Jonathan Trans

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DEVELOPER NOTES *@ University of California - Davis*

Restructuring MAT22AL (Linear Algebra Computer Laboratory) Website **Davis, CA**
PreTexT, XML, HTML, CSS, and Python *April 2021 - Present*

- Currently working under UC Davis Professor Ali A. Dad-del
    - Restructuring MAT22AL (Discrete Mathematics Computer Laboratory) coursework website through front-end development tools including PreTexT, HTML, CSS, and Python
- Built web applications in an agile and iterative way using agile methodologies and Git/Github

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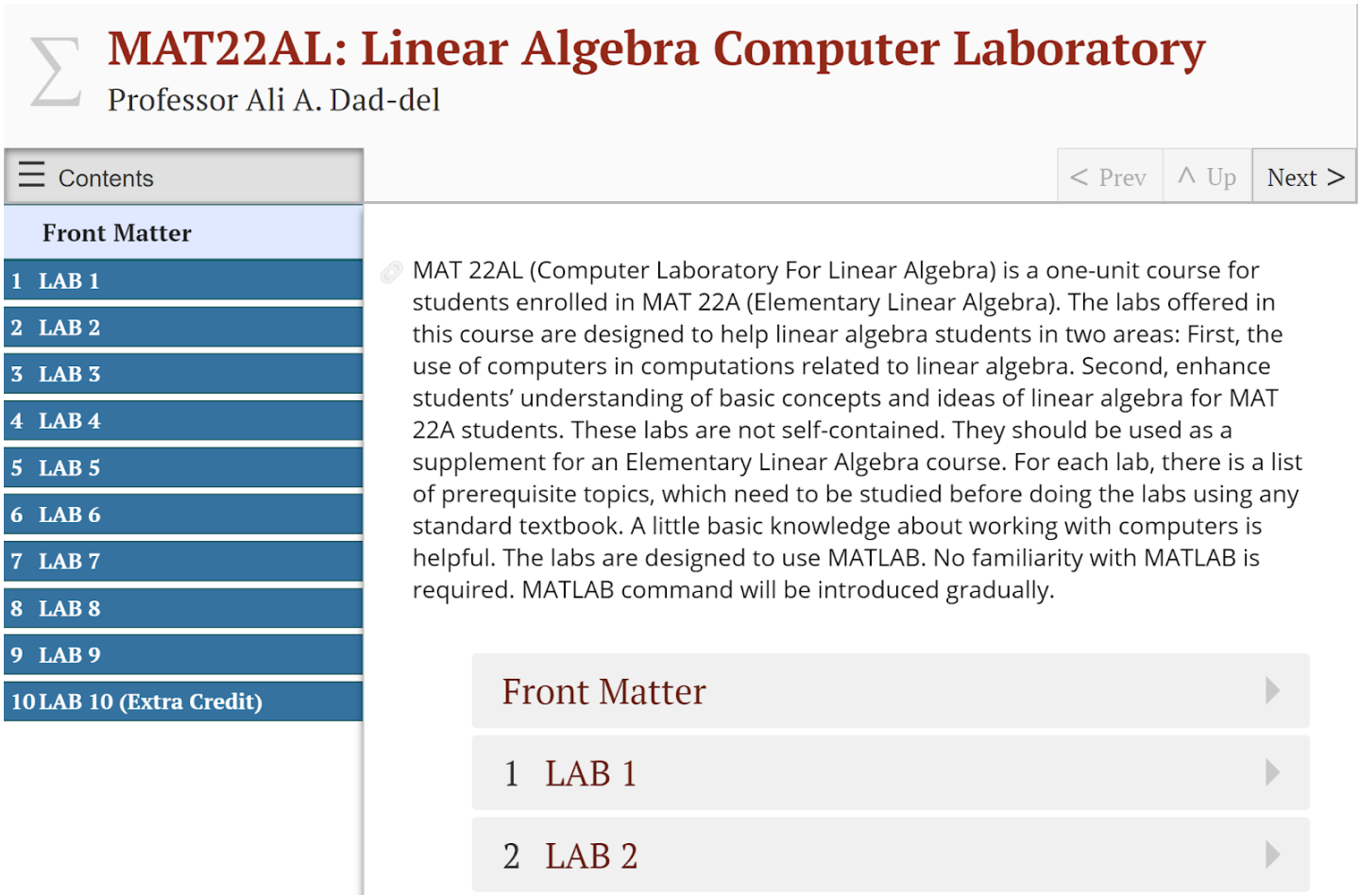
Week 1 **Davis, CA**
UC Davis 21 *April 2021: 10 hours*

