

Chapter Mapping between 3rd Edition and 4th Edition of  
*Computer Organization and Design – The Hardware/Software Interface*

Chapters in 3 <sup>rd</sup> Edition	Chapters in 4 <sup>th</sup> Edition
1. Computer Abstractions and Technology	1. Computer Abstractions and Technology
2. Instructions: Language of the Computer	2. Instructions: Language of the Computer
3. Arithmetic for Computers	3. Arithmetic for Computers
4. Assessing and Understanding Performance	4. The Processor
5. The Processor: Datapath and Control	5. Exploiting Memory Hierarchy
6. Enhancing Performance with Pipelining	6. Storage and Other I/O Topics
7. Exploiting Memory Hierarchy	7. Multicores, Multiprocessors, and Clusters
8. Storage, Network, and Other Peripherals	

The major goals for the fourth edition of *Computer Organization and Design* are: the multicore revolution in microprocessors, highlight parallel hardware and software topics throughout the book; streamline the existing material to make room for topics on parallelism; enhance pedagogy in general; update the technical content to reflect changes in the industry since the publication of the third edition in 2004; and restore the usefulness of exercises in this Internet age. Major changes include:

1. Old Chapter 4 is merged into Chapter 1.
2. Some material in old Chapter 3 (integer representation) is moved to Chapter 2.
3. Old Chapter 5 and Chapter 6 are merged into Chapter 4.
4. Parallelism issues are added into each chapter. (Sec. 1.5, Sec. 2.11, Sec. 3.6, Sec. 4.10, Sec. 5.8, Sec. 6.9)
5. A new chapter is added as Chapter 7 to discuss about the multicore revolution in processors.