

# Advanced Calculus I

MATH 409, Study Abroad Besançon 2018

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## Meeting Times-Location

Lectures: MTWRF 8:30-10:30am

Classroom: see the course webpage

Office hours: daily by appointment

## Global Course Description

Name: Advanced Calculus I

Description: Axioms of the real number system; point set theory of the real number line; compactness, completeness and connectedness; continuity and uniform continuity; sequences, series; theory of Riemann integration. A main goal of the course, essential to mastering the indicated material, is to learn how to apply precise mathematical reasoning in reading, understanding, and writing proofs of theorems in analysis.

Textbooks: *Elementary Real Analysis*, Second Edition (2008), Volume One, by Brian S. Thomson, Judith B. Bruckner, and Andrew M. Bruckner. The course material is contained in Chapters 1, 2, 4, 5, 7, and 8 and is available for free download here <http://classicalreanalysis.info>.

Prerequisites: Math 220 (Foundations of Mathematics) and Math 221 (Several Variable Calculus).

Tentative

Schedule:

1. Review of MATH 220 (3 days)
2. Axioms of number systems (2 days)
3. Sequences of real numbers (2 days)
4. Introduction to the topology of the real line (2 days)
5. Continuity (3 days)
6. Differentiability (3 days)
7. Introduction to Riemann integration (3 days)

## Exams Policy

In-class tests: One in-class test will be given on Monday June 4th, 8:30-10:30 a.m.

Final exam: A comprehensive final exam will be given on Thursday June 21st, 1:30-3:30 p.m..

Final grade: Final grade = 25% in-class test + 30% Final Exam + 20% quizzes + 25% participation/personal investment.

Grading: A 90-100% B 80-89% C 70-79% D 60-69% F 0-59%

Appeal: Any discussion on your grade will be only possible within 2 days (starting at the graded exam date). You have the possibility to check your grades via the eCampus website. It is your responsibility to verify that the grades reported online correspond to your actual grades.

## Quizzes

You will have to take a quiz on a daily basis. These quizzes are short, concise and straightforward. They are excellent indicators to how well you keep up with the pace of the class.

## Participation and Personal Investment

The participation and personal investment portion of your grade accounts for 25% of your grade and will be established based on the following criteria:

1. participation during the lectures,
2. participation during the mandatory cultural activities,
3. investment during the study sessions where you will work on the homework problems under the supervisions of your French tutors,
4. general behavior.

Every mandatory activity that you will miss without a university valid excuse will incur a 1-point deduction on your participation and personal investment portion of your grade.

## Attendance and Make-up Policy

Attendance of lectures is mandatory and failure to appear to a lecture will automatically result in a failing grade. Make-up exams will be given only to students providing a University-approved excuse. If you miss an exam, you have to notify your instructor within 24 hours. Otherwise the students forfeits his/her right to make-up. Excused absences for the exams and final will be dealt with on an individual basis, but require convincing documentation. See <http://student-rules-tamu-edu/> for more details.

## Miscellaneous

### Academic Integrity Statement

Cheating and other forms of academic dishonesty will not be tolerated.

Aggie Honor Code: “An Aggie does not lie, cheat, or steal, or tolerate those who do”

Upon accepting admission to Texas A&M University, a student immediately assumes a commitment to uphold the Honor Code, to accept responsibility for learning, and to follow the philosophy and rules of the Honor System. Students will be required to state their commitment on examinations, research papers, and other academic work. Ignorance of the rules does not exclude any member of the TAMU community from the requirements or the processes of the Honor System. For additional information please visit: <http://aggiehonor.tamu.edu>

### Disability Services

The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please contact Disability Services, currently located in the Disability Services building at the Student Services at White Creek complex on west campus or call 979-845-1637. For additional information, visit <http://disability.tamu.edu>.

### Copyright Policy

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