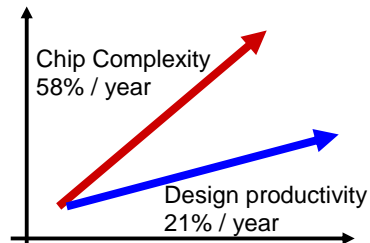


## Teaching IP Core Development: An Example

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## The Need for IP Cores

- Benefits of HDL-based design
  - Portability
  - Technology independence
  - Design cycle reduction
  - Automatic synthesis and Logic optimization
- ... But, the gap between available chip complexity and design productivity continues to increase

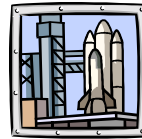
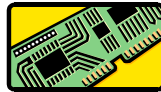
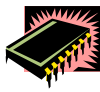


⇒ Use IP cores

## Educators Mission

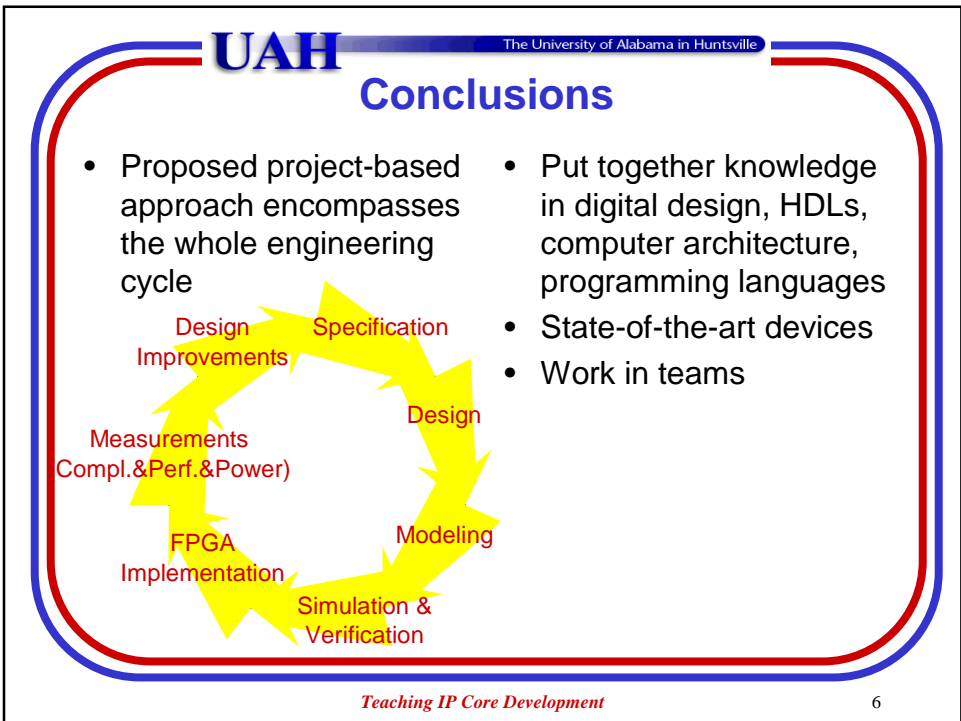
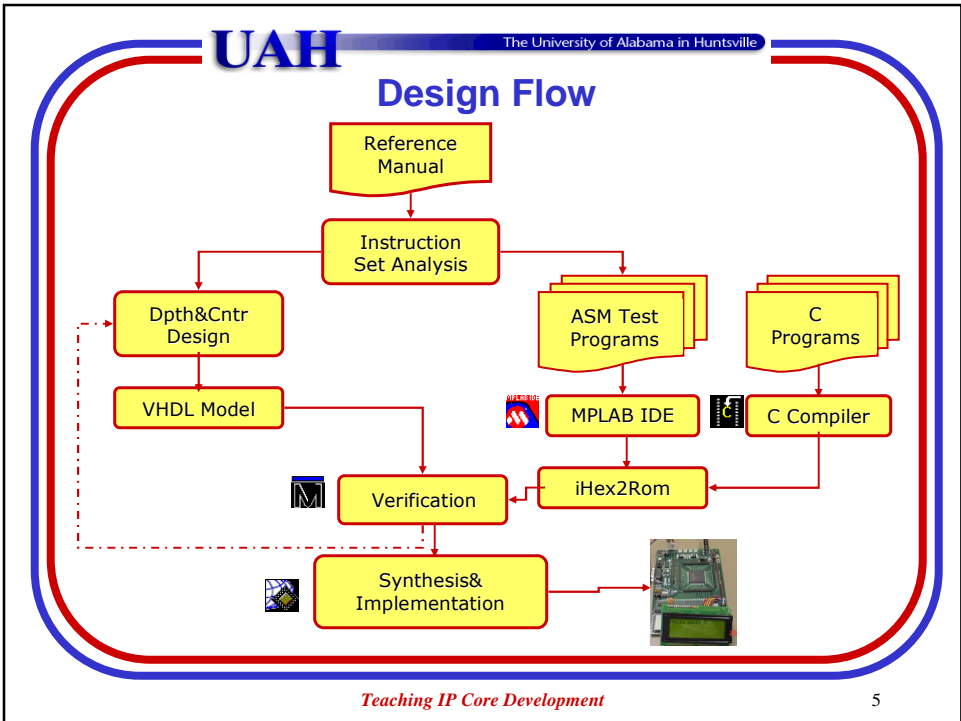
- Educate future generations of designers
  - Emphasis on hierarchical IP core design
  - Design systems, not components!
  - Understand hardware/software co-design
  - Understand and explore design tradeoffs between complexity, performance, and power consumption

⇒ Design a soft processor/micro-controller core



## UAH Library of Soft Cores

- Microchip's PIC18 micro-controller
- Microchip's PIC16 micro-controller
- Intel's 8051
- ARM Integer CPU core
- FP10 Floating-point Unit



# PIC18 Greetings

