BOT 358 Plant Molecular Biology

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COURSE INFORMATION

Course hours:3 (2+1)
Course Description: The genetic material that take fore of the chromosomes have the force to control the characters to living organism . chromosome change that take place in some living organism lead to raise new characters and geratic diseases

Reference books

- Molecular Biology of the Gene, (7th Edition) by Watson,Baker,Bello,Gann,Levine,Losick.
- Molecular Biology of the Cell. 4th edition.Alberts B, Johnson A, Lewis J, et al.New York: Garland Science; 2002.
- Molecular Biology by David Freiffelder
- Genetics by P.K. Gupta, - Rastogi Publications Meerut.
- Genetics and Molecular Biology (second edition)Robert Schleif

Student Learning Outcomes:
Students will be able to:

1. Gene chemistry (DNA & RNA)
2. Gene expression (Transcription and translation) and genetic code.
3. Gene organization. Control of gene expression.
4. Recombination of Genetic material

COURSE REQUIREMENTS

Exams: Midterm and Final Exam

practical part: Attendance, Short tests, Duties and Final Exam:

COURSE distribution

#	The lecture title	Planned Contact Hours	Actual Contact Hours
1.	Definition and Components involve in plant molecular biology	1	
2.	Structure and properties of each component (DNARNA-Proteins)	1	
3.	Types of DNA and central dogma of molecular biology	1	
4.	Replication–Transcription – Translation 3	3	
5.	Plant Genetic diversity	**2**	
6.	Plant genetic resources	2	

7.	Measuring plant genetic variation	2	
8.	Genetic markers: - Description - Types - Desirable properties	1	
9.	Genetic markers: types Morphological traits Protein (biochemical) markers DNA (molecular) markers	2	
10	Protein- - based technologies - Protein basics and Enzymes (Allozymes and isozymes) - SDS-PAGE Technique	2	
11	DNA-based technologies - DNA basics and restricted enzymes - RAPD-PCR - RFLP Techniques	2	

Distribution of grades	
half-semester Test	12+12
Course activity	6
Final exam	40
practical part	30
Total	100