MA266

ORDINARY DIFFERENTIAL EQUATIONS

ABOUT ME

- **Instructor: Gert Vercleyen**

  Pronunciation: very hard. Many have tried, few succeeded.

  ⇒ just Professor :)

- **Office**: MATH 409

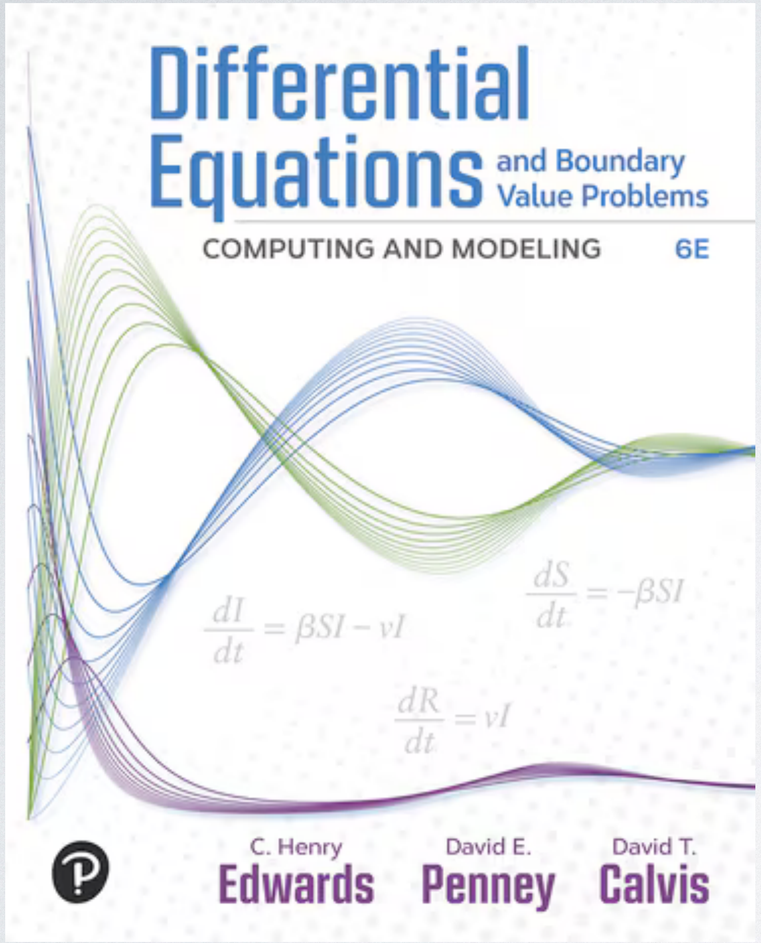
  - **Office hours**: Tuesday and Thursday 1:30 PM - 3 PM, or by email appointment.

