

# SKEMA GLOBAL BBA SYLLABUS

### CAMPUS: Sophia Antipolis ACADEMIC YEAR: 2022/2023

COURSE CODE	COURSE NAME					
BAC.EAINA.OTMTH.2001	CALCALUS III					
Credits	US Credits 4	/ ECTS Credits 8				
Student Workload	Contact Hours	Personal and/or Teamwork	Evaluation			
	52.5	225	7.5			
Teaching Language	English	-				
Co/Prerequisite	Calculus II	Calculus II				
Discipline	Dther					
Course Manager	Yan Grasselli - yan.grasselli(	an Grasselli - yan.grasselli@skema.edu				
Course Description	This multivariate calculus course is the last of the calculus series. This sophomore course is required in almost all engineering and science majors, It covers cylindrical and spherical coordinates, vectors, functions of several variables, partial derivatives, multiple integrals and vector integral calculus.					
Learning Out	sartial derivatives, multiple integrals and vector integral calculus. Three dimensional space, vectors Vectors, dot product, cross product Lines, planes, quadric surfaces Cylindrical and spherical coordinates Vector valued functions Motion along a curve, tangent and normal vectors, curvature Multivariable functions, limits, continuity Partial derivatives, tangent planes, differentials Chain rules, directional derivatives, gradients Maxima and minima, lagrange multipliers Double integrals in cartesian and polar coordinates Parametric surfaces and surface areas Triple integrals (Cartesian, Cylindrical, Spherical ) Mass, center of gravity, theorem of Papus Change of variables in multiple integrals, jacobians Lines integrals, independence of path, Green's theorem					
Course included in AACSB Assurance of Learning	No If Yes, enter the LO(s)					
Transferable Competences	□ Sustainability □ Ethics	Please include details here:				



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	Artificial Intelligence				
	Technological Agility				
	Communication				
	Research Methods				
	□ Other				
Teaching Methods	⊠ Lectures		Case Study		
	□ Blended Learning		□ Project		
	Guided Personal Work		□ Seminar		
	🛛 Autonomous Personal Wo	ork	□ Other Please specify		
Student Assessment	Written Examination		Coefficient %		
	2 midterms tests		40%		
	Final Exam		35%		
	Continuous Assessment:		Coefficient %		
	3 Quizzes		25%		
Grading System	Grading System Please refer to the Academic Regulations for the grading system used in the RRA Progra				
	details and for information co	oncerning absences, p	participation in class, plagiarism, etc.		
			1		
References / Books	Required for the course		Recommended references		
	Enter a brief reference to any required reading		Inomas' Calculus (12th Ed.) George B, Thomas,		
			Joel R, Hass		
Online reference	Bogwirod for th	0.001/20	Posemmended references		
material		ecourse	List any recommended online resources here		
	List any required online reso	ources here			
	COURSE CONTENT				
Session:	Contents:				
15/09/2022	Rectangular coordinates in 3 dimensions, spheres, cylindrical surface, vectors, dot product, cross product				
20/09/2022	Quadric surfaces, cylindrical and spherical coordinates				
22/09/2022	Quadric surfaces, cylindrical and spherical coordinates				
27/09/2022	Calculus of vector valued functions				

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29/09/2022	Calculus of vector valued functions, change of parameter, arc length			
04/10/2022	Unit tangent, normal and binormal vectors, curvature			
06/10/2022	Curvature, motion along a curve			
11/10/2022	Functions of two or more variables, limits and continuity			
13/10/2022	Partial derivatives			
18/10/2022	Maxima and minima of functions of two variables			
20/10/2022	Lagrange multipliers			
25/10/2022	Lagrange multipliers			
27/10/2022	Lagrange multipliers			
03/11/2022	Double integrals over rectangular and nonrectangular regions			
08/11/2022	Double integrals over rectangular and nonrectangular regions			
10/11/2022	Double integrals over rectangular and nonrectangular regions			
15/11/2022	Centroid, center of gravity, theorem of Papus			
17/11/2022	Change of variables in multiple integrals, Jacobians, triple integrals in cylindrical coordinates			
22/11/2022	Triple integrals in spherical coordinates			
24/11/2022	Vectors fields, line integrals, independence of path, conservative vector fields, Green's theorem			
29/11/2022	The divergence theorem and Stokes theorem			
01/12/2022	The divergence theorem and Stokes theorem			
06/12/2022	The divergence theorem and Stokes theorem			