COLUMBUS STATE
COMMUNITY COLLEGE

ENGR 1181

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Biological and Physical Sciences

Today's Learning Objectives

After today's class, students will be able to:

- List the ENGR 1181 Course Goals
- Use the syllabus to locate course expectations
- List benefits of teamwork
- Identify stages of team development
- Create a team working agreement

You can set your preferred name

https://www.cscc.edu/services/student-forms/chosen-names.shtml

- Change how your name appears on CougarWeb and Blackboard
- Change your pronoun options
- Change the name that appears on the front of your ID at Student Central

Course Goals

Students will:

- Gain a solid understanding of the fundamentals of Engineering
- Develop quantitative and critical thinking skills that aid in Problem Solving
- Develop skills that aid in Engineering Design
- Develop good written and unwritten communication skills
- Develop competence with tools that aid in Engineering
- Develop skills and values that support good teamwork

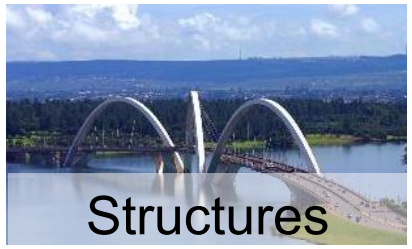
How can an engineer impact the world?

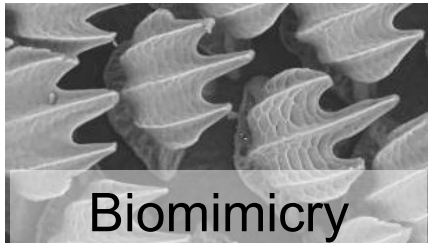
- Engineers help their communities by providing solutions to everyday problems

Think-Pair-Share

What has been a significant engineering accomplishment in the last century?

Some major impacts





What is Engineering?

- Engineering involves the application of scientific, mathematical, and practical knowledge to create solutions to real-world problems
- Leads to technological advancements
- Leads to improvements in quality-of-life and efficiency

Who can become an engineer?

- Society tends to send us messages that if we're not good at something when we first try it, we're not smart in that way
- Engineering skills (Math, Programming, Design) are learned skills
- Some skills may take longer to learn, but everyone can learn!

Even if it doesn't come easily at first, remember that there is nothing in engineering that is beyond what you can learn to do

How can you learn engineering skills?

CSCC offers a two-course sequence that starts your engineering pathway

ENGR 1181

- Problem Solving and Engineering Tools
- Programming
- Hands-on labs
- Teamwork
- Technical Communication

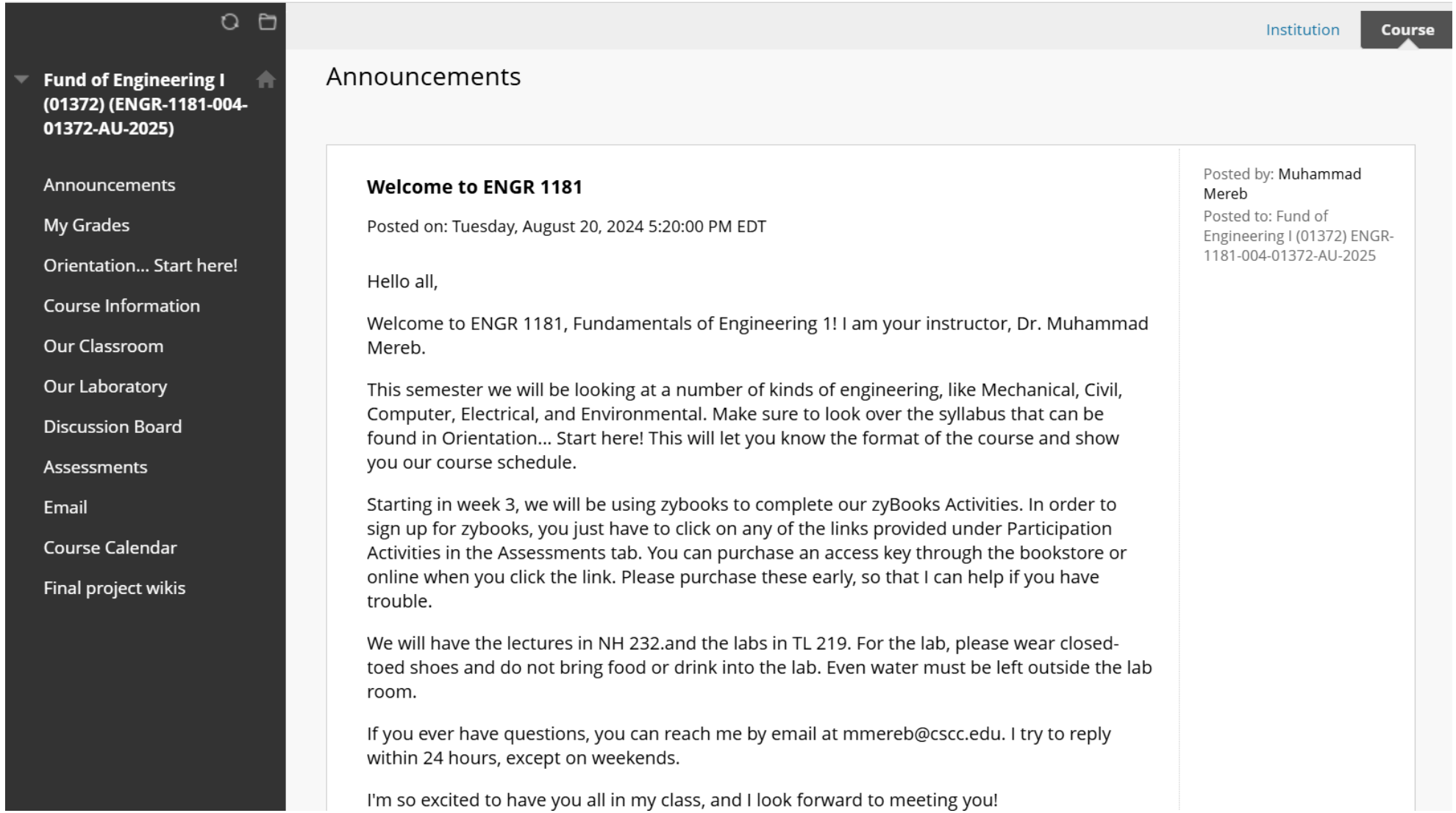
ENGR 1182

- Graphics and CAD
- Design and build projects
- Hands-on labs
- Teamwork
- Technical Communication

Classroom structure and Expectations

Typical class day will include

- Before class – Assigned preparation may include reading, videos, tutorials, and zyBooks
- In-class – Lectures, Activities, assignments, Demos, Assignment dates will be listed in the semester schedule
  - Check Blackboard and email for updates or changes to the schedule



