Computer Science

Curriculum

37 courses in 30 categories

Introduction to Computer Science

Course

Duration

Effort

Introduction to Computer Science - CS50 (https://www.edx.org/course/introduction-computer-science-harvardx-cs50x#!)

12 weeks
10-20 hours/week

Math (Mathematical Thinking)

Course

Duration

Effort

Effective Thinking Through Mathematics (https://www.edx.org/course/effective-thinking-through-mathematics-utaustinx-ut-9-01x)

9 weeks
5 hours/week

Program Design

Course

Duration

Effort

How to Code: Systematic Program Design - Part 1 (https://www.edx.org/course/how-code-systematic-program-design-part-ubcx-spd1x)

5 weeks
8-12 hours/week

How to Code: Systematic Program Design - Part 2 (https://www.edx.org/course/how-code-systematic-program-design-part-ubcx-spd2x)

5 weeks

8-12 hours/week

How to Code: Systematic Program Design - Part 3 (https://www.edx.org/course/how-code-systematic-program-design-part-ubcx-spd3x)

5 weeks
8-12 hours/week

Math (Discrete Math)

Course

Duration
Effort

Mathematics for Computer Science (http://ocw.mit.edu/courses/electrical-engineering-and-computer-science/6-042j-mathematics-for-computer-science-fall-2010/index.htm)

12 weeks
5 hours/week

Algorithms

Course

Duration
Effort

Algorithms, Part I (https://www.coursera.org/course/algs4partI)

6 weeks
6-12 hours/week

Algorithms, Part II (https://www.coursera.org/course/algs4partII)

6 weeks
6-12 hours/week

Programming Paradigms

Course

Duration
Effort

Functional Programming Principles in Scala (https://www.coursera.org/course/progfun)

7 weeks
5-7 hours/week

Object Oriented Programming in Java (https://www.coursera.org/learn/object-oriented-java)

6 weeks
4-6 hours/week

Software Testing

Course	Duration Effort
Software Testing (https://www.udacity.com/course/software-testing--cs258)	4 weeks 6 hours/week
Software Debugging (https://www.udacity.com/course/software-debugging--cs259)	8 weeks 6 hours/week

Math (Calculus)

Course	Duration Effort
Calculus One (https://www.coursera.org/learn/calculus1)	16 weeks 8-10 hours/week
Calculus Two: Sequences and Series (https://www.coursera.org/learn/advanced-calculus)	7 weeks 9-10 hours/week

Software Architecture

Course	Duration Effort
Software Architecture & Design (https://www.udacity.com/course/software-architecture-design--ud821)	8 weeks 6 hours/week

Theory

Course	Duration

Effort

Automata (https://www.coursera.org/course/automata)

6 weeks
8-10 hours/week

Software Engineering

Course

Duration

Effort

Software Processes and Agile Practices (https://www.coursera.org/learn/software-processes-and-agile-practices)

4 weeks
6-8 hours/week

Math (Probability)

Course

Duration

Effort

Introduction to Probability - The Science of Uncertainty (https://www.edx.org/course/introduction-probability-science-mitx-6-041x-0)

16 weeks
12 hours/week

Computer Architecture

Course

Duration

Effort

Computer Architecture (https://www.coursera.org/course/comparch)

5-8 hours/week

Operating Systems

Course

Duration

Effort

Operating Systems and System Programming (https://www.youtube.com/view_play_list?p=-XXv-cvA_iBDyz-ba4yDskqMDY6A1w_c)

10 weeks
2-3 hours/week

Computer Networks

Course

Duration

Effort

Computer Networks (https://www.coursera.org/course/comnetworks)

4–12 hours/week

Databases

Course

Duration

Effort

Databases (https://lagunita.stanford.edu/courses/DB/2014/SelfPaced/about)

12 weeks
8-12 hours/week

Cloud Computing

Course

Duration

Effort

Introduction to Cloud Computing (https://www.edx.org/course/introduction-cloud-computing-ieeex-cloudintro-x-0)

4 weeks
1 hour/week

Math (Linear Algebra)

Course

Duration

Effort

Coding the Matrix: Linear Algebra through Computer Science Applications (https://www.coursera.org/course/matrix)

10 weeks
7-10 hours/week

Cryptography

Course

Duration
Effort

Cryptography I (https://www.coursera.org/course/crypto)

6 weeks
5-7 hours/week

Cryptography II (https://www.coursera.org/course/crypto2)

6 weeks
6-8 hours/week

Security

Course

Duration
Effort

Introduction to Cyber Security (https://www.futurelearn.com/courses/introduction-to-cyber-security)

8 weeks
3 hours/week

Compilers

Course

Duration
Effort

Compilers (https://www.coursera.org/course/compilers)

9 weeks
6-8 hours/week

Parallel Computing

Course

Duration

Effort

Heterogeneous Parallel Programming (https://www.coursera.org/course/hetero)

11 weeks
8-10 hours/week

UX Design

Course

Duration

Effort

UX Design for Mobile Developers (https://www.udacity.com/course/ux-design-for-mobile-developers--ud849)

6 weeks
6 hours/week

Computer Graphics

Course

Duration

Effort

Computer Graphics (https://www.edx.org/course/computer-graphics-uc-san-diegox-cse167x)

6 weeks
12 hours/week

Artificial Intelligence

Course

Duration

Effort

Artificial Intelligence (https://www.edx.org/course/artificial-intelligence-uc-berkeleyx-cs188-1x#!)

12 week
15 hours/week

Machine Learning

Course

Duration
Effort

Machine Learning (https://www.coursera.org/learn/machine-learning)

11 weeks
4-6 hours/week

Natural Language Processing

Course

Duration
Effort

Natural Language Processing (https://www.coursera.org/course/nlangp)

10 weeks
8-10 hours/week

Big Data

Course

Duration
Effort

Introduction to Big Data (https://www.coursera.org/learn/intro-to-big-data)

3 weeks
5-6 hours/week

Data Mining

Course

Duration
Effort

Pattern Discovery in Data Mining (https://www.coursera.org/course/patterndiscovery)

4 weeks
4-6 hours/week

Internet of Things

Course	Duration	Effort
The Internet of Things (https://www.futurelearn.com/courses/internet-of-things)	4 weeks	2 hours/week

Home Contribute (https://github.com/open-source-society/computer-science) About