Tasks for this week:

Focus on individual blocks, with participation from student contributors. This week: Prototype construction, scale models, introduction to IC layout.

Another task this week, in conjunction with the syllabus and receiver block diagram, is to outline a midterm exercise. We’ll be doing this in 3 weeks.

Receiver Block Diagram including signal frequencies and amplitudes

Compare and Contrast the Superhet and IQ image-reject receiver architectures, including basic math

Filters 101

as always, the questions will be in a form you might see during an interview

Study Material with links on the class web page:

IEEE Paper “HF-VHF-UHF IQ Mixer with a Single SPDT Switch”
European Microwave Week Paper “Project-Based RF/Microwave Education”
MicroR1 Receiver Description
Instrumentation Receiver Description
Quartz Crystal basics
Commercial IC Example: Basic Radio IC
2Q4 all-pass prototype

Homework--First design sketches of your piece of the block. Schematic, layout, components, component availability, construction method, time

Midterm exam date:

In Class February 22. Closed book, no notes, no calculators. Note, this is a late exam, and covers all to the lecture material in the class. By the middle of February we will be working on our contributions to the class project.

Final class project. We will design and build individual contributions to the block diagram receiver. The final report will be a 4 page description, including design strategy, circuit details, measured results, and integration into the complete class project, with field testing. There will be as many blocks as students in the class, and they may be interconnected LEGO fashion into different receivers.