ADVANCED ANIMAL DEVELOPMENTAL BIOLOGY (LS639A) S Saran*

S. No	Topics	Contact hours
1.	Introduction : Features and concepts in Developmental Biology,	6
	Future of Developmental Biology, Developmental Genetics,	
	Developmental mutants, Transgenesis, Gene duplication,	
	Regulatory circuits in embryonic development	
2.	Zebrafish as a model organism: Normal development,	4
	Mutagenesis, Regional specification	
3.	Mouse as model organism :Normal development, Regional	4
	specification, Understanding gene function by transgenic and	
	knockout studies	
4.	Cell-cell communications in development	3
5.	Growth, aging and regeneration	4
6.	Concept of stem cells: Hematopoietic stem cells as a model,	3
	Progenitor cells, Trans differentiation, Embroyonic stem cells	
7.	Medical implication of Developmental Biology: Diseases of	3
	development, Teratogenesis, Developmental therapies, Gene	
	therapy, Therapeutic cloning	
8.	Evolution and Development : Modification of development in	3
	evolution, Hox genes, Changes in the timing of developmental	
	processes during evolution	
9.	Developmental Mechanisms of evolutionary change—2 lectures	2

Suggested Readings:

- Developmental Biology Scott F Gilbert
 Essentials of Developmental Biology JMW Slack
 Development Wolpert and Tickle
- 4. Research papers