

**Math 114-01, Calculus II, Fall 2016**  
MWF 10:55-12:10, OSS 328

**Instructor:** Amy DeCelles

Email: [adecelles@stthomas.edu](mailto:adecelles@stthomas.edu)

Webpage: <http://personal.stthomas.edu/dece4515/>

Office: OSS 203

Office phone: 2-5695

Tentative office hours: MWF 9:30-10:30, Tu 2-3, Th 4-5, and by appointment

**Course Prerequisites:** Successful completion (C- or better) of trigonometry based Calculus I (Math 113), or its equivalent.

**Credits and Workload Expectations:** 4 credits: 8-10 hours per week outside the classroom.

**Course Materials and Resources:**

- Textbook: *Calculus: Single and Multivariable*, 6th ed., Hughes-Hallett, McCallum, et. al.
- *Mathematica* Software: <https://www.stthomas.edu/irt/students/desktopsupport/software/>
- **Math Resource Center (MaRC, OSS 235)** : free drop-in peer tutoring, group study areas, solution manuals, WebAssign tutorials, *Mathematica* help, . . .

**Course Objectives:**

- Gaining factual knowledge (terminology and methods: integration techniques, parametric curves, differential equations and their solutions, sequences, series, tests for convergence etc.)
- Learning fundamental principles, generalizations, and theories (measuring continuous accumulation with integrals, finite measurements for infinite things, etc.)
- Learning to apply course material (modeling with integrals, parametric curves, and differential equations)
- Developing skill in expressing myself orally or in writing (clear written solutions and oral presentations of problems)

**Assignments:** To prepare for class you will be assigned reading, along with **reading questions** and **discussion problems** related to the reading. You will also be assigned **practice problems** related to material that we have already discussed in class. For each topic, you will also write up one **quality solution**. Occasionally, in-class participation or presentations will be graded.

**Late Work:** Late work is typically not accepted. The lowest three scores in each assignment category will be dropped at the end of the semester. Extensions may be granted if requested before the due date, and work may certainly be submitted before the due date, if arrangements have been made with the professor in advance. If there is a serious, unforeseeable reason for missing more than three days of class, it is the student's responsibility to contact the professor as

soon as possible and to make appointments with the professor and with Academic Counseling upon returning to classes to make a plan for making up missed work.

**Missed Exams:** Make-up midterm exams may be given to students with legitimate excuses such as serious illness, university sponsored events, etc., as long as the make-up exam can be taken within a reasonable time frame. If it is not possible to schedule a make-up exam within a reasonable time frame, the grade for the midterm may be prorated from the final exam. Written documentation may be required. Rescheduling the final is not possible except under very extreme circumstances.

**Incompletes:** Grades of I are normally not given in this course. However, they may be granted due to extenuating circumstances especially if (i) the majority of the course work has been completed at a level of C or better and (ii) the student demonstrates the ability to complete the remaining coursework outside of the classroom. In such cases, a well-documented petition should be submitted to the professor before the last day of classes. Please see the university policies on [withdrawals](#) and [incomplete grades](#).

**Final Course Grade:** The overall score for this course will be computed as outlined below. Final letter grades will be assigned based on the overall score, with the two major components, written solutions and exams also being considered separately. In particular, the final letter grade will not be higher than one letter grade above the level of the work on written solutions or the work on exams. Exceptional performance on the final may also be taken into account.

- Assignments (45%): reading questions (5%), discussion preparation (5%), discussion/practice problems (5%), and quality solutions and oral presentations (30%)
- Midterm Exams (30%): tentatively Mon Oct 3, Mon Oct 31, and Wed Nov 30
- Final Exam (20%): cumulative; **1:30-3:30 pm Mon Dec 19**, location TBA
- Best Exam (5%): at the end of the semester the score for the best exam will contribute an extra 5% towards the overall score

**Disability Accommodations:** Academic accommodations will be provided for qualified students with documented disabilities including but not limited to mental health diagnoses, learning disabilities, Attention Deficit Disorder, chronic medical conditions, visual, mobility, and hearing disabilities. Students are invited to contact the Disability Resources office about accommodations early in the semester. Appointments can be made by calling 651-962-6315 or in person in Murray Herrick, room 110. For further information, you can locate the Disability Resources office on the web at <http://www.stthomas.edu/enhancementprog/>.

