**Post Graduate Govt. College for Girls, Sector-42, Chandigarh**

**Teaching Plan (OddSemester) Session (2019-2020)**

**Class: BSc Biotech(E)5th Sem Name of the Teacher: Sumit Dabhi**

**Subject: Plant & Animal Biotechnology Period:5th (1-6)**

**Paper: A & B Room No:129**

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| S. No | Dates | Topics to be Covered |
| Week 1 | 23-07-2019 to 27-07-2019 | Introduction & History of Plant tissue culture |
| Week 2 | 29-07-2019 to 03-08-2019 | Plant Growth Regulators & applications |
| Week 3 | 05-08-2019 to 10-08-2019 | Introduction to *in vitro* methods : Micropropagation-somatic embryogenesis & organogenesis, |
| Week 4 | 13-08-2019 to 17-08-2019 | Introduction to *in vitro* methods : Micropropagation-somatic embryogenesis & organogenesis, |
| Week 5 | 19-08-2019 to 24-08-2019 | embryo culture, endosperm culture |
| Week 6 | 26-08-2019 to 31-08-2019 | Protoplast isolation, methods, testing their viability & regeneration, various methods of fusion: somatic hybridization & their applications. |
| Week 7 | 02-09-2019 to 07-09-2019 | Protoplast isolation, methods, testing their viability & regeneration, various methods of fusion: somatic hybridization & their applications. |
| Week 8 | 09-09-2019to 14-09-2019 | haploids & their applications, somaclonal & gametoclonal  variations |
| Week 9 | 16-09-2019 to 21-09-2019 | Direct and indirect transformation of plants. Tumor formation in plant using Agrobacterium tumefaciens. Mechanism of T-DNA transfer to plants, plasmid vectors for plant transformation. |
| Week 10 | 23-09-2019 to28-09-2019  (Youth Festival 24-09-2019 to 27-09-2019) | Youth Festival |
| Week 11 | 30-09-2019 to 05-10-2019 | Direct and indirect transformation of plants. Tumor formation in plant using Agrobacterium tumefaciens. Mechanism of T-DNA transfer to plants, plasmid vectors for plant transformation. |
| Mid Semester Exams | | |
| Week 12 | 16-10-2019 to 19-10-2019 | Genetic manipulation of plants for virus resistance, pest resistance, herbicide tolerance, resistance to fungi and bacteria. |
| Week 13 | 21-10-2019 to 26-10-2019 | Introduction to animal cell cultures, Requirement (laboratory equipment, media etc. primary and secondary culture cell lines)  Anchorage dependence and contact inhibition. |
| Week 14 | 29-10-2019 to 02-11-2019 | Contamination & remedial measures. Monolayer and suspension cultures. |
| Week 15 | 04-11-2019 to 09-11-2019 | Cryopreservation and germplasm storage. Establishment of gene banks. |
| Week 16 | 11-11-2019 to 16-11-2019 | Cytodifferentation culturing of differentiation cells and retention of properties. Large scale production of animal cell in culture. |
| Week 17 | 18-11-2019 to 23-11-2019 | Transformation of animal cells. Transgenesis, applications of transgenic animal, Biofarming. |
| Week 18 | 25-11-2019 to 30-11-2019 | Stem cells : their applications in biology & medicine cloning : Procedure, applications &problems. |

