**SYLLABUS**  **MATH 1101 Intro to Mathematical Modeling**  **Fall 2017**

**CRN:** 80990 & 80991, **Section:** 03 & 03S  
**Instructor:** Billie May  
**E-Mail:** BillieMay@clayton.edu  
**Webpage:** faculty.clayton.edu/bmay

**Class:** 11:00 – 11:50 a.m. MWF, U409  
**Office:** UC 429  
**Phone:** 678-466-4445  
**Office Hours:** MW 12:00 – 1:00,  
TTh 11:00 – 12:30, F 10:00-11:00  
Other times by appointment

**Prerequisite:** Math 0099 or high school Algebra II and a suitable score on a mathematics placement test.

**Course Description:** This course is a study of equations, functions, graphs, modeling, and problem solving. Linear, quadratic, exponential, and logarithmic equations in one variable are applied to a variety of problems, which concern real-world situations. Systems of linear equations in two variables are studied in conjunction with their use in problem solving. The concepts of functions and graphing are studied as essential tools for interpreting functions of one variable. Linear, quadratic, exponential, polynomial and logarithmic functions are emphasized and used to model a variety of real-world situations.

**Learning Outcomes:** After successful completion of the course the student will be able to:
1. Model situations from a variety of settings in mathematical forms by extracting quantitative data from a given situation, translating the data into information in various modes, evaluating the information, abstracting essential information, making logical deductions, and arriving at reasonable conclusions;  
2. Manipulate mathematical information, concepts, and thoughts in verbal, numeric, graphical and symbolic form while solving a variety of problems;  
3. Solve multiple-step problems through different (inductive, deductive and symbolic) modes of reasoning;  
4. Express mathematical information, concepts, and thoughts in verbal, numeric, graphical and symbolic form while solving a variety of problems;  
5. Shift among the verbal, numeric, graphical and symbolic modes of considering relationships;  
6. Use appropriate technology in the evaluation, analysis, and synthesis of information in problem-solving situations.

**Outcomes:**  
**Communication:** Students will gain a knowledge base of basic mathematics in analytical, graphical, and numerical form. Students will communicate their ideas orally in class discussions and in written form on quizzes and examinations.  
**Critical Thinking:** Students will apply their knowledge to solve applied problems presented in class, on quizzes, and on examinations. Students will determine the mathematical question and appropriate concepts with which to draw a conclusion, and then provide evidence of a logical answer.

**Computer:** A computer is required in Math 1101. Each student in Math 1101 needs access to a notebook computer. Students will use their notebook computers during class sessions. Clayton State University requires that students have ready access throughout the semester to a notebook computer that meets faculty-approved hardware and software requirements for the student's academic program. For further information on Clayton State’s notebook policy and suggested configurations, please go to http://www.clayton.edu/hub/itpchoice/notebookcomputerpolicy. It is a student’s responsibility to have a working computer. In most cases, if your computer is not working properly, you can see someone in the HUB or contact a software help center.
Computer Skills Prerequisites:
- Able to send and receive email using Outlook. I will only respond to emails that originate from your Clayton State student email.
- Able to attach and receive attached files via email.
- Able to use a web browser.

Required Course Materials:
**Math Software:** There are two free software packages, Graph and Geogebra, which are recommended for Math 1101 students. You may use either of these programs. Only the Graph program will be taught during class.
Graph: [http://www.padowan.dk/download/](http://www.padowan.dk/download/)
Geogebra: [https://www.geogebra.org/download](https://www.geogebra.org/download).

**Textbook:** Ronald Harshbarger & Lisa Yocco *College Algebra in Context*, Fifth edition, Pearson Education, Inc., 2017. The online version of the textbook including MyMathLab will be available inside D2L. You will be billed after the drop/add period. If you opt out of the purchase, keep in mind that you will not have access to the homework and quizzes. The additional purchase of the printed textbook is optional. Students are encouraged to use [IShopLochShop.com](http://www.ishoplochshop.com) to comparison shop for textbooks.

**Desire2Learn:** In addition to accessing your textbook, homework and quizzes, some documents for the course will be posted in D2L. You can gain access to D2L by signing on to the SWAN portal and selecting “D2L.” If you experience difficulties in D2L please email or call the HUB at [TheHub@clayton.edu](mailto:TheHub@clayton.edu) or (678)466-HELP. Expect to have to provide the date and time of your problem, your SWAN username, the name of the course you are attempting to access and your instructor’s name.