**Math 114-01, F2016, Detailed Schedule**

<b>Mon</b>	<b>Wed</b>	<b>Fri</b>
Sep 5, 2016	Sep 7, 2016	Sep 9, 2016
Labor Day	Intro to Course Due today: Read 2.4, 3.9 Next class: RQ 10.1, D 2.4/3.9	Derivatives and Approximation (2.4, 3.9) Due today: RQ 10.1, D 2.4/3.9 Next class: RQ 10.2, D 10.1, P&QS 2.4/3.9
Sep 12, 2016	Sep 14, 2016	Sep 16, 2016
Taylor Polynomials (10.1) Due today: RQ 10.2, D 10.1, P&QS 3.9 Next class: RQ 5.1/5.2, D 10.2, P&QS 10.1	Taylor Series (10.2) Due today: RQ 5.1/5.2, D 10.2, P&QS 10.1 Next class: RQ 7.5, D 5.1/5.2, P&QS 10.2	Definite Integrals and Approximation (5.1, 5.2) Due today: RQ 7.5, D 5.1/5.2, P&QS 10.2 Next class: RQ 5.3/6.1/6.4, D 7.5, P&QS 5.1/5.2
Sep 19, 2016	Sep 21, 2016	Sep 23, 2016
Numerical Integration (7.5) Due today: RQ 5.3/6.1/6.4, D 7.5, P&QS 5.1/5.2 Next class: RQ 6.3/11.1, D 5.3/6.1/6.4, P&QS 7.5	The FTC (5.3, 6.1, 6.4) Due today: RQ 6.3/11.1, D 5.3/6.1/6.4, P&QS 7.5 Next class: RQ 11.2, D 6.3/11.1, P&QS 5.3/6.1/6.4	Intro to Diff. Eq. (6.3, 11.1) Due today: RQ 11.2, D 6.3/11.1, P&QS 5.3/6.1/6.4 Next class: RQ 11.4/11.5, D 11.2, P&QS 6.3/11.1
Sep 26, 2016	Sep 28, 2016	Sep 30, 2016
Slope Fields (11.2) Due today: RQ 11.4/11.5, D 11.2, P&QS 6.3/11.1 Next class: RQ 7.1, D 11.4/11.5, P&QS 11.2	Separation of Variables and Modeling (11.4, 11.5) Due today: RQ 7.1, D 11.4/11.5, P&QS 11.2 Next class: P&QS 11.4, 11.5; D Rev	Review Session Due today: D Rev, P&QS 11.4/11.5 Next class: Study for exam
Oct 3, 2016	Oct 5, 2016	Oct 7, 2016
<b>Exam 1</b> Next class: RQ 7.2, D 7.1	Integration by Substitution (7.1) Due today: RQ 7.2, D 7.1 Next class: RQ 7.4A, D 7.2, P&QS 7.1	Integration by Parts (7.2) Due today: RQ 7.4A, D 7.2, P&QS 7.1 Next class: RQ 7.4B, D 7.4A, P&QS 7.2
Oct 10, 2016	Oct 12, 2016	Oct 14, 2016
Partial Fractions (7.4A) Due today: RQ 7.4B, D 7.4A, P&QS 7.2 Next class: RQ 1.8, D 7.4B, P&QS 7.4A	Trigonometric Substitutions (7.4B) Due today: RQ 1.8, D 7.4B, P&QS 7.4A Next class: RQ 4.7, D 1.8, P&QS 7.4B	Limits (1.8) Due today: RQ 4.7, D 1.8, P&QS 7.4B Next class: RQ 7.6, D 4.7, P&QS 1.8
Oct 17, 2016	Oct 19, 2016	Oct 21, 2016
L'Hopital's Rule (4.7) Due today: RQ 7.6, D 4.7, P&QS 1.8 Next class: RQ 4.8A, D 7.6, P&QS 4.7	Improper Integrals (7.6) Due today: RQ 4.8A, D 7.6, P&QS 4.7 Next class: RQ 4.8B, D 4.8A, P&QS 7.6	Parametric Equations (4.8A) Due today: RQ 4.8B, D 4.8A, P&QS 7.6 Next class: RQ 5.4, D 4.8B, P&QS 4.8A
