MATH 135 – PRECALCULUS: ELEMENTARY FUNCTIONS - 3 credits

INSTRUCTOR:  Mark Hedley
OFFICE:  Mana‘opono 110A
OFFICE HOURS:  MTThF 12:00 – 1:00 p.m. and by appointment
TELEPHONE:  236-9281
EMAIL:  hedley@hawaii.edu
EFFECTIVE DATE:  Summer 2011

<table>
<thead>
<tr>
<th>CRN</th>
<th>Time</th>
<th>Days</th>
<th>Classroom</th>
</tr>
</thead>
<tbody>
<tr>
<td>62043</td>
<td>8:00am – 9:50am</td>
<td>M T Th F</td>
<td>Mana‘opono 102</td>
</tr>
</tbody>
</table>

Windward Community College Mission Statement

Windward Community College offers innovative programs in the arts and sciences and opportunities to gain knowledge and understanding of Hawai‘i and its unique heritage. With a special commitment to support the access and educational needs of Native Hawaiians, we provide O‘ahu’s Ko‘olau region and beyond with liberal arts, career and lifelong learning in a supportive and challenging environment — inspiring students to excellence.

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):  Manaleo 113 – phone number 235-7498
STUDENT LEARNING OUTCOMES

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.

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.
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.

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, 22.5 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 MyUH Website

Students are responsible for checking their UH email regularly for important announcements. Students are also expected to check the Math 135 course homepage at the MyUH website for important resources for the course.
Course Tasks and Grading Information

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

<table>
<thead>
<tr>
<th>Course Task</th>
<th>Points</th>
<th>Percentage (% of possible pts)</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 exams @100 pts</td>
<td>400</td>
<td>64%</td>
</tr>
<tr>
<td>Course Activities</td>
<td>100</td>
<td>16%</td>
</tr>
<tr>
<td>Final Exam</td>
<td>125</td>
<td>20%</td>
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<tr>
<td>Total points</td>
<td>625</td>
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Course activities may include but are not limited to:
- Graded Homework Problems
- In-Class Problems
- Journal entries (writing assignments)
- Math Resource Activities
- Reports or Presentations
- Other Problems

Most course activities will be graded homework problems and in-class or other additional problems. Although there are points associated only with graded problems for the course activities portion of the grade, it is expected that students do recommended problems that are problems from the text or on handouts that have answers provided as a way to practice the strategies learned. 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.

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>
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<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>
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<tr>
<td>F</td>
<td>Less than 60% of the cumulative points possible</td>
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<tr>
<td>Cr</td>
<td>70% - 100% of the cumulative points possible</td>
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<tr>
<td>NC</td>
<td>Less than 70% of the cumulative points possible</td>
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<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>
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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 4 pm). YOU CAN LEAVE A VOICE MAIL MESSAGE FOR THE INSTRUCTOR (236-9281). 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. **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.**

   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.

7. **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.
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, and organized manner. It 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.
# TENTATIVE SCHEDULE - MATH 135
## SUMMER 2011 – HEDLEY
MTTHF 8:00 am - 9:50 am

<table>
<thead>
<tr>
<th>MONDAY</th>
<th>TUESDAY</th>
<th>THURSDAY</th>
<th>FRIDAY</th>
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<tbody>
<tr>
<td>JUL 4</td>
<td>JUL 5</td>
<td>JUL 7</td>
<td>JUL 8</td>
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<tr>
<td>JUL 11</td>
<td>1.7, 1.8</td>
<td>JUL 14</td>
<td>JUL 15 Exam 1</td>
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<td>JUL 18</td>
<td>2.2, 2.3</td>
<td>JUL 21</td>
<td>JUL 22 2.7, 2.8</td>
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<tr>
<td>JUL 25</td>
<td>3.1, 3.2</td>
<td>JUL 28</td>
<td>JUL 29 Exam 2</td>
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<tr>
<td>AUG 1</td>
<td>3.6</td>
<td>AUG 4</td>
<td>AUG 5 4.4, 4.5</td>
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<tr>
<td>AUG 8</td>
<td>4.5</td>
<td>Exam 3 Review</td>
<td>AUG 11 Final Exam Review</td>
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## IMPORTANT DATES
- **07/06/2011** Last day to receive 100% tuition refund
- **07/11/2011** Last day to receive 50% tuition refund
- **07/11/2011** Last day to drop (No "W" on transcript)
- **07/27/2011** Last day to withdraw from class ("W" on transcript)