

Schedule for 2310554

GENE ENG (2 credits)

Second semester (2019)

Time: WE, FR 08.00 - 09.00

Room: 521 SCI10

Co-ordinator: Kanoktip

Topic	Hrs.	Date	Instructor
DNA cloning	5	Jan 8, 10, 22, 24, 29	Kanoktip
Steps in DNA cloning, PCR DNA vector Enzymes in genetic engineering Bioinformatics (Sequence analysis) Transformation and transfection Screening and detection of the recombinant clones			
Gene expression analysis	4	Jan 31, Feb 5, 7, 12	Teerapong
Northern blot analysis RT-PCR and RT-qPCR Digital PCR DNA microarray RNA Sequencing (RNA-Seq)			
Recombinant protein expression and purification	4	Feb 14, 19, 21, 26	Kunlaya
<i>E. coli</i> expression system Yeast expression system Baculovirus expression system Protein purification			
Mid-term examination:			
Sequencing Technology and application	4	Mar 11, 13, 18, 20	Vorrapon
First Generation sequencing Second-Generation Sequencing Third Generation sequencing			
Gene function analysis	3	Mar 25, 27, Apr 1	Kunlaya
Mutagenesis Homologous Recombination RNA interference (RNAi)			
CRISPR-Cas and application (Genome editing and gene function analysis)	2	Apr 3, 8	Kunlaya

Molecular markers	4	Apr 10, 17, 22, 24	Anchalee
Types of genetic markers (e.g. SNPs) Mapping of genetic markers Applications (e.g. fingerprinting, MAS, GWAS)			
Synthetic biology	2	Apr 29, May 1	Alisa
Final examination:			

