The careful design of experiments lies at the core of good research. This seminar is intended to provide a review of the concepts needed to effectively design experiments, making this essential aspect of the research process readily understandable. A major goal is to demonstrate how good experimental design relies more on clear thinking and environmental understanding and less on mathematical or statistical complexity.

This seminar will explain how to establish the framework for an experimental project, set up an experimental system, design experiments within that system, determine and use the correct set of controls, and formulate models to test the veracity and resiliency of the data. Students will apply these concepts by developing a research proposal on a topic of their own choice.