**PG.GOVT COLLEGE FOR GIRLS, SECTOR-42, CHANDIGARH**

**Teaching Plan Session Odd Semester**

**(2017-18)**

**Class: M.Sc Sem III & B.Sc sem IV**

**Name of the Teacher: Dr. Rewa Sharma**

**Subject: Zoology**

**Paper : Dev. Bio Paper VI (M.Sc.), Paper A (B.Sc )**

**Period :**

**Room No :**

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| **S. No** | **Date From** | **Date Upto** | | **Topics to be covered** |
| Week 1 | July 22 & July 24 2017 | July 29, 2017 | | M.Sc Sem 3: Gametogenesis in animals: Spermatogenesis and oogenesis.  Molecular events during fertilization. |
| Week 2 | July 31 2017 | Aug 5, 2017 | | B.Sc. Sem 5: Gametogenesis with particular reference to differentiation of spermatozoa, subtesticular cells in gametogenesis. |
| Week 3 | Aug 7, 2017 | Aug 12, 2017 | | M.Sc Sem 3:  Zygote formation, blastula formation and embryonic fields. Cleavage patterns and fate maps of Tunicate, Drosophila, Amphibia, Chick and C. elegans. Gastrulation. |
| Week 4 | Aug 14, 2017 | Aug 19, 2017 | | B.Sc Sem 5: Oogenesis and vitellogenesis; role of follicle in oogenesis. Egg maturation; egg membranes ; polarity of egg.  Fertilization; parthenogenesis. |
| Week 5 | Aug 21, 2017 | Aug 26, 2017 | | M.Sc Sem 3: Basic concepts of Development : Potency, commitment, specificiation, induction,instructive and permissive interactions, competence, determination and differentiation |
| Week 6 | Aug 28, 2017 | Sept 2, 2017 | | B.Sc Sem 5: Cleavage patterns; Cleavage; determination and differentiation |
| Week 7 | Sept 4, 2017 | Sept 9, 2017 | | M.Sc Sem 3:  Molecular basis of differentiation, transdifferentiation and dedifferentiation.  Regeration |
| Week 8 | Sept 11, 2017 | Sept 16, 2017 | | B.Sc Sem 5: Tissue interactions, basic concepts of organizers and inductors and their role. |
| Week 9 | Sept 18, 2017 | Sept 23, 2017 | | M.Sc Sem 3: Pattern formation in Drosophila Amphibian, Chick |
| Week 10 | Sept 25, 2017 | Sept 29, 2017 | | B.Sc Sem 5: Development of Amphioxus and Herdmania upto three germinal layers and metamorphosis in Herdmania. |
| **Autumn Break (30 Sept 2017- 09 Oct 2017)**  **Mid Semester Exam (10 Oct 2017 – 17 Oct 2017)** | | | | |
| Week 11 | Oct 18, 2017 | | Oct 21, 2017 | M.Sc Sem 3: Pattern formation in, C. elegans.  Presentations from students and discussion |
| Week 12 | Oct 23, 2017 | | Oct 28, 2017 | B.Sc Sem 5: in Development of frog upto three germinal layers and metamorphosis. Fate maps of frog embryo. |
| Week 13 | Oct 30, 2017 | | Nov 4, 2017 | M.Sc Sem 3: Regeneration  Presentations from students and discussion |
| Week 14 | Nov 6, 2017 | | Nov 11, 2017 | B.Sc Sem 5: development upto three germinal layers chick , Fate maps of chick embryo. Extra embronic membranes, their formation and role. |
| Week 15 | Nov 13, 2017 | | Nov 18, 2017 | M.Sc Sem 3: |
| Week 16 | Nov 20, 2017 | | Nov 25, 2017 | B.Sc Sem 5: development upto three germinal layers rabbit. Foetal membranes, their formation and role.  Mammalian placenta – Its formation, types and functions. |
| Week 17 | Nov 27, 2017 | | Dec 1, 2017 | M.Sc Sem 3:  Gene regulation in Development in Drosophila. |

