



**THE OHIO STATE UNIVERSITY**  
COLLEGE OF ENGINEERING

# Numerical Methods in Aerospace Engineering

## AEROENG 3581

**Credit Hours:**

3.00

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**Course Levels:**

Undergraduate (1000-5000 level)

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**Course Components:**

Lecture

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**Course Description:**

Fundamentals of mathematical and numerical modeling techniques and their applications in solving engineering problems.

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**Prerequisites and Co-requisites:**

Prereq: Math 2174, or 2568 (568) and 2415 (415); and enrollment as AeroEng-BS student.

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**Course Goals / Objectives:**

- Teach students the most common numerical methods in engineering analysis
  - Students to know when to use each method, and how to implement the methods using MATLAB's programming language
  - Train students to apply knowledge of mathematics, science and engineering to identify, formulate and solve engineering problems
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**Course Topics:**

- Solutions of Nonlinear Equations
  - Curve Fitting and Interpolation
  - Solving Systems of Linear Equations
  - Numerical Integration
  - Numerical Differentiation
  - ODEs:Initial-Value Problems
  - ODEs:Boundary-Value Problems
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**Designation:**

Required