- Utilized **Git Bash** for compiling through this command line: ***xsltproc/xsltproc.exe mathbook/xsl/pretext-html.xsl test.xml***
- Utilized **Visual Studio Code** for coding **XML, HTML, CSS,** and **Python** files
- While working with **PreTexT** and **XML**, I noticed how the formatting is nearly identical to a book. Every number below "Front Matter" represents a chapter, and the front matter precedes the main text of a book
    - **ERROR BUG LOG:** I am having difficulties changing the label of Front Matter to the rather ideal "Course Information." I believe Front Matter cannot be changed
    - **ERROR BUG LOG:** For some reason, I am not able to utilize the bold tags to bold keywords such as "MAT 22AL", "MAT 22A" and "MATLAB."

The picture below the ordering of LAB Assignments from 1-10. An abstract of the class is provided, alongside the title of the class and the professor's name who is teaching the course. The buttons of UP, NEXT, and PREV work according to their function.



- Made improvements to sections and understood the mechanics of PreTexT a lot more through trial and error.
    - Fixed the first bug and learned the differences in XML and PreTexT compared to other front-end tools.
    - **ERROR BUG LOG:** I am having difficulties adding an image or pdf to the designated section.
        - Ex: Lab1.pdf -> Section Lab1

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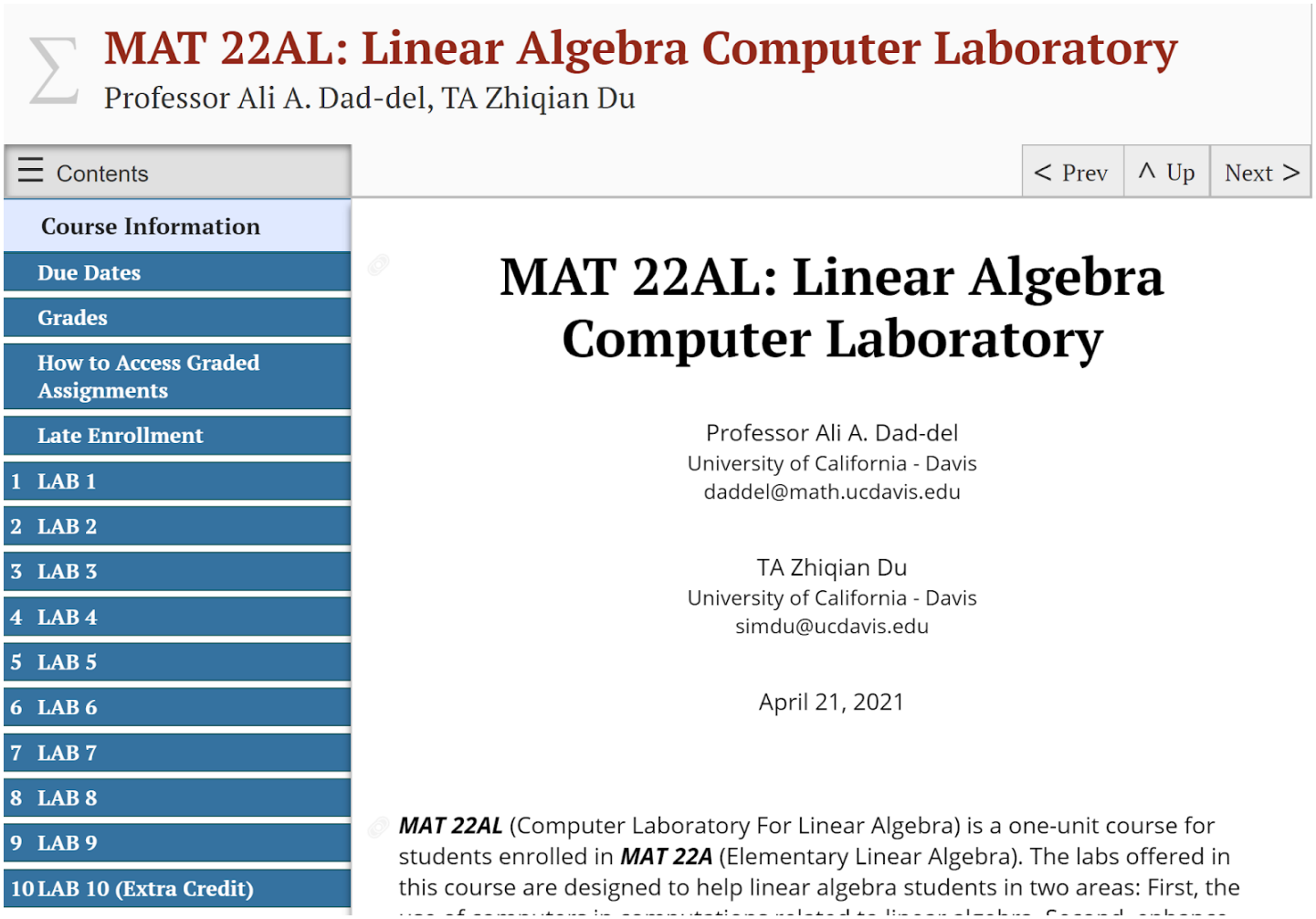
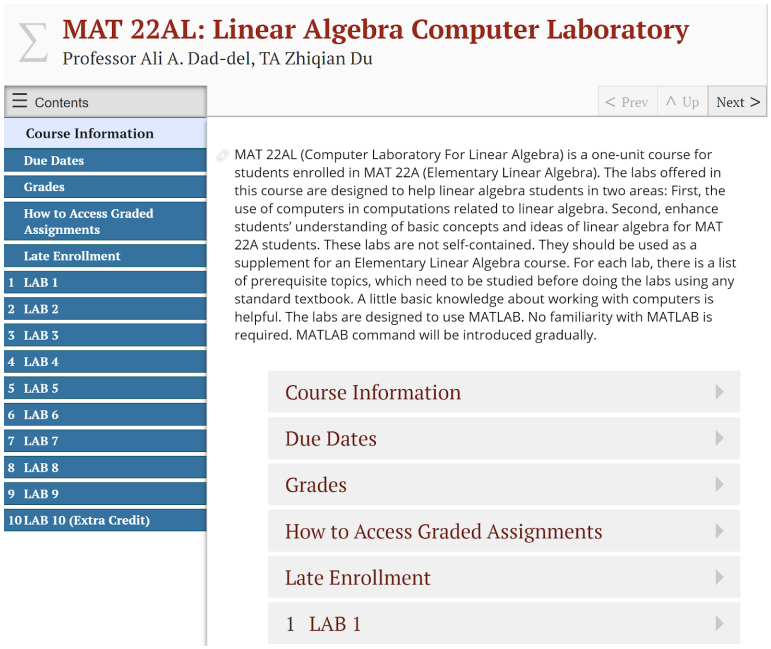
The picture below demonstrates the major changes to the user interface.





