

Bachelor of Technology and Diploma in Computer Science

We are pleased to provide a curated list of open educational resources for the B. Tech and Diploma in Computer Science Program. These are only for the purpose of additional readings and support classroom interactions.

Programming Fundamentals using C

Downey, A. B. & Scheffler, T. (1999). *How to Think Like a Computer Scientist: C Version*. Green Tea Press. Open Textbook Library.

<https://open.umn.edu/opentextbooks/textbooks/how-to-think-like-a-computer-scientist-c-version-1999>. License: CC BY-NC.

Fiore, J. M. (2018). *Embedded controllers using C and Arduino* (2nd ed.). Dissidents. Open Textbook

Library. <https://open.umn.edu/opentextbooks/textbooks/embedded-controllers-using-c-and-arduino-2e>. License: CC BY-NC-SA.

Analog Electronic Circuit

Davis, C. (2016). *AC Circuits*. Open Textbook

Library <https://shareok.org/items/528b80fd-5618-437d-9a43-b9f58ff3b950>. License: CC BY-NC-SA.

Davis, C. (2016). *DC Circuits*. Open Textbook Library.

<https://shareok.org/server/api/core/bitstreams/23e9ec3b-d8ee-44a9-aab0-3d076239dfff/content>. License: CC BY-NC-SA.

Steer, M. (2019). *Microwave and RF Design*. Open Textbook Library.

<https://repository.lib.ncsu.edu/items/c920fb47-8458-433e-9cd8-b5cacf70e859>. License: CC BY.

Data Structure and Algorithms

Bible, P. W. & Moser, L. (2023). *An Open Guide to Data Structures and Algorithms*. Open Textbook Library.

<https://pressbooks.palni.org/anopenguidetodatastructuresandalgorithms/>. License: CC BY

Downey, A., & Mayfield, C. (2020). *Think Data Structures: Algorithms and Information Retrieval in Java*. Green Tea Press.

<https://greenteapress.com/thinkdast/thinkdast.pdf>. License: CC BY.

Nievergelt, J., & Hinrichs, K. (2011). *Algorithms and Data Structures with Applications to Graphics and Geometry*. Open Textbook Library.

<https://open.umn.edu/opentextbooks/textbooks/algorithms-and-data-structures-with-applications-to-graphics-and-geometry>. License: CC BY.

Discrete Mathematics

Levin, O. (2024). *Discrete mathematics: An open introduction* (4th ed.). Oscar Levin. Open Textbook Library. <https://discrete.openmathbooks.org/dmoi4.html>. License: CC BY-NC-SA

Kwong, H. (2015). *Spiral workbook for discrete mathematics*. Open SUNY. Open Textbook Library. <https://open.umn.edu/opentextbooks/textbooks/spiral-workbook-for-discrete-mathematics>. License: CC BY-NC-SA

Ahmed, Z., Colman, H., & Lubliner, S. (2025). *Discrete math with SageMath: Learn math with open-source software*. Zunaid Ahmed, Hellen Colman, and Samuel Lubliner. Open Textbook Library. <https://www.hellencolman.com/sagediscretemath>. License: CC BY

Computer Organization and Architecture

Critchlow, C., & Eck, D. (2011). *Foundations of computation*. Open Textbook Library. <https://open.umn.edu/opentextbooks/textbooks/foundations-of-computation>. License: CC BY-NC-SA.

Severance, C., & Dowd, K. (2010). *High performance computing*. OpenStax CNX. Open Textbook Library. <https://open.umn.edu/opentextbooks/textbooks/high-performance-computing>. License: CC BY

Operating Systems

Keane, L. (2021). *Windows operating system*. OER Commons. <https://oercommons.org/courseware/lesson/83375/overview>. License: CC BY

Spillner, J. (2025). *Operating Systems and Infrastructure in Data Science*. Open Textbook Library. <https://open.umn.edu/opentextbooks/textbooks/operating-systems-and-infrastructure-in-data-science>. License: CC BY-NC-SA.

