

**SCHOOL OF LIFE SCIENCES**  
**JAWAHARLAL NEHRU UNIVERSITY**

**LS406- Life Science Practical-I**

(Dr. S.L. Panwar\*, Dr. V. Yadav, Prof. S.Gourinath, Dr. N. Ramchiary, Prof. A.S. Kharat,  
Prof. R.P.Singh, Prof. D. Sharma, Dr A.B. Tiku, Prof. S. Chakraborty)

**Updated: April 2021**

<b>Course Name</b>	<b>Course In-charge/Faculty</b>	<b>Experiments</b>
Biochemistry-I	Dr. Vikas Yadav (Experiment No. 1 to 5)  Prof. S. Gourinath (Experiment No. 6 to 8):  Dr. Sneha Lata Panwar (Experiment No. 9 to 13)	<ol style="list-style-type: none"> <li>1. Biochemical Calculation.</li> <li>2. Concept of isoelectric point and protein solubility and preparation of casein from milk.</li> <li>3. Estimation of protein by: Lowry Method Bradford Method</li> <li>4. Ultraviolet absorbance of aromatic amino acid.</li> <li>5. Estimation of inorganic phosphate in casein by Fiske &amp; Subbarow method.</li> <li>6. Purification of egg white lysozyme and its characterization by SDS PAGE.</li> <li>7. Crystallization of Lysozyme.</li> <li>8. Kinetics of Lysozyme activity.</li> <li>9. Extraction of Phospholipids from egg yolk.</li> <li>10. Estimation of lipids by Fiske &amp; Subbarow method.</li> <li>11. Separation of various phospholipids by thin layer chromatography.</li> <li>12. Estimation of cholesterol.</li> <li>13. Analysis of lipids by GC-MS.</li> </ol>
Genetics	Dr. Nirala Ramchiary	<ol style="list-style-type: none"> <li>1. Construction of genetic map in biparental mapping population (Plants) <ol style="list-style-type: none"> <li>a. DNA extraction of mapping population (approx. 96 individuals) derived from two contrasting parents</li> <li>b. PCR analysis of mapping population DNAs with molecular marker(s)</li> <li>c. Marker band scoring after resolving in agarose gel</li> <li>d. Construction of genetic map using MapMaker/Joinmap or any other mapping programmes publicly available</li> <li>e. Presentation of genetic maps and interpretation</li> </ol> </li> <li>2. Quantitative Trait Loci mapping in Biparental cross (Plants) <ol style="list-style-type: none"> <li>a) Scoring of quantitative traits in segregating mapping population</li> </ol> </li> </ol>

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		<ul style="list-style-type: none"> <li>b) Mapping of Quantitative trait loci using different programmes.</li> <li>c) Presentation of QTLs in linkage maps and interpretation</li> </ul>
Microbiology	Prof. Arun S. Kharat	<ul style="list-style-type: none"> <li>1. Microbial media; Minimal/Rich/Differential and selective.</li> <li>2. Test of sterility.</li> <li>3. Isolation of bacteria.</li> <li>4. Monochrome, Endospore staining and different staining techniques.</li> <li>5. Lactose fermentation test.</li> <li>6. Antibiotic susceptibility test.</li> <li>7. Spontaneous and Adaptive mutation.</li> <li>8. IMViC test.</li> <li>9. Bacterial growth curve.</li> </ul>
Cancer Biology	Prof. R. P. Singh	<ul style="list-style-type: none"> <li>1. Demonstration of carcinoma slides of different organs of human.</li> <li>2. Live and Dead cell counting by Trypan blue</li> <li>3. Demonstration of Immunohistochemistry (IHC) slides.</li> </ul>
Animal Histology	Prof. Deepak Sharma	<ul style="list-style-type: none"> <li>1. Microscopic study of different types of tissues and their cytoarchitecture.</li> <li>2. Tissue process for histological preparations.</li> <li>3. Section cutting; Microtomy (Rotary)</li> <li>4. Staining: Haematoxyline/Eosin of stained preparations for different organs.</li> <li>5. Preparation of permanent slides.</li> </ul>
Plant Histology	Dr. A.B. Tiku	<ul style="list-style-type: none"> <li>1. Observations of permanent slides of different Algae, Fungi and Plants Specimen.</li> <li>2. Sectioning of plant tissues and staining by different stains to study colour reactions for wall substances.</li> </ul>
Plant tissue culture	Prof S Chakravarty	<ul style="list-style-type: none"> <li>1. Regeneration and transformation of tobacco using Agrobacterium tumefaciens.</li> </ul>

(Dr. Sneha Lata Panwar)

Coordinator