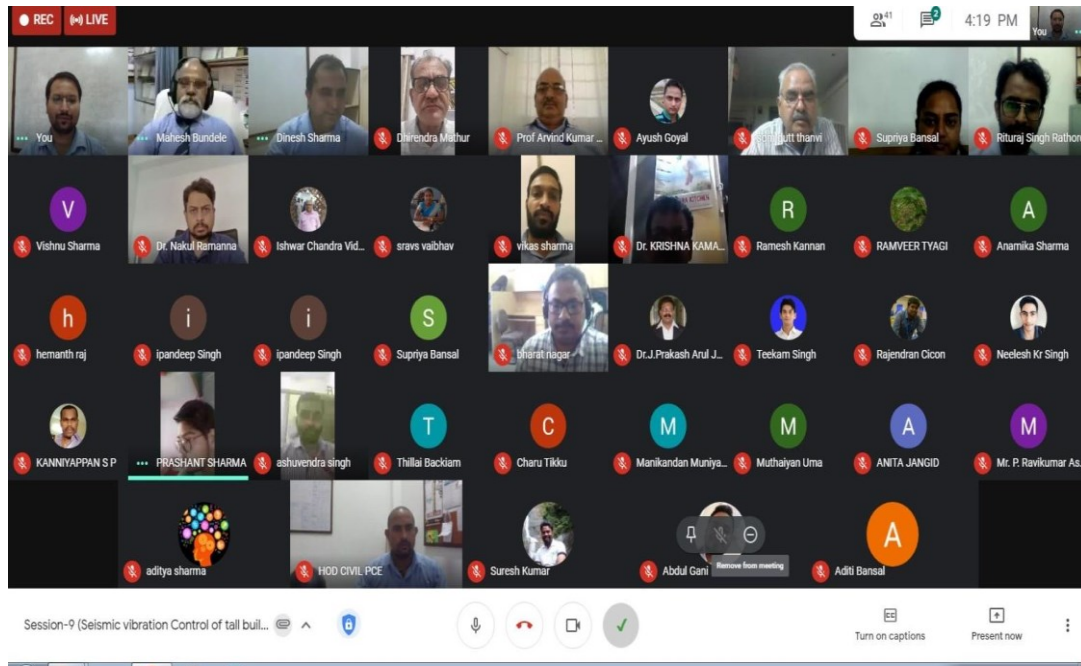
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Session-9 (Seismic vibration Control of tall buil...

Turn on captions Supriya Bansal is presenting

Participants: You, som dutt tharvi, Dinesh Sharma, Mahesh Bunde, Prof Arvind Kumar D., Ayush Goyal, Supriya Bansal, Rituraj Singh Rathore, Ishwar Chandra Vid..., Dhirendra Mathur, srava vaibhav, Dr. KRISHNA KAMA..., Ramesh Kannan, vikas sharma, Dr. Nakul Ramanna


Dr. Mahesh Bunde
B.E., M.E., Ph.D.
Director
Poornima College of Engineering
ISI-6, FIICO Institutional Area
Shilpura, JAIPUR



5. ASSESSMENT

Questions Responses 98 Total points: 10

After section 1 Continue to next section

Section 2 of 3

Quiz form

Description (optional)

Ordinary frames are not permitted in zones

☐ a. II and III

☐ b. III and IV

☐ c. IV and V

☐ d. None of the above

The design of the projecting parts during the construction of earthquake-resistant buildings should be per _____

☐ a. IS 1833: 2000

☐ b. IS 1873: 2001

☐ c. IS 1893: 2002

☐ d. IS 1993: 2004

The design horizontal seismic coefficient A_h for a structure

☐ $(Z/2) \times (R/I) \times (S_a/g)$

☐ $(Z/2) \times (I/R) \times (S_a/g)$

☐ $(2/Z) \times (I/R) \times (S_a/g)$

India is divided into _____ seismic zones

- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5

The ends of stirrup is bend at angle

- ☐ 45°
- ☐ 90°
- ☐ 135°
- ☐ 180°

Importance factor for buildings such as hospitals, railway station, monumental buildings etc

