ME679: Polymer Processing Techniques

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Course Description: Students will learn advanced information on the mechanical properties of polymeric materials, and the techniques for processing of plastics: extrusion, injection molding, compression molding, thermoforming, casting

Prerequisites: Credits in undergraduate courses in fluid dynamics (ME 304) and heat transfer (ME 407).

Textbook: Polymer processing fundamentals By Tim A. Osswald ISBN 1-56990-262-3

Reference: Principles of Polymer Processing By Tadmor and Gogos ISBN 0-471-38770-3

Topics: Some topics may be taught in a different style from the text and others may not be in the text at all, but will be provided as notes. Real life problems and examples will be shared as often as possible and leading experts in the field may be invited occasionally to give a snapshot on the polymer processing challenges and successes. See Assignment Sheet for details

Homework: See Assignment Sheet

Class Format: The Lectures by the Instructor will focus on selected properties of plastics, several polymer processing equipment, and how each processing technique is used to convert polymer feedstock into plastic end products.

Homework: See Assignment Sheet

Exams: There will be two Exams: **One mid term (worth 30% of the final grade) and a final (worth 35% of the final grade).** Each exam will cover material from lectures taught preceding the date of the exam. Exams will be open book. *Make-ups will only be given to students who provide a valid excuse or conflict or medical or family emergency.*
Grades for missed exams with no valid excuse will be recorded as **zero.**

Participation and attendance: Participation and attendance is expected of all students and rated at 5% of the final grade. Missed time is allowed with a valid excuse with proof.

Special Events: On occasion, there may be experts in the field invited to give a talk on specific topic, in that case the info will provided ahead of time.