Blackboard Overview

Syllabus Review

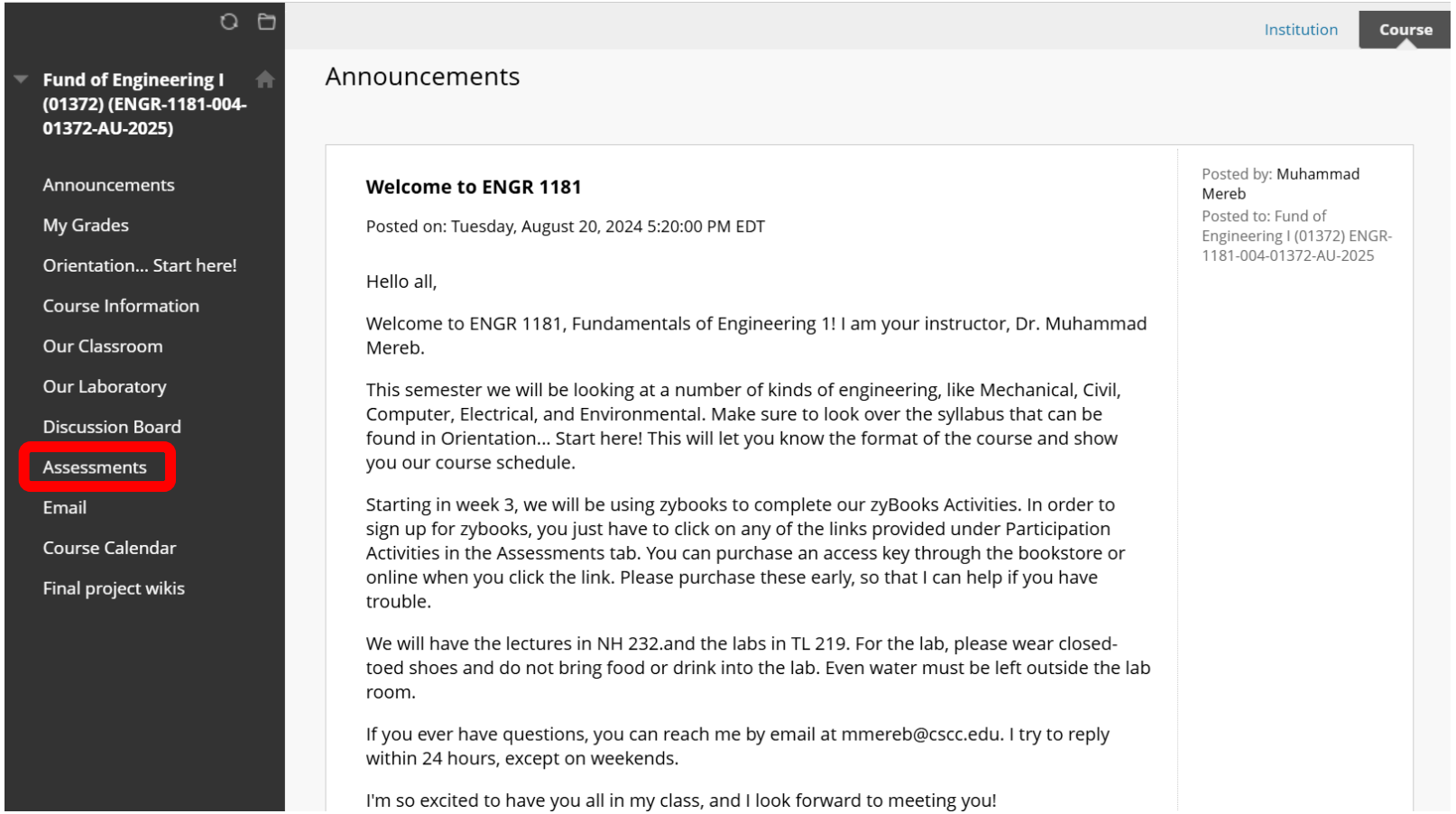
- Assignment policy
- Hands-on laboratory
  - Note: You must receive a 70% in lab in order to pass the course
- Attendance
- Participation

zyBooks is required for this course

zyBooks Preparation and Other Activities

- Reading Activities are assigned as part of before-class preparations and are due at the start of class

zyBooks assignments can be found on Blackboard



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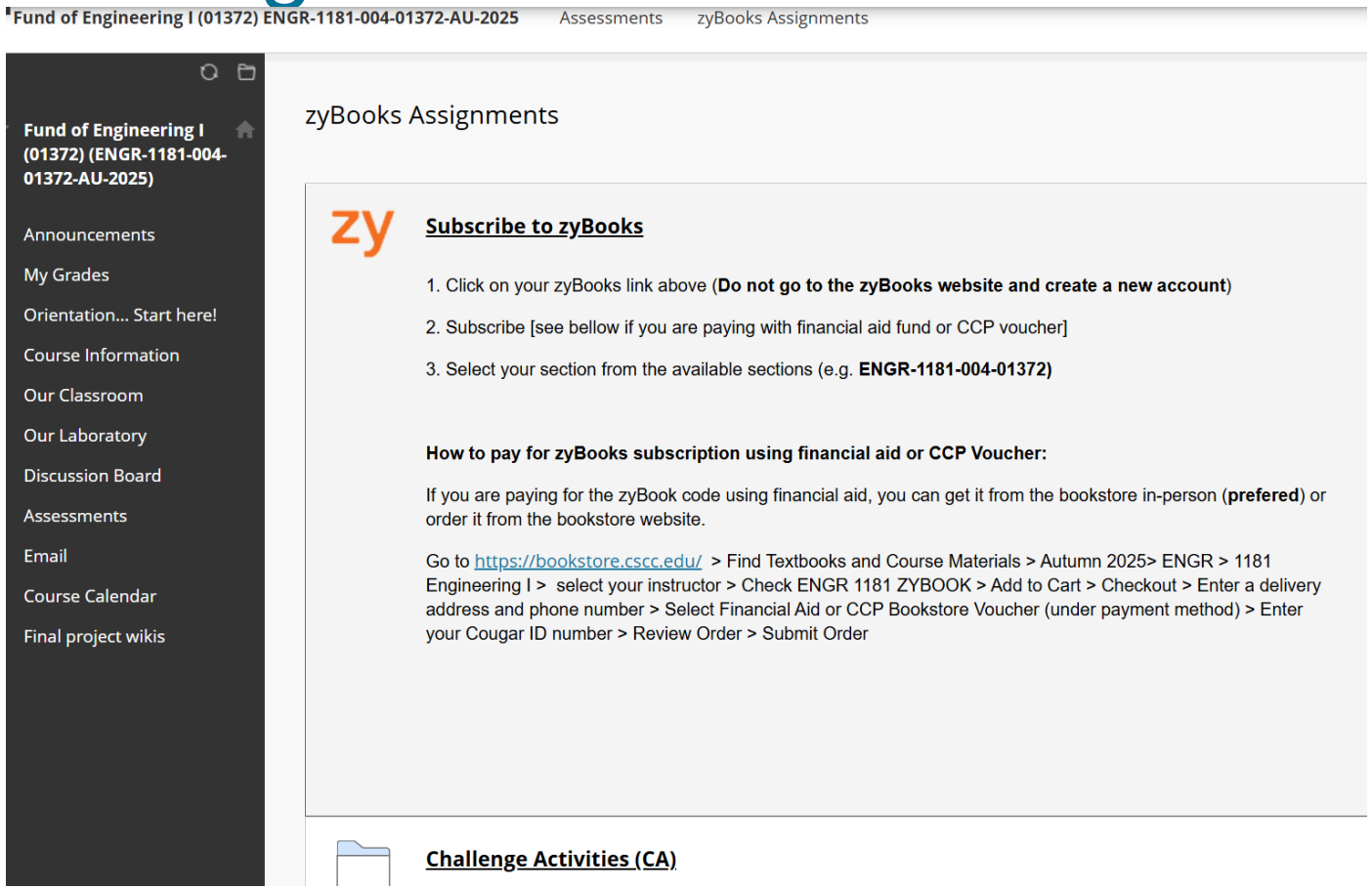

