Computational Structures

Tim Sheard
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Class Preliminaries

Acknowledgements:

- I would like to thank Sava Krstic for a set of notes that I have based my slides on.

Contact Details:

- Tim Sheard:
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- CS 311:
  - **`http://web.cecs.pdx.edu/~sheard/course/CS311/index.html`**

Teaching assistant:

- "Harry" Xingzhi Pan
- Email: pan.xingzhi@gmail.com
- Office hour: 1:00-2:00pm M&W

- Further arrangements to be made as the class progresses.

Time and Location:

- Currently scheduled:
  - Tues & Thurs, 14:00-15:50 pm
  - URBAN 204
  - 20 classes

- Midterm:
  - Most probably Tuesday April 26, 2011
- Final:
  - Monday, June 6, 2011 -- 10:15 am - 12:05 PM.

Methods of assessment:

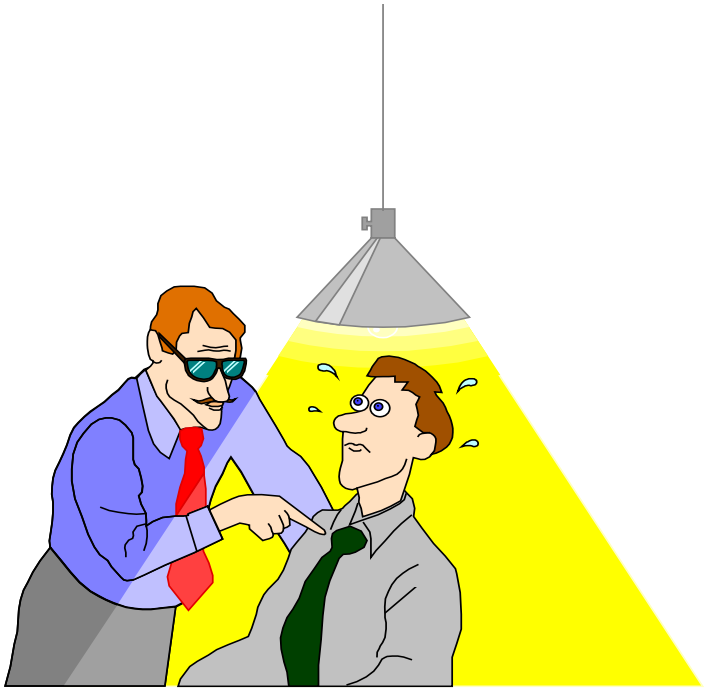
Quizzes (15 min, weeks 3 & 8, closed book)	15%
Homework (8 weekly homeworks)	40%
Midterm (most probably Nov 4, open book)	15%
Final exam (Dec 11, open book)	30%
TOTAL	100%

Policies:

- By default, all deadlines are firm.
- We will be as flexible as possible in accommodating special circumstances; but advance notice will make this a lot easier.

