



**Birzeit University-Mathematics Department**  
**Math141-Calculus I**

**Course Outline**

**Fall 2015-2016**

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**Textbook:** Thomas G., M. Weir and J. Hass, Thomas' Calculus.  
Twelfth Edition, Addison-Wesley

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<b>Chapter</b>	<b>Title</b>	<b>Sections</b>
	Review of functions, limits, continuity, differentiation, integration.	
Ch.6	Applications of definite integrals	1,2,3,4
Ch.7	Transcendental functions	1-8
Ch.8	Techniques of integration	1,2,3,4
Ch.11	Parametric equations + conic sections	11.1,11.2,11.6
Appendix 7	Complex numbers	

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**Grading Policy:**

Quizzes	15%
Mid-Term Exam	35%
Final Exam	50%

<b>Section number</b>	<b>Section title</b>	<b>Number of lectures</b>
	<b>Review</b>	8
	<b>Chapter 6</b>	
6.1	Volumes using cross sections	1
6.2	Volumes using cylindrical shells	1
6.3	Arc length	1
6.4	Areas of surface of revolution	1
	<b>Chapter 7</b>	
7.1	Inverse functions and their derivatives	1
7.2	Natural Logarithms	1
7.3	Exponential Functions	1
7.4+7.5	Exponential Change+L'Hopital's Rule	1
7.6	Inverse Trigonometric Functions	1
7.7	Hyperbolic Functions	1
7.8	Relative rates of growth	1
	<b>Chapter 8</b>	
8.1	Integration by parts	1
8.2	Trigonometric integrals	1
8.3	Trigonometric substitution	1
8.4	Partial Fractions	1
	<b>Chapter 11</b>	
11.1	Parametric curves	1
11.1	Calculus with parametric curves	1
11.6	Conic sections	1
<b>Appendix 7</b>	Complex variables	2
	<b>Total</b>	<b>28</b>

## Homework Problems

	<b>Chapter 6-Applications of integrals</b>
6.1	2,5,6,10,18,22,25,27,28,32,36,40,44,46,49,51
6.2	2,4,9,12,14,17,24,28,29,32,34,38,39
6.3	5,7,10,19,22
6.4	14,15,18,20,22,24
	<b>Chapter 7-Integrals and Transcendental Functions</b>
7.1	2,9,12,16,21,32,33,42,44
7.2	2,4,10,14,16,22,24,31,34,44,54,64,66,70,71
7.3	4,14,21,23,26,38,41,48,50,52,65,73,82,91,92,98,106,108,118
7.4	25,26,30,31,36
7.5	10,16,21,27,30,34,38,41,46,52,56,60,62,66,68,72
7.6	2(c),5(a),6(b),12,16,18,22,26,34,35,40,46,50,59,64,70,74,79,86,90
7.7	2,6,10,15,20,22,46,52,54,57,60
7.8	2,6,8
	<b>Chapter 8-Techniques of Integration</b>
8.1	6,11,16,22,25,30,33,36,39,46,50,58
8.2	5,11,18,20,22,28,36,38,42,47,51,64,67,69
8.3	10,14,18,24,26,29,33,38,45,46,54
8.4	12,14,18,20,23,29,30,37,42,47,49,54
	<b>Chapter 11-Parametric Equations and Conic Sections</b>
11.1	2,6,10,12,14,16,18,22,23,26,29
11.2	6,8,11,14,20,21,25,30,34
11.6	10,15,17,24,26,28,34,36,38,42,52,56,66
	<b>Appendix 7-Complex Numbers</b>
A.7	2,5,9,10,12,14,18,20,22,24