

نموذج توصيف مقرر
Course Description Form

Name of College\Faculty : Science

اسم الكلية:

Name of Department: Department of Biological Sciences

اسم القسم العلمي:

Course Name	Plant Biochemistry	اسم المقرر
Course No.	0494-473	رقم المقرر
No. of Credits	4	عدد الوحدات
Theoretical Hours	3	عدد الساعات النظرية
Practical Hours	3	عدد الساعات المحلية
Course topics		مواضيع المقرر
Text book: (Name, Author , Year , Publisher)		عنوان الكتاب : (الاسم ، المؤلف ، سنة الطبع ، دار النشر)
This course focuses on the biochemical processes by which plant cells regulate the biosynthesis of a wide range of metabolites through complex catabolic and anabolic pathways. Signal transduction mechanisms in plant cells. Special emphasis is placed on biochemical mechanisms occurring in the thylakoid and mitochondrial membranes, as well as biochemical repair mechanisms under stress conditions, with a particular focus on photorespiration. Additionally, secondary metabolites biosynthesis and compounds with unique antioxidant properties, exploring their roles in plant defense mechanisms, and applications in alternative medicine. The course also examines the relationship between cellular energy production and the regulatory functions of enzyme-mediated processes.		
References: (Name , Author , Year . Publisher)		عنوان المرجع : (الاسم ، المؤلف ، سنة الطبع ، دار النشر)
Heldt, H.-W. & Piechulla, B. (2011). <i>Plant Biochemistry</i> (5th ed.). Academic Press. ISBN: 978-0-12-818631-2.		

Prerequisites					متطلبات المقرر
	Exams		21 %		الاختبارات

Grading	Quizzes		6 %		امتحانات قصيرة	آلية رصد المقرر
	H.W.		3 %		واجبات	
	Project (field study)		30 %		مشاريع (دراسة ميدانية)	
	Final		40 %		الاختبار النهائي	
	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 ، توقيعه ، 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	Understand fundamental biochemical pathways in plants, including anabolic and catabolic reactions	Topics: Metabolic pathways, enzyme function, biosynthesis of metabolites Activities: principles of enzyme kinetics	X		
2	Analyze biochemical mechanisms in thylakoid and mitochondrial membranes	Topics: Photosynthesis (light reactions), mitochondrial respiration, membrane bioenergetics Activities: pigments extracts and case studies on coenzymes	X		

3	Explain biochemical repair mechanisms under stress, with special emphasis on photorespiration	Topics: Photorespiration, stress response pathways, repair mechanisms Activities: Case studies, stress simulation experiments	X		
4	Evaluate the role of antioxidant compounds in plant defense, food production, and alternative medicine	Topics: Antioxidants, plant defense, applications in food and medicine Activities: Compound extraction, antioxidant activity assays		X	
5	Correlate biochemical processes with plant growth, development, and nutritional importance	Topics: Growth metabolites, nutritional biochemistry, crop improvement Activities: Metabolite profiling, nutritional analysis		X	
Fields	Plant Biochemistry, Plant Physiology, Biochemistry, Agricultural Science				
Skills	Ability to analyze plant biochemical pathways, perform enzyme and metabolite assays, interpret stress responses, and apply biochemical knowledge to nutritional contexts				
Coordinator (Name and Rank) :	Dr. Naemah Al-Mansour				
Signature and stamp :					
Date:	11 \ 11 \ 2025				