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|  | P.G GOVT COLLEGE FOR GIRLS SECTOR -42 CHANDIGARH  TEACHING PLAN SESSION ODD SEMESTER | | |
|  | (2017-18) | |  |
|  |  |  |  |
| CLASS - B.SC 3rd year Micro E | |  | Name of the Teacher : Akashdeep Sandhu |
| Subject : Food & Industrial Micro | |  | Period : 2nd |
| Paper:MIC502 |  |  | Room No : 327 |
|  |  |  |  |
| S. NO | Date from | Date Upto | Topics to be Covered |
|  |  |  |  |
| Week 1 | July 22nd July 24 2017 | July 29,2017 | Food as substrate for microbes |
| Week 2 | July 31,2017 | Aug 5,2017 | Nutritive value of food stuffs |
| Week 3 | Aug 7,2017 | Aug 12,2017 | Effect of pH on food |
| Week 4 | Aug 14,2017 | Aug 19,2017 | Moisture requirement of food |
| Week 5 | Aug 21,2017 | Aug 26,2017 | Staphylococcal intoxication |
| Week 6 | Aug 28,2017 | Sept 2,2017 | botulism |
| Week 7 | Sept 4,2017 | Sept 9,2017 | Salmonellosis |
| Week 8 | Sept 11,2017 | Sept 16,2017 | Shigellosis |
| Week 9 | Sept 18,2017 | Sept 23,2017 | Contamination preservation and spoilage in cereal and cereal products |
| Week 10 | Sept 25,2017 | Sept 29,2017 | Contamination preservation and spoilage in sugar and sugar products |
|  | 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 | Production strains |
| Week 12 | Oct 23, 2017 | Oct 28, 2017 | Isolation of strains |
| Week 13 | Oct 30,2017 | Nov 4,2017 | Preservation |
| Week 14 | Nov 6, 2017 | Nov 11,2017 | Genetic modification |
| Week 15 | Nov 13,2017 | Nov 18,2017 | Yeast and its uses |
| Week 16 | Nov 20,2017 | Nov 25,2017 | Fermentation of beer |
| Week 17 | Nov 27,2017 | Dec 1,2017 | Fermentation of wine and alcohol |

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

**Teaching Plan Session Even Semester**

**(2017-18)**

**Teacher: Akashdeep Sandhu**

**Class: B.Sc. 3rd year Micro E Period: 2nd**

**Paper: MIC 602 Food & Industrial Micro Room No: 326**

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| **S. No** | **From** | **Up to** | **Topics to be covered** |
| Week 1 | Jan 08 | Jan 13 | ---- |
| Week 2 | Jan 15 | Jan 20 | Qualitative and quantitative analysis of proteins |
| Week 3 | Jan 22 | Jan 27 | Qualitative and quantitative analysis of lipids |
| Week 4 | Jan 29 | Feb 3 | Qualitative and quantitative analysis of carbohydrates |
| Week 5 | Feb 5 | Feb 10 | Microbiological examination of food products including dairy products |
| Week 6 | Feb 12 | Feb 17 | Food poisoning caused by bacteria |
| Week 7 | Feb 19 | Feb 24 | Food poisoning caused by fungi |
| Week 8 | Feb 26 | Mar 03 | Contamination preservation and spoilage in vegetables and fruits |
| Week 9 | March 12 | March 17 | Contamination preservation and spoilage in meat |
| Week 10 | March 19 | March 24 | Contamination preservation and spoilage in milk and milk products |
| Week 11 | March 26 | March 31 | Fermentation media chararacteristics of ideal production medium |
| Week 12 | April 02 | April 07 | Common substrates used in ideal fermentations |
| Week 13 | April 09 | April 14 | Batch and continuous fermentations |
| Week 14 | April 16 | April 21 | Production of organic acids (acetic acid, lactic acids, propionic acids) |
| Week 15 | April 23 | April 28 | Production of organic acids ( butyric acid and mixed acids) |
| Week 16 | April 30 | May 05 | Mass transfer in aerobic fermentations |

