FAMU

FLORIDA A&M UNIVERSITY
MATHEMATICS
COLLEGE OF SCIENCE AND TECHNOLOGY

COURSE SYLLABUS	
Course Number: MAC 1105 **Prerequisite(s):** ALEKS score 30 to 60 or MAT 1033	**Course Title**: College Algebra
Course Credit: 3	**Course Hours**: 3
College: Science and Technology **Department**: Mathematics	**Required Text**: *College Algebra 7th ed* with web access to www.WebAssign.com. Authors: James Stewart, Lothar Redlin, Saleem Watson **WebAssign: Sign up through Canvas.**
Faculty Name: TBA	**Term and Year**: Fall 2022 **Place and Time**: Dyson Pharmacy Buld 103. MWF10:10 – 11:00 **Modality:** Face to Face
Office Location: TBA	**Telephone**: TBA **e-mail**: TBA

Office Hours	Monday TBA	Tuesday TBA	Wednesday TBA	Thursday TBA	Friday TBA

Links to Key Information

Required Technology
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Grading
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Course Description and Goals

1. To develop the ability of the student to relate concepts of algebra to daily life and apply skills to practical applications.
2. To build a solid foundation of knowledge and skills on which other mathematics can rely for enhancement and relevance
3. To help students see more clearly the relationship between quantities and their cause and effect

Overall Goals of the Course & Student Learning Outcomes

To successfully complete College Algebra, the student will be required to meet the following objectives with at least 70% proficiency. At the end of the course the student will be able to:
1. Identify functions and use functional notation
2. Find the domain and range of a function
3. Understand and use inverse functions
4. Graph functions and relations
5. Perform operations on functions
6. Solve linear, quadratic, and rational equations
7. Understand and use absolute value and radical functions
8. Know the properties of exponential and logarithmic functions
9. Solve exponential and logarithmic equations
10. Understand applications such as modeling, exponential and logarithmic growth and decay functions
11. Solve systems of equations and inequalities

Formative assessments
The student will be able to use processes, procedures, data, or evidence to solve problems and make effective decisions.
The student will be able to read and comprehend data and information from a problem.
The student will be able to recognize relevant data, translate data/information to a usable form and find algebraic models that describe the situation.
The student will be able to analyze and apply appropriate strategies to find solutions to the problem.
The student will be able to interpret the solutions and draw well supported conclusions.

The student will be able to use functions and functions concepts to analyze and model realistic situations.
The student will be able to describe and analyze relationships between variable quantities in numerical, symbolic and graphical forms.
The student will be able to apply function concepts such as domain and range, intercepts and inverse functions to realistic problems.
The student will be able to use operations on and transformations of functions to analyze and apply each of the families of functions.

Summative assessments
After the successful completion of the course, the student will be able to:
Find the intercepts of a linear equation.
Construct graphs of linear equations.
Select appropriate viewing windows for graphs of linear functions
Determine the slope of a line under various conditions.
Determine the slope-intercept form of a linear equation given various data such as: slope and y-intercept, a coordinate and slope, two coordinates.
Determine and apply the point-slope form and the standard form of a line.

Determine the slope of a line under various conditions.

Write equations of lines in slope-intercept form, point-slope form, and standard form.

Find and interpret slope as rate of change in the context of a problem.

Find and interpret the y-intercept in the context of a problem.

Identify functions from verbal and algebraic descriptions, tables, and graphs.

Identify and use function notation.

Evaluate a function expressed verbally, numerically, and graphically.

Identify properties of parallel and perpendicular lines.

Determine whether two lines are parallel, perpendicular, or neither.

Find equations of horizontal, vertical, parallel, and perpendicular lines, and graph the corresponding lines.

Determine the domain and range of a function algebraically.

Recognize whether or not a given function is increasing, decreasing, or constant and model the behavior graphically.

Retrieve information about a function from its graph: domain, range; increasing and decreasing intervals; output given an input and vice versa.

Apply linear models to real world situations.

Solve a system of linear equations graphically and through symbolic methods, including substitution and elimination.

Recognize consistent, inconsistent, independent, and dependent system of equations.

Apply systems of linear equations to real world situations.

Solve linear inequalities in two variables.

Apply linear inequalities to real world situations.

Recognize basic functions and their graphs.

Identify graphs as variations of basic functions.

Graph various families of functions.

Identify and find zeros of functions.

Determine whether a given function is even, odd, or neither.

Use transformations to graph a function.

Determine the relative minima and relative maxima, absolute maximum and absolute minimum of functions.

Find average rate of change.

Calculate the difference quotient.

