

**Course Outline for Math 181: Applied Basic Mathematics**  
(Modeling, Functions, and Graphs, 4<sup>th</sup> Ed. By Yoshiwara & Yoshiwara)

**Topic Coverage:** The order of topics and the times allotted indicated below are merely suggestions. Be sure to emphasize applications.

TOPIC	APPROXIMATE WEEKS
<b>Appendix A: Algebra Skills Refresher</b> Briefly cover A.1 <u>Numbers and Operations</u> , A.2 <u>Linear Equations and Inequalities</u> , A.3 <u>Algebraic Expressions and Problem Solving</u> , A.4 <u>Graphs and Equations</u> , A.5 <u>Linear Systems in Two Variables</u> and A.6 <u>Laws of Exponents</u> . The coverage of this material may be dispersed throughout the semester. (Note that in order to buy time to cover the body of the text more thoroughly, some or all of these topics could be omitted or only assigned as homework. Perhaps students whose algebra is so weak that they need this much review would be better served by Math 139, but weak nursing students must get more from any exposure to Math 181 than that alternative. It's a tough call.)	(≤?) <b>1.0</b>
<b>Chapter 1: Functions and Their Graphs</b> Do all except 1.6 <u>Linear Regression</u> . Note that it would be reasonable to insert the material from 8.1 <u>Systems of Linear Equations in Two Variables</u> in keeping with the largely linear focus of this chapter.	<b>1.5</b>
<b>Chapter 2: Modeling with Functions</b> Do all, but in 2.5 <u>The Absolute Value Function</u> omit the algebra of absolute equations and inequalities. Instead stress the interpretation of absolute value as "distance" in modeling and measurement error and go light on 2.6 <u>Domain and Range</u> .	<b>1.5</b>
<b>Chapter 3: Power Functions</b> Do all except 3.5 <u>Joint Variation</u> .	<b>1.5</b>
<b>Chapter 4: Exponential Functions</b> Do all, but in 4.4 <u>Properties of Logarithms</u> stress the significance of $\log_b x^k = k \log_b x$ in solving exponential equations with the aid of a calculator (as in Example 3 on p. 368) and in applications.	<b>2.0</b>
<b>Chapter 5: Logarithmic Functions</b> Do all, but in 5.2 <u>Logarithmic Functions</u> light on graphs of logarithmic functions and do very little with properties of logarithms and in 5.4 <u>Logarithmic Scales</u> place the emphasis on specific applications like pH, decibels and the Richter scale.	<b>1.5</b>
<b>Chapter 6: Quadratic Functions</b> Omit 6.5 <u>Quadratic Inequalities</u> , 6.6 <u>Curve Fitting</u> and in 6.2 <u>Solving Quadratic Equations</u> cover only the quadratic formula and applications.	<b>1.0</b>
<b>Chapter 7: Polynomial and Rational Functions</b> Omit	<b>0</b>
<b>Chapter 8: Linear Systems</b> Do only 8.1 <u>Systems of Linear Equations in Two Variables</u> . As noted above, inserting this topic between Chapters 1 and 2 seems wise.	<b>0.5</b>
<b>Supplementary Materials For Math 181: Arithmetic With Approximate Numbers, Conversion Of Units, Right Triangle Trigonometry</b> Do all. Spend about half a week each on <u>Arithmetic With Approximate Numbers</u> and <u>Conversion Of Units</u> .	<b>2.5</b>
<b>Exams and Review</b>	<b>1.0</b>
<b>Total</b>	<b>14.0 weeks</b>