Computer Science

Curriculum

37 courses in 30 categories

Introduction to Computer Science

Course	Duration	Effort
Introduction to Computer Science - CS50	12 weeks	10-20 hours/week

Math (Mathematical Thinking)

Course	Duration	Effort
Effective Thinking Through Mathematics	9 weeks	5 hours/week

Program Design

Course	Duration	Effort
How to Code: Systematic Program Design - Part 1	5 weeks	8-12 hours/week
How to Code: Systematic Program Design - Part 2	5 weeks	8-12 hours/week
How to Code: Systematic Program Design - Part 3	5 weeks	8-12 hours/week

Math (Discrete Math)

Course	Duration	Effort
Mathematics for Computer Science	12 weeks	5 hours/week

Algorithms

Course	Duration	Effort
Algorithms, Part I	6 weeks	6-12 hours/week
Algorithms, Part II	6 weeks	6-12 hours/week

Programming Paradigms

Course	Duration	Effort
Functional Programming Principles in Scala	7 weeks	5-7 hours/week
Object Oriented Programming in Java	6 weeks	4-6 hours/week

Software Testing

Course	Duration	Effort
Software Testing	4 weeks	6 hours/week
Software Debugging	8 weeks	6 hours/week

Math (Calculus)

Course	Duration	Effort
Calculus One	16 weeks	8-10 hours/week
Calculus Two: Sequences and Series	7 weeks	9-10 hours/week

Software Architecture

Course	Duration	Effort
Software Architecture & Design	8 weeks	6 hours/week

Theory

Course	Duration	Effort
Automata	6 weeks	8-10 hours/week

Software Engineering

Course	Duration	Effort
Software Processes and Agile Practices	4 weeks	6-8 hours/week

Math (Probability)

Course	Duration	Effort
Introduction to Probability - The Science of Uncertainty	16 weeks	12 hours/week

Computer Architecture

Course	Duration	Effort
Computer Architecture		5-8 hours/week

Operating Systems

Course	Duration	Effort
Operating Systems and System Programming	10 weeks	2-3 hours/week

Computer Networks

Course	Duration	Effort
Computer Networks		4–12 hours/week

Databases

Course	Duration	Effort
Databases	12 weeks	8-12 hours/week

Cloud Computing

Course	Duration	Effort
Introduction to Cloud Computing	4 weeks	1 hour/week

Math (Linear Algebra)

Course	Duration	Effort
Coding the Matrix: Linear Algebra through Computer Science Applications	10 weeks	7-10 hours/week

Cryptography

Course	Duration	Effort
Cryptography I	6 weeks	5-7 hours/week
Cryptography II	6 weeks	6-8 hours/week

Security

Course	Duration	Effort
Introduction to Cyber Security	8 weeks	3 hours/week

Compilers

Course	Duration	Effort
Compilers	9 weeks	6-8 hours/week

Parallel Computing

Course	Duration	Effort
Heterogeneous Parallel Programming	11 weeks	8-10 hours/week

UX Design

Course	Duration	Effort
UX Design for Mobile Developers	6 weeks	6 hours/week

Computer Graphics

Course	Duration	Effort
Computer Graphics	6 weeks	12 hours/week

Artificial Intelligence

Course	Duration	Effort
Artificial Intelligence	12 week	15 hours/week

Machine Learning

Course	Duration	Effort
Machine Learning	11 weeks	4-6 hours/week

Natural Language Processing

Course	Duration	Effort
Natural Language Processing	10 weeks	8-10 hours/week

Big Data

Course	Duration	Effort
Introduction to Big Data	3 weeks	5-6 hours/week

Data Mining

Course	Duration	Effort
Pattern Discovery in Data Mining	4 weeks	4-6 hours/week

Internet of Things

Course	Duration	Effort
The Internet of Things	4 weeks	2 hours/week