

THE UNIVERSITY OF WESTERN ONTARIO  
DEPARTMENT OF MATHEMATICS

**Mathematics 1225B**  
**Methods of Calculus**

January - April 2017

**NOTE: Many science/technically oriented courses and programs, at Western and at other universities, require a full-year calculus course (such as Calculus 1000A and 1501B). Mathematics 1225B may not be appropriate and will not serve as a prerequisite for Calculus 1301B or 1501B.**

**INSTRUCTORS:** (*Course Coordinator: V. Olds*)

001 - C. Okay; 002 - V. Olds; 003 - H. Seyedinejad; 530 (Brescia) - C. Florence; 550 & 551(Huron) - M. Ataei; 570 & 571 (King's) - D. Meredith; 572 (King's) - T. Moschandreou; 573 (King's) - J. Turnbull  
(*See Class Schedule and Instructor Contact Information on next page.*)

**TEXTBOOK: (required)**

*Math 1225A/B Methods of Calculus (Excerpts from Tan et al)* Custom Edition, published by Nelson.  
*Custom package with text and Student Solution Manual* ISBN: 0176705538 or *text* ISBN: 0176588906 and *Student Solutions Manual* ISBN: 0176588914 if purchased separately. (This is the *Revised Edition*, which has many typos corrected. Used copies of ISBN: 0176637680 (text) and ISBN: 0176649697 (solutions) may be used, but a student using these needs to be sure to consult the errata list on the course web site for the typos.)

**PREREQUISITES:**

Ontario Secondary School MCV4U or equivalent (High School Calculus), or Mathematics 0110A/B.

**ANTIREQUISITES:**

Applied Mathematics 1201A/B, 1413, Calculus 1301A/B, 1501A/B. **If Calc 1000A/B or 1500A/B was completed after Sept. 1 2016 it is an antirequisite** (but not if it was completed before that time).

**COURSE OUTLINE:**

Logarithmic, exponential and trigonometric functions; integration, applications of integration (area, volume); techniques of integration, improper integrals; functions of several variables, Second Partial Test, Lagrange Multipliers; differential equations.

**COURSE WEB SITE:**

Various supplemental materials, such as practice tests and solutions to some of the homework exercises, are posted on the OWL web site. In addition, there are forums on which students may post questions. Important information will be posted on the NEWS forum and/or on the class page on the web site. All students are expected to be aware of information, and make use of materials, posted on the course web site. As well, some class sections use the online quizzes on the web site as the class work component of the grade.

**WHAT IS EXPECTED OF THE STUDENT?**

Attend all classes, make a serious effort to understand all course material, and do all assigned homework. Be aware of all information posted on the NEWS forum in OWL. The student must assume responsibility for any missed classes. It is up to the student to seek out help when needed.

**Please contact the course instructor if you require material in an alternate format or if any other arrangements can make this course more accessible to you. You may also wish to contact Services for Students with Disabilities (SSD) at 661-2111 x82147 for any specific question regarding an accommodation.**

## EVALUATION OF STUDENT PERFORMANCE:

Students will be assessed on the basis of "Class Work", 2 Term Tests, and a Final Exam. The means of assessing the Class Work component will be determined by the instructor of each section, and may be for participation, quizzes, assignments, etc. For each class, information about how the Class Work component will be assessed, and details of the timing, will be announced in class and also posted on the appropriate "class page" on the OWL web site. (Some sections will use Online Quizzes in OWL.)

The 2 Term Tests, each 90 minutes in length, will be held on:

**Friday February 10 2017, 7:00 - 8:30 p.m.** and **Friday March 17 2017, 7:00 - 8:30 p.m.**

Locations of these tests will be announced in class and/or on the course web site.

The Final Exam will be 3 hours in length, covering all of the course material. This exam will be scheduled by the Registrar's Office during the April Exam Period.

### **Calculation of Final Grade:**

Each Term Test will count for 20%, the Final Exam will count for 40% and the Class Work component will count for 10%. The remaining 10% weight will be assigned to whichever of the 3 tests/exams is the student's best mark.

