CIDSE Software Engineering (MS)
Deficiency Prerequisites Courses

COURSES ARE FOR NON-SOFTWARE ENGINEERING BACHELOR DEGREE HOLDERS
AND FOR GRADUATE STUDENTS ONLY.
Lower division courses may be taken at local community colleges. Please visit www.aztransfer.com for course equivalencies.

CST 100      Object-Oriented Software Development
Introduces problem solving with a state-of-the-art programming language. Expressions, statements, basic control flow and methods. Data, data aggregation and usage. Uses a structured personal software development process to implement solutions representative of common computing applications. Uses development kits for some course activities. Prerequisites: None

1CST 200      Core Data Structures with Object Oriented Programming
Design, implementation and use of core data structures; object-oriented software development: design, analysis and programming. Prerequisites: CST 100 (or 211) with C or better

2CST 220/SER221   Programming Languages and Their Execution Environment
Introduces the fundamental programming language concepts of data, type, control, abstraction, and structure; software development and execution environments; programming language paradigms. Pre-requisite: CST 200 or SER 102; Credit is allowed for only CST 220 or SER 221

3CST 230/SER222   Design and Analysis of Data Structures and Algorithms
Data structures and related algorithms for their specification, complexity analysis, implementation and application. Sorting and searching. Professional responsibilities that are part of program development, documentation and testing. Pre-requisites: EGR/SER 102 (or CST 200); MAT 243; Credit is allowed for only CST 230 or SER 222

CST250      Microcomputer Architecture and Programming
Microcomputer architecture, instruction set, assembly language programming and debugging, I/O considerations, memory interface, peripherals and busses, exception/interrupt handling. Prerequisites: CST 100; CST 150 or SER 232

MAT 243      Discrete Mathematical Structures
Logic, sets, functions, elementary number theory and combinatorics, recursive algorithms, and mathematical reasoning, including induction. Emphasizes connections to computer science. Prerequisites: MAT 210, MAT 251, MAT 265, or MAT 270 with C or better

4SER232      Computer Systems Fundamentals I
Logic design and computer organization; number systems and arithmetic, boolean algebra; digital systems components; assembly language and instruction set concepts and application. Prerequisites: CST 100, EGR 101 or SER 101 (or be co-enrolled in CST 100); MAT 117 or higher; Credit is allowed for only CST 150 or SER 232

SER 234      Operating Systems and Networks
Fundamentals of operating systems, process management, scheduling, synchronization techniques and file management. Network technology, topologies, protocols, application control; network and operating system security. Prerequisites: CST 200; SER 232

Notes: 1 SER 102 or CST 200     2 CST 220 or SER 221     3CST 230 or SER 222     4CST 150 or SER 232

School of Computing, Informatics & Decision Systems Engineering
Ira A. Fulton Schools of Engineering
CIDSE Software Engineering (MS)
Graduate Admissions Deficiency Courses

**CST 250 Microcomputer Architecture and Programming**
Microcomputer architecture, instruction set, assembly language programming and debugging, I/O considerations, memory interface, peripherals and busses, exception/interrupt handling.
Prerequisites: CST 100; CST 150 or SER 232

**SER 221 Programming Languages and Their Execution Environment**
Introduces the fundamental programming language concepts of data, type, control, abstraction, and structure; software development and execution environments; programming language paradigms.
Prerequisites: CST 200 or SER 102; Credit is allowed for only CST 220 or SER 221

**SER 222 Design and Analysis of Data Structures and Algorithms**
Data structures and related algorithms for their specification, complexity analysis, implementation and application. Sorting and searching. Professional responsibilities that are part of program development, documentation and testing.
Prerequisites: EGR/SER 102 (or CST 200); MAT 243; Credit is allowed for only CST 230 or SER 222

**SER 234 Operating Systems and Networks**
Fundamentals of operating systems, process management, scheduling, synchronization techniques and file management. Network technology, topologies, protocols, application control; network and operating system security.
Prerequisites: CST 200; SER 232