

Lesson Plan

Name of the Faculty : Dr. Mukesh Kumar
Discipline : Biotechnology Engineering
Semester : 6th
Subject : Animal Biotechnology (Theory:BTE- 306A; Practical BTE-312LA)
Lesson Plan Duration :

**Work Load(Lecture/Practical) per week(in hours): 03 Practical : 03

Week	Theory		Practical	
	Lecture Day	Topic(including assignment /test)	Practical Day	Topic
1 st	1 st	History and scope of animal cell culture	One day	Packing and sterilization of glass and plastic wares for cell culture
	2 nd	Cell culture media		
	3 rd	Role of serum, physicochemical properties of media		
	4 th	-do-		
2 nd	5 th	Preparation of primary culture, trypsinization, thawing	One day	Preparation of reagents and media for cell culture
	6 th	-do-		
	7 th	Continuous cell lines, adherent cultures, suspension cultures		
	8 th	Cell counting, application of animal cell culture		
3 rd	9 th	-do-	One day	Primer culture technique chicken embryo fibroblast
	10 th	Artificial insemination, super ovulation		
	11 th	-do-		
4 th	12 th	In <i>Vitro</i> fertilization and embryo transfer	One day	Secondary culture of chicken embryo fibroblast
	13 th	Cryopreservation of cell lines and animal germplasm		
	14 th	DNA bar coding		
5 th	15 th	Molecular biological techniques for rapid diagnosis of genetic diseases	One day	Quantification of cells by trypan blue exclusion dye
	16 th	-do-		
	17 th	Gene therapy		
6 th	18 th	Transfection	One day	Isolation of lymphocytes and cultivation of lymphocytes
	19 th	Establishment of immortal cell lines		
	20 th	Gene cloning techniques for mammalian cells		
7 th	21 st	Extinction of gene function by antisense RNA and DNA	One day	Study of effect of toxic chemicals on cultured mammalian cells
	22 nd	Brief account of gene silencing.		

	23 rd	Retroviral vector method		
8 th	24 th	DNA microinjection method	One day	Cryopreservation of cell primary cultures and cell lines
	25 th	Engineered embryonic stem cell method		
	26 th	Cloning by nuclear transfer		
9 th	27 th	Yeast artificial chromosome transgenesis		