

Department: Civil & Environmental Engineering
Level and Major: Graduate – General Course

Division: Civil engineering

Course Title: Advanced engineering mathematics

Number of Credits: 3

Prerequisite (Corequisite): Structural analysis (I), Concrete Technology Lecturer: -

Course Topic

- Reminding of ordinary differential equations ,solving equations by expanding sequence and reviewing the concepts of expansion in terms of orthonormal functions and application in solving equations
- Application of variable isolation method to solve differential equations with some derivatives in different coordinate system of curved lines
- Familiarity with the concepts of integral transformations and its application in solving the problems of differential equation with partial derivatives and using the residual theorem in estimating inverse integral transformations
- Application of % conversion in solving harmonic and non- harmonic equations using the use of conformal mapping
- Analysis of tensors and its application in geometric problems
- Familiarity with the account of changes including the concept of function, Euler ,Lagrange equation, application of weight residual theorems and Rayleigh -Ritz method in solving differential equations in the form of algebraic equations in the domain or boundary

Course Description:

Reading Sources:

Course Goals and objectives:

Evaluation:

Course topics:

The course aims t:o