Course: Introduction to Polymeric Materials and Composites **Code:** MEM.006

Credits: 03

Module: Specific formation

Research area: Selection, processing e characterization

Contents:

Historic; Introductory concepts: polymerization, molar mass, molar mass distribution; Non-Newtonian behavior; Thermal transitions; Crystallinity of polymers; Mixing rule and macro and micro-mechanical models for composite materials. Some characterization techniques for polymers and composites. New materials.

References:

1. STEVENS, M. P. Polymer chemistry: an introduction. 3rd edition. Oxford University Press, 1998.
2. YOUNG, R. J., LOVELL, P. A. Introduction to polymers. 2nd edition. London: CRC, 2000.
3. Van der Vegt, A. K. From polymers to plastics. The Netherlands: VSSD, 2006.
4. BILLMAYER Jr, F. W. Textbook of polymer science. John Wiley & Sons, 1984
5. -MARINHO, J.R.D. Macromoléculas e polímeros. São Paulo, Manole, 2005.
6. CHARLES, E.; CARRAHER, Jr. Polymer chemistry: an introduction. 4th edition. New York: Marcel Dekker, 1996.
7. STEVENS, M. P. Polymer chemistry: an introduction. 2nd edition. Oxford University Press, Oxford, 1990.
8. MANO, E. B. Polímeros como materiais de engenharia. São Paulo: Edgard Blücher Ltda,1991.
9. HULL, D. Materiales Compuestos. Barcelona: Reverté, 1987.
10. ANNUAL REVIEW OF MATERIALS SCIENCE. Annual Reviews, Palo Alto, vs. 20.21,22, 1990,1991,1992.
11. Artigos recentes de periódicos