

Justification for Python Programming II

The BS in Data Science curriculum at Florida International University (FIU) seeks to provide students with a comprehensive understanding of data-driven methodologies and tools. As such, the inclusion of "Python Programming II" is a strategic imperative to ensure that students are well-prepared in advanced programming paradigms, especially given Python's prominence in the data science domain. This course builds upon foundational Python concepts, focusing on features and utilities of the object-oriented programming, database manipulation, and data visualization. Its emphasis on object-oriented principles and Python's vast ecosystem ensures that students are adept at designing scalable, maintainable, and efficient software solutions. Moreover, with a focus on critical libraries like pandas and matplotlib, students will be able to manage, process, and visualize large datasets effectively. As data scientists often are faced with complex challenges, the course's introduction to advanced programming constructs, recursion, and the differences between data structures and algorithm design is invaluable. Ensuring students grasp these advanced Pythonic solutions aligns perfectly with FIU's commitment to producing data scientists who are not just proficient in data analysis but are also effective programmers capable of developing software tools for a variety of real-world data challenges.