



## **COMPUTER ORGANIZATION**

21:198:251 (3 credits)

### **COURSE DESCRIPTION:**

An introduction to computer system structure and organization. Topics include representation of information, circuit analysis and design, register-transfer level, processor architecture, and input/output.

### **PREREQUISITE:**

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

### **TEXTBOOK:**

“Logic & Computer Design Fundamentals with CD,” (5<sup>th</sup> edition), by Mano, published by Pearson.

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

### **THIS COURSE COVERS THE FOLLOWING:**

#### Chapter 1:

Representation of numbers - binary numbers, base conversions and operations

#### Chapter 2:

Logic – binary logic, Boolean algebra, simplification with Karnaugh maps

#### Chapter 3:

Combinational circuits – two-level realization of Boolean functions, binary adders, decoders, multiplexors

#### Chapters 5 & 7:

Circuits, registers and counters, and other selected topics

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