University of Hawaii Maui College
MATH 135 - Precalculus:Elementary Functions
(Banner -- Precalc:Elementary Func per UH system agreement)

1. **Course Alpha. Please click on the ? to the right for help.**

   MATH

2. **Course Number. Please click on the ? to the right for help.**

   135

3. **Course Title/Catalog Title. Please click on the ? to the right for help.**

   Precalculus:Elementary Functions(Banner -- Precalc:Elementary Func per UH system agreement)

4. **Number of Credits. Please click on the ? to the right for help.**

   3

5. **Contact Hours/Type. Please click on the ? to the right for help.**

   - Hour lecture (3)

6. **Course Description. Please click on the ? to the right for help.**

   Investigates linear, quadratic, polynomial, rational, exponential, and logarithmic functions and related topics. This course is the first part of the precalculus sequence.

7. **Pre-Requisites. Please click on the ? to the right for help.**

   MATH 103 with a grade of C or better or placement at MATH 135, and ENG 100 with a grade of C or better (or concurrent), or consent.

8. **Co-requisites.**

   None.

9. **Recommended Preparation.**

   None.

10. **Is this a cross-listed course? Please click on the ? to the right for help.**

    NO

11. **Reason for Proposal. Why is this course being proposed or modified? This question requires specific information as part of the explanation. Please click on the ? to the right for help.**

    Revise course to comply with UH system changes initiated at Faculty Discipline Meeting (May 13, 2013) to standardize Course title, Banner title, Prerequisites and Course Description. This modification also makes updates for 5 year review.

12. **Effective Semester and Year. For new or modified courses, the effective year is one year from the semester proposed. For example, if proposed in Spring 2012, the effective semester is Spring 2013.**

   Fall 2014

13. **Grading Method. What grading methods may be used for this course?**

   - Standard (Letter,Cr/NCr,Audit) (0)

14. **Is this course repeatable for credit? How often can this course be counted toward a degree or certificate? Please click on the ? to the right for help.**
   NO

15. **Course Student Learning Outcomes (SLOs). DO NOT ENTER TEXT IN THE TEXT BOX BELOW. Click on the yellow button "COURSE LEARNING OUTCOMES" and enter in that screen.**

Course SLO/Competency	Draw a complete picture of the relationship or function. Use algebraic, numerical, and graphical techniques to locate specific points or regions (Solve equations and inequalities). Describe the characteristics of the relation (domain, range, asymptotes, symmetries, extreme points) for a function given a data set, graph or equation.	Analyze polynomial, rational, exponential and logarithmic functions	Find the inverse of a function and the composite of two functions.	Rewrite expressions and solve equations by using the special exponential and logarithmic algebraic properties and identities.	Solve problems using systems of equations.	Solve equations and inequalities of polynomial, rational, exponential and logarithmic functions using algebraic and graphical techniques.	Solve applied problems using the functions and methods of this course.	Apply technology as an aid in working mathematical problems.
Apply appropriate mathematical processes to solve problems that can be modeled by algebraic functions including, but not limited to, linear, polynomial, rational, exponential and logarithmic.	☑	☑	☑	☑	☑	☑	☑	
Demonstrate effective use of technology in solving such problems	☑	☑	☑	☑	☑	☑	☑	☑
Communicate the solution of such problems using Standard English and numeric, graphic or symbolic representations.	☑	☑	☑	☑	☑	☑	☑	

Course SLO
Apply appropriate mathematical processes to solve problems that can be modeled by algebraic functions including, but not limited to, linear, polynomial, rational, exponential and logarithmic.
Demonstrate effective use of technology in solving such problems
Communicate the solution of such problems using Standard English and numeric, graphic or symbolic representations.

16. **Course Competencies. DO NOT ENTER TEXT IN THE TEXT BOX BELOW. Click on the yellow button "COURSE COMPETENCIES/ISSUES/SKILLS" and enter text in that screen. Course competencies are smaller, simpler tasks that connect to and facilitate the SLOs.**

Competency
Draw a complete picture of the relationship or function. Use algebraic, numerical, and graphical techniques to locate specific points or regions (Solve equations and inequalities). Describe the characteristics of the relation (domain, range, asymptotes, symmetries, extreme points) for a function given a data set, graph or equation.
Analyze polynomial, rational, exponential and logarithmic functions
Find the inverse of a function and the composite of two functions.
Rewrite expressions and solve equations by using the special exponential and logarithmic algebraic properties and identities.
Solve problems using systems of equations..
Solve equations and inequalities of polynomial, rational, exponential and logarithmic functions using algebraic and graphical techniques.
Solve applied problems using the functions and methods of this course.
Apply technology as an aid in working mathematical problems.

