

# IDC 5100: Introduction to Data Science Bootcamp

Fall 2023

## Meeting Times

Zoom (<https://smithsonian.zoom.us/j/88554585522?pwd=OGdleWRvQUcxbS9mMGlzdXRrM0JCZz09>):

Tuesday (8/22) and Wednesday (8/23): 10:00am - 11:30am, 1:45pm - 3pm, 3:30pm - 4:30pm

Thursday (8/24): 10:00am - 11:45am, 2:00pm - 3:15pm, 3:30pm - 4:30pm

LBR 209:

Friday (8/25): 10:00am - 11:45am, 1:15pm - 2:15pm, 2:30pm - 3:30pm

## Instructor

Name:

Joshua Ingram

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Office:

<https://smithsonian.zoom.us/j/88554585522?pwd=OGdleWRvQUcxbS9mMGlzdXRrM0JCZz09>

Office Hours:

Tuesday (8/22), Wednesday (8/23), Thursday (8/24): 12:30pm - 1:30pm

## Course Description

The purpose of this course is to provide incoming students in the New College of Florida Master's in Applied Data Science program with an overview of the field of data science, as well as a review of the mathematical and programming foundation necessary to succeed in the program. The course will begin with an exploration of the current state of the field of data science. Students will then learn about the use of the command line interface, virtual environments, and version control, followed by an introduction to the basics of Python. The remainder of the course will focus on covering important topics in calculus, linear algebra, and probability with applied examples relevant to data science. The course will conclude with a group mini-project to expose students to the process of solving problems in data science as a team.

By the end of this course a successful student should be able to:

- Understand the current state of data science
- Navigate the command line interface, create and manage virtual environments, and use Git for version control
- Create basic programs in Python and be familiar with important Python packages
- Apply mathematical concepts in calculus, linear algebra, and probability to problems encountered in data science
- Understand basic data science project workflows

## Course Outline

Module
Module 1 - The Field of Data Science
Module 2 - Navigating the Command Line, Virtual Environments, and Version Control
Module 3 - Basics of Python and Good Programming Practices
Module 4 - Review of Calculus
Module 5 - The Data Science Workflow
Module 6 - Review of Linear Algebra
Module 7 - Data Wrangling and Visualization with Python
Module 8 - Machine Learning with Python
Module 9 - Effective Project and Team Structures

## Assignments and Due dates

Assignment 1 - Survey and Software Installation: Due Tuesday (8/22) at 10am  
Assignment 2 - Python Basics and Version Control: Due Wednesday (8/23) at 10am  
Assignment 3 - Mathematics Problem Set 1: Due Thursday (8/24) at 10am  
Assignment 4 - Mathematics Problem Set 2: Due Friday (8/24) at 10am  
Assignment 5 - Group Mini-Project: Due Friday (8/24) at 6pm

## Grading Policy

This is a pass/fail course, with a pass being designated as “Satisfactory” and a fail being designated as “Unsatisfactory”. Students will be evaluated based on their attendance, participation, and performance on 5 assignments throughout the week. Assignments will be turned in via the Canvas course page. Late work will not be accepted.

## Disability Services and Accommodations

If you are a student in need of academic accommodations due to a documented disability, please consult with the Student Disability Services office to make arrangements for appropriate accommodations.