



Final Project



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Final Project



- This is the 'project' in 'project lab' and is YOUR design.
- Work in teams of two or three persons.
 - Help each other design and debug.
- Staff will support and help as much as possible.
 - Start now!
 - Get a partial check-off on Lab 3 if required to get on with your project.
 - TA to student mapping is not by recitation, but we determine this by information in your project abstracts.
- Use of computers
 - Use them to prepare data, etc. for your project, NOT as an integral part of your project. This is a hardware subject, not a programming subject.
 - If in doubt, discuss this AHEAD OF TIME with a TA or Prof. Troxel.
- Demonstrations last week of the term
- Add 6.905 by DROP date.
 - This makes 6.111 an 18-unit subject.
 - Projects do NOT have to be super complex to warrant adding 6.905.
 - But, you do have to be on time for the Block Diagram Conference.

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Procedures



- 1. Form project teams – two or three people to a team.**
If you want to work alone... Don't!
Teams really can get more done, more quickly.
Help each other by checking each other's wiring, vhdl code, etc.
Help each other by trying to figure out why a subsystem doesn't work – find bugs.
- 2. Decide what to build. Your project should do something.**
Implement some unique feature.
Be visually or aurally appealing.
Working projects will be video taped (at your option).
- 3. Write up proposal abstract.**
Convenient form is the last page of project info handout.
Turn in abstracts in lab by 1 PM Wednesday, OCT 29, 2003.
We will use this to map TAs to project teams.



More Procedures



- 4. Write the proposal itself.**
Description in words
Block diagram of major parts
Specifications: what will the project do?
Division of responsibilities among team members
- 5. Proposal conference**
Schedule with your project TA.
Bring proposal material.
Expect pointed discussion.
- 6. Detailed design**
Based on proposal and proposal conference
Wiring diagrams and source code
Supported by design conferences
Should be done BEFORE construction begins
Design presentations – scheduled at class hours

Attendance at all design presentations is required.



Still More Procedures



7. **End work on prior assignments before construction begins on your final project.**

Don't work on anything but the project.

8. **Debug**

9. **Demonstrate**

Typically during the last week of the term – (Earlier is OK!)

Working projects will be video taped (unless you decline).

Video taping is required for any prize nomination.

10. **Report**

A formal report (as described in the report guide) is required.

Report may be prepared jointly with individual sections identified.

The deadline is the last day of classes.

You must build a project, demonstrate something, and turn in a report in order to pass 6.111.

That is NOT true of other 6.111 assignments.



Project Parts



■ **One lab kit per student**

Additional proto boards are available (if needed).

Additional kits and/or FPGA boards as available

■ **Parts we supply are listed in the “Project Resources” handout.**

Many of these parts are in cabinets in the lab.

■ **Purchased parts**

Reimbursement is **ONLY** for parts pre-approved by a TA and/or Prof. Troxel.

An absolute maximum of \$100 per project **MAY** be allowed. Budgets are tight!

• No sales tax is ever reimbursed.

Purchasing assistance (recommended) can be provided by John Sweeney, 38-500, jsweeney@mit.edu. You must research your sources and give John ordering information.

You must do this early on. No Incompletes will be given for late arrival of parts.

■ **You MUST leave the parts for use in 6.111 for a future term.**

You **MUST** leave a short memo which shows future students how to use these parts.



Extra Units



- **Adding 6.905 makes 6.111 into an 18-unit subject.**
 - Your project does NOT have to be extra large.
 - 6.905 provides six more Engineering Design Points.
 - But 6.905 doesn't satisfy any other requirements (except units).
- **Grading**
 - 6.111 grade is determined without considering 6.905 registration.
 - 6.905 grade is then the 6.111 grade.
- **Requirements**
 - Must have detailed design done and be ready for construction.
 - Must have all of this done by DROP date.
- **Paperwork**
 - Get your project TA to sign form (penultimate page in project info).
 - Troxel will sign your add card as 'instructor'.
 - You may leave paperwork to be signed at the 6th floor parts counter.
 - Your advisor must sign add card before you take it to the registrar.

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Prizes – Summary of Dates



- **George C. Newton, Jr. Prize – one per year**
 - Best undergraduate project lab in course VI
 - Not always, but often, won by a 6.111 project
- **Bell Northern Research Prize – one per term**
- **Best 6.111 project**
 - You can't win both BNR and GCN prizes!
- **Summary of dates**

Formation of project teams	ASAP
Project Abstracts	29 OCT (Wed in lecture)
Proposal Conferences	3 NOV (for a week)
Block Diagram Conferences	12 NOV (for a week)
Drop date (adding 6.905)	19 NOV
Design Presentations (34-101)	19 NOV (4 sessions)
Demonstration	8 DEC
Video Taping (optional)	9 DEC
Reports due in lab by 5 PM	10 DEC (last class day)

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