MATH 2801L	**Transition to Advanced Mathematics Laboratory**	Spring 2024
Section: 001	T 4:10 – 5:00 PM	Prof. Matthew Clay
	MEEG 217	

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Office Hours: Office hours will be held Tuesdays from 11:00 – 12:00 and Fridays from 1:00 – 2:00, in-person, but you may request a virtual meeting. If you are unable to use this time, please make an appointment to see me.

Course Goal: This course will serve as an introduction to software that is useful in mathematical and statistical disciplines, and additionally as an introduction to careers and opportunities involving mathematics and statistics generally speaking.

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

Student Responsibilities: Students are expected to attend and participate in all class meetings. Students are expected to treat each other with respect during class, using thoughtful dialogue and keeping disruptive behaviors to a minimum. This applies both to working in groups and while listening to presentations from other students. Cell phones, iPads, or any device that may distract from the class should be silenced before class begins unless instructed otherwise and may not be on the desk during class.

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.

Computer Assignments: You will be introduced to three pieces of software that are useful in mathematics, both for computation and for writing. 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 semester's end.

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

  MiKTeX (Windows, macOS, Linux)

  MacTeX (macOS)

  However, there are also very good online LaTeX 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 is free to install on personal computers for University of Arkansas students, but must be requested from IT Services:

  `https://its.uark.edu/software-equipment/get-software/`

  Mathematica is also available for use on the computers in SCEN 320. Additionally, Mathematica can be accessed via the Wolfram Cloud.

- **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. If you have use macOS or Linux, you most likely already have a basic program for using Python already. Open a "Terminal" window and enter `python`. If you use Windows, you can download Python by following these instructions:

  `https://learn.microsoft.com/en-us/windows/python/beginners`

  Alternatively, there are two online ways to use Python without having to download any software:

  Google Colaboratory

  Project Juptyer

Information Interview: Your 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 I am also interested in 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 ideal, but a Zoom or a phone interview is also acceptable. Before you conduct the interview, you will need to research the organization and interviewee so that you can ask appropriate questions. We will have a 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 or other campus activities will prepare you for this industry? You will write 2 pages summarizing your interview and give a 3 minute presentation based on this document. Presentations will take place on Tuesday, April 23 and Tuesday, April 30. The written document is due on Tuesday, April 23.

Career Services Resources: `http://career.uark.edu/cdc/students/explorecareers/`

Course Grade:

- Attendance and Participation - 25%
- Miscellaneous Assignments - 10%
- Computer Assignments - 50%
- Information Interview - 15%

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.

Important Dates

Tuesday, January 16	Classes start
Monday, January 29	Last day to drop without W
Monday, March 18 – Friday, March 22	Spring Break
Friday, April 19	Last day to drop with W
Thursday, May 2	Last day of classes

For the complete academic calendar, see:

`https://registrar.uark.edu/academic-dates/academic-semester-calendar/`

Special Accommodation: Under University policy and federal and state law, students with documented disabilities are entitled to reasonable accommodations to ensure the student has an equal opportunity to perform in class. If any member of the class has such a disability and needs special academic accommodations, please report to the Center for Educational Access (CEA). Reasonable accommodations may be arranged after the CEA has verified your disability. Students who are registered with the Center for Educational Access must meet with the instructor by the end of the first week of class, or within one week of registering with CEA to discuss their accommodations. This must be done before you utilize your accommodations. Do not hesitate to contact me if any assistance is needed in this process.

Class Cancellation Policy: Class will be held if the University is officially open. Allowances will be made if you are unable to safely reach the campus. If the University is closed for inclement weather, class will be conducted synchronously via Zoom if possible. Any online meeting will be recorded and attendance will not be required. Check your University email and Blackboard for announcements of any online meetings and Zoom links for meetings.

The University policy for inclement weather is available at:

`https://safety.uark.edu/inclement-weather/`

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