MATH 135 – PRECALCULUS: ELEMENTARY FUNCTIONS - 3 credits
MWF 10:00 – 11:15 a.m.

INSTRUCTOR: Jean Okumura
OFFICE: Mana’opono 112A
OFFICE HOURS: MF 1:00 – 2:00 p.m.
TR 9:45 – 10:15 a.m.
Other Hours by Appointment
TELEPHONE: 236-9282
FAX NUMBER: 247-5362 Attention: Jean Okumura
EMAIL ADDRESS: jokumura@hawaii.edu
EFFECTIVE DATE: Fall 2010

Windward Community College Mission Statement

Windward Community College is committed to excellence in the liberal arts and career development; we support and challenge individuals to develop skills, fulfill their potential, enrich their lives, and become contributing, culturally aware members of our community.

Catalog Description

An analysis of elementary functions. A study of polynomial, rational, exponential, and logarithmic functions. Topics also include graphing techniques, transformations, applications, and related topics. Emphasis is placed on topics that will prove useful to students planning to take Calculus and also to those who are interested in pursuing math related careers. (3 hrs lecture)

PREREQUISITES: Grade of "C" or better in Math 103, Math 27, or equivalent, satisfactory placement test score, or consent of instructor.

WCC: FS

Suggested Basic Skills

Good study skills and habits; Competency with College Algebra

Learning Resources and Materials


Required Technology Tool: TI-83, TI-83+, TI-84, or TI-84+ calculator.

MATH LAB: Mana`opono 113

THE LEARNING CENTER (TLC): Alaka’i 106 – phone number 235-7498
STUDENT LEARNING OUTCOMES

These student learning outcomes will be assessed via course activities (homework, in-class work, and/or additional assignments) and via tests or quizzes.

1. Demonstrate proficiency in writing math expressions into different forms and finding the solutions to an equation and inequality using complex numbers where appropriate, by applying formal rules or algorithms.

2. Use appropriate symbolic techniques (such as algebraic techniques) to analyze and solve applied problems, and in the critical evaluation of evidence.

3. Interpret equations geometrically and use geometrical information to obtain the equation of lines and circles.

4. Utilize function concepts.

5. Draw the graphs of functions utilizing behavior information and/or transformations.

6. Utilize precise mathematical language and symbols to effectively communicate mathematics in written and/or oral form and in the presentation of evidence.

7. Traverse the bridge from theory to practice by using theorems related to polynomial functions and demonstrate proficiency in working with polynomial functions.

8. Apply concepts and properties of the logarithm functions.

9. Understand the concept of proof as a chain of inferences by doing some proofs.

Course Goals

1. To provide the student with mathematical skills and with an understanding of functional concepts which are prerequisite for further studies in mathematics, business and/or the sciences.

2. To cultivate and enhance the student's mathematical reasoning ability.

3. To extend the student's frame of reference in comprehending and applying mathematical concepts.

4. To nurture the growth of the student's problem-solving ability.

5. To promote awareness and appreciation for the role of mathematics in contemporary society.
**FOUNDATION HALLMARKS**

Math 135 fulfills 3 credits of the General Education requirements (Foundations: Symbolic) for both an A.A. degree at WCC and a Bachelor's degree at UH Manoa. Consequently, it meets the following hallmarks of the symbolic reasoning requirement:

1. Students will be exposed to the beauty, power, clarity and precision of formal systems.
2. Instructors will help students understand the concept of proof as a chain of inferences.
3. Instructors will teach students how to apply formal rules or algorithms.
4. Students will be required to use appropriate symbolic techniques in the context of problem solving, and in the presentation and critical evaluation of evidence.
5. The course will not focus solely on computational skills.
6. Instructors will build a bridge from theory to practice and show students how to traverse this bridge.

**Activities Required at Scheduled Times Other Than Class Times**

Homework; possibly quizzes or exams; consultation with instructor.

It is expected that students spend, at the minimum, 9 hours per week outside of class time studying and doing homework and readings for this class.

