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*Steel Design, Fifth Edition*, covers the fundamentals of structural steel design for buildings. This book is intended for junior and senior level engineering students, although some of the later chapters can be used in a construction management graduate course. Incoming civil engineers who need a review of current practice and the current AISC Specification and Manual will find the book useful as a reference. Students should have a background of mechanics of materials and analysis of statically determinate structures. Knowledge of statically indeterminate structural analysis is not a prerequisite for the use of the book.

Structural design is a complex, multi-step, involving the synthesis of many processes. This book does not teach the overall design of buildings, but presents some of the "building blocks" for structural steel design. It focuses on the analysis and design of individual members and connections, rather than complete structures.

Prior to the 2005 Specification and Manual of the American Institute of Steel Construction, load and resistance factor design (LRFD) was covered by the 1989 AISC Specification and LRFD Manual of Steel Construction. The Allowable Stress Design (ASD) was covered by the 1974 AISC Specification and Manual of Steel Construction, both in two volumes. In 2005, the two volumes were merged into single specification and a single manual, the thirteenth edition of the *Specification for Structural Steel Buildings*. In addition, changes were made to many provisions of the specification, both in form and substance. The unified approach coincides with the 2010 Specification and the 14th edition of the *Steel Construction Manual*. Both documents have been revised to reflect current research and practice, but the format remains the same.

Both LRFD and ASD are covered in this text book, but the emphasis is on LRFD. In most examples, both LRFD and ASD solutions are given. In these examples, the LRFD solution is given first; in some cases, the ASD solution is abbreviated but is still independent of the LRFD solution. This usually involves some design steps, but is necessary if a reader is interested in only the ASD solution. In some ASD solutions where there would be a clearly dominant LRFD solution, the reader is referred to the LRFD solution for that portion. In some of the examples, particularly in the steel moment-resisting joints, only an LRFD solution is given. This is in keeping with the best practices