Spring 2022 - Introduction to Systems Biology

- Chemical reaction networks
- Biochemical kinetics
- Metabolic networks
- Signal transduction pathways
- Gene regulatory networks

This course will primarily involve

- Lectures
- Presentations
- A number of projects during the semester
- A final project.

The projects will be adapted to the background and interests of the participants. The necessary mathematical and biological background concepts will be introduced as part of the course.

Interdisciplinary groups will be formed of students with biological, mathematical and computational backgrounds. For example, a team of students from BA-BIOL, BS-CS and BS-BME each will bring their unique knowledge and perspectives to the team. Using models and existing codes (MATLAB) and/or developing their own codes (MATLAB, Python) students will develop modeling tools and algorithms (e.g., machine learning) to understand biological systems.

Prerequisites can be waived. However, a meeting with the professor is required beforehand.

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Listed as:

- Biol470 (Dynamic principles in systems biology, U)
- Biol672 (Computational systems biology, G)