General Education Annual Course Assessment Form

Course Number/Title  Chem131B/Biochemistry Lab  GE Area  R

Results reported for AY  2016-2017  # of sections  2  # of instructors  1

Course Coordinator:  Alberto A. Rascón, Jr.  E-mail:  alberto.rascon@sjtu.edu

Department Chair:  Karen Singmaster  College:  Science

Instructions: Each year, the department will prepare a brief (two page maximum) report that documents the assessment of the course during the year. This report will be electronically submitted to <curriculum@sjtu.edu>, by the department chair, to the Office of Undergraduate Studies, with an electronic copy to the home college by October 1 of the following academic year.

Part 1

To be completed by the course coordinator:

(1) What GELO(s) were assessed for the course during the AY?

GELO 1: Students will be able to demonstrate an understanding of the methods and limits of scientific investigation.

1. (2) What were the results of the assessment of this course? What were the lessons learned from the assessment?

The learning objective was assessed using exam questions for the FA 2016 and SP 2017 sections of Chem 131B. In the fall, 16/18 students showed mastery of the learning objective by attaining 100% on the problem that was assessed. In the spring, 28/32 students showed a mastery of the learning objective by attaining 100% and 3/32 students showed an understanding of the objective by attaining ≥75% on the problem that was assessed. Note that students are given a chance to choose the best answer, and if unsure, have an opportunity to choose a second answer worth fewer points.

Question: The advantage of using the Invision His-tag stain over the Simply Blue dye safe stain is that:

a. The fluorescent dye in the stain is conjugated to the same nitrilo acetic acid (NTA) complex that is found in Anion exchange columns resulting in detection levels at ~ 0.5 pico moles of His-tagged fusion proteins.

b. The fluorescent dye in the stain is conjugated to the same nitrilo acetic acid (NTA) complex that is found in Hydrophobic columns resulting in detection levels at ~ 0.5 pico moles of His-tagged fusion proteins.

c. The fluorescent dye and the Simply Blue dye have no differences and there is no advantage using one over the other since they both result in detection levels at ~ 0.5 pico moles of His-tagged fusion proteins.

d. The fluorescent dye in the stain is conjugated to the same nitrilo acetic acid (NTA) complex that is found in Ni-standard columns resulting in detection levels at ~ 0.5 pico moles of His-tagged fusion proteins. (Answer)

e. Simply Blue dye is better and results in detection levels at ~ 0.5 pico moles of His-tagged fusion proteins.
In addition, the objective was also assessed using a group presentation in which students focused on the experimental methods/techniques that were used for successful/unsuccessful cloning and expression of a gene of interest. This included a collaborative effort between students on how to interpret and present results/data collected throughout the semester and provide explanations using the literature on ways to troubleshoot approaches. Although the presentations were a collaborative effort, each student was graded individually. Please see the rubric and presentation format given to the students (Group Presentation Grading Rubric-Chem 131B 2016-2017.pdf and Chem 131B Group Presentation Format-2016-2017.pdf). In the fall, 17 out of 18 students showed mastery of this approach by attaining ≥80% on the presentation. In the spring, 22 out of 32 students showed mastery of this approach by attaining ≥80% on the presentation.

(3) What modifications to the course, or its assessment activities or schedule, are planned for the upcoming year? (If no modifications are planned, the course coordinator should indicate this.)

No modifications are planned.

Part 2

To be completed by the department chair (with input from course coordinator as appropriate):

(4) Are all sections of the course still aligned with the area Goals, Student Learning Objectives (GELOs), Content, Support, and Assessment? If they are not, what actions are planned? Yes

(5) If this course is in a GE Area with a stated enrollment limit (Areas A1, A2, A3, C2, D1, R, S, V, & Z), please indicate how oral presentations will be evaluated with larger sections (Area A1), or how practice and revisions in writing will be addressed with larger sections, particularly how students are receiving thorough feedback on the writing which accounts for the minimum word count in this GE category (Areas A2, A3, C2, D1, R, S, V, & Z) and, for the writing intensive courses (A2, A3, and Z), documentation that the students are meeting the GE GELOs for writing.

