

General Optimization Books:

1. David K. Kahaner, Cleve Moler, and S.G. Nash, [*Numerical Methods and Software*](#), Prentice-Hall (1989)
2. Nonlinear Programming: 2nd Edition by [Dimitri P. Bertsekas](#)
 - [Contents](#), [Preface](#), [Ordering](#), [Home](#)
 - ISBN: 1-886529-00-0
 - Publication: 1999, 780 pages, hardcover
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 - 3. Stephen G. Nash and Ariela Sofer, [*Linear and Nonlinear Programming*](#), McGraw-Hill (1996).

Books mainly devoted to nonlinear programming

[Avriel, M. and Golany, B.: Mathematical Programming for Industrial Engineers. Marcel Dekker:1996.](#) Contains introductory chapters to several areas of mathematical optimization. well suited for beginners.

[Bonnans, J.F., Gilbert, J.C., Lemarechal, C., Sagastizabal, C.A.: Numerical Optimization. Springer: 2003.](#) Both theory and details on implementations; nonsmooth optimization, interior-point methods etc.

[Bertsekas, Dimitri P.: Nonlinear Programming, second edition. Athena Scientific, 1999.](#)

[Bjoerck, Ake : Numerical methods for least squares problems. Philadelphia, SIAM 1996.](#) Very well written book with lots of nonstandard information.

[Dennis, E. and Schnabel, B.: Numerical Methods for Unconstrained Optimization and Nonlinear Equations. Prentice Hall, 1983. \(reprinted by SIAM\)](#) (a classic in its field).

[Du and Pardalos, P.: Minimax and Applications. Kluwer, 1995.](#)
[Fiacco, A. and McCormick, G. P.: Sequential Unconstrained Minimization Techniques. reprinted by SIAM.](#) (A classic from 1968, given new life by the interior point LP methods.)

[Fletcher, R.: Practical Methods of Optimization. John Wiley, 1987.](#) "The" reference at the date of its printing.

[Gill, Ph.E., Murray, W. and Wright, M.: Practical methods of optimization. New York:Acad. Press 1982](#) (a bit dated with respect to methods, but with many hints for practitioners)

- [Horst R., Pardalos P., and Thoai, V.: Introduction to global optimization. Kluwer, 1995.](#)
- [Horst R. and Pardalos P.: Handbook of Global Optimization. Kluwer, 1994.](#)
- [Kelley, C.T.: Iterative methods of optimization. Philadelphia: SIAM 1999.](#)
- [Luenberger, D.: Introduction to Linear and Nonlinear Programming. Addison Wesley, 1984.](#) (Updated version of an old classic. Well suited for beginners.)
- [Miettinen,K.: Nonlinear Multiobjective Optimization, Kluwer. 1999.](#)
- [More, J.J. and Wright, St.: Optimization Software Guide. SIAM, 1993.](#) Contains overview and comments existing software, mainly commercial.
- [Nash, S. and Sofer, A.: Linear and Nonlinear Programming. McGraw-Hill, 1996.](#)
- [Nemhauser, G.L., Rinnooy Kan,A.H.G. and Todd, M.J.: Optimization. \(Handbook in Operations Research and Management Science Vol D\). North Holland, 1989.](#) Contains excellent introductions to severals areas of optimization.
- [Nocedal, J. and Wright, St.: Numerical Optimization. Springer Verlag, 1999.](#) Very well written modern introduction into continuous optimization.
- [Tawarmalani, M. and Sahinidis, N. V.: Convexification and Global Optimization in Continuous and Mixed-Integer Nonlinear Programming. Kluwer, 2002 .](#) Based on BARON software.
- [Pinter, J.D.: Global Optimization in Action. Kluwer, 1996.](#) Book received 2000 INFORMS Computing Society Prize
- [Pinter, J.D.: Computational Global Optimization in Nonlinear Systems. Lionheart Publ., 2001.](#) short e-book, demo software included
- Spellucci, P.: Numerische Verfahren der nichtlinearen Optimierung. Birkhuser, Basel 1993 (in German).
[course script 1 / course script 2](#)

Web locations:

<http://www-fp.mcs.anl.gov/otc/Guide/>

<http://www-fp.mcs.anl.gov/otc/Guide/CaseStudies/>

<http://www-fp.mcs.anl.gov/otc/Guide/OptWeb/continuous/unconstrained/index.html>

<http://www-neos.mcs.anl.gov/neos/server-downloads.html>

<http://www.ece.northwestern.edu/OTC/>

<http://www.ece.northwestern.edu/OTC/OTCsoftware.htm>