

# Enquire Teaching Timetable

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## Course Outcome

### MATH 2040 - Linear Algebra II

#### Learning Outcome

We expect students to understand more advanced topics in linear algebra: abstract vector spaces and linear transformations, eigenvalues and eigenvectors, canonical forms of matrices and linear transformations, inner product spaces, and spectral theorems. Students are expected to understand the ideas underlying the concepts and write mathematical proofs.

#### Course Syllabus

Abstract vector spaces, subspaces, sum and direct sum, span and linear independence, basis and dimension, linear transformations and their matrix representations, null space and range, rank-nullity theorem, change of basis formula, invertibility and isomorphism, determinants, eigenvalues and eigenvectors, diagonalization, invariant subspaces and Cayley-Hamilton theorem; inner product spaces, orthogonality, adjoint of an operator, normal and self-adjoint operators, Jordan canonical forms, spectral theorems and applications.

#### Assessment Type

	Assessment Type	Current Percent
1	Essay test or exam	50
2	Others	10
3	Short answer test or exam	40

#### Feedback for Evaluation

Mid-term evaluation (optional)  
End-term evaluation (mandatory)

#### Required Readings

None

#### Recommended Readings

- S. Friedberg, A. Insel and L. Spence: Linear Algebra  
- P. Halmos: Finite-Dimensional Vector Spaces