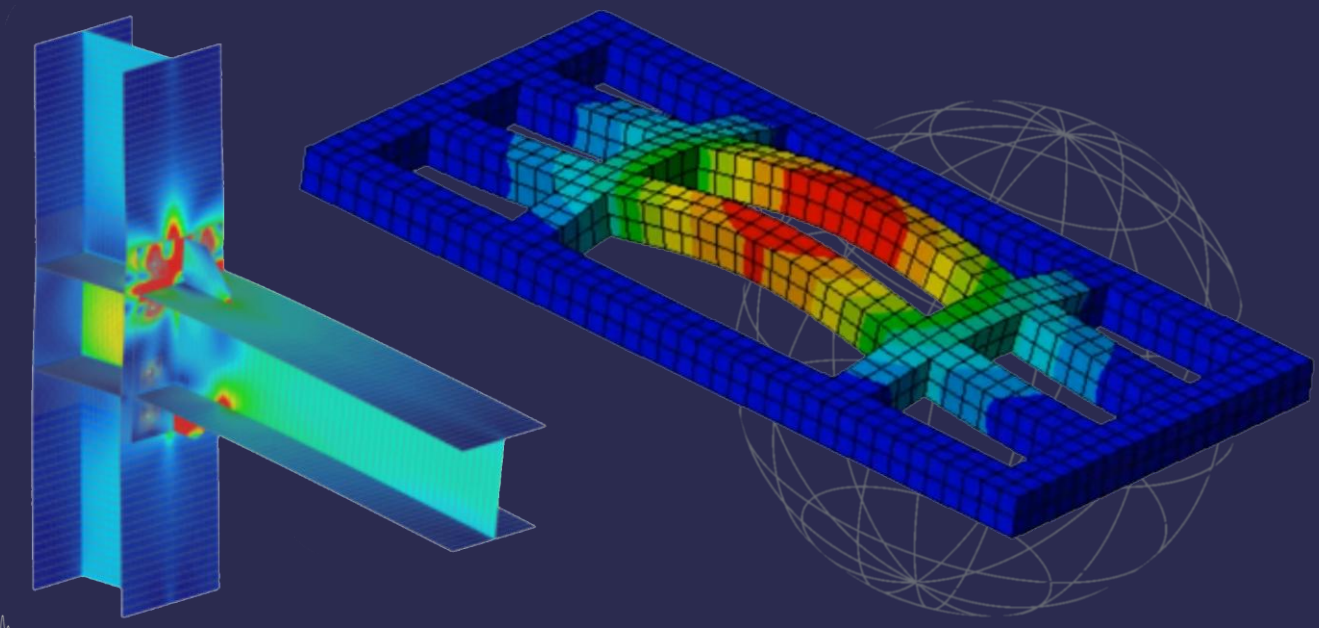
SCMCES TRAINING SERIES

# ANSYS
## for
## Civil & Structural Engineers



SCMCES provides consultancy services for civil infrastructure, including Structural Analysis Design, Review, Audit, Remedial Engineering, Advanced Rehabilitation Technologies(ART), Structural Health Monitoring (SHM) services as well as research and training in related engineering domains.


CONSULTANCY & ENGINEERING SERVICES

+91-84314 22882

scmces.consultants@gmail.com

www.scmces.com


"Engineering Insight ✣ Monitoring Integrity ✣ Building Futures"

SCMCES TRAINING SERIES

# ANSYS for Civil and Structural Engineers

## From Theory to Real-World Structural Simulation

### About the Course

- This course is designed for civil and structural engineers who wish to **understand and apply Finite Element Analysis (FEA) systematically** using **ANSYS Workbench and Mechanical APDL**.
- ANSYS is a core FEA platform for the simulation of **linear and non-linear, static and dynamic structural systems**. In professional practice, **knowing *what* to analyse is as important as knowing *how***. This program emphasizes **engineering judgment, modelling strategy, and interpretation of results**, not just software.
- No prior ANSYS experience is required. A background in **strength of materials, structural mechanics, and basic dynamics** is assumed. The course is ideal for **new users, practicing engineers, and professionals seeking skill refreshment**.

### Who Should Attend

Civil Engineers | Structural Engineers | Post-graduate students |
Final-year engineering students | Fresh Graduates | Practicing Professionals

### SCMCES Training benefits

- ✓ Engineering-led training approach
- ✓ Practical civil & structural case studies
- ✓ Application-oriented learning
- ✓ Professional certification on completion

### How the Training Works

- Conceptual explanation of FEA principles
- Live demonstrations in **ANSYS Workbench & APDL**
- Step-by-step modelling and solution walkthroughs
- Hands-on lab sessions using **ANSYS Student Version**
- Engineering-focused examples from **real civil & structural scenarios**

### Training batch details

- **Batch starts** : Every Quarterly
- **Training Mode** : Online/ Offline / Hybrid
- **Course duration** : 40 Hrs. (2~3 -hour session per day)
- **Enquire Now | Book Your Seat** : +91 8431 42 28 82
  scmces.consultants@gmail.com

Disclaimer: ANSYS Workbench and APDL is a registered product of ANSYS. This training is independent and application-oriented.

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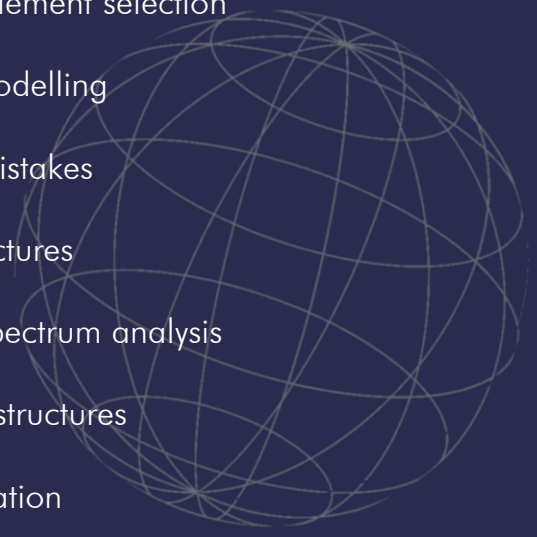
# ANSYS for Civil and Structural Engineers

## From Theory to Real-World Structural Simulation

### Course Topics & Modules

- **Introduction to Finite Element Analysis**
  FEA philosophy, assumptions, and relevance to civil structures
- **Getting Started with ANSYS Workbench & APDL**
  Interface, workflow, solvers, and modelling approach
- **General Analysis Procedure**
  Problem definition → modelling → solution → validation
- **Creating the Finite Element Model**
  Geometry idealization, meshing strategies, element selection
- **Material Properties & Behaviour**
  Linear, non-linear, elastic, plastic material modelling
- **Loads & Boundary Conditions**
  Structural realism and common modelling mistakes
- **Static Structural Analysis**
  Linear and non-linear static response of structures
- **Dynamic Structural Analysis**
  Modal, harmonic, transient, and response spectrum analysis
- **Thermal Analysis**
  Steady-state and transient thermal effects in structures
- **Post-Processing & Result Interpretation**
  Stress, deformation, convergence, and validation
- **APDL Programming & Scripting**
  Parameters, macros, batch mode, and automation



### What Participants Receive

- Structured training notes
- Step-by-step **ANSYS modelling workflows**
- Sample input files & APDL scripts
- Engineering interpretation guidelines
- **Course completion certificate from SCMCES**

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