Course: Precalculus I (5 credits), MATH& 141, Class #: 3991/3994, Section #: 1/4, Winter 2016
Instructor: Gregory Ferencko, Bldg. 15, Rm. 239, Phone: 253-566-5305
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Web-Page: http://www.tacomacc.edu/home/gferencko/index.htm

Class Time and Location:
- Section 1: M-F, 7:30 – 8:20, Bldg. 12, Rm. 240.
- Section 4: M-F, 10:30 – 11:20, Bldg. 8, Rm. 1.

Office Hours: M-F: 8:30 – 9:20 am and by appointment.

Prerequisite(s): MATH 140 with a minimum grade of C or appropriate MATH placement and READ 095 or ENGL/ 095 with a minimum grade of C or assessment above READ 095 or ENGL/ 095.

Course Description: (Formerly MATH-115) In-depth study of the concept of a function, including graphs, transformations, operations on functions, and inverse functions. General theory of functions is applied to the study of polynomial, absolute value, radical, rational, exponential, and logarithmic functions. First course in a two course sequence designed to prepare students for Calculus. Graphing calculator required.

The course objectives listed below make reference to the following Math Department Program Learning Outcomes:

1. Create, interpret, and analyze graphs and charts that communicate quantitative or relational information.
2. Determine, create, and use appropriate and reasonable mathematical constructs to model, understand, and explain phenomena encountered in the world.
3. Determine and carry out an appropriate algorithm to solve problems that are amenable to mathematical solutions.
4. Communicate mathematical information formally, using appropriate math notation and terminology, and informally by using everyday language to express ideas.
5. Use technology to analyze and solve mathematical problems and to effectively communicate solutions to problems, particularly those that cannot be solved efficiently by other means.

Course Objectives: Upon successful completion of this course, the student should be able to:

1. Demonstrate an understanding of functions, function notation, and the properties of functions from the numerical, graphical, and symbolic perspectives. Apply this understanding to the study of linear, quadratic, polynomial, rational, radical, exponential, and logarithmic functions. (2, 4)
2. Graph the above functions and their transformations. (1, 2)
3. Carry out the algebra of functions and find the domain of the result. (2, 4)
4. Describe and apply the relationship between algebraic changes in the rule of a function and geometric transformation of its graph. (1, 2)
5. Solve polynomial, rational, radical, exponential, and logarithmic equations.
6. Graphically determine if a function has an inverse, find the inverse algebraically, and demonstrate an understanding of the relationship between a function and its inverse. (1, 2, 4)
7. Apply algebraic concepts to various physical problems. (2, 3)
8. Write clear and complete solutions to mathematical problems, including correct notation and written explanations when appropriate. (4)
9. Use a graphing calculator and/or computer software as appropriate. (5)

Course Materials

Text: Contemporary Precalculus, a Graphing Approach, 5th edition by Hungerford with WebAssign. Please note that there exist various purchasing options – what is required is the textbook (in any format) along with WebAssign.

Supplies/Tools: In addition to the text, the following items will be needed by you throughout the quarter:

- **Pencil, pencil sharpener, paper, straight edge.** All exams, quizzes, homework, etc. should be done using pencil.
- **Graphing Calculator.** I will be using the TI-84 Plus Silver Edition for all in class demonstrations. **Any TI-83 or TI-84 calculator is the required calculator for this course.** The required course calculator will be the only calculator allowed on closed-book exams or quizzes. Additionally, you are not allowed to share a calculator with another classmate during a quiz or exam. If you forget a calculator on an exam or quiz day, calculators are available for 2 hour check-out at the MARC provided you have photo ID.
- **Spiral Notebook.** This spiral notebook should be dedicated for the sole purpose of computer homework. All paper/pencil work associated with computer with these assignments should be recorded in this notebook.
- **WAMAP Account.** I will be using WAMAP to post class documents, including problem sets and answer keys. Details about WAMAP are provided on my website and will also be discussed in class. For WAMAP, you will use CourseID: 11365 and Enrollment Key: M141W2016.
- **WebAssign.** You will be assigned computer homework and quizzes via WebAssign. You will need to create a WebAssign account. See the last page of this document for details on using WebAssign.
- **Internet access and e-mail.** If you don't have internet access at home, there are many places on campus where you can use a computer, most notably the Math Center (bldg. 19, room 22), the library (bldg. 7), and the Information Commons (bldg. 16). You should also set up your TCC e-mail account. I will expect that you check your TCC e-mail at least once each weekday. If you have not yet set up your campus computer account, go to building 16 for details about how to do so.