- ☐ a. 1.0
- ☐ b. 1.2
- ☐ c. 1.5
- ☐ d. 2.0

The advantages of using steel for earthquake resistant structure is

- ☐ a. Ability to withstand reversal of stresses
- ☐ b. Ductility
- ☐ c. Energy dissipation capacity



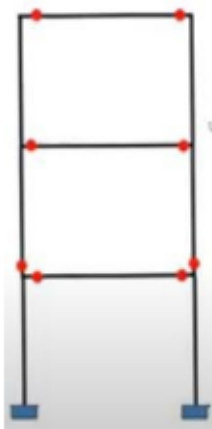
Earthquake is displacement loading not force loading

- ☐ True
- ☐ False

Response reduction factor for special frame as per IS 1893 (2016) for RC and steel are:

- ☐ a. RC: 5, Steel : 5
- ☐ b. RC: 3, Steel : 5
- ☐ c. RC: 5, Steel : 3
- ☐ d. RC: 3, Steel : 3

Is this moment resisting frame acceptable? (Red circle denoted Hinges)



- ☐ No
- ☐ Yes

6. FEEDBACK FORM FORMAT

Questions Responses 99 Total points: 10

**Faculty Development Program
On**

**Earthquake Resistant Design of Concrete &
Steel Moment Resisting Frame Building**

Section 1 of 3

Feedback and Assessment Form-
**"Earthquake Resistant Design of Concrete &
Steel Moment Resisting frame Buildings"**

POORNIMA COLLEGE OF ENGINEERING, JAIPUR
RAJASTHAN TECHNICAL UNIVERSITY, KOTA
RTU (ATU) TEQIP-III PROJECT
21th-25th September 2020.

Email address *

Valid email address

This form is collecting email addresses. [Change settings](#)

Name of Participant with title (Dr./Mr./Mrs./Ms.) *

Short answer text

Institute Name *

Short answer text

After section 1 Continue to next section

Section 3 of 3

Feedback Form

Description (optional)

Kindly provide us your valuable feedback about the course (10 is the highest grade).

Description (optional)

Your experience about the course. *

1	2	3	4	5	6	7	8	9	10
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Knowledge enhancement. *

1	2	3	4	5	6	7	8	9	10
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Relevancy of topics. *

1	2	3	4	5	6	7	8	9	10
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

About speakers. *

1	2	3	4	5	6	7	8	9	10
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



General Arrangement *

1	2	3	4	5	6	7	8	9	10
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In future do you want to attend such courses conducted by this Institute (Poornima College of Engineering)? *

- ☐ Yes
- ☐ No

If No, Why?

Long answer text

Topic that can be covered in the next course? *

Short answer text

Knowledge gain by the course. *

Short answer text




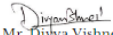
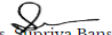