Recognize and graph piecewise-defined functions.

Apply non-linear models to real world situations.

Solve quadratic equations by different methods: factoring, square root, quadratic formula, graphing.

Given a quadratic equation, find the discriminant and state the nature of the solutions.

Given a quadratic function, determine: concavity, vertex as maximum or minimum value, axis of symmetry, intercepts, width (narrow/wide); increasing and decreasing intervals.

Graph parabolas.

Find the equation of a parabola given the vertex and a second point, or given its graph.

Find average rate of change.

Solve quadratic inequalities by graphing.

Apply quadratic models to real world situations.

Determine whether a function is one-to-one.

Make a table of values for a given function and its inverse.

Given a function, find its inverse.

Graph inverse functions.

Perform basic operations on functions and find composite functions.

Determine algebraically whether two given functions are inverses of each other.

Recognize polynomial functions and their properties.
Given a polynomial function: write it in descending order, find the degree, and identify the leading term and leading coefficient.
Given a polynomial function, identify the zeros and corresponding multiplicity.
Determine if a given binomial is a factor of a polynomial function.
Determine the end behavior of polynomial functions
Determine the intercepts of polynomial functions
Determine the real zeros of polynomial functions and their multiplicities.
Given the graph of a polynomial function, find: the number of turning points, zeros, whether the graph represents an odd or even degree function.
Determine the equation of a polynomial function given its graph.
Graph polynomial functions.
Determine the domain of a rational function.
Determine asymptotes of a rational function.
Recognize and graph exponential functions.
Find an exponential function given its graph.
Given an exponential function, find: the initial value, growth or decay factor, and percent increase or decrease.
Recognize and graph logarithmic functions.
Evaluate logarithmic expressions.
Recognize and apply properties of logarithms.
Convert exponential equations to logarithmic form and vice versa.
Find the inverse function of an exponential function; of a logarithmic function.
Identify and apply natural exponential and logarithmic functions.
Compute common and natural logarithms.
Solve exponential and logarithmic equations.
Apply the change of base formula.

Required Technology
a) Computer
b) Internet connection (DSL, LAN, or cable connection desirable) to access Canvas and WebAssign
c) Web Camera
d) Headset with microphone

Course Structure
This course's information will be delivered online through the course management system CANVAS. You will use your FAMNet username and password to login to the course from the FAMU CANVAS page.

In CANVAS, you will access online lessons, course materials, and resources. At designated times throughout the semester, we will participate in a blend of self-paced and group-paced activities using CANVAS and alternative Internet-based technologies. Activities will consist of chat, discussion forums, email, and web posting.

FAMU CANVAS Access
To access this course on FAMU CANVAS (https://famu.instructure.com/) you will need access to the Internet and a supported Web browser (Internet Explorer, Firefox, Safari, and Google Chrome). To ensure that you are using a supported browser and have required plug-ins please run the Check Browser from your CANVAS course.

Technical Assistance

If you need technical assistance at any time during the course or to report a problem with CANVAS you can:

- Visit the Office of Instructional Technology page
- Contact the Office of Instructional Technology at 850-599-3460 or oit@famu.edu
- View CANVAS Guides to learn more about using CANVAS

COVID-19 and Face Coverings

Wearing a face covering in public can help prevent the spread of COVID-19 in the community. In accordance with guidance from the Centers for Disease Control and Prevention (CDC) and the Florida Department of Health, Florida A&M University expects everyone to wear a face covering in university buildings, including classrooms, regardless of vaccination status. Face coverings should be worn appropriately (i.e., covering both your mouth and nose) in the building if you are attending class in person. Everyone is expected to wear one while inside any university building or public space in which social/physical distancing cannot be observed. Face coverings other than those provided by the University are acceptable so long as they provide appropriate coverage (mouth and nose).

Face coverings protect the health and safety of individual students as well as the health and safety of their classmates, instructor, and the university community. Anyone attending class in person without a face covering or whose face covering does not provide appropriate coverage may obtain a face covering, free of charge from University locations throughout the University. Instructors will end class if anyone present creates a disruption in class regarding behavioral expectations.

Students should observe signage or otherwise sit, stand, and situate themselves in the seating arrangement identified by their instructor. Disruptive students may face disciplinary action for Student Code of Conduct violations. Students may consult with the Center for Disability Access and Resources (CeDAR) for accommodations, as necessary.

Finally, students who are experiencing COVID-19 related symptoms must not attend class in person and are encouraged to contact a health care provider. Students must report their absence to the course instructor. Alternatively, students may contact Student Health Services to report their absence, who will work with the student to communicate with the course instructor.

