University of Montana

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Fall 9-1-2020

M 121.R05: College Algebra Plus

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Catalog Description:
> The central theme of College Algebra is functions as models of change. This course fulfills the prerequisites for M122 (College Trigonometry) and for M162 (Applied Calculus). Intended to strengthen algebra skills. The study of functions and their inverses; polynomial, rational, exponential and logarithmic functions. Credit not allowed for both M121 and M151.

Learning Outcomes: Upon completion of this course, students will be able to:

1. Demonstrate conceptual understanding of functions and solve problems using four different points of view: geometric (graphs), numeric (tables), symbolic (formulas), and written (verbal descriptions and interpretations).
2. Be flexible and have the ability to choose between these points of view when solving problems such as evaluating functions; solving equations; identifying where a function is increasing, decreasing, positive or negative; finding domain and range, intercepts, slope, vertex, concavity, symmetries, end-behavior, and asymptotes.
3. Create graphs when given a formula; write a formula when given a graph.
4. Build new functions from existing ones: using transformations, composition, and the algebra of functions. Identify when a function has an inverse, identify domain and range, and compute a formula for the inverse, when possible.
5. Describe real-world situations using linear, quadratic, piecewise, polynomial, power, rational, exponential and logarithmic functions; and interpret functions and their parameters in real world contexts.

General Education Learning Outcomes:
Upon completion of the mathematical literacy requirement, a student will be able to effectively apply mathematical or statistical reasoning to a variety of applied or theoretical problems.

Course Content:
1. *Graphs, Functions, Applications* (Function Notation, Linear Functions, Equations of Lines, Applications, Solving Linear Inequalities, Increasing, Decreasing, and Piecewise Functions, Algebra of Functions, Composition of Functions, Symmetry and Transformations; Quadratics Functions)
2. *Exponential and Logarithmic Functions* (Inverse Functions, Exponential and Logarithmic Functions and their Graphs, Exponential and Logarithmic Equations, Applications)
3. *Polynomial and Rational Functions* (Short-run Behavior, Graphs, Comparing Power, Exponential and Logarithmic Functions, Fitting Exponential and Polynomials to Data, Applications)

Text:
We will use use a compilation of Open Educational Resource texts: *PreCalculus: An Investigation of Functions.*, Lippman. This is a free textbook and is available to download through a link on the MyOpenMath site. You can order a printed copy as well through Lulu.com for a small fee. We will also be using an Intermediate Algebra Student Work book, which is also free of charge and is linked to MyOpenMath. Access to MyOpenMath and a graphing calculator are also required. Classroom demonstrations will be done with a TI-84. A graphing calculator with symbolic capability, such as a TI-89, TI-92 or anything CAS will not be allowed on quizzes or exams. Please note that there are downloadable calculators and apps that are fairly inexpensive.

For an orientation on enrolling and getting started with the MyOpenMath, please view:
https://www.youtube.com/watch?v=_IdFpaVYsgU&feature=youtu.be

To enroll in our course on MyOpenMath: go to www.myopenmath.com and note that our course ID is **77787** and the enrollment key is: **mathiscool**

This is the site where you can access the texts, online homework and videos that are linked to the text, tests, and the online homework gradebook. Regarding the online homework, you will have the opportunity to try each question several times, and if you continue to get it incorrect, you can click "similar problem" for additional attempts. It is strongly recommended that if you do

not get the question correct on the first couple of tries; that you access the associated video (if one exists) that is linked to that particular homework question. It is essential that you do these assignments daily.

Please note that within each course topic on MyOpenMath, there are several short videos available that provide brief explanations and examples of various relevant topics. I encourage you to view these for additional explanations, as needed. You will also see such videos linked to random homework problems throughout the course.

Grading:
Your course grade will be based on the following:

50% of your grade:	Unit tests and quizzes, schedule TBA
15% of your grade:	Cumulative Final Exam.
35% of your grade:	Other activities (online homework, in-class activities, etc)

Please note that this class is highly interactive with nearly daily in-class activities, hence attendance and participation are essential for success in the class. You are expected to be in class every day it meets.

When any assignment is returned, there is one week from the date of return for contesting the grading. After that time, the grade will be accepted as final. All tests, quizzes and assignments to be turned in are announced well before-hand and an email will also be sent to the class alerting you of an upcoming due date. It is your responsibility to keep up to date on all such announcements.