Overall experience of the course. *

Short answer text

Suggestions *

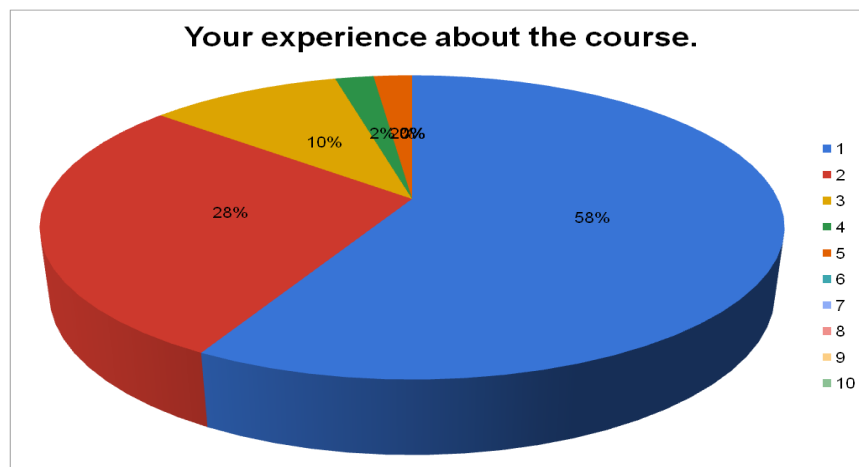


7. CERTIFICATE FORMATE

	<p align="center">Five Days TEQIP-III Sponsored Faculty Development Programme on Earthquake Resistant Design of Concrete & Steel Moment Resisting frame Buildings Jointly Organised By Rajasthan Technical University, Kota & Department of Civil Engineering Poornima College of Engineering, Jaipur</p>	
<p align="center">Certificate</p>		
<p>Certificate id : {{certificate id}} This is to certify that{{full name}}.....of{{other identifier}}.....has participated in the Five Days Faculty Development Programme on "Earthquake Resistant Design of Concrete & Steel Moment Resisting frame Buildings" held from <u>21/09/2020</u> to <u>25/09/2020</u> at "Poornima College of Engineering".</p>		
 Dr. A.K. Dewedi (Coordinator) RTU, Kota	 Mr. Divya Vishnoi (Coordinator) PCE, Jaipur	 Ms. Supriya Bansal (Coordinator) PCE, Jaipur
 Dr. Mahesh Bunde (Principal) PCE, Jaipur		

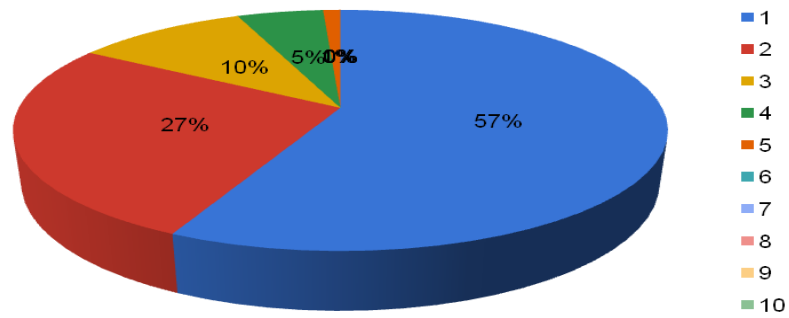
8. FEEDBACK ANALYSIS

Note: Questions were asked on a scale of 1 to 10

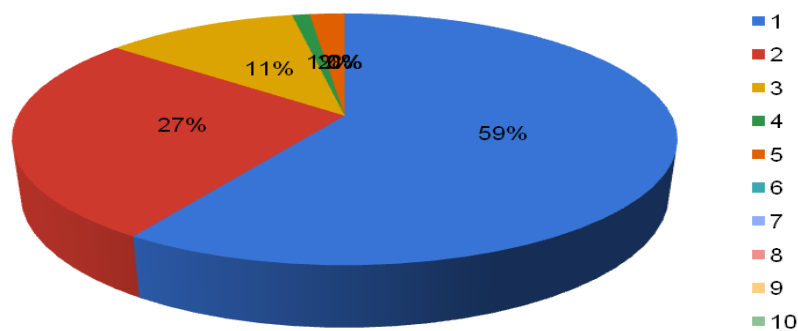



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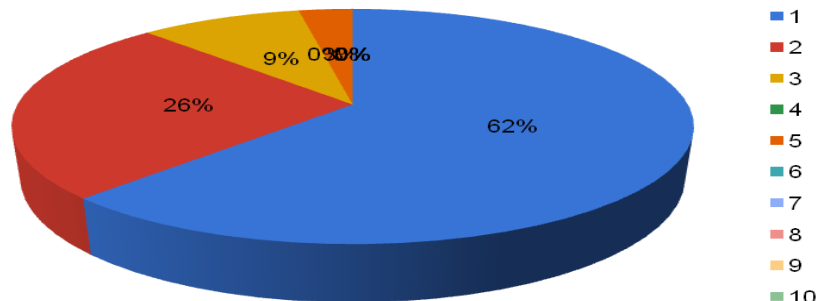
Knowledge enhancement.