**Responsibilities of Students**

Success in this course will be enhanced by:

1. A positive, inquiring attitude toward mathematics;
2. Setting aside adequate time for studying, working on problems, and careful cogitation of the material;
3. Reading the text carefully and making use of other learning materials whenever necessary;
4. Seeking assistance from the instructor and the Math Lab whenever necessary;
5. Regularly attending class and, notifying the instructor of an absence and responsibly obtaining and completing assignments by the designated date.
Email and Laulima Website

You are responsible for checking your UH email regularly for important announcements. You are also expected to check the Math 135 course homepage at the Laulima website for important resources for the course.

Academic Honesty

All quizzes and exams are **closed books and notes and must be done by your individual effort.** You may not consult with any classmates while taking quizzes or exams. You are not allowed to tell a friend the type of questions on the quiz or exam, the answers, or help a classmate in any way (e.g. by explaining how to solve the problem). This would fall under the guidelines of academic integrity and any evidence of cheating will result in a score of 0 for all parties involved. Also keep in mind that we are assessing your knowledge and understanding of the concepts and strategies – attempting to find the answers online or through other sources is not in the spirit of academic honesty. An “F” will be assigned to students involved in cheating and will be reported to the Dean.

Graded assignments that apply to the course activities portion of your grade may be discussed with your classmates and you may seek guidance from the instructor, the Math Lab tutors, or the Trio tutors (if you are a Trio client), however, the write up of the solution for each problem must be done on your individual effort unless otherwise specified by the instructor. Graded assignments are **not group assignments** where all members of the group write the same responses for each problem. Any evidence of plagiarism will result in a score of 0 for all parties involved. If plagiarism persists, then an “F” will be assigned to the students involved in plagiarism and will be reported to the Dean.

Disruptive Behavior

**Disruptive Behavior** leads to a loss of learning time. Examples are activated beepers and cell phones, texting messages, making offensive remarks, packing books before class is over, making noise, leaving class early, coming to class late, sleeping in class, prolonged chattering, reading other materials not relevant to this class, etc. If a student takes part in disruptive behavior, the instructor reserves the right to exclude the student immediately from the class meeting, and will be marked absent.
Course Tasks and Grading Information

Grades for this course are based on the following course tasks:

<table>
<thead>
<tr>
<th>Task</th>
<th>Points</th>
<th>(Percentage of Possible Points)</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 exams @100 pts</td>
<td>400 pts</td>
<td>(64% of possible pts)</td>
</tr>
<tr>
<td>Course Activities</td>
<td>100 pts</td>
<td>(16% of possible pts)</td>
</tr>
<tr>
<td>Final Exam</td>
<td>125 pts</td>
<td>(20% of possible pts)</td>
</tr>
<tr>
<td>Total points</td>
<td>625 pts</td>
<td></td>
</tr>
</tbody>
</table>

Course activities may include but are not limited to:

- Graded Homework Problems
- In-Class Problems
- Journal entries (writing assignments)
- Math Resource Activities
- Other Problems
- Reports or Presentations

Most course activities will be graded homework problems and in-class or other additional problems. There may be a few opportunities to earn extra credit for the course activities portion of your grade. However, the maximum score possible for the course activities portion of your grade is 100 points.

At the end of the semester, three course activities assignments with the lowest percent correct will be dropped. Then, the total percent correct will be multiplied by a 100 (rounded to the nearest whole number 100 or below) to obtain your score for the course activities portion of your grade.

Each letter grade for the course will be assigned according to the level of achievement as provided in the table below:

<table>
<thead>
<tr>
<th>Letter Grade</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>90% - 100% of the cumulative points possible</td>
</tr>
<tr>
<td>B</td>
<td>80% - 89% of the cumulative points possible</td>
</tr>
<tr>
<td>C</td>
<td>70% - 79% of the cumulative points possible</td>
</tr>
<tr>
<td>D</td>
<td>60% - 69% of the cumulative points possible</td>
</tr>
<tr>
<td>F</td>
<td>Less than 60% of the cumulative points possible</td>
</tr>
<tr>
<td>Cr</td>
<td>70% - 100% of the cumulative points possible</td>
</tr>
<tr>
<td>NC</td>
<td>Less than 70% of the cumulative points possible</td>
</tr>
<tr>
<td>W</td>
<td>Official Withdrawal</td>
</tr>
<tr>
<td>I</td>
<td>Incomplete - given when a student has failed to complete a SMALL part of the course due to circumstances beyond his/her control.</td>
</tr>
</tbody>
</table>

