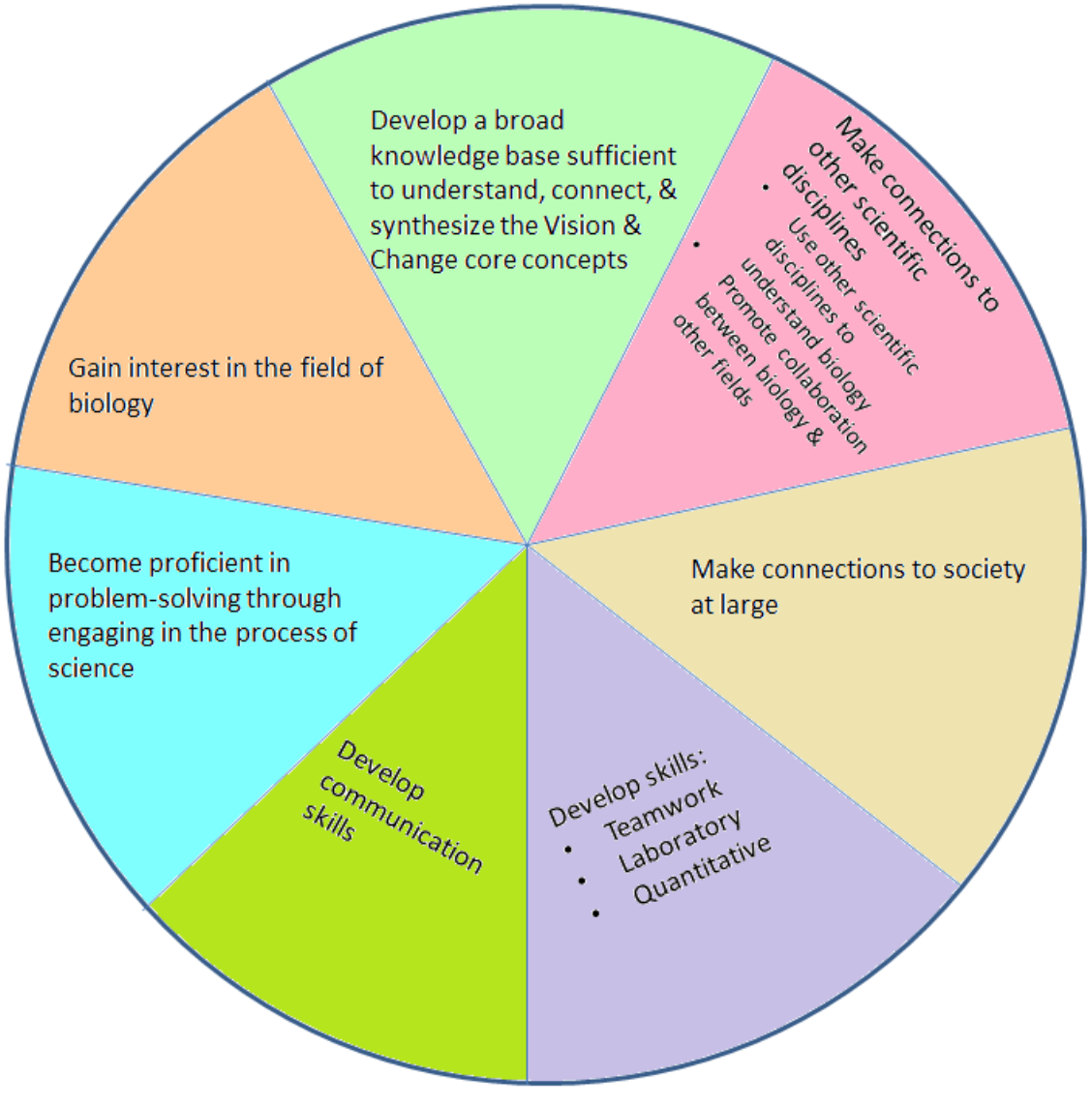
DRAFT April 1, 2013

Introductory Biology 151/153-152 Overarching Goals

Introductory Biology 151/153-152 will provide students with a solid foundation in the fundamental concepts and knowledge base of modern biology and help students develop the skills that are integral to the process of science. This course provides a coherent framework for understanding biology and prepares students for their upper-level courses. We hope also to encourage in students an intellectual excitement for biology and for science in general.

Science is hierarchical and current findings build on historical knowledge. In Introductory Biology 151/3-152 we are providing the FOUNDATION upon which the rest of a student's biological growth stands. As a result, both process AND content are crucial.



General Learning Goals and Objectives (in no particular order)

- Develop a broad knowledge base sufficient to understand, connect, & synthesize the Vision & Change core concepts: Evolution; Structure and Function; Information Flow, Exchange, and Storage; Pathways and Transformations of Energy and Matter; Systems.
  - Students will be exposed to topics that cover the breadth of the field of biology, the scope of biology (atoms to ecosystems), and about the many ways to be a biologist.

- Make connections to other scientific disciplines. Students will:
  - use other scientific disciplines (e.g., chemistry, physics, and math) to understand biology, and make conceptual and content linkages with those disciplines.
  - understand the importance of collaboration between biology & other scientific disciplines.

- Make connections to society at large. Students will understand:
  - the scientific underpinnings of current issues
  - why biological knowledge is essential to global citizenship

- Develop practical skills necessary for a professional biologist. Students will advance their:
  - teamwork skills
  - laboratory skills
  - quantitative analysis skills

- Develop communication proficiency. Students will be able to:
  - write logically and with clarity and style about important questions in biology
  - articulate persuasively, both orally and in writing, focused, sophisticated, and credible arguments
  - understand and explain results effectively
  - approach evidence with probity and intellectual independence
  - find and use source material appropriately with proper citation
  - read and understand primary scientific literature
  - understand the difference between primary and secondary scientific literature

- Become proficient in problem-solving through engaging in the process of science. Students will become proficient in:
  - developing testable hypotheses and aligning methods with a hypothesis
  - using biological knowledge/concepts to solve novel problems
  - identifying/asking questions & determining how to answer them
  - integrating disparate information

- Gain interest in the field of biology. Students will gain an appreciation for all topics in biology, not just their own intended major or career path.