    To give everyone a chance to visit, you cannot schedule weekly meetings

- **Email**: gvercley@purdue.edu

- Sylabus: see

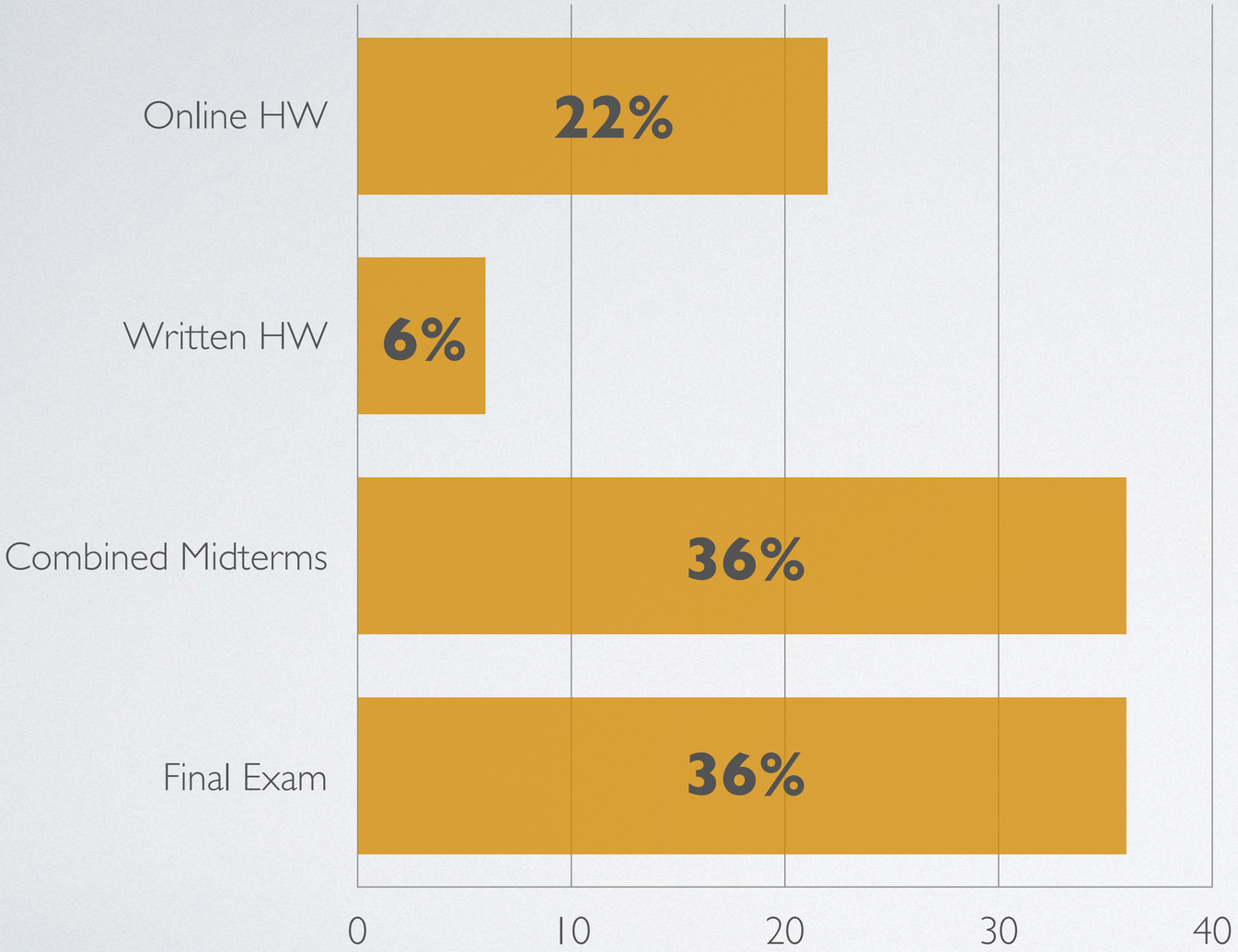
THE BOOK



- **Book**: Differential Equations and boundary value problems from Edwards, Penney, and Calvis.

  You can use any version but make sure to use the online version to do the handwritten problems: different versions might have different exercise numbers!

GRADES



- **No quizes :)**
- **Exams**:
  - 2 Midterm exams: see calendar
  - 1 Final exam: date tba
- **Final grade** (A+, A, A-, …, F): determined by a cutoff table given in the ground rules in syllabus
- **The curve**: this table might have its values lowered at the end of year. Don't ask for the curve: I don't know the curve