Note: Cr/NC grades require written instructor consent. Students must apply for Cr/NC grading option at the Admissions Office by the posted deadline. If a student does not apply for Cr/NC grading option at the Admissions Office by the required deadline and if s/he does not withdraw, a letter grade (A, B, C, D, F) will be assigned for the course.

Note: W grade is given only when the student officially withdraws from the course at the Admissions Office by the posted deadline.
Additional Information

1. **ABSENCES:**

   It is your responsibility to attend class. If you are absent, borrow a classmate's notes and copy them for the day you were absent. You are responsible for those topics and examples discussed on the day of your absence. Furthermore, you are responsible for any important announcements or homework assignments given during the class you missed. Frequent absences can negatively affect your grade.

2. **MAKE-UP POLICY:**

   There are no make-up opportunities for any quizzes, graded assignments, or graded in-class activities that you miss due to absences or tardiness. Some extra credit opportunities are available for the course activities portion of your grade.

   If you are unable to attend class on an exam day, discuss your situation with the instructor as soon as possible before the exam day. It may be possible for you to take the exam earlier than the specified day/time. **IF YOU UNEXPECTEDLY MUST BE ABSENT ON AN EXAM DAY, NOTIFY THE INSTRUCTOR BY THE END OF THAT EXAM DAY (By 6 pm). YOU CAN LEAVE A VOICE MAIL MESSAGE FOR THE INSTRUCTOR (236-9282). BE SURE TO STATE THE REASON FOR THE ABSENCE.** If no notification is received by the day of the exam or if the reason is not justified, then you will receive a 0 for that exam and no make-up will be allowed. If notification is received and the reason is justified then a make-up exam will be scheduled. You must take the make-up exam as soon as possible after you return to school. The instructor has the right to request documentation of the student's absence and determine if the reason for the absence is justified. **FOR EACH STUDENT, NOT MORE THAN ONE MAKE-UP EXAM MAY BE TAKEN.**

3. There are NO RETESTS for this course.

4. **FINAL EXAM:** The final exam is cumulative.

5. **CALCULATOR:**

   A TI-83, TI-83+, TI-84, or TI-84+ calculator is required for this class. The calculator is required for some parts of the exams and assignments and not allowed for other parts.

6. **CELL PHONES:**

   Please put your cell phone on silent mode or turn it off prior to the start of the class so that it does not disturb the class session.
Additional Information (continued)

7. HOMEWORK:

Read the sections to be covered in a class session prior to that class session. As you read each section, write down terminology or symbols and its definition and properties/rules that are important and that are not already listed in the in-class notes. This will become helpful additional notes. Try to do as much of the recommended problems as possible. Also look at the in-class examples and try to do as much of those problems as possible.

After the class lecture/discussion on a section, you should complete the recommended problems from those sections. Those problems and concepts that you still do not understand or that you need further clarification on should be asked about in the class meeting after the section is discussed in class. Because there is very little class time, you will probably need to seek assistance from the instructor or from the Math Lab if not all your questions on problems are handled during class time or if you are still having difficulties. Complete, review, and analyze all of the recommended problems to help you learn and get a better understanding of the material. You may need to do more than the recommended problems to become comfortable with the concepts and skills.

After the section(s) are covered in class, graded homework that count towards the course activities (CA) portion of your grade will be given with a due date. This graded homework must be turned in on time and at the beginning of the class, unless otherwise specified. LATE GRADED HOMEWORK WILL NOT RECEIVE ANY POINTS. You may turn in your graded homework before the due date and/or time without losing points. There will be opportunities to earn some extra credit points towards your course activities portion of your grade.

