**CS Undergraduate Prerequisite Structure**

**Core classes**
- 2024
- 1110
- 1112
- 1132
- 1133
- 1380
- 2770
- 2850

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

**Bold & colored courses**
- with corresponding arrows indicate prerequisites

**Practicums in small font:**
- + : optional
- & : required

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**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**: Discrete Structures
**2802**: Discrete Structures - Honors
**2850**: Networks

**3110**: Data Structures and Functional Programming
**3152**: Introduction to Computer Game Architecture
**3220**: Introduction to Scientific Computation
**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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See Roster.