Assumptions

- **Daily Commitment**: Up to 4 hours, 5 days a week (Monday to Friday), totaling ~20 hours weekly.
- **Total Duration**: The 31-hour course, plus exercises and review, will take ~60-70 hours. I'll spread this over 12 weeks (60 hours core + buffer for review/projects).
- **Learning Style**: Includes video watching (~1.5-2 hours/session), note-taking, exercises, and periodic review.
- **Tools**: You'll need a computer with Anaconda installed (per course requirements) and Microsoft Excel for some sections.
- **Goal**: Master the material step-by-step, building a strong foundation for data science.

Study Plan Overview

- **Weeks 1-2**: Foundations (Data Science Intro, Mathematics)
- **Weeks 3-4**: Statistics and Probability
- **Weeks 5-6**: Python for Data Science
- **Weeks 7-8**: Advanced Statistics and Tableau
- **Weeks 9-10**: Machine Learning
- **Weeks 11-12**: Deep Learning and Capstone/Review
- **Daily Structure**:
    - **1.5-2 hours**: Watch videos (1x speed for clarity, pause for notes).
    - **1-1.5 hours**: Complete exercises, quizzes, or coding practice.
    - **0.5 hour**: Review notes, summarize key concepts, or revisit tough topics.
- **Weekly Review**: Every Friday, dedicate ~1 hour to revisiting weak areas or practicing coding.

Detailed Study Plan

Week 1: Introduction and Mathematics I

- **Goal**: Understand data science basics and start linear algebra/calculus.
- **Daily Plan (4 hours/day, Mon-Fri)**:
    - **Mon**: Intro to Data Science (Sections 1-2, ~1 hour video). Explore course resources. Install Anaconda (0.5 hour). Practice Excel basics (1.5 hours).
    - **Tue**: Mathematics - Linear Algebra Part 1 (Section 3, ~1.5 hours video). Solve practice problems (1.5 hours). Review vector concepts (1 hour).
    - **Wed**: Linear Algebra Part 2 (Section 4, ~1.5 hours). Practice matrix operations (1.5 hours). Summarize key formulas (1 hour).

    - **Thu**: Calculus Part 1 (Section 5, ~1.5 hours). Work on derivatives exercises (1.5 hours). Note applications to ML (1 hour).
    - **Fri**: Calculus Part 2 (Section 6, ~1 hour). Practice integrals (1.5 hours). Review Week 1 notes, identify gaps (1.5 hours).
- **Total**: ~10 sections, ~7 hours video, 13 hours practice/review.

Week 2: Mathematics II

- **Goal**: Complete math foundations, prepare for statistics.
- **Daily Plan**:
    - **Mon**: Advanced Linear Algebra (Section 7, ~1.5 hours). Practice eigenvalues/vectors (1.5 hours). Review notes (1 hour).
    - **Tue**: Calculus for ML (Section 8, ~1.5 hours). Solve optimization problems (1.5 hours). Summarize calculus (1 hour).
    - **Wed**: Probability Intro (Section 9, ~1 hour). Work on basic probability (1.5 hours). Review linear algebra (1.5 hours).
    - **Thu**: Combinatorics (Section 10, ~1 hour). Practice permutations/combinations (1.5 hours). Note real-world applications (1.5 hours).
    - **Fri**: Math wrap-up (Sections 11-12, ~1 hour). Mixed practice problems (1.5 hours). Week 2 review, focus on weak areas (1.5 hours).
- **Total**: ~10 sections, ~6.5 hours video, 13.5 hours practice/review.

Week 3: Statistics I

- **Goal**: Master descriptive statistics and probability distributions.
- **Daily Plan**:
    - **Mon**: Descriptive Statistics (Sections 13-14, ~1.5 hours). Calculate mean/median/variance (1.5 hours). Review concepts (1 hour).
    - **Tue**: Probability Distributions (Section 15, ~1.5 hours). Practice normal distribution (1.5 hours). Summarize (1 hour).
    - **Wed**: More Distributions (Section 16, ~1 hour). Solve distribution problems (1.5 hours). Review probability (1.5 hours).
    - **Thu**: Statistical Significance (Section 17, ~1 hour). Practice p-values (1.5 hours). Note applications (1.5 hours).
    - **Fri**: Hypothesis Testing Intro (Section 18, ~1 hour). Exercises on t-tests (1.5 hours). Week 3 review (1.5 hours).
- **Total**: ~8 sections, ~6 hours video, 14 hours practice/review.