17. **Recommended Course Content and Timeline. The course content facilitates the course competencies. Course content may be organized by weeks, units, topics or the like.**

    Weeks 1-6 Graphs, Functions and Models

    Weeks 7 -11 Polynomials and Rational Functions

    Weeks 12-16 Exponential and Logarithmic Functions and Systems of Non-linear equations and inequalities

18. **Program Learning Outcomes. DO NOT ENTER TEXT IN THE TEXT BOX BELOW. Click on the yellow button "PLOs" and enter text in that screen. Program Student Learning Outcomes (PLOs) supported by this course. If you are not a "program" use the Liberal Arts PLOs, view them by clicking on ? icon to the right.**

19. **College-wide Academic Student Learning Outcomes (CASLOs). FIRST, fill out the CASLO grid located in the UHMC tab above. Click on the HELP icon for tips on determining support for the CASLOs and indicate your choices below by clicking on the box in front of each supported CASLO. NOTE: Our campus does not use the Preparatory Level, Level 1 and Level 2 designations in the chart below.**

	Creativity - Able to express originality through a variety of forms.
☑	**Critical Thinking** - Apply critical thinking skills to effectively address the challenges and solve problems. ☑ Preparatory Level
	Information Retrieval and Technology - Access, evaluate, and utilize information effectively, ethically, and responsibly.
	Oral Communication - Practice ethical and responsible oral communications appropriately to a variety of audiences and purposes.
☑	**Quantitative Reasoning** - Synthesize and articulate information using appropriate mathematical methods to solve problems of quantative reasoning accurately and appropriately. ☑ Preparatory Level
	Written Communication - Write effectively to convey ideas that meet the needs of specific audiences and purposes.

GenED SLO
Critical Thinking - Apply critical thinking skills to effectively address the challenges and solve problems.
Quantitative Reasoning - Synthesize and articulate information using appropriate mathematical methods to solve problems of quantative reasoning accurately and appropriately.

20. **Linking. CLICK ON CHAIN LINK ICON IN UPPER RIGHT HAND CORNER TO BEGIN LINKING.**

21. **Method(s) of delivery appropriate for this course.**

- Cable TV (0)
- Classroom/Lab (0)
- HITS/Interactive TV (0)
- Hybrid (0)
- Online (0)

22. **Text and Materials, Reference Materials, and Auxiliary Materials.**

Blizer (2014) Precalculus (5th edition). Upper Saddle River, NJ:Pearson, Prentice Hall or similar text
Access to computer based assignments, such as My Math Lab

23. **Maximum enrollment. Please click on the ? to the right for help.**

24 Computer Classroom required

24. **Particular room type requirement. Is this course restricted to particular room type?**

YES
Computer Classroom

25. **Special scheduling considerations. Are there special scheduling considerations for this course?**

NO

26. **Are special or additional resources needed for this course?**

No

27. **Does this course require special fees to be paid for by students?**

NO

28. **Does this course change the number of required credit hours in a degree or certificate?**

No

29. **Course designation(s) for the Liberal Arts A.A. degree and/or for the college's other associate degrees.**

Degree	Program	Category
Associate in Arts:	Liberal Arts	FS - Symbolic Reasoning LE - Elective
AS:	ANY	PE - Program Elective
AAS:	ANY	PE - Program Elective
BAS:	BAS - All	CR - Core Course/Requirement - BAS
Developmental/ Remedial:		

30. **Course designation(s) for other colleges in the UH system.**

FS in UH System

31. **Indicate the year and page # of UHMC catalog referred to. For new or modified courses, please indicate the catalog pages that need to be modified and provide a sheet outlining those changes.**

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32. **College-wide Academic Student Learner Outcomes (CASLOs).**

