

EFFECTIVE: MAY 2006 CURRICULUM GUIDELINES

А.	Division:	Instructional	Eff	ective Date:		May 2006
B.	Department / Program Area:	Mathematics/ Faculty of Science & Technology	Re	vision	X	New Course
			If F Rev Da Da	Revision, Section(s) vised: te of Previous Revision te of Current Revision	on: 1 :	F,G,H,J,M,N,O,P,Q September 2004 September 9, 2005
C:	MATH 1125	D : Calculus for	the So	cial Sciences		E: 3
	Subject & Course No.		Descrip	iptive Title		Semester Credits
F:	Calendar Description: This course is an introduction to differential calculus for students in business, social sciences and biological sciences. Topics include limits, differentiation techniques for algebraic, logarithmic, exponential and trigonometric functions, mathematical modeling, applications to graphing and optimization, implicit differentiation and differentials.					ences and biological ponential and tion, implicit
G:	Allocation of Co / Learning Settin	ontact Hours to Type of Instruction ngs	H:	Course Prerequisites	S:	10
	Primary Method Learning Setting	ods of Instructional Delivery and/or ngs:		better in Principles of Math 12 or an approved equivalent		
	Lecture, tutorial		I:	Course Corequisites:		
	Number of Cont for each descrip	tact Hours: (per week / semester tor)		None		
	4 hours le	ecture + 1 hour tutorial /week	J:	Course for which th MATH 1225	is Cou	rse is a Prerequisite
	Number of Wee	ks per Semester:	K:	Maximum Class Siz	ze:	
		15		35		
L:	PLEASE INDI	CATE:	1			
	Non-Credit					
	College Credit Non-Transfer					
	X College Credit Transfer:					
	SEE BC TRANSFER GUIDE FOR TRANSFER DETAILS (www.bctransferguide.ca)					

M:	Course Objectives / Learning Outcomes						
	Upon completion of MATH 1125 the student should be able to:						
	- evaluate elementary limits involving algebraic, exponential, logarithmic and trigonometric functions						
	- describe the concept of continuity and determine intervals upon which a function is continuous						
	- apply the intermediate value theorem						
	- find average and instantaneous rates of change						
	- find derivatives and relate them to tangent lines and instantaneous rates of change						
	- use differentiation rules to compute the derivatives of algebraic functions						
	- compute the derivatives of exponential, logarithmic and trigonometric functions						
	- compute derivatives using implicit differentiation						
	- formulate and solve problems involving marginal analysis, elasticity, points of diminishing returns,						
	and other forms of economic modeling						
	- apply the concepts of differentials and linear approximations						
	- use Newton's method to determine points of intersection						
	- sketch graphs of functions by applying first and second derivative techniques as well as analysis of vertical horizontal and elect asymptotes.						
	- use differentiation to determine the local and absolute extrema of functions						
	Additional topics that may be included in the course material may be chosen from:						
	- apply the concept of an annuity to loans, mortgages and investments						
	- solving problems involving Markov Chains, Linear Programming and Game Theory						
	- compute the definite and indefinite integral of a function						
	- use integration techniques (substitution, integration by parts and others) to compute integrals						
	 apply the integral to problems in Business and the Social Sciences 						
N:	Course Content:						
	1. Limits and Limit Laws						
	2. Continuity 2. Tangant Lines and the Derivative						
	5. Taligent Lines and the Derivative 4 Differentiation Rules and Implicit Differentiation						
	4. Differentiation Rules and implicit Differentiation 5. Related Rates						
	6 Marginal Analysis and Differentials						
	7. Applications to Graphing Functions						
	8. Determining the Extrema of Functions						
	 Additional techniques of Business Analysis 						
0:	Methods of Instruction						
	Lectures, tutorials, problem sessions and assignments						
P:	Textbooks and Materials to be Purchased by Students						
	Hoffmann, Bradley and Rosen, <u>Applied Calculus</u> , 8 th Edition, McGraw Hill, 2005 <u>Student Solution Guide</u> , McGraw Hill, 2005						
0 :	Means of Assessment						
_							
	Evaluation will be carried out in accordance with Douglas College policy. The instructor will present a written course outline with specific evaluation criteria at the beginning of the semester. Evaluation will be based on some of the following:						
	1 Weekly tests $0.40.04$						
	$\begin{array}{c} 1. \text{weakly lesis} \\ 2 \text{Term tests} \\ \end{array} \qquad \begin{array}{c} 0 - 40 & 70 \\ 2 & 70\% \end{array}$						
	2. Term tests $20 - 70\%$ 3. Assignments $0 - 20\%$						
	4 Attendance/narticipation $0 = 5\%$						
	5. Tutorials $0 - 10\%$						
	6. Final Examination $30-40\%$						

R: Prior Learning Assessment and Recognition: specify whether course is open for PLAR

None

Course Designer(s) Aubie Anisef

Education Council / Curriculum Committee Representative

Dean / Director

Des Wilson

Registrar Trish Angus

© Douglas College. All Rights Reserved.