Zurich University of Applied Sciences



Valid for 2022.FS

Module Name: Mathematics 2							
Module Code	w.BA.XX.2Math2-en.XX						
Module Description	Students know, understand, and master the basic set of tools of mathematical analysis in the area of differentiation and integration. They can apply this set of tools in formalizing, modelling, and solving quantitative problems of business administration and economics.						
Program and Specialization	Business Administration - Banking and Finance (PiE)						
Legal Framework	Academic Regulations BSc dated 29.01.2009, Appendix to the Academic Regulations for the degree programs in Business Administration, Business Information Technology, and Business Law, first adopted on 12.05.2009						
Module Category	Module Type: Compulsory	Program Phase: First-Year Studies					
FCTS	3						
Organizational Unit	W Institut für Risk & Insurance						
Module Coordinator	Jürg Portmann (port)						
Deputy Module Coordinator	Johannes Gerd Becker (bece)						
Prerequisite Knowledge	Mathematics 1						
Contribution to Program	S Professional Competence						
Learning Goals (Affected by	§ Methodological Competence						
Module)	§ Social Competence						
,	§ Self-Competence						
Contribution to Program	Professional Competence						
Learning Objectives	Professional Competence § Knowing and Understanding Content of Theoretical and Practical Relevance § Apply, Analyze, and Synthesize Content of Theoretical and Practical Relevance § Evaluate Content of Theoretical and Practical Relevance Methodological Competence § Problem-Solving & Critical Thinking § Scientific Methodology § Work Methods, Techniques, and Procedures § Information Literacy Social Competence § Written Communication § Oral Communication § Teamwork & Conflict Management Self-Competence § Self-Management & Self-Reflection § Learning & Change						
Module Learning Objectives	 Students find the derivatives of elementary funrules. interpret the derivative of a function a gradient of the graph of the function, use derivatives to discuss the monote find extreme points and inflection points are differential of a geometrically. use the concept of the differential of a apply the differential calculus to basic apply the differential calculus to function find antiderivatives of elementary fun calculate areas using the definite interest of a poly integral calculus to basic economics. 	actions and apply the common differentiation at a point as the local rate of change, as the or as the slope of its tangent at this point. onicity and curvature of a function. Ints by means of analysis and interpret these a function mathematically and economically. function mathematically and economically. c economic problems. tions of more than one independent variable. differentiation and integration. ctions and apply the common integration rules. egral.					

Modu	le Content	§ Continuity and differer	tiability				
		§ Derivatives and differentiation rules					
		§ Curve sketching including monotonicity, curvature, extreme points, and inflection					
		points					
		§ Differential of a function	n				
		S Application of differential calculus to basic economic problems					
		S Differential calculus of functions with more than one independent variable					
		Antiderivatives and elementary integration rules					
		§ Definite integral and area calculation					
		§ Application of integral calculus to basic economic problems					
Separable differential equations and their economic						s	
Links to other modules The content of this module is linked to the following modules:						-	
		w.BA.XX.2Makro-PiE.XX		0			
w.BA.XX.2Math1-en.XX							
		w.BA.XX.2Micro-en.XX					
		w.BA.XX.2Stat-en.XX					
Meth	ods of Instruction	§ Lecture		Social Setti	nas Use	d:	
		§ Interactive Instruction		Individual W	ork		
		§ Exercises					
		§ Discussion					
Digita	al Resources	§ Teaching Videos					
		§ Teaching Materials					
		§ Practice and Application	on Exercises (with	Key)			
T	- Charles affect	§ Collaboration tools					
Туре		Classroom Instruction	Guided Self-Stu	ay	Autono	mous Self-Study	
		28 h		-			
	Small Class	14 h		16 h	-		
	Group Instruction	-		-			
	Described March				1		
	Practical Work	-		-			
	Practical Work Seminar	-		-			
	Practical Work Seminar Total	- - 42 h		- - 16 h	-	32 h	
Perfc	Practical Work Seminar Total rmance Assessment	- - 42 h		- - 16 h		32 h	
Perfo	Practical Work Seminar Total rmance Assessment End-of-module exam			- - 16 h Length (min)	32 h Weighting	
Perfo	Practical Work Seminar Total rmance Assessment End-of-module exam Written exam	- - 42 h Form Specified documentation		- - 16 h Length (min 90	1.)	32 h Weighting 100,00 %	
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