In-Class Recording FAQs and Protocols When can a student record?

A student may record a class lecture for three specified purposes as outlined in House Bill 233/section 1004.097, Florida Statutes:

1. For the student's own personal educational use;
2. In connection with a complaint to the University where the recording is made; or
3. As evidence in, or in preparation for, a criminal or civil proceeding.

What can students record?

Students may audio or video record a class lecture for a class in which the student is enrolled. A class lecture is defined as an [educational presentation delivered by faculty or guest lecturer] OR [faculty-delivered educational presentation], as part of a Florida A&M University course, intended to inform or teach enrolled students about a particular subject. A class lecture does not include lab sessions, student presentations, clinical presentations such as patient history, academic exercises involving student participation, assessments (quizzes, tests, exams), field trips, private conversations between students in the class or between a student and the faculty or lecturer during a class session.

When are students allowed to record?
Students may record at any time during a class lecture, so long as the recording is made for one

of the above listed specific purposes.

Do students need permission to record?

No. Students do not need to seek permission from the lecturer prior to recording a class lecture. However, the recording must be made in accordance with the three specified purposes.

Can a student share a recording with another student?

No. A recording of a class lecture may not be published without the [written] consent of the lecturer. Publish means share, transmit, circulate, distribute, or provide access to a recording, regardless of format or medium, to another person (or persons), including but not limited to another student within the same class section. Additionally, a recording, or transcript of the recording, is considered to be published if it is posted on or uploaded to, in whole of part, any media platform, including but not limited to social media, magazine, newspaper or leaflet.

Are students required to inform faculty that they are recording a class lecture?

No. Students may record a class lecture under the specified purposes listed above without informing the lecturer or receiving consent from the lecturer.

What happens if a student publishes a recording without getting written consent first?

If a student publishes a recording of a class lecture without the lecturer's written consent, and it is not in connection with a University complaint or as evidence in a criminal or civil legal proceeding, the student could face severe legal and/or disciplinary consequences. Per HB 233/section 1004.097, Florida Statutes, the unauthorized publishing of the recording allows the lecturer to take the student to court for damages, including attorney's fees, totaling as much as $200,000. Additionally, the student may be referred to the Office of Student Conduct and Conflict Resolution for a potential violation of the Student Code of Conduct.

Does HB 233/section 1004.097, Florida Statutes, affect a student's accommodations granted through the Center for Disability Access and Resources (CEDAR)?

No. If a student has an accommodation through CEDAR to record class activities, the accommodation is for the student's own personal educational use. Accordingly, the student may not share the recordings without the lecturer's written consent.

Course Policies

University's Americans with Disabilities Act (ADA) Policy Statement
To comply with the provisions of the Americans with Disabilities Act (ADA), please advise instructor of accommodations required to insure participation in this course. Documentation of disability is required and should be submitted to the Learning Development and Evaluation Center (LDEC). For additional information please contact the LDEC at (850) 599-3180.

University's Non-discrimination Policy Statement
It is the policy of Florida Agricultural and Mechanical University to assure that each member of the University community be permitted to work or attend classes in an environment free from any form of discrimination including race, religion, color, age, disability, sex, marital status, national origin, veteran status and sexual harassment as prohibited by state and federal statutes. This shall include applicants for admission to the University and employment.

Attendance
Students are expected to be punctual. A student must be present for the entire class period in order to be marked present. If a student is absent from a class, an official excuse should be obtained from the student's dean's office and submitted within one week of the student's returning to class. Students are responsible for all assignments, quizzes and examinations at the time they are due and may not use their absence from class as a plea for extensions of time to complete assignments or for permission to take make-up examinations or quizzes. **There will be no make-up tests given.** As per the university's catalog, only two/three unexcused absences are allowed for this course. Subsequent absences may result in the student earning a grade of F in the course. It is the responsibility of the student to keep track of the dates of the absences and to submit the official excuses on time.

Dropping This Course
It is the student's responsibility to understand when they need to consider dropping a course. Refer to the FAMU Course Schedule for dates and deadlines for registration. After this period, a serious and compelling reason is required to drop from the course. Serious and compelling reasons includes: (1) documented and significant change in work hours, leaving student unable to attend class, or (2) documented and severe physical/mental illness/injury to the student or student's family.

Last day to withdraw: November 4.

Communication/ Critical Thinking/ Technology
The student will demonstrate competence in writing, reading and speaking about mathematics. The student will be expected to demonstrate critical thinking skills measured by the ability to apply mathematical methods to the solution of real-world as well as theoretical problems. Regularly check e-mails from the university.

