

# Syllabus for *Programming with Categories*

David Spivak, Bartosz Milewski, and Brendan Fong

## 1 Basic information

Course number: 18.S097  
Class Dates: January 7 – 31, 2020 (except MLK day, Jan 20)  
Class Time: MTWRF 14:05 – 14:55  
Extra Discussion: MTWRF 15:00 – 15:30  
Meeting Room: 4-163

Instructor Names: David Spivak, Bartosz Milewski, & Brendan Fong  
Instructor Office: 2-180

Grading: P/D/F (3 Units)  
Class participation: 25%  
Homework: 75%

Lecture notes/Videos: Will be posted on course webpage following each lecture:  
<http://brendanfong.com/programmingcats.html>.

Tentative schedule		
Session	Topic	Student tasks
1	Introduction	Introduce yourself to an instructor, Session 1 or 2
2 – 4	Categories and Haskell	
5 – 8	Universals and algebraic datatypes	PSet1 due Session 8 (Jan 16)
9 – 12	(Co)algebras and recursive datatypes	
13 – 15	Monads and side effects	PSet2 due Session 13 (Jan 24)
16 – 18	Special topics	PSet3 due Session 18 (Jan 31)

## 2 What to do right now

1. Access the course webpage: <http://brendanfong.com/programmingcats.html>.
2. Following the notes on the webpage (or otherwise), get Haskell running on your computer.
3. Introduce yourself to Brendan, Bartosz, or David after class, either Jan 7 or Jan 8.

## 3 Grading

Attending lecture is mandatory, unless you have prior permission from an instructor. Class participation is 25% of your grade. How to participate? Ask questions! It's crucial that you ask questions when you don't understand.

Homework is worth 75% of your grade. It will be collected weekly, at the beginning of the class sessions listed above. Late homework will generally not be accepted. Just turn in what you have finished at the time the homework is due. Don't stress too much about this: we're here to have fun!