

## UPDATED COURSE OUTLINE, SPRING 2020

### Math 101: Calculus II

#### Instructors, by lecture sections

**A01-A02:** Dr. Yakine Bahri      **Office:** DTB A533    **Email:** [ybahri@uvic.ca](mailto:ybahri@uvic.ca)  
**A03-A05:** Ms. Svetlana Oshkai      **Office:** DTB A551    **Email:** [soshkai@uvic.ca](mailto:soshkai@uvic.ca)

**Textbook:** Thomas' Calculus Early Transcendentals, 14th Edition, Weir and Hass, published by Pearson/Prentice Hall. If you do not have a MyMathLab code from the previous term, you may purchase a print copy of the textbook packaged together with access to MyMathLab (see below) from the UVic bookstore. If you do not want a print copy, you are not required to purchase one – MyMathLab comes with an e-book version of the textbook. **MyMathLab** is a required tool, which you already have if you took Math 100 or 109 in less than 15 month ago.

**Course Pre-requisites** MATH 100 or MATH 109, or permission of the department.

**Number of Units** 1.5

**Grade in Calculus I** If your grade in Math 100 or 109 is less than *C+*, statistics show that with 95% probability your grade in Math 101 will be *F*. If you intend to succeed in Math 101 course this term, you need to drastically change your learning approach, and to focus on fixing your existing weaknesses from Pre-Calculus and Calculus I.

#### Course webpage:

The course webpage <http://coursespaces.uvic.ca>: 202001 MATH 101 A01-A05 X.

#### Evaluation and Grading:

Your final percentage grade will be computed according to the following scheme.

Components	Dates	Weights
Weekly MML Quizzes, online, 30-mins-long	Most Weeks	7%
MML Pre-class assignments, online	before most lectures	5%
MML Gateway test #1, online, 30-mins-long	due Mon Jan 27	3%
MML Gateway test #2, online, 30-mins-long	due Mon March 02	3%
MML Gateway test #3, online, 30-mins-long	due Mon Apr 06	3%
Tutorial “exit tickets”	first 10 weeks	1%
Tutorial Assignments	last three weeks	3%
Midterm 1, 90-mins-long	Saturday 08/02	20 %
Midterm 2, 90-mins-long	Saturday 21/03	15 %
Final Exam, part 1, 60-mins-long, Short Answer	April 17	20%
Final Exam, part 2, 90-mins-long, Long Answers	April 17	20%

Departmental Course Policies common to all Math classes can be found at <http://www.uvic.ca/science/math-statistics/current-students/undergraduate/course-policies/index.php>.

Course Policies specific to Math 101 course can be found at the CourseSpaces course page <https://coursespaces.uvic.ca/course/view.php?id=72957>

## Suggested Problems

Section	Fourteenth Edition
<b>6.1</b> Volumes Using Cross Sections	1-63 odd
<b>6.2</b> Volume Using Cylindrical Shells	1-43 odd, 46-50 all
<b>6.3</b> Arc Length	1-15 odd, 17(a,b only)-23(a,b only) odd, 25-29 all, 37
<b>7.1</b> The Logarithm Defined as an Integral	1-51 odd; <b>After Ch.6:</b> 53, 54, 55, 56
<b>7.2</b> Exponential Change and Separable Differential Equations	1-49 odd
<b>7.3*</b> Hyperbolic Functions	1-81 odd, 82, 84-86 all
<b>8.1</b> Using Basic Integration Formulas	1-45 odd, 51, 53; <b>After Sect.6.3:</b> 46, 47, 48
<b>8.2</b> Integration by Parts	1-57 odd, 77-81 odd; <b>After Ch.6:</b> 59-64 all; <b>After Sect.7.3:</b> 83, 84;
<b>8.3</b> Trigonometric Integrals	1-67 odd, 72, 76; <b>After Ch.6:</b> 69, 71, 74, 75
<b>8.4</b> Trigonometric Substitutions	1-57 odd, 58, 59(a), 61, 63; <b>After Ch.6:</b> 60, 62, 64
<b>8.5</b> Integration of Rational Functions by Partial Fractions	1-71 odd, 74; <b>After Ch.6:</b> 73
<b>8.8</b> Improper Integrals	1-71 odd, 75, 79; <b>After Ch.6:</b> 73, 76(a), 77, 78
<b>Appendix 7</b> Complex Numbers	see page AP-34, exercises 1-23 odd, 26, 28, 29, 30
<b>10.1</b> Infinite Sequences	1-109 odd, 114, 117-141 odd
<b>10.2</b> Infinite Series	1-99 odd, 100
<b>10.3</b> The Integral Test	1-47 odd, 50, 51-57 odd
<b>10.4</b> Comparison Tests	1-55 odd, 59-62 all, 67-72 all
<b>10.5</b> Absolute Convergence; The Ratio and Root Tests	1-67 odd
<b>10.6</b> Alternating Series and Conditional Convergence	1-81 odd, 88-91 all
<b>10.7</b> Power Series	1-57 odd, 62, 63
<b>10.8</b> Taylor and Maclaurin Series	1-41 odd, 42
<b>10.9</b> Convergence of Taylor Series	1-47 odd, 48
<b>10.10*</b> Applications of Taylor Series	1-53 odd, 66-69 all, 71
<b>11.1</b> Parameterizations of Plane Curves	1-43 odd, 49
<b>11.2</b> Calculus with Parametric Curves (No Areas of Surfaces of Rev.)	1-29 odd, 41-44 all
<b>11.3</b> Polar Coordinates	1-67 odd, 68
<b>11.4</b> Graphing Polar Coordinate Equations	1-31 odd
<b>11.5</b> Areas & Length in Polar Coordinates	1-31 odd

