

THE UNIVERSITY OF WESTERN ONTARIO
LONDON CANADA
DEPARTMENT OF MATHEMATICS

Calculus 1000A

May–June 2017

INSTRUCTOR: Janusz Adamus.

TEXTBOOK: *Single Variable Calculus, 8th Edition with Early Transcendentals*, by James Stewart.

OTHER (OPTIONAL) MATERIALS AVAILABLE IN CAMPUS BOOKSTORE:

- *Student Solutions Manual* (in bundle with the text)
- *Enhanced Webassign Access Code* (in bundle with the text)
- *Calculus... Fear No More* (in bundle with the text)
- *Midterm Tests and Final Exams for Calculus 1000A*, published for the Department of Mathematics by Custom Course Materials.

PREREQUISITES: Ontario Secondary School MCV4U or Mathematics 0110A/B.

ANTIREQUISITES: Calculus 1500A/B or the former 1100A/B, Applied Mathematics 1413.

SENATE POLICY ON PREREQUISITES: Unless you have either the requisites for this course or written special permission from your Dean to enroll in it, you will be removed from this course and it will be deleted from your record. This decision may not be appealed. You will receive no adjustment to your fees in the event that you are dropped from a course for failing to have the necessary prerequisites.

COURSE OUTLINE: Review of limits and derivatives of exponential, logarithmic and rational functions. Trigonometric functions and their inverses. The derivatives of the trig functions and their inverses. L'Hospital's rules. The definite integral. Fundamental Theorem of Calculus. Simple substitution. Applications of integration, including areas of regions and volumes of solids of revolution.

We shall cover selected topics from Chapters 1-6. See the list of *Recommended Practice Problems* for more details.

WHAT IS EXPECTED OF THE STUDENT: Students are expected to learn the material of the appropriate sections of Chapters 1-6 and to complete the practice problems. Additional material and exercises may be assigned.

Students that work at a consistent pace throughout the term (and do not put off asking questions until exam time), use help resources available, and do self-directed exploration of topics, tend to achieve better results in university-level mathematics courses.

COURSE WEB PAGE: <http://www-home.math.uwo.ca/~jadamus/17-18/1000A2017/index.html>

EVALUATION OF STUDENT PERFORMANCE:

Midterm Examination: (35%) Time and date TBA (2 hours).

Final Examination: (50%) To be scheduled by the Registrar's Office (3 hours).

Quizzes: (15%) There will be weekly in-class quizzes.

POLICY ON CALCULATORS AND OTHER ELECTRONIC DEVICES: The use of calculators and other electronic devices will not be permitted for the midterm test and the final examination.

STATEMENT ON ACADEMIC OFFENCES: Scholastic offences are taken seriously and students are directed to read the appropriate policy, specifically, the definition of what constitutes a Scholastic Offence, at the following Web site:

http://www.uwo.ca/univsec/pdf/academic_policies/appeals/scholastic_discipline_undergrad.pdf

Computer-marked multiple choice tests and/or exams may be subject to submission for similarity review by software that will check for unusual coincidences in answer patterns that may indicate cheating.

MEDICAL EXCUSE REGULATIONS: If you are unable to meet a course requirement worth 10% or more of your course grade, due to illness or other serious circumstances, you must provide valid medical or other supporting documentation to your home faculty Dean's Office as soon as possible and contact your instructor immediately. It is the student's responsibility to make alternative arrangements with their instructor once the accommodation has been approved and the instructor has been informed. In the event of a missed final exam, a "Recommendation of Special Examination" form must be obtained from the Dean's Office as soon as possible.

The Policy on Accommodation for Medical Illness is available at

http://www.uwo.ca/univsec/pdf/academic_policies/appeals/accommodation_medical.pdf

A student requiring academic accommodation due to illness should use the Student Medical Certificate when visiting an off-campus medical facility or request a Record's Release Form (located in the Dean's Office) for visits to Student Health Services. The form can be found here:

http://studentservices.uwo.ca/secure/medical_document.pdf

MENTAL HEALTH STATEMENT: Students who are in emotional/mental distress should refer to Mental Health@Western

http://www.health.uwo.ca/mental_health/

for a complete list of options about how to obtain help.

