DATA STRUCTURES & ALGORITHM DESIGN
21:198:335 (3 credits)

COURSE DESCRIPTION:
To explore Data Structures their needs and types, Algorithm Analysis, Lists, Stacks, Queues, Binary Trees, Non-Binary Trees, Sorting, Searching, Indexing, Graphs, Analyze the theory of Algorithms.

PREREQUISITE:
21:198:102 (Computers & Programming II)

TEXTBOOK:
“Data Structures & Algorithm Analysis in Java” (3rd edition) by Clifford A. Shaffer, published by Dover.

DEPARTMENT WEB SITE:  http://www.ncas.rutgers.edu/math

THIS COURSE COVERS THE FOLLOWING:

1. Data Structures & Algorithms
   1.1-1.2, 1.4
3. Algorithm Analysis
   3.1-3.6
4. Lists, Stacks, Queues
   4.1-4.3
5. Binary Trees
   5.1-5.6
6. Non-Binary Trees
   6.1, 6.3
7. Internal Sorting
   7.1-7.7
9. Searching
   9.1, 9.4
10. Indexing
   10.1, 10.4, 10.5
11. Graphs
   11.1-11.5
13. Advanced Tree Structures
   13.1, 13.2
14. Analysis Techniques
14.1, 14.3
16. Patterns of Algorithms
   16.1
17. Limits to Computation

Department of Mathematics & Computer Science
Smith Hall 216, 101 Warren Street, Newark, New Jersey
07102  Phone: (973) 353-1004  Fax: (973) 353-5270