Course activities may also include other activities such as journals (writing assignments), oral presentations, etc. Any item collected for grading purposes for the course activities portion of your grade are due at the BEGINNING OF CLASS unless otherwise specified by the instructor and WILL NOT RECEIVE ANY POINTS IF TURNED IN LATE.

Although there are generally no points associated with recommended problems that are problems from the text or on handouts that have answers provided as a way to practice the strategies learned, it is expected that students do recommended problems to assist them in their learning. Not doing recommended problems and/or waiting to work on recommended problems until right before an exam generally results in poor exam results and a lack of success in this course.

Be sure to review and analyze your graded homework and other course activities after it is returned to you. This will help you to get a better understanding of the material and concepts.
Additional Information (continued)

8. HELP:

Your instructor is your primary human resource for help when you are lost or having trouble. Seek help immediately if you are encountering problems even after reading and re-reading the text section(s) and listening to/thinking about the discussion in class on that section(s). See the instructor during office hours, make an appointment, email or call. Don’t wait too long to get help!! The Math Lab is also available for drop-in assistance on the course material.

If a crisis comes up that interferes with the class, communicate with your instructor in a timely manner. Too many students wait until it is too late to inform their instructor about their crisis and that reduces the options that students may have to complete the course with a grade of C or better.

9. GRADING ON HOMEWORK, QUIZZES, OR EXAMS:

To receive full credit for problems done on exams, on quizzes, or for graded homework, you must show sufficient work in a clear, logical, mathematically precise and organized manner. This is to assess student learning outcome #6 and Foundations Hallmark #4. It also helps me determine where your error is (hence, you might be able to obtain partial credit) and if you are logically applying the mathematical tools learned to solve the given problem. Your work must be neat and organized. "Messy" and/or disorganized work will not be accepted.

10. DON’T PROCRASTINATE

Mathematics is not a subject that you can consistently be successful in by "cramming" a day or two before the test. By "cramming" you don't develop proficiency in doing the problems, knowledge of what to do on a particular problem and long-term understanding of the process. Also, if you procrastinate, you may fall so hopelessly behind that it becomes impossible to catch up. It requires constant work to keep on top of the material.

DISABILITIES ACCOMMODATION STATEMENT

If you have a physical, sensory, health, cognitive, or mental health disability that could limit your ability to fully participate in this class, you are encouraged to contact the Disability Specialist Counselor to discuss reasonable accommodations that will help you succeed in this class. Ann Lemke can be reached at 235-7448, lemke@hawaii.edu, or you may stop by Hale ‘Akoakoa 213 for more information.
<table>
<thead>
<tr>
<th>Date</th>
<th>MONDAY</th>
<th>WEDNESDAY</th>
<th>FRIDAY</th>
</tr>
</thead>
<tbody>
<tr>
<td>AUG 23</td>
<td>Orientation 1.1</td>
<td>AUG 25</td>
<td>1.2, 1.3</td>
</tr>
<tr>
<td>AUG 30</td>
<td>1.4, 1.5</td>
<td>SEPT 1</td>
<td>1.5</td>
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<tr>
<td>SEPT 6</td>
<td>HOLIDAY: Labor Day</td>
<td>SEPT 8</td>
<td>1.7, 1.8</td>
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<tr>
<td>SEPT 13</td>
<td>1.10, 1.11, 4.2 (partial) <strong>Erase &amp; 50% Refund Deadline</strong></td>
<td>SEPT 15</td>
<td>4.2, 4.3, 4.4 (partial)</td>
</tr>
<tr>
<td>SEPT 20</td>
<td>4.5</td>
<td>SEPT 22</td>
<td>Review Exam 1</td>
</tr>
<tr>
<td>SEPT 27</td>
<td>4.5</td>
<td>SEPT 29</td>
<td>4.1</td>
</tr>
<tr>
<td>OCT 4</td>
<td>More on 4.4</td>
<td>OCT 6</td>
<td>2.1</td>
</tr>
<tr>
<td>OCT 11</td>
<td>2.2, 2.3</td>
<td>OCT 13</td>
<td>Review Ch 4, Section 2.1</td>
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<tr>
<td>OCT 18</td>
<td>2.3, 2.4</td>
<td>OCT 20</td>
<td>2.4</td>
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<tr>
<td>OCT 25</td>
<td>2.6 <strong>W &amp; CR/NC Deadline 10/26</strong></td>
<td>OCT 27</td>
<td>2.6</td>
</tr>
<tr>
<td>NOV 1</td>
<td>2.8</td>
<td>NOV 3</td>
<td>3.1</td>
</tr>
<tr>
<td>NOV 8</td>
<td><strong>EXAM 3 !!!</strong> Ch 2 (not 2.1 &amp; 2.8)</td>
<td>NOV 10</td>
<td>3.2, 3.3</td>
</tr>
<tr>
<td>NOV 15</td>
<td>3.6</td>
<td>NOV 17</td>
<td>3.6</td>
</tr>
<tr>
<td>NOV 22</td>
<td>Review Ch 3</td>
<td>NOV 24</td>
<td><strong>EXAM 4 !!!</strong> Sect. 2.8, Ch 3 (not 3.4 &amp; 3.5)</td>
</tr>
<tr>
<td>NOV 29</td>
<td>3.5</td>
<td>DEC 1</td>
<td>9.5</td>
</tr>
<tr>
<td>DEC 6</td>
<td>9.6</td>
<td>DEC 8</td>
<td>Final Exam Review</td>
</tr>
<tr>
<td>DEC 13</td>
<td>No Class Study for Final Exam</td>
<td>DEC 15</td>
<td><strong>FINAL EXAM !!!</strong> 10:30 - 12:20</td>
</tr>
</tbody>
</table>
Grades for this course are based on the following:

