Computer Science, MCS, MS and Ph.D.
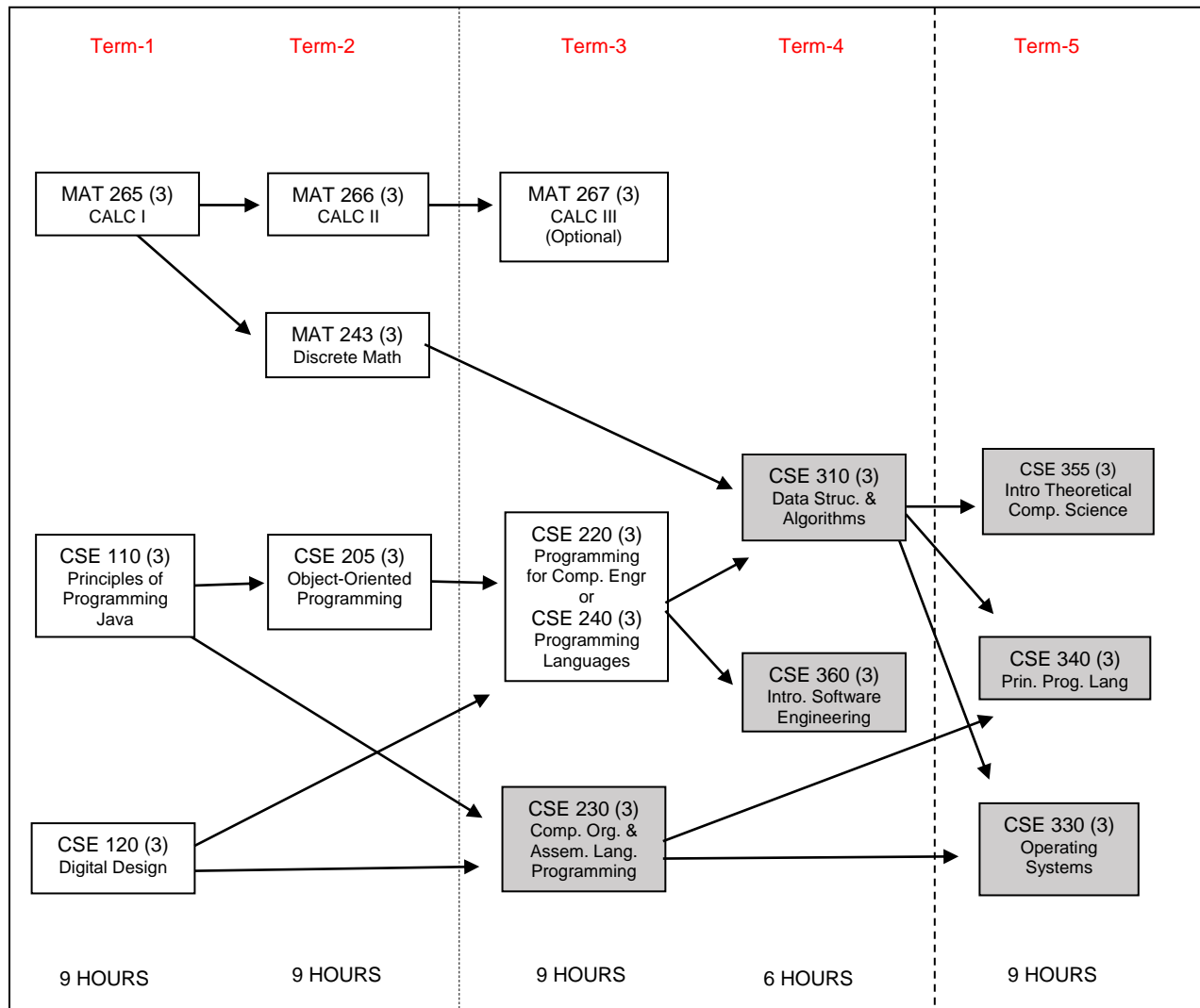## Deficiency Courses
http://cidse.engineering.asu.edu/forstudent/prospective-students/graduate-admissions/

