

Spring 2026 - PLP 893

Applied Molecular Evolution and Genetics of Microbes

In this course, you will get an introduction to population genetics and phylogenetics as applied to plant pathology. **No prior experience is required**, but it is recommended to have a general knowledge of pathogen biology and genetics.

The course will cover topics such as sampling strategies, types of markers, estimation of genetic diversity, evolutionary forces, population evolution and demographics, and phylogenetic methods. The class will consist of lectures, literature discussions, and hands-on analysis, and students will have the opportunity to analyze their datasets. After the class, students will have a better understanding of population genetics and the genetic diversity of plant-associated microbes.

Objectives:

- Employ genetic tools, including phylogenetics, to understand the evolution and variation of microbial populations.
- Apply population genetics to answer plant pathology-related questions.
- Recognize the limitations, advantages, and proper use of genetic markers and population genetics tools.
- Interpret data and results derived from population genetic analysis.
- Connect concepts learned across previous courses in ecology, genetics, statistics, and evolution with population genetics.

3 Credits

Day/Time: Tue & Thu 9 am - 10.20 am

Place: PLB 147

Professor: Alejandro Rojas

For more information please contact rojasfle@msu.edu