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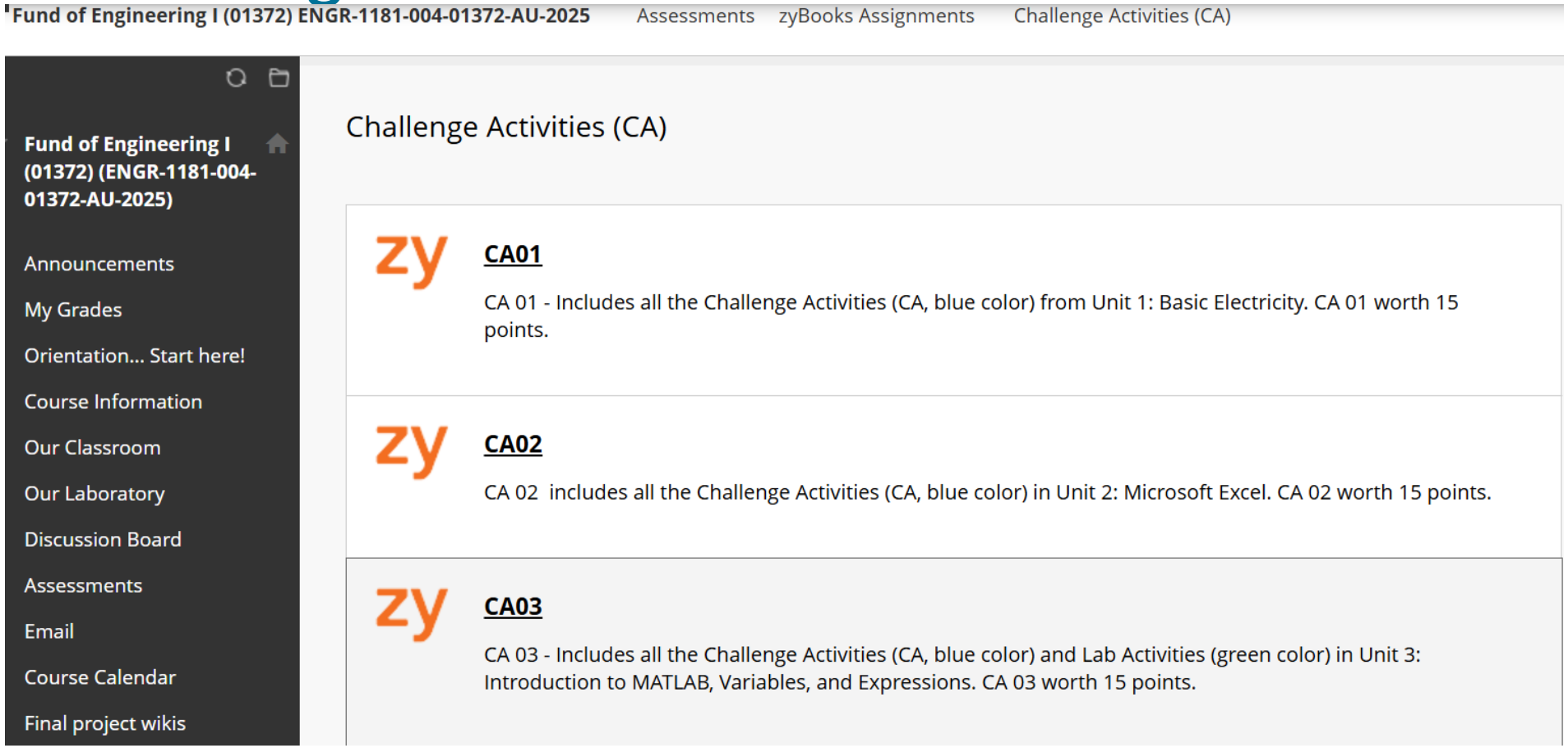
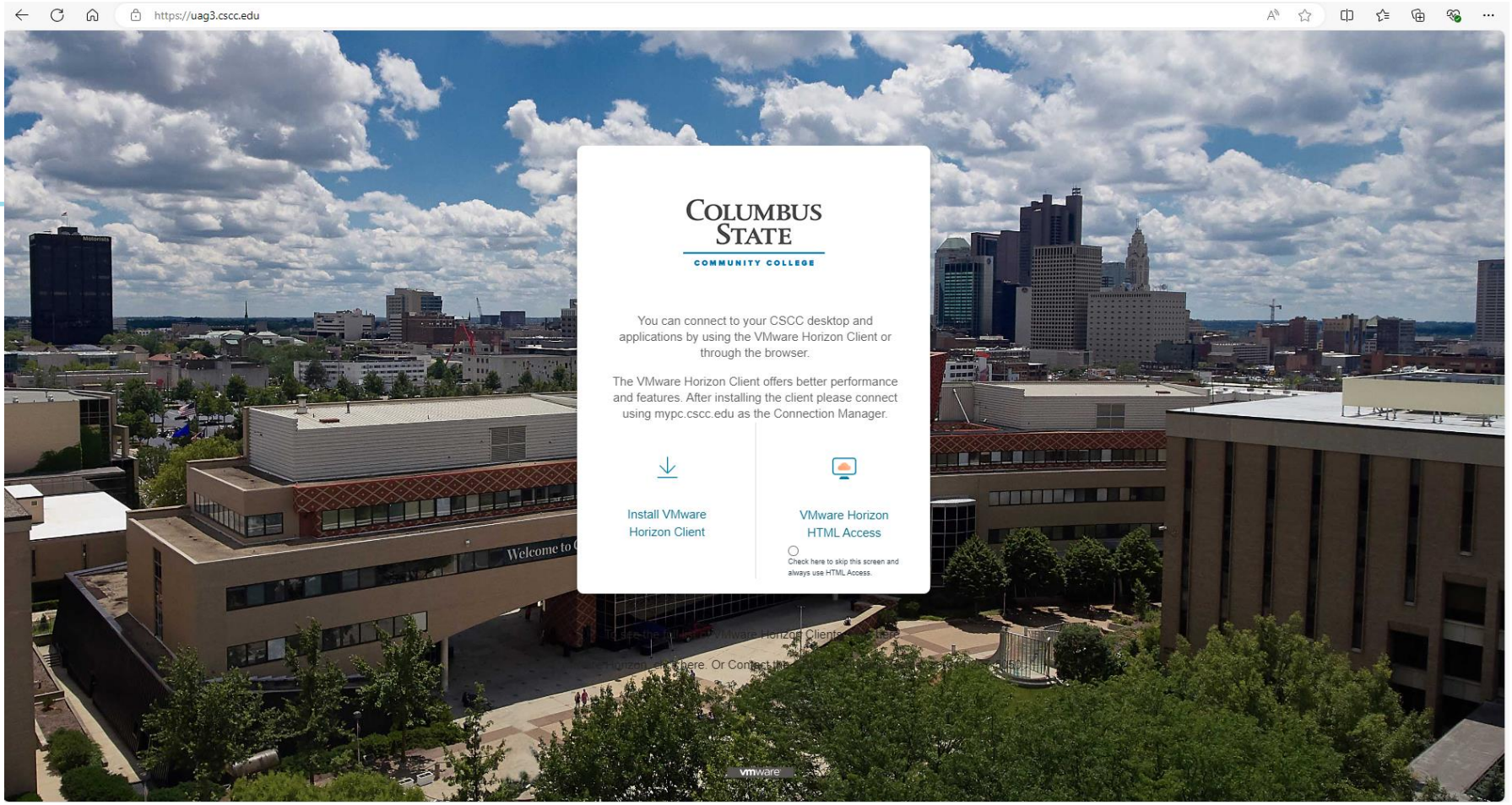


This course uses Excel and MATLAB

Used during class and lab, everyone should become comfortable with both

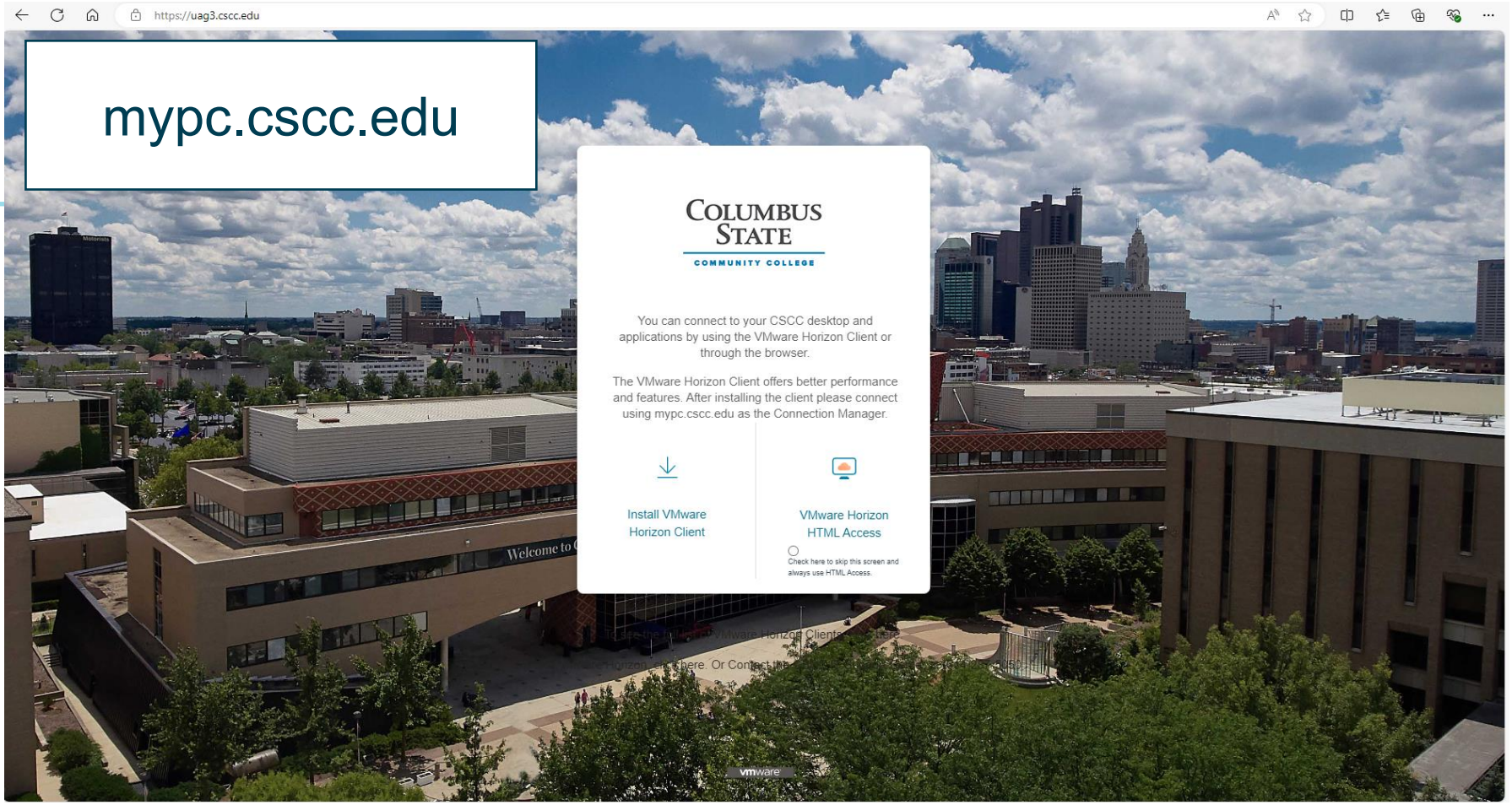
- MATLAB and Excel are both useful in organizing and processing data
- Engineers use both programs (and many others) to accomplish specific tasks
- Everyone in ENGR 1181 can access both programs without having to install on their own machine