Grade	*Grading Scale by Percentages*
A	90%+
B	89-80%
C	79-65%
D	64-55%
F	Less than 55%
CR	

*** If you are taking this course to fulfill a general education requirement or a requirement for your major or minor, you must take it for a traditional letter grade (not CR/NCR). If you decide anyhow to take this course with CR/NCR grading, a grade of "D-"is considered passing and will earn you credit for the course, BUT it will NOT fulfill your general education requirement NOR any requirement for your major or minor.***

Make-ups:
It is your responsibility to notify me as soon as you know you will miss any exam and it must be either prior to or within 24 hours of the exam. If I do not receive an email within that period, the test or quiz score will be a 0.

If a student's final exam percentage is greater than any one of the tests during the regular semester, I will replace the low test grade with that percentage. The final exam cannot be replaced.

Add/Drop Policy:
The last day to add/drop or change grading option to Audit by Cyberbear is **9/9.** The last day to change sections and to change grading options is **10/21.**This is also the last day to drop. Changes after this deadline and until **11/18** must be done by Petition to Drop/Add after deadline and approved by me, your advisor and the appropriate Dean. Approval requires genuine extenuating circumstances as listed in the university catalog.
   Extenuating circumstances are:
   1. Missing a substantial number of classes due to illness, accident or family emergency.
   2. A change in work schedule that makes it impossible to attend class or devote adequate time to the course.
   3. Registration in the course by error and never attending class.
   Reasons that are not satisfactory include:
   1. Forgetting to turn in a drop slip.
   2. Protecting your grade point average.

≥ 55%

Incomplete (I) Grades:
To be eligible for an "I", the following conditions must be met:
1. The student must have been in attendance and passing the course up to 3 weeks before the semester ends; and
2. The student is unable to complete the course due to extenuating circumstances, which usually means serious illness or death in the family.

  Incompletes are not given under any other circumstances and are always given at the discretion of
  the instructor. See the 2020-2021 catalog for further information.

Misconduct:
All students must practice academic honesty. Academic misconduct is subject to an academic penalty by the course instructor and/or a disciplinary sanction by the University. All students need to be familiar with the <u>Student Conduct Code</u>.

Disability modifications:
The University of Montana assures equal access to instruction through collaboration between students with disabilities, instructors, and <u>Disability Services for Students</u>. If you think you may have a disability adversely affecting your academic performance, and you have not already registered with Disability Services, please contact Disability Services in Lommasson Center 154 or call 406.243.2243. I will work with you and Disability Services to provide an appropriate modification.

Important University-Wide Info and Dates:
- Monday, 7 September: Labor Day. No school.
- Tuesday, 3 November: Election Day. No school.
- Wednesday, 11 November: Veteran's Day. No school.

Student expectations:
Attendance: Attendance is a required component of the course. If you must be absent, you are responsible for obtaining missed assignments and announcements (such as upcoming quizzes and activities), and being prepared for the next class. In the case that you miss a class, recordings will be posted on the BOX folder.
 Email: Students are expected to maintain an active email account and to check email daily.
 Preparation: Students are expected to come to all classes prepared, with assignments complete, even if they have been absent.
 Electronics: Students are expected to keep all phones and other personal electronics away/off during class. Calculators and laptops being used for class work will be acceptable.
Attendance/Participation: Students are expected to attend every class, to be on time for class, and to stay for the entire class period. Students who miss class are expected to complete the day's work and stay on schedule. Attendance is very important in this course. The only excused absences will be those due to required participation in university-sanctioned events such as athletic competitions, musical performances, and class trips. Students are expected to participate in all class activities, including individual work, group work, and work shared with the rest of the class. Full class participation involves bringing all relevant materials, staying on task, contributing to group activities, fostering a positive learning environment, answering questions when called upon by your instructor, and keeping all non-essential electronic devices away. Participation is very important in this course and is graded daily. *Sometimes you may think that you don't have time to attend class due to other matters, but past experience has shown that students who miss class actually spend far more than 50 minutes making up what they missed.*

A portion of class time will be spent working in small groups. The benefit of discussion while working in small groups to develop and use mathematical concepts has been shown to increase success rates. Brain research has shown that sharing multiple viewpoints and verbally articulating questions and answers strengthens the connections your brain makes between concepts. Strong connections improve your ability to recall and use concepts. Even if you think you already understand a concept, explaining your understanding to others benefits others while strengthening your own understanding. If you ask a question of your group or class, you are providing an opportunity for good discussion, so don't be shy about asking questions! The only bad question is one that is left unasked!

