

نموذج توصيف مقرر
Course Description Form

Name of : Science

اسم الكلية:

College\Faculty

Biological Sciences: القسم العلمي:

Name of Department:

Course Name	Plant Tissue and Organ Culture	اسم المقرر
Course No.	0494-337	رقم المقرر
No. of Credits	3	عدد الوحدات
Theoretical Hours	1	عدد الساعات النظرية
Practical Hours	6	عدد الساعات المحلّية
Course topics		مواضيع المقرر

Introduction to Plant Cell and Tissue Culture.

Equipment's, Apparatus and other Requirements:

- Laboratory equipment
- Sterile laminar flow cabinet and transfer room
- Temperature, humidity and light requirements.

Aseptic Techniques in Plant Tissue Culture.

Preparation of Plant Tissue Culture Media:

- Composition of cultural media
- Plant growth regulators
- Preparation of culture media.

Cell Culture and Plant Regeneration:

- Initiation of callus from explants
- Factors affecting callus growth
- Initiation of cell suspension cultures
- Maintenance of callus cultures
- Regeneration of tissue cultures via organogenesis
- Regeneration of tissue cultures via embryogenesis.

Applications of Plant Cell and Tissue Culture:

- Haploid cultures.
- Protoplast cultures.
- Preservation and cryopreservation of germplasm.
- Selection for somaclonal variants.
- Secondary product synthesis by plant tissue cultures.
- Micropropagation techniques in horticulture and crop improvement.

Genetic Manipulation of Plants.

Text book: (Name, Author , Year , Publisher)	عنوان الكتاب : (الاسم ، المؤلف ، سنة الطبع ، دار النشر)
In Vitro Culture of Higher Plants by R.L.M. Pierik, Kluwer Academic Publishers. 1997.	
References: (Name , Author , Year . Publisher)	عنوان المرجع : (الاسم ، المؤلف ، سنة الطبع ، دار النشر)
1- Plant Cell Culture by Collin H.A. & Edwards S. BIOS Scientific Publishers, 1998. 2- Plant Cell Culture – A practical approach by Dixon R.A. & Gingals R.A. eds. Oxford University Oxford, 1994. 3- Plant Tissue Culture Manual Fundamentals and Applications by Lindsey K. (ed). Kluwer Academic Publishers, Netherlands, 1990	

Prerequisites				متطلبات المقرر	
	Exams		% 15	الاختبارات	
	Quizzes		% 5	امتحانات قصيرة	
	H.W.		%	واجبات	
	Practical		% 40	مشاريع (دراسة ميدانية)	

Grading	Final		%	40	الاختبار النهائي	آلية رصد المقرر
	% 100					

أهداف مخرجات المقرر :					
الرقم	أهداف مخرجات المقرر :	أمثله من المقرر لتحقيق هذه الأهداف	المستوى المطلوب من عضو هيئة التدريس لتحقيق الهدف :		
			عالي	متوسط	منخفض
1					
2					
3					
4					
5					
					الحقول
					المهارات
			منسق المقرر (اسم عضو هيئة التدريس المشرف على توصيف المقرر ، توقيع ، الختم و الرتبة الأكاديمية)		
			تاريخ إعداد النموذج		

Course objectives					
No.	Course Objectives (Learning Outcomes)	Example(s) of relevant (Topics and activities)	Recommended Level to satisfy the objectives		
			High	Medium	Low
1	How to use the basic concept of Plant Tissue Culture as a Biotechnology tool.	Learning the basic steps of aseptic technique for the various in vitro techniques.	High		
2	Understand the importance of Plant Tissue Culture.	How to benefit from the application of aseptic techniques.	High		
3	Learn the skills and the practical techniques in Plant Tissue Culture.	Conducting various in vitro techniques in the laboratory.		Medium	
4	Know the chemicals needed for successful	Learning the preparation of media and the	High		



	Plant Tissue Culture techniques.	importance of each component.			
5	Analyze the in vitro data and the possible reasons for unsuccessful outcome.	By working in groups and collecting data from the practical experiments for comparison and discussion.		Medium	
Fields	Plant structure and function, in vitro techniques, Plant breeding and propagation.				
Skills	Learning how to produce pathogen free plant cell and tissue cultures. Examining the experiment results and drawing the correct conclusion. Working independently and as part of a team. Practice presentation skills and how to discuss the practical results. How to operate the various equipment's at the green house and the laboratory.				
Coordinator (Name and Rank):	Amina Ali Redha Associate Professor				
Signature and stamp:					
Date:	9 \ 11 \ 2025				