- 4 exams @100 pts  
  400 pts  
  (64% of possible pts)
- Course Activities  
  100 pts  
  (16% of possible pts)
- Final Exam  
  125 pts  
  (20% of possible pts)
- Total Possible Points  
  625 pts

Course activities may include but are not limited to:

- Graded Homework Problems
- In-Class or Other Problems
- Journals (writing assignments)
- Presentations
- Math Resource Activities

**COURSE ACTIVITIES THAT ARE TURNED IN LATE WILL NOT RECEIVE ANY POINTS (no matter what the reason).** All assignments are due at the **BEGINNING** of class on the due date unless otherwise specified by the instructor. The "beginning of class" means that assignments must be given to the instructor by 5 minutes after the start of class. For example, if the class meets 1:30 - 2:20 then, the assignment must be turned in by 1:35. The clock of the classroom is the official time clock.

**There are no make-up opportunities for missed assignments, in-class activities, or other activities that are graded for the course activities portion of your grade.** At the end of the semester, the three assignments with the lowest percent correct will be dropped. There will be a few opportunities to earn extra credit points for the course activities portion of your grade. However, the maximum score for the course activities portion of your grade is 100 points.

In addition, extra credit quizzes will be given for each unit and will be used as a form of extra credit for unit exams. The points earned for these extra credit quizzes for a unit will be called the Unit Extra Credit Quizzes Score. A maximum of 20 points can be earned for the Unit Extra Credit Quizzes Score. In calculating your unit exam score, I will follow the given formula:

\[
\text{Raw Score on Unit Exam} + \text{Unit Extra Credit Quizzes Score} \\
100 + \text{Unit Extra Credit Quizzes Score}
\]

This number will be rounded to the nearest whole percent to determine your score for the unit exam. Quizzes may be given outside of class time in the TTC on specified days and times. **There are no make-up opportunities for missed quizzes.**

The aforementioned scoring procedure will not be used for the final exam.

Instructor: Jean Okumura  
Office: Mana`opono 112  
Office phone: 236-9282  
Office Hours: MF: 1:00 p.m. – 2:00 p.m.  
TR: 9:45 a.m. – 10:15 a.m.  
Other hours by appointment  
Email: jokumura@hawaii.edu  
School Fax Number: 247-5362  
Attention: Jean Okumura