



# WELCOME TO CLASS!

**Introduction to Statistics**

# Modern Statistics

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Learning about data by applying statistical techniques.

## **1. Exploration**

- Identifying patterns in data
- Uses visualizations

## **2. Prediction**

- Making informed guesses about unobserved data

## **3. Inference**

- Using data to draw reliable conclusions about the world
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# Why data and programming?

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## **1. Data**

- Ubiquitous
- Need to make sense of it

## **2. Applicable skills**

- Programming is great and flexible tool
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# Course Structure

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## **1. Lecture**

- In person (60 mins)
- Lab Q&A (15 mins)
- Quiz (15 mins)

## **2. Assignments**

- 27.5% - Labs (Programming)
  - 27.5% - Homeworks (Programming)
  - 15% - Quizzes
  - 30% - Final and Midterm
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# Course Structure

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## **3. Course Site**

- <https://jhb10c.github.io/dsites/fall2021/fall2021.html>
- Link will Posted on D2l

## **4. Textbook**

- <https://ipydatatbook.github.io/chapters/intro.html>
  - Free open source text by Ani Adhikari and John DeNero
  - Link will Posted on D2l
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# Taking Notes

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## **1. Microsoft Office**

- Type keywords from slide show.
- Read book to fill in key words and knowledge gaps.

## **2. Online Notebook**

- Programming portion of class has notebooks online
  - Saves your work to the cloud
  - Take notes and use code and apply to lab and homeworks
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# Assignment Structure

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Book  
Topics



Lecture  
Notebooks



Labs/HWs

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# Course Content

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## Chapters 1-8

- 1. Data Exploration
  - 2. Visualizing Data
  - 3. Cleaning Data
  - 4. Introduction to Python
- (6 weeks)

## Chapters 9-12

- 1. Predictions
  - 2. Test Hypothesis
  - 3. Confidence
  - 4. Randomness
- (5 weeks)

## Chapters 13-15

- 1. Predictions II
  - 2. Mean, Median
  - 3. Linear Regression
  - 4. Least Squares Regression
- (4 weeks)



# Getting Help

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## **1. Office Hours**

- MWF 8-10 AM
- Office NOC 216B?

## **2. Class Discord**

- Ask questions on Labs and Homeworks/anything else
  - Set up your own private chats and discuss remotely
  - Labs and Homeworks you may work with 1 partner
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# Collaboration

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**Asking questions is greatly encouraged!**

## **1. Homeworks and Labs**

- Discuss these assignments with each other!
- Turn in own copy!

**Copying solutions is never permitted!**

Programming is large portion and will show up on Tests.

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# First Day Worksheet

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**Go to <https://ipydatasci.github.io/spring2021/spring2021.html> and click on “First Day Worksheet”.**

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