Course enrollment was 16 per section.
Journal Article Presentation - Powerpoint/Keynote Style

Title Slide

Could be the title of the article you are presenting, with Author name(s) and institution information. Your name, date, and course information.

Introduction/Background

You should be extremely familiar with the journal article you have chosen. You will be required to give an introduction that includes background information of the chosen journal article. Typically, the introduction from the journal article should state the purpose of the investigation and its relationship to other work in the field. This should be presented in a direct and concise matter showing more figures/illustrations than words. The introduction/background section should set the tone for the rest of the presentation, including segueing into the results/data of the journal article.

Results/Data

It is important to present the best results that get to the point of why the journal article was written/accepted. You are not required to present all the results/data of the article, if you do not have to. You only have 15 min to present the article (with 3-5 min questions at the end). However, for this section, it is important to present the experiments (or materials and methods) in sufficient detail so that the audience is aware of how the results/data were obtained.

For example, if the authors used an experiment or technique that is novel, then you should give some background information of how the technique is used, then get into the experiment from the journal article.

An important note: Whenever you prepare a presentation of any kind, your goal should be to educate the audience. This will change depending on your target audience (e.g. If you were defending a thesis, the target audience could span from your peers and colleagues to the general public. So, you would probably present more detail, especially experimental detail to compensate for the lack of science background from the general public).

Discussion/Conclusion

Once you have presented the results/data of the article, you should discuss how the results were interpreted by the authors in the article. This should bring the whole presentation together, tying in the introduction (why the study was performed), the results/data obtained, and any important interpretations/conclusions. In addition, if the journal article states that there other pending studies or any future directions, this is where they should be mentioned.
Questions

Be prepared for questions. So, **one important tip**: do not put anything on your slides that you do not know. Anything that you present is fair game! This does not mean that you should leave something out only because you do not know what it is. Do the background research and find out! I will be reading all the journal articles and keep notes on what you presented and what you did not, so if you leave out an important experiment, it could cost you points.

Finally, **EVERYONE** will be required to ask at **least 3** questions (I will keep track and will be calculated into your final score).

*If you ask more, I will keep track and may earn you some extra points.*
### Group "Lab Meeting" Presentation - Individual Grading Rubric

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<th>Category</th>
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<th>4</th>
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<tr>
<td><strong>Deliver</strong>&lt;br&gt;- body language &amp; eye contact&lt;br&gt;- contact with the public&lt;br&gt;- poise&lt;br&gt;- seldom looks at notes&lt;br&gt;- very good transition from one group member’s section to the next</td>
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<td><strong>Content/organization</strong>&lt;br&gt;- clear and adequate ppt slides&lt;br&gt;- more figures than words (if possible)&lt;br&gt;- logical structure&lt;br&gt;- demonstrates knowledge of assigned section</td>
<td>5</td>
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<td><strong>Mastery of individual section</strong>&lt;br&gt;- clear and relevant information&lt;br&gt;- able to explain well&lt;br&gt;- depth of commentary&lt;br&gt;- spoken, not read&lt;br&gt;- able to answer questions</td>
<td>5</td>
<td>4</td>
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<td><strong>Overall contribution to presentation</strong>&lt;br&gt;- nice flow of presentation (not too fast or slow)&lt;br&gt;- approximately 6.25 min time limit, individually&lt;br&gt;- able to answer question(s)&lt;br&gt;- individual content/organization fit well with group</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
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<td><strong>Overall group presentation</strong>&lt;br&gt;- excellent group dynamic&lt;br&gt;- proper use of time&lt;br&gt;- 25 min (+/- 2 min) for group&lt;br&gt;- nice flow of presentation (not too fast or slow)</td>
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<td><strong>Total score</strong> / 25</td>
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