Floorplanning

18-322 Fall 2000
Floorplanning

So far: “Sub”systems

One “System”

“System-on-a-Chip”

Don’t forget about interconnect!
Porosity and Feedthroughs

Porosity: Ability to get wires through block.
Feedthrough: Planned wiring channel through block

With Zero “porosity”

How to get wire from here

To here?
Floorplanning w/o Porosity

PLAN!
- Estimate wires / busses
- Allocate space on layers
- Attempt to localize connections
Floorplanning w/ Porosity

- More important in new technologies
  - 6-8 metal layers!
- Reserve whole layers, or channels:
  - Horizontal and Vertical

Over-the-chip Routing
Bit Slice Datapath
Datapath Floorplanning

Approach I —
Signal and power lines parallel

Approach II —
Signal and power lines perpendicular