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|  | P.G GOVT COLLEGE FOR GIRLS SECTOR -42 CHANDIGARH  TEACHING PLAN SESSION ODD SEMESTER | | |
|  | (2017-18) | |  |
|  |  |  |  |
| CLASS - B.SC 2nd year Micro E | |  | Name of the Teacher : Akashdeep Sandhu |
| Subject : Introductory immunology | |  | Period : 6th |
| Paper:MIC302 |  |  | Room No : 219 |
|  |  |  |  |
| S. NO | Date from | Date Upto | Topics to be Covered |
|  |  |  |  |
| Week 1 | July 22nd July 24 2017 | July 29,2017 | Introduction and history of immunology |
| Week 2 | July 31,2017 | Aug 5,2017 | Non specific defence: Physoical barrier |
| Week 3 | Aug 7,2017 | Aug 12,2017 | Chemical and cellular barrier |
| Week 4 | Aug 14,2017 | Aug 19,2017 | Phagocytosis Inflammatory barriers Inflammation Fever |
| Week 5 | Aug 21,2017 | Aug 26,2017 | Types of immunity active and Passive Immunological memory |
| Week 6 | Aug 28,2017 | Sept 2,2017 | Humoral imuune Response Antibodies/ immunoglobulins |
| Week 7 | Sept 4,2017 | Sept 9,2017 | Structure Function and types of Antibodies |
| Week 8 | Sept 11,2017 | Sept 16,2017 | Cell mediated Immune System Mechanism of CMI |
| Week 9 | Sept 18,2017 | Sept 23,2017 | Types of effector T cells Helper T cellsd Suppressor T cells |
| Week 10 | Sept 25,2017 | Sept 29,2017 | Cytotoxic T cells killer T cells |
|  | 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 | Interaction between T and B lymphocytes |
| Week 12 | Oct 23, 2017 | Oct 28, 2017 | Antigen Antibody Interactions |
| Week 13 | Oct 30,2017 | Nov 4,2017 | Precipitation Reaction |
| Week 14 | Nov 6, 2017 | Nov 11,2017 | Immunodiffusion test |
| Week 15 | Nov 13,2017 | Nov 18,2017 | Counter current immunoelectrophoresis |
| Week 16 | Nov 20,2017 | Nov 25,2017 | Compliment fixation tests |
| Week 17 | Nov 27,2017 | Dec 1,2017 | REVISION |

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

**Teaching Plan Session Even Semester**

**(2017-18)**

**Teacher: Akashdeep Sandhu**

**Class: B.Sc. 2nd year Micro E Period: 6th**

**Paper: MIC 402 Introductory immunology Room No: 219**

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| **S. No** | **From** | **Up to** | **Topics to be covered** |
| Week 1 | Jan 08 | Jan 13 | ---- |
| Week 2 | Jan 15 | Jan 20 | Primary and secondary Lymphoid organs  MALT & CALT |
| Week 3 | Jan 22 | Jan 27 | Lymphocyte traffic, Cells of Immune system |
| Week 4 | Jan 29 | Feb 3 | Antigens, factors affecting Immunogenicity. |
| Week 5 | Feb 5 | Feb 10 | Epitopes and haptens |
| Week 6 | Feb 12 | Feb 17 | Antigen combining regions of antibodies. Factors influencing antibody production. |
| Week 7 | Feb 19 | Feb 24 | Genetic Model, Multigene organisation. Generation of antibody diversity |
| Week 8 | Feb 26 | Mar 03 | Cytokines, lymphokines, colony stimulating factors, Tumor necrosis factors, interferons. |
| Week 9 | March 12 | March 17 | Accessory celss (macrophages)  Complement system classical and alternate pathway |
| Week 10 | March 19 | March 24 | HLA  monoclonal antibody technology and its applications |
| Week 11 | March 26 | March 31 | Antigen antibody interactions: widal test |
| Week 12 | April 02 | April 07 | Wasserman’s test |
| Week 13 | April 09 | April 14 | Weil felix reaction |
| Week 14 | April 16 | April 21 | Western blotting |
| Week 15 | April 23 | April 28 | Types of vaccines |
| Week 16 | April 30 | May 05 | REVISION |