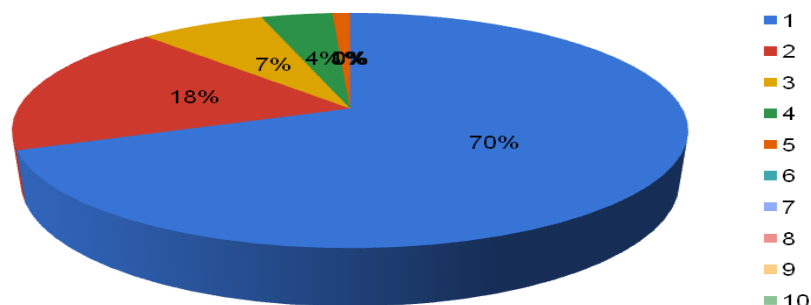
Relevancy of Topics



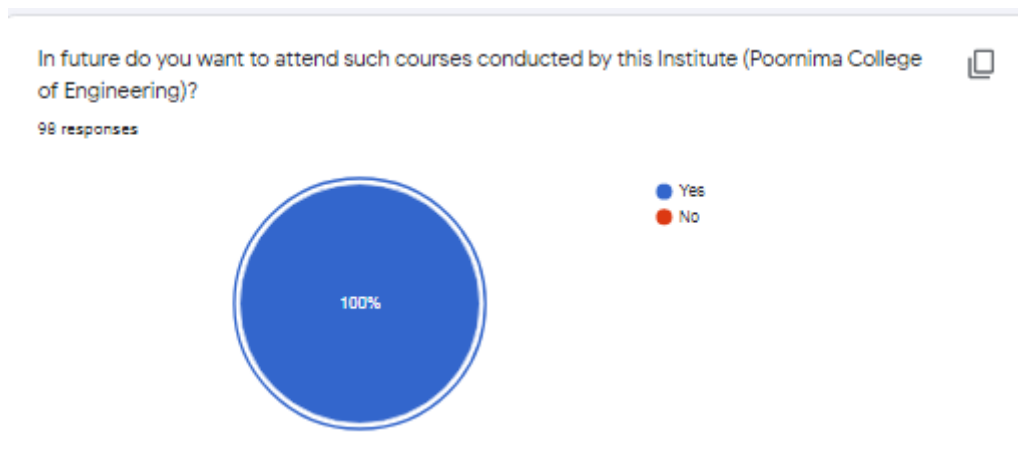
About Speakers



General Arrangement



When asked whether they would like to attend such courses in future if conducted by the institute, all participants said a Yes.



Topic that can be covered in the next course?

98 responses

Any

Cad software

Program on gis

More about different states under seismic zones

Characterization Techniques of concrete and quality control

any innovative

Tensile fibre structure

Finite element analysis

Design of Concrete Structures and Design of Steel Structures

Knowledge gain by the course.

98 responses

Very nicely CONDUCTED sessions

Great academic & practical knowledge with relevance to earthquake resisting frames. Also the stability and strengthen our structure situated in various zones. The design philosophy and approach to safeguard & increase durability of structure is clearly understood.

HIGHLY BOOSTING

Na

Earthquake resistant building design and structures.

Very good

learn more information about tall building

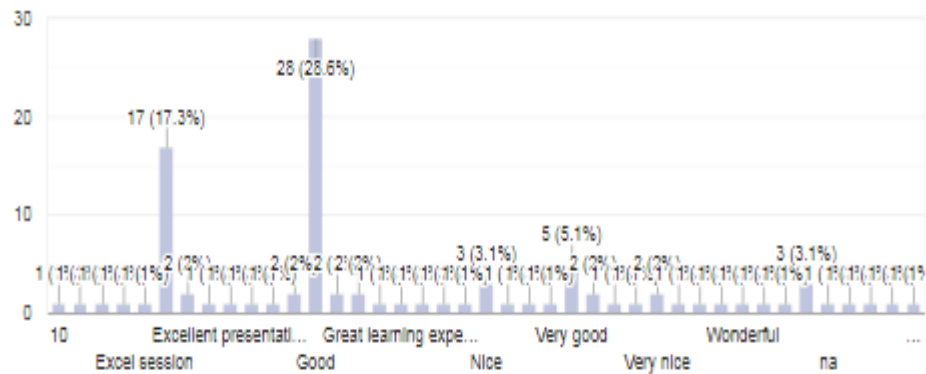
Sufficient

100%

Earthquake resistant design of building

Overall experience of the course.

98 responses



Suggestions

98 responses

- Nice session
- provide webinars on fem
- Not such
- Arrange Again next program
- Excellent
- It was good
- More such fdp should be organized
- THANKS A LOT SIR
- There should be some knowledge software for earthquake resisting building

9. PARTICIPANTS LIST AND CERTIFICATIONS

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