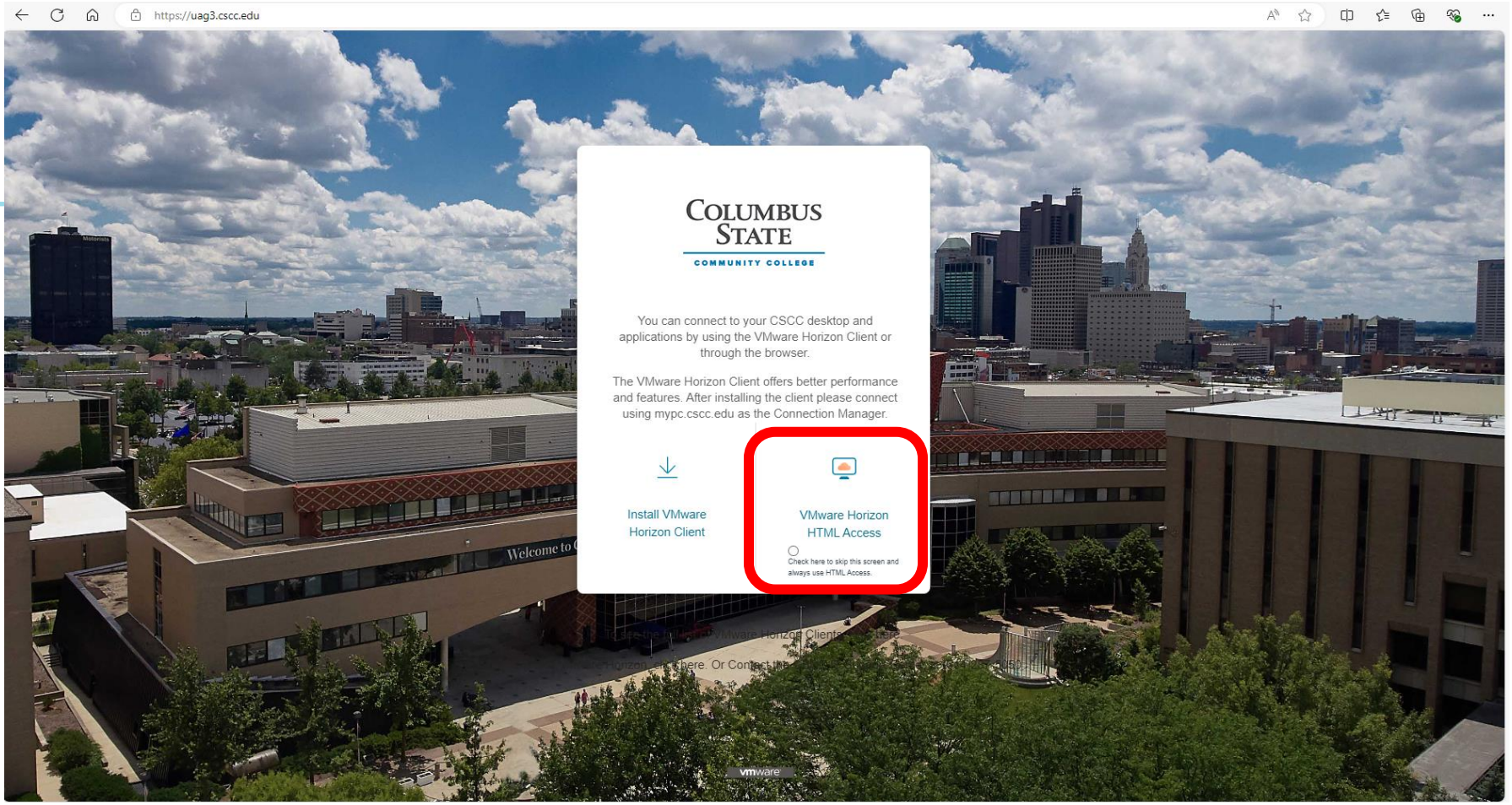


mypc.cscc.edu

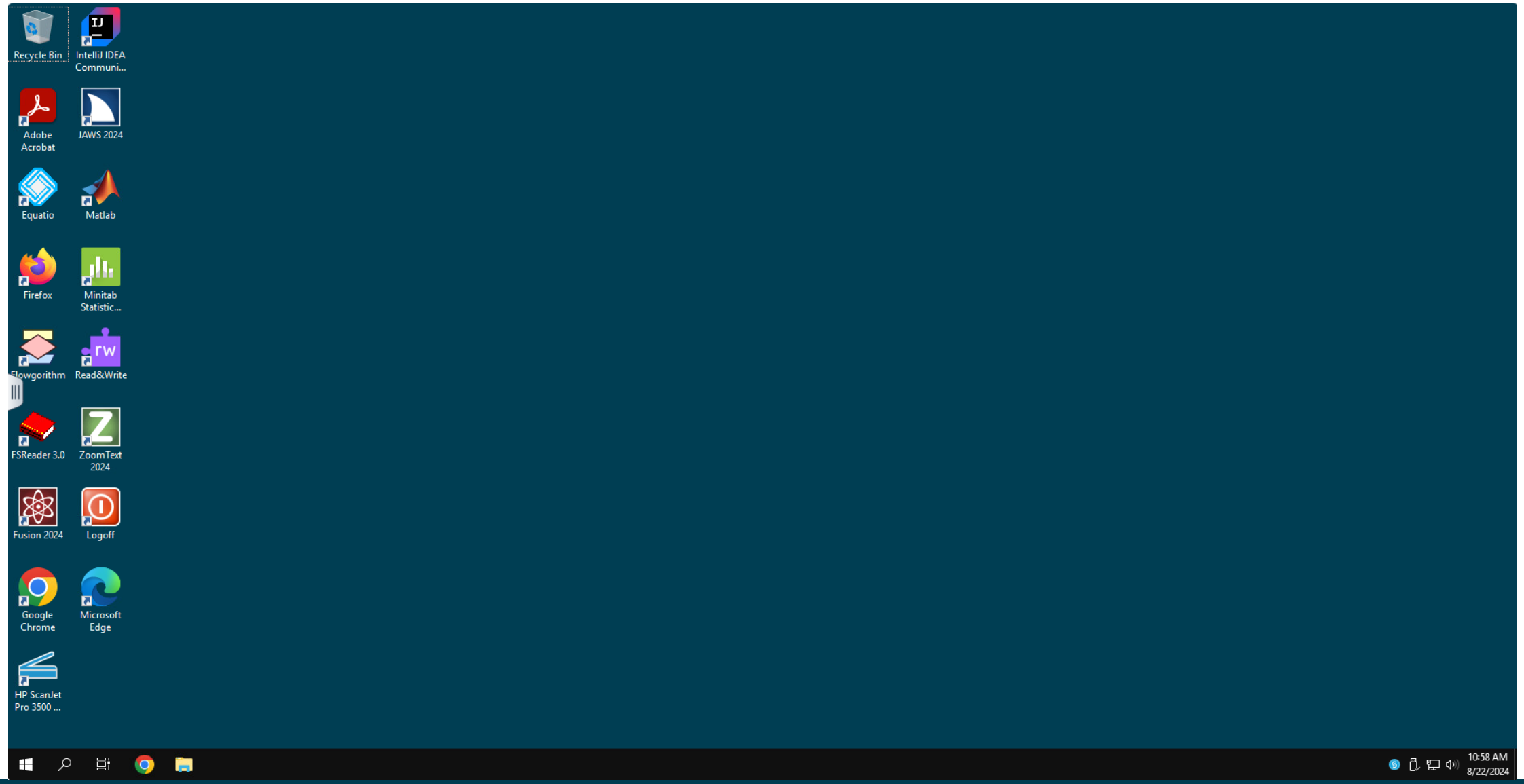
Using a Virtual Machine

Using a Virtual Machine