Course Content:
**Functions, Graphs, and Models; Linear Functions:** Functions and Models, Graphs of Functions, Linear Functions, Equations of Lines. (Sections 1.1 – 1.4)
**Linear Models, Equations, and Inequalities:** Algebraic and Graphical Solutions of Linear Equations, Fitting Lines to Data Points: Modeling Linear Functions, Systems of Linear Equations in Two Variables, Solutions of Linear Inequalities. (Sections 2.1 - 2.4)
**Quadratic Piecewise-Defined, and Power Functions:** Quadratic Functions; Parabolas, Solving Quadratic Equations, Piecewise-Defined Functions and Power Functions, Quadratic and Power Models. (Sections 3.1 - 3.4)
**Additional Topics with Functions:** Transformations of Graphs and Symmetry, Combining Functions; Composite Functions, One-to-One and Inverse Functions. (Sections 4.1 – 4.3)
**Exponential and Logarithmic Functions:** Exponential Functions, Logarithmic Functions; Properties of Logarithms, Exponential and Logarithmic Equations, Exponential and Logarithmic Models, Exponential Functions and Investing. (Sections 5.1 - 5.5)
**Higher-Degree Polynomial and Rational Functions:** Higher Degree Polynomial Functions, Modeling with Cubic and Quartic Functions, Solution of Polynomial Equations. (Sections 6.1 - 6.3)

**TECHNOLOGY ETIQUETTE:** The computer is used extensively in this course. During class do not play computer games, play music on the computer, surf the net, pass e-mail “notes”, use computer headphones, or use the computer in any way that is distracting to the instructor or any other student. Set the volume on your computer to MUTE. Outside of class, any e-mail sent to your instructor should state your name and identify the class you are taking. Remember to act professionally when sending e-mail to your instructor. Any unprofessional e-mail sent to an instructor will not be tolerated. **You will be responsible for sending and**
receiving email from your CSU account (I will NOT respond to emails received from other accounts). All cell phones should be either turned off or in “silent” (not vibrate) mode during all class times.

EVALUATION: Your grade in MATH 1101 is dependent on the following four criteria.

Online Homework / In-class Assignments and Quizzes: Your grade in this category will be determined by the average score that you earn on the best 21/23 homework assignments. You should make every effort to complete the homework assignments and seek help during office hours with problems you have not been able to solve. Homework is not timed and you are allowed unlimited attempts up to the due date. The deadlines will not be extended, and homework will not be reopened at the end of the semester, so it is imperative that you complete all homework by the deadline.

Quizzes: Your grade in this category will be determined by the best 10/12 departmental quizzes. Quizzes have a limited number of attempts and have a time limit. Quizzes must be completed by the due date and time. The due dates will not be extended.

Tests: Your grade in this category will be determined by your best three of four tests.

Make-ups: It is your responsibility to make sure that you have no schedule conflicts and can take the tests at the times designated by your instructor. Tests may NOT be made up. Your lowest test score will be dropped. If you miss a test that is the score which will be dropped. If a student must miss more than one test due to a mandatory university event (such as an athlete) arrangements may be made for taking the test at an alternate time so long as the test is taken before the next class meeting.

Final Exam: The Departmental Final Examination is comprehensive and is worth 20% of your grade. No student will be excused from taking the Final Examination, and only under unusual circumstances will a student be allowed to take the Final Examination at any time other than the regularly scheduled time. Failure to take the Final Examination will result in the grade of "F" for the course.

Assessment Points:

<table>
<thead>
<tr>
<th>Assessment</th>
<th>Point Value</th>
<th>% of Overall Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>Homework</td>
<td>50</td>
<td>10%</td>
</tr>
<tr>
<td>Quizzes</td>
<td>50</td>
<td>10%</td>
</tr>
<tr>
<td>Tests/Other Assessments</td>
<td>300</td>
<td>60%</td>
</tr>
<tr>
<td>Final Exam</td>
<td>100</td>
<td>20%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>500</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

Final Course Grade: Your course grade will be determined by the following Grading Scale.

<table>
<thead>
<tr>
<th>Grade</th>
<th>Percent</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>89.5% - 100%</td>
<td>448 - 500</td>
</tr>
<tr>
<td>B</td>
<td>79.5% - 89.4%</td>
<td>398 – 448</td>
</tr>
<tr>
<td>C</td>
<td>69.5% - 79.4%</td>
<td>348 – 398</td>
</tr>
<tr>
<td>D</td>
<td>59.5% - 69.4%</td>
<td>298 – 348</td>
</tr>
<tr>
<td>F</td>
<td>&lt; 59.5%</td>
<td>&lt; 298</td>
</tr>
</tbody>
</table>

Midterm Progress Report: The midterm grade in this course, which will be issued by October 3, 2017, reflects approximately 30% of the entire course grade. Based upon the midterm grade, students may choose to withdraw from the course and receive a grade of W. Instructions for withdrawing from a course, including hardship withdrawals, can be found at [http://www.clayton.edu/registrar/withdrawal](http://www.clayton.edu/registrar/withdrawal). Before withdrawing from a course, please talk with your advisor and your instructor so that you will understand the academic consequences of withdrawing. If you are on financial aid, please meet with a financial aid advisor.
to discuss the impact on your satisfactory academic progress (SAP) and financial aid eligibility. The last day to withdraw with a grade of W is October 6, 2017.

