

MATH 4341 – Winter 2013

Combinatorial Design Theory

Instructor

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- Office Hours: 13:00–13:50 on Tuesday and Thursday, or by appointment

Course Info

- Location: Henrietta Harvey Building – Room 3017
- Class Times: 10:30–11:45 on Tuesday and Thursday
- Prerequisites: MATH 3320 (Abstract Algebra) or MATH 3340 (Introductory Combinatorics).
- Textbook: Introduction to Combinatorial Designs, second edition, by W. D. Wallis. Published by Chapman & Hall / CRC. ISBN 1-58488-838-5.

Course Outline

The intent is to cover the following chapters (although not necessarily in numerical order).

Chapter 1	Basic Concepts
Chapter 2	Balanced Designs
Chapter 3	Finite Geometries
Chapter 5	Difference Sets and Difference Methods
Chapter 6	More about Block Designs
Chapter 7	The Main Existence Theorem
Chapter 8	Latin Squares
Chapter 10	One-Factorizations
Chapter 12	Steiner Triple Systems
Chapter 13	Kirkman Triple Systems and Generalizations

If time permits, additional material may be covered.

Method of Evaluation and Related Policies

- Assignments will be due at the time and date announced when distributed. Assignments should be submitted to the designated assignment box in the corridor near the Math & Stats General Office, located in the Henrietta Harvey Building. Late assignments will not be accepted and will receive a grade of zero.
- Plagiarism, cheating, and academic dishonesty will not be tolerated. The minimum penalty for any form of cheating on an assignment, test, etc. will be a grade of zero for the corresponding assignment, test, etc.

- It shouldn't need to be said, but inevitably somebody puts me through this test... on homework, quizzes, tests, etc, I expect you to show your work. Simply stating the answer (even if it is correct) will rarely get you full credit; the work behind your answer is usually given more credit than the answer itself. In short, your job is to *show* that you know *how* to do the exercises.

Moreover, your work should reflect clear content as well as coherent and organised structure. Part of what this means is that your work should be clear to follow and should show a logical progression of thought. Arguments that wander around the point, or which include extraneous and/or irrelevant side details, are inferior to arguments that do not go astray at times. Likewise, if you have to guide me through your work in order to point out your thought process (again, even if you got the correct answer in the end), then you should not expect to get full credit.

- Be aware that not all learning takes place in the classroom. Expect to devote personal time to ensure that you fully comprehend and understand the material. This will likely entail reading from the textbook, consulting with additional resources, engaging in interactive discussions, as well as doing exercises beyond those which are assigned.
- Quizzes and/or tests will be regularly administered. Crib sheets will not be allowed.

Expect to have photo-id checked during each test and exam.

Make-up quizzes and tests will be given only for legitimate absences, and only if the request for a make-up is brought to my attention no later than the day that you next attend class; otherwise, a score of zero will be assigned for any missed quizzes and/or tests. I reserve the right to require documentation supporting the absence.

One of the tests will likely take place on February 21.

- The final exam will be comprehensive.
- Final grades will be based upon the following scheme

Homework:	30
Quizzes and/or Tests:	30
Final Exam:	40
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	100

Notwithstanding the above formula, in order to pass the course a combined score of at least 30 out of the 70 possible points for the quizzes/tests and the final exam must be achieved.

- Requests for "extra-credit" projects will be denied. Put simply, your grade will be based upon the required course-work as indicated in this syllabus.

If You're Thinking of Majoring in Math...

... but aren't sure what career options would be available with a Math degree, then here are some resources that you can look at:

- "101 Careers in Mathematics" by Andrew Sterrett. Call Number: QA 10.5.A15 1996
- "She Does Math!" by Marla Parker. Call Number: QA 27.5.S53 1995

- www.ams.org/careers/
- www.maa.org/careers/
- www.cms.math.ca/Education/MathAtWork

And if you want to talk to somebody for academic advice concerning undergraduate programmes of study in Mathematics, you can see Harold Johnson in the Henrietta Harvey Building, Room 3004.

Also, the Department of Mathematics and Statistics publishes an Undergraduate Guide to its courses and programmes of study. If you don't already have one, pick one up from Harold Johnson.