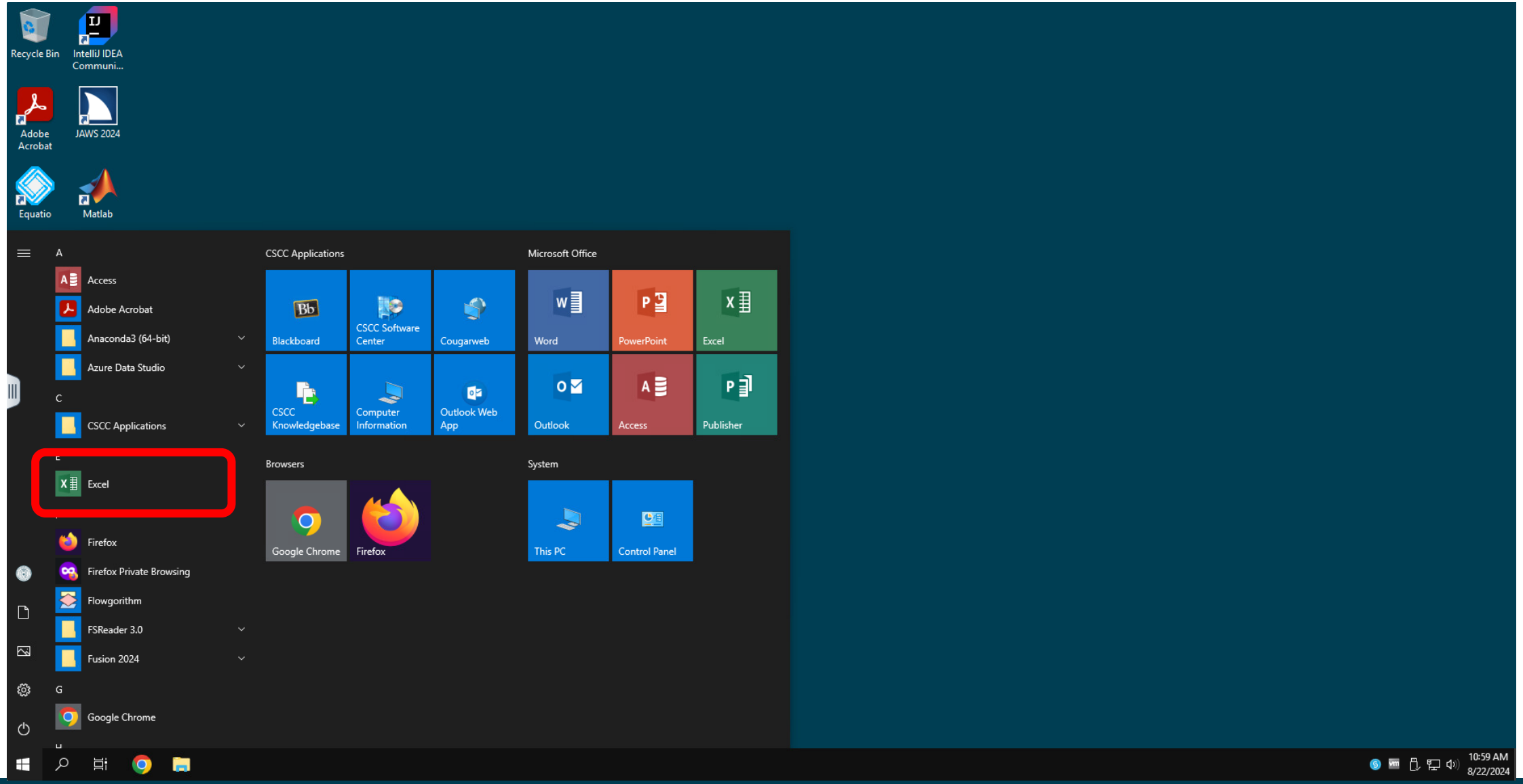




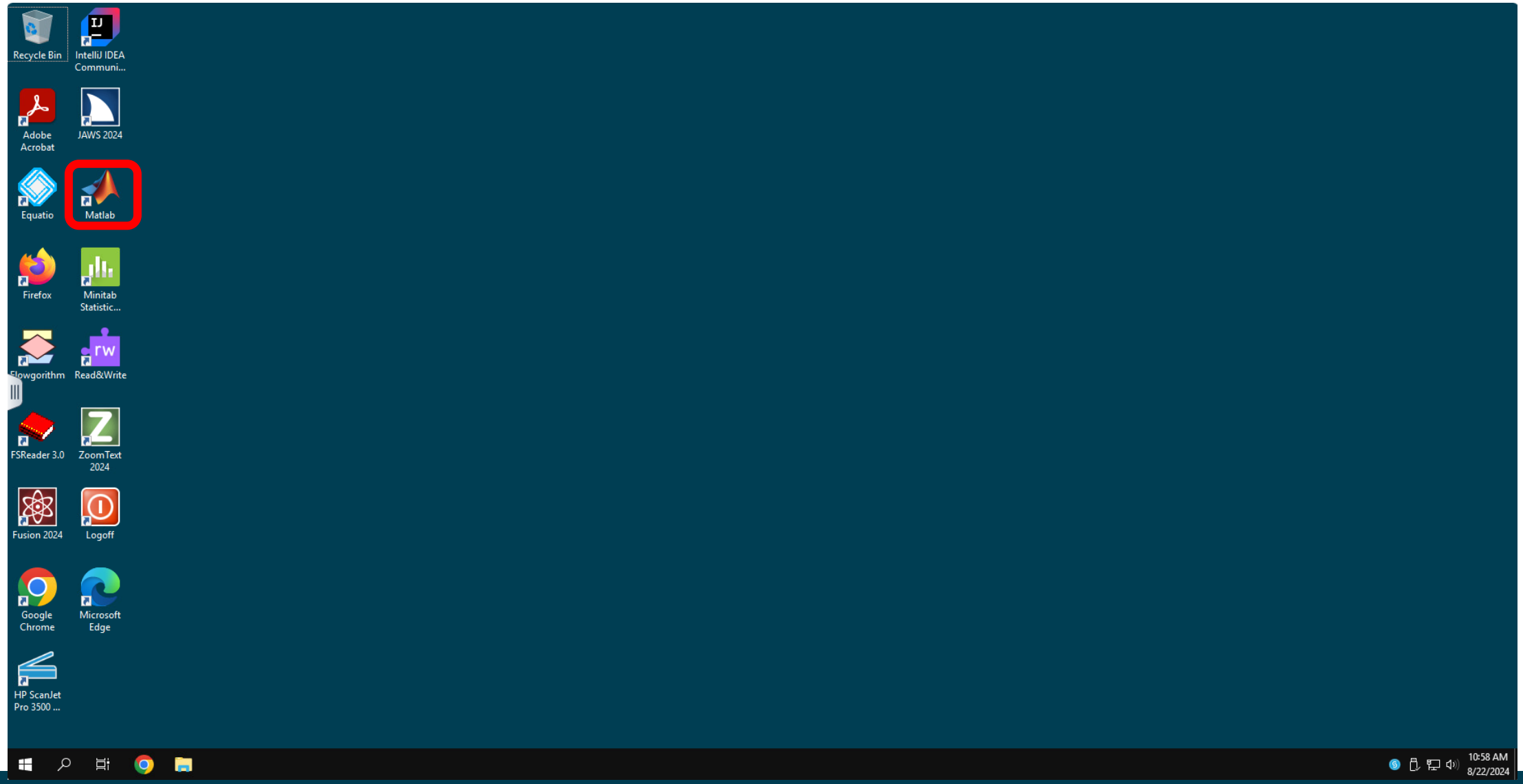
Access from any browser



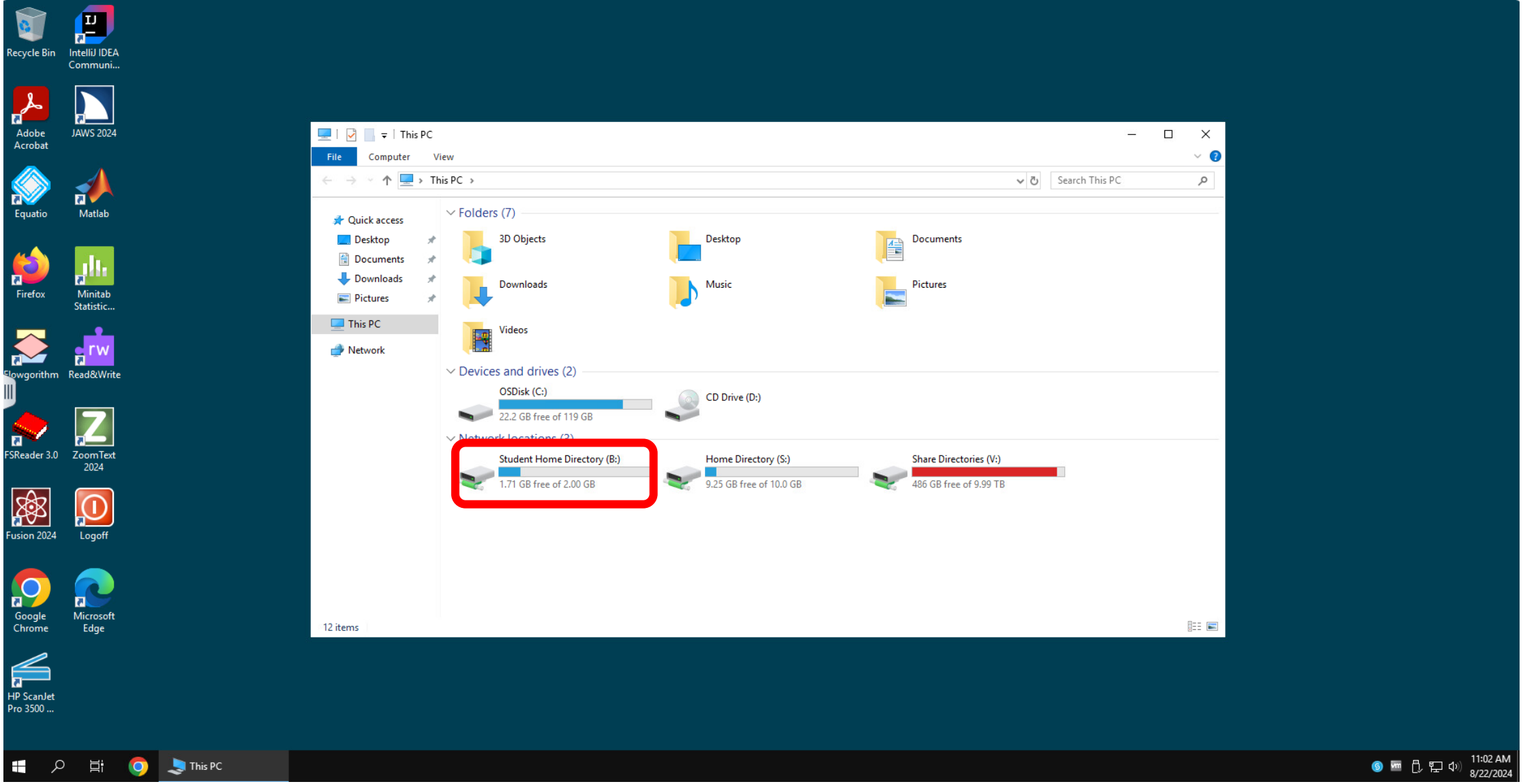
Our lab computers, anywhere!



