

# DEPARTMENT OF MATHEMATICS

## SYLLABUS

Course # & Name:     MAT 125B: Real Analysis    

Recommended Text(s) & Price:     William Wade, An Introduction to Analysis,  
3<sup>rd</sup> Edition, Prentice Hall, ISBN-13: 978-  
0131453333 (\$120.00)    

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version  
approved  
4/24/2007    

Lecture(s)	Sections	Comments/Topics
	<b>Chapter 5</b>	<b>Riemann integration</b>
2	1	Definition of Riemann integral
2	2	Riemann's definition; properties
2	3	Fundamental theorem of calculus
2	4	Improper integrals
	<b>Chapter 11</b>	<b>Multivariate differentiation</b>
2	1	Restricting to one variable
	<b>Chapter 8</b>	
1	2	Linear transformations
	<b>Chapter 11</b>	<b>Multivariate differentiation (continued)</b>
2	2	Differentiability
1	3	Relations to univariate concepts
2	4	Chain rule
2	5	Multivariate MVT and Taylor's theorem
2	6	Inverse function theorem
	<b>Chapter 12</b>	<b>Multivariate integration</b>
2	1	Integrating indicator functions
2	2	Multivariate Riemann integral
2	3	Iterated integrals
2	4	Change of variables

### Additional Notes:

Total number of lectures = 28.
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