The picture below demonstrates the use of <alert> to bold. I confused it with <b> or <bold> from HTML/CSS.

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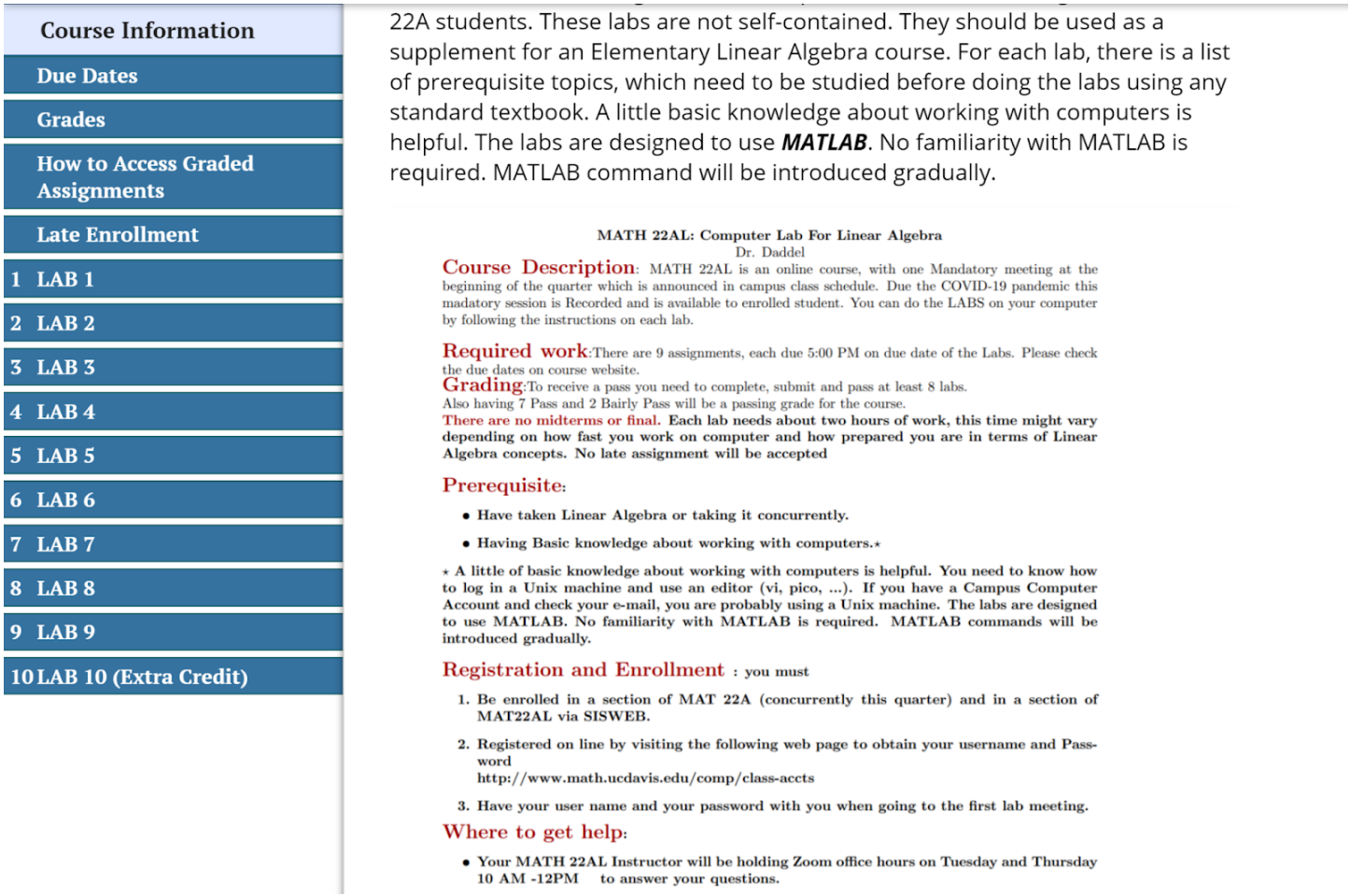
The picture below demonstrates the use of png files from the original pdf files.



Course Information
Due Dates
Grades
How to Access Graded Assignments
Late Enrollment
1 LAB 1
2 LAB 2
3 LAB 3
4 LAB 4
5 LAB 5
6 LAB 6
7 LAB 7
8 LAB 8
9 LAB 9
10 LAB 10 (Extra Credit)

22A students. These labs are not self-contained. They should be used as a supplement for an Elementary Linear Algebra course. For each lab, there is a list of prerequisite topics, which need to be studied before doing the labs using any standard textbook. A little basic knowledge about working with computers is helpful. The labs are designed to use ***MATLAB***. No familiarity with MATLAB is required. MATLAB command will be introduced gradually.

MATH 22AL: Computer Lab For Linear Algebra
Dr. Daddel

Course Description: MATH 22AL is an online course, with one Mandatory meeting at the beginning of the quarter which is announced in campus class schedule. Due the COVID-19 pandemic this madatory session is Recorded and is available to enrolled student. You can do the LABS on your computer by following the instructions on each lab.

Required work:There are 9 assignments, each due 5:00 PM on due date of the Labs. Please check the due dates on course website.
Grading:To receive a pass you need to complete, submit and pass at least 8 labs.
Also having 7 Pass and 2 Bairly Pass will be a passing grade for the course.
There are no midterms or final. **Each lab needs about two hours of work, this time might vary depending on how fast you work on computer and how prepared you are in terms of Linear Algebra concepts. No late assignment will be accepted**

Prerequisite:

- **Have taken Linear Algebra or taking it concurrently.**
- **Having Basic knowledge about working with computers.⋆**

⋆ A little of basic knowledge about working with computers is helpful. You need to know how to log in a Unix machine and use an editor (vi, pico, ...). If you have a Campus Computer Account and check your e-mail, you are probably using a Unix machine. The labs are designed to use MATLAB. No familiarity with MATLAB is required. MATLAB commands will be introduced gradually.

