**MATH& 141 Syllabus Rob Jonas Pre-Calculus 1 Spring 2013**

 **Daily 7:00-7:50am Room: SS0001 Item: 5983 Section: AA**

 **Daily 8:00-8:50am Room: SS0001 Item: 5987 Section: BB**

**Instructor:** Rob Jonas

**Office:** HSA 49

**Phone:** 833-9111 Extension 4939

**Office Hours:** Daily 9:00am – 9:50am **OR** by appointment (2pm?) **Email:** rjonas@greenriver.edu

**Mailbox:** My mailbox is located in the HSA building.

**Text:** *Precalculus An Investigation of Functions, 1st Edition* by Lippman and Rasmussen.

 Text website: <http://www.opentextbookstore.com/precalc>

**Calculator**: A graphing calculator is required for this course. I will demonstrate with a TI-83.

**My web page:** [**http://www.instruction.greenriver.edu/rjonas/**](http://www.instruction.greenriver.edu/rjonas/)

**INTRODUCTION:** Welcome to **Pre-Calculus**!! This is the first of a 2-course sequence that will prepare you for **Calculus** (and satisfies the Quantitative Skills requirement for an AA degree). We will be gaining a deeper understanding of functions and function notation. Once we have mastered the concept of a function, we will study various properties of and operations with linear, exponential, polynomial, rational, and logarithmic functions (to name a few).

**PREREQUISITE:** The prerequisite for this class is Math 97 with a grade of 2.5 or higher, or appropriate Compass score, or instructor’s permission.

**SPECIAL NEEDS:** If you need course adaptations or special accommodations because of a disability, if you have emergency medical information, or if you have special accommodations that need to be shared with me in the event that the building needs to be evacuated, please contact me at extension 4939 or in my office as soon as possible. If you use an alternate medium for communication, please let me know before class so that appropriate accommodations can be made.

**LEARNING OBJECTIVES:** Students will demonstrate the ability to:

1. develop and use problem solving skills: recognizing the applicability of previously learned solutions to a new problem and applying reverse reasoning.
2. work efficiently in small group settings: respecting others’ ways of thinking, having confidence in your own knowledge, sharing information, pooling knowledge, and listening effectively.
3. recognize that problems may have alternate solutions and that alternate techniques may be used to arrive at those solutions.
4. understand when the use of a calculator is appropriate and when it’s use may lead to misconceptions.
5. define and identify a function and apply function notation.
6. graph and identify properties of linear, quadratic, exponential, rational, polynomial, and logarithmic functions in various forms.
7. calculate and graph transformations of functions in various form. These transformations include vertical and horizontal shifts, reflections, and “stretches”.
8. solve absolute value, quadratic, higher degree polynomial, fractional, radical, logarithmic, and exponential equations and inequalities graphically, symbolically, and numerically.
9. solve problems involving exponential growth, exponential decay and compound interest.
10. calculate and interpret composition and combinations of functions graphically, numerically, and symbolically.
11. calculate and interpret inverse functions in all forms.
12. use mathematics to solve practical applications.

**Demonstrated through your answers in class, homework, quizzes, and tests.**

**CAMPUS-WIDE OUTCOMES:** Green River Community College has identified ability areas that we believe encompass knowledge and are the most important skills, behaviors, attitudes, and values that students will need in order to be successful after leaving the college. Among these ability areas, this class will address Responsibility, Quantitative/Symbolic Reasoning, and Critical Thinking. Outcomes in these ability areas and where they will be demonstrated in your work are listed below.

 Responsibility: Students will demonstrate the ability to:

1. Identify and comply with clearly stated expectations, policies, and procedures.
2. Demonstrate common courtesies and show respect for the needs, difficulties, and rights of others.
3. Complete work independently and appropriately acknowledge the source of ideas and contributions of others.

**Demonstrated by preparedness for lectures and discussions, handing assignments in on time, group accountability, and signing the Student Understandings hand-out.**

 Quantitative/Symbolic Reasoning: Students will demonstrate the ability to:

1. Evaluate and interpret quantitative and symbolic reasoning.
2. Recognize which quantitative reasoning methods are appropriate for solving a given problem, and correctly implement those methods.
3. Demonstrate the ability to estimate a solution to a presented problem.
4. Translate data into various formats such as symbolic language, equations, graphs, and formulas.
5. Implement calculator/computer technology to solve problems.

**Demonstrated through your answers in class, homework, quizzes, and tests.**

 Critical Thinking: Students will demonstrate the ability to:

1. Use appropriate reasoning to evaluate problems, make decisions, and formulate solutions.
2. Give reasons for conclusions, assumptions, beliefs, and hypotheses.