Week 4: Statistics II

- **Goal**: Complete statistics, including inferential methods.
- **Daily Plan**:
    - **Mon**: Hypothesis Testing Advanced (Section 19, ~1.5 hours). Practice ANOVA (1.5 hours). Review distributions (1 hour).
    - **Tue**: Confidence Intervals (Section 20, ~1 hour). Solve problems (1.5 hours). Summarize testing (1.5 hours).
    - **Wed**: Correlation/Regression Intro (Section 21, ~1 hour). Practice correlation (1.5 hours). Review hypothesis testing (1.5 hours).
    - **Thu**: Regression Analysis (Section 22, ~1.5 hours). Exercises on linear regression (1.5 hours). Note pitfalls (1 hour).
    - **Fri**: Statistics Wrap-up (Section 23, ~1 hour). Mixed practice (1.5 hours). Week 4 review (1.5 hours).
- **Total**: ~8 sections, ~6 hours video, 14 hours practice/review.

Week 5: Python I

- **Goal**: Learn Python basics and data manipulation.
- **Daily Plan**:
    - **Mon**: Python Intro (Sections 24-25, ~1.5 hours). Install libraries, write first script (1.5 hours). Review syntax (1 hour).
    - **Tue**: Python Data Types (Section 26, ~1 hour). Practice lists/dictionaries (1.5 hours). Summarize basics (1.5 hours).
    - **Wed**: Control Structures (Section 27, ~1 hour). Code loops/conditionals (1.5 hours). Review data types (1.5 hours).
    - **Thu**: Functions (Section 28, ~1 hour). Write custom functions (1.5 hours). Note best practices (1.5 hours).
    - **Fri**: NumPy Intro (Section 29, ~1 hour). Practice arrays (1.5 hours). Week 5 review, debug code (1.5 hours).
- **Total**: ~8 sections, ~5.5 hours video, 14.5 hours practice/review.

Week 6: Python II

- **Goal**: Master Pandas and visualization.
- **Daily Plan**:
    - **Mon**: Pandas Intro (Section 30, ~1.5 hours). Load/process datasets (1.5 hours). Review NumPy (1 hour).

    - **Tue**: Pandas Advanced (Section 31, ~1 hour). Practice joins/groupby (1.5 hours). Summarize Pandas (1.5 hours).
    - **Wed**: Matplotlib (Section 32, ~1 hour). Create plots (1.5 hours). Review data cleaning (1.5 hours).
    - **Thu**: Seaborn (Section 33, ~1 hour). Build visualizations (1.5 hours). Note plot types (1.5 hours).
    - **Fri**: Python Wrap-up (Section 34, ~1 hour). Mixed coding practice (1.5 hours). Week 6 review (1.5 hours).
- **Total**: ~8 sections, ~5.5 hours video, 14.5 hours practice/review.

Week 7: Advanced Statistics

- **Goal**: Learn regressions, clustering, and factor analysis.
- **Daily Plan**:
    - **Mon**: Advanced Regression (Section 35, ~1.5 hours). Practice logistic regression (1.5 hours). Review linear regression (1 hour).
    - **Tue**: Clustering Intro (Section 36, ~1 hour). Run k-means (1.5 hours). Summarize regression (1.5 hours).
    - **Wed**: Clustering Advanced (Section 37, ~1 hour). Practice hierarchical clustering (1.5 hours). Review clustering (1.5 hours).
    - **Thu**: Factor Analysis (Section 38, ~1 hour). Exercises on PCA (1.5 hours). Note applications (1.5 hours).
    - **Fri**: Stats Wrap-up (Section 39, ~1 hour). Mixed practice (1.5 hours). Week 7 review (1.5 hours).
- **Total**: ~7 sections, ~5.5 hours video, 14.5 hours practice/review.

Week 8: Tableau

- **Goal**: Master data visualization with Tableau.
- **Daily Plan**:
    - **Mon**: Tableau Intro (Section 40, ~1.5 hours). Install Tableau, build first dashboard (1.5 hours). Review stats (1 hour).
    - **Tue**: Tableau Charts (Section 41, ~1 hour). Create bar/line plots (1.5 hours). Summarize Tableau (1.5 hours).
    - **Wed**: Tableau Advanced (Section 42, ~1 hour). Build interactive visuals (1.5 hours). Review charts (1.5 hours).

    - **Thu**: Tableau Dashboards (Section 43, ~1 hour). Design dashboard (1.5 hours). Note best practices (1.5 hours).
    - **Fri**: Tableau Wrap-up (Section 44, ~1 hour). Practice project (1.5 hours). Week 8 review (1.5 hours).
- **Total**: ~7 sections, ~5.5 hours video, 14.5 hours practice/review.

