Math 245: Discrete Mathematics

Discrete Mathematics

Initial Meeting, Fall 2006

Lecture #1

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Math 245 — Add Codes / Crashers / Class Capacity

Capacity:	40 students
Enrolled:	40 students
Available Add Codes:	0*

Due to *fire regulations*, 40 students is the **hard limit**.

* See Peter before/after class to get add codes (or get on a wait-list for add-codes).

Math 245: Note Taking

Class notes (the slides) will be posted on the class web site. — That way the class does not become a note-taking contest.

It is recommended that you take additional notes, regarding additional explanations, discussions, and examples done in class (on the board).

Basic Information: The Professor 1 of 2

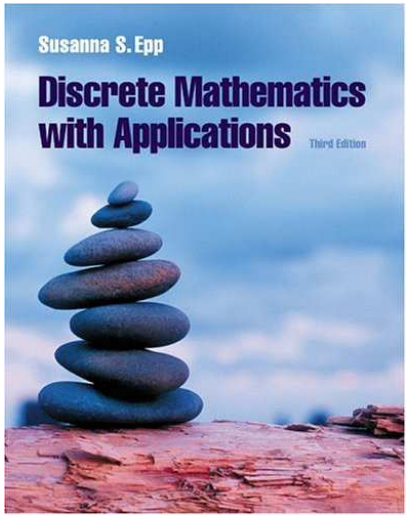
- August 2002 – Present: Assistant Professor, San Diego State University, Department of Mathematics and Statistics.
- 1998 – 2002: Research Associate. Stanford University, Department of Mathematics. Main Focus: Time Reversal and Imaging in Random Media (with George Papanicolaou, *et. al.*)
- 1994 – 1998: PhD. UCLA Department of Mathematics. Adviser: Tony F. Chan. PDE-Based Methods for Image Processing. Thesis title: *"Total Variation Methods for Restoration of Vector Valued Images."*
- 1989 – 1994: MSc. Engineering Physics, Royal Institute of Technology (KTH), Stockholm, Sweden. Thesis Advisers: Michael Benedicks, Department of Mathematics KTH, and Erik Aurell, Stockholm University, Department of Mathematics. Thesis Topic: *"A Renormalization Technique for Families with Flat Maxima."*

"If we knew what it was we were doing,
it would not be called research, would it?"
(Albert Einstein)

Basic Information: The Professor 2 of 2

Office	GMCS-587
Email	blomgren@mail.SDSU.EDU
Web	http://terminus.sdsu.edu/SDSU/Math245_f2006/
Phone	(619)594-2602
Office Hours	TuTh: 3:30p – 5:15p + More TBA and by appointment

Basic Information: The Book



Title:
"Discrete Mathematics with Applications," 3rd Edition

Author:
Susanna S. Epp

Publisher:
Brooks/Cole (Thomson Learning)

ISBN:
0-534-35945-0

Basic Information: Syllabus

Chapter	Title	Notes
1	Logic of Compound Statements	
2	Logic of Quantified Statements	
3	Logic of Elementary Number Theory and Methods of Proof	Midterm #1 10/10/2006
4	Sequences and Mathematical Induction	
5	Set Theory	Midterm #2
6	Counting and Probability	11/9/2006
7	Functions	Cumulative
8	Recursion	Final
10	Relations	12/12/2006

See also detailed handout.

Basic Information: Grading

Homework*	25%
Midterm #1	25%
Midterm #2	25%
Final	25%

Extra credit assignments may be available.

* Due (almost) every Friday at Noon in GMCS-587 (Peter's office).

Expectations/Procedures, I

- Some, but not all, class attendance is OPTIONAL — Homework, projects, tests, and announcements will be posted on the class web page.
  - Unfortunately, the exams are REQUIRED. Any required attendance beyond the exams will be posted on the class web page.
  - If you choose to attend optional classes:
    - Please be on time.
    - Please pay attention.
    - Please turn off mobile phones.
    - Please be courteous to other students and the instructor.
    - Abide by university statutes, and all applicable local, state, and federal laws.

Expectations/Procedures, II

- Turn in assignments on time. (The instructor reserves the right not to accept late assignments.)
- The instructor will make special arrangements for students with documented learning disabilities and will **try** to make accommodations for other unforeseen circumstances, *e.g.* illness, personal/family crises, etc. in a way that is fair to all students enrolled in the class. **Please contact the instructor EARLY regarding special circumstances.**
- You are expected **and encouraged** to ask questions in class!
- Students are expected **and encouraged** to to make use of office hours! If you cannot make it to the scheduled office hours: contact the instructor to schedule an appointment!
- **Academic honesty** submit your own work — but feel free to discuss ideas with other students in the class!

Math 245 — Goals

Goal #1 To teach the essential language and reasoning of mathematics — clarity and precision in definitions and statements of fact, and rigorous methods for establishing that a statement is true.

Goal #2 To teach the basics of set theory, logic, combinatorics and graph theory.

In a way, this is a ***language class***. Mathematicians use (English) words is a very precise way to convey very precise statements about mathematical properties. Even the common "or" tends to 'behave' differently in mathematics:

Question: Do you want vanilla ***or*** chocolate?
Expected: *Chocolate.* (Statement of preference)
Mathematician: *Yes.* (Statement of truth)

Questions, Comments, Administrative Stuff...

Formal Prerequisites: Math 121 or Math 150.

September 18 Last day to add classes, drop classes, or change grading basis. No schedule adjustments allowed after 6:00 p.m. on this date.

December 12 Final Exam (Tuesday 1pm–3pm).

Questions?