**Post Graduate Govt. College for Girls, Sector-42, Chandigarh**

**Teaching Plan (OddSemester) Session (2019-2020)**

**Class: BSc Bioinfo(E)3rdSem Name of the Teacher: Sumit Dabhi**

**Subject: Fundamentals of Molecular Biology-I Period:1st (1,4)**

**Paper: B Room No:329**

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| S. No | Dates | Topics to be Covered |
| Week 1 | 23-07-2019 to 27-07-2019 | Structure of prokaryotic and eukaryotic genes. |
| Week 2 | 29-07-2019 to 03-08-2019 | Structure of prokaryotic and eukaryotic genes. |
| Week 3 | 05-08-2019 to 10-08-2019 | Structure of prokaryotic and eukaryotic genes. |
| Week 4 | 13-08-2019 to 17-08-2019 | DNA replication: Both prokaryotes and eukaryotes  Properties of DNA polymerases, Synthesis of Leading and lagging strands |
| Week 5 | 19-08-2019 to 24-08-2019 | DNA replication: Both prokaryotes and eukaryotes  Properties of DNA polymerases, Synthesis of Leading and lagging strands |
| Week 6 | 26-08-2019 to 31-08-2019 | DNA replication: Both prokaryotes and eukaryotes  Properties of DNA polymerases, Synthesis of Leading and lagging strands |
| Week 7 | 02-09-2019 to 07-09-2019 | DNA Repair: Photo-reactivation, excision repair, post replication repair, SOS repair. |
| Week 8 | 09-09-2019to 14-09-2019 | DNA Repair: Photo-reactivation, excision repair, post replication repair, SOS repair. |
| Week 9 | 16-09-2019 to 21-09-2019 | DNA Repair: Photo-reactivation, excision repair, post replication repair, SOS repair. |
| Week 10 | 23-09-2019 to28-09-2019  (Youth Festival 24-09-2019 to 27-09-2019) | Youth Festival |
| Week 11 | 30-09-2019 to 05-10-2019 | Transcription  RNA polymerase in prokaryotes – its molecular composition, role of each component of RNA polymerase, mechanism of transcription, |
| Mid Semester Exams | | |
| Week 12 | 16-10-2019 to 19-10-2019 | Transcription  RNA polymerase in prokaryotes – its molecular composition, role of each component of RNA polymerase, mechanism of transcription, |
| Week 13 | 21-10-2019 to 26-10-2019 | Transcription  RNA polymerase in prokaryotes – its molecular composition, role of each component of RNA polymerase, mechanism of transcription, |
| Week 14 | 29-10-2019 to 02-11-2019 | Gene Expression  Prokaryotic gene expression. *Lac*, *His*, *Trp* operons. Catabolite repression. Eukaryotic gene expression and transcription factors |
| Week 15 | 04-11-2019 to 09-11-2019 | Gene Expression  Prokaryotic gene expression. *Lac*, *His*, *Trp* operons. Catabolite repression. Eukaryotic gene expression and transcription factors |
| Week 16 | 11-11-2019 to 16-11-2019 | Gene Expression  Prokaryotic gene expression. *Lac*, *His*, *Trp* operons. Catabolite repression.Eukaryotic gene expression and transcription factors |
| Week 17 | 18-11-2019 to 23-11-2019 | Gene Expression  Prokaryotic gene expression. *Lac*, *His*, *Trp* operons. Catabolite repression.Eukaryotic gene expression and transcription factors |
| Week 18 | 25-11-2019 to 30-11-2019 | Revision |