Week 9: Machine Learning I

- **Goal**: Understand ML basics and supervised learning.
- **Daily Plan**:
    - **Mon**: ML Intro (Sections 45-46, ~1.5 hours). Explore datasets (1.5 hours). Review Tableau (1 hour).
    - **Tue**: Linear Regression in ML (Section 47, ~1 hour). Code regression model (1.5 hours). Summarize ML (1.5 hours).
    - **Wed**: Logistic Regression (Section 48, ~1 hour). Practice classification (1.5 hours). Review regression (1.5 hours).
    - **Thu**: Decision Trees (Section 49, ~1 hour). Build tree model (1.5 hours). Note overfitting (1.5 hours).
    - **Fri**: Random Forests (Section 50, ~1 hour). Code ensemble model (1.5 hours). Week 9 review (1.5 hours).
- **Total**: ~8 sections, ~5.5 hours video, 14.5 hours practice/review.

Week 10: Machine Learning II

- **Goal**: Master unsupervised learning and evaluation.
- **Daily Plan**:
    - **Mon**: Clustering in ML (Section 51, ~1 hour). Run k-means in Python (1.5 hours). Review supervised ML (1.5 hours).
    - **Tue**: Model Evaluation (Section 52, ~1 hour). Practice metrics (1.5 hours). Summarize clustering (1.5 hours).
    - **Wed**: Hyperparameter Tuning (Section 53, ~1 hour). Optimize models (1.5 hours). Review evaluation (1.5 hours).
    - **Thu**: Support Vector Machines (Section 54, ~1 hour). Code SVM (1.5 hours). Note applications (1.5 hours).
    - **Fri**: ML Wrap-up (Section 55, ~1 hour). Mixed practice (1.5 hours). Week 10 review (1.5 hours).
- **Total**: ~7 sections, ~5 hours video, 15 hours practice/review.

Week 11: Deep Learning

- **Goal**: Learn neural networks and TensorFlow.
- **Daily Plan**:
    - **Mon**: DL Intro (Sections 56-57, ~1.5 hours). Explore TensorFlow (1.5 hours). Review ML (1 hour).
    - **Tue**: Neural Networks (Section 58, ~1 hour). Build simple NN (1.5 hours). Summarize DL (1.5 hours).
    - **Wed**: CNNs (Section 59, ~1 hour). Code image classifier (1.5 hours). Review NNs (1.5 hours).
    - **Thu**: RNNs (Section 60, ~1 hour). Practice time-series model (1.5 hours). Note DL pitfalls (1.5 hours).
    - **Fri**: DL Advanced (Section 61, ~1 hour). Optimize models (1.5 hours). Week 11 review (1.5 hours).
- **Total**: ~8 sections, ~5.5 hours video, 14.5 hours practice/review.

Week 12: Capstone and Review

- **Goal**: Complete course, apply skills, and prepare portfolio.
- **Daily Plan**:
    - **Mon**: Capstone Project Intro (Section 62, ~1 hour). Start project (2 hours). Review DL (1 hour).
    - **Tue**: Capstone Work (Section 63, ~1 hour). Continue project (2 hours). Summarize course (1 hour).
    - **Wed**: Capstone Completion (Section 64, ~1 hour). Finalize project (2 hours). Review weak areas (1 hour).
    - **Thu**: Course Wrap-up (Section 65, ~1 hour). Polish portfolio (2 hours). Practice coding (1 hour).
    - **Fri**: Full Course Review. Revisit tough sections (2 hours). Mock interview questions (2 hours).
- **Total**: ~5 sections, ~5 hours video, 15 hours project/review.

Tips for Success

- **Environment**: Study in a quiet space with minimal distractions. Keep Anaconda and Python updated.
- **Practice**: Code daily, even small scripts, to reinforce Python skills. Use course datasets for extra practice.

- **Community**: Join the course's Q&A or forums like Reddit (r/datascience) for support.
- **Breaks**: Take 5-10 minute breaks every hour to stay focused.
- **Track Progress**: Check off completed sections in Udemy's interface to stay motivated.
- **Portfolio**: Save your capstone project and key exercises to showcase on GitHub or LinkedIn.
- **Adjust Pace**: If a topic is tough (e.g., calculus or deep learning), slow down and revisit earlier videos.

Flexibility

- **Missed Days**: Catch up on weekends with 2-3 hour sessions, but avoid burnout.
- **Faster Pace**: If comfortable, combine lighter sections (e.g., Tableau intro + charts) to finish early.
- **Struggles**: Pause videos to research concepts (e.g., Khan Academy for math, StatQuest for stats).

This plan covers the entire course in ~12 weeks, with ~240 hours total (60% practice/review). By Week 12, you'll have a solid grasp of data science, a completed capstone, and confidence to pursue projects or jobs. If you need specific tweaks (e.g., shorter weeks, focus on Python), let me know