CS Undergraduate Prerequisite Structure

**bold & colored courses** (with corresponding arrows) indicate prerequisites

| 1110: Introduction to Computing Using Python |
| 1112*: Introduction to Computing Using MATLAB |
| 1132: Short Course in MATLAB |
| 1133: Short Course in Python |
| 1380: Data Science for All |

| 2024: C++ Programming |
| 2110: Object-Oriented Programming and Data Structures |
| 2112: Object-Oriented Design and Data Structures - Honors |
| 2770: Excursions in Computational Sustainability |

| 2800: Excursions in Computational Sustainability |
| 2802: Discrete Structures - Honors |

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**3110**: Data Structures and Functional Programming

3152: Introduction to Computer Game Architecture

**3410**: Computer System Organization and Programming

**3420**: Embedded Systems (prereq: ENGRD 2300, not shown)

4110: Programming Languages and Logics

4120: Introduction to Compilers

4152: Advanced Topics in Computer Game Architecture

4154: Analytics-driven Game Design

4160: Formal Verification

4220: Numerical Analysis: Linear and Nonlinear Problems

4320: Introduction to Database Systems

4410: Operating Systems

4450: Introduction to Computer Networks

4620: Introduction to Computer Graphics

4670: Introduction to Computer Vision

4700: Foundations of Artificial Intelligence

4740: Natural Language Processing

4750: Foundations of Robotics

4780: Machine Learning for Intelligent Systems

4786: Machine Learning for Data Science

4787: Principles of Large-Scale Machine Learning

4810: Introduction to Theory of Computing

4820: Introduction to Analysis of Algorithms

4850: Mathematical Foundations for the Information Age

4860: Applied Logic

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**1110**: Introduction to Computing Using Python

**1112**: Introduction to Computing Using MATLAB

**2800**: Excursions in Computational Sustainability

**2802**: Discrete Structures - Honors

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starred (*) courses have at least 1 MATH pre- or co-requisite See Roster.

5 Practicums in small font:

+ : optional

& : required

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core classes

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See Roster.