

Intermediate Data Science – Fall 2025				
DATE	WEEK	DAY	Lecture Topic	Book Chapters
09/03/25	1	Wednesday	Install computer packages - GIT - Python - Review Python Programming	Python for Data Analysis – chapter 2.3 and chapter 3
09/05/25	1	Friday	<i>Review of DATA 101</i> <i>Make sure your computer is working!</i>	
09/08/25	2	Monday	Start – Advanced Data Analysis in Python Advanced topics in pandas: descriptive statistics and essential functions.	Python for Data Analysis – chapter 5
09/10/25	2	Wednesday	Data Loading and Storage: JSON data, Piecewise text files, and other delimited formats Being a responsible data steward.	Python for Data Analysis – chapter 6
09/12/25	2	Friday		
09/15/25	3	Monday	Data Cleaning and Preparation: missing data, transformations, string manipulation, categorical data.	Python for Data Analysis – chapter 7
09/17/25	3	Wednesday	Data Wrangling: Join, Combine and Reshape	Python for Data Analysis – chapter 8
09/19/25	3	Friday		

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			Data Visualizations: Plotly, Matplotlib, Pandas, and Seaborn	
09/22/25	4	Monday	Avoiding misrepresentation	Python for Data Analysis – chapter 9
09/24/25	4	Wednesday	Data Aggregation and Group Operations.	Python for Data Analysis – chapter 10
09/26/25	4	Friday		
09/29/25	5	Monday	Time Series Data: Timestamps, periods, resampling and frequency conversion.	Python for Data Analysis – chapter 11
10/01/25	5	Wednesday	Advanced Web Scraping Techniques The ethical scraper	Reading assigned on Canvas
10/03/25	5	Friday	<i>Advanced Web Scraping Techniques</i>	
10/06/25	6	Monday	Putting it all together: Data Science/Analysis Project	Focus on writing and presentation
10/08/25	6	Wednesday	Ethics in Data Acquisition Analysis	Reading assigned on Canvas
10/10/25	6	Friday	<i>Exam 1 – Data Analysis in Python</i>	<i>Exam 1</i>
10/13/25	7	Monday	STUDY DAY	
10/15/25	7	Wednesday	Start – Modeling and Machine Learning Classifying Iris Species – your first model	Introduction to Machine Learning with Python – chapter 1.7
10/17/25	7	Friday		

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10/20/25	8	Monday	Review of Linear and Logistic Regression Generalizations, Overfitting, and Underfitting	Introduction to Machine Learning with Python – Chapter 2.1 – 2.2
10/22/25	8	Wednesday	Supervised Learning – kNearest Neighbors and Linear Models	Introduction to Machine Learning with Python – Chapter 2.3.1 – 2.3.3
10/24/25	8	Friday		
10/27/25	9	Monday	Supervised Learning – Naive Bayes Classifiers	Introduction to Machine Learning with Python – chapter 2.3.4
10/29/25	9	Wednesday	Supervised Learning – Decision Trees	Introduction to Machine Learning with Python – chapter 2.3.5
10/31/25	9	Friday		
11/03/25	10	Monday	Supervised Learning – Support Vector Machines and Linear Discriminant Analysis	Introduction to Machine Learning with Python – chapter 2.3.7
11/05/25	10	Wednesday	Unsupervised Learning – Preprocessing and Scaling	Introduction to Machine Learning with Python – chapter 3.1 – 3.3
11/07/25	10	Friday		

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11/10/25	11	Monday	Unsupervised Learning – PCA Which features (variables) matter?	Introduction to Machine Learning with Python – chapter 3.4.1
11/12/25	11	Wednesday	Unsupervised Learning – kMeans Clustering	Introduction to Machine Learning with Python – chapter 3.5.1
11/14/25	11	Friday	<i>Exam 2 – Modeling and Machine Learning</i>	<i>Exam 2</i>
11/17/25	12	Monday	Start – Model Evaluation and Advanced Methods Cross-Validation	Introduction to Machine Learning with Python – chapter 5.1
11/19/25	12	Wednesday	Grid Search and Overfitting	Introduction to Machine Learning with Python – chapter 5.2
11/21/25	12	Friday		
11/24/25	13	Monday	Evaluation Metrics	Introduction to Machine Learning with Python – chapter 5.2
11/26/25	13	Wednesday	THANKSGIVING	
11/28/25	13	Friday		
12/01/25	14	Monday	Putting it all together: The Data Science Lifecycle – Data Gathering – Analysis – Modeling – Evaluation – Presentation	Reading assigned on Canvas
12/03/25	14	Wednesday	Final Project Working Day	Focus on analysis and code
12/05/25	14	Friday		
12/08/25	15	Monday	Final Project Working Day	Focus on writing and presentation
Final Exam Week	15	12/12/2025 Noon	During our final exam period each group will present their results.	

Final Project Info – Career Building – Other Announcements
Weekly Career Building – Read Build a Career in Data Science 1.1 What is Data Science
Weekly Career Building – Read Build a Career in Data Science 1.2 Different Types of Data Science Jobs
Weekly Career Building – Read Build a Career in Data Science 1.3 Choosing your Path

Weekly Career Building – Read Build a Career in Data Science 2.1 Data Science Companies – Massive Tech
Weekly Career Building – Read Build a Career in Data Science 2.2 Data Science Companies – Established Retailers
<i>Get some initial data for your final project. Start the data preparation process.</i>
Weekly Career Building – Read Build a Career in Data Science 2.3 and 2.4 Data Science Companies - Startups
Weekly Career Building – Read Build a Career in Data Science 2.5 Data Science Companies – Giant Government Contractors

Weekly Career Building – Do a job search. What kind of data jobs are there in your area of interest?
Final project proposals due
Weekly Career Building – Read Build a Career in Data Science 4.1 and 4.3 Building a portfolio – Create a project and Working on example projects
Weekly Career Building – Read Build a Career in Data Science 5.1 and 5.2 Identifying the right job for you.
Don't forget to sign up for Spring Classes:
DATA 211 – Introduction to Databases and Data Management

Weekly Career Building – Read Build a Career in Data Science 6.1 and 6.2 The application – Resume and Cover Letter basics
Final Project EDA and Modeling Proposals due
Weekly Career Building – Write a draft of your Resume and a cover letter for an example job.
Weekly Career Building – Read Build a Career in Data Science 6.3 The application – Tailoring your application
Weekly Career Building – Read Build a Career in Data Science 7+ The interview – what to expect and how to handle it.
Final projects are due 12/14/24 11:59pm