

Language and Life: Splicing Writing and Biology

A bioengineered learning community. Linked BIO 11 and ENG 11 classes explore biology and writing across the curricula. Exercises in engineering design processes are incorporated. Students have the opportunity to connect, experiment, think critically, reflect, and write. Designed for elementary education majors, although suitable for all students.

| | Bio 11 Lecture Schedule | Bio 11 Lab Schedule | Eng 11 Schedule |
|---------|--|---|--|
| Week 1 | Introduction to Biology <i>Bioengineering discussion – What is it?</i> | Metrics, Scientific Method <i>Biotech all around us.</i> | Relating engineering and writing processes |
| Week 2 | Ecology | Graphing, <i>Testing Porosity</i> | Writing the short article: Focus on Ecology |
| Week 3 | Human Impact on the Environment <i>Water pollution discussion. Outside reading: Arsenic Crisis in Bangladesh; August 2004; <u>Scientific American Magazine</u>; by A. Mushtaque R. Chowdhury</i> | <i>Engineering a steady flow through a filter</i> | Responding to short articles: Feedback and revision |
| Week 4 | Chemistry for Biology Properties of Water Particle size | Intro to Chemistry, Functional Groups | Writing the application essay |
| Week 5 | The Cell <i>Life membranes – how phospholipid bilayers effectively control the cell.</i> | Osmosis and Diffusion <i>Paper Chromatography</i> | Conferences |
| Week 6 | Cellular Reproduction | Life Chemistry | Writing a lesson plan that incorporates engineering principles |
| Week 7 | Patterns of Inheritance | Exam week | Writing the memoir |
| Week 8 | Gene Expression & Regulation | Enzymes | Conducting Research |
| Week 9 | Evolution of Populations | Microscopy, Cell Diversity | Writing the news story |
| Week 10 | Evolution of Diversity; <i>Outside reading: Wading in Waste; June 2006; <u>Scientific American Magazine</u>; by M. A. Mallin</i> | <i>Designing a Water Filter</i> | Documentation format |
| Week 11 | Evolution of Microbes <i>The first cells- how were membranes formed?</i> | <i>Invasive Species; Designing an Insect Trap</i> | Writing the editorial |
| Week 12 | Evolution of Plants & Animals | Probabilities, Basic Genetics | Writing the research article: <i>Focus on trends in biotechnology</i> |
| Week 13 | Ecology | <i>Forensics Lab: Biotech and DNA</i> | Conferences |
| Week 14 | <i>Current Issues in Biology – Biotechnology: further exploration</i> | | Portfolio cover letters and final revision: <i>Fine-tuning and preparation</i> |

Bio 11: Italicized content is specific to this course.