

Course Name:

Boundary Elements Method

Course Number: 20-150	Credit: 3
Program: Graduate	Course Type: Technical Selective
Prerequisite: -	Corequisite: -

Course Description (Objectives):

This course introduces the Boundary Element Method as an alternative numerical method for solving linear partial differential equations.

Course Content (outline):

- Chapter 1: Introduction and mathematical foundations of boundary value problems
- Chapter 2: Strong and weak forms of boundary value problems
- Chapter 3: Green's function for Laplace equations and its corresponding integral form in two-dimensional problems
- Chapter 4: Application of the Boundary Element Method for the formulation of two-dimensional Laplace equations
- Chapter 5: Green's function for two-dimensional elasticity problems
- Chapter 6: Integral form of two-dimensional elasticity problems
- Chapter 7: Application of the Boundary Element Method for the formulation of two-dimensional elasticity problems
- Chapter 8: Solution of three-dimensional Laplace equations
- Chapter 9: Special topics in the Boundary Element Method

References:

- Brebbia C.A., The Boundary Element Method for Engineers. Pentech Press.
- Gaul L., Kogl M., Wagner M., Boundary Element Methods for Engineers and Scientists: An Introductory Course with Advanced Topics. Springer