ANIMAL DEVELOPMENTAL BIOLOGY (476)

Prof. Shweta Saran

S. No.	Topics	Name of faculty	No. of lectures
1	Principles of Developmental Biology (3 lectures) • Questions and approaches in Developmental Biology • Evolution of developmental patterns • Principles of experimental embryology • Genomic equivalence	Shweta Saran	3
2	Signaling cascades involved in the control of developmental program with specific examples	Shweta Saran	2
3	Early embryonic development • Cleavage—Types and mechanism. • Gastrulation---movements involved • Cell specification w.r.t. amphibian, chick	Shweta Saran	4
4	Phenomenon of the Organizer wrt amphibians • Progressive determination • Regional specificity of induction	Shweta Saran	2
5	Pattern formation (2 lectures) • French flag model • polar coordinate model	Shweta Saran	2
6	Regeneration (3 lectures) • Epimorphic e.g. salamander limbs • Morphallactic e.g. Hydra • Compensatory e.g. mammalian liver	Shweta Saran	3
7	Tetrapod limb development (3 lectures) • Axes formation • Coordination of the three axes	Shweta Saran	3
8	*Dictyostelium discoideum* as a model organism (3 lectures) • Life cycle • pattern formation • cAMP signaling during development	Shweta Saran	3
9	*C. elegans* as a model system (3 lectures) • Invariant cell lineage • vulval development	Shweta Saran	3
10	*Drosophila* as a model system (3 lectures) • Anterior/posterior • Dorsal/ventral polarity development	Shweta Saran	3

11	Applications of developmental biology (1 lectures)	Shweta Saran	1
12	Programmed cell death (3 lectures) • Apoptosis • Autophagy • Necrosis	Shweta Saran	3