

Schedule for 2310525			
Omics Sciences and Technology (2 credit)			
Second semester (2024)			
Time: TU 10.00 - 12.00		Co-ordinator: Pattana	
Room:	SCI10 519		
Topic	Hrs.	Date	Instructor
Genomics			
1 Introduction to Genomics	1	7 Jan (1h)	Pattana
2 Genome Analysis	3	7 (1h), 14 Jan	Pattana
2.1 Sequencing Technology			
- First Generation sequencing			
- Second-Generation Sequencing			
- Third Generation sequencing			
2.2 Genome sequencing by high throughput sequencing			
2.3 Sequence Polymorphism (SNPs, Indel, ...) and Comparative Genomics			
2.4 Genome Association Mapping			
3 Applying Genomics to research	1	21 Jan (1h)	Pattana
Transcriptomics			
1 Introduction to Transcriptomics	1	21 Jan (1h)	Teerapong
2 Analysis of transcriptome	2	28 Jan	Teerapong
2.1 DNA microarray			
2.2 RNA-Seq, Single-cell Seq			
3 Gene Function Annotation (GO, KEGG pathway)	1	4 Feb (1h)	Teerapong
4 Translatome	1	4 Feb (1h)	Teerapong
5 Applying Transciptomics to research	1	11 Feb (1h)	Teerapong
Epigenomics			
1 Introduction to Epigenomics	1	11 Feb (1h)	Kunlaya
2 Epigenetics (mechanisms)	2	18 Feb	Kunlaya
- DNA methylation			
- Histone modification			
- Small RNA Interference			
3 Analysis of epigenetic changes	2	25 Feb	Kunlaya
- Sequencing technique			
- Chip-Seq			
4 Applying Epigenomics to research	1	นัดเพิ่ม 1 h	Kunlaya
Mid-term examination: สอบ 3 - 7 Mar 2025; 07-03-2025 13:00 - 16:00 น.			
Proteomics			
1 Introduction to proteomics	1	11 Mar (1h)	Supitcha
2 Analysis of Proteome			
Expression Proteomics	2	11 (1h), 18 Mar (1h)	Supitcha
Structural Proteomics	1	18 Mar (1h)	Kuakarun
Interaction Proteomics	1	25 Mar (1h)	Supitcha
3 Protein interaction network	1	25 Mar (1h)	Supitcha

4 Applying Proteomics to research	1	1 Apr (1h)	Supitcha
Metabolomics			
1 Introduction to Metabolomics	1	1 Apr (1h)	Supaart
2 Analysis of Metabolome	2	8 Apr	Supaart
NMR			
Mass Spectrometry (LC/GC MS/MS)			
3 Metabolic network	2	22 Apr	Supaart
4 Applying Metabolomics to research	1	29 Apr (1h)	Supaart
Final-term examination: สอบ 28 Apr - 14 May 2025; 08-05-2025 13:00 - 16:00 น.			