Course Activities and Grades:

Your course grade will be based upon your performance on various course activities. These activities include computer homework, paper/pencil quizzes, in-class work, unit exams, and a final exam. Each of these activities is described below along with information about how that activity will count toward your final grade.

**Unit Exams:** There will be three unit exams during the quarter. **Unit Exam #1 will count 10% toward your final grade. Unit Exams #2 and #3 will each count 16% toward your final grade.**

**Final Exam:** There will be a cumulative final exam. **The final exam will count 33% toward your final grade.**
Activity Grade: Any graded activity not labeled as an "exam" will count toward your Activity Grade. The points you earn from each of these activities will be summed to form your activity grade. Activities that count toward your Activity Grade may include computer homework, paper/pencil quizzes, and in-class group work. Each of these activities is described below. Your Activity Grade will count 25% toward your final grade.

Computer Homework (Daily Homework): For most sections of the book covered in class, there will be associated computer homework. Working thoughtfully on computer homework on a daily basis is critical to your success in this class. You will get instant feedback on computer homework and an instant opportunity to rework problems on which you have made a mistake. The goal of the computer homework is for you to assess what you know, what you don't know, and to provide you with ample opportunity to practice towards perfection. All work related to computer homework should be recorded in your spiral notebook. Questions arising from computer homework should be brought to class for discussion. Computer homeworks will be due at 11:59 pm on the due date. Each computer homework will be worth a total of 10 Activity Points. Each question that is answered correctly more than 24 hours before the due date will earn a 5% bonus. At the end of the quarter, your two lowest computer homework scores will be dropped.

Paper/Pencil Quizzes: In order to check your understanding, correct use of notation, and clarify my expectations regarding the quality of written work, a short in-class quiz will be given on most Fridays. Sometimes quizzes will be given as a "take-home" or on a day that is not Friday. Quiz topics/sections will be any section covered previous to that day – the focus will typically be material on which homework has been completed. Each quiz will be worth 15 Activity Points. Homework quizzes cannot be made-up or rescheduled for any reason; because of this, I will drop your lowest quiz score at the end of the quarter. Take-home quizzes are due at the beginning of class on the due-date. Quizzes not handed in at that time will be accepted until 2:30 pm on the due date with a 2-point penalty. For problems that require justification, here are some basic guidelines/requirements:

1. Neat and orderly. Problems should be done using vertical format whenever appropriate (e.g. solving equations, simplifying expressions, etc.). The answer to the question should be clearly identifiable (i.e. write final answer in answer space OR circle final answer).
2. Done in pencil.
3. For all graphs, axes should be clearly labeled, with some indication of the scale. Rough sketches of graphs should be careful enough so that important information is correctly and accurately conveyed to the reader of the graph. Typically, important features include local extrema, concavity, asymptotes, holes, and correct implications about the behavior of the graph beyond the graphing window.
4. All answers should be accompanied with an explanation. Explanations usually take the form of (1) algebra/work shown, (2) a graph, (3) a short written explanation, or (4) some combination of items 1 - 3. Any answer given with no explanation will receive no credit.
5. For all word problems, variables should be clearly defined. This means a precise definition (including units) of what each variable represents. Where appropriate, a picture/diagram should be included.
6. All written explanations should be written in clear and coherent English. Do not assume that I will know what you mean or that I will fill-in the gaps in your reasoning - I won't!

In-Class Work: Throughout the quarter there will be various in-class activities to be performed either in groups or individually. Some will involve work that is to be graded. Graded in-class work will count towards your Activity Grade. You must be present on the day in-class activities are assigned to get credit for them. In-class work cannot be made up for any reason.
Final Grades: Your final average will be computed using the formula given below. Then, your final grade will be determined from the given table.

Final Average = .25(Activity %) + .10(Exam 1 %) + .16(Exam 2 %) + .16(Exam 3 %) + .33(Final Exam %)

<table>
<thead>
<tr>
<th>Grade</th>
<th>Minimum %</th>
<th>Maximum %</th>
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</thead>
<tbody>
<tr>
<td>A</td>
<td>92%</td>
<td>100%</td>
</tr>
<tr>
<td>A-</td>
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<td>91.9%</td>
</tr>
<tr>
<td>B+</td>
<td>88%</td>
<td>89.9%</td>
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<tr>
<td>B</td>
<td>82%</td>
<td>87.9%</td>
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<tr>
<td>B-</td>
<td>80%</td>
<td>81.9%</td>
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<tr>
<td>C+</td>
<td>78%</td>
<td>79.9%</td>
</tr>
<tr>
<td>C</td>
<td>72%</td>
<td>77.9%</td>
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<tr>
<td>C-</td>
<td>70%</td>
<td>71.9%</td>
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<tr>
<td>D</td>
<td>60%</td>
<td>69.9%</td>
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<tr>
<td>E</td>
<td>Below 60%</td>
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</tbody>
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Classroom Policies:

Attendance: It is expected that you will attend class every day. If you are absent, it is your responsibility to submit any assignments due on that day and to learn about any announcements. Furthermore, it is expected that you will arrive to class on time each day. Showing up late to class on a consistent basis is rude to both me as well as to your classmates. Don't be rude!