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|  | P.G GOVT COLLEGE FOR GIRLS SECTOR -42 CHANDIGARH  TEACHING PLAN SESSION ODD SEMESTER | | |
|  | (2017-18) | |  |
|  |  |  |  |
| CLASS - B.SC 1st year Micro E | |  | Name of the Teacher : Akashdeep Sandhu |
| Subject : Fundamentals of Microbio | |  | Period : 6th |
| Paper:MIC101 |  |  | Room No : 324 |
|  |  |  |  |
| S. NO | Date from | Date Up to | Topics to be Covered |
|  |  |  |  |
| Week 1 | July 22nd July 24 2017 | July 29,2017 | History development and scope of Microbiology |
| Week 2 | July 31,2017 | Aug 5,2017 | Methods of microbiology Isolation of pure culture |
| Week 3 | Aug 7,2017 | Aug 12,2017 | Theory and practice of sterilization |
| Week 4 | Aug 14,2017 | Aug 19,2017 | Nature of Microbial world prokaryotes and eukaryotes |
| Week 5 | Aug 21,2017 | Aug 26,2017 | Growth pattern in microbes |
| Week 6 | Aug 28,2017 | Sept 2,2017 | Morphology and fine structure of bacteria and fungi |
| Week 7 | Sept 4,2017 | Sept 9,2017 | Morphology and fine structure of actinomycetes and algae |
| Week 8 | Sept 11,2017 | Sept 16,2017 | Organisation of cell wall, cell membrane, flagella and capsules in bacteria. |
| Week 9 | Sept 18,2017 | Sept 23,2017 | Morphogenesis in bacteria, formation of spores and cysts. |
| Week 10 | Sept 25,2017 | Sept 29,2017 |  |
|  | 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 | rDNA technology, genetic engineering and gene cloning in microbes. |
| Week 12 | Oct 23, 2017 | Oct 28, 2017 | Strategies of genetic engineering: Restriction enzymes |
| Week 13 | Oct 30,2017 | Nov 4,2017 | Vectors and Plasmids |
| Week 14 | Nov 6, 2017 | Nov 11,2017 | Microorganism association with vascular plants Rhizosphere and rhizoplane microbes and Mycorhizae |
| Week 15 | Nov 13,2017 | Nov 18,2017 | Nitrogen Fixation: Symbiotic and non symbiotic. |
| Week 16 | Nov 20,2017 | Nov 25,2017 | Biofertilizers. |
| Week 17 | Nov 27,2017 | Dec 1,2017 | Biopesticides. |

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

**Teaching Plan Session Even Semester**

**(2017-18)**

**Teacher: Akashdeep Sandhu**

**Class: B.Sc. 1st year Micro E Period: 6th**

**Paper: MIC 202 Microbial Physiology Metabolism. Room No: 324**

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| **S. No** | **From** | **Up to** | **Topics to be covered** |
| Week 1 | Jan 08 | Jan 13 | ---- |
| Week 2 | Jan 15 | Jan 20 | Microbial growth: growth in population. Bacterial growth curve. |
| Week 3 | Jan 22 | Jan 27 | Mathematical nature and expression. Factors affecting growth in microorganisms. |
| Week 4 | Jan 29 | Feb 3 | Methods for measurement of growth in microorganisms. |
| Week 5 | Feb 5 | Feb 10 | Mechanism of enzymes action. |
| Week 6 | Feb 12 | Feb 17 | Inhibition, Control and regulation of enzyme activity. |
| Week 7 | Feb 19 | Feb 24 | Enzyme Kinetics: Michaelis-Menten equation. |
| Week 8 | Feb 26 | Mar 03 | Catabolism of lipids and prorteins. |
| Week 9 | March 12 | March 17 | Beta Oxidation. |
| Week 10 | March 19 | March 24 | Electron transport chain. |
| Week 11 | March 26 | March 31 | Biochemical mechanisms of generation of ATP. |
| Week 12 | April 02 | April 07 | Transport of nutrients by bacteria. |
| Week 13 | April 09 | April 14 | Synthesis of Amino acids; Glutamate, Lysine, Glutamine, Serine and arginine family. |
| Week 14 | April 16 | April 21 | Structure and synthesis of cell wall peptidoglycan. |
| Week 15 | April 23 | April 28 | Biosyntheis of carbohydrates (gluconeogenesis) & Phospholipids. |
| Week 16 | April 30 | May 05 | Replication of DNA, Transcription and Translation. |