**Post Graduate Govt. College for Girls, Sector-42, Chandigarh**

**Teaching Plan (OddSemester) Session (2019-2020)**

**Class: BSc Bioinfo.(E)1st Sem Name of the Teacher: Sumit Dabhi**

**Subject:Cell Biology & Biochemistry Period:6th (1-3)**

**Paper: B Room No:122 (Bioinfo. lab)**

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| S. No | Dates | Topics to be Covered |
| Week 1 | 23-07-2019 to 27-07-2019 | Cell as a basic unit of living systems: The cell theory, Precellular evolution: artificial creation of “cells”. |
| Week 2 | 29-07-2019 to 03-08-2019 | Introduction for structure and function of cell organelles: Utra structure of cell membrane, cytosol, |
| Week 3 | 05-08-2019 to 10-08-2019 | Introduction for structure and function of cell organelles: Utra structure of cell membrane, cytosol, |
| Week 4 | 13-08-2019 to 17-08-2019 | golgi bodies, endoplasmic reticulum ( rough and smooth), |
| Week 5 | 19-08-2019 to 24-08-2019 | cytoskeletal structures ( actin, microtubules etc.), |
| Week 6 | 26-08-2019 to 31-08-2019 | mitochondria, chloroplasts, |
| Week 7 | 02-09-2019 to 07-09-2019 | lysosomes, peroxisomes, ribosomes,  vacuoles. |
| Week 8 | 09-09-2019to 14-09-2019 | lysosomes, peroxisomes, ribosomes,  vacuoles. |
| Week 9 | 16-09-2019 to 21-09-2019 | Nucleus, nuclear membrane, nucleoplasm, nucleolus, chromatin, |
| Week 10 | 23-09-2019 to28-09-2019  (Youth Festival 24-09-2019 to 27-09-2019) | Youth Festival |
| Week 11 | 30-09-2019 to 05-10-2019 | Cell motility ( amoeboid,flagellar, and ciliar)  Cell senescence and death. Cell division and cell cycle. |
| Mid Semester Exams | | |
| Week 12 | 16-10-2019 to 19-10-2019 | General properties of organic and inorganic compounds. Solubility of organic compounds for generation of structure, storage of energy and information. |
| Week 13 | 21-10-2019 to 26-10-2019 | General properties of organic and inorganic compounds. Solubility of organic compounds for generation of structure, storage of energy and information. |
| Week 14 | 29-10-2019 to 02-11-2019 | General properties of organic and inorganic compounds. Solubility of organic compounds for generation of structure, storage of energy and information. |
| Week 15 | 04-11-2019 to 09-11-2019 | Structure and functions of Biomolecules- Carbohydrates, Proteins, |
| Week 16 | 11-11-2019 to 16-11-2019 | Structure and functions of Biomolecules- Lipids, Nucleic Acids |
| Week 17 | 18-11-2019 to 23-11-2019 | Enzymes- Classification, Nomenclature, general properties, regulation of enzyme activity, steady state kinetics. |
| Week 18 | 25-11-2019 to 30-11-2019 | Applications in industries – Enzymes in food processing, medicine, diagnostics and production of new compounds. Enzymes as research tools – ELISA methods, enzymes. |

**Post Graduate Govt. College for Girls, Sector-42, Chandigarh**

**Teaching Plan (OddSemester) Session (2019-2020)**

**Class: BSc Micro(E)1st Sem Name of the Teacher: Sumit Dabhi**

**Subject: Fundamentals of Microbiology-I Period:6th (5-6)**

**Paper: B Room No:219**

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| S. No | Dates | Topics to be Covered |
| Week 1 | 23-07-2019 to 27-07-2019 | Organization of cell wall, cell membrane, flagella and capsules in bacteria. |
| Week 2 | 29-07-2019 to 03-08-2019 | Organization of cell wall, cell membrane, flagella and capsules in bacteria. |
| Week 3 | 05-08-2019 to 10-08-2019 | Organization of cell wall, cell membrane, flagella and capsules in bacteria. |
| Week 4 | 13-08-2019 to 17-08-2019 | Organization of cell wall, cell membrane, flagella and capsules in bacteria. |
| Week 5 | 19-08-2019 to 24-08-2019 | Morphology and fine structure of bacteria, fungi, actinomycetes and algae. |
| Week 6 | 26-08-2019 to 31-08-2019 | Morphology and fine structure of bacteria, fungi, actinomycetes and algae. |
| Week 7 | 02-09-2019 to 07-09-2019 | Morphology and fine structure of bacteria, fungi, actinomycetes and algae. |
| Week 8 | 09-09-2019to 14-09-2019 | Morphology and fine structure of bacteria, fungi, actinomycetes and algae. |
| Week 9 | 16-09-2019 to 21-09-2019 | Morphogenesis in bacteria, formation of spores and cysts. |
| Week 10 | 23-09-2019 to28-09-2019  (Youth Festival 24-09-2019 to 27-09-2019) | Morphogenesis in bacteria, formation of spores and cysts. |
| Week 11 | 30-09-2019 to 05-10-2019 | Morphogenesis in bacteria, formation of spores and cysts. |
| Mid Semester Exams | | |
| Week 12 | 16-10-2019 to 19-10-2019 | Microorganism Association with Vascular Plants : Rhizosphere and Rhizoplane microorganisms and Mycorrhizae. |
| Week 13 | 21-10-2019 to 26-10-2019 | Microorganism Association with Vascular Plants : Rhizosphere and Rhizoplane microorganisms and Mycorrhizae. |
| Week 14 | 29-10-2019 to 02-11-2019 | Microorganism Association with Vascular Plants : Rhizosphere and Rhizoplane microorganisms and Mycorrhizae. |
| Week 15 | 04-11-2019 to 09-11-2019 | Microorganism Association with Vascular Plants : Rhizosphere and Rhizoplane microorganisms and Mycorrhizae. |
| Week 16 | 11-11-2019 to 16-11-2019 | Nitrogen fixation : Symbiotic and nonsymbiotic and biofertilizers. Biopesticides. |
| Week 17 | 18-11-2019 to 23-11-2019 | Nitrogen fixation : Symbiotic and nonsymbiotic and biofertilizers. Biopesticides. |
| Week 18 | 25-11-2019 to 30-11-2019 | Nitrogen fixation : Symbiotic and nonsymbiotic and biofertilizers. Biopesticides. |

