

Digital Design provides a modern approach to learning the increasingly important topic of digital systems design. The text's focus on register transfer level (RTL) design and modern applications not only leads to a better appreciation of computers and of today's ubiquitous digital devices, but also provides for a better understanding of careers involving digital design and embedded system design.

- An emphasis on **RTL design**, the level at which most digital design is now practiced.
- **Bottom-up coverage**, starting from transistors and gates, and working up step-by-step to more complex components. The book emphasizes design, not just components, involving behavior capture followed by circuit creation at various levels of abstraction.
- Extensive use of **basic examples** to teach and illustrate new concepts, and **application examples**, such as pacemakers, ultrasound machines, automobiles, and cell phones, to demonstrate the immediate relevance of concepts.
- Separation of basic design from **optimization and tradeoffs**, allowing development of a solid understanding of basic design, before considering the more advanced topic of optimization and tradeoffs.
- Flexible organization, enabling early or late coverage of optimization methods or of HDLs and enabling the **choice of VHDL, Verilog or SystemC**.
- **Companion books** on Verilog and VHDL, organized with the same chapter structure and examples as the main book, allow for more in-depth HDL coverage.
- A clear bottom-up description of **field-programmable gate arrays (FPGAs)**.
- The free **book companion website** offers extensive supporting materials, including graphical animated PowerPoint slides, a complete solutions manual for the instructor, and online tools that interactively illustrate key concepts. Go to www.wiley.com/college/vahid for more information on these resources.

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