



Human Biology | 2014-2015 Assessment Report

1. Please give a brief overview of the assessment data you collected this year. This can be in any form you feel is appropriate, such as a table, a short narrative of results, statistical analysis, highlighting findings that were of particular interest, etc. You will, however, likely want to submit results for each learning outcome you assessed this year individually.

Demonstrate a basic knowledge of molecular/biochemical processes

Students in **Exercise Physiology** were given instruction on accounting for all electron carriers, CO₂ produced, oxygen used, and ATP for the complete oxidation of glucose and free fatty acids. They were able to successfully quantify values, e.g., CO₂ produced, for all of these variable for each of the following processes: B-oxidation, lipolysis, glycolysis, electron transport chain, and oxidative phosphorylation. Evaluation of their understanding using quizzes and exams indicated that all students were able to do this at the A to B grade level.

Students in **Exercise Physiology** were given instruction on the biochemical/cellular basis of muscle contraction. This included understanding the role of protein biochemistry / structure and the role of ATP in the process of muscle contraction. Evaluation of their understanding using quizzes and exams indicated that all students were able to do this at the A to B grade level.

Demonstrate a basic knowledge of molecular/biochemical processes

Demonstrate a basic knowledge of cell structure, organelles, and cellular processes

Students taking **Immunology** were given instruction on the molecular mechanisms by which B lymphocytes and T lymphocytes are activated, proliferate and differentiate into various effector cells and memory cells. This information covers both outcomes. Evaluation of their understanding of this information was assessed through an essay test. All students took the exam. There were 10 A's, 5 B's, 6 C's and 1 D. Quizzes that lead up to essay tests to identify gaps in information for individual students are a part of the course design. However, in the future, I will communicate my concern of these gaps more assertively to students through direct, individual conversation with invitations for one-on-one tutoring sessions.

Demonstrate a basic knowledge of molecular/biochemical processes

Students in **Microbiology** were given instruction on the variety of mechanisms by which prokaryotes regulate metabolic pathways. This outcome was evaluated by a multiple-choice exam. There were 14 A's, 25 B's, 18 C's, 10 D's and 1 F. Early intervention through direct conversation that includes offerings to tutor students on an individual basis will be attempted in future courses.

Demonstrate a basic knowledge of cell structure, organelles, and cellular processes

Students taking the **lab portion of Microbiology** are exposed to a variety of techniques to identify various cellular characteristics of eukaryotes and prokaryotes. This outcome was evaluated by a lab

practical and the associated final lab report. This outcome was assessed in lab section 001. There were 12 A's, 10 B's and 1 C.

2. How will you use what you've learned from the data that was collected? Some examples are: particular improvements to the curriculum, incorporation of a different pedagogy, a change in assessment plan for the following year in order to obtain more specific feedback, better information or a better response rate, a determined need for faculty development in a particular area, better career alignment, a faculty retreat to discuss the data and how best to use it, etc.

Performance in individual courses suggests that the vast majority of students are doing very well in terms of these 2 outcomes. A senior seminar course required by all Human Biology majors would be a great opportunity to assess how well our students are performing in all areas of interest. This course is not being offered for a variety of reasons, including the overwhelming number of Human Biology majors the limited number of Human Biology faculty are advising. We are simply outmatched by numbers. As such, the ideal course for assessment is not possible at this time. Other methods, including online surveys, have been conducted in the past. The value of online survey instruments tends to be limited because of poor response rates. We are currently evaluating how we can develop and administer a useful online instrument to increase response rates. We hope to incorporate this method next year.