

Date:	Examination No.: 15367	Version:1/9/2023	Start: 1/9/2023																																
Module Name - Code	Mathematics III - 109																																		
Module Language:	English																																		
Responsible:	Lecturer Sanaa Ismael Khaleel																																		
Lecture (s):																																			
College:	College of Engineering – Salahaddin University																																		
Duration:	15 week – 1 semester																																		
Course outcomes:	polar coordinates system-Vectors (representation, operation& product)-position, velocity, acceleration and speed - function of more than one variable (partial derivatives, chain rule, higher order derivatives)- differential equations-multiple integrals																																		
Course Content:	<table border="1"> <thead> <tr> <th colspan="2">Week lecture</th> </tr> </thead> <tbody> <tr> <td>1st</td> <td>Introduction-course book</td> </tr> <tr> <td>2nd</td> <td>Polar coordinates, graph & Area in polar coordinates</td> </tr> <tr> <td>3rd</td> <td>Vector, force by vector</td> </tr> <tr> <td>4th</td> <td>Sphere and Dot product</td> </tr> <tr> <td>5th</td> <td>Lines in the Plane and distances from points</td> </tr> <tr> <td>6th</td> <td>Cross product</td> </tr> <tr> <td>7th</td> <td>Line & line segments</td> </tr> <tr> <td>8th</td> <td>Midterm exam</td> </tr> <tr> <td>9th</td> <td>Position, velocity, speed & acceleration</td> </tr> <tr> <td>10th</td> <td>Partial derivatives</td> </tr> <tr> <td>11th</td> <td>Chain rules</td> </tr> <tr> <td>12th</td> <td>Directional Derivatives and Gradient Vectors</td> </tr> <tr> <td>13th</td> <td>Mix derivatives</td> </tr> <tr> <td>14th</td> <td>Multiple integrals</td> </tr> <tr> <td>15th</td> <td>Final exam</td> </tr> </tbody> </table>			Week lecture		1st	Introduction-course book	2nd	Polar coordinates, graph & Area in polar coordinates	3rd	Vector, force by vector	4th	Sphere and Dot product	5th	Lines in the Plane and distances from points	6th	Cross product	7th	Line & line segments	8th	Midterm exam	9th	Position, velocity, speed & acceleration	10th	Partial derivatives	11th	Chain rules	12th	Directional Derivatives and Gradient Vectors	13th	Mix derivatives	14th	Multiple integrals	15th	Final exam
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Literature:	<p>1-Thomas_ Calculus" Eleventh Edition"</p> <p>2- George B. Thomas, Jr, Maurice D. Weir, Joel Hass, Christopher Hell <<THOMAS CALCULUS 13/E >> Pub, Pearson, 20103-</p> <p>3-George B. Thomas, Jr, Maurice D. Weir, Joel Hass, Frank R. Gird <<THOMAS CALCULUS 11/E >> Pub, Pearson, 2005,</p>																																		
Type of Teaching:	3 hrs. theory per week1 hr. tutorial per week																																		
Pre-requisites:	Math. II																																		
Frequency:	Yearly in fall semester																																		

Requirements for creditpoints:	<p>For the award of credit points it is necessary to pass the module exam.</p> <p>The module exam (theoretical) contains:</p> <p>classroom activates ,Quizzes, H.W, Mid term exam and final exam</p> <p>Student's attendance is required in all classes</p>
Credit point:	5
Grade Distribution:	<p>The Grade is generated from the examination result(s) with the following</p> <p>20% activity, H.w and quizzes</p> <p>20% mid-term exam</p> <p>60% final Exam</p>
Work load:	The workload is 120h. It is the result of 60h attendance and 60h self studies