

Course Title & Number: _____ Human Biology Bio*H115 _____

Competency Area: **SCIENTIFIC REASONING** (Goal: Students will become familiar with science as a method of inquiry. Students will develop a habit of mind that uses quantitative skills to solve problems and make informed decisions.)

Faculty submitting the Learning Outcomes: _____ Rachel E. Sackett _____

Date: _____ 3/6/13 _____

[Instructions: Please match the Learning Outcomes in the left hand column to those of the course you are submitting for Gen Ed approval. List the corresponding course outcomes in the right hand column to indicate a match.]

BOR TAP's Learning Outcomes	Corresponding Outcomes for Course Named Above
1. Explain the methods of scientific inquiry that lead to the acquisition of knowledge. Such methods include observations, testable hypotheses, logical inferences, experimental design, data acquisition, interpretation, and reproducible outcomes.	Determine the effect of various pollutants on ecosystem composition Explore the effects of pH, temperature and substrate concentration on enzymes and explain how these variables relate to the characteristics of enzymes
2. Apply scientific methods to investigate real-world phenomena, and routine and novel problems. This includes data acquisition and evaluation, and prediction.	Apply the steps of the scientific method through developing hypotheses and executing experiments during laboratory whereby they test the effects of temperature on respiration rates of goldfish
3. Represent scientific data symbolically, graphically, numerically, and verbally.	Plot data for phenotypic ratios in tables Plot data on enzyme activity during laboratory activities as histograms Explain data given in tables during oral presentations on organ systems
4. Interpret scientific information and draw logical references from representations such as formulas, equations, graphs, tables, and schematics.	Interpret various graphs and tables during laboratory exercises.
5. Evaluate the results obtained from scientific methods for accuracy and/or reasonableness.	Evaluate scientific methods while performing research on the human organ systems and discuss these studies during oral presentations

Additional Outcomes

Define and explain various terms and concepts in biology (such as homeostasis, cell, prokaryote, eukaryote, taxonomy, evolution, genotype/phenotype, etc.) as well as give examples of these concepts.

Use Punnett squares as models to predict potential inheritance outcomes

Use chemistry models to construct various molecules when given chemical formulas to demonstrate how atoms are stabilized by forming bonds

Use phenotypic evidence to predict possible genotypes in various plant and animal models

Apply the steps of the scientific method through developing hypotheses and executing experiments during laboratory

Determine the effect of various pollutants on ecosystem composition

Define the term evolution, give examples of evidence which supports evolutionary theory and discuss how previous thoughts were changed through experimentation and data collection

Evaluate electronic data bases, websites and publications to demonstrate an understanding of the quality of scientific information.

Use those approved resources to conduct research to explain the anatomy and physiology of the organ systems of the human body; including discussion on an infectious disease, disorder and cancer which