

Calculus 1 B : Study guide

Module	block 1B, year 2019 - 2020
Book	Thomas' Calculus, Early Transcendentals, 12 th edition
Version	V01: 6 November 2019

The purpose of this document is to make more precise what belongs to this course and what does not. In principal the contents of the subsections mentioned in the topics list or the course schedule belong to the course. You should be able to formulate definitions introduced in these subsections. The same holds for named theorems like, for example, Theorem 4 of Section 5.4 (The Fundamental Theorem of Calculus, Part 1 and Part 2).

- **Section 5.2.** You do not need to know the formulas for the sums of the first n squares or cubes (page 309). If needed, they will be provided.
- **Section 9.1.** This section will be treated till the subsection with the blue caption “Euler’s Method”(page 517). However, it is advised to read the subsection “Euler’s Methods”, since it explains how computers solve differential equations.
- **Section 9.3.** Skip the subsection with the blue caption “Orthogonal Trajectories”(page 530-531).
- **Section 10.7.** Power series belong to this course as far as they support Taylor series (Section 10.8) and its use. In particular you should know:
 - What is the radius of convergence, and how to calculate it in easy cases.
 - Term-by-term differentiation is allowed within the radius of convergence.
 - Term-by-term integration is allowed within the radius of convergence.

In particular you can skip Example 3 (page 595), and also the pages 597 and 598 up to Theorem 21.

- **Section 17.1.** The material will be treated starting from the subsection with the blue caption “Constant-Coefficient Homogeneous Equations”.
- **Section 17.2.** This section belongs to the course up to the blue caption “The Method of Variation of Parameters”.