

## Welcome

- This is CMPE323 Signals and Systems.
- For the first few (15) weeks, bear with me as I try to learn your names (I'm a slow learner!)
- The more you come see us, the better chance we have to know your name!
- ...the good news is that *I* know most of you,

## Administrative Stuff

- Who's here – who should be here?
- Look at Blackboard!
- **Read the Syllabus**, all of the grading info is in there!
- ...but I do reserve the right to modify as we go to accommodate this ACTIVE learning space.
- New furniture is on order and will relieve the overcrowding!

## Dr. LaBerge's schedule, UMBC Fall 2014

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 Fall 2016

	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
8:00					
8:30					
9:00	Office Hours	Prep/Grading No Appointments	Office Hours	Prep/Grading No Appointments	CMPE323-03 ENGR231
9:30					
10:00	CMPE450 ENGR231	Office Hours (might be late)	CMPE450 ENGR231	Office Hours (might be late)	CMPE451 ENGR231
10:30		Office Hours	CMPE323-02 ENGR231	Office Hours	CMPE451 (ENGR231)
11:00	ENES101-01 ENGR027				ENES101(ENGR027)
11:30	Lunch	Office Hours	Lunch	Office Hours	Lunch
12:00		Lunch		Lunch	
12:30	Office Hours	Office Hours	Office Hours	Office Hours	Call, text, or e-mail first I might be off campus especially later in the semester
1:00		UMBC Camerata		UMBC Camerata	
1:30					
2:00		Office Hours	Office Hours	Office Hours	
2:30	CMPE323-01 ENGR231		CMPE323-01 ENGR231		
3:00					
3:30					
4:00	Office Hours e-mail for appointment		Office Hours e-mail for appointment		
4:30					
5:00					
5:30					
6:00					
6:30					
7:00					

**Legend:**

Usually On Campus

Usually Off Campus

Office Hours

Primary Course

Secondary Course

302/306 Lab

**Office Hour Conventions**

- 1) If I'm here, I'm generally available to help you out
- 2) If my door is **shut**, I'm busy, please come back later
- 3) If my door is **ajar**, please knock. I'll be with you shortly
- 4) If my door is **open**, come on in.

**Most successful students come to see me during the semester**

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## What's in a grade (approximately)

- An "A" means you have mastered the content and can apply it independently. Generally > 90%
- A "B" means you have mastered the content, but need help applying it. Generally > 80%
- A "C" means you need some help with the content. Generally > 70%
- A "D" means you need a lot of help with the content. Generally > 60%
- An "F" means you don't get it at all.
- **My goal is for you to get "A" or "B"**
- Your goal should be to achieve that standard
- I have no problem with 25 A's and 25 B's or better!
- But the grades are earned not given: **"No pain, no gain"**

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## Grading, etc

- CMPE323 is an extension of the concepts we finished with in CMPE306 (circuits) and is **very** math-intensive!
- We will practice the math facts and relationships in class, discussion and labs
- You will practice in homework and MATLAB-based assignments. If you don't do the practice, you won't retain the concepts!
  - Homework 10% Graded on attempt as described below
  - MATLAB lab exercises 10%
  - Project: 15%
  - Exam #1 15%,
  - Exam #2 20%,
  - Final 30%
- Please notify me if you have an accommodation letter!

## Homework grades

- You get 2 points for attempting all of the homework problems in each assignment.
  - These general problems will not be graded...
  - ...but you *will* be responsible for knowing the correct solutions...
  - ...which will be posted each week on Blackboard.
- You get 1 point for skipping problems (everyone should get 2 points)
- So a typical homework assignment will be worth 2 homework points
- 11-13 HW assignments planned, 22-26 total homework points. No homework pass!
- There are lab assignments, but generally no lab reports. You may be asked to submit MATLAB material.

## Grading Summary

- You **can't** get an "A" or "B" if you blow off the homework and the MATLAB labs
- Later exams are worth more, so improvement leads to a better grade!
- The exams are long (maybe even *very* long)...but there's always extra credit to be had (*a la 306*)
- It is best to develop a test-taking strategy; it isn't necessary to finish every problem to do well!
- It pays to come see me in many ways
- A word to the wise
  - COMM-track CMPE students **MUST** pass CMPE323
  - I'm **probably not** teaching CMPE323 in F17
  - Carpe Diem – seize the day!

