



DE LA SALLE UNIVERSITY  
College of Science  
Department of Mathematics



**MATH116** *Mathematics*



	Two Variables 3.4 Lagrange Multipliers		Apply Lagrange Multiplier method to find the relative extrema of a function subject to equality constraint.
	<b>IV. Multiple Integration</b> 5.1 Cylindrical and Spherical Coordinates 5.2 Double Integrals 5.3 Double Integrals in Polar Coordinates 5.4 Triple Integrals 5.5 Triple Integrals in Cylindrical and Spherical Coordinates	Week 11-13 (9 hrs)	Introduce cylindrical and spherical coordinates. Evaluate double integrals and its applications. Evaluate double integrals using polar coordinates. Evaluate triple integrals in rectangular coordinates. Evaluate triple integrals using cylindrical and spherical coordinates. Illustrate the use of iterated integrals to evaluate multiple integrals.
	<b>FINAL EXAMINATION</b>	<b>( 2 hrs)</b>	

## References

- Anton, H. (2002) *Calculus* (7th ed.) New York: Wiley
- Edwards, C.H. and Penney, D.E. (2008) *Calculus: Early Transcendentals* (7th ed.) Upper Saddle River, NJ: Pearson/Prentice Hall.
- Larson, R.E, Hostetler, R. & Edwards, B.H. (2008) *Essential Calculus: Early Transcendental Functions*. Boston: Houghton Mifflin
- Leithold, L. (2002) The Calculus 7 (Low Price Edition) Addison-Wesley**
- Simmons, G.F. (1996) *Calculus with Analytic Geometry* (2nd ed.) New York: McGraw-Hill
- Smith, Robert T., Minton, Roland B. (2012), *Calculus*, New York : McGraw Hill
- Tan, Soo T. (2012) *Applied Calculus for the Managerial, Life, and Social Sciences : A Brief Approach* Pt 7 of 9

7. Learning outputs are required and not optional to pass the course.
8. Mobile phones and other forms of communication devices should be on silent mode or turned off during class.
9. Students are expected to be attentive and exhibit the behavior of a mature and responsible individual during class. They are also expected to come to class on time and prepared.
10. Sleeping, bringing in food and drinks, and wearing a cap and sunglasses in class are not allowed.
11. Students who wish to go to the washroom must politely ask permission and, if given such, they should be back in class within 5 minutes. Only one student at a time may be allowed to leave the classroom for this purpose.
12. Students who are absent from the class for more than 5 meetings will get a final grade of 0.0 in the course.
13. Only students who are officially enrolled in the course are allowed to attend the class meetings.

Approved by:

**DR. ARTURO Y. PACIFICADOR, JR.**  
Chair, Department of Mathematics

April, 2014