

أسم الجامعة: جامعة ديالى
 أسم الكلية: الهندسة
 أسم القسم: الميكانيك
 أسم المحاضر: جاسم محمد عبد اللطيف
 اللقب العلمي: مدرس
 المؤهل العلمي: دكتورا هندسة
 مكان العمل: قسم الهندسة الميكانيكية



جمهورية العراق
 وزارة التعليم العالي و البحث العلمي
 جهاز الإشراف التقويم العلمي

((أستمارة الخطة التدريسية السنوية))

م.د جاسم محمد عبد اللطيف						اسم التدريسي:
						البريد الالكتروني:
Numerical Analysis						اسم المادة:
3 hrs per week , theory: 2 hrs , tutorial : 1 hrs						مقرر الفصل:
Teaching the students the method of solution of numerical solution to be qualified to programming by numerical analysis and solve any function, equation, integrals ...etc						اهداف المادة:
Numerical methods, finite differences, Numerical Differentiation and integration, Numerical solution of partial differential equations , numerical Double integration, trapezoidal method, Simpson method, Applications on computer in the subjects of numerical analysis by using Fortran						التفاصيل الاساسيه للمادة:
Numerical Analysis , Richard L. Burden and J. Douglas Faires						الكتب المنهجية:
Numerical Analysis , Steven T. Karris						المصادر الخارجية:
الامتحان النهائي	السعي النهائي	الفصل الثاني	نصف السنة	الفصل الاول	الفصل الدراسي	تقديرات الفصل:
%60	%40	12.5%	15%	12.5%	الدرجة	
A couple of quizzes have to be done during the both semesters						معلومات اضافية:

جدول الدروس الأسبوعي – الفصل الدراسي الاول

الملاحظات	المادة النظرية	محتوى المادة	التاريخ	الأسبوع
	<i>Solution of equations in one variable</i>	<i>The Bisection Method for Root Approximation, examples, Fixed point iteration, examples</i>	5/10/2010	1
	<i>Solution of equations in one variable</i>	<i>Newton's Method for Root Approximation, Secant Method, Examples</i>	12/10/2010	2
	Numerical Differentiation and integration	<i>Integration By Numerical Methods, Trapezoidal method, Examples</i>	19/10/2010	3
	Numerical Differentiation and integration	<i>Integration By Numerical Methods, 1/3 Simpson's method, Examples</i>	26/10/2010	4
	Numerical Differentiation and integration	<i>Integration By Numerical Methods, 3/8 Simpson's method, Examples, Double integral, examples</i>	2/11/2010	5
	<i>Numerical linear algebra</i>	<i>Solving linear systems, Gaussian elimination, Examples</i>	9/11/2010	6
	<i>Numerical linear algebra</i>	<i>Pivoting strategies, Linear algebra and matrix inversion , examples</i>	16/11/2010	7
	<i>Numerical linear algebra</i>	<i>The determinant of a matrix, examples, matrix Factorization , special types of matrices, examples</i>	23/11/2010	8
	<i>Initial-value problem for ODEs</i>	<i>The elementary theory of initial- value problems</i>	30/11/2010	9
	<i>Initial-value problems for ODEs</i>	<i>Euler's method , Examples, Higher order Taylor Methods, Examples</i>	7/12/2010	10
	<i>Initial-value problems for ODEs</i>	<i>Runge- Kutta methods, Examples, Errores control and the Runge – Kutta – Fehlberg Method, Examples</i>	14/12/2010	11
	<i>Initial-value problems for ODEs</i>	<i>Multistep Methods, Examples, Variable step – size multistep methods, examples</i>	21/12/2010	12
	<i>Initial-value problems for ODEs</i>	<i>Higher – order equations and systems of differential equations, examples</i>	28/12/2010	13
	<i>Initial-value problems for ODEs</i>	<i>Stability, Stiff Differential equations , examples</i>	4/1/2011	14
	<i>Iterative techniques in matrix algebra</i>	<i>Norms of Vectors and matrices, examples, Eigenvalues and Eigenvectors, examples</i>	11/1/2011	15

توقيع العميد:

توقيع الأستاذ:

جدول الدروس الأسبوعي – الفصل الدراسي الثاني

الملاحظات	المادة النظرية	محتوى المادة	التاريخ	الأسبوع
	<i>Iterative techniques in matrix algebra</i>	<i>Iterative Techniques for solving linear systems, examples, Error Bounds and iterative refinement, examples</i>	18/1/2011	17
	<i>Iterative techniques in matrix algebra</i>	<i>The conjugate gradient method, examples</i>	25/1/2011	18
	<i>Approximating Eigenvalues</i>	<i>Linear algebra and Eigenvalues, , examples</i>	1/2/2011	19
	<i>Approximating Eigenvalues</i>	<i>The power method, Jacobi transformations of a symmetric matrix, examples</i>	8/2/2011	20
	<i>Approximating Eigenvalues</i>	<i>Reduction of a symmetric matrix to Tridiagonal form, examples, Hermitian matrices, examples</i>	15/2/2011	21
	<i>Approximating Eigenvalues</i>	<i>The QR Algorithm for real Hessenberg matrices, examples, Improving Eigenvalues and / or finding Eigenvectors by inverse iteration, examples</i>	22/2/2011	22
	<i>Numerical solutions of nonlinear systems of equations</i>	<i>Fixed points for functions of several variables , examples , Newton's method, examples.</i>	1/3/2011	23
	<i>Numerical solutions of nonlinear systems of equations</i>	<i>Quasi – Newton method, examples, steepest descent techniques, examples, Homotopy and continuation methods, examples</i>	8/3/2011	24
	<i>Linear and Parabolic Regression</i>	<i>Curve Fitting, Linear Regression, Parabolic Regression ,Regression with Power Series Approximations, examples</i>	15/3/2011	25
	<i>Boundary – value problems for ODEs</i>	<i>The linear shooting method , examples, the shooting method for nonlinear problems, examples</i>	22/3/2011	26
	<i>Boundary – value problems for ODEs</i>	<i>Finite- difference methods for linear problems, examples, Finite- difference methods for nonlinear problems, examples</i>	29/3/2011	27
	<i>Numerical solutions to partial differential equations</i>	<i>Introduction, Flux – conservative initial value problems, examples, Diffusive initial value problems, examples</i>	5/4/2011	28
	<i>Numerical solutions to partial differential equations</i>	<i>Initial value problems in multidimensions, Fourier and cyclic reduction methods for boundary, examples</i>	12/4/2011	29
	<i>Numerical solutions to partial differential equations</i>	<i>Relaxation method for boundary value problems, examples , multigrid methods for boundary value problems, examples</i>	19/4/2011	30

توقيع العميد:

توقيع الأستاذ: