

# Math 343 Lecture 1

## ① Introduction

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Course Exploring combinatorial classes  
by counting  
finding bijections  
generating elements  
searching

[people.math.sfu.ca/~kyeats/teaching/math343.html](http://people.math.sfu.ca/~kyeats/teaching/math343.html)

TA Steve Melczer

## Schedule

Lectures	Mondays	2:30 - 3:20	AQ 5018
	Thursdays	2:30 - 4:20	WMC 3510
Tutorials	Thursdays	4:30 - 5:20	WMC 3253

## Assignments

Approximately weekly.

Due in class

No retroactive lates → at due time I expect  
(ie from everyone either an  
assignment or a reason.

ONLY

② Administrative questions for you

Office hours?

Midterm date?

Project vs final?

### ③ Combinatorial classes

Def A combinatorial class  $A$  is

(a)

(b)

Note: I will use

eg let  $\mathcal{T}$  be the set of binary rooted trees (with distinct left and right children)

$$\mathcal{T} = \{$$

let the size of a tree be

Is  $\mathcal{T}$  a combinatorial class?

More notation

Def Let  $A$  be a combinatorial class

(a)

$|a|$

(b)  $A_n =$

(c)  $a_n =$

(

eg for the binary rooted trees

The main questions of the course are, for interesting combinatorial classes  $A$  how do we

①

②

③

④

And we want to be able to do these things efficiently

Other interesting things to do

⑤

6

Important examples of combinatorial objects include

4 A final question for you

do you want more algorithms?

examples?

coding?

pure math?

general tools?

what excites you?