

**Overview:**

- Students will evaluate the challenges of sustainable recycling of electronic waste and possible solutions using biotechnology.
- Students will design and develop approaches that incorporate sustainability and biotechnology to address wicked challenges such as the accumulation of discarded electronics.



**Topics:**

1. Why is the sustainable disposal of electronic waste a global and challenging problem?
2. Principles of Sustainability
3. The Scientific Method
4. Introduction to Biotechnology
5. Reading Critically as a Community of Scholars
6. Experimental Design
7. Demystifying Big Data & High-throughput Approaches
8. Communicating Science with the Public

**Lab Sessions:**

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| 1. Introduction to genes, genomes, and pangenomes            | 3 weeks |
| 2. Studying communities of microbes and their environments   | 3 weeks |
| 3. Designing your experiments                                | 2 weeks |
| 4. Troubleshooting, incorporating feedback, and reevaluating | 3 weeks |
| 5. Analyzing your data                                       | 3 weeks |
| 6. Presenting your case                                      | 1 week  |