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

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, الاحد-الثلاثاء-الخميس***	
E- mail	***rbadarneh@hu.edu.jo***	
Course Web Site:		
Text Book		
Title	*Numerical Analysis*,	
Author	R. L. Burden and J. D. Faires,	
Publisher	Brooks Cole	
Year	2011	
Edition	8th edition	
References(s)	**1)** Mathematica, Eugene Don, Mc Graw Hill, Second Edition. **2)** J. Dorfman, **Introduction to MATLAB Programming**, Decagon Press, Inc **3)** Atkinson, K. E. (2008). *An introduction to numerical analysis*. 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 علىة كل طالب احضار الهوية الجامعية و بخلاف ذلك تعتبر علامتة 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.