HOMEWORK

Online

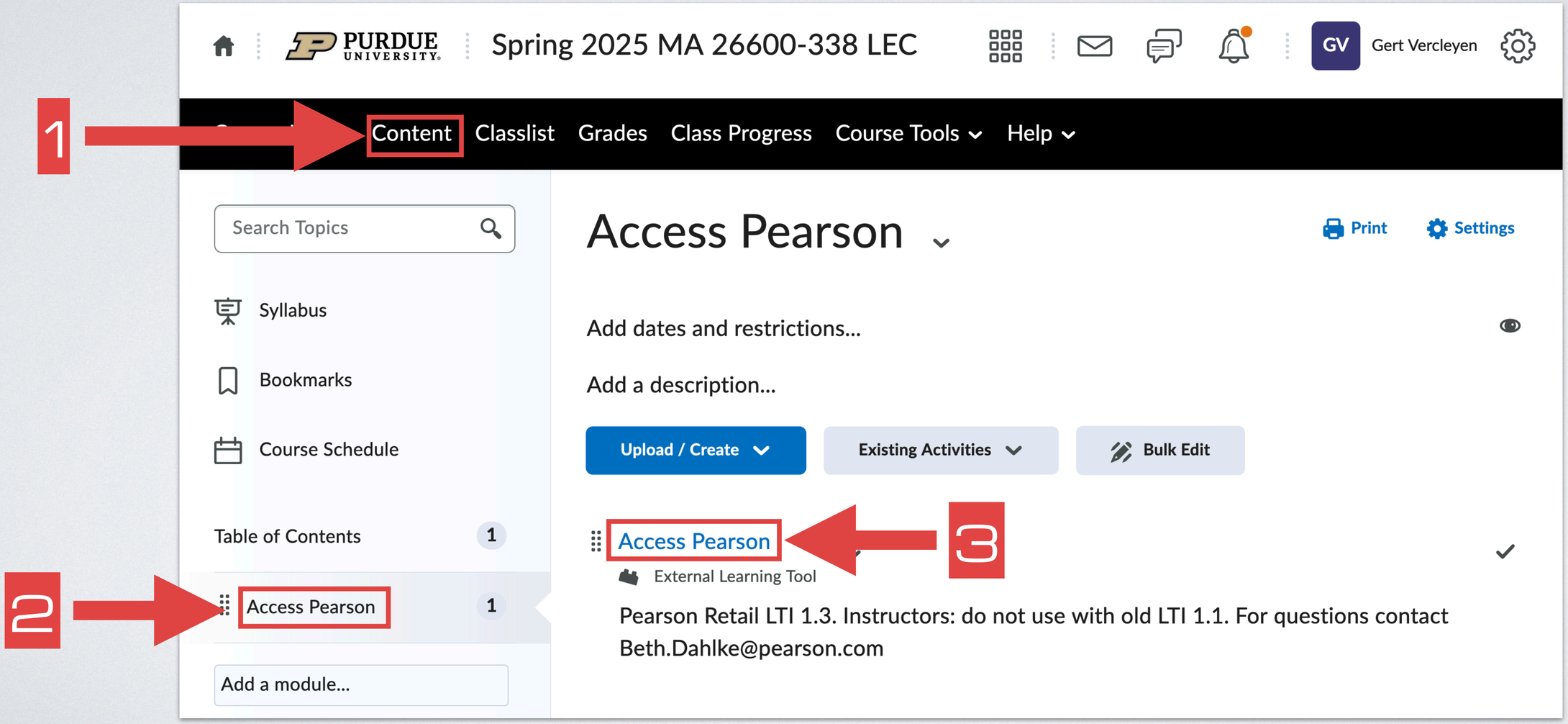
- After each lecture
- You can attempt each question 20 times
- Grades immediately available
- Deadlines: see calendar
- Lowest 3 grades are dropped at end of year