On coronavirus: All students are expected to follow UM's face covering policy (see <u>www.umt.edu/policies/browse/facilities-security/covid-19-face-covering-policy</u>).

Resources:
Student Hours: My student/office hours are for you to seek direct help from me. I am available during all announced hours as well as other times by appointment. Please come see me with any concerns you have during the semester, especially if there is something going on that is having an impact on your ability to succeed in the class. You can also come see me during these hours for help on math, just as you would get help in the math lab. Don't wait until you are way behind to get help! It is strongly

recommended that you communicate with me as much as possible so that we can work together to get you through the course successfully.

The Math Department has tutors available at the Math Learning Center and hours will be announced as soon as they are provided.

Student: As a student, you may experience a range of challenges that can interfere with learning, such as health: strained relationships, increased anxiety, substance abuse, feeling down, difficulty concentrating, and/or lack of motivation. These mental health concerns or stressful events may diminish your academic performance and/or reduce your ability to participate in daily activities. Counseling is available and treatment does help. The professional staff at Curry Health Center offers free confidential counseling to full-time students. I am always happy to help you find the resources you need.

A Statement on Digital Access and Equality:
Digital devices (like laptops and cell phones) are becoming increasingly important to success in college. In this course, you may need digital devices to access readings, complete and submit written assignments, complete online quizzes, verify your attendance, take in-class polls, coordinate with other students regarding group projects, complete and submit group projects.
I recognize that some students are unable to afford the cost of purchasing digital devices and that other students rely on older, more problem-prone devices that frequently break down or become unusable. I also recognize that those technology problems can be a significant source of stress for students. Given those challenges, I encourage students to contact me if they experience a technology-related problem that interferes with their work in this course. This will enable me to assist students in accessing support.

Here is some information in case you or another student you know faces challenges securing food or housing. There are some campus resources that might be helpful:

Food Pantry Program

UM offers a food pantry that students can access for emergency food. The pantry is open on Tuesdays from 9 to 2, on Fridays from 10-5. The pantry is located in UC 119 (in the former ASUM Childcare offices). Pantry staff operate several satellite food cupboards on campus (including one at Missoula College). For more information about this program, email umpantry@mso.umt.edu, visit the pantry's website (https://www.umt.edu/uc/food-pantry/default.php) or contact the pantry on social media (@pantryUm on twitter, @UMPantry on Facebook, um_pantry on Instagram).

ASUM Renter Center

The Renter Center has compiled a list of resources for UM students at risk of homelessness or food insecurity here: http://www.umt.edu/asum/agencies/renter-center/default.php and here: https://medium.com/griz-renter-blog.

Students can schedule an appointment with Renter Center staff to discuss their situation and receive information, support, and referrals.

Accessing Online Homework in MyOpenMath

If you do not already have a MyOpenMath account:

1) Open up your web browser (like Internet Explorer, FireFox, Safari, or Chrome)
2) Enter the address: **www.myopenmath.com**
3) Click "Register as new student"
4) Enter the requested information.
5) Where it says "Select the course you'd like to enroll in", leave "My teacher gave me a course ID (enter below)" selected, and enter this class's course id and key:
   Course ID: **77787**
   Enrollment key: **mathiscool**
6) Click "Sign-up"
7) You will taken back to the login page. Enter your username and password you selected
8) You may see a "Browser Check" page. If so, click the "Continue with Image-based display" button.
9) The course name will now show up in the "Courses You're Taking" box on your home page. Click on the course name to enter the course.

The next time you want to access the course, you will just need to enter your username and password at the login page, then click on the course name to re-enter the course.

If you already have a MyOpenMath account:

1) Log into myopenmath.com
2) Click the "Enroll in a New Course" button.
3) Enter the course ID and enrollment key from #5 above, and click Sign Up.
4) The course name will now show up in the "Courses You're Taking" box on your home page. Click on the course name to enter the course.

