Disclaimer
This syllabus is to be used as a guideline only. The information provided is a summary of topics to be covered in the class.
Information contained in this document such as assignments, grading scales, due dates, office hours, required books and materials may be from a previous semester and are subject to change. Please refer to your instructor for the most recent version of the syllabus.

Mat 371 — Advanced Calculus I — Spring 2018

Line No.	13244
Time	TuTh 3:00-4:15 PM
Room	WXLR 108
Instructor	Jack Spielberg
Instructor webpage	`http://math.asu.edu/~jss`
Office	PSA-747
Phone	965-3286 (Math Department: 965-3951)
Office Hours	M 1:30 - 2:30, W 3:00 - 5:00, and by appointment.
e-mail	jack.spielberg@asu.edu
Text	Abbott, *Understanding Analysis*, 2nd edition, Springer.
Course webpage	`https://mathcms2.asu.edu/moodle/course/view.php?id=84`

Points	Homework	one-sixth
	Quizzes	one-sixth
	2 Midterms	one-third
	Final Exam	one-third

Dates	ASU Day 1	Jan 8, Monday
	Drop/Add Ends	Jan 14, Sunday
	Martin Luther King Jr. holiday	Jan 15, Monday
	Midterm 1	Feb 15, Thursday
	Spring Break	Mar 5 – 9, Monday – Friday
	Course Withdrawal Deadline	April 1, Sunday
	Midterm 2	Apr 5, Thursday
	Last day of classes	Apr 27, Friday
	Final Exam	May 1, Tuesday, 2:30 – 4:20 PM

Course Description. MAT 371 is a course on the theory underlying calculus, and as such, is an introduction to mathematical analysis. Unlike a course in calculus, the problems in this class require essay responses, in the form of clearly written and logically sound proofs. Students completing the course will know the precise definitions and statements of theorems that are crucial to the subject, and will be able to use them to prove related results that have not been seen before. Additionally, students will improve their skill in constructing and writing mathematical proofs. Prerequisites: MAT 272 (or MAT 267) and MAT 300 with grade of C or better.

Course outline. We will cover the following sections of the text:

1.1 - 1.4, 1.5 selections
2.2 - 2.6
4.1 - 4.5
5.1 - 5.3
6.2 - 6.3
7.2 - 7.5

This is a course that cannot be managed on the cheap. You should expect to spend a LOT of time outside class studying the text and your class notes, and working on problems. The material builds on itself in a way that is unlike other courses. If you skip a week, it will be very difficult to catch up.

Course Materials will be posted on Moodle, which is accessible at the address at the beginning of this syllabus. You should check there regularly for updated information. All information and policies in this syllabus are subject to change at the instructor's discretion. All changes will be announced in class and on Moodle.

The text for this class is a good one. I hope you find it interesting as well as intelligible — but the material of this class is difficult! You should read (and reread) it carefully. Suggested sections for reading

will be included each week with the homework, but it is a good idea to read ahead. Even if the material is confusing on the first reading, it will be more clear on the second.

Homework will be assigned weekly. The assignments will be posted on Moodle. Homework is due at the end of class on the due date.

With occasional exceptions, the homework problems will require careful proofs. You should think of each assignment as a collection of short (or not so short) essays. You must write in complete sentences, with punctuation, that show all of your reasoning. Mathematical and logical symbols should be confined to well-formed mathematical or logical phrases within complete sentences. Avoid using symbols as shorthand for words or phrases. (For example, the symbol $\Rightarrow$ must not be used in place of the word *implies*.)

You should expect to spend a lot of time on the homework. You are welcome to work together on the problems, but you must write up your solutions yourself, in your own words. Always reread, and then recopy, your solutions before handing them in. If you type your solutions, rereading and recoding before submission is still crucially important.

Reading the homework is a time-consuming job too! Please make it easier for us to give you the score that you deserve by

- writing neatly, with large enough printing, and leaving space between lines
- not writing in the upper corners where pages will be stapled
- writing on only one side of each sheet
- STAPLING your papers BEFORE coming to class.

You should take the point of view that paper is cheap. Use plenty of scratch paper when working out your solutions, and use plenty of paper to write (and rewrite) your solutions for submission.