Handwritten

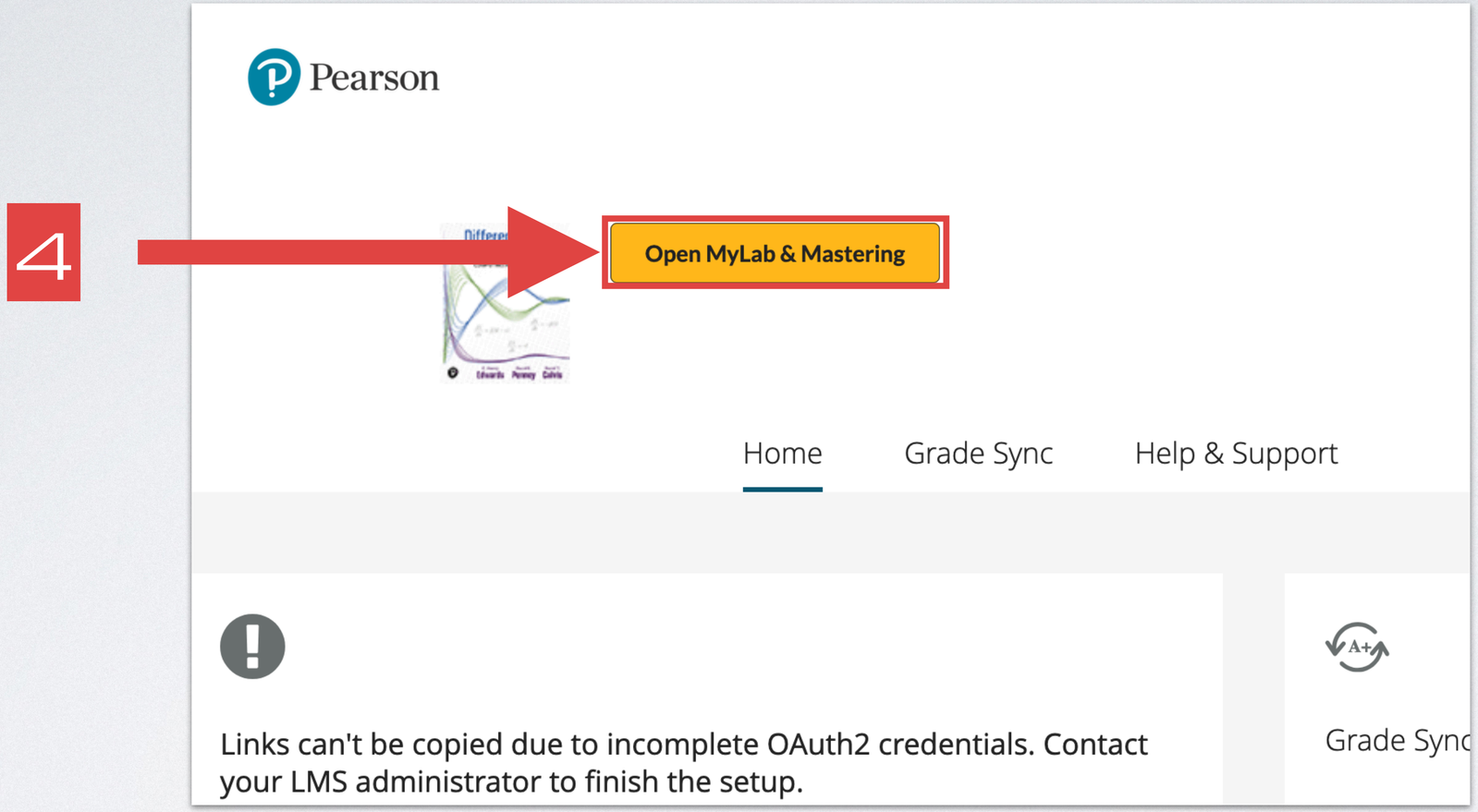
- After each lecture but with combined deadlines: see calendar
- Only 1 attempt
- Grades available when grader uploads them
- No grades are dropped at end of year