Graded Work: Work that is graded will be handed back during class time. It is your responsibility to be present during class to pick-up your graded assignments. Work that is not collected during class may be picked up at my office during office hours. Work that is not collected within a week of me handing it back may be disposed of at my discretion.

Late Work: See specific assignment type for late-work policy.

Missed Exams: Exams can be made-up only in cases of extreme emergency and if I am contacted BEFORE the exam is given. If the nature of the emergency is such that you cannot contact me before the exam, contact me as soon as possible, and I might be willing to make an exception. Please be prepared to provide documentation of your emergency (e.g., police report, note from doctor, etc.).

Dropping This Class: If you drop the class by January 15th, no grade will be reported. You may drop the class with a grade of ‘W’ through February 26th. After this date, you will not be allowed to drop the class.

Incomplete: After February 26th, an incomplete may be arranged in the case of an emergency. An incomplete will only be granted if the student is performing satisfactorily (C- or better). You will need to meet with me so that an Incomplete Contract can be written.

Etiquette for Classroom Dispute Resolution: If you have questions or concerns about this class or me, please come to talk with me first. If we are unable to resolve your concerns, you may talk next with Carol Avery, the Chair of the Mathematics Department.

Cheating: Cheating on an exam or quiz will result in a grade of zero for that piece of work. A second occurrence will result in a grade of E for the course. The complete Administrative Process for Academic Dishonesty is available on the TCC website.

Accommodations: If you need specific auxiliary aids or services due to a disability, please contact the Access Services office in Building 7. They will require you to present formal, written documentation of your disability from an appropriate professional. When this step has been completed, arrangements can be made for you to receive reasonable auxiliary aids or services. Once you have received the disability accommodation documentation, you must make an appointment with me so that appropriate arrangements can be made.

Caveats: This syllabus is subject to change in the event of extenuating circumstances. If changes are necessary, an addendum to the syllabus will be distributed via e-mail.
Directions for using WebAssign

Getting started in WebAssign.

To use WebAssign, you must enter the class key to enroll yourself in Math&141. A class key is not the same as an access code. You will get an access code when you purchase a textbook from the Bookstore OR you can purchase an access code on-line (after registering for the class). (You can get started in WebAssign with only the Class Key below and you will have up to 14 days to purchase your access code. If you do not purchase the access code within 14 days, you will be dropped from WebAssign and lose all the work you’ve done!)

Go to www.webassign.net
Click I have a class key
Enter this class key tacomacc 2081 4325 and click Submit.
If the correct class and section are listed, click Yes, this is my class.
Select either I already have a WebAssign account or I need to create a WebAssign account and enter the requested information.
It is important to remember your Username, Password and Institution Code (tacomacc). You will always go to www.webassign.net to login.

Completing Assignments in WebAssign.

You will have an assignment to complete in WebAssign for almost every section of the textbook we cover in class. You will have until 11:59 pm on the Due Date to complete the assignment. Due Dates are posted on the Calendar in WebAssign and you will be reminded about assignments during class. After a WebAssign Due Date has passed, you will be able to view the assignment, but you cannot submit any answers.

You will have only 8 tries to get the correct answer on a WebAssign problem. It’s recommended that you first spend time at the [Read It], [Watch It], and/or [Practice It] links so you’ll be prepared to enter the correct response. Note: pay attention to details! For example, if the problem asks you to write an equation in terms of “t” and you use an “x” as a variable, WebAssign will count the problem as incorrect.

Communicating with your Instructor.

I will NOT be checking messages within WebAssign. If you need help on a problem, you should email me at gferencko@tacomacc.edu from your TCC email account or, even better, use the “Discussion” feature in WebAssign (be sure to click on the WAMAP link on my webpage and get yourself set-up in WAMAP).

Troubleshooting in WebAssign.

For help with WebAssign, go to http://www.webassign.net/user_support/student/. You can also find all of the support resources you need under the “Student Support” link in the upper right of the page of the WebAssign homepage. I am here to help you with math only. If you have questions about WebAssign, please see the resources on the Student Support page and contact WebAssign for help with WebAssign related issues.