

أسم الجامعة: جامعة ديالى  
 أسم الكلية: الهندسة  
 أسم القسم: الميكانيك  
 أسم المحاضر: ليث عبد حسناوي حسن  
 اللقب العلمي: مدرس مساعد  
 المؤهل العلمي: ماجستير هندسة ميكانيكية  
 مكان العمل: قسم الهندسة الميكانيكية



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

(( أستمارة الخطة التدريسية السنوية ))

Asst. Lect. Layth Abed Hasnawi						اسم التدريسي:
<a href="mailto:Leath_tech2014@yahoo.com">Leath_tech2014@yahoo.com</a>						البريد الالكتروني:
<b>Mathematics (I)</b>						اسم المادة:
4 hrs per week , theory: 3 hrs , tutorial : 1 hrs						مقرر الفصل:
Teaching the students the basic and elementary mathematics to be qualified for advanced mathematics.						اهداف المادة:
Functions And Limits, Continuity, Trigonometric Functions, Conic Sections Differentiations And Its Applications, Integration And Its Applications Transcendental and Hyperbolic functions, Methods Of Integration, Matrices And Determinants, Introduction To Vectors, Complex Numbers						التفاصيل الاساسيه للمادة:
Thomas' Calculus, 11 <sup>th</sup> ed. By George B. Thomas, Jr (2005). Revised by: Maurice D. Weir, Joul Hass, Frank R. Giordan						الكتب المنهجية:
Calculus, 7 <sup>th</sup> ed. By Howard Anton, Irl Bivens, Stephen Davis, ( 2002).						المصادر الخارجية:
الامتحان النهائي	السعي النهائي	الفصل الثاني	نصف السنة	الفصل الاول	الفصل الدراسي	تقديرات الفصل:
%60	%40	10%	20%	10%	الدرجة	
A couple of quizzes have to be done during the both semesters						معلومات اضافية:

## Course weekly Outline-Semester(1)

الملاحظات	المادة النظرية	محتوى المادة	التاريخ	الأسبوع
	<b>Simple function and their graphs</b>	- Cartesian coordinate sys. - Inequality , intervals & Equation of line: Midpoint, distance,...etc.	24/11/2014	1
	<b>Simple function and their graphs</b>	- Domain, range, Families of functions & parametric eqn., Composition and shifting of functions	27/11/2014	2
	<b>Limits &amp; continuity</b>	- Laws of limits.& Squeezing theory. - Sided limits & limits at $\infty$ - Continuity and Continuous functions.	1/12/2014	3
	<b>Trigonometric functions</b>	- Basic trigonometric fun. - Identities & Trig. graphs.	4/12/2014	4
	<b>Conical sections</b>	- Circle, Ellipse, Parabola, Hyperbola & Eccentricity	8/12/2014	5
	<b>Differentiation</b>	- Rate of change & slopes - Rules of diff.& Derivative of Trig. Func. - Chain rule & Implicit differentiation	11/12/2014	6
	<b>Derivative applications</b>	- Velocity and acc., Critical points, Max. & Min. and inflection points,+ Asymptotes.	15/12/2014	7
	<b>Derivative applications</b>	- l'Hopital's rule.& Optimization problems - Related rate problems	18/11/2014	8
	<b>Integration</b>	- Indefinite integration, & Rules of integration.+ Integration of Trig. Funcs.	22/12/2014	9
	<b>Integration</b>	- Definite integ. & Riemman's sums.	25/12/2014	10
	<b>Definite integral application</b>	- Area between 2 curves & Vol. of solids. - Volume by revolution.+ Disk & Washer methods.	29/12/2014	11
	<b>Definite integral application</b>	- Volume by cylindrical shell. - Length of plane curves - Area of a surface of revolution.	5/1/2015	12
	<b>Transcendental functions</b>	- Inverse functions. - Natural logarithm functions $\ln(x)$ . - Exponential function $e^x$ .	8/1/2015	13
	<b>Transcendental functions</b>	- General exponential function $a^x$ - Logarithm with base $a \log_a x$ . - Inverse Trig. Funcs. (Derivatives & integrations) to all above.	12/1/2015	14
	<b>Hyperbolic functions</b>	- Definitions & Identities - Inverse hyperbolic functions - Differentiation & Integration	15/1/2015	15
		<b>Review for All lectures</b>	18/1/2015	16
<b>Half-Year Break</b>				

## Course weekly Outline-Semester(2)

الملاحظات	المادة النظرية	محتوى المادة	التاريخ	الأسبوع
	Techniques of Integration	- Simple integration methods - Integration by part - Tabular integration	2/3/2015	1
	Techniques of Integration	- Integration by partial fraction. - Integration of trigonometric functions	9/3/2015	2
	Techniques of Integration	- Trigonometric substitution - Substitution $Z=\tan(x/2)$	16/3/2015	3
	Techniques of Integration	- Improper integration	23/3/2015	4
	Matrices	- Definitions & Elementary matrix operation - Matrix multiplication	30/3/2015	5
	Matrices	- Determinant & Laplace expansion & others - Properties of determinants.	6/4/2015	6
	Matrices	- Inverse of matrix - Systems of linear equations - Cramer's rule.	13/4/2015	7
	Matrices	- Solution by matrix inverse - Gauss elimination method - Gauss-Jordan method * Eigen value & Eigen vectors	20/4/2015	8
	Introduction to vectors	-Definitions - Addition and subtraction (Graphically & Componently) - Length of vector & Unit vector	27/4/2015	9
	Introduction to vectors	- Direction of vector & Sins & Cosines law - Resultant of two concurrent force - Vectors in 3-space	4/5/2015	10
	Introduction to vectors	- Dot (scalar) product. - Angle between vectors - Vector projection & Work	11/5/2015	11
	Introduction to vectors	- Cross (vector) product - Torque	18/5/2014	12
	Complex Numbers	- Introduction to numbers. - Arithmetic operations - Geometric representation	25/5/2015	13
	Complex Numbers	- Euler's formula - De Moivers theorem -Finding the Roots	1/6/2015	14
		-Review for All lectures	8/6/2015	15