HOMEWORK - ONLINE EXERCISES

- **Go to Brightspace**



HOMEWORK - ONLINE EXERCISES

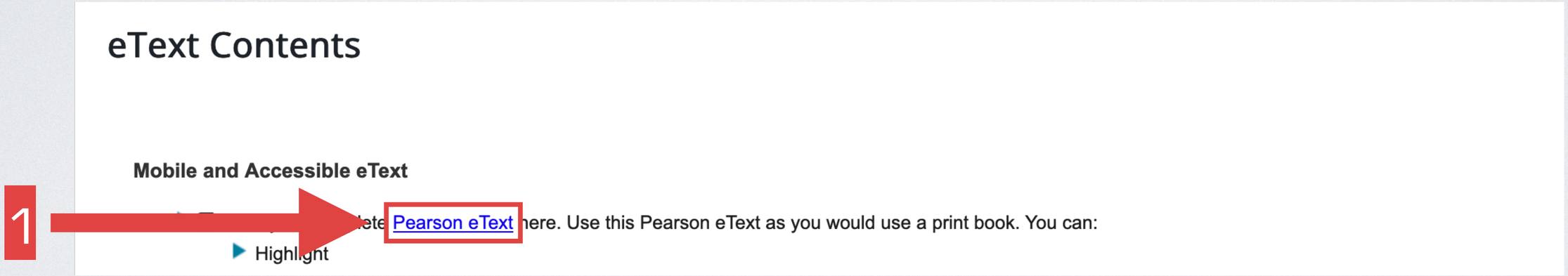


- **Click on the Assignments tab on the left**

HOMEWORK - HAND WRITTEN EXERCISES

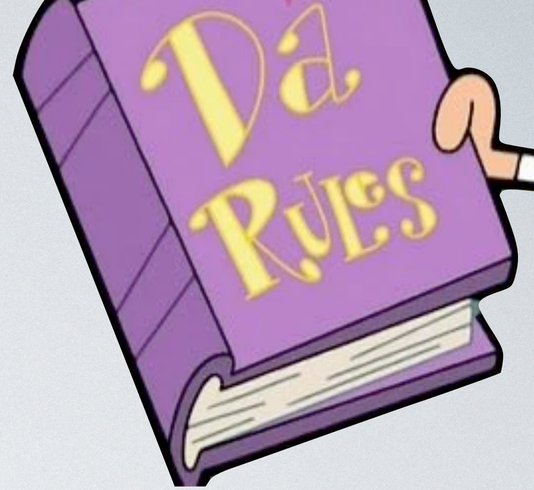
- **Go to Brightspace and look up exercise numbers on calendar**

- **Go to pearson and click on eText Contents tab on the left**



- **<u>Make the exercises from this book! Do not get your exercises from somewhere else: the exercises might seem the same but the numbers might be different!</u>**

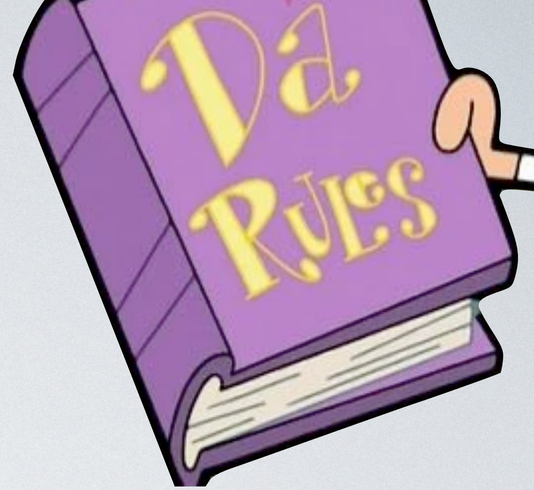
HOMEWORK - DA RULES I



- **Working together**: Please do, but make sure your homework is a representation of your skills, not of your peers. Remember that you will have to do the exams on your own!

- **Calculators**: Not allowed on exam and not nearly as good as online tools. You are free to use them for homework, but I wouldn't

HOMEWORK - DA RULES II



- **AI and websites like WolframAlpha:**
  You can use them but the exam will be without aid.
- Note: AI is terrible at math. Pearson has its own AI Study Tool which gives vague and sometimes incorrect answers. Like most AI it's meant to impress rather than to give correct answers.

