Content

Course Code	Course Name	Semester	Theory	Practice	Lab	Credit	ECTS
ECON151	Programming with Python	1	0	0	3	3	3

Prerequisites	
Admission Requirements	

Language of Instruction	Turkish
Course Type	Compulsory
Course Level	Bachelor Degree
Objective	The objective of this course is to teach Economics students the fundamental concepts of programming and to help them acquire computational thinking and data processing skills tailored to the requirements of the digital age. While developing their computational thinking skills through algorithms and flowcharts, students will have the opportunity to experience the software development process using the Python programming language. In addition to basic data structures such as data types, lists, tuples, sets, and dictionaries, their problem-solving abilities will be enhanced through decision structures, loops, and functions.

Content	Introduction to Programming and Basic Concepts * Computational thinking * What is an algorithm and how is it designed? * Flowcharts * Software development process * General overview of programming languages Introduction to the Python Programming Language * What is Python? * Compiler and interpreter concepts * IDE usage and installation * Introduction to the Python interface Data Types and Basic Structures * Numerical data: Integers, Floats * Text data: Strings * Logical data: Booleans * Variable definition and usage * Operators: mathematical, comparison, logical Decision Structures, Loops, and Error Handling * If, else, and elif structures * Nested decision structures * While and for loops * Using break and continue in loops * Range and enumerate functions * Types of errors * Error handling blocks (Try-Except) Functions * Parameterized and parameterless functions * Return statement * Lambda expressions * Recursive functions Data Structures * Lists * Tuples * Sets * Dictionaries Python Standard Libraries * Math module * Random module * Datetime and Time modules File Operations * File creation, writing, and reading * File updating and control functions
References	Course materials for each week will be uploaded to the Moodle course page under the corresponding week. The following resources may be used as supplementary materials (optional) to the primary course resources: Yıldız, B. Python Projeleri ve Popüler Kütüphaneler (3. Baskı) Tungut, H. B. Algoritma ve Programlama Mantığı (23. Baskı) Taşçı, V. Python Eğitim Kitabı (4. Baskı) Kalb, I. Learn to Program with Python 3. Sweigart, Al. The Big Book of Small Python Projects: 81 Easy Practice Programs Matthes, Eric. Python Crash Course, 3rd Edition: A Hands-On, Project-Based Introduction to Programming. Tuckfield, Bradford. Dive into Algorithms: A Pythonic Adventure for the Intrepid Beginner.

Theory Topics

Week	Weekly Contents
1	Introduction to Programming: Algorithms and Flowcharts
2	Introduction to Python

Week	Weekly Contents
3	Decision Structures
4	Loops
5	Error Handling
6	String (str) Data Type
7	List (list) Data Type
8	Tuple (tuple) Data Type
9	Set (set) Data Type
10	Dictionary (dict) Data Type
11	File Operations
12	Python Standard Libraries
13	Python Libraries
14	Python Libraries