

## MATH 162 – Summer 2018 - Syllabus

### Week Day

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Jun 4	1	§1.4,1.5 Tangent lines. The limit $\lim_{x \rightarrow a} f(x)$ . Computing limits using tables.
	2	§1.5,1.6 Finite and infinite limits.
	3	§2.1 Definition of derivative $f'(a)$ . Rates of change.
	4	§2.2 Function $f'(x)$ (graphs, definition, find for elementary functions).
	5	§2.3 Rules for differentiation ( $c, x^n, cf, f \pm g, fg, f/g$ ).
	5	§2.4 Rules for differentiation (trig functions).
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Jun 11	6	§6.2 Rules for differentiation (exponential function $f(x) = e^x$ ).
	7	§2.5 Chain Rule.
	8	§2.6 Implicit differentiation.
	9	<b>REVIEW</b>
	10	<b>EXAM 1</b>
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Jun 18	11	§2.7 Rates of change (average/instantaneous rates, distance/velo/acceleration, units).
	12	§2.8 Related rates of change.
	13	§2.9 Linearization. (Skip section “Differentials” in book. Refer to posted handout.)
	14	§3.1 Application: Maxima and minima. Critical points. Finding absolute extrema of continuous functions on closed intervals.
	15	§3.3 Intervals of increasing/decreasing, concave up/down. Inflection points.
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Jun 25	16	§3.4 Limits at infinity. Graphing rational functions.
	17	§3.5 Graphing functions (polynomials and simple rationals).
	18	§3.7 Optimization.
	19	<b>REVIEW</b>
	20	<b>EXAM 2</b>
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Jul 2	21	§3.9 Differential Equations. Applications from Physics.
	22	§4.1 Approximating areas and distances. Wednesday is a holiday!
	23	§4.2 Properties of the definite integral (incl functions defined piecewise).
	24	§4.3 Fundamental Theorem (derivation, differentiating integrals with variable bounds)
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Jul 9	25	§4.3 Fundamental Theorem (evaluating definite integrals).
	26	§4.4 Indefinite integrals, and net change.
	27	§4.5 Substitution. Change bounds (as in book, example 7) for all definite integrals.
	28	§5.1 Areas between curves.
	29	§5.2 Volumes of solids of revolution (disk/washer)
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Jul 16	30	§5.4 Work.
	31	<b>REVIEW</b>
	32	<b>EXAM 3</b>
	33	§8.1 Arclength.
	34	§5.5 Average.
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Jul 23	35	Continuity, IVT, EVT. Differentiability, MVT.
	36	Integrability. More applications from physics (piecewise acceleration).
	37	<b>REVIEW</b>
	38	<b>REVIEW</b>
	39	<b>REVIEW</b>
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Jul 28		<b>**FINAL EXAM** (comprehensive) 10am-12pm, Woodward 101</b>