Oct 24, 2016	Oct 26, 2016	Oct 28, 2016
Parametric Curves: Slope, Concavity, (4.8B) and Area (supplement) Due today: RQ 5.4, D 4.8B, P&QS 4.8A Next class: P&QS 4.8B; D Rev	Review Session Due today: D Rev, P&QS 4.8B Next class: Study for exam	Fall Break
Oct 31, 2016	Nov 2, 2016	Nov 4, 2016
<b>Exam 2</b> Next class: RQ 8.1, D 5.4	Area b/w Curves; Ave Value (5.4) Due today: RQ 8.1, D 5.4 Next class: RQ 8.2A, D 8.1, P&QS 5.4	Areas and Volumes (8.1) Due today: RQ 8.2A, D 8.1, P&QS 5.4 Next class: RQ 8.2B, D 8.2A, P&QS 8.1
Nov 7, 2016	Nov 9, 2016	Nov 11, 2016
Applications to Geometry: Volumes (8.2A) Due today: RQ 8.2B, D 8.2A, P&QS 8.1 Next class: D 8.2B, P&QS 8.2A; prepare presentation	Applications to Geometry: Arc Length (8.2B) Due today: D 8.2B, P&QS 8.2A Next class: P&QS 8.2B; prepare presentation	Presentations: Density and Center of Mass (8.4) Due today: P&QS 8.2B, 8.4 presentation QS Next class: P 8.4, prepare presentation
Nov 14, 2016	Nov 16, 2016	Nov 18, 2016
Presentations: Applications to Physics (8.5) Due today: P 8.4, 8.5 presentation QS Next class: P 8.5, prepare presentation	Presentations: Applications to Economics (8.6) Due today: P 8.5, 8.6 presentation QS Next class: RQ 9.1, P 8.6, QS 8.4-8.6	Intro to Sequences (9.1A) Due today: RQ 9.1, P 8.6, QS 8.4-8.6 Next class: RQ 9.2, D 9.1B, P&QS 9.1A
Nov 21, 2016	Nov 23, 2016	Nov 25, 2016
Convergence of Sequences (9.1B) Due today: RQ 9.2, D 9.1, P&QS 9.1A Next class: P&QS 9.1B, D Rev	Mathematica Project	Thanksgiving Break
Nov 28, 2016	Nov 30, 2016	Dec 2, 2016
Review Session Due today: D Rev, P&QS 9.1B Next class: Study for exam	<b>Exam 3</b> Next class: RQ 9.3, D 9.2	Geometric Series (9.2) Due today: RQ 9.3, D 9.2 Next class: RQ 9.4, D 9.3, P&QS 9.2
Dec 5, 2016	Dec 7, 2016	Dec 9, 2016
Convergence of Series (9.3) Due today: RQ 9.4, D 9.3, P&QS 9.2 Next class: RQ 9.5, D 9.4, P&QS 9.3	Ratio Test (9.4) Due today: RQ 9.5, D 9.4, P&QS 9.3 Next class: RQ 10.3A, D 9.5, P&QS 9.4	Power Series (9.5) Due today: RQ 10.3A, D 9.5, P&QS 9.4 Next class: RQ 10.3B, D 10.3A, P&QS 9.5
Dec 12, 2016	Dec 14, 2016	Dec 16, 2016
Taylor Series Revisited (10.2, 10.3A) Due today: RQ 10.3B, D 10.3A, P&QS 9.5 Next class: D 10.3B, P&QS 10.3A	Using Taylor Series (10.3B) Due today: D 10.3B, P&QS 10.3A Due 11:59 tonight: P&QS 10.3B	