Minor in Computer Science

Mathematics Requirement

Mathematics Competence may be established by completing one of the following course sequences:

- MATH 121-2 (Calculus I-II)
- MATH 101-2 (Introduction to Analysis I-II)

Required Courses

Students must complete at least **25 credits** from the following list, subject to the following restrictions:

- The requirements of each category must be fulfilled (Computer Programming, Theoretical Foundations, Computer Systems, and Advanced Electives).
- Students who take CS 175 for the intro programming sequence will be required to take 9 credits of advanced electives.

Computer Programming (6-15 credits):

Complete one of the following introductory course sequences (*must be completed with a C or better before admission to the program*):

- CS 171/172 (Computer Programming I/II)
- CS 175 (Computer Programming I-II)
- CS 140/143/171/172 (Intro Multimedia Programming/ Computer Programming Fundamentals/Computer Programming I &II)
- SE 101/102/103 (Fundamentals of Software Engineering I/II/III)
- ECE 203 (Programming for Engineers) & ECEC 301 (Adv Programming for Engineers)

Complete the following **advanced programming** course:

- CS 265 (Advanced Programming Tools and Techniques)

Theoretical Foundations (6 credits):

Complete the following two courses:

- CS 260 (Data Structures)
- CS 270 (Mathematical Foundations of Computer Science

Computer Systems (4 credits):

Complete one of the following architecture courses:

- CS 281 (Systems Architecture I)
- ECEC 355 (Computer Organization & Architecture)

Advanced Electives (at least 6 credits)

Complete two or more of the following courses* (does not need to be in the same subject area):

Algorithms/Theory:

- CS 440 (Theory of Computation)
- CS 457 (Data Structures & Algorithms I)
- CS 458 (Data Structures & Algorithms II)

Artificial Intelligence:

- CS 380 (Artificial Intelligence)
- CS 383 (Machine Learning)
- CS 385 (Evolutionary Computing)
- CS 387 (Game AI Development)
- CS 481 (Advanced Artificial Intelligence)
- CS 485 (Topics in Artificial Intelligence)

Computer Game Design:

- CS 345 (Computer Game Design & Dev)
- CS 347 (Experimental Game Developmt)
- CS 348 (Serious Game Development)
- CS 387 (Game AI Development)

Computer Graphics/Vision:

- CS 430 (Computer Graphics)
- CS 431 (Adv Rendering Techniques)
- CS 432 (Interactive Computer Graphics)
- CS 435 (Computational Photography)

Computing Systems and Security:

- CS 283 (Systems Programming)
- CS 352 (Processor Arch & Analysis)
- CS 361 (Concurrent Programming)
- CS 365 (System Administration)
- CS 370 (Operating Systems)
- CS 461 (Database Systems)
- CS 472 (Computer Networks)
- CS 475 (Computer & Network Security)
- CS 476 (High Performance Computing)

Human-Computer Interaction:

- CS 337 (Human Computer Interaction)
- CS 338 (Graphical User Interfaces)

Numeric and Symbolic Computation:

- CS 300 (Applied Symbolic Computation)
- CS 303 (Alg Number Theory & Cryptog)
- MATH 300 (Numerical Analysis)

Programming Languages and Compilers:

- CS 360 (Prog Language Concepts)
- CS 440 (Theory of Computation)
- CS 441 (Compiler Workshop I)
- CS 442 (Compiler Workshop II)

Software Methodology (not available to SE):

- CS 350 (Software Design)
- CS 451 (Software Engineering)

* Other courses may be approved by the Department; contact the CS advisor (amn27@drexel.edu).