

Characterization Lab 2000

Course Evaluations from Winter 99 Quarter

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Polymer Characterization
20 MTEN 636 001
Quarter: Winter, 1999/2000
LEVEL: Dual (Required Graduate; Undergraduate Elective)
513 Rhodes Hall for Full Class Or TBA for Groups

Prof. Gregory Beaucage gbeaucag@uceng.uc.edu 556-3063/-5152(Lab)/-9305(Lab) 540 ERC/551 ERC and 410 Rhodes (Labs)	Doug Bowling MS Materials Science and Engineering dbowling@uceng.uc.edu 556-7759 504 A Rhodes Hall	Teaching Assistant: Unknown , PhD Candidate in Polymers 556-xxxx xxxxxxx@email.uc.edu xxx Rhodes Hall
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Groups (Tenative)

Group 1	Group 2	Group 3	Group 4	Group 5	Group 6
Brandewie, Brian	Chase, Jennifer	Labbe, Cliff	Phatak, Deepti	Fan, Gangli	Levine, Kirill
Cerny, Jennifer	Aykanat, Aydin	Agashe, Nikhil	Varadarajan, Bhadri	Chen, Jinhui	Lippl, Anthony
Hostetter, Greg	Oztemiz, Serhan	Shah, Kunal	Jobanputra, Manish	Zhu, Yanrong	

SCHEDULE

Group (Day)	Week 1 (W/F) Jan. 3	Week 2 (MwF) Jan. 10	Week 3 (W/F) Jan. 17	Week 4 (MwF) Jan. 24	Week 5 (MwF) Jan. 31	Week 6 (MwF) Feb. 7	Week 7 (MwF) Feb. 14	Week 8 (MwF) Feb. 21	Week 9 (MwF) Feb. 28	Week 10 (MwF) Mar. 6	Finals Mar. 13
1 (M)	x	2	1(W)	3	4	5	6	7	x	Gp. 3	Gp. 2
2 (M)	x	1	2(W)	4	3	6	5	x	7	Gp. 5	Gp. 4
3 (W)	1	2	x	3	4	5	6	7	x		
4 (W)	2	1	x	4	3	6	5	x	7	Gp. 1	Gp. 6
5 (F)	1	2	3	4	5	6	7	x			
6 (F)	2	1	4	3	6	5	x	7			
								"=	Whole Class Meets in 513 Rhodes at 12pm		

Currently, 17 students are registered for Polymer Characterization. The class will be divided into 6 groups of 3 students. These groups will meet on the specified days (see table above) to be instructed on each lab. The 3 credits of lab for this course convert to 9 hours of lab time which the students can complete at any time that access to the instruments is available. Instruction for each lab will take place only during the class time of 12-1 pm on the specified day (see table above).

The numbers in the table above correspond to the lab number given below. **Students are expected to be familiar with the lab prior to the specified instruction period.**

Parts: (html)
[Background Class on Analysis.html](#)
[Computer Program Problem.html](#)

[Reverse Engineering Project.html](#)

PLEASE DO NOT PUT THIS QUARTER PROJECT OFF TO THE LAST MINUTE!!!

Labs

Lab	html file	Background Notes:
Lab 1	Melt Viscosity.html	Background.html , Polymer Melt Rheology/Viscometric Flow.html
Lab 2	Tensile/Impact.html	StressStrainNotes.html , Morphology of Polymer Deformation.html Some Past Instron Data Sets
Lab 3	DTA/TGA.html	Thermal Analysis.html , Semicrystalline Morphology.html
Lab 4	GPC/Intrinsic Viscosity.html	Intrinsic Viscosity and MW distribuitons.html , Physics of Coil: dilute.html , Physics of Coil: semi-dilute.html
Lab 5	Spectroscopy.html	EM Radiation.html , IR.html , NMR.html XRD.html
Lab 6	XRD.html	Download Data: UHMWPE.gif Azimuthal Averaged Data.MSExcel Radial Averaged Data.MSExcel
Lab 7	Microscopy.html	EM Radiation (Analysis).html , Morphology Class.html , Semicrystalline Morphology.html , Deformation Morphology.html , Phase Morphology.html

Files: (Click to Down Load)

[Data for Computer Program](#), [Excel File for Computer Program](#)

The focus of this course is analysis and characterization of polymers and plastics. Polymer Characterization is a **lab course** which is intended as a compliment to a lecture course [Polymer Analysis](#) which is offered in the fall quarter.

Polymer Characterization involves

- a sequence of 7 labs which are performed by groups of 3 to 4 students
- a required computer program written individually
- a reverse engineering project based on a commercial product which is presented as a written report and as a class presentation by each group.

The grade for the class is an equally weighted sum of grades for each of the 7 [reports](#), the 1 [computer program](#), the class presentation and the write-up for [the reverse engineering project](#). That is, each component of the grade is weighted 1/10.

Students are expected to keep a [lab notebook](#) which will make up a portion of the individual grades for the lab reports.

Lab reports are due 1 week after completion of the lab. This means that the **first lab is due** the second week of classes (**Week of January 10 at 5pm on the day of the lab**) and one lab will be due every week until 7 have been completed. Late reports will not be accepted.

The computer program is due at midterm (**February 4 at 5pm**) no late computer programs will be accepted.

The written report on the reverse engineering project is due **March 13 at 5pm. No late reports will be accepted.** The group presentations for the reverse engineering project will be given the weeks of **February 28, March 6 and March 13.**

Summary of Characterization Lab Due Dates:

(Deliver All Reports to 410 Rhodes Lab or Directly to the TA)

Week of

Jan 10 Lab Due 5pm (except groups 1 and 2)
 Jan 17 Lab Due 5pm
 Jan 24 Lab Due 5pm (except groups 3 and 4)
 Jan 31 Lab Due 5pm
 Feb 7 Lab Due 5pm
 Feb 11 Program Due
 Feb 14 Lab Due 5pm
 Feb 21 Lab Due 5pm (except group 6)
 Feb 28 Lab Due 5pm (except groups 2, 4 and 5)
 Mar 6 Lab Due 5pm (only groups 2 and 4)

Presentations for Reverse Engineering

Mar 3 Group 1 (Whole Class Meets at 12pm in 513 Rhodes)
 Mar 6 Group 3 (Whole Class Meets at 12pm in 513 Rhodes)
 Mar 8 Group 5 (Whole Class Meets at 12pm in 513 Rhodes)
 Mar 10 Group 6 (Whole Class Meets at 12pm in 513 Rhodes)

Mar 13 Group 2 (Whole Class Meets at 12pm in 513 Rhodes)

Mar 15 Group 4 (Whole Class Meets at 12pm in 513 Rhodes)

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