



**Mathematics 313** **Honours Linear Algebra II**

Diagonalization. Canonical forms. Inner products, orthogonalization. Spectral theory. Students will be required to complete a project using a computer algebra system.

Course Hours: H(3-1T)

Prerequisite(s): [Mathematics 213](#) or a grade of B+ or better in [Mathematics 211](#) or 221.

Antirequisite(s): Credit for both [Mathematics 311](#) and [313](#) will not be allowed.

*Syllabus*

<u>Topics</u>	<u>Number of Hours</u>
Invariant subspaces, diagonalization and triangulation, direct-sum decompositions.	8
Rational and Jordan canonical forms.	8
Inner products, inner product spaces, orthogonalization, adjoints, unitary and normal operators.	8
Spectral theory.	8
SVD. Quadratic forms.	4
<b>TOTAL HOURS</b>	<b>36</b>

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