HOMEWORK - DA RULES III

- **Homework submitted after a deadline does not count.**

  Exceptions: (A) if you can convince Purdue that the reason for missing the deadline is severe enough, then you can get an extension for a deadline.
  I need an email from Purdue, confirming this is the case.
  (B) I announce on BrightSpace that some homework has an extended deadline

- In particular, **do not send emails** with excuses like
  - I thought the deadline was on date X but it turned out to be date Y…
  - My internet was gone …
  - I finished it, but forgot to submit …

COURSE RULES

- **Attending classes**: do! I don't take attendance but typically 95% of people that skip class should not.
  Also: at some point the university will ask me to provide a list of students that come to class (for grants and other stuff…)
- **Cheating**: don't.
  If the exam says "no calculator" then don't bring one. If it says "no formula sheets" then don't bring formula sheets.
  Helping others cheat is also cheating.
- **Further rules**: read the syllabus on Brightspace and ground rules on the course homepage

RESPECT

- **Respect**: Purdue University is committed to maintaining a community which **recognizes and values the inherent worth and dignity of every person**; fosters **tolerance**, **sensitivity**, **understanding**, and **mutual respect** among its members; and encourages each individual to strive to reach his or her potential. In pursuit of its goal of academic excellence, the University seeks to develop and **nurture diversity**. The University believes that diversity among its many members **strengthens the institution, stimulates creativity, promotes the exchange of ideas, and enriches campus life**.

EMERGENCIES

- **Emergency Preparedness:**
  - In the event of a major campus emergency or other circumstances beyond the instructor's control, course requirements, deadlines, and grading percentages are subject to changes that may be necessitated by a revised semester calendar. Relevant changes to this course will be posted on the course web page https://www.math.purdue.edu/ma26600.
  - You are expected to read your @purdue.edu email on a frequent basis.
  - Purdue's website on Emergency Preparation and Planning covers topics such as Severe Weather Guidance, Emergency Plans, and a place to sign up for the Emergency Warning Notification System.
  - You are encouraged to download and review the Emergency Preparedness for Classrooms document.

DISABILITIES

- **Accommodations for Students with Disabilities**: If you anticipate or experience physical or academic barriers based on disability, contact the Disability Resource Center at: drc@purdue.edu or by phone: 765-494-1247, as soon as possible.
- Disability includes attention-deficit/hyperactivity disorder (ADHD), learning disabilities, autism, physical and sensory disabilities, medical and mental health conditions, and temporary disabilities.
- I will never be told what the reason for your accommodations are and I will never ask.

STUDYING MATH: A PERSONAL VIEW

- Study techniques from other courses, e.g. Biology, English don't do well for mathematics.
  Just reading and memorizing mathematics is a waste of time.
- To **learn** mathematics you have to **do** mathematics: exercises are the key to understanding.
  If you can't do an exercise: read the book/notes and try again.
  You could read the theory and try again or search for examples that are similar and try to understand those first.

STUDYING MATH: A PERSONAL VIEW

- Make it a game to **minimize the amount of memorization**. You can get extremely far with a minimum of formulas and some insight in the material.

  In particular never memorize solutions to exercises!

- Mathematics is scary because it forces you to acknowledge that you're not **yet** capable of doing certain things.

  Try → fail → learn → try again → …, and constantly improve.

STUDYING MATH: A PERSONAL VIEW

- Be kind to yourself: harsh self-criticism is often inhibiting rather than motivating.
- Think about this. Who would you prefer to work for:

  A. A boss that shouts at you every time you make a mistake, or

  B. one that kindly helps you find the mistake and teaches you how to avoid it next time?

  - Which of these two will help you achieve the most?

- Rather than blaming yourself, realise that making mistakes is a central component of the learning process. Find the mistake, learn from it and continue. You will improve one step at a time!

STUDYING MATH: A PERSONAL VIEW

- Sometimes little 'holes' can appear in your understanding.
  For example, you might not remember
  - how to differentiate $\tan(x)$
  - the formula for $\sin(a+b)$
  - whether $(a^b)^c = a^{bc}$ or $(a^b)^c = a^{b+c}$
- Likewise you sometimes might not be convinced about some derivation you did yourself
- In all cases: deal with those small issues first!
  Fill the gaps and convince yourself why the correct formula is actually the correct formula


FAILURE
Speak not to me of failure! Failure is the greatest instructor of all. Your existence is a sequence of mistakes; avoid making the same one twice.