Teach yourself Computer Science:

Curriculum: Below are the broad line areas to be covered to achieve a conventional bachelor level accomplishment in the field of CS:

1. Programming or Intro to CS
2. Computer Architecture
3. Algorithm and data structure
4. Math for CS
5. UX design or Intro to web development
6. Intro to database
7. Operating System
8. Programming language theory / Compiler
9. Distributed System

Intro to CS or Programming:

1. How to design Programs – [An Introduction to Computing and Programing](Intro%20to%20CS/How_To_Design_Programs.pdf); by Matthias Felleisen (Soft coy)
2. SICP- [Structure & interpretation of Computer Programs](Intro%20to%20CS/SICP_2nd%20Edition.pdf) – by MIT Press (soft copy); At least the first 3 chapters along with the exercise; with MIT video lectures or Brian Harvey’s SICP lecture
3. Computer Science 101- by Stanford University self- paced course

. Intro to CS using Javascript - Stanford University

ii.Intro to Computer Science; Build Search Engine using Social Network (Python)-Udacity

https://www.udacity.com/course/intro-to-computer-science--cs101

iii. Structure and Interpretation of Computer Programs /SICP: Soft copy;

at least the first three chapters of SICP and doing the exercises

Accompanying video suggestion for SICP:Brian Harvey’s SICP lectures (for the 61A course at Berkeley)

https://archive.org/details/ucberkeley-webcast-PL3E89002AA9B9879E?sort=titleSorter

Teachyourself CS:

Semester 1:

i

Semester II:

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| --- | --- | --- | --- |
| Courses | Duration | Effort | Prerequisites |
| i. How to Code - Simple Data | 7 weeks | 8-10 hours/week | none |
| ii. How to Code - Complex Data | 6 weeks | 8-10 hours/week | How to Code: Simple Data |

Full Course) How to Code: Simple Data; Based on the book How to Design Programs (HtDP)

iii. Maths for CS:

suggested starting point for discrete mathematics is the set of lecture notes by László Lovász.

Professor Lovász did a good job of making the content approachable and intuitive, so this serves

as a better starting point than more formal texts.

For a more advanced treatment, we suggest Mathematics for Computer Science, the book-length lecture notes for the MIT course of the same name. That course’s video lectures are also freely available, and are our recommended video lectures for discrete math.

For linear algebra, we suggest starting with the Essence of linear algebra video series, followed by Gilbert Strang’s book and video lectures.