

**MATH 481: DISCRETE MATHEMATICS
FALL 2009**

Course webpage: <http://www.math.msu.edu/~dhand/481.html>

9/2 Introduction

9/4 Sets and counting

9/7 **No class**

9/9 Three basic problems

9/11 Binomial coefficients

9/14 Binomial theorem

9/16 Fourth basic problem **HW 1 due**

9/18 Multinomial coefficients, counting cards

9/21 Combinatorial proofs

9/23 Generating functions **HW 2 due**

9/25 Fibonacci numbers

9/28 Linear recurrences

9/30 Catalan numbers, **HW 3 due**

10/2 Groups

10/5 Cycle index

10/7 Burnside's Lemma, **HW 4 due**

10/9 Pólya's formula

10/12 Applications of Pólya's formula

10/14 Review, **HW 5 due**

10/16 **Midterm Exam**

10/19 Graphs

10/21 First theorem of graph theory

10/23 Connected components

10/26 Bipartite graphs

10/28 Trees, **HW 6 due**

10/30 Cayley's theorem

11/2 Planar graphs

11/4 Kuratowski's theorem, **HW 7 due**

11/6 Polyhedra

11/9 Graph coloring

11/11 Chromatic number, **HW 8 due**

11/13 Chromatic polynomials

11/16 Chromatic polynomials

11/18 Chromatic polynomials, **HW 9 due**

11/20 Chromatic polynomials

11/23 Unlabeled graphs

11/25 **No class**

11/27 **No class**

11/30 Unlabeled trees

12/2 Fibonacci numbers mod n ,

12/4 Pascal's triangle mod n

12/7 Review

12/9 Review, **HW 10 due**

12/11 Review

Final Exam: Wed. 12/16. Wells C 105. 10am - 12 noon.

IMPORTANT DATES:

Wednesday 09/02/2009 Classes Begin. Students should go to regularly scheduled Monday classes on the first day.

Monday 09/07/2009 Labor Day University closed

Wednesday 09/09/2009 Online open add period for fall semester ends at 8pm.

Thursday 09/10/2009 to Wednesday 09/16/2009 Students go to Undergraduate office, A212 Wells Hall for Mathematics enrollment changes. (late adds, drop to lower course, section changes)

Wednesday 09/16/2009 Last day to late add a course or change sections within a course. Last day to drop to a lower level course.

Monday 09/28/2009 End of 100% Tuition Refund

Wednesday 10/21/2009 Middle of Semester. Last day to drop a course without a grade being reported.

Thursday 11/26/2009 to Friday 11/27/2009 Thanksgiving Break

Friday 12/11/2009 Last day of classes.