Find Excel in the Start menu



Find MATLAB on the desktop

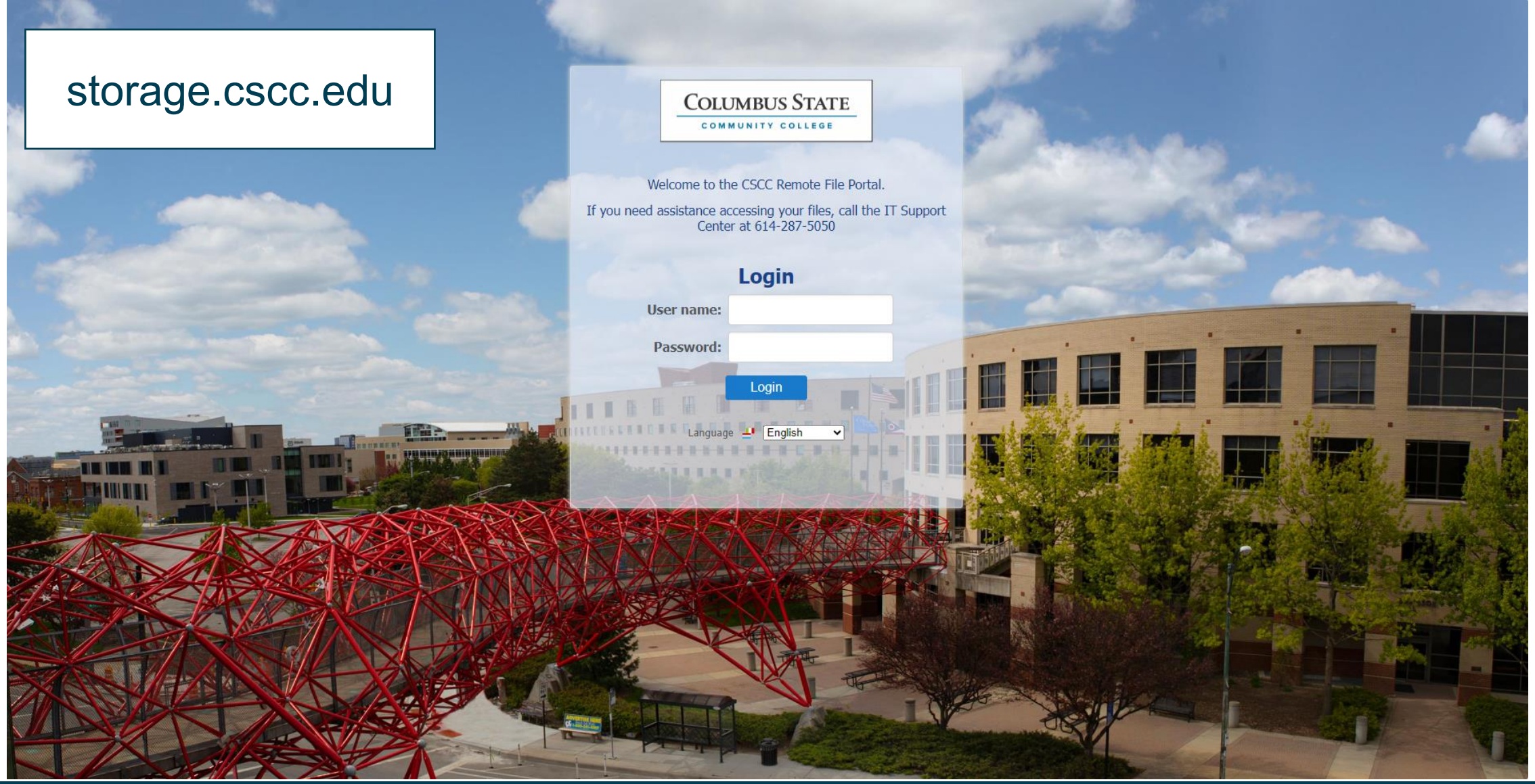


Save files in the Student Home Directory (B:)