Standard 1 - Written Communication **Write effectively to convey ideas that meet the needs of specific audiences and purposes.**	
Outcome 1.1 - Use writing to discover and articulate ideas.	1
Outcome 1.2 - Identify and analyze the audience and purpose for any intended communication.	0
Outcome 1.3 - Choose language, style, and organization appropriate to particular purposes and audiences.	1
Outcome 1.4 - Gather information and document sources appropriately.	0
Outcome 1.5 - Express a main idea as a thesis, hypothesis, or other appropriate statement.	0
Outcome 1.6 - Develop a main idea clearly and concisely with appropriate content.	2
Outcome 1.7 - Demonstrate a mastery of the conventions of writing, including grammar, spelling, and mechanics.	0
Outcome 1.8 - Demonstrate proficiency in revision and editing.	0
Outcome 1.9 - Develop a personal voice in written communication.	0
Standard 2 - Quantitative Reasoning **Synthesize and articulate information using appropriate mathematical methods to solve problems of quantative reasoning accurately and appropriately.**	
Outcome 2.1 - Apply numeric, graphic, and symbolic skills and other forms of quantitative reasoning accurately and appropriately.	3
Outcome 2.2 - Demonstrate mastery of mathematical concepts, skills, and applications, using technology when appropriate.	3
Outcome 2.3 - Communicate clearly and concisely the methods and results of quantitative problem solving.	3
Outcome 2.4 - Formulate and test hypotheses using numerical experimentation.	0
Outcome 2.5 - Define quantitative issues and problems, gather relevant information, analyze that information, and present results.	2
Outcome 2.6 - Assess the validity of statistical conclusions.	0
Standard 3 - Information Retrieval and Technology. **Access, evaluate, and utilize information effectively, ethically, and responsibly.**	
Outcome 3.1 - Use print and electronic information technology ethically and responsibly.	1
Outcome 3.2 - Demonstrate knowledge of basic vocabulary, concepts, and operations of information retrieval and technology.	0
Outcome 3.3 - Recognize, identify, and define an information need.	0
Outcome 3.4 - Access and retrieve information through print and electronic media, evaluating the accuracy and authenticity of that information.	1
Outcome 3.5 - Create, manage, organize, and communicate information through electronic media.	1
Outcome 3.6 - Recognize changing technologies and make informed choices about their appropriateness and use.	0
Standard 4 - Oral Communication **Practice ethical and responsible oral communications appropriately to a variety of audiences and purposes.**	
Outcome 4.1 - Identify and analyze the audience and purpose of any intended communication.	0
Outcome 4.2 - Gather, evaluate, select, and organize information for the communication.	1
Outcome 4.3 - Use language, techniques, and strategies appropriate to the audience and occasion.	0
Outcome 4.4 - Speak clearly and confidently, using the voice, volume, tone, and articulation appropriate to the audience and occasion.	0

Outcome 4.5 - Summarize, analyze, and evaluate oral communications and ask coherent questions as needed.	1
Outcome 4.6 - Use competent oral expression to initiate and sustain discussions.	1
Standard 5 - Critical Thinking **Apply critical thinking skills to effectively address the challenges and solve problems.**	
Outcome 5.1 - Identify and state problems, issues, arguments, and questions contained in a body of information.	3
Outcome 5.2 - Identify and analyze assumptions and underlying points of view relating to an issue or problem.	1
Outcome 5.3 - Formulate research questions that require descriptive and explanatory analyses.	0
Outcome 5.4 - Recognize and understand multiple modes of inquiry, including investigative methods based on observation and analysis.	1
Outcome 5.5 - Evaluate a problem, distinguishing between relevant and irrelevant facts, opinions, assumptions, issues, values, and biases through the use of appropriate evidence.	1
Outcome 5.6 - Apply problem-solving techniques and skills, including the rules of logic and logical sequence.	2
Outcome 5.7 - Synthesize information from various sources, drawing appropriate conclusions.	2
Outcome 5.8 - Communicate clearly and concisely the methods and results of logical reasoning.	2
Outcome 5.9 - Reflect upon and evaluate their thought processes, value system, and world views in comparison to those of others.	1
Standard 6 - Creativity **Able to express originality through a variety of forms.**	
Outcome 6.1: Generate responses to problems and challenges through intuition and non-linear thinking.	1
Outcome 6.2: Explore diverse approaches to solving a problem or addressing a challenge.	2
Outcome 6.3: Sustain engagement in activities without a preconceived purpose.	0
Outcome 6.4: Apply creative principles to discover and express new ideas.	0
Outcome 6.5: Demonstrate the ability to trust and follow one's instincts in the absence of external direction	1
Outcome 6.6: Build upon or adapt the ideas of others to create novel expressions or new solutions.	1

33. Additional Information