

First-year Calculus Tests – The transition in assessing!

Mathematics Session

**A Dialogue on CS and Math Education
High School CS/Math Teacher Workshop 2018**

Tuesday, June 5th

5 Calculus Courses Offered at UTM

1. MAT133Y5 – Calculus and Linear Algebra for Commerce
2. MAT134Y5 – Calculus for Life Sciences
3. MAT135Y5 – Calculus
4. MAT137Y5 – Calculus!
5. MAT157Y5 – Analysis I

MAT133Y5 – Calculus and Linear Algebra for Commerce

Mathematics of finance, matrices and linear equations. Review of differential calculus; applications. Integration and fundamental theorem; applications. Introduction to partial differentiation; applications. NOTE: This course cannot be used as the calculus prerequisite for any 200-level MAT or STA course, except in combination with MAT233H5. [72L, 24T]

Exclusion: MAT134Y5, MAT135Y5, MAT137Y5, MAT157Y5, MAT133Y1, MAT135Y1, MAT135H1, MAT136H1, MAT137Y1, MAY157Y1, MATA30H3, MATA31H3, MATA32H3, MATA33H3, MATA35H3, MATA36H3, MATA37H3

Prerequisite: Minimum 70% in Grade 12 Advanced Functions (MHF4U).
Highly Recommended: Minimum 70% in Grade 12 Calculus and Vectors (MCV4U).

This course cannot be used for the specialist or major programs in Mathematics, Statistics or Computer Science, except in combination with MAT233H5.

Restricted to students admitted into Management or Commerce.

<https://student.utm.utoronto.ca/calendar/>

MAT134Y5 – Calculus for Life Sciences

Trigonometric functions. Limits, continuity. Techniques of differentiation and integration with applications to the life sciences. Extreme values and optimization. Graphing. The fundamental theorem of calculus. Introduction to sequences and series, power series. Introduction to discrete and continuous time modeling. [72L, 24T]

Exclusion: MAT133Y5, MAT135Y5, MAT137Y5, MAT133Y1, MAT135Y1, MAT135H1, MAT136H1, MAT137Y1, MAT157Y1, MAT157Y5, MATA30H3, MATA31H3, MATA32H3, MATA33H3, MATA35H3, MATA36H3, MATA37H3

*Prerequisite: Minimum 70% in Grade 12 Advanced Functions (MHF4U)
Highly Recommended: Minimum 70% in Grade 12 Calculus and Vectors (MCV4U)*

Restricted to students in a Life Science Program.

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MAT135Y5 – Calculus

Trigonometric functions. Limits, continuity. Review of differential calculus; applications. Graphing, extreme values and optimization. Integration and fundamental theorem; applications. Sequences and series. Power Series. Introduction to differential equations. [72L, 24T]

Exclusion: MAT133Y5, MAT134Y5, MAT137Y5, MAT133Y1, MAT135Y1, MAT135H1, MAT136H1, MAT137Y1, MAT157Y1, MAT157Y5, MATA30H3, MATA31H3, MATA32H3, MATA33H3, MATA35H3, MATA36H3, MATA37H3

Prerequisite: Minimum 70% in Grade 12 Advanced Functions (MHF4U)

Highly Recommended: Minimum 70% in Grade 12 Calculus and Vectors (MCV4U)

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MAT137Y5 – Calculus!

A conceptual approach for students with a serious interest in mathematics. Geometric and physical intuition are emphasized but some attention is also given to the theoretical foundations of calculus. Material covers first a review of trigonometric functions followed by discussion of trigonometric identities. The basic concepts of calculus: limits and continuity, the mean value and inverse function theorem, the integral, the fundamental theorem, elementary transcendental functions, Taylor's theorem, sequences and series, power series.
[72L, 48T]

Exclusion: MAT133Y5, MAT134Y5, MAT135Y5, MAT133Y1, MAT135Y1, MAT135H1, MAT136H1, MAT137Y1, MAT157Y1, MAT157Y5, MATA30H3, MATA31H3, MATA32H3, MATA33H3, MATA35H3, MATA36H3, MATA37H3

Prerequisite: Minimum 70% in Grade 12 Advanced Functions (MHF4U), Minimum 70% in Grade 12 Calculus and Vectors (MCV4U)

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MAT157Y5 – Analysis I

A theoretical course in calculus for students with a very serious interest in mathematics; emphasizing proofs and techniques, as well as geometric and physical understanding. Trigonometric identities. Limits and continuity; least upper bounds, intermediate and extreme value theorems. Derivatives, mean value and inverse function theorems. Integrals; fundamental theorem; elementary transcendental functions. Techniques of integration. Taylor's theorem; sequences and series; uniform convergence and power series.

[72L, 48T]

Note: MAT157Y5 will be accepted anywhere where MAT137Y5 is accepted.

Exclusion: MAT137Y1, MAT137Y5, MAT195H, MAT197H, MATA37H3

*Prerequisite: Minimum 70% in Grade 12 Advanced Functions (MHF4U),
Minimum 70% in Grade 12 Calculus and Vectors (MCV4U)
Corequisite: MAT102H5*

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