Registration and Enrollment : you must

1. **Be enrolled in a section of MAT 22A (concurrently this quarter) and in a section of MAT22AL via SISWEB.**
2. **Registered on line by visiting the following web page to obtain your username and Password**
   http://www.math.ucdavis.edu/comp/class-accts
3. **Have your user name and your password with you when going to the first lab meeting.**

Where to get help:

- **Your MATH 22AL Instructor will be holding Zoom office hours on Tuesday and Thursday 10 AM -12PM to answer your questions.**

Week 2 **Davis, CA**
UC Davis *29 April 2021: 10 hours*

- Utilized **Git Bash** for compiling through this command line: ***xsltproc/xsltproc.exe mathbook/xsl/pretext-html.xsl test.xml***
- Utilized **Visual Studio Code** for coding **XML, HTML, CSS,** and **Python** files
- Had an extremely time-consuming problem as I could not create subsections under the header, constantly compiling with warnings
    - The solution was to change the format from article to book
        - PreTexT gives two formats (article and book)
- Changed the order of the chapters (Blue margin)
    - Created sections under the chapters to match Professor's examples
    - Course information is without the abstract
    - Cut-down unnecessary <p>
    - **ERROR BUG LOG:** Cannot use the provided TeX files provided by professor. Spent a lot of time doing research on utilizing the files on the lab section.

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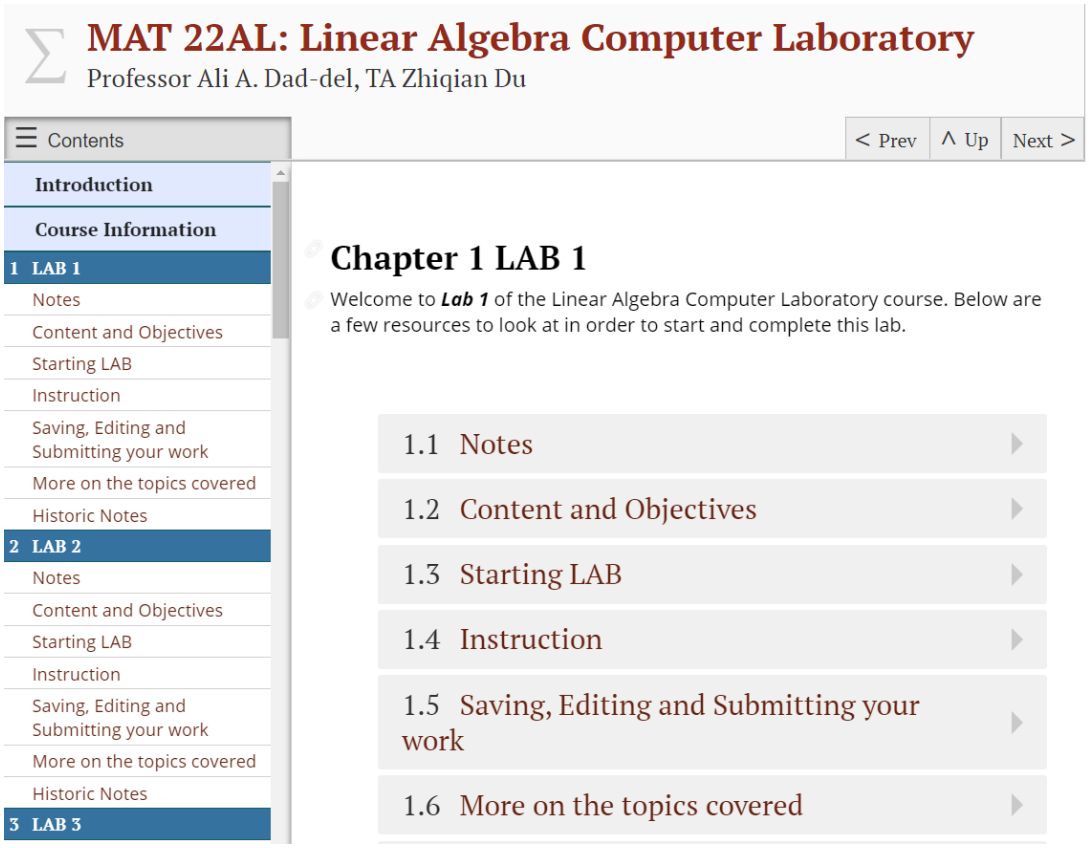