**Demonstrated through your explanations in class, assignments, quizzes, and tests.**

**EXPECTATIONS**: My expectations are fairly simple and direct:

 I expect you to participate fully in the class and in your own learning. Collaborative learning in all its forms (group homework, study groups, etc.) is expected. You are not in this alone. I expect you to be in class and to complete all assignments. All assignments are due at the **beginning** of class. **There will be no make-up quizzes or exams, and I will accept no late homework or projects.**

A few other points:

1. Respect for all others in this class is a necessity.
2. There is no such thing as a dumb question!!
3. Work sessions outside of class between classmates are highly encouraged.
4. Do not hesitate to ask me for suggestions or to inquire about your progress in the class.
5. Absolutely no cheating or plagiarism will be tolerated in this class. If individuals are found

 to be cheating, their names will be given to the Dean of Academic Education for further

 action which may range from no credit on the exam/assignment to a 0.0 grade in the class.

* If you are taking this class as a prerequisite for another math class, you must receive a 2.0 or above to go on to the next course.
* If you get to a point in the quarter when you are thinking about withdrawing, please come and talk to me about your options.

**ASSESSMENT:** Point distribution for participation, homework, and projects will be discussed in class.

**Grades will be weighted *roughly* as follows: (≈% of grade)**

 Homework (4) 100 pts 22.2 %

 Presentations 25 pts 5.5 %

 Quizzes (3) 75 pts 16.7 %

 Tests (3) 150 pts 33.3 %

 Final 100 pts 22.2 %

 **Total 450pts**

**Homework:** Required homework is listed on the back of the class calendar. You are encouraged to check your work with your classmates outside of class time, **especially** the even numbered problems. Also you may ask questions on homework problems in class (as time allows) and during my office hours or in the MLC. I suggest that you organize your homework in a three-ring binder. Check the calendar for homework packet due dates. These packets should show the steps that justify the solution to the problems. Please label the problems, circle the answers, and **put them in order**. Homework packets that are not in order may not receive full credit. I will select a subset of these problems to grade. **The lowest homework score will be dropped.**

**Quizzes:** There will be 3 short homework quizzes as shown on the class calendar. These quizzes will primarily emphasize skill and drill exercises and the homework questions. **The lowest quiz score can be dropped and replaced with the % score from the final if this results in a higher overall score.**

**Tests:** There will be 3 tests given in class as noted on the class calendar. Included on tests will be questions asking you to problem solve, write, and explain processes. **Your lowest test score can be replaced with half your score from the final if this will result in a higher score.**

**Note: I drop the lowest scores in the above categories to account for emergencies (illness, forgot the assignment at home, had to go to the hospital, etc). Again, I do not accept late work, so if you have another low score, you are stuck with it and it will be used in your final grade calculations.**

**Presentations:** Occasionally (about 4 – 6 times) groups will go to the boards and do presentations. Typically you will be solving homework problems or *other problems that I select*. If you are absent on presentation day you will lose presentation points.

**Bonus points:** Most of the graded material has bonus points built in. For example, the homework is worth 25 points, but if you get 25 points, I will give you a 2 point bonus so you get 27 points. Quizzes usually have 27 points possible, but only count as 25 points…another 2 point bonus. If you pass the entrance exam, you will get bonus points. Since there are 450 points possible in this class, every *extra 4.5 points* will increase your decimal grade by .1! I designed my grading system like this so that you will consistently maintain your efforts. I hope it works. ☺

**Final Exam:** The final is comprehensive. The final exam date is listed on the class calendar.

**DECIMAL GRADING:** Green River uses numerical grading. Percent to decimal grade conversions are as follows:

 95-100 :4.0 89 : 3.4 83 : 2.8 77 : 2.2 71 : 1.6 65-60 : 1.0

 94: 3.9 88 : 3.3 82 : 2.7 76 : 2.1 70 : 1.5 **Below 60: 0.0**

 93: 3.8 87 : 3.2 81 : 2.6 75 : 2.0 69 : 1.4

 92 3.7 86 : 3.1 80 : 2.5 74 : 1.9 68 : 1.3

 91: 3.6 85 : 3.0 79 : 2.4 73 : 1.8 67 : 1.2

90 3.5 84 : 2.9 78 : 2.3 72 : 1.7 66 : 1.1

**If you are taking this class as a prerequisite for another math class, you must receive a 2.0 or above to go on to the next course.**