Rutgers University
Finance and Economics Department
Spring 2020
Special Topic Object Oriented Programming II (22:839:615:30)

Instructor:	Dr. John Jenq		
Time:	Friday	9:00am – 11:50pm	Rm 226
Recitation	Thursday	9:00am – 12:00pm	Rm 303
Final Exam:	May 1, 2020 @9am		

Suggest Reference Books:

The Practice of Computing Using Python, 3/E, William F. Punch and Richard Enbody, ISBN 978-0-13-437976-0, Pearson
Introduction to Programming using Python, Daniel Liang, ISBN 978-0-13-274718-9, Pearson
Intro to Python for Computer Science and Data Science: Learning to Program with AI, Big Data and The Cloud, By Paul J. Deitel, Harvey Deitel, Harvey M. Deitel, Pearson
Data Structures and Algorithms in Python, Michael Goodrich, Roberto Tamassia, and Michael Goldwasser, Wiley

Course Outline:

1. IDE for python, Python types,
2. Python operators and built in functions
3. Python string
4. Python control structures
5. Python Functions
6. Python List
7. Python Tuple
8. Python Dictionary
9. Python Sets
10. Python Files
11. Python Exceptions
12. Python Classes, constructors, encapsulation, visibility
13. Python Inheritance
14. Python Polymorphism
15. Scoping rules
16. GUI
17. Brief introduction of web site design and development
18. HTML 5
19. CSS
20. Introduction of structured query language (SQL)
21. Create databases and tables of relational databases
22. Manipulation and retrieve data on relational database tables
23. Brief introduction of open source database system: MySql
24. Python web technologies
25. Software design and analysis
26. Efficiencies and correctness of programs
27. Data structures of stacks, queues, and deque
28. Linked lists
29. Trees: binary trees, tree traversals.
30. Maps, hash tables
31. Search trees: binary search tree, AVL tree. B tree
32. Sorting: quick sort, merge sort, selection sort
33. Graph algorithms

Evaluation

Homework	30%	
Midterm Exams	30%	Two midterm exams, each 15%
Project	10%	
Practice	5%	
Final Exam	25%	

Grades

A >92, A- 90-92, B+ 86-89, B 83-85, B- 80-82, C+ 76-79, C 73-75, C- 70-72, D+ 66-69 D 60-65, F<60