

Tentative Schedule:

Week No.	Date	Topics	Laboratory	Lecturer	Teaching method
1	7 Aug 2020	Orientation History of genetic engineering	Introduction to laboratory	Dr. Aphacha	Classroom
2	14 Aug 2020	Structure of nucleic acid	Structure of nucleic acid (lecture)	Dr. Aphacha	Classroom
3	21 Aug 2020	DNA, RNA and protein synthesis	Basic techniques 1	Dr. Aphacha	Classroom
4	28 Aug 2020	Gene control and expression	Basic techniques 2	Dr. Aphacha	Classroom
5	4 Sep 2020	Principle of gene cloning DNA for gene cloning	Chemical and equipment preparation	Dr. Aphacha	Classroom
6	11 Sep 2020	Enzymes for gene cloning	DNA extraction	Dr. Aphacha	Classroom
7	18 Sep 2020	Host cells and vectors for gene cloning	DNA concentration measurement	Dr. Aphacha	Classroom
8	Mid-Term Exam (21 -27 Sep 2020)				
9	2 Oct 2020	Introduction of DNA into living cells	Laboratory presentation and discussion	Dr. Aphacha	Classroom
10	9 Oct 2020	Selection and identification of clone	Agarose gel electrophoresis	Dr. Aphacha	Classroom
11	16 Oct 2020	DNA analysis and sequencing	Cutting of DNA with restriction enzyme	Dr. Aphacha	Classroom
12	23 Oct 2020	Chulalongkorn Memorial Day (Official Holiday)	PCR technique	Dr. Aphacha	Classroom
13	30 Oct 2020	Polymerase chain reaction (PCR)	PCR technique (continued)	Dr. Orachorn	Classroom
14	6 Nov 2020	Cloning for eukaryotes	Preparation of DNA fragment	Dr. Orachorn	Classroom
15	13 Nov 2020	Protein expression from cloned gene	Transformation of DNA fragment into cell	Dr. Orachorn	Classroom
16	20 Nov 2020	Application of genetic engineering	Detection of recombinant cloned cell	Dr. Orachorn	Classroom
17	27 Nov 2019	Assignment: Paper presentation and discussion		Dr. Aphacha/ Dr. Orachorn	Classroom
18	Final Exam (30 Nov - 10 Dec 2020)				