# Lecture 1

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## Course Goals

- R, Functional Programming
- Visualise, Process, and Analyse tabular data
- Predictive Modeling

## Introduction

I'm assuming you have previous coding experience, so I'll skip the basic stuff.

### Comments

start with #

```
# Hi, I'm a comment
```

### Print

Use `cat` to print statements

```
cat("Hello World!") # no semicolon at the end
```

```
## Hello World!
```

### Variables

```
# We use <- (ALT - ) for assign, instead of =

engsci_adj <- -12
x <- 97 + engsci_adj
# These are displayed in the Environment
```

To run a line, use CTRL ENTER, to run a code chunk, use CTRL SHIFT ENTER.

### Functions

Let's say we want to see if

$$ax^2 + bx + c = 0$$

has real roots or not.

```
no_roots <- function(a, b, c){
  # Boolean of whether or not discriminant is negative
  b**2 - 4*a*c < 0
```

```
  # return not needed
}
```

### Conditionals

```
exam_grade <- 94

# C-like syntax

if(exam_grade >= 95){
  cat("Yay")
}else if(exam_grade >= 94){
  cat("OK")
}else{
  cat("Drop out")
}
```

```
## OK
```