ACCESSIBILITY STATEMENT: Please contact the course instructor if you require material in an alternate format or if you require any other arrangements to make this course more accessible to you. You may also wish to contact Services for Students with Disabilities (SSD) at 661-2111 ext. 82147 for any specific questions regarding an accommodation.

Recommended Practice Problems for Calculus 1000A

Intersession 2017

Text: *Single Variable Calculus, 8th Edition with Early Transcendentals*, by James Stewart

FOR REVIEW	
SECTION	PROBLEMS
1.1	3, 7, 9, 25-35 (odd), 39, 41, 43, 47, 57, 63-65
1.2	1, 2, 13, 15
1.3	31, 33, 37, 43, 44, 47
3.1	1-33 (odd), 47, 55
3.2	3, 5, 11, 15, 17, 33, 43
THE COURSE BEGINS WITH SECTION 1.4	
LIMITS AND DERIVATIVES	
SECTION	PROBLEMS
Appendix D	1, 3, 7, 9, 17-31 (odd), 46, 48, 50, 65, 69
1.4	1, 2, 3, 4, 5, 11, 13, 15, 21, 23
1.5	5-17 (odd), 21, 23, 25, 33-41 (odd), 51, 53, 55, 66, 68, 69, 71, 72, 75
2.2	1, 2, 5, 7, 9, 11, 31-41 (odd), 54
2.3	1, 3-9 (odd), 11-31 (odd), 37, 39, 41, 43, 49, 53, 54
2.5	1, 3, 9, 13, 19, 21, 35, 37, 39, 43, 45, 47, 51, 53, 55, 57, 69, 71
2.6	1, 3, 5, 7, 15-41 (odd), 40, 65 (a), 67, 75, 81(a)
2.7	17, 31-41 (odd), 59, 60
2.8	1-31 (odd), 57, 59
Ch. 2 Review	Concept check 1, 2, 3, 5, 7; True/False 1-15; Exercises 3-19 (odd), 23, 29; Problems Plus 3, 9
DIFFERENTIATION	
SECTION	PROBLEMS
3.3	1-17 (odd), 18, 21, 23, 29, 31, 33, 39-49 (odd), 56, 57
3.4	1-53 (odd), 55(a), 61, 63, 67, 69, 71, 75, 77, 79, 81
3.5	3-19 (odd), 27, 29, 31, 37, 43-53 (odd), 75, 80
3.6	1-33 (odd)
3.9	3, 5, 9, 11, 13, 14, 15, 16, 17, 19, 20, 21, 22, 23, 31, 37, 39
Ch. 3 Review	True/False odd; Exercises 1-49 (odd), 65, 83, 85, 89-101 (odd)

MAX/MIN, L'HOSPITAL'S RULES, ANTIDERIVATIVES	
SECTION	PROBLEMS
4.1	1, 3, 5, 29-43 (odd), 47-62 (odd), 71, 72, 73, 75
4.3	1-7, 9-21 (odd), 25, 31-53 (odd)
4.4	1, 7, 13-27 (odd), 31-41 (odd), 43-67 (odd)
4.7	3, 5, 9, 13, 15, 19, 23, 26, 31, 33, 41, 45, 51
4.9	7-21 (odd), 27, 29, 33-47 (odd), 61, 63, 73
Ch. 4 Review	Concept check 1, 5, 6, 7, 11; True/False odd; Exercises 1-13 (odd), 51, 53, 57, 59, 65-73 (odd), 77, 79, 85
INTEGRATION	
SECTION	PROBLEMS
Appendix E	11-33 (odd), 41, 43, 45
5.1	3, 5, 21, 23, 25
5.2	17, 19, 21, 25, 27, 29, 35-41 (odd), 45, 47, 49, 55-63 (odd)
5.3	7-47 (odd)
5.4	7-17 (odd), 21-45 (odd), 49-57 (odd), 71
5.5	1-47 (odd), 53-73 (odd), 77, 81, 85
Ch. 5 Review	Concept check 1-4, 6, 8; True/False 1-10, 16-18; Exercises 3, 8, 11-39 (odd), 45, 47, 49, 69, 70, 72
APPLICATIONS OF INTEGRATION	
SECTION	PROBLEMS
6.1	13, 15, 17, 21, 23, 27, 35
6.2	1-17 (odd), 23, 27, 51, 55, 57, 61
Ch. 6 Review	Exercises 1, 3, 5, 15, 16