

## Fruto Academy R Development Course Syllabus

### Course Overview:

Welcome to the Fruto Academy R Development Course! This comprehensive program will provide you with the skills and knowledge needed to become a proficient R developer. Throughout this course, you'll learn the fundamentals of R programming, data analysis, and statistical modeling.

Course Duration: 12 weeks

### Week 1-2: Introduction to R Programming

- Understanding programming concepts and paradigms
- Introduction to the R programming language
- Setting up R environment and IDE

### Week 3-4: R Basics

- Variables, data types, and basic operators
- Control structures: conditionals and loops
- Functions and user-defined functions
- Handling data structures in R

### Week 5-6: Data Manipulation with dplyr

- Introduction to the dplyr package
- Filtering, selecting, arranging, and summarizing data
- Chaining operations for data transformation

### Week 7-8: Data Visualization with ggplot2

- Introduction to the ggplot2 package
- Creating basic and advanced visualizations
- Customizing plots and adding themes

### Week 9-10: Statistical Analysis with R

- Introduction to statistical concepts in R
- Descriptive statistics and exploratory data analysis
- Hypothesis testing and t-tests
- Linear regression and correlation analysis

### Week 11: R Markdown and Reporting

- Creating dynamic documents using R Markdown
- Integrating code, text, and visualizations
- Exporting documents to various formats (PDF, HTML, etc.)

### Week 12: Final Project and Data Analysis

- Applying R skills to a real-world project

- Performing data analysis on a provided dataset
- Final project: Analyze and visualize data using R

Assessment and Certification:

- Weekly coding assignments: 40%
- Midterm project (R data analysis project): 20%
- Final project: 30%
- Participation and quizzes: 10%

Recommended Resources:

- "R for Data Science" by Hadley Wickham and Garrett Grolemund
- "Introduction to Data Science" by Rafael A. Irizarry
- Online tutorials and documentation for R and relevant packages

Note: This syllabus is subject to adjustment based on instructor discretion and the evolving landscape of R development.

For inquiries, contact us at [info@frutoacademy.com](mailto:info@frutoacademy.com) or visit [www.frutoacademy.com](http://www.frutoacademy.com).