**\PG.GOVT COLLEGE FOR GIRLS, SECTOR-42, CHANDIGARH**

**Teaching Plan Session Even Semester**

**(2017-18)**

**Class: Name of the Teacher:**

**Subject: Period :**

**Paper : Room No :**

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| **S. No** | **Date From** | **Date Upto** | | **Topics to be covered** |
| Week 1 | Jan 08, 2018 | Jan 13, 2018 | | M.Sc Sem 4:  Introduction to organogenesis and induction |
| Week 2 | Jan 15, 2018 | Jan 20, 2018 | | B.Sc sem 6:  Gene and Genetic Code: Structure of nucleic acids (DNA & RNA). Replication of DNA and transcription. Expression of gene (protein synthesis in Prokaryotes and Eukaryotes). Properties of genetic code, codon assignment, wobble hypothesis. |
| Week 3 | Jan 22, 2018 | Jan 27, 2018 | | M.Sc Sem 4:  Organogenesis: Vulva formation in C. elegans, Epithelio-mesenchymal interactions. |
| Week 4 | Jan 29, 2018 | Feb 3, 2018 | | B.Sc sem 6  Linkage, crossing over and recombination: Linkage, sex-linked characters, crossing over, frequency of crossing over, cytological basis of crossing over, synaptonemal complex. |
| Week 5 | Feb 5, 2018 | Feb 10, 2018 | | M.Sc Sem 4:  Totipotency & nuclear transfer experiment.  Eye lens induction. Differentiation of neuron |
| Week 6 | Feb 12, 2018 | Feb 17, 2018 | | B.Sc sem 6  Recombination in Fungi (tetrad analysis). Genetic recombination in bacteria (conjugation, transduction and transformation) plasmids. Regulation of gene expression in prokaryotes (Operon model) and in eukaryotes. |
| Week 7 | Feb 19, 2018 | Feb 24, 2018 | | M.Sc Sem 4:  Primary and secondary embryonic induction, chemical nature of evocators. |
| Week 8 | Feb 26, 2018 | Mar 03 , 2018 | | B.Sc sem 6  Applied Genetics: Recombinant DNA, genetic cloning and its applications in medicine and agriculture, DNA finger printing. |
| **2nd week March (Mid Semester Exam)** | | | | |
| Week 9 | March 12, 2018 | | March 17, 2018 | M.Sc Sem 4:  Primary and secondary embryonic induction, chemical nature of evocators continued. |
| Week 10 | March 19 , 2018 | | March 24, 2018 | B.Sc sem 6  Population genetics: Equilibrium of gene frequencies and Hardy Weinberg Law. Modification of Mendelian ratios: Non-allelic gene interaction, Modified F2 ratios. (9:7, 9:3:4, 9:3:3:1, 12:3:1, 13:3, 15:1, 9:6:1). |
| Week 11 | March 26, 2018 | | March 31, 2018 | M.Sc Sem 4:  Introduction to stem cells, stem cell related disorders, gene therapy.  Metamorphosis. |
| Week 12 | April 02, 2018 | | April 07, 2018 | B.Sc sem 6  Gene modifications due to incomplete dominance, lethal factors (2:1), Pleiotropic genes. Multiple Alleles: Blood group inheritance, eye colour in Drosophila, pseudo-allelism. Multiple Factors: Qualitative and quantitative characters, inheritance of quantitative traits (skin colour in man). |
| Week 13 | April 09, 2018 | | April 14 , 2018 | M.Sc Sem 4:  Teratogenesis: Critical period dose, classes of cytotoxic teratogens, human teratogenesis.  Cell surface adhesion, inter cellular adhesion, adhesive molecules - cadherins. |
| Week 14 | April 16, 2018 | | April 21, 2018 | B.Sc sem 6  Mutations: Spontaneous and induced mutations, physical and chemical mutagens. Detection of mutations in Maize and Drosophila. |
| Week 15 | April 23, 2018 | | April 28, 2018 | Environmental evolution and animal development: Environmental cues and effects, malformations and disruptions, changing evolution through development modularity, developmental constraints.  Sex determination. |
| Week 16 | April 30, 2018 | | May 05, 2018 | B.Sc sem 6  Inborn errors of metabolism in man (Phenylketonuria, Alcaptonuria, Albinism). Somatic mutations and carcinogenesis. Extranuclear inheritance: Kappa particles in Paramecium. |