

Schedule for 2310555			
GENE ENGINEER LAB (2 credits)			
First semester (2022)			
Time: FR 09.00 - 12.00, 13.00 - 16.00		Co-ordinator: Tanakarn	
Room: LAB 603; LECT 603			
Topic	Hrs	Date	Instructor
I. DNA extraction and PCR			
1.1 Orientation	6	19-ส.ค.-22	Tanakarn
1.2 Plasmid and chromosomal DNA extraction	6	26-ส.ค.	Tanakarn
1.3 Agarose gel and UV spectrophotometry			
1.4. PCR and agarose gel electrophoresis of PCR product	6	2-ก.ย.	Tanakarn
II. DNA cloning			
2.1 Brief restriction enzyme digestion and ligation	1	9, 16, 23, 30 Sep	Pawinee
2.2 Restriction enzyme digestion	2		
2.3 Ligation	3		
2.4 Brief transformation	2		Pawinee
2.5 Transformation	2		
2.6 Brief clone identification	1		Pawinee
2.7 Plasmid extraction	2		
2.8 Restriction analysis and colony PCR	2		
2.9 Agarose gel electrophoresis	1		
2.10 Discussion	1		Pawinee
Mid-term examination			
III. Site--directed mutagenesis			
3.1 Brief side-directed mutagenesis	1	21 Oct, 28 Oct, 4 Nov	Kittikun
3.2 Site-directed mutagenesis and error-prone PCR	5		
3.3 Transformation of site-directed mutagenesis	1		Kittikun
3.4 Gel electrophoresis, gel extraction, ligation, and transformation of error-prone PCR reaction	5		
3.5 Analysis of mutagenesis results	6		
3.6 Discussion	3		
IV. RNA extraction and RT-PCR			
4.1 Brief RNA extraction	1	18-ต.ค.	Tanakarn
4.2 Preparation of chemicals & glassware, induction of expression and cell collection	2		
4.3 RNA extraction	3		Tanakarn
4.4 Quantitative and qualitative determination of RNA	3	นัดเพิ่ม (11 Oct)	
4.4 Brief Dnase treatment and RT-PCR	1	Anchalee	
4.5 DNase treatment of total RNA	3		
4.6 Reverse transcription	2		

4.7 PCR	3		
4.8 Agarose gel electrophoresis	3		Anchalee
4.9 Discussion	3	25-ต.ค.	Anchalee, Tanakarn
Final examination: สอบ 28 Nov - 13 Dec 2022			