

**Text:** *Precalculus for the University of Oregon* (custom edition of *Precalculus: A Prelude To Calculus*), by Sheldon Axler.

**Calculator:** *If you require a graphing calculator, use it and recommend a TI-84, TI-83 Plus or TI-83. If you do not allow the use of a calculator, be prepared to a) not use one yourself (lest ye be accused of hypocrisy) and b) write exams so that the simplification of arithmetically complex problems does not overshadow the actual concept they are being tested on.*

**Notes:**

- *It is extremely important that the students know that Math 111 is a precalculus course. It is designed for students who have a basic algebraic understanding that is to be built upon in order to prepare them for calculus. Not all students fit this description, but nevertheless it is the assumption.*
- *Please adjust the timing of holidays in the syllabus below for winter and spring terms.*

<b>WEEK</b>	<b>SECTIONS TO COVER</b>	<b>Notes</b>
<b>1</b>	1.1, 1.2  <i>Readiness Quiz Wed!</i>	<b>1.1</b> Spend a lot of time (3+ lectures) on this, integrating review problems into the definition of and notation for functions (see sample 1.1 handout attached) <b>1.2</b> Include intervals on which a function is increasing/decreasing/constant
<b>2</b>	1.2, 1.3	<b>1.3</b> Work vertical/horizontal shifts/stretches/reflections, make sure they know how to combine transformations
<b>3</b>	1.4, 1.5, 1.6	<b>1.5</b> Stress domain/range of inverses <b>1.6</b> Revisit monotonicity as sufficient for a function being one-to-one
<b>4</b>	2.1, 2.2  <i>Review for Midterm</i>  <i>Midterm 1</i>	<b>2.1</b> Focus on lines from the linear <u>function</u> perspective, treat slope-intercept and point- slope forms as review, but do a handful of examples, including parallel/perpendicular <b>2.2</b> Review completing the square for vertex form and compare to graph transformations; you may incorporate example(s) of quadratic function applications (dropping/throwing objects, revenue/profit, etc.) 1 <sup>st</sup> midterm (Chapter 1 exam) on Friday
<b>5</b>	2.3, 2.4	<b>2.3</b> Discuss graphs of $y = x^3$ and $y = x^4$ as prototypes for polynomial graphs, as well as $y = \frac{1}{x}$ and $y = \frac{1}{x^2}$ as prototypical rational functions <b>2.4</b> Stress algebraic manipulation of polynomials/polynomial functions
<b>6</b>	2.5, 3.1	<b>3.1</b> Introduce exponential functions from an evaluative perspective (e.g. given $f(x) = 4^x$ , find and simplify $f(-\frac{3}{2})$ ).
<b>7</b>	3.2  <i>Review for Midterm, Midterm 2</i>	<b>3.2</b> Discuss basic qualities (domain/range, intercepts, etc.) of both exponential and logarithmic functions; explore both categories of functions with transformations 2 <sup>nd</sup> midterm (Chapter 2 exam) on Friday Have exam grades available by Sunday before the drop deadline

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<b>8</b>	3.3, 3.4	<b>3.4</b> If you have not covered 4.2 at this point, do not use $e$ (so no examples with natural log or continuously compounded interest yet)
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<b>9</b>	3.5, 4.2	<b>3.5</b> Students learn exponential functions best from applications, so do lots of accessible examples (folding paper in half, grains of rice on the chessboard, etc.) <b>4.2</b> You may choose to cover this section with <b>3.2</b> , but regardless avoid getting tied up in detailed definitions of $e$ , the most accessible approach is likely continuously compounded interest
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*Thanksgiving holiday Thursday/Friday.*

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<b>10</b>	4.4	<b>4.4</b> You may choose to cover this section with <b>3.4/3.5</b>
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*Catch-up, review*

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**11 Final exam during scheduled time ([registrar.uoregon.edu/common/cals/finalscal.htm](http://registrar.uoregon.edu/common/cals/finalscal.htm))**

There are no sections listed as optional – it is your responsibility to your students to cover the material listed! To further that end, please use this syllabus when preparing your class lecture schedule, and keep it to refer to during the term. Ask if you have questions!

**Other Important Dates (<http://registrar.uoregon.edu/calendars/academic#fall2009>):**

Monday of 2 <sup>nd</sup> week	Last day to drop without a “W” (but only 75% tuition refund)
Wednesday of 2 <sup>nd</sup> week	Last day to add a class
Sunday after 7th week	Last day to drop --- period!

- **Additional information for instructors available in the Math 111 Overview**
- **Lecture handouts (like the one provided for 1.1) available from Mike Price upon request**