Academic Integrity

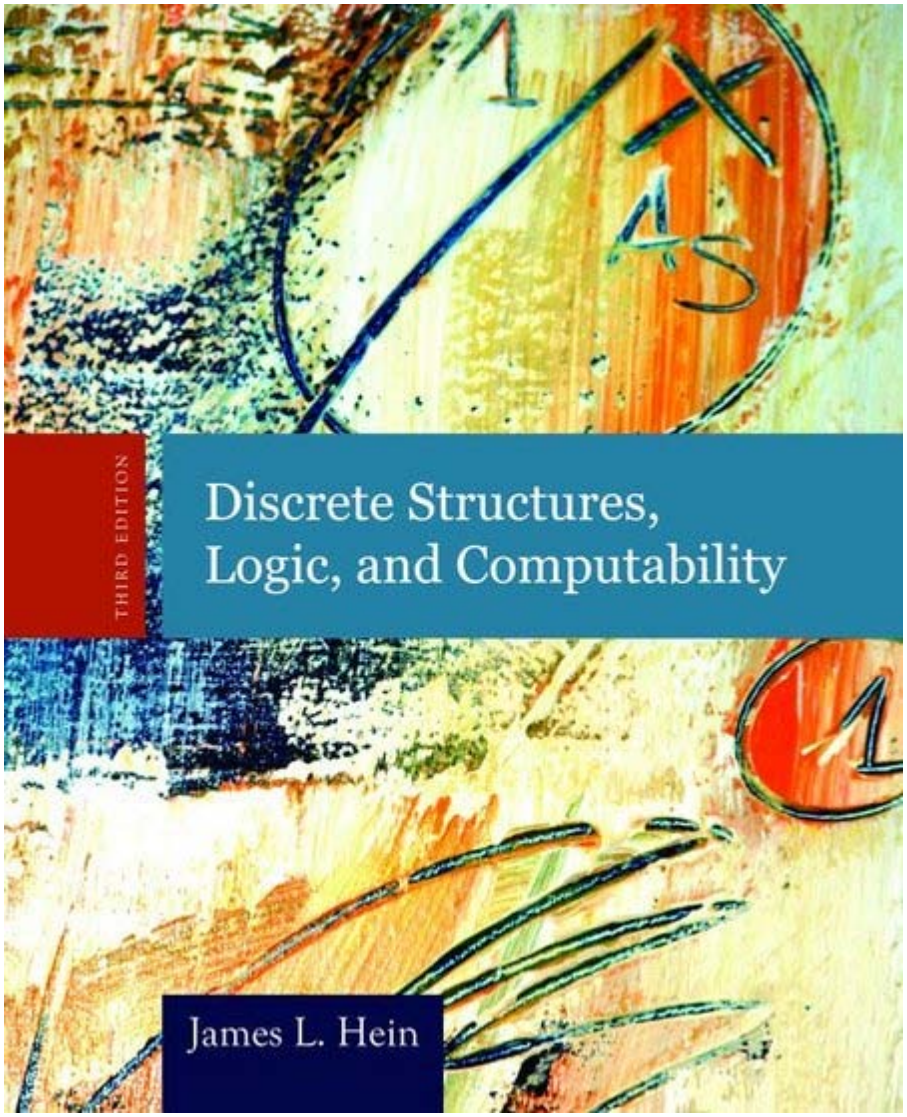
- We follow the standard PSU guidelines for academic integrity Students are expected to be honest in their academic dealings. Dishonesty is dealt with severely.
- Examinations. Notes and such,
- only as the instructor allows.
- Homework..
  - Discussion is good;
  - Items turned in should be your own
  - individual work. You are encouraged
  - to talk to other people about the
  - homework problems, but you must write
  - up your answers independently. If
  - you're stuck with a problem,
  - please ask for help.



Course Text:

- *Discrete Stuctures, Logic, and Computability*
  - *(3rd ed)*
  - James L. Hein
  - Published by Jones and Bartlett
  - ISBN-13 978-0-7637-7206-2
  - ISBN-10 0-7637-7206-2
- Home page of the text book:
  - **http://www.jblearning.com/catalog/9780763772062/**

It looks like this!



Syllabus

- *Mathematical Preliminaries*
  - *(.5 week, review)*
- *Finite Automata and Regular Languages*
  - *(3.5 weeks, chapter 11)*
- *Pushdown Automata and Context-Free Languages*
  - *(2.5 weeks, chapter 12)*
- *Turing Machines and Undecidability*
  - *(2.5 weeks, chapter 13)*
- *Computability*
  - *(1 week, chapter 14)*

Today's Assignments

- Review Readings
  - Sets 1.1, 1.2
  - Strings 1.3.3, 3.1.2, 3.2.2
  - Logic 6.1, 6.2, 6.3, 7.1
  - Proofs 4.4
- You should know this review material
- In today's lecture we will review
- basic operations on sets
- definition and operations on strings
- definition and operations on languages
- statements, predicates, and quantifiers
- Converse and contrapositive
- Proofs - By contradiction