Quizzes. Short quizzes will be given weekly. The quizzes will typically be based on the homework.

Grading. Problems are "worth" 5 points each. The rough scale is: 4 = A, 3 = B, 2 = C, 1 = D. The instructor may choose to adjust this scale downwards. Late homework will not be accepted, and missed quizzes may not be taken later. However, the lowest two homeworks and two quizzes will be dropped at the end of the semester.

Questions. I welcome questions at any time. Please don't hesitate to ask me during class if there is something that you don't understand or that you want to discuss. (The only exception is a question about the grading of your homework or exam paper. Please ask these questions after class, or in office hours.) You may also ask questions in office hours, or any other time that you catch me in my office (if I am too busy, we can set up another time). You may also ask questions by email.

Civility. As a courtesy to me and to the other members of the class, please turn off cell phones, pagers, watch beepers, etc., before entering the classroom. Please arrive to class on time, and if you must leave before the end of class, do so as unobtrusively as possible. Do not send text messages or use audio players. **PLEASE DO NOT EAT DURING CLASS.**

IMPORTANT BOILERPLATE

Exam Policies. A missed midterm exam can be made up only in the case of a documented emergency, or because of a conflict with a university-sanctioned activity. In the latter case you must notify me well in advance (messages may be left through email, or in the main office (965-3951)), and provide me with a copy of your travel schedule and the name and phone number of the appropriate university sponsor. The University has an extremely strict policy regarding missed final exams. You may view this policy at the link for the final exam schedule: `http://students.asu.edu/final-exam-schedule`

We give the following excerpt:

> Except to resolve those situations described below, no changes may be made in this schedule without prior approval of the Dean of the college in which the course is offered . . . Under this schedule, if a conflict occurs, or a student has more than three exams on one day,

the instructors may be consulted about an individual schedule adjustment. If necessary, the matter may be pursued further with the appropriate dean(s). This procedure applies to conflicts among any combination of Downtown Phoenix campus, Tempe campus, Polytechnic campus, West campus, and/or off campus class.

In particular, make-up exams will NOT be given for reasons of non-refundable airline tickets, vacation plans, work schedules, weddings, family reunions, and other such activities. Students should consult the final exam schedule before making end-of-semester travel plans.

CLAS Statement on Academic Integrity. Academic honesty is expected of all students in all examinations, papers, laboratory work, academic transactions and records. The possible sanctions include, but are not limited to, appropriate grade penalties, course failure (indicated on the transcript as a grade of E), course failure due to academic dishonesty (indicated on the transcript as a grade of XE), loss of registration privileges, disqualification and dismissal. For more information, see `http://provost.asu.edu/academicintegrity`.

CLAS Disability Policy Statement. *Disability Accommodations:* Qualified students with disabilities who will require disability accommodations in this class are encouraged to make their requests to me at the beginning of the semester either during office hours or by appointment. Note: Prior to receiving disability accommodations, verification of eligibility from the Disability Resource Center (DRC) is required. Disability information is confidential.

Establishing Eligibility for Disability Accommodations: Students who feel they will need disability accommodations in this class but have not registered with the Disability Resource Center (DRC) should contact DRC immediately. Their office is located on the first floor of the Matthews Center Building. DRC staff can also be reached at: 480-965-1234 (V), 480-965-9000 (TTY). For additional information, visit: `www.asu.edu/studentaffairs/ed/drc`. Their hours are 8:00 AM to 5:00 PM, Monday through Friday.

ASU's policy against threatening behavior (Student Services Manual SSM 10402 "Handling Disruptive, Threatening or Violent Individuals on Campus"):

All incidents and allegations of violent or threatening conduct by an ASU student (whether on-or off campus) must be reported to the ASU Police Department (ASU PD) and the Office of the Dean of Students. If either office determines that the behavior poses or has posed a serious threat to personal safety or to the welfare of the campus, the student will not be permitted to return to campus or reside in any ASU residence hall until an appropriate threat assessment has been completed and, if necessary, conditions for return are imposed. ASU PD, the Office of the Dean of Students, and other appropriate offices will coordinate the assessment in light of the relevant circumstances.