

## CHEMISTRY 342 - FALL 2006

# TECHNIQUES IN BIOCHEMISTRY

## LABORATORY SCHEDULE

<u>Week</u>	<u>Date</u>	<u>Experiment</u>	<u>Page</u>
1	8/31	Introduction	
2	9/7	Determination of Protein Concentration	<a href="#">9</a>
3	9/14	Buffer Preparation	<a href="#">17</a>
4	9/21	Assay of Lactate Dehydrogenase	<a href="#">19</a>
5	9/28	Purification of Lactate Dehydrogenase: A) Preparation of Extract and Ammonium Sulfate Precipitation (LONG LAB PERIOD)	<a href="#">25</a>
6	10/5	B) Affinity Chromatography	<a href="#">33</a>
7	10/12	Purification Wrap-Up (protein assays)	<a href="#">37</a>
8	10/19	DATA ANALYSIS (attendance optional, to compensate for long lab period on 9/28; but note assignments due!)	
9	10/26	SDS-PAGE Analysis of LDH Purification and plan further enzyme characterization	<a href="#">41</a>
10	11/2	Characterization of LDH kinetics, isozyme composition, or native molecular weight	<a href="#">45</a>
11,12, 13	11/9, 11/16 11/30	Further Characterization of LDH (independent projects)	<a href="#">61</a>
14	12/7	Presentations	

## SCHEDULE OF ASSIGNMENTS

<u>Date Due</u>	<u>Assignment</u>
9/14	<u>Homework</u> : Buffer Preparation Prelab Questions ( <a href="#">p.17</a> ) (10 pts.)
9/21	<u>Lab Report</u> (data & brief discussion): Methods of Protein Determination (see <a href="#">p.16</a> )(25 pts.)
10/5	<u>Paper Draft</u> : Purification of Lactate Dehydrogenase (Introduction section; see <a href="#">guidelines for citing scientific literature</a> ) (20 pts.)
10/19	<u>Paper Draft</u> : Purification of Lactate Dehydrogenase (Materials & Methods section) (20 pts.) (see <a href="#">guidelines</a> ) <u>Homework</u> (due at <i>end</i> of lab period): SDS-PAGE Prelab Calculations (see <a href="#">p.40</a> ) (5 pts.) <b>(Note: this homework assignment – <i>not</i> the paper draft – may be prepared and submitted jointly by you and your lab partner[s])</b>
10/26	<u>Homework</u> : Purification Table (see <a href="#">p.38</a> ) (10 pts.) <b>(Note: this homework assignment may be prepared and submitted jointly by you and your lab partner[s])</b>
11/16	<u>Paper Draft</u> : Purification of Lactate Dehydrogenase (Results section, with data tables & figures) (20 pts.) (excluding enzyme characterization; this will be included in final paper) (see <a href="#">guidelines</a> )
12/7	<u>Presentation</u> : Independent Project (20 pts.) (oral group presentation plus group write-up stating goal, experimental design, data, and brief discussion)
12/11	<u>Final Paper</u> : Purification and Characterization of LDH (revisions of previously submitted drafts, plus Abstract and Discussion sections) (50 pts; see grading <a href="#">rubric</a> )

In addition to these scheduled assignments, lab performance will be evaluated (20 pts. total). The lab performance grade will be based on attendance, punctuality, preparation, awareness of lab safety rules, lab skills, and proper lab notebook maintenance.

Although lab experiments will be performed by lab partners, all written assignments are expected to be individually prepared. You may work together on calculations, but be prepared to explain to me (in person, one on one) how you did them!

**Reminder:** All students are bound by the standards of the Academic Honor Code, found at [www.goucher.edu/documents/General/AcademicHonorCode.pdf](http://www.goucher.edu/documents/General/AcademicHonorCode.pdf)