**Post Graduate Govt. College for Girls, Sector-42, Chandigarh**

**Teaching Plan (OddSemester) Session (2019-2020)**

**Class: BSc. Micro(E)3rd Sem Name of the Teacher: Sumit Dabhi & Mrs. Sonia**

**Chauhan**

**Subject: Medical Microbiology Period:1st (5) & 1st (6)**

**Paper: B Room No:303**

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| S. No | Dates | Topics to be Covered |
| Week 1 | 23-07-2019 to 27-07-2019 | Brief introduction to terminology of infectious diseases, |
| Week 2 | 29-07-2019 to 03-08-2019 | Frequency of disease, Recognition of infectious disease, Infectious disease cycle. |
| Week 3 | 05-08-2019 to 10-08-2019 | Frequency of disease, Recognition of infectious disease, Infectious disease cycle. |
| Week 4 | 13-08-2019 to 17-08-2019 | Frequency of disease, Recognition of infectious disease, Infectious disease cycle. |
| Week 5 | 19-08-2019 to 24-08-2019 | Nomenclature and classification of microbes of medical importance, criteria of classification |
| Week 6 | 26-08-2019 to 31-08-2019 | Nomenclature and classification of microbes of medical importance, criteria of classification |
| Week 7 | 02-09-2019 to 07-09-2019 | Nomenclature and classification of microbes of medical importance, criteria of classification |
| Week 8 | 09-09-2019to 14-09-2019 | Microbial adherence |
| Week 9 | 16-09-2019 to 21-09-2019 | Active penetration into body, Passive penetration into body, |
| Week 10 | 23-09-2019 to28-09-2019  (Youth Festival 24-09-2019 to 27-09-2019) | Microbial production of enzymes in the body |
| Week 11 | 30-09-2019 to 05-10-2019 | Microbial production of enzymes in the body |
| Mid Semester Exams | | |
| Week 12 | 16-10-2019 to 19-10-2019 | Development of chemotherapy, |
| Week 13 | 21-10-2019 to 26-10-2019 | General characteristics of antimicrobial drugs, Determining level of antimicrobial activity, |
| Week 14 | 29-10-2019 to 02-11-2019 | Mechanism of action of antimicrobial drugs, |
| Week 15 | 04-11-2019 to 09-11-2019 | Mechanism of action of antimicrobial drugs, |
| Week 16 | 11-11-2019 to 16-11-2019 | Factors influencing the effectiveness of antimicrobial drugs. |
| Week 17 | 18-11-2019 to 23-11-2019 | Factors influencing the effectiveness of antimicrobial drugs. |
| Week 18 | 25-11-2019 to 30-11-2019 | Revision |