**Note:** Sections marked with the \* will be covered in this course if time permits to do so in all lecture sections of the course. All material covered in lectures, tutorials and in the recommended questions is expected to be included in the Midterm and Final Examinations.

### Important administrative dates:

Last day for withdrawing from courses with 100% fee reduction: Sunday, January 19.

Last day for adding courses: Wednesday, January 22.

Last day for withdrawing from courses with 50% fee reduction: Sunday, February 9.

Reading Break: Monday-Friday, February 17-21.

Last day for withdrawing from courses without penalty of failure: Saturday, February 29.

Last day of classes: Friday, April 3.

Examination period: Monday April 6 - Friday April 24.

Statutory holidays: April 10 Good Friday, April 13 Easter Monday.

All information in the course outline, including lecture schedule and topics are approximate and subject to change. All the announcements about the changes will be made in lectures. Students missing the announcements in class are responsible for the consequences.

## Course Schedule (subject to change)

Week of	Topics	Important Dates
Week 1: 6/01/20	Section 8.1: Basic Integration Formulas Section 7.1: Logarithms & Exponents	Mon 06/01 - first day of classes; No tutorial this week; no MML Quiz
Week 2: 13/01/20	Section 7.2: Exponential Change Section 8.2: Integration by parts	Tutorial 1; MML Quiz1 (Sun)
Week 3: 20/01/20	Section 8.3: Trig Integrals Section 8.4: Trig substitutions	Tutorial 2; MML Quiz2 (Sun)
Week 4: 27/01/20	Section 8.5: Partial Fractions Section 8.8: Improper Integrals	<b>Gateway #1</b> on Mon 27/01; Tutorial 3; MML Quiz3 (Sun)
Week 5: 3/02/20	Sections 10.1: Infinite Sequences Sections 10.2: Infinite Series	Tutorial 4; MML exam prep HW; <b>Midterm #1</b> on Sat 8/02
Week 6: 10/02/20	Sections 10.3: Integral Test Sections 10.4: Comparison Tests	Tutorial 5; MML Quiz4 (Sun)
Week 7: 17/02/20	Reading Break	Mon-Fri no classes / no tutorials; no MML quiz due
Week 8: 24/02/20	Sections 10.5: Ratio and Root Tests Sections 10.6: Alternating Series Test	Tutorial 6; MML Quiz5 (Sun)
Week 9: 2/03/20	Sections 10.7: Power Series Appendix 7: Complex Numbers	<b>Gateway #2</b> on Mon 02/03; Tutorial 7; MML Quiz6 (Sun)
Week 10: 9/03/20	Sections 10.8: Taylor / Maclaurin Ser. Sections 10.9: Convergence of Taylor Ser. Sections 10.10*: Applications of Taylor Ser.	Tutorial 8;  MML Quiz7 (Sun)
Week 11: 16/03/20	Section 6.1: Volume; Cross-Sections Section 6.2: Volume; Cylindrical Shells Section 6.3: Arc-length	Tutorial 9;  MML exam prep HW; <b>Midterm #2</b> on Sat 21/03
Week 12: 23/03/20	Section 11.1: Parameter. of Plane Curves Section 11.2: Calculus with Param. Curves Section 11.3: Polar Coordinates	Tutorial 10;  MML Quiz8 (Sun)
Week 13: 30/03/20	Section 11.4: Graphing Polar Coord Section 11.5: Area in Polar Coordinates Sections 7.3*: Hyperbolic Functions	Tutorial 11;  MML Quiz9 (Sun)
<b>Exam Period</b>	6/04/20 – 24/04/20, Easter Holiday 10-13	Final exam: April 17, 2 - 5 pm

**Note:** Sections marked with the \* will be covered in this course only if time permits to do so in all lecture sections of the course. All material covered in lectures and tutorials can be included in the Final Examination.