**FORTH, University of Crete**
Materials Science and Technology

# Dynamics of Polymeric Liquids
# 5-Day Accelerated Course

**Seminar Room I, FORTH main building**
**September 7-11, 2015**

Monday – Thursday 10.00 am to 01.30 pm
Friday 2.30 pm – 6.00 pm

Professor Giacomin, giacomin@queensu.ca

Lectures: 3h per day for 5 days

Required Text: Bird, R.B., R.C. Armstrong, and O. Hassager, "Dynamics of Polymeric Liquids. Vol. 1. Fluid Mechanics", **FIRST EDITION**, John Wiley & Sons, New York, 1977

Prerequisite (or corequisite): Undergraduate transport phenomena (or fluid mechanics)

**SYLLABUS**
**Dynamics of Polymeric Liquids**
**5-Day Accelerated Course**
**Summer 2015**

Prof. Giacomin

| Day | Class Date | Assigned Chapters | Subject | Assigned Problems |
|---|---|---|---|---|
| 1 | Mon | 1, A<br>2 | Newtonian Fluid Dynamics<br>Structure of Polymeric Fluids | Illustrative Examples |
| 2 | Tues | 3<br>4<br>5, B | Flow Phenomena in Polymeric Fluids<br>Material Functions for Polymeric Liquids<br>Generalized Newtonian Fluid | Illustrative Examples |
| 3 | Wed | 6 | General Linear Viscoelastic Fluid | Illustrative Examples |
| 4 | Thu | 7 | Quasilinear Corotational Models | Illustrative Examples |
| 5 | Fri | 8 | Nonlinear Corotational Models | Illustrative Examples |

**Important Dates**

First Class 9/7
Last Class 9/11

**CLASS PARTICIPATION INFORMATION**
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This course is taught using my version of the Socratic method. By this I mean that students will learn by answering questions. To get the most out of this class preparation, students must prepare by completing the assigned readings, and then, by preparing at least two questions provoked by these readings. They must also be prepared to answer questions on the assigned readings. Students must also demonstrate critical thinking, when called upon, by analyzing their classmates' answers to questions. Students can expect to be called upon every time the class meets.