



Introduction to Bioinformatics: *Basic Computational Skills for Biological Data Handling & Analysis*

Course number: PLB802-03

Instructor: Shin-Han Shiu (shius@msu.edu)

Time & Place: Tuesday & Thursday, 1:20-3pm, Plant Biology 147

Credit: 3 for both undergraduate and graduate students

About the Course:

- **What is bioinformatics**

Bioinformatics is the science and technique for organizing and analyzing biological data. The advent of various ‘omics tools allows the rapid generation of enormous amounts of data, such as DNA and protein sequences, gene expression profiles and protein-protein interactions. *How do you deal with these massive amounts of data and make sense out of them?* Here is where bioinformatics becomes extremely useful and essential for the next generation biologists.

- **What you will learn**

This course provides:

- An introduction to the biological datasets available and how they are generated.
- The bioinformatic tools for analyzing these data, the basic quantitative concepts behind these tools, and the kinds of questions these tools can address.
- Basic UNIX, programming, and database management.
- Hands-on experience in developing simple bioinformatic tools for *your own research interests*.

- **Who should take this course**

This course is designed for students (both undergraduate and graduate) with a basic statistics background. Specifically, you should take this course if you are:

- Interested in knowing how you can apply bioinformatics to your day-to-day research.
- A biology major and want to learn more about the exciting field of bioinformatics
- Majoring in a quantitative science such as computer science or statistics and are interested in knowing what kinds of problems biologists are trying to tackle with bioinformatics.

Any questions? Contact the instructor at shius@msu.edu for more details!