



Applied Mathematics 411

Differential Equations II

Existence and uniqueness theorems, comparison and oscillation theorems, Green's functions, Sturm-Liouville problems, systems of equations, phase portraits, stability.

Course Hours: H(3-1T)

Prerequisite(s): One of [Applied Mathematics 311](#) or [307](#), and one of [Mathematics 331](#), [353](#), [381](#), [Applied Mathematics 309](#), or consent of the Division.

Notes: It is recommended that students complete [Pure Mathematics 435](#) or [455](#) before taking this course.

Syllabus

Existence, uniqueness and continuity theorems. Singular solutions.

Comparison and Oscillation theorems.

Green's functions.

Sturm-Liouville Problems.

Systems of Differential Equations.

Linear systems. Matrix exponentiation.

Stability and Phase portraits.

Optional additional topics: Integral equations; Difference equations; Solutions of Partial Differential Equations.

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Prerequisite change made 03:07:02

Prerequisite change made 08:07:01

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