

Course Number: MATH 1121 **Course Title:** Precalculus with Review II

Credits: 5 **Class Hours Per Week:** 6

Prerequisites: Placement Group C

COURSE DESCRIPTION: Together, MATH 1120 and 1121 provide an in-depth and rigorous preparation for Calculus. MATH 1121 students will demonstrate a deep understanding of functions with particular proficiency working with the following families of functions: linear, quadratic, higher-order polynomial, rational, exponential, logarithmic, radical, piecewise-defined (including absolute value), and trigonometric functions. Students will investigate a wide array of equations and inequalities involving the Elementary Functions (with emphasis on Trigonometric functions), taking advantage of common structure and equivalencies to describe characteristics, features, and behavior. Students will examine situations via mathematical models and appropriately apply technology in support of their exploration. Finally, students will describe and communicate their conjectures, discoveries, and conclusions through mathematical reasoning.

STUDENT LEARNING OUTCOMES:

Following student outcomes from TMM002, the successful Precalculus II student can:

- analyze functions.
- convert between different representations of a function.
- perform operations with functions.
- analyze angles and triangles
- combine geometric and arithmetic reasoning with regards to \mathbb{R}^2 and \mathbb{C} .
- recognize function families as they appear in equations.
- choose an appropriate solution methodology for a particular equation.
- communicate reasons for choices.
- use correct, consistent, and coherent notation throughout the solution process.
- distinguish between exact and approximate solutions.
- demonstrate an understanding of the algebraic, functional, and geometric viewpoints.
- solve for one variable in terms of another.
- cite domain restrictions resulting from solution decisions.
- purposefully create equivalences and indicate where they are valid.
- recognize opportunities to create equivalencies in order to simplify workflow.
- become fluent with conversions using traditional equivalency families.
- interpret the function correspondence and behavior of a given model in terms of the context.
- create linear models from data and interpret slope as a rate of change.
- determine parameters of a model given the form of the model and data.
- determine a reasonable applied domain for the model.
- anticipate the output from a graphing utility and make adjustments.
- use technology to verify solutions to equations and inequalities obtained algebraically.
- use technology to obtain solutions to equations and inequalities which are difficult to obtain algebraically.
- use technology and algebra in concert to locate and identify exact solutions.
- recognize when a result (theorem) is applicable and use the result to make sound logical conclusions and provide counter-examples to conjectures.

INSTITUTIONAL LEARNING GOALS

This course addresses the following Columbus State general education goals:

- Critical Thinking
- Quantitative Literacy
- Effective Communication

TEXTBOOK, MANUALS, REFERENCES, AND OTHER REQUIRED MATERIALS:

- Textbook materials will be provided.
- Graphing Technology required

GENERAL INSTRUCTIONAL METHODS

Instructional methods may include face-to-face or video lectures or demonstrations, face-to-face or virtual discussion, individual or group activities including the use of visual aids, calculators, computers and/or other technologies. Students may be expected to participate in these activities during class and/or outside of class. Instructors may require class participation, collaborative learning, and peer review.

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STANDARDS AND METHODS FOR EVALUATION:

Letter grades for the course will be awarded using the following scale:

≥ 90% - A 80-89% - B 70-79% - C 60-69% - D < 60% - E

Grades will not be curved, skewed, or otherwise inflated.

To achieve a mastery of the course material, the Ohio Department of Higher Education expects that the average student should be prepared to spend an average of 15 hours per week for 16 weeks on this course to receive an average grade.

ACADEMIC ASSESSMENT STATEMENT

Columbus State Community College is committed to assessment (measurement) of student achievement of academic outcomes. This process addresses the issues of what you need to learn in your program of study and if you are learning what you need to learn. The assessment program at Columbus State Community College has four specific and interrelated purposes:

- 1) to improve student academic achievement;
- 2) to improve teaching strategies;
- 3) to document successes and identify opportunities for program improvement;
- 4) to provide evidence for institutional effectiveness.

In class, you are assessed and graded on your achievement of the outcomes for this course. You may also be required to participate in broader assessment activities.

COLLEGE SYLLABUS STATEMENTS

Columbus State Community College required College Syllabus Statements on College Policies and Student Support Services can be found at www.csc.edu/syllabus or on the College website Quick Links “Syllabus Statements”.

AMERICANS WITH DISABILITIES ACT (ADA) POLICY

It is Columbus State policy to provide reasonable accommodations to students with disabilities as stated in the Americans with Disabilities Act (ADA) and Section 504 of the Rehabilitation Act. If you would like to request such accommodations for access, please contact Disability Services: 101 Eibling Hall, (614) 287-2570 (V/TTY). Be sure to email or give your instructor a copy of your accommodations letter from Disability Services as soon as possible.

