DATA SCIENCE - ASSOCIATE IN SCIENCE DEGREE, CERTIFICATE OF ACHIEVEMENT

Top Code:

0702.00
The Data Science program is designed to provide practical literacy of the computational, statistical, and empirical methods and tools used by data scientists at all levels. The program addresses key areas of knowledge in data science, including data development and management; machine learning and natural language processing; statistical analysis and data visualization. Students will utilize computing technologies for big data applications.

This program is intended for both students and working adults who want to learn more about data science. Students who complete the data science program will be ready to model, synthesize, and apply computational and statistical techniques to interpret a variety of datasets. The emphasis of the courses will be on writing code, using libraries, and scripts and analytical methods and applying the knowledge and skills to create workflows that facilitate the process of data collection, transformation, analysis, visualization, and interpretation.

The Data Science program will be useful for a range of professionals in many fields, including computer and information technology, business management, financial operations, law, architecture and construction, engineering, health and medicine, and the environmental, life, physical, and social sciences.

A Certificate of Achievement will be awarded upon successful completion of all required courses with a grade of C or better.

Program Outcomes

- Use the theory of demand and supply to explain market equilibrium and the effects of government interventions.
- Demonstrate the theory of consumer behavior to derive the demand curve.
- Identify, analyze and evaluate fiscal and monetary theory and policy.
- Identify the various market structures; demonstrate the firm's decisions under different market structures; evaluate the effects of government intervention.
- Apply the theory of comparative advantage to evaluate gains from international trade and effects of government intervention.

Code	Title	Units
CORE COURSES		
CS 031	INTRODUCTION TO DATA SCIENCE	4
CIS 031	INTRODUCTION TO DATABASE MANAGEMENT SYSTEMS	3
STATISTICS		
STAT 015	STATISTICS FOR BUSINESS AND ECONOMICS	4
or STAT 018	STATISTICS FOR BEHAVIORAL AND SOCIAL SCIENCES	
or STAT 050	ELEMENTARY STATISTICS	
or STAT 050H	HONORS ELEMENTARY STATISTICS	
PROGRAMMING		
CS 003B	FUNDAMENTALS OF COMPUTER SCIENCE (JAVA)	4
or CS 003C	FUNDAMENTALS OF COMPUTER SCIENCE (PYTHON)	
or CS 002	FUNDAMENTALS OF COMPUTER SCIENCE I	
ADVANCED PROGRAMMING		
CS 033	ADVANCED JAVA PROGRAMMING AND ALGORITHM WITH DATA STRUCTURES	3
or CS 034	ADVANCED PYTHON PROGRAMMING AND BASIC DATA STRUCTURES	
Total Units		**18**

Recommended Preparation

Code	Title	Units
CS 137	R PROGRAMMING FOR DATA SCIENCE	2

General Education Requirements for the Associate in Science Degree

- General Information (https://curriculum.pasadena.edu/academic-programs-leading-degree-certificate/)
- PCC Local Gen Ed (https://curriculum.pasadena.edu/academic-programs-leading-degree-certificate/#pcclocaltext)
- CSU Breadth (https://curriculum.pasadena.edu/academic-programs-leading-degree-certificate/#csubreadthtext)
- IGETC (https://curriculum.pasadena.edu/academic-programs-leading-degree-certificate/#igetctext)