

COLLEGE OF FISHERIES, KISHANGANJ
BIHAR ANIMAL SCIENCES UNIVERSITY, PATNA

Lecture Plan for B.F. Sc 1st Semester

Course –Fundamentals of Biochemistry Course code- FPT-111 Credit hrs. 3(2+1)

Theory

<i>Sl. no.</i>	<i>Topic</i>	<i>No. of lecture</i>
1.	A brief introduction to developments in biochemistry and its transformation to molecular biology.	1
2.	Cell structure, water and major molecules of life. Carbohydrate chemistry: structure, classification, functions (mono, di and polysaccharides) isomerism and mutarotation.	2
3.	Metabolism of carbohydrates: glycolysis, gluconeogenesis, glycogenolysis, glyconeogenesis, TCA cycle, central role of TCA cycle in metabolism.	6
4.	Protein chemistry: classifications and functions.	1
5.	Classification, structure, function and properties of amino acids.	2
6.	Essential and nonessential amino acids. Primary, secondary, tertiary and quaternary structure of proteins.	1
7.	Classification, structure, functions and properties of lipids.	2
8.	Lipid auto oxidation. Significance of Omega-3 and Omega-6 fatty acids.	2
9.	Enzymes: nomenclature; classification; specificity; mechanism of enzyme action; kinetics and regulation of enzyme activity.	2
10.	Steroid and peptide hormones-chemistry and function.	1
11.	Structure and function of fat- and water-soluble vitamins. Vitamins – classification-functions.	1
12.	Minerals –classification-functions.	1
13.	Nucleic acid: Structure function and importance genetic code.	1
14.	Transcription and translation. Protein synthesis.	1
15.	Energy changes in chemical reactions, reversible and irreversible reactions in metabolism.	1
Total no. of lectures		25

Practical

<i>Sl. no.</i>	<i>Topic</i>	<i>No. of lecture</i>
1.	Preparation of normal solution of acid and base, buffers and reagents.	1
2.	Qualitative determination of carbohydrates, proteins and lipids.	6
3.	Estimation of total nitrogen and crude protein of fish tissue.	2
4.	Estimation of carbohydrates in foods.	2
5.	Determination of specific gravity of oil.	1
6.	Extraction and estimation of total lipids in fish tissue.	1
7.	Determination of saponification value, iodine value and free fatty acid value.	2
Total no. of lectures		15

Course Instructor
Ms. Susmita Rani