Carnegie Mellon University School of Computer Science

COMPUTER SCIENCE MAJOR

PROGRAM REQUIREMENTS (360 UNITS)

CS ELECTIVES

6 Classes Take one course from each of the following areas: Logics & Languages Elective Software Systems Elective

Artificial Intelligence Elective

Domains Elective

And two additional SCS Electives

CORE CLASSES 6 Classes & 1 Seminar*

First Year Immigration Course* Principles of Imperative Computation Principles of Functional Programming Parallel & Sequential Data Structures & Algorithms Introduction to Computer Systems Great Ideas in Theoretical CS Algorithm Design & Analysis

SCS CONCENTRATION OR NON-CS MINOR 5-6 Classes

Required

All subjects available: science, engineering, arts, humanities and business

Minors and concentrations are department defined**

SCS offers 11 concentrations

** Interdisciplinary IDEATE program minors available

COMMUNICATIONS 2 Classes

Interpretation & Argument

And one of the following: Writing for the Professions Research & Innovation in CS Ethics & Policy Issues in Computing

HUMANITIES & ARTS 6 Classes

These must be completed within Dietrich College, CFA and/or Tepper. They must include one course from each of the following areas:

Cognition & Choice

Social, Political & Economic Institutions

Cultural Analysis

And three additional SCS Electives

MATHEMATICS & PROBABILITY

6 Classes

Differential & Integral Calculus Integration and Approximation Vector Calculus for CS Mathematical Foundations for CS Matrix & Linear Algebra Course Probability Course

ENGINEERING & NATURAL SCIENCES 4 Classes

Four courses in Biology, Chemistry, Engineering and Physics.

One of the four science courses must be an approved lab course.

At least two must be from the same department.



Sample Course Schedule

B.S. IN COMPUTER SCIENCE

Note: For Students with AP Computer Science or College Credit in Introductory Programming and AP Calculus, AB or college credit for Calculus I.

YEAR 1: FALL

COURSE	UNITS	COURSE NAME
07-128	3	First Year Immigration Course
07-131	2	Great Practical Ideas for Computer Scientists
15-122	12	Principles of Imperative Computation
15-151	12	Mathematical Foundations for Computer Science
21-122	10	Integration and Approximation
76-101	9	Interpretation and Argument

YEAR 1: SPRING

COURSE	UNITS	COURSE NAME
15-150	12	Principles of Functional Programming
15-213	12	Introduction to Computer Systems
21-266	10	Vector Calculus for Computer Scientists
XX-XXX	9	Science/Engineering Course
XX-XXX	9	Humanities and Arts Elective

YEAR 2: FALL (SOPHOMORE)

COURSE	UNITS	COURSE NAME
15-251	12	Great Ideas in Theoretical CS
21-241	11	Matrices and Linear Transformations
хх-ххх	9	Science/Engineering Course
хх-ххх	9	Humanities and Arts Elective
хх-ххх	9	Minor Requirement/Free Elective

YEAR 2: SPRING

COURSE	UNITS	COURSE NAME
15-210	12	Parallel and Sequential Data Structures and Algorithms
хх-ххх	9/12	Probability Course
хх-ххх	9	Science/Engineering Course
хх-ххх	9	Humanities and Arts Elective
хх-ххх	9	Minor Requirement/Free Elective

YEAR 3: FALL (JUNIOR)

COURSE	UNITS	COURSE NAME
15-451	12	Algorithm Design and Analysis
хх-ххх	9/12	Computer Science: Constrained Elective
хх-ххх	9	Technical Communications Course
хх-ххх	9	Humanities and Arts Elective
XX-XXX	9	Minor Requirement/Free Elective

YEAR 3: SPRING

COURSE	UNITS	COURSE NAME
XX-XXX	9/12	Computer Science: Constrained Elective
XX-XXX	9	School of Computer Science Elective
XX-XXX	9	Science/Engineering Course
XX-XXX	9	Humanities and Arts Elective

YEAR 4: FALL (SENIOR)

COURSE	UNITS	COURSE NAME
XX-XXX	9/12	Computer Science: Constrained Elective
XX-XXX	9	School of Computer Science Elective
XX-XXX	9	Humanities and Arts Elective
xx-xxx	9	Minor Requirement/Free Elective

YEAR 4: SPRING

COURSE	UNITS	COURSE NAME
хх-ххх	9/12	Computer Science: Constrained Elective
XX-XXX	9	Humanities and Arts Elective
XX-XXX	9	Minor Requirement/Free Elective
хх-ххх	9	Minor Requirement/Free Elective