

# COURSE DETAIL

## NUMERICAL METHODS IN ENGINEERING

**Country**

Singapore

**Host Institution**

National University of Singapore

**Program(s)**

National University of Singapore

**UCEAP Course Level**

Upper Division

**UCEAP Subject Area(s)**

Mechanical Engineering

**UCEAP Course Number**

130

**UCEAP Course Suffix****UCEAP Official Title**

NUMERICAL METHODS IN ENGINEERING

**UCEAP Transcript Title**

NUMERICAL METHODS

**UCEAP Quarter Units**

6.00

**UCEAP Semester Units**

4.00

## Course Description

This course introduces students to fundamental concepts of numerical analysis as a powerful tool for solving a wide variety of engineering problems. Topics include numerical solution of linear systems of algebraic equations, numerical solution of nonlinear algebraic equations and systems of equations, elementary unconstrained optimization techniques, regression and interpolation techniques, numerical differentiation and integration, as well as the numerical solution of Ordinary Differential Equations (ODE). Applications are drawn from a broad spectrum of diverse disciplines in Mechanical Engineering. The course also introduces the use of scientific computing software packages for the numerical solution of practical engineering problems. The course requires students to take prerequisites.

### Language(s) of Instruction

English

### Host Institution Course Number

ME3291

### Host Institution Course Title

NUMERICAL METHODS IN ENGINEERING

### Host Institution Course Details

<https://nusmods.com/courses/ME3291/numerical-methods-in-engineering>

### Host Institution Campus

### Host Institution Faculty

### Host Institution Degree

### Host Institution Department

Mechanical Engineering

### Course Last Reviewed

2024-2025

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