



NORTH SOUTH UNIVERSITY
Department of Biochemistry & Microbiology

Course outline

BBT312 L: Molecular Biology Lab

Total Credits: 01

Course instructor: Abhinandan Chowdhury (ACh)
Website: <http://abhinandanchowdhury.weebly.com/>
Email: abcnsuedu@gmail.com

1. DISCLAIMER

The instructor holds the right to make necessary changes to the syllabus and the grading policies outlined here to best accommodate the interest of the class.

2. RATIONALE

The Molecular Biology Laboratory course is designed to give students sufficient exposure to laboratory conditions to carry out molecular biological experiments independently after graduation.

3. OBJECTIVES

The course aims to give the students an understanding of both the logic and planning to carry out molecular biological experiments with emphasis on molecular laboratory techniques related to DNA extraction, polymerase chain reaction and gel run.

4. LEARNING OUTCOMES

By attending classes regularly, and through participation in the assessment exam, students of this course should be able to:

- (i) Sampling of bacteria from water samples
- (ii) Extract bacterial genomic DNA;
- (iii) Perform Polymerase Chain Reaction (PCR)
- (iv) Carry out agarose gel electrophoresis of gDNA;

5. GRADING POLICY

NSU grading policy will be followed.

6. COURSE CONTENTS

6.1 COURSE DESCRIPTION

- a. Sampling and culture of bacteria from collected samples
- b. Isolation and extraction of gDNA using Chelex Methods
- c. Polymerase Chain Reaction (PCR) run
- d. Agarose gel electrophoresis of gDNA to identify specific bacteria;

6.2 TIMELINE

Class	Experiment	Duration
1	<i>Lecture 1:</i> Introductory class & lecture on Isolation and extraction of gDNA using Chelex Methods	90min
2	Practical: Sampling and Culturing Bacteria	90 min
3	Practical on “Isolation plasmid DNA from <i>E. coli</i> ”	180 min
4	<i>Lecture 2:</i> on Polymerase Chain Reaction (PCR) & Agarose gel electrophoresis of gDNA to identify specific bacteria	90 min
5	Practical on the “Polymerase Chain Reaction (PCR)”	180 min
	Practical on “Agarose gel electrophoresis of gDNA to identify specific bacteria”	180min

7. ASSESMENT STRATEGIES

Topic	Marks	Remarks
Class Attendance	20%	100% attendance is desired.
Journal Report	20%	Journal Style Report of all experiments
Assessment Exam	60%	Written exam for 10 MCQs on the experiments. Time : 60 Minutes