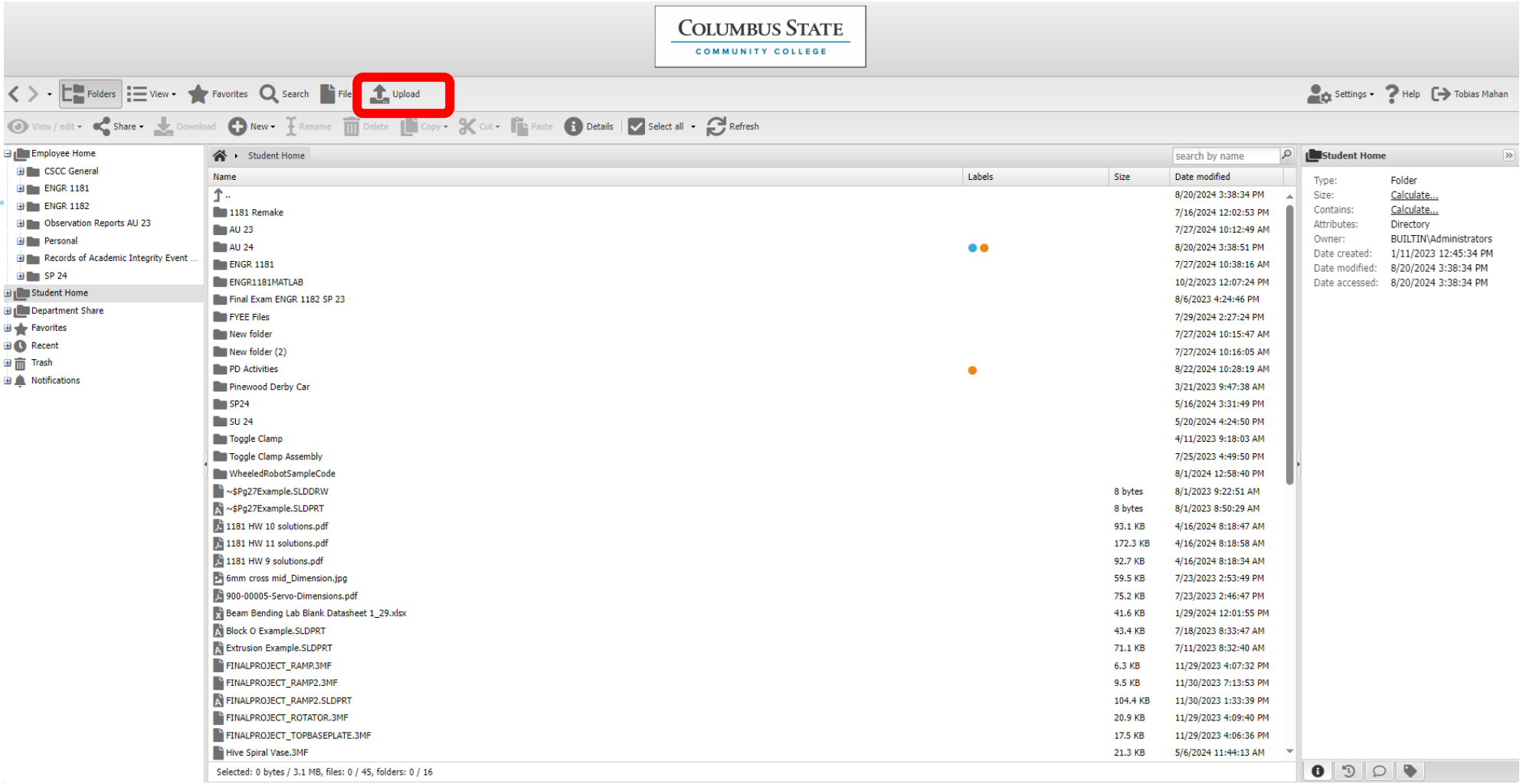
Best Practices with a Virtual Machine

- Never save data in a temporary location, like the desktop or Downloads
  - Once you close the VM, those files disappear!
- Save work early and often
- Log out when you are not working
- Set up dual-factor authentication
  - Your files are available in the virtual machine!

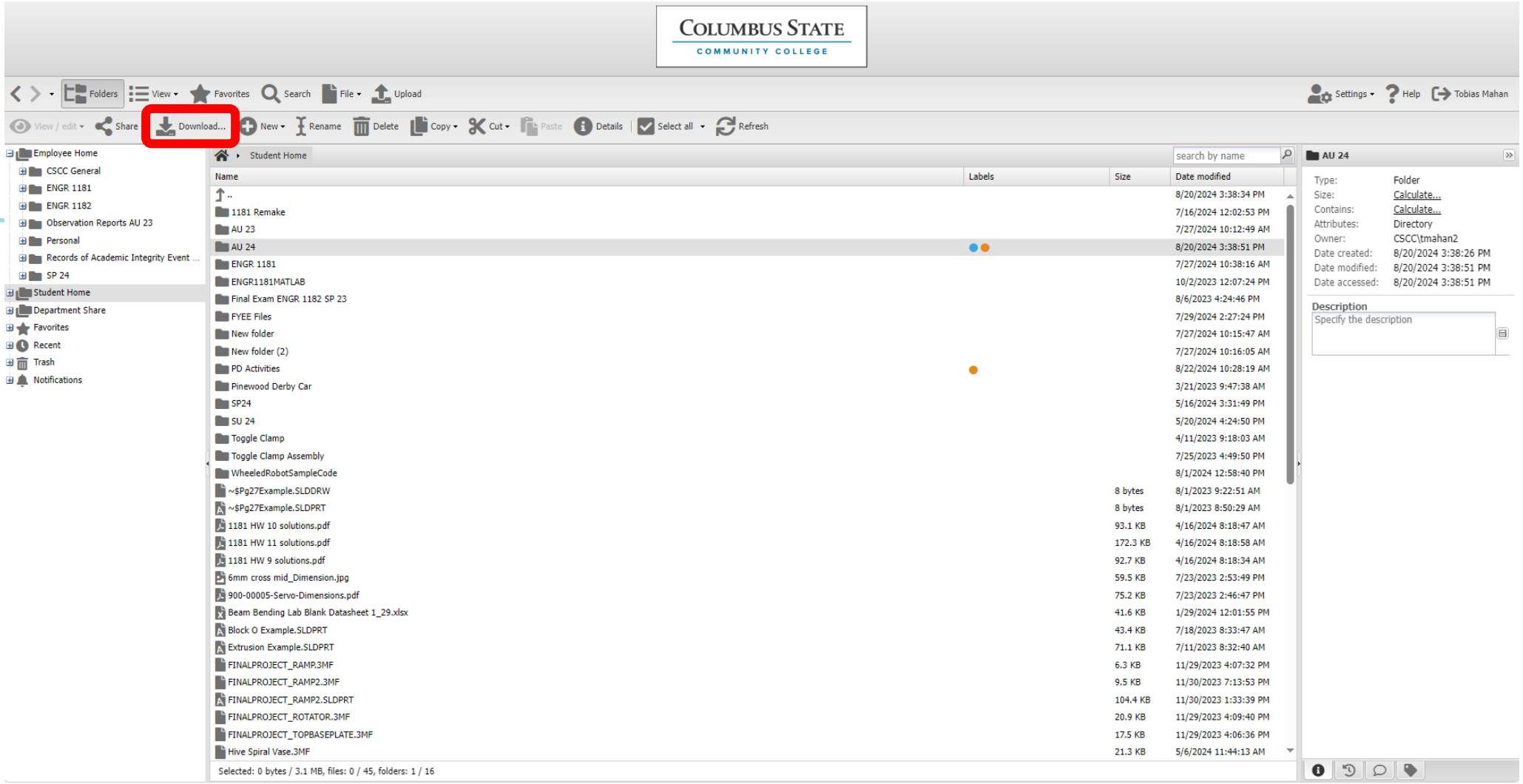
storage.cscc.edu



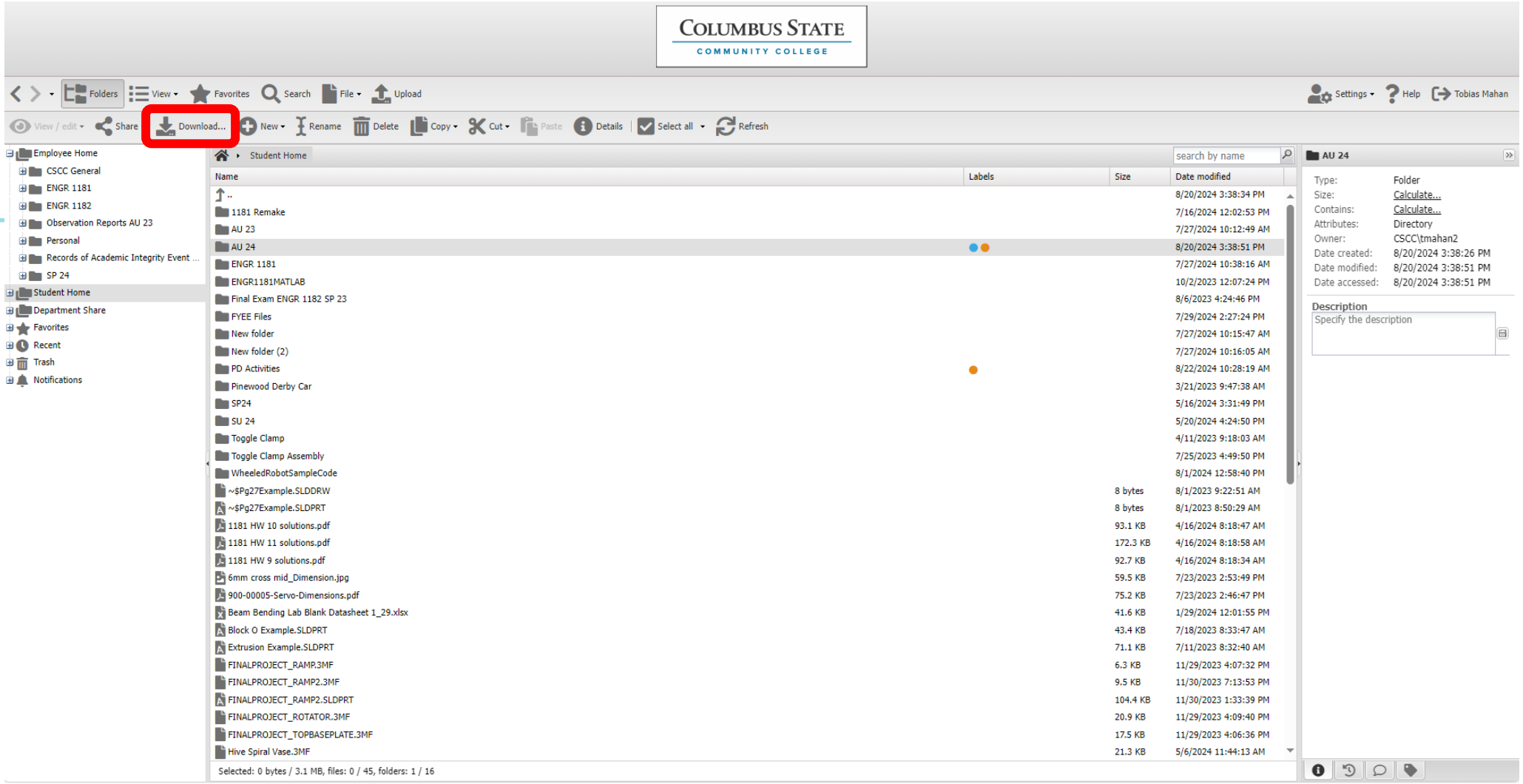
All your B drive files are available on any browser



You can upload files



You can download files



Avoid my mistake: Form a file organizing scheme NOW!