**Attendance:** Students are expected to attend each class meeting. Students are responsible for knowing about in-class announcements whether they are present or not. *In the event of an unexpected instructor absence or university closure, be sure to check your email for instructions.*

**UNIVERSITY POLICIES:**

**No Shows:** Any paid student who has failed to attend a class by the deadline posted in the official university calendar for the term will be identified as a “no show.” The “no show” student will be administratively withdrawn from the class, a grade of W$ will be posted, and the student will NOT be reinstated. Any appeals on the decision are made to the Dean of the student’s major.

**Student Conduct:** For the health, safety and general well-being of all students, faculty, and staff, students must abide by the policies set forth in both the Clayton State University Student Handbook and the Basic Undergraduate Student Responsibilities ([http://www.clayton.edu/Portals/5/BasicUndergraduateStudentResponsibilities.pdf](http://www.clayton.edu/Portals/5/BasicUndergraduateStudentResponsibilities.pdf)) as listed in the current CSU Academic Catalog.

**Academic Integrity:** Students are expected to do their own work on all graded material for MATH 1101 including all homework, quizzes and tests, as outlined in the Clayton State University Student Code of Conduct, which can be found in the Student Handbook. Cheating will not be tolerated in MATH 1101, and any student who engages in suspicious conduct will be confronted and subjected to the disciplinary process. Cheaters will receive a grade of zero on the work involved. All instances of academic dishonesty will be reported to the Office of Community Standards. [http://www.clayton.edu/community-standards](http://www.clayton.edu/community-standards).

**Disruption of the Learning Environment:** Behavior which disrupts the teaching-learning process during class activities will not be tolerated. While a variety of behaviors can be disruptive in a classroom setting, more serious examples include belligerent, abusive, profane, and/or threatening behavior toward the instructor and/or other students in the class. A student who fails to respond to reasonable faculty direction regarding classroom behavior and/or behavior while participating in classroom activities may be dismissed from the class. A student who is dismissed from the class is entitled to due process and will be afforded such rights as soon as possible following dismissal, in collaboration with the Office of Community Standards. If found in violation, a student may be administratively withdrawn and may receive a grade of WF.

More detailed examples of disruptive behavior are provided in the Code of Conduct and Disciplinary Procedures sections of the Clayton State University Academic Catalog and Student Handbook.

**Weapons on Campus:** Clayton State University is committed to providing a safe environment for our students, faculty, staff, and visitors. Information on laws and policies regulating weapons on campus are available at [http://www.clayton.edu/public-safety/Safety-Security/Weapons](http://www.clayton.edu/public-safety/Safety-Security/Weapons).

**STUDENT RESOURCES:**

* Remember that MyMathLab is a good resource for video lectures and help with completing homework problems.

**Instructor Office Hours:** Your instructor holds regular office hours and is willing to help. If you are unable to make it to your instructor's regular office hours, please contact them by email or in person after class to see if another time is available.

**Center for Academic Success:** The Center for Academic Success (CAS) provides personalized one-on-one peer and professional staff tutoring in over 100 core subjects. The CAS is located in Edgewater Hall Suite 276. The CAS also offers moderated study groups, informal study sessions, a comfortable study environment, a student study lounge, and it is all free to students enrolled in classes at Clayton State. For more information, you can email the CAS at [thecas@clayton.edu](mailto:thecas@clayton.edu)

**Students with Disabilities:** Students with disabilities who require reasonable accommodations need to register with the Disability Resource Center (DRC) in order to obtain their accommodations. You can contact them at 678-466-5445 or [DisabilityResourceCenter@clayton.edu](mailto:DisabilityResourceCenter@clayton.edu). If you are already registered with DRC and are
seeking accommodations for this course, please make an appointment with your instructor to discuss your specific accommodation needs for this course and give the instructor your accommodations letter.

**Important Dates for the Fall 2017:**

<table>
<thead>
<tr>
<th>Date Range</th>
<th>Event Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mon, Aug 14 – Thu, Aug 17</td>
<td>Drop/Add</td>
</tr>
<tr>
<td>Thu, Aug 24</td>
<td>No-Show Deadline</td>
</tr>
<tr>
<td>Sat, Sept 3 – Mon, Sept 5</td>
<td>Holiday – No classes</td>
</tr>
<tr>
<td>Fri, Oct 6</td>
<td>Last Day to Withdraw and Receive a W</td>
</tr>
<tr>
<td>Sat, Oct 7 – Tue, Oct 10</td>
<td>Fall Break – No classes</td>
</tr>
<tr>
<td>Wed, Nov 22 – Sat, Nov 25</td>
<td>Holiday – No classes</td>
</tr>
<tr>
<td>Mon, Dec 4</td>
<td>Last day of classes</td>
</tr>
<tr>
<td>Friday, Dec. 8, 12:30 – 2:30 pm</td>
<td>Final Exam</td>
</tr>
</tbody>
</table>

See CSU Academic Calendar ([http://www.clayton.edu/calendar](http://www.clayton.edu/calendar)) for the most recent academic calendar for the Fall 2017 semester.

**The instructor reserves the right to add or delete topics and adjust due dates. Students will be given sufficient notice and any changes will be announced through email and during class.**