



**UNIVERSIDADE FEDERAL DE SANTA CATARINA
CENTRO DE CIÊNCIAS FÍSICAS E MATEMÁTICAS
POS-GRADUAÇÃO EM MATEMÁTICA PURA E APLICADA**

MTM410024 Computational Linear Algebra

Pre-requisite: x-x

Weekly lesson hours: 06h

Discipline syllabus: Matrix analysis. Decomposition in singular values. Sensitivity of systems of linear equations. Decomposition QR. Methods for linear least squares problems. Sensitivity analysis. Classical iterative methods for linear systems. Introduction to Methods based on Krylov subspaces.

BIBLIOGRAPHIC REFERENCES

Text book 1:

1. GOLUB, Gene H.; VAN LOAN, Charles F. Matrix computations. 3rd. ed. Baltimore: Johns Hopkins University Press, 1996.

Text book 2:

2. DEMMEL, James W.; Applied Numerical Linear Algebra. Philadelphia: SIAM, 1997.

COMPLEMENTARY BIBLIOGRAPHY

1. BHATIA, Rajendra. Matrix analysis. New York: Springer, 1996.
2. GREENBAUM, Anne; Iterative Methods for Solving Linear Systems. Philadelphia: SIAM, 1997..
3. HORN, Roger A.; JOHNSON, Charles R. Matrix analysis. Cambridge: Cambridge University Press, 1990.
4. MEYER, Carl D. Matrix analysis and applied linear algebra. Philadelphia: SIAM, 2000.
5. TREFETHEN, Lloyd N.; BAU, David. Numerical Linear Algebra. Philadelphia: SIAM, 1997.
6. f). WATKINS, David S. Fundamentals of matrix computations. New York: J. Wiley, 1991.