

Schedule for 2310525

Omics Sciences and Technology (2 credit)

Second semester (2022)

Time: TU 10.00 - 12.00

Co-ordinator: Kunlaya

Room: SCI10 519

Topic	Hrs.	Date	Instructor
<b>Genomics</b>			
1 Introduction to Genomics	1	10 Jan (1h)	Pattana
2 Genome Analysis	3	10 (1h), 17 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	24 Jan (1h)	Pattana
<b>Transcriptomics</b>			
1 Introduction to Transcriptomics	1	24 Jan (1h)	Teerapong
2 Analysis of transcriptome	2	31 Jan	Teerapong
2.1 DNA microarray			
2.2 RNA-Seq, Single-cell Seq			
3 Gene Function Annotation (GO, KEGG pathway)	1	7 Feb (1h)	Teerapong
4 Translatome	1	7 Feb (1h)	Teerapong
5 Applying Transcriptomics to research	1	14 Feb (1h)	Teerapong
<b>Epigenomics</b>			
1 Introduction to Epigenomics	1	14 Feb (1h)	Kunlaya
2 Epigenetics (mechanisms)	2	21 Feb	Kunlaya
- DNA methylation			
- Histone modification			
- Small RNA Interference			
3 Analysis of epigenetic changes	2	28 Feb	Kunlaya
- Sequencing technique			
- Chip-Seq			
4 Applying Epigenomics to research	1	นัดเพิ่ม 1 h	Kunlaya
<b>Mid-term examination 7 - 13 Mar 2023: 8 Mar 2023 (13:00-16:00)</b>			
<b>Proteomics</b>			
1 Introduction to proteomics	1	14 Mar (1h)	Kunlaya
2 Analysis of Proteome			
Expression Proteomics	2	14 (1h), 21 (1h) Mar	Kunlaya
Structural Proteomics	1	21 (1h) Mar	Kuakarun
Interaction Proteomics	1	28 Mar (1h)	Kunlaya
3 Protein interaction network	1	28 Mar (1h)	Kunlaya

4 Applying Proteomics to research	1	4 Apr (1h)	Kunlaya
Metabolomics			
1 Introduction to Metabolomics	1	4 Apr (1h)	Supaart
2 Analysis of Metabolome	2	11 Apr	Supaart
NMR			
Mass Spectrometry (LC/GC MS/MS)			
3 Metabolic network	2	18 Apr	Supaart
4 Applying Metabolomics to research	1	25 Apr (1h)	Supaart
<b>Final examination 8 - 19 May 2023: 9 May 2023 (13:00-15:00)</b>			