

Course Description Form

1. Course Name:					
Optimization II					
2. Course Code:					
MATH 319					
3. Semester / Year:					
First/ Third					
4. Description Preparation Date:					
23/3/2024					
5. Available Attendance Forms:					
6. Number of Credit Hours (Total) / Number of Units (Total)					
60 hours/ 4 Units					
7. Course administrator's name (mention all, if more than one name)					
Name: Associate Professor Saad Mohsen Asst. Lec. Abbas Ibraheem Asst. Lec. Wurood Riyadh Asst. Lec. Eman Khalid Email: saad.mohsen@nahrainuiv.edu.iq					
8. Course Objectives					
Course Objectives			<ul style="list-style-type: none"> Study of non-linear programming systems and their solutions. Study classical optimization and solve systems u many methods. numerical optimization and its applications 		
9. Teaching and Learning Strategies					
Strategy		The strategy is to provide the students with as much information about linear programming as possible by attending lectures to maximize the connection between the students and the lecturer in order to solve as many real-life statistical applications as possible with practical lab. The lectures, some homework and some other additional exercises is also shared on Google Classroom.			
10. Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method

2-1		4	Definition and classification of nonlinear programming		
6-3		8	Solution of single variable optimization		
9-7		8	Multi variable optimization no constraints		
11-10		10	Multi variable optimization with constraints		
13-12		14	Solve numerical optimization unrestricted search exhaustive		
15-14		16	Solve numerical optimization dichotomous, Fibonacci golden section		

11. Course Evaluation

Midterm exam: 40 marks

Final exam: 60 marks

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Optimization theory and applications by S.S. RAO
Main references (sources)	Operation research by HAMDY A. TAHA
Recommended books and references (scientific journals, reports...)	Any website related to our study
Electronic References, Websites	Google.com

1. بنية المقرر

الأسبوع	الساعات	مخرجات التعلم المطلوبة	اسم الوحدة / أو الموضوع	طريقة التعليم	طريقة التقييم
2-1	4	الطريقة البيانية	Graphical solution	برمجة باستخدام الماتلاب	
6-3	8	الطريقة المبسطة	Simplex method	برمجة باستخدام الماتلاب	
9-7	8	طريقة Big M	Big M method	برمجة باستخدام الماتلاب	
11-10	10	طريقة ذات الطورين	Two phase method	برمجة باستخدام الماتلاب	
13-12	14	طريقة الثنائية	Dual simplex method	برمجة باستخدام الماتلاب	
15-14	16	طريقة النقل	Transportation method	برمجة باستخدام الماتلاب	

