

**Instruction Set Design**

**Due: Wednesday, November 13, Start of Class**

**To Do**

Complete the following tasks by class time on the due date:

- Programming Model
  - Define the number and size of your general purpose registers.
  - Define any “special” or dedicated registers, including carry, overflow, or other bits as needed.
  - Define size and width of your instruction memory.
- Instruction Set
  - Implement the 16 instructions given in the project definition plus at least 4 more of your own choosing:
    - Define the classes of instructions.
    - For each class of instruction, define the instruction format including bit fields and lengths.

**Check Out**

Your processor needs to execute the following 3 programs by the final project due date:

- The multiply program found in the project definition.
- The rotate program found in the program definition.
- An implementation of Booth’s multiplication algorithm as demonstrated in class.

**To Turn In**

- This assignment sheet.
- A block diagram of your processor.
- The completed tasks listed above.