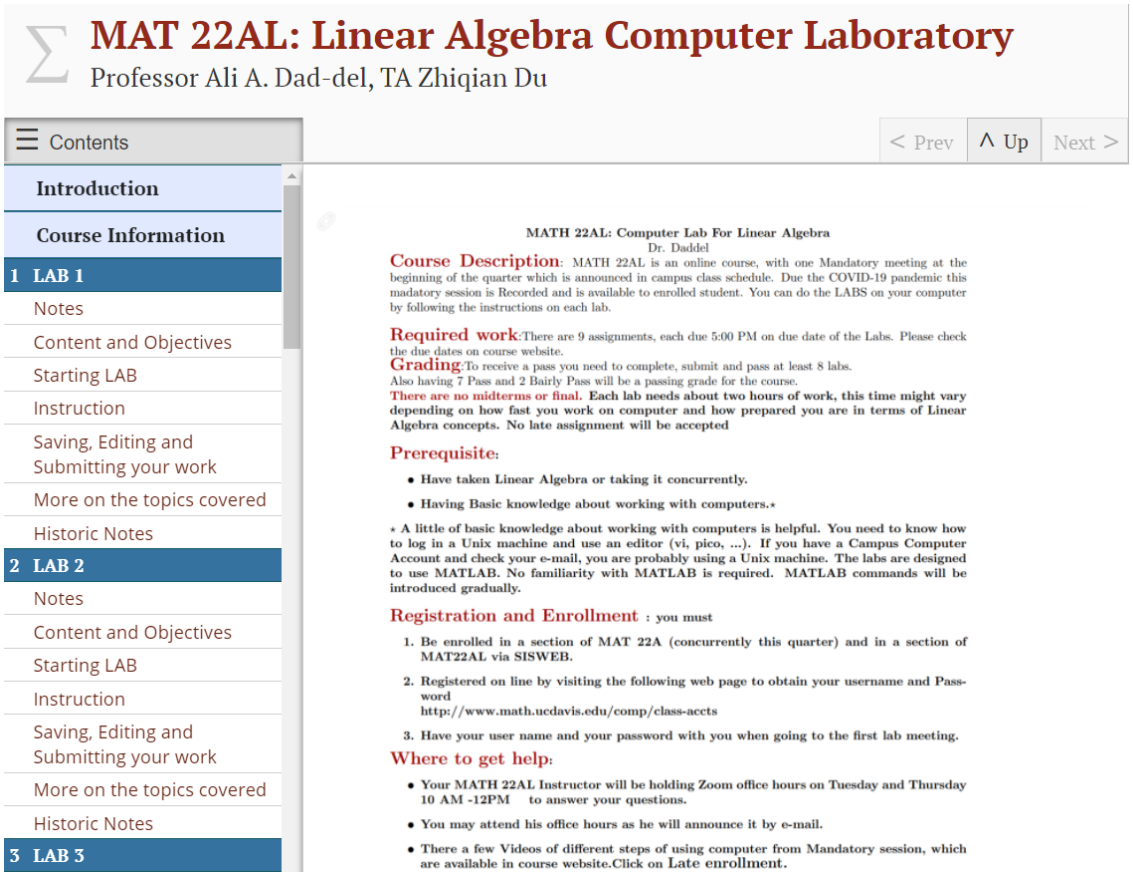

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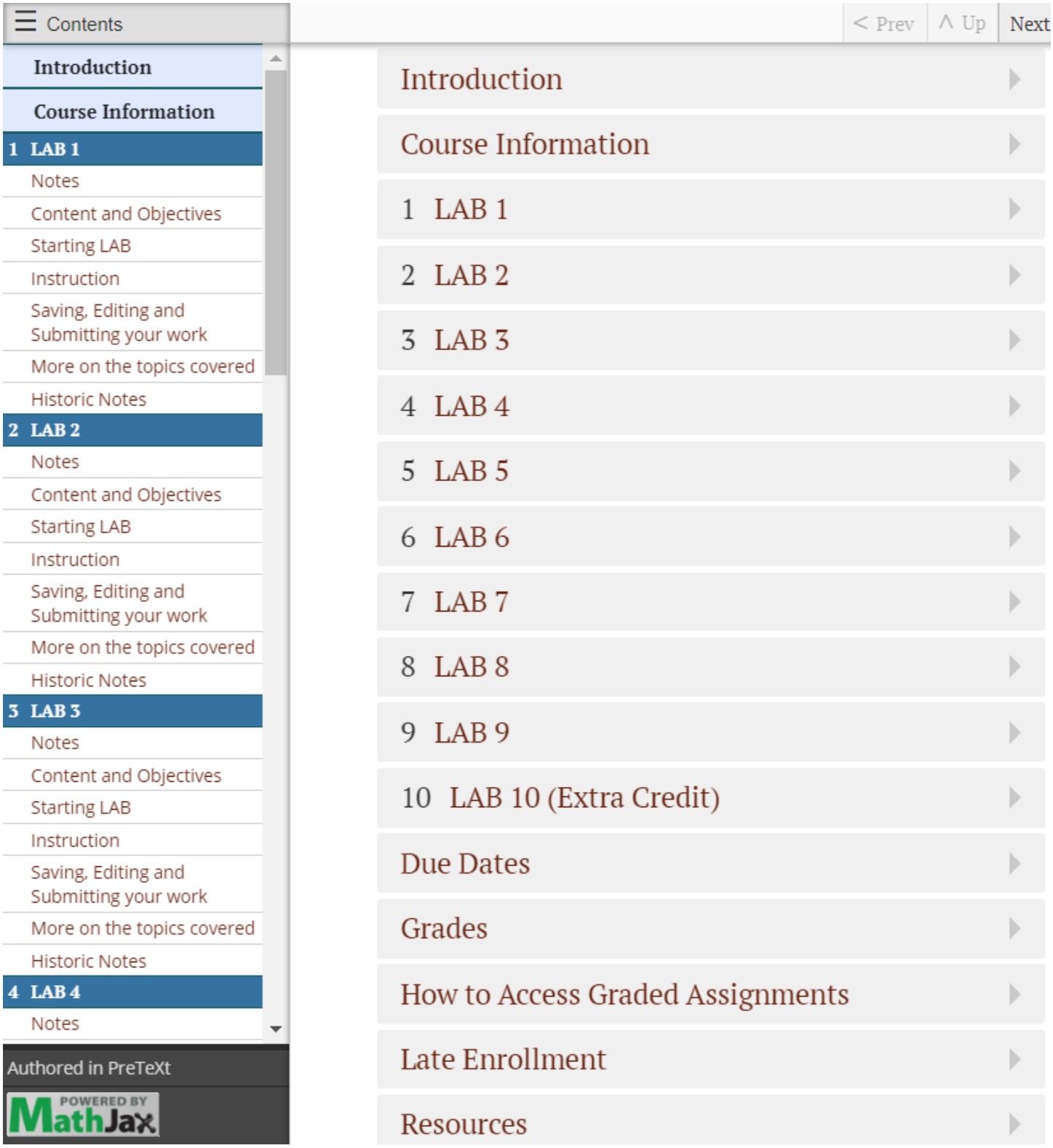

Week 3 - Day 1 **Davis, CA**
UC Davis 4 May *2021: 5 hours*

- Utilized **Git Bash** for compiling through this command line: ***xsltproc/xsltproc.exe mathbook/xsl/pretext-html.xsl test.xml***
- Utilized **Visual Studio Code** for coding **XML, HTML, CSS,** and **Python** files

