



PROGRAMS AND BIBLIOGRAPHY

Subject	
Code	Name
QF661	Applied Chemistry

Vector
OF:S-5 T:004 P:000 L:000 O:000 D:000 HS:004 SL:004 C:004 AV:N EX:S FM:75%

Pre requisite
*QF531 *QO521/*QF531 *QO421

Summary
Materials: polymers, metals, ceramics and glasses. Colloids and surfaces: surfactants, foams, wettability, detergency, stability and properties of dispersions.

Program
Contact angle and applications. 1. Tensioactive agents, micelles and stability, liquid crystals; 2. Emulsions and microemulsions; foams; charged interfaces and colloidal stability; stabilizing agents; aggregation processes; characterization and applications. 3. Polymers, fabrication; catalysts, charges; characterization and applications. 4. Materials: ceramics, glasses, refractory materials, cement and concrete. Properties and characterization. Industrial applications. 5. Mechanical, optical and thermal properties of polymeric, metallic and inorganic materials. 6. Quality and Norms; notions about ASTM, ABNT and ISO. 7. Experimental planning: notions of chemometrics. 8. Technology, innovation and R&D: technology and its impact; technology and economy; R&D activity and its role in companies; innovation and incremental development.

Bibliography
1. R.E. Bruns, "Planejamento e Otimização de Experimentos" , Campinas, Editora da UNICAMP, 1995. 2. H.G. Elias; "Mega Molecules" , Springer Verlag, London, 1987. 3. G. Wolfgang, "Ullmann's Encyclopedia of Industrial Chemistry" , 5a Ed., VHC Kirk Othmer, "Encyclopedia of Chemical Technology, 3a Ed., Wiley, N.Y. 1979 4. H.F. Mark, N.M. Bekales, C.G. Overberger, G. Menges, " Encyclopedia of Polymer Science and Engineering" , Wiley, N.Y. 1987. 5. F.W. Billmeyer, "Textbook of Polymer Science" , John Wiley 6. M.J. Rosen, "Surfactants and Interfacial Phenomena" , John Wiley R.J. Hunter, " Introduction to Modern Colloid Science" , Oxford U.P.

Evaluation criteria

For grading policy, see: Regimento Geral de Graduação, Seção I – Normas Gerais, Capítulo V – Da Avaliação do Aluno na Disciplina. Students are required to attend 75 % of the lectures. For further details, see: Regimento Geral de Graduação, capítulo VI, seção X, artigo 72.