## The syllabus is on Blackboard

- All class policies, grading, attendance, academic honesty, detailed schedule, etc., are in the detailed syllabus posted on Blackboard
- **READ IT!!!**
- **...questions next time!**
- **Print, SIGN and date the Academic Honesty policy and return it to me next Wednesday**
- Laptops are needed!! at least one per table will be necessary! Web surfing is off limits!
- Cell phones should be silenced or turned off
  - If it rings, you sing the UMBC alma mater "Our UMBC"!
  - Study guide for UMBC posted on Blackboard.

## Attendance

- Although I don't/won't take attendance...
- ...I expect you here for every class meeting...
- ...lectures, discussion, and lab.
- If you miss class, you will almost certainly be behind...
- ...because this stuff isn't easy nor obvious...
- ...and I actually have some skill in explaining it (at least I think so)
- Come to class!
- ...even at 9 AM on Friday!!!
- If the class as a whole is regular in attendance, I might let you off the hook the Wednesday before Thanksgiving!

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## UMBC Policy on Academic Honesty

By enrolling in CMPE323, each student assumes the responsibilities of an active participant in UMBC's scholarly community, in which everyone's academic work and behavior are held to the highest standards of honesty. Cheating, fabrication, plagiarism, and helping others to commit these acts are all forms of academic dishonesty, and they are wrong. Academic misconduct could result in disciplinary action that may include, but is not limited to, suspension or dismissal.

The full Student Academic Conduct Policy, is available in the UMBC Student Handbook, the Faculty Handbook, or the UMBC Policies section of the UMBC Directory.

I understand the requirements of the UMBC Policy on Academic Honesty and agree to be bound by them, including any appropriate disciplinary action

CMPE323 F16

Student

Date

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## Rules for ENGR231 ACTIVE Center

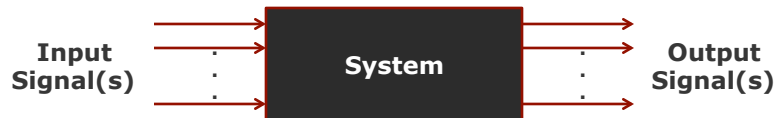
- **No food! I have to enforce this**
- **No drinks except water! I have to enforce this**
- **Laptops are welcome, but there will obviously be a crush if we have 5 laptops on each table. Let's plan on using 2/table, when we need them.**
- **For the first few weeks, PLEASE bring your laptop**
- **This is a facility meant for new teaching approaches**
  - **Some will work great**
  - **Some won't work at all**
  - **Please be patient**

## MATLAB

- **MATLAB is one of the finest ways to visualize the concepts of this course...**
- **...and we will use it exclusively in the labs**
- **It's available free (!!!) to students**
- **<https://wiki.umbc.edu/display/faq/Matlab+Stand-Alone+Installation>**
- **Please download and install before our first Lab meeting this Friday (9/2) at 9 AM (here!)**

## Signals and Systems

- We're interested in the characteristics of the signals and systems themselves...
- ...generally not in the internal details



- Our task is to provide a model of the signal(s) and the system and their relationships
- The *language* we use to build the model is mathematics...
- ...the framework we use is based on science!

## There are three critical topics

- Convolution
  - Given an input to a *linear, time invariant system*, as a function of time, how do I find the output as a function of time?
- Fourier Transforms
  - How do I describe **signals** in terms of an expansion into the sum (or integral) of sines and cosines or complex exponentials
- Laplace Transforms
  - How do I describe the **system** in terms of its expansion into complex exponentials, and therefore determine properties like stability

## What Math do I need



- **MATH151, 152, (251), (221), 225** It's a math-intensive course
- **Familiarity with differential equations!**
- **You should have seen some basic Laplace Transforms in MATH225, partial fractions, etc.**
- **You should be able to manipulate, integrate and differentiate complex values**
- **Some matrix algebra might be helpful, but we may not get to it.**
- **Finite and infinite sums (CMPE203)**
- **It's ok, I'll review most of what we need next Wednesday**
- **We'll get started at 2:30 this afternoon.**