

SYLLABUS and information

Practical Bioinformatics

Fall Semester, 2021: 9:00 am - 12:00 noon Fridays Online classes

Course Directors: Bin Liu, Rick Wood, and J-J Shen

Week	LECTURE TOPIC	INSTRUCTOR
October 8	1. Gene expression analysis	Bin Liu
October 15	2. Cancer Genomics (TCGA)	Bin Liu
October 22	3. Chromatin Accessibility (ATAC-seq)	Yue Lu
October 29	4. Epigenetics and functional analysis	Han Xu
November 5	5. Proteomics	Nidhi Sahni

1. **Gene Expression Analysis** (RNA seq and related techniques)
2. **Cancer Genomics** (TCGA data access and analysis)
3. **Chromatin Accessibility** (ATAC-seq data analysis)
4. **Epigenetics and functional analysis** (ChIP-seq, Bisulfite-seq, CRISPR/Cas9 screens)
5. **Proteomics** (Genome-wide protein interactions)

SYLLABUS and information

Welcome to Practical Bioinformatics (GS04 1251). The instructors look forward to

working with you and learning together in this course.

Please read this note carefully so that you will be prepared for class

We will be sending a short questionnaire to gauge prior experience. Please respond to it so that we can better tailor the course to your needs.

Course Schedule

The course schedule is posted on Canvas. It starts promptly at 9 AM, so please log into Zoom 5-10 minutes early so that time is not lost in connecting.

The course is held on Fridays except for the last course session, because the GSBS retreat starts on the Friday.

Technical Preparation

Bring a high-resolution computer, enabled for Zoom

As you know, a good stable internet connection is important. You can probably find locations at MD Anderson if your home speed and stability is inadequate.

If you use an iPad, interactive annotation with an Apple pencil or similar is useful, but not required or necessary. You can also use the annotation functions in Zoom.

Individual preparation for each course session

Watch canvas in advance of each class for short tutorials or videos that we ask you to read through in advance, or one or two papers from the literature

Grading. The course is pass / fail. We ask for class participation. A “pass” will be given if all five homework assignments are returned.

Homework will be short and given at the end of each class session. It will consist of some data analysis that will take no more than 30-45 minutes to complete.

Class date	Homework due date (11:59pm)
October 8	October 14
October 15	October 21
October 22	October 28
October 29	November 4
November 5	November 11