Term-1	Term-2	Term-3	Term-4	Term-5

MAT 265 (3) CALC I → MAT 266 (3) CALC II → MAT 267 (3) CALC III (Optional)

MAT 265 (3) CALC I → MAT 243 (3) Discrete Math

CSE 310 (3) Data Struc. & Algorithms

CSE 355 (3) Intro Theoretical Comp. Science

CSE 110 (3) Principles of Programming Java → CSE 205 (3) Object-Oriented Programming → CSE 220 (3) Programming for Comp. Engr or CSE 240 (3) Programming Languages

CSE 360 (3) Intro. Software Engineering

CSE 340 (3) Prin. Prog. Lang

CSE 120 (3) Digital Design

CSE 230 (3) Comp. Org. & Assem. Lang. Programming

CSE 330 (3) Operating Systems

9 HOURS	9 HOURS	9 HOURS	6 HOURS	9 HOURS

Extensive knowledge in shaded courses is required for MCS, MS, and Ph.D. admission.
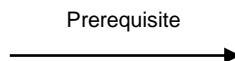
Prerequisite →

Additional Admission Requirements
(See website for details)

1. Transcripts/Academic Credentials.
2. Official GRE Test Scores.
3. Three letters of recommendation
4. Statement of Purpose
5. If applicable, English Proficiency (TOEFL).
6. GPA Requirement is 3.25 or higher in the last 60 hours of the undergraduate degree.

Ready to apply?

Apply now through the Office of Graduate Education online graduate application (https://webapp4.asu.edu/dgsadmissions/Index.jsp). Read the FAQs (https://students.asu.edu/graduate/faqs) about your graduate application.

Rev. 4/2016

Term 1
CSE 110: Principles of Programming with Java -Concepts of problem solving using Java, algorithm design, structured programming, fundamental algorithms and techniques, and computer systems concepts. Social and ethical responsibility.
MAT 265: Calculus for Engineers I-Limits and continuity, differential calculus of functions of one variable, introduction to integration. Not open to students with credit in MAT 270.
CSE 120: Digital Design Fundamentals-Number systems, conversion methods, binary and complement arithmetic, Boolean algebra, circuit minimization, ROMs, PLAs, flipflops, synchronous sequential circuits.

Term 2
CSE 205: Object-Oriented Programming & Data Structures-Problem solving by programming with an object-oriented programming language. Introduces data structures. Overview of computer science topics.
MAT 266: Calculus for Engineers II -Methods of integration, applications of calculus, elements of analytic geometry, improper integrals, Taylor series.
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.

Term 3
MAT 267: Calculus for Engineers III -Vector-valued functions of several variables, partial derivatives, and multiple integration.
CSE 230: Computer Organization & Assembly Language Programming-Register-level computer organization. Instruction set architecture. Assembly language. Processor organization and design. Memory organization. IO programming, Exception/interrupt handling.
CSE 220: Programming for Computer Engineering-Introduction to C/C++, systems programming, and concurrency.
or
CSE 220: Programming Languages – Introduction to C/C++, systems programming, and concurrency.

Term 4
CSE 310: Data Structures and Algorithms-Advanced data structures and algorithms, including stacks, queues, trees (B, B+, AVL), and graphs. Searching for graphs, hashing, and external sorting.
CSE 360: Introduction to Software Engineering-Software life cycle models; project management, team development environments and methodologies; software architectures; quality assurance and standards; legal, ethical issues.

Term 5
CSE 340: Principles of Programming Languages-Formal syntactic and semantic descriptions, compilation and implementation issues, and theoretical foundations for several programming paradigms.
CSE 355: Introduction to Theoretical Computer Science-Introduces formal language theory and automata, Turing machines, decidability/undecidability, recursive function theory, and complexity theory.
CSE 330: Operating Systems-Operating system structure and services, processor scheduling, concurrent processes, synchronization techniques, memory management, virtual memory, input/output, storage management, and file systems. *Previously CSE 430.