30.7.2020

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APRIL 2014 | MARCH

Wednesday 12

ADVANCED STRUCTURAL DESIGN

CES623

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TAUGHT BY

prof. sunitha P

COURSE CONTENTS

1. analysis

- configuration
- structural plan density
- initial proportioning
- estimation of loads and load combinations
- numerical modelling concepts
- interpretation of linear-elastic structural analysis and modal analysis results - concept of lateral stiffness

2. design

- design of structural members for loading effects - axial, flexure, shear, torsion
- design for combined effects

2014

MARCH

13 Thursday

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- design of RC beam - column joints
- design of steel connections - joint panel zones
- design of foundations
- design of column bases
- design of wall-frame systems,

3. behaviour
   - lateral stiffness
   - lateral strength
   - ductility capacity
   - collapse mechanism and energy dissipation capacity

REFERENCES

1. building code requirements for structural concrete (American concrete institute)

2. seismic provisions for structural steel buildings (ANSI / AISC 341 - 16) (American institute of steel construction)

2014

QUAKE ARENA

3. specifications for structural steel buildings (ANSI/AISC)

4. minimum design loads for buildings and other structures (American society of civil engineers)

5. Seismic rehabilitation of existing buildings (ASCE)

6. earthquake resistant design of structures

7. indian standard plain and reinforced concrete -code of practice, IS456 : 2000

8. indian standard code of practice for general construction in steel.

9. ductile detailing of reinforced concrete structures subjected to seismic forces, code of practice, IS13920 : 2016

10. indian standard criteria for earthquake resistant design of structures, IS 1893 : 2002 - part-1

11. fundamentals of earthquake engineering.

12. ductility of seismic resistant steel structures

13. earthquake engineering for structural design.

14. reinforced concrete structures

15. Seismic design of reinforced concrete and masonry buildings.

30.7.2020

MARCH

15 Saturday

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16. Steel structures design and behaviour.

17. design of reinforced concrete foundation.

16 Sunday

2014