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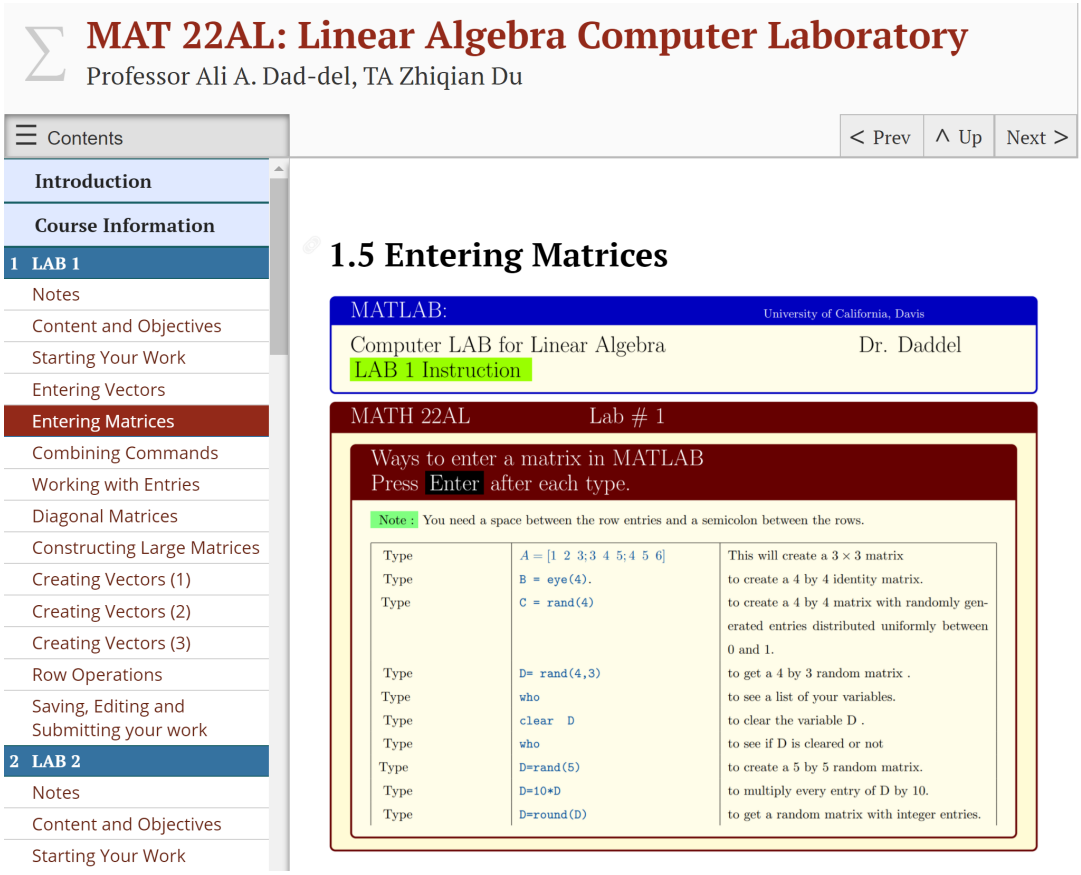
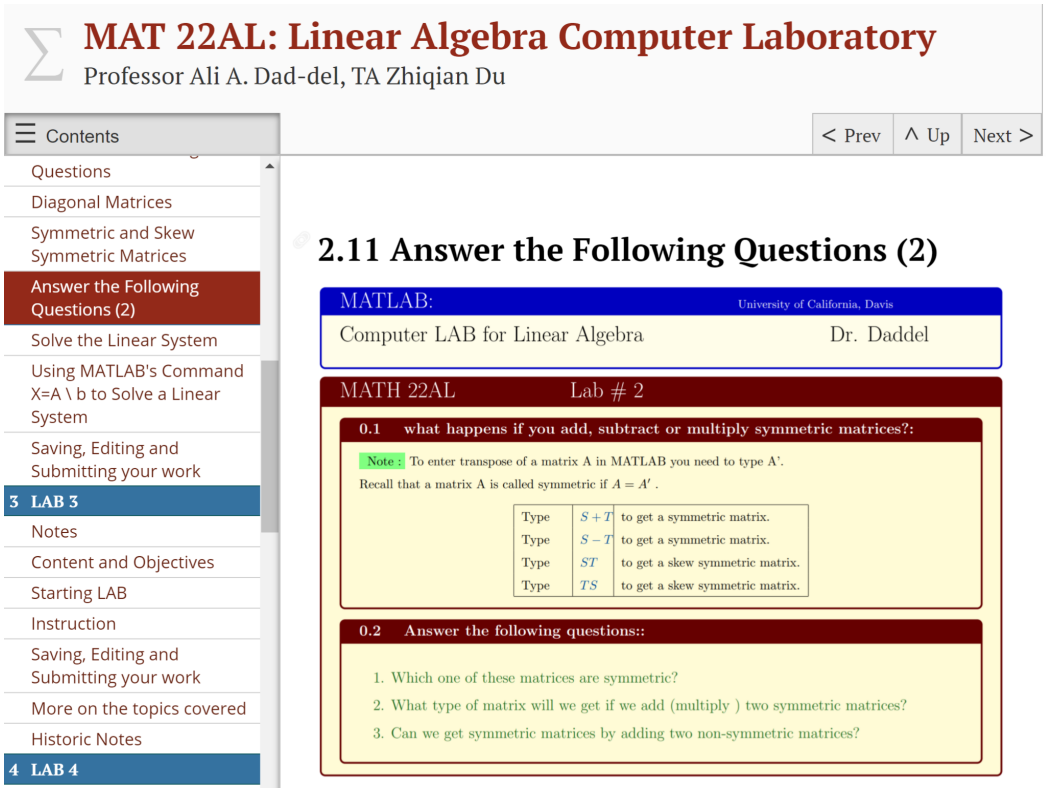
- As I attempt for hours to understand LaTeX and pdfs, there has been a problem for the tool to read pdf files. I switched the pdf files to pngs and separated them into their own respective categories, as well as reformatting Labs 1 and 2

The picture below demonstrates the major changes to the user interface.





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Week 3 - Day 2 **Davis, CA**

UC Davis ? May *2021: 3 hours*

- Utilized **Git Bash** for compiling through this command line: ***xsltproc/xsltproc.exe mathbook/xsl/pretext-html.xsl test.xml***
- Utilized **Visual Studio Code** for coding **XML, HTML, CSS,** and **Python** files