



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

MTM410057 Dynamical Systems

Pre-requisite: MTM410019 Linear Algebra, MTM410034 Ordinary Differential Equations

Weekly lesson hours: 06h

Discipline syllabus: Chapter 1 of Book Text 1, Chapter 5 of Book Text 2 and chapters 1 to 6 of Book Text 3, covering the fundamental notions and tools for the study of topological dynamical systems in discrete time in one dimension, and the qualitative study of flows.

BIBLIOGRAPHIC REFERENCES

Text book:

1. Devaney, R. L.; An Introduction to Chaotic Dynamical Systems. Addison-Wesley, 1989.
2. Walters, P.; An Introduction to Ergodic Theory. Springer-Verlag, 1982.
3. Doering, C. I, Lopes, A. O.; Equações Diferenciais Ordinárias.

COMPLEMENTARY BIBLIOGRAPHY

1. Alligood, K., Sauer, T. D., Yorke, J. A.; Chaos: An Introduction to Dynamical Systems. Springer-Verlag, New York, 1996.
2. Banks, J., Brooks, J., Cairns, G., Davies, G., Stacey, P.; On Devaney's definition of chaos. Amer. Math. Monthly, vol. 99 (1992), pp. 332-334.
3. Birkhoff, G. D.; Dynamical Systems. American Mathematical Society, Rhode Island, 1966.
4. Brin, M., Stuck, G.; Introduction to Dynamical Systems. Cambridge University Press, New York, 2002.
5. Hirsch, M. W., Smale, S.; Differential Equations, Dynamical Systems and Linear Algebra. Academic Press, San Diego, 1974.
6. de Melo, W., van Strien, S.; One-Dimensional Dynamics.
7. Katok, A., Hasselblatt, B.; A Moderna Teoria de Sistemas Dinâmicos. Ed. Fundação Calouste Gulbenkian, Lisboa, 2005.
8. Lind, D. A., Marcus, B.; An introduction to symbolic dynamics and coding. Cambridge University Press, New York, 1995.