### **Notes:**

1. The Tests and Examination will all have some multiple choice questions and some written answer questions.
2. **NO calculators or other electronic devices or any other aids are allowed on tests and exams.**
3. See Absence / Missed Work policy on next page.

## CLASS SCHEDULE:

Section	Campus	Instructor	Days & Times	Location
001	Main	C. Okay	MWF 9:30	AHB 1R40
002	Main	V. Olds	MWF 12:30	MC 110
003	Main	H. Seyedinejad	Tu 7:00 - 9:00 Th 7:00 - 8:00	UCC 146 UCC 146
530	Brescia UC	C. Florence	MTuW 9:30	BR - 203
550	Huron UC	M. Ataei	MWF 1:30	HC - V 214
551	Huron UC	M. Ataei	MWF 8:30	HC - V 214
570	King's UC	D. Meredith	Tu 1:30 - 2:30 Th 1:30 - 3:30	KC - SA 150 KC - W 166
571	King's UC	D. Meredith	Tu 9:30 - 10:30 Th 9:30 - 11:30	KC - W 168 KC - W 168
572	King's UC	T. Moschandreou	MW 7:00 - 8:30	KC - W 168
573	King's UC	J. Turnbull	M 3:30 - 5:30 W 2:30 - 3:30	KC - SA 151 KC - LH 100

## INSTRUCTOR CONTACT INFORMATION:

V. Olds (002 & Course Coordinator): volds@uwo.ca, MC 103G, X86520

C. Okay (001): cokay@uwo.ca, MC 134, X86540

H. Seyedinejad (003): sseyedin@uwo.ca, MC 129, X86528

C. Florence (530): cflorenc@uwo.ca, BUC - MSJ 301E, 519 432-8353

M. Ataei (550 & 551): mataeija@uwo.ca, HUC - OR 154

D. Meredith (570 & 571): meredith@uwo.ca, KUC - DL 120, KUC X4322

T. Moschandreou (572): tmoschan@uwo.ca, KUC - SA 231

J. Turnbull (573): jturnbu7@uwo.ca, KUC - W 233

**Note:** Any email sent to an instructor (and especially to the course coordinator) **MUST say Math 1225B in the subject line.** Any email without this, and/or any email sent from other than a UWO email address, may be deleted unread.

### SENATE POLICY ON PREREQUISITES:

Prerequisite checking is the **student's responsibility**. Unless you have either the prerequisites for this course or written special permission from your Dean to enroll in it, you may 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.

### 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](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.

### ABSENCE / MISSED WORK:

If you are unable to meet a course requirement due to illness or other serious circumstances, you must provide valid medical or other supporting documentation *to your Dean's Office as soon as possible* and contact *your instructor immediately*. It is the student's responsibility to make alternative arrangements with his or her 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 immediately. For further information concerning UWO's Policy on Accommodation for Medical Illness please refer to this policy at: [http://www.uwo.ca/univsec/pdf/academic\\_policies/appeals/accommodation\\_medical.pdf](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: [https://studentservices.uwo.ca/secure/medical\\_document.pdf](https://studentservices.uwo.ca/secure/medical_document.pdf)

A makeup will be held for each term test as well as for the final exam. Only students with prior permission from their instructor will be allowed to write the makeup for a test. Only students with a Recommendation for Special Exam from their Dean's Office will be allowed to write a makeup for the Final Exam. Any student who misses a portion of the Class Work component of the grade for any legitimate reason should contact your instructor as soon as possible. Supporting documentation may be required. In the case of missed Class Work, or if a student is unable to write the scheduled makeup for a Term Test due to a documented prolonged or recurring absence or other legitimate conflict, your instructor will decide whether to accommodate by rescheduling or by reweighting that component of the grade.