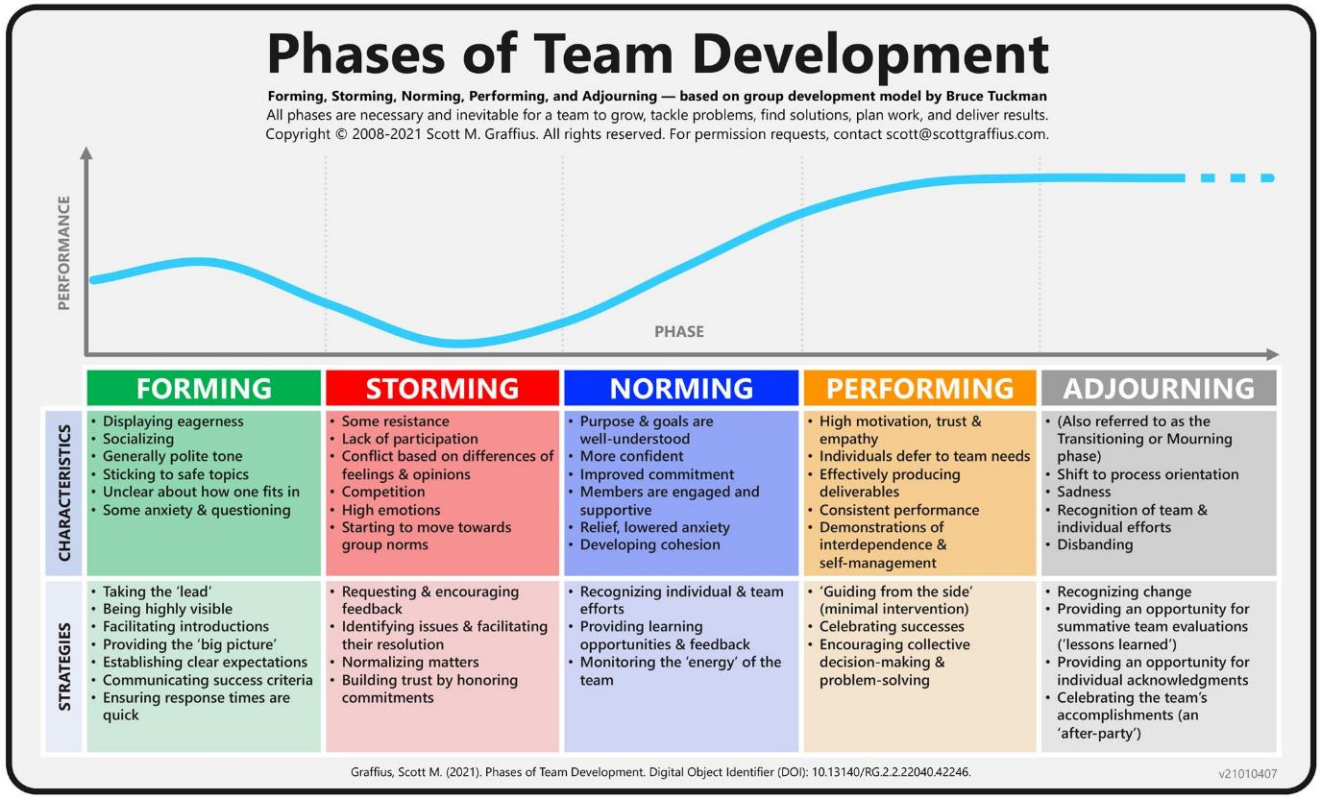
Engineering is a team effort!

- Engineering is rarely ever a solo venture
  - Engineering teams are multi-disciplinary, including dozens, hundreds, maybe more
- Team success depends on effective collaboration
- Effective collaboration depends on effective communication
- Effective collaboration doesn’t mean no conflict, it means effective conflict resolution

What are the benefits of teams?

- Many problems are better solved as teams
- Other team members may think of ideas you did not
- Broader range of possible solutions can be created
- Each team member may bring a unique skill set or expertise, which helps with idea generation
- Team members can offer ‘fresh eyes’ to help when you are stuck on a problem

Don’t be afraid of conflict



Let’s form some teams!

- The people at your table are your teammates
- Make sure to share your emails
  - You can email each other through blackboard
- Find the most obscure “Same but different”
  - Everyone’s favorite food is ice cream, but everyone likes different flavors
  - Everyone’s favorite activity is reading, but everyone has a different favorite author

Set expectations early

- Serious conflict arises when expectations are not met
  - It is easy to fall short of expectations when they are not explicit
- Team contracts and/or working agreements are a common way to lay out expectations
- Our teams will each complete their own working agreement!

Part 1: Header and Team Identification

Team Working Agreement

Term (**Autumn 2024**)

Creation XX/XX/XXXX; Revised XX/XX/XXXX (Only if revised)

1) Group Identification

Section # -

Instructor -

Team Name (Optional) -

Team member info:

NAME:	EMAIL:	PHONE:	OTHER:

Part 2: Means of Communication

2) Primary Means of Communication and Expectations

State your team's agreed upon means of communication and expectations for response.

mmereb@cscc.edu

Note: On the syllabus, I clearly lay out how to reach me (via email), how quickly I expect to get back to you (48 hours), and set a boundary on my time (except on weekends). Make sure that your group is explicit!

Part 3: Regular meetings

3) Scheduling of Meetings (Schedule at least one meeting as part of constructing your team agreement.)

Day and time of regular meeting: (agree on a day of the week and a time that works for everyone now)

Location/format of meeting: (in person, over Zoom, etc.)

Agreed upon means of scheduling other meetings:

(Example: Group will meet every Thursday from 6:30 to 7:00 over Zoom. Before leaving at the end of each class, the team will agree to set any meetings times and agenda needed before the next class and beyond if possible. The Coordinator for that week will send out a reminder of the meeting with an agenda within eight hours after the class.)

Example Agenda Format:

Team Name:

Meeting Schedule:

Date:	Time:	Location:

Participating members (If not all.):

Agenda: (items in bulleted/numbered list)

Part 4: General Rules

4) General Responsibilities for All Team Members

This element of the team working agreement is the list of rules/agreements or the contract that all members agree to abide by.

This section might seem vague, but it is really important! It is easiest to start with common values, and make rules that enforce those common values.

Part 5: Conflict Resolution

5) Conflict Resolution

Each team should have a pre-agreed approach to addressing issues that may arise.

Example statement: When there are problems within our group pertaining to the general responsibilities or specific responsibilities, the following steps will be taken in this order until a resolution is found.

1. Enter conflict resolution assuming good intentions from teammates.
2. Discuss problems within the group to come to a working solution, trying to make sure all members have opportunity to participate in the discussion.
3. Hold a team discussion of the problem with a GTA or Professor to find a solution.
4. If 2 and 3 fail, ask a GTA or Professor to assist (arbitrate).

Part 6: Expectations of Faculty

6) Expectations of Faculty

Suggested Statement:

If a team member fails to live up to this agreement, the situation may be reported to the instructor, but the team will still be responsible for submitting a completed assignment. Staff will be available to meet with teams to resolve issues.

Part 7: Digital signatures

7) Team Signatures

Signature for each student is to be included.

Be sure that all team members receive a copy of this agreement.

Note: This document can evolve!

- This may be many people's first working agreement
  - Some things in the working agreement might not work like you thought, and you might find that something is missing
- Teams may change slightly, especially if any students are missing during the first week
- If you need to change your working agreement, please let me know

Week 1 Lab

- Make sure to wear closed-toed shoes
- Make sure to complete the Pre-lab assignment
- Make sure to sit with your group

Thank you!

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