

Faculty	Management and Social Science	
Department	Economics	
Course Title	Mathematics for Economists 1	
Year of Study	2	
Course Code	ECN 205	
Credit Hours	2	
Contact Hours	30	
Mode of Delivery	Classroom Lectures	
Mode of Assessment		Weight
Continuous Assessment		30%
Final Examination		70%
Total		100%
Course Lecturer	Mr. O.O. Awelewa	
Course Description	Mathematics for economists has to with the knowledge of more mathematical concepts and tools needed in solving and addressing economic problems. This is the higher dimension of the introductory to mathematics for Economists offered in the 100 level.	
Course Objectives	This course would enable the understanding of the following: <ol style="list-style-type: none"> <li>1. Derivatives of Trigonometric functions.</li> <li>2. Sequences, Series and Taylor's Theories</li> <li>3. Differentiation of Functions</li> <li>4. Partial derivatives and applications</li> <li>5. Total derivatives and applications</li> <li>6. Integral calculus and its application</li> <li>7. Matrix Algebra</li> </ol>	
Learning Outcomes	By the end of the course, students will be able to: <ol style="list-style-type: none"> <li>1. Solve the derivatives of basic trigonometric functions</li> <li>2. Work out some equations that involve sequence, series and Taylor's expansion</li> <li>3. Handle of partial and total derivatives with their applications</li> <li>4. Carry out some differential and integral calculus operations Apply some of the mathematical topics in addressing some quantitative economics problems</li> <li>5. Solve some matrix algebra problems</li> </ol>	

Teaching and Learning		
Detailed Course Content	Derivatives of trigonometric functions, sequences, series and Taylor's theories, differentiation of functions, partial derivatives and applications, total derivatives and applications, integral calculus and its application and matrix Algebra.	
	Course Content Sequencing	
Weeks	Detailed Course Outline	Allocated Time
Week 1	<p>Trigonometric Functions</p> <ul style="list-style-type: none"> <li>• Derivatives of trigonometric functions</li> </ul>	
Week 2	<p>Sequences and Series</p> <ul style="list-style-type: none"> <li>• Arithmetical Progression</li> <li>• Arithmetic mean</li> <li>• Sum of Arithmetic Progression</li> </ul>	
Week 3	<p>Sequences and Series</p> <ul style="list-style-type: none"> <li>• Geometrical Progression</li> <li>• Geometric mean</li> <li>• Sum of the Geometric progression</li> <li>• Sum to infinity</li> </ul>	
Week 4	<p>Taylor's theories Taylor's Series</p>	
Week 5, 6	<p>Partial Derivatives and Its applications</p> <ul style="list-style-type: none"> <li>• Partial derivatives</li> <li>• Techniques of partial differentiation</li> <li>• Second-Order partial derivatives</li> <li>• Economic applications</li> </ul>	
Week 7, 8	<p>Total Derivatives and its applications</p> <ul style="list-style-type: none"> <li>• Total derivatives</li> <li>• Implicit and inverse functions rules</li> <li>• Economic applications</li> </ul>	
Weeks 9, 10,11	Integral Calculus	

	<ul style="list-style-type: none"> <li>• The power rule</li> <li>• Exponential rule</li> <li>• Logarithmic rule</li> <li>• Sum-Difference rule</li> <li>• The substitution rule</li> <li>• The integration by part rule</li> <li>• Definite integral</li> <li>• Economic applications</li> </ul> <p>Matrix Algebra</p>	
Week 12	Revision	
Week 13, 14	Examinations	
<p><b>Recommended Reading Material</b></p> <ol style="list-style-type: none"> <li>1. Dowling, E.T. (2019). Introduction to Mathematical Economics. McGraw-Hill International Edition.</li> <li>2. Ekanem, O.T. &amp; Iyoha, M.A. (2013). Mathematical Economics. An introduction. Mareh Publishers</li> </ol>		