



Hashemite University	 	<i>Numerical analysis</i> 3 Credit Hours
Faculty of Science		Pre-requisite: yes
Department of Mathematics		Summer Semester 2018/2019
Course Syllabus		

Course Information	
Course Title	Numerical analysis
Course Number	1402
Course Credits	3 Hours
Course Time	10 :20-11 :20
Course Duration	One semester
Instructor	Dr. Ramzi Albadarneh
Office Location	
Office Phone	+962(05)3903333 - 4495
Office Hours	9-10, الأحد-الثلاثاء-الخميس
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Text Book	
Title	<i>Numerical Analysis,</i>
Author	R. L. Burden and J. D. Faires,
Publisher	Brooks Cole
Year	2011
Edition	8th edition
References(s)	<ol style="list-style-type: none"> 1) Mathematica, Eugene Don, Mc Graw Hill, Second Edition. 2) J. Dorfman, Introduction to MATLAB Programming, Decagon Press, Inc 3) Atkinson, K. E. (2008). <i>An introduction to numerical analysis</i>. John Wiley & Sons.
Grading plan	
First Exam	30 %
Second Exam	30 %
HomeWorks	----
Final Exam	40 %

Section Number	Topics	Week Number
1.1	Review of Calculus	1
1.2	Round-off Errors and Computer Arithmetic	
2.1	The Bisection Method	2
2.2	Fixed-Point Iteration	
2.3	Newton's Method and Its Extensions	
2.4	Error Analysis for Iterative Methods	
3.1	Interpolation and the Lagrange Polynomial	3
3.3	3.3 Divided Differences	
	First Exam	
3.3	Hermite Interpolation	
4.1	Numerical Differentiation	4
4.2	Richardson's Extrapolation	
4.3	Elements of Numerical Integration	
4.4	Composite Numerical Integration	5
4.5	Romberg Integration	
5.1	The Elementary Theory of Initial-Value Problems	6
5.2	Euler's Method	
5.3	Higher-Order Taylor Methods	
	Second Exam	
5.4	Runge-Kutta Methods	7
6.1	Linear Systems of Equations	
6.2	Pivoting Strategies	
7.1	Norms of Vectors and Matrices	8
7.3	The Jacobi and Gauss-Siedel Iterative Techniques	
	Final Exam	

* ملاحظات هامة

- في الامتحانات يجب علنة كل طالب احضار الهوية الجامعية و بخلاف ذلك تعتبر علامة في ذلك الامتحان صفرا.

- في حال تغيب الطلاب عن اي امتحان يقدم عذر مقبول من العمادة في مدة لا تتجاوز 48 ساعة من عقد الامتحان.

- أي طالب يتجاوز نسبة الغياب المقررة بالقانون الجامعي بعذر او بدون عذر يحرم من المادة.