

# Course Syllabus for MATH 105

COURSE NAME	TERM/YEAR:
Integral Calculus with Applications to Commerce and Social Sciences	Summer II 2020 (Jul 6 <sup>th</sup> )

## CALENDAR DESCRIPTION:

Antiderivatives, the definite integral, techniques of integration, infinite series, partial derivatives, maxima and minima with constraints, discrete and continuous random variables.

## COURSE DESCRIPTION:

This course examines the concept of Integrals, Areas and Distances, The Definite Integral, The Fundamental Theorem of Calculus, Indefinite Integrals and the Net Change Theorem, The Substitution Rule. Applications of integration, Areas between Curves, Volume, Volumes by Cylindrical Shells, Techniques of integration, Integration by Parts, Trigonometric Integrals, Trigonometric Substitution, Applications of integration to Economics and Biology.

## COUSE PRE-REQUISITE(S):

Differential Calculus course (i.e. MATH 104).

## REQUIRED TEXTS & RESOURCES:

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

ISBN: 978-1-305-27033-6

or

Stewart, James. *Calculus: Early Transcendentals, 8th Edition.* (eBook)

ISBN: 978-1-305-27033-6

Available at [www.nelson.com](http://www.nelson.com)

## COURSE REQUIREMENTS:

All students are expected to access Canvas weekly to watch the lectures and study the textbook to achieve the learning objectives. Also they are expected to do the weekly assignments based in the textbook and submit them on time. The **video assignment** is also mandatory to submit, in order to the course. Assignments are important part of the course evaluation. Access to **Microsoft Excel** or **Mathcad software** or **graphing calculator** is recommended, and it would help to better understand and experiment the course content.

### GRADE DISTRIBUTION:

The grading schema for the course is as follows: (In order to pass the course students must pass the final exam. Also the video assignment is mandatory to pass the course.)

	<b>GRADE %</b>
Assignments	30%
Midterm	30%
Final Exam	40%

### COURSE POLICIES:

It is the responsibility of every student to read and understand the College Policies. The College Policies on [Academic Honesty](#), [Academic and Exam Accommodations](#), [Grading Practices](#), [Student Conduct](#), [Technology Usage](#), and more can be found here: <http://corpuschristi.ca/about-us/academic-policies>

In addition to the College Policies, this course also upholds the following policies and practices:

### TESTS:

- There will be a midterm and a final exam, which will cover the entire course material.

### GRADING SCALE:

LETTER GRADE	NUMERICAL EQUIVALENTS	GRADE POINT	GRASP OF SUBJECT MATTER	OTHER QUALITIES EXPECTED OF STUDENTS
<b>A RANGE:</b>		Excellent: Student shows original thinking, analytic and synthetic ability, critical evaluations, broad knowledge base.		
A+	90-100	4.33	Extraordinary	Strong evidence of original thought, of analytic and synthetic ability. Superior grasp of subject matter with sound and penetrating critical evaluations, which identify assumptions of those they study as well as their own; ; mastery of an extensive knowledge base.
A	85-89	4.0	Excellent	Clear evidence of original thinking, of analytic and synthetic ability; Strong grasp of subject matter with sound critical evaluations; evidence of broad knowledge base.
A-	80-84	3.67	Very, very good	Strong grasp of subject matter and sound critical assessments with appreciation for the larger context.
<b>B RANGE:</b>		Good: Student shows critical capacity and analytic ability, understanding of relevant issues, familiarity with the literature.		
B+	76-79	3.33	Very good	Good critical capacity and analytic ability; reasonable understanding of relevant issues; good evidence of familiarity with literature

LETTER GRADE	NUMERICAL EQUIVALENTS	GRADE POINT	GRASP OF SUBJECT MATTER	OTHER QUALITIES EXPECTED OF STUDENTS
<b>B</b>	72-75	3.0	Good	
<b>B-</b>	68-71	2.67	Satisfactory	Adequate critical capacity and analytic ability; reasonable understanding of relevant issues; evidence of familiarity with literature.

<b>C RANGE</b>		Acceptable to minimum.		
<b>C+</b>	64-67	2.33	Acceptable	Very basic critical capacity and analytic ability; some understanding of relevant issues; some evidence of familiarity with literature.
<b>C</b>	60-63	2.0	Barely Acceptable	Generally clear in expression but deficient in analysis or in structure.
<b>C-</b>	55-59	1.67	Needs Improvement	Acceptable in expression but deficient in both analysis and in structure.
<b>D</b>	50-54	1.0	Minimum Pass	Addresses the topic but significant deficiencies in expression, analysis and structure.

<b>FAILED</b>				
<b>F</b>	0-49	0		Failure to meet the above criteria

### COURSE SCHEDULE

The following schedule may be altered according to the instructor's judgment.

Week	Date(s)	Course Content	Readings For Each Class	Other Information
1	Jul 6-13	Areas and distances, The definite integral	§5.1 §5.2	<b>Homework-1, Due Jul 13<sup>th</sup></b>
2	Jul 13-20	Antiderivatives The fundamental theorem of calculus, Indefinite integrals and the net change Theorem	§4.9 §5.3 §5.4	<b>Homework-2, Due Jul 20<sup>th</sup></b>
3	Jul 20-27	The substitution rule Areas between curves	§5.5 §6.1	<b>Homework-3, Due Jul 27<sup>th</sup></b>
4	Jul 27- Aug 3	Volumes Volumes by cylindrical shells Work	§6.2 §6.3 §6.4	<b>Homework-4, Due Aug 3<sup>rd</sup></b> <b>Video assignment due Aug 2<sup>nd</sup></b>

Week	Date(s)	Course Content	Readings For Each Class	Other Information
5	Aug 3-10	Average value of a function	§6.5	<b>Homework-5, Due Aug 10<sup>th</sup></b> <b>Midterm</b>
6	Aug 10-17	Integration by part Trigonometric integrals	§7.1 §7.2	<b>Homework-6, Due Aug 17<sup>th</sup></b>
7	Aug 17-24	Trigonometric substitutions Applications to economics and biology	§7.3 §8.4	<b>Homework-7, Due Aug 24<sup>th</sup></b>
8	Aug 24-28	Final Exam		<b>Final Exam</b>

## Appendix

### RECOMMENDATIONS FOR RELATED COURSES AT CORPUS CHRISTI COLLEGE:

For Business study the following courses are recommended: BUS 204, 205, 290, 291, 295.

### OTHER RELEVANT INFORMATION FOR THIS COURSE:

**Credit transferability:** Consult <http://www.bctransferguide.ca>

**The calculator question:** Although graphing calculators may be helpful in exploring the topics in this course, they will not be permitted for midterm or final exam. Only basic non-programmable, non-graphing scientific calculators will be permitted. Therefore, the purchase of a graphing calculator for the purposes of this course is unnecessary. The following free-of-charge sites are other options for the purposes of exploration and consolidation of learning:

<https://www.desmos.com/calculator>

[https://desmos.s3.amazonaws.com/Desmos\\_User\\_Guide.pdf](https://desmos.s3.amazonaws.com/Desmos_User_Guide.pdf)

<http://www.wolframalpha.com/>

**Full textbook step-by-step solutions:** Although the textbook provides solutions to odd numbered questions, students will find full solutions available on [www.slader.com](http://www.slader.com)