Design and Analysis of Algorithms

Moser, L., Scarlatos, M. M., & Bible, P. W. (2023). *An Open Guide to Data Structures and Algorithms*. Open Textbook Library. <https://pressbooks.palni.org/anopenguidetodatastructuresandalgorithms/>. License: CC BY.

Nievergelt, J., & Hinrichs, K. (2011). *Algorithms and Data Structures with Applications to Graphics and Geometry*. Open Textbook Library. <https://open.umn.edu/opentextbooks/textbooks/algorithms-and-data-structures-with-applications-to-graphics-and-geometry>. License: CC BY.

Signals and Systems

Fonseca, A., & Dickerson, J. A. (2024). *Open Signals and Systems Laboratory Exercises* (2nd ed.). Open Textbook Library. <https://www.iastatedigitalpress.com/plugins/books/155/>. License: CC BY-NC.

Database Management Systems

Carlisle-Johnston, E., Thompson, K., Hill, K., Dennie, D., & Fortin, É. (2024). *Research Data Management in the Canadian Context*. Open Textbook Library.

<https://ecampusontario.pressbooks.pub/canadardm/>. License: CC BY.

McFadyen, R. (2016). *Java with BlueJ*. Open Textbook Library.

<https://ecampusontario.pressbooks.pub/relationaldatabasesandmicrosoftaccess365/>.

License: CC BY-NC-SA.

Watt, A. (2014). *Database Design* (2nd ed.). Open Textbook Library.

<https://opentextbc.ca/dbdesign01/>. License: CC BY.

Object Oriented Programming

Downey, A., & Mayfield, C. (2020). *Think Java: How to Think Like a Computer Scientist* (2nd ed.). Open Textbook Library. <https://greenteapress.com/thinkdast/thinkdast.pdf>. License: CC BY.

McFadyen, R. (2016). *Java with BlueJ*. Open Textbook Library.

<https://ecampusontario.pressbooks.pub/relationaldatabasesandmicrosoftaccess365/>.

License: CC BY-NC-SA.

Walde, R., & Morelli, R. (2016). *Java, Java, Java: Object-Oriented Problem Solving*. Open

Textbook Library. <https://www.cs.trincoll.edu/~ram/jjj/jjj-os-20170625.pdf>. License: CC BY.

Computer Networks

Bonaventure, O. (2012). *Computer networking: Principles, protocols and practice*. The Saylor Foundation. OER

Commons. <https://oercommons.org/courses/computer-networking-principles-protocols-and-practice>. License: CC BY

Peterson, L., & Davie, B. (2019). *Computer Networks: A Systems Approach*. Open Textbook

Library. <https://github.com/SystemsApproach/book/releases>. License: CC BY.

FLAT (Formal Language Automata Theory)

Critchlow, C., & Eck, D. (2011). *Foundations of Computation*. Open Textbook Library.

https://math.hws.edu/FoundationsOfComputation/FoundationsOfComputation_2.3.2_6x9.pdf. License: CC BY-NC-SA.

Hugtenburg, S., & Yorke-Smith, N. (2022). *Delftse Foundations of Computation* (2nd ed.). Open Textbook Library. <https://books.open.tudelft.nl/home/catalog/view/211/393/640>. License: CC BY-NC-SA.

Artificial Intelligence

Frické, M. (2024). *Artificial Intelligence and Librarianship* (3rd ed.). Open Textbook Library. <https://softoption.us/sites/default/files/AInLibrariesNotesForTeaching3rdEd.pdf>. License: CC BY-NC-SA.

Sylvia IV, J. J. (2024). *The Data Renaissance: Analyzing the Disciplinary Effects of Big Data, Artificial Intelligence, and Beyond*. Open Textbook Library. <https://open.umn.edu/opentextbooks/textbooks/the-data-renaissance-analyzing-the-disciplinary-effects-of-big-data-artificial-intelligence-and-beyond>. License: CC BY-NC-SA.