

**The Ministry of Higher
Education
& Scientific Research**



University: Diyala
College: Agriculture
Department: Horticulture and
landscaping
Stage: Fourth
Lecturer name: Ayad Assi Obaid
Scientific title: Prof.
Qualification: PhD
Place of work: College of Agriculture

Course Instructor	Ayad Assi Obaid						
E-mail	ayadassi@uodiyala.edu.iq						
Title	Plant Biotechnology						
Course Coordinator	The second chapter \ Stage 4						
Course Objective	Application of plant Biotechnology, method of trans genes to plant.						
Course Description	Genetic engineering and its application - Genetic transformation using Agrobacteriumtum faciens- Polymerase chain reaction and its application						
Textbook	pant biotechnology T. K. Ramawat. Biotechnology dr. A. E. Aubaida and dr. A. A. Mahmood						
References	plant biotechnology RAMAWAT 2004 – Quantitative genetics to Dr. Ahmed plant genetics (practical part) Ghassan Ayash and others,Abdel-Moneim						
Course Assessment	The first monthly test (theoretical)	The second monthly test (theoretical)	The first monthly test (Lab.)	The second monthly (Lab.)	Final examination		Final grade
					Theoretical	Lab.	
	14	14	6	6	40	60	100

Republic of Iraq

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بسم الله الرحمن الرحيم



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Flow up of implementation celli pass play

the week	the date	Topics Covered	Practical Part	Notes
1		Historic development and practical application of plant biotechnology	Plant cell growth measurement in labs	
2		Double haploid production using tissue culture technique	Double haploid production of barley	
3		Protoplast fusion and somatic hybrids production	Protoplast fusion for petunia	
4		Genetic engineering and its application	Protein extraction and purification from plant	
5		Genetic engineering and its application	DNA extraction and purification from plant	
6		Genetic engineering and its application	Qualitative and quantitative of plant DNA	
7		Cloning vectors (plasmids, cosmids, phages)	gel electro porosis for DNA and protein	
8		Cloning strategies in plant	DNA stating methods	
9		Genetic transformation using Agrobacteriumtum faciens	DNA hybridization methods (southern blotion)	
10		Genetic transformation using Agrobacteriumtum faciens	Application of RAPD and SSR technique	
11		Genetic transformation using direct method	Application of AFLP technique	
12		Genetic transformation using direct method	Genetic transformation in tobacco by gen gun	
13		Genetic transformation using direct method	Genetic transformation using Agrobacteriumtum faciens	
14		Polymerase chain reaction and its application	Detection of genetically modified	
15		Bases of biosafety and genetically modified detection	Genetic transformation using electro PCR technique	

A.A. Obaid

Teacher's signature
Prof. Dr. AYAD ASSI OBAID
15/1/2025

Raaed Ibrahim Khalil

Dean' signature
Prof. Dr. Raaed Ibrahim Khalil
15/1/2025