

Title: Mechanical Testing System Coupled with an Environmental Chamber for Hydrogels

Names:

Team: Gabriel Martinez-Diaz, Darcee Nelson, Charlie Haggart, Mike Piche

Client: Prof. Weiyuan John Kao

Advisor: Paul Thompson

Date: 9/4/02 – 9/10/02

Problem Statement: To update an existing procedure to make dog-bone stencils, approved by the American Society for Testing Materials (ASTM), and to test an environmental chamber, built in BME 301, to be used with a mechanical testing system in order to test the mechanical properties of hydrogels including stress, strain and creep.

Restatement of Team Goals: N/A

Summary of Accomplishments:

1. Assigned team roles:
 - Gabriel Martinez-Diaz – Communications liaison
 - Darcee Nelson – Team leader
 - Charlie Haggart – BSAC
 - Mike Piche – BWIG
2. Made semester goals:
 - Test existing environmental chamber built in BME 301
 - Adapt chamber to perform creep tests
 - Gather creep data of hydrogels of various modulations
 - Refine PDMS stencil procedure
 - Increase number of stencils that can be made at once
 - Present presentation/paper of work
3. Familiarized all group members with the project
4. Put together the existing environmental chamber

Statement of Team Goals:

1. Meet on Wednesday perform temperature tests of the chamber
2. Write detailed schedule for semester
3. Update PDS of chamber and stencil procedure
4. Inquire about using 1313 lab (availability, storage space, etc)
5. Set-up meeting with client

Project Schedule:

Date	Tasks
9/4 - 9/10	Define team roles and outline semester goals
9/11 - 9/17	Make a schedule for semester, update PDS and set-up meeting with client
9/11 - 9/20	Testing of existing chamber (temp, seals, visibility, compatibility with Instron 1000)
9/20 - 9/24	Brainstorm adaptations of chamber for creep testing, update PDMS stencil procedure
9/25 - 10/4	Adapt environmental chamber to be used for creep testing
10/5 - 10/10	Write midsemester report, midsemester presentation
10/11	Midsemester presentation
10/12 - 10/18	Resolve issues with Eng. 1313 Research Lab, plan for creep tests
10/19 - 10/22	Make hydrogels for Creep Testing

10/23 - 11/29	Perform creep testing of hydrogels/data analysis
11/30 - 12/12	Preparation of final paper and poster presentation
12/13	Poster presentation
12/14 - 12/20	Final meeting with advisor

Last updated: 9/10/02

Difficulties: none

Activities:

Team: Wednesday meeting to discuss project, 1 hr

Friday meeting to sign up for projects, meet with advisor, and choose course roles, 2 hr

Monday meeting to familiarize group members with the project and semester goals, 1.5 hr

Gabriel: Worked on tentative schedule, 0.5 hr

Total: 5 hr

Darcee: Worked on tentative schedule, 0.5 hr

Total: 5 hr

Charlie:

Total: 4.5 hr

Mike:

Total: 4.5 hr