### SUPPORT SERVICES

Office of the Registrar

UWO	<a href="http://www.registrar.uwo.ca">www.registrar.uwo.ca</a>
Brescia	<a href="http://www.brescia.uwo.ca/academics/registrar-services">www.brescia.uwo.ca/academics/registrar-services</a>
Huron	<a href="http://www.huronuc.on.ca/CurrentStudents/StudentLifeandSupportServices/AcademicResources">www.huronuc.on.ca/CurrentStudents/StudentLifeandSupportServices/AcademicResources</a>
King's	<a href="http://www.kings.uwo.ca/academics/academic-deans-office/">www.kings.uwo.ca/academics/academic-deans-office/</a>

Student Development Services [www.sdc.uwo.ca](http://www.sdc.uwo.ca)

Learning Skills Services <http://sdc.uwo.ca/learning/>

USC <http://westernusc.ca/services/>

Academic Calendar [www.westerncalendar.uwo.ca](http://www.westerncalendar.uwo.ca)

ITS [www.uwo.ca/its/helpdesk](http://www.uwo.ca/its/helpdesk)

Students who are in emotional/mental distress should refer to Mental Health @ Western via the link given below for a complete list of the options about how to obtain help: <http://www.uwo.ca/uwocom/mentalhealth/>

**Mathematics 1225B - Suggested Exercises - Winter 2017**

<b>Section</b>	<b>Page</b>	<b>Problems</b>
§5.1 †	9	odd 1 - 31, all 43 - 46.
§5.2 †	17	all 1 - 20, odd 21 - 35, odd 41 - 59, 68, 69, all 77 - 80.
§5.3 †	25	odd 1 - 27, all 28 - 40, odd 41 - 47, 48, 49, 71, 73.
§5.4 †	35	odd 1 - 31, all 32 - 44, odd 45 - 55, all 58 - 63.
§6.2	67	all 1 - 8, all 10 - 14, all 27 - 30.
§6.4	75	all 1 - 34, 43, 44, 46, 49, 50.
§8.1	94	odd 1 - 55, odd 59 - 67, odd 71 - 75, 79.
§8.2	111	odd 1 - 41, odd 45 - 73.
§8.4	132	odd 21 - 51.
§8.5	143	odd 1 - 27, 30, 31, 32, 34, 37, 38, odd 39 - 49, all 64 - 69, 71, 74.
§5.1 ‡	156	2, 4, 5, 9, 11, all 13 - 23, 25, all 28 - 31, all 33 - 35, 41, 43, 45, 46.
§5.2 ‡	170	all 1 - 10, all 13 - 17, all 19 - 22, all 28 - 31. ( <i>Hint for #5: use <math>\tan^2 y = \sec^2 y - 1</math></i> )
§9.1	180	odd 1 - 33, 37, 39 all 43 - 50, 53, 55, 56, 57.
§9.2	190	odd 1 - 13, all 14 - 23, odd 25 - 29.
§9.5	201	odd 1 - 9, odd 13 - 29, odd 33 - 41.
§10.1	213	odd 1 - 13, 29.
§10.2	226	odd 1 - 25, odd 29 - 59.
§10.3	237	odd 1 - 19, 27, all 29 - 31, 33.
§10.5	249	1, 3, 5, 7, 11, 12, 13, 15, 17, 18, 23, 25.
§7.1	267	all 1 - 5, all 9 - 11, 14, 16, 17, 20, 22, 23, 25, 26.
and applications	267	27, all 34 - 36, 39, all 42 - 45.
§5.5 †	44	1, 2, 11, 15
§7.4	282	all 1 - 11, 13, 15, all 17 - 22.
and applications	282	all 27 - 29.

*Notes:*

- Page numbers and text section references refer to the custom published text (larger number shown at the **centre bottom** of each page).
- Because the source material for this text comes from two different books, the custom text contains **two Chapter 5's**. In the table of contents, the two source texts are indicated by superscripts of † and ‡. In the above, the same symbols are used to differentiate between the two Chapter 5's. Section numbers followed by † refer to **the first Chapter 5** in the text, while section numbers followed by ‡ refer to **the second Chapter 5**.
- **Except for §5.5 †**, which is covered with Chapter 7 at the end of the course, all sections covered are in the same order as they appear in the custom published text. However, in Ch. 7, some classes may cover the applications parts of the Ch. 7 material **after** covering the methodology for both sections. So for some, the "and applications" and 5.5 † homework may come after the first line of 7.4 homework above.
- Any changes to this list will be announced on the NEWS and/or Homework discussion boards.
- Answers and solutions for assigned even-numbered problems are posted on the course web site. Detailed solutions to some other problems are also posted.