Computer Arithmetic - Spring 1999
Designing IEEE Compliant Floating Point Units

Dr. Guy Even

Dept. of Electrical Engineering – Systems

Tel–Aviv University

Wednesdays 16-18, Kitot 207

URL: http://www.eng.tau.ac.il/∼guy/arith99/arith_home.html

Topic

1. Fixed point arithmetic: Fast adders and fast multipliers (logarithmic delay), including parallel prefix adders, Booth Recoding, Wallace trees.

2. Floating point arithmetic: The IEEE 754 Standard, a general rounding unit, fast rounding for floating point multiplication, fast floating point addition algorithms, floating point division.

The goal of the course is to give the students the background required to do the Masters in this field.

Requirements

1. (20% of final grade) Submit a paper describing a lecture given by me. Paper must be printed. Style of writing must be scientific - which means that the students are required to fill gaps that were not covered in class. Paper must be submitted at most 10 days after the lecture is given. Students will be given one iteration for corrections. The paper must be submitted in postscript so that I can post in the course's web page.

2. (50% of final grade) Home work assignments (expect around 5 assignments).

3. (30% of final grade) Take-home exam.

Books

Parts of the material course appear in books and in articles. A list will be given in the Web page.