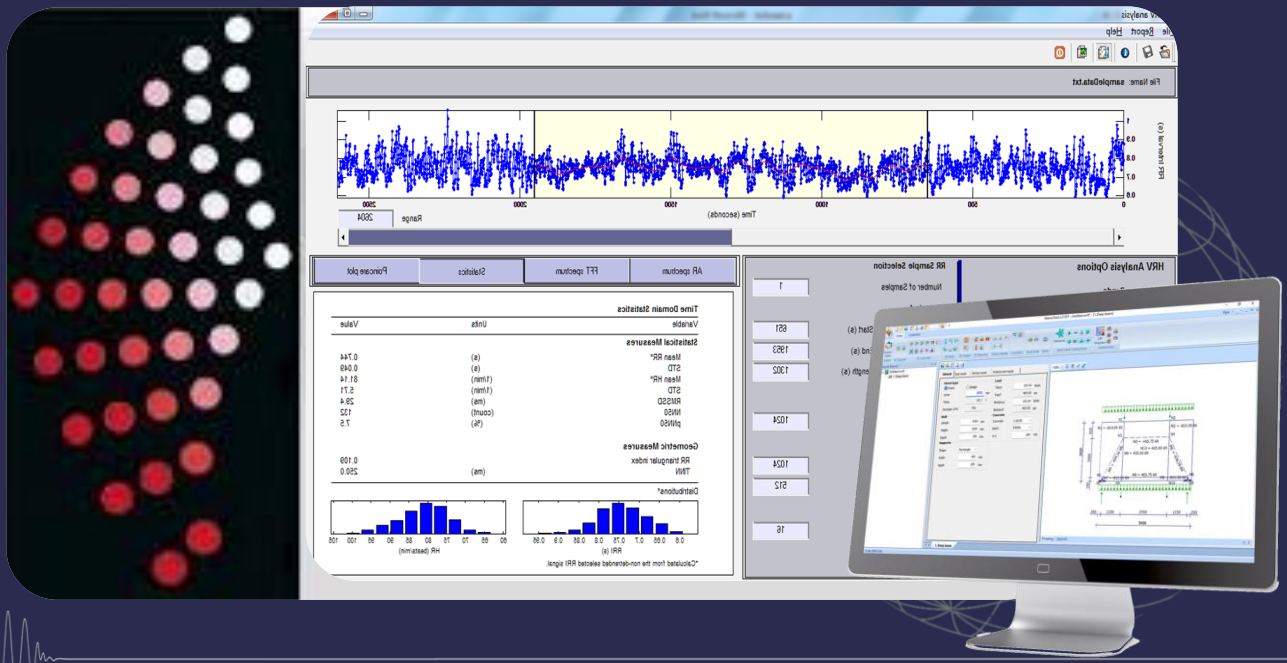
SCMCES TRAINING SERIES

MATLAB & SCILAB

for Civil and 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

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"Engineering Insight ✣ Monitoring Integrity ✣ Building Futures"

SCMCES TRAINING SERIES

MATLAB & SCILAB for Civil & Structural Engineers

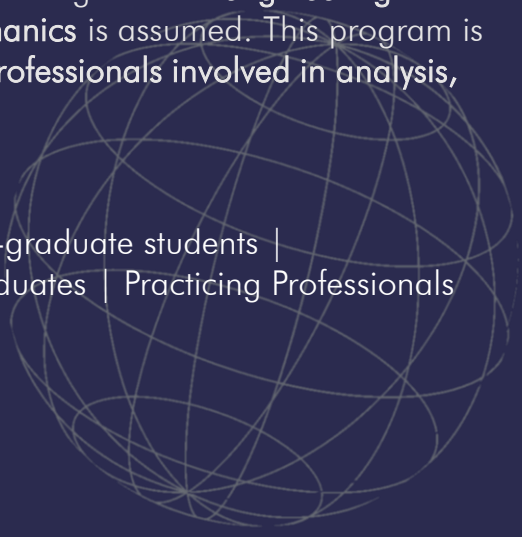
From Equations to Engineering Insight

About the Course

This course is designed for civil and structural engineers who want to **go beyond spreadsheet-based calculations** and adopt **numerical computing and algorithm-driven analysis** using **MATLAB** and **SCILAB**.

MATLAB and SCILAB are powerful platforms for **matrix-based computation, numerical methods, structural dynamics, signal processing, optimization, and data analysis**. In professional practice, these tools are invaluable for **custom analysis, verification of commercial software results, research, and automation**.

No prior programming experience is required. A background in **engineering mathematics, structural analysis, and basic mechanics** is assumed. This program is suitable for **freshers, practicing engineers, and professionals involved in analysis, research, or advanced design verification**



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

- Step-by-step explanation of numerical and computational concepts
- Live coding demonstrations in MATLAB & SCILAB
- Hands-on problem solving with civil & structural examples
- Engineering-focused exercises (not generic programming tasks)
- Emphasis on **interpretation, validation, and correctness**

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
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Disclaimer: MATLAB is a registered product of MathWorks. SCILAB is an open-source numerical computing platform. This training is independent and application-oriented.

SCMCES TRAINING SERIES

MATLAB & SCILAB for Civil & Structural Engineers

From Equations to Engineering Insight

Course Topics & Modules

- **Introduction to Numerical Computing for Engineers**
  Role of computation in civil & structural engineering
- **Getting Started with MATLAB & SCILAB**
  Interface, syntax, variables, and scripting basics
- **Matrix Operations & Linear Algebra**
  Core tools for structural analysis and system modelling
- **Programming Fundamentals**
  Loops, conditionals, functions, and scripts
- **Numerical Methods**
  Root finding, integration, differentiation, solvers
- **Structural Analysis Applications**
  Matrix stiffness method, truss & frame examples
- **Structural Dynamics & Vibrations**
  Free and forced vibration, modal concepts
- **Data Processing & Visualization**
  Plotting, result interpretation, and reporting
- **Automation & Parametric Studies**
  Repetitive calculations, sensitivity analysis
- **Engineering Communication & Documentation**
  Presenting results, stakeholder communication, technical clarity

What Participants Receive

- MATLAB & SCILAB example scripts
- Structural engineering problem libraries
- Numerical method reference notes
- Plotting & visualization templates
- Course completion certificate from SCMCES

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