

Math 28031L	Transition to Advanced Mathematics Laboratory	Fall 2022
Section: 002	T 8:00 – 8:50 AM	Prof. Matthew Clay
	AFLS D118	

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Class Delivery: Classes will consist presentations, some by outside speakers, and computer software activities. Attendance is required and class meetings will not be recorded.

Computer Assignments: We will be investigating three pieces of software that are useful in mathematics. The goal is to become familiar with the purpose and abilities of the software and to know where to go for more information. By no means will you be expected to be an expert with these software packages by semesters end.

- **L^AT_EX:** This is a markup language used for typesetting mathematics and used by virtually all mathematicians world-wide for creating documents (including this one). You can install a L^AT_EX distribution and run L^AT_EX on a personal computer using a text editor and PDF viewer. The following are packaged downloads for this that include a L^AT_EX frontend for editing and viewing documents:

MiKTeX (Windows, macOS, Linux)

MacTeX (macOS)

However, there are also very good online L^AT_EX editors that allow you use a web-interface as opposed to downloading software. A popular choice is Overleaf.

- **Mathematica:** This powerful application can perform many useful tasks including algorithmic, numeric and symbolic computation, as well as data visualization and plotting. It must be downloaded and install on your personal computer to use. It is free for University of Arkansas students, but must be requested from IT Services:

<https://its.uark.edu/software-equipment/get-software/>

- **Python:** This scripting language can perform many tasks and is the basis for many computer applications. There are many ways to use Python, some involving downloading software onto your personal computer, some using an online interpreter. More information will be shared later.

Information Interview: You will interview a professional from an industry of your choice approved by the instructor (that's me!). The industry should be one that you are considering entering. The purpose of the interview is to familiarize yourself with the skills necessary in your chosen industry. Technical skills (e.g. proficiency with certain software, knowledge of a certain subject) constitute one component, but what I am more interested in are the non-technical skills or traits. Besides the obvious technical requirements, what is really needed to succeed (or merely survive) in the given industry? In-person interviews are possible, but a Zoom or a phone interview is also acceptable. Before your interview, you will need to research the organization and interviewee so that you can ask appropriate questions. We will have one class period focusing on how to find an appropriate person and conduct the interview.

After the interview, reflect on your own academic plans. Which classes (in particular your mathematics classes) will prepare you for this industry? You will write 2 pages summarizing your interview and findings and give a 3 minute presentation based on this document.

Weekly Schedule

1	Tuesday, August 23	Introduction
2	Tuesday, August 30	Library Book Presentations
3	Tuesday, September 6	L ^A T _E X #1
4	Tuesday, September 13	Outside Speaker #1
5	Tuesday, September 20	L ^A T _E X #2
6	Tuesday, September 27	Mathematica
7	Tuesday, October 4	Information Interview Preview
8	Tuesday, October 11	Outside Speaker #2
9	Tuesday, October 18	Math Educator Panel
10	Tuesday, October 25	Fall Break
11	Tuesday, November 1	L ^A T _E X #3
12	Tuesday, November 8	Graduate Student Panel
13	Tuesday, November 15	Python
14	Tuesday, November 22	Outside Speaker #3
15	Tuesday, November 29	Information Interview Presentations
16	Tuesday, December 6	Information Interview Presentations

Course Grade:

- Attendance and Participation - 25%
- Library Book Presentation - 5%
- Computer Assignments - 50%
- Information Interview - 20%

Letter grades: *A* : 100 – 90; *B* : 89 – 80; *C* : 79 – 70; *D* : 69 – 60; *F* : 59 – 0

All scores posted on or before Dead Day will be deemed accurate unless a possible error is brought to the attention of the instructor before the scheduled final exam.

Academic Honesty Policy: As a core part of its mission, the University of Arkansas provides students with the opportunity to further their educational goals through programs of study and research in an environment that promotes freedom of inquiry and academic responsibility. Accomplishing this mission is only possible when intellectual honesty and individual integrity prevail. Each University of Arkansas student is required to be familiar with and abide by the University’s “Academic Integrity Policy” which may be found at <http://honesty.uark.edu>. Students with questions

about how these policies apply to a particular course or assignment should immediately contact their instructor.

Special Accommodation: Students who are registered with the Center for Educational Access must notify the instructor in writing by the end of the first week of class, or within one week of registering with CEA.

Inclement Weather Policy: Class will be held if the University is officially open. Allowances will be made if you are unable to safely reach the campus, but, bravely, class will go on! Do not call the Math office for inclement weather information. Instead, you should call the following telephone number: 575-7000.

Disclaimer: Information on this syllabus is subject to change. Any change will be announced on Blackboard and during the regular meeting time.