

BILL, RECORD LECTURE!!!!

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**Today:
Admin,
Intro to Theory of
Computation**

Admin

Necessary Administrative

Everything in these slides is also on the written syllabus on the course website.

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Course Webpage:

<https://www.cs.umd.edu/users/gasarch/COURSES/452/S24/index.html>

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1. Taught by William Gasarch. Tu-Th 3:30-4:45 in CSI 3117.
2. TAed by Cheng-Yuan 'Sam' Lee, Adam Melrod and Isaac Mammel.

Necessary administrative stuff

- ▶ Course Website: Will post slides, notes, and HW there.
- ▶ Elms: will post recording.
- ▶ Gradescope: you will **submit HW** there.
- ▶ Gradescope: we will **grade HW** there.
- ▶ Regrade requests due within a week of the HW being graded.
- ▶ Piazza is great for asking questions.

IF you are auditing this class for whatever reason- perhaps you are having a hard time getting permission to take it, or perhaps you like the material but don't want to take it, let me know and I will put you on the class email list and invite you to join the Piazza.

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- ▶ Appointments (possibly on zoom).

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- ▶ There will be one short programming project. (This is **not** a course like **CMSC 412** where the project IS the course.)

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I am not sure why you are telling me about **time stamps**, but, as the kids say, whatever.

Textbook

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Recommended Text None.

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Elementary Theory of Computation

Our Key Question

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This question permeates all branches of mathematics and computer science.

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Example: Gauss invented the Fast Fourier Transform but never told anyone since he did not think it was that important.

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4. We will prove some sets are **not regular**.

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3. We will study grammars **briefly**, emphasizing:
 - 3.1 Sets CFGs can generate that are not regular.
 - 3.2 Sets CSGs can generate that CFGs cannot generate.
 - 3.3 Problems that can be done with a large DFA or NFA, but only need a small CFG.

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5. We will define problems that are HARDER THAN HALT.

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