Accommodations do not start until the letter is received, and accommodations are not retroactive. Delaware Campus students may also contact an advisor in the Student Services Center, first floor Moeller Hall, (740) 203-8000.

FINANCIAL AID ATTENDANCE REPORTING

Columbus State is required by federal law to verify the enrollment of students who participate in Federal Title IV student aid programs and/or who receive educational benefits through the Department of Veterans Affairs. It is the responsibility of the College to identify students who do not commence attendance or who stop attendance in any course for which they are registered and paid. Non-attendance is reported every semester by each instructor, and results in a student being administratively withdrawn from the class section. Please contact the Financial Aid Office for information regarding the impact of course withdrawals on financial aid eligibility.

For the purposes of financial aid reporting, a student meets the participation and attendance criteria if s/he has actively engaged in the class and demonstrated a meaningful attempt toward completion of the course. For the purposes of this blended class, that could be demonstrated by completion of all online quizzes, online Practice Exercises, all tests, and attendance and participation in all class meetings. Failure to complete all of these assessments or class attendance policies could result in being withdrawn from the course.

AUDIO/VIDEO RECORDING

Audio- and video-recording of class content, transmission, and distribution of class content (e.g., lectures, discussions, demonstrations, etc.) is strictly prohibited unless written permission has been provided by the course instructor via the syllabus or a signed form. Authorization to record extends solely to students in that particular course. Transmitting, sharing, or distributing course content onto public sites, commercial sites, or social media sites is strictly prohibited.

STUDENT CODE OF CONDUCT

As an enrolled student at Columbus State Community College, you have agreed to abide by the Student Code of Conduct as outlined in the Student Handbook. You should familiarize yourself with the student code. The Columbus State Community College expects you to exhibit high standards of academic integrity, respect and responsibility. Any confirmed incidence of misconduct, including plagiarism and other forms of cheating, will be treated seriously and in accordance with College Policy and Procedure 7-10.

The use of a graphing calculator to store notes and/or formulas without the instructor's permission is considered academic misconduct and is subject to disciplinary action according to college policy. The use of any electronic device capable of wireless communication (phone, computer, pager, etc.) is **strictly prohibited** during any proctored assessment (test, quiz, etc.)

TOBACCO FREE COLUMBUS STATE 2015

As a result of a proposal by the Ohio Board of Regents in 2012, Columbus State became a tobacco-free institution, as have colleges and universities across the nation, including The Ohio State University, which made the change in 2014. In an effort to support the health and well-being of all students, faculty, and staff, the College has adopted a tobacco free policy which prohibits the use of all tobacco-related products on College property. The primary emphasis of this approach is to focus on the elimination of tobacco use on all College property with cessation left as a choice for the individual. The effective date for the tobacco free policy was July 1, 2015.

TITLE IX STATEMENT

Columbus State Community College is committed to creating a learning and working environment that is free of bias, discrimination, and harassment by providing open communication and mutual respect. If you have encountered sexual harassment, sexual misconduct, sexual assault, or discrimination based on race, color, religion, age, national origin, sex, sexual orientation, gender identity and expression, genetic information (GINA), military status or disability, please contact one of the following people:

Renee Fambro, Director of Equity and Compliance, Rhodes Hall 115, rfambro@csc.edu, 287-5519

Danette Vance, Title IX Deputy Coordinator, Rhodes Hall 115, dvance1@csc.edu, 287-2433

Joan Cook, Title IX Deputy Coordinator, Rhodes Hall 115, jcook60@csc.edu, 287-2636

Darla Van Horn, Title IX Deputy Coordinator, Eibling Hall 203(D), dvanhorn@csc.edu, 287-2856

For additional information about your options at Columbus State Community College or to file a complaint online, please visit our webpage at <http://www.csc.edu/services/title-ix/>

WEATHER CONDITIONS

In the event of severe weather or other emergencies which could force the college to close or to cancel classes, please refer to the college's severe weather policy, which is posted at <http://www.csc.edu/weather>

DIVERSITY, EQUITY, and INCLUSION STATEMENT

The CSCC Mathematics Department faculty value diversity of thought, perspective, and experience, and respect your identities (including but not limited to race/ethnicity, age, gender identity or expression, class, sexual orientation, religion, and ability). The education, rights, and well-being of all students are encouraged and cultivated. Our goal is to foster and support safe and inclusive learning environments with equitable opportunities for all students to participate, contribute, and succeed.