The following syllabus **is** subject to modifications (and in all probability will be changed due to timing!). **This includes a potential change of dates for tests. It is your responsibility to keep up to date on all such announcements.**

Monday	Tuesday	Wednesday	Thursday	Friday
Aug 17	Aug 18	Aug 19 Intro	Aug 20 Support/Exp	Aug 21 Support/Exp
Aug 24 Support/Polys	Aug 25 Support/Polys	Aug 26 Complex Fractions	Aug 27 Complex Fractions	Aug 28 1.1
Aug 31 1.1	Sep 1 1.2	Sep 2 1.2	Sep 3 1.3	Sep 4 1.3
Sep 7 Labor Day	Sep 8 1.3	Sep 9 1.4	Sep 10 1.4	Sep 11 1.4
Sep 14 1.6	Sep 15 1.5	Sep 16 1.5	Sep 17 1.5	Sep 18 Review for Test 1
Sep 21 2.1	Sep 22 2.1	Sep 23 2.1	Sep 24 2.2	Sep 25 2.3
Sep 28 2.3-2.4	Sep 29 line recap	Sep 30 4.1	Oct 1 4.1	Oct 2 4.1
Oct 5 4.1	Oct 6 4.1	Oct 7 4.2	Oct 8 4.2	Oct 9 4.3
Oct 12 4.3	Oct 13 4.3	Oct 14 4.3	Oct 15 4.3	Oct 16 4.4
Oct 19 4.4	Oct 20 4.4	Oct 21 4.5	Oct 22 4.6	Oct 23 4.6, Test 2 Review
Oct 26 3.1	Oct 27 3.1	Oct 28 3.2	Oct 29 3.2	Oct 30 3.2
Nov 2 3.2	Nov 3 Election Day	Nov 4 3.2	Nov 5 3.2	Nov 6 3.3
Nov 9 3.3	Nov 10 3.7	Nov 11 Veterans Day	Nov 12 3.7	Nov 13 3.7
Nov 16 3.8	Nov 17 3.8	Nov 18 Review	Nov 19 Finals	Nov 20 Finals
Nov 23 Finals	Nov 24 Finals	Nov 25 Finals	Nov 26	Nov 27

M121 Plus/M191 – Co-requisite Support for College Algebra

This course serves as a co-requisite for M121 College Algebra. It is intended to provide additional support in a small classroom setting. The content will mirror the course outcomes of M121 and background and necessary skills will be covered as needed. This course provides an alternative to M095 by incorporating M095 material into the M121 curriculum. This course is intended to allow some students placing into developmental math an opportunity to earn credit for college level math course while providing the additional time and support associated with developmental courses.

Learning Outcomes:

Support in achieving the M121 learning outcomes will be provided through extra instruction of basic algebraic concepts at the beginning of the semester as well as a more detailed and in depth look at M121 topics throughout the semester.

Required Texts

There are no additional materials that are required for this portion of the course. We will be using a workbook periodically, but links are provided on MyOpenMath.

Grading Policy

Grades will be assigned on a CR/NCR basis. If you are an active participant, attend class daily and complete the additional assignments, a grade of CR will be given. If you are present less than 65% of the sessions, you will earn NCR.

Attendance and Participation:

Class attendance is expected every day. If you are absent, you are responsible for finding out what you missed and completing assigned work. Having said that, you need to be an ACTIVE participant. One learns by DOING, not watching.

Discussion:

The Corequisite Model entails placing students directly in their college level math class, while providing the assistance needed with the prerequisite material. The advantage of this is that you will not just be learning seemingly arbitrary concepts in a developmental class, you will be learning these concepts and will be able to immediately see their utility and context in M121.

Student Contract for M121 Co-Requisite Participation

As a M121 Co-Requisite student, I understand that I will be expected to meet the following responsibilities:

1. I understand that attendance is a crucial component of my success in this class. I will attend all lectures and lab classes, barring unforeseen circumstances, and will check my campus email regularly.

2. In the event that I will need to miss class, I understand that it is my responsibility to get class notes, watch the recording and catch up on missed work so I am prepared for the next class period.

3. In the event that something arises in my life that may cause me to miss school or tune out for a time, I will contact Lauren and keep her apprised of my situation.

4. If I score below 65% on any test or on my average scores for quizzes that are given between the tests, I will be required to attend the Math Tutoring at least 1 hour each week until my scores increase.

5. I understand that learning math is an active process that requires daily study; that the only way to learn math is by practicing problems on my own, not simply by watching others do them for me.

6. I will come to class prepared for the session and will ask any and all questions I may have as they arise, I will NOT wait until right before a test or quiz. Furthermore, I will not procrastinate my homework and will do my best to stay up-to date.

7. I will be respectful to my fellow students as well as to myself.

Print Name_____

Signed_____

Date:_____