BIRLA INSTITUTE OF TECHNOLOGY & SCIENCE, PILANI
INSTRUCTION DIVISION
First semester 2015-2016

Date: 01.08.2015

COURSE HANDOUT (PART-II)

In addition to part-I (General Handout for all courses appended to the timetable) this portion gives further specific details regarding the course.

Course No. : **BIO F110**
Course Title : **BIOLOGY LABORATORY**
Instructor-in-charge : **UMA S. DUBEY**
Team of Instructors : Ashish Runthala, Bhagavatula Vani, Gurpreet Kaur, Kuldeep Gupta, Lalita Gupta, PA Bhoopati, Parik Kakani, Rajnish Singh, Sandhya Marathe, Sethil Naggapan, Shilpi Garg, Vandana, Zaiba Hasan Khan, Akanksha Pareek, Leena Fageria, Poonam Singh, Ranita De, Rini Dhawan, Sandeep Poonia, Subhra Das, Zarna Pala.

Course Description:
Analysis and estimation of biomolecules, preparation of temporary slides for microscopic analysis, study of cell structure and division, investigation of catalytic activity of enzyme, physiology of plant and animal systems, diversity of living systems.

Scope and Objective of the course:
The major objective of this course is to offer a hands-on experience on fundamental aspects of practical biology. The student would observe and understand various biological phenomena and also be equipped with some simple techniques which form the basis of research in biology.

Text Book/Manual: Laboratory Manual for Biology, BITS Pilani 2014.

Reference Book:
1. Simon, E.J. et al: Campbell Essential Biology with Physiology (5^{th} Edition, BITS Pilani custom edition). Noida: Perason India Education Services Pvt. Ltd., 2015
2.Eldon D Enger, Frederick C Ross, and David B. Bailey: Concepts in Biology (14^{th} edition, BITS-Pilani 2^{nd} custom edition). New Delhi: Tata McGraw-Hill Publishing Company Ltd., 2012.

Experiment Plan:

Experiment – 1:	Measurement of glucose concentration in the given sample by Folin-Wu's method.	I-1
Experiment – 2:	Measurement of total protein content in the given sample by Lowry's method.	II-1
Experiment – 3:	To extract total genomic DNA from banana pulp.	III -1
Experiment – 4:	Separation of chlorophyll pigments by paper	IV -1

	chromatography	
Experiment – 5:	Measurement of mitotic index and duration of mitosis in the given plant tissue. Observation of various stages of mitosis through readymade slides.	V-1
Experiment – 6:	Measurement of haemoglobin content in the human blood and determination of blood group and Rh status.	VI -1
Experiment – 7:	To study the effect of the enzyme lactase on milk	VII -1
Experiment – 8:	To study the phenomenon of plasmolysis in onion peel.	VIII-1
Experiment – 9:	Preparation of temporary mount of leaf epidermis to study the structure of stomata and measurement of transpiration rate using Ganong's potometer.	IX-1
Experiment –10:	Identify and write characteristic features of the given sample slides.	X-1

Evaluation Scheme:

S. No.	Evaluation component	Date and time	Venue	Weightage (%)
1.	Day to day Evaluation of all experiments (Attendance + Performance + Record + Viva/Quiz)	Day to day evaluation	R.No. 3124 / 3219	60%
2.	Mid Term Quiz			15%
3.	End Semester Quiz			25%

Note: The order of experiments listed above may change depending on the availability of chemicals, enzymes, and other requirements for a specific experiment.

Notices: Notices will be displayed on Biological Sciences Departmental Notice Board.

Make up Policy: Make up will be granted only with prior permission in genuine cases such as hospitalization upon production of the relevant documents as proof.

Instructor-in-Charge
BIO F110