The student will be expected to demonstrate proficiency in the use of technology measured by the ability to input data and interpret numerical results. The student will be expected to use the WebAssign online system to turn in homework and quizzes along with completing group projects using a Computer Algebra System (CAS). Computer facilities are available in the (1) Math learning lab, Dyson Pharmacy Building, Room 128 (2) Math Lab, Jackson Davis 105 and (3) the Media Center in the Coleman Library.

Academic Honor Policy/Plagiarism
It is your responsibility to know the university's policy on academic/intellectual dishonesty (Section 6C3-2.012(10)(s) of the FAMU Student Handbook). Students will be expected to adhere to standards of academic honesty and integrity, as outlined in the Student Academic Honesty Policy. All assignments must be original work, clear and error-free. All ideas/material that are borrowed from other sources must have appropriate references to the original sources.
Any student caught cheating in any manner is awarded the grade of F. No warnings are given; it is your responsibility to do your own work. All persons collaborating in cheating will receive the grade of F. The University's Academic Honor Policy is located in the FANG Student Handbook, under the Student Code of Conduct- Regulation 2.012 section, beginning on page 55-56. **A visible cell phone or any device which can access the Internet or a calculator during tests or the final exam will result in the student failing the exam.** Read more about FAMU's Academic Honesty Policy & Procedures

Etiquette
1. **Respect others and their opinions.** In online learning, students from very different backgrounds come together to learn. It is important to respect their feelings and opinions even when they are quite different from your own.
2. **Watch your language and tone carefully.** When you are communicating online, you have to rely solely on words to get your point across. The other person cannot see your facial expression or hear your tone of voice, so things like sarcasm and humor often don't come across very well. That's why it's important to take your time, choose your words carefully, and be as straightforward as you can.
3. **Consider people's privacy.** Always ask for permission before you forward someone's email messages to somebody else, and if you do reuse somebody else's words (with their permission), make sure to acknowledge them appropriately. Keep in mind that all private email mail is considered copyrighted by the original author.
4. **Avoid inappropriate material.** It's tempting to forward messages you find clever or links to websites you find entertaining to classmates. If they are not directly relevant to the course, please don't do this, especially if the material is sexually suggestive, politically sensitive, or otherwise "edgy." Same goes for frivolous "joke" emails and chain messages. This is not the place for it.
5. **Be forgiving.** If someone writes something that you find offensive, mention it directly to the instructor. He or she is best equipped to address the situation. Remember that the person contributing to the discussion might be new to this form of communication. What you find offensive may have been unintended.
6. **Be concise.** When you are contributing to a discussion, be as brief as you can to get your point across. Adding a lot of unnecessary words just makes your message less clear. Try to stick to the point and not go off on irrelevant tangents.
7. **Read first, write later.** Don't add your comments to a discussion before reading the comments that are already there. And if you are responding to a previous comment, always make clear which comment you are responding to.
8. **DON'T TYPE IN ALL CAPS OR USE EXCESSIVE PUNCTUATION!!!!!!!** Most people find this annoying and you may not be communicating your thoughts effectively.
Think before you hit the send button. Learning to be your own editor is a difficult and important skill. Think carefully about the content of your message before you send or post it. Once you push the button, there is no taking it back. Grammar and spelling errors reflect badly on you, and misspelled words or poorly constructed sentences can make it hard to decipher your meaning accurately.

Grading

Your course grade will be determined by:

		The scale will be:
Four Tests	16 percent	A – at least 89.5%
WebAssign Homework	10 percent	B – 79.5-89.4%
WebAssign Quizzes	10 percent	C – 69.5-79.4%
Projects	25 percent	D – 59.5-69.4%
Math Gym	15 percent	F – less than 59.5%
Class Participation	5 percent	
Math Learning Lab Attendance	5 percent	
Final Examination	14 percent	

Final Exam Administration
The departmental Final examination will be on Monday of final exam week. Time and location will be sent by email from FAMUINFO. Regularly check email from the University.

<u>I Grade</u>
The "I" grade is given at the instructor's discretion and then only to students who are PASSING***** and who are prevented from completing the course by UNAVOIDABLE circumstances not of their own doing. Students who have missed more than one test are not eligible for an "I" grade.

*Passing means: Getting at least a C on each test, online work and class quizzes. It should also be accompanied with almost a perfect attendance. Check your printout for course & sections number. If you are not attending the section for which you are officially enrolled, the instructor of the section for which you are officially enrolled will assign you an "F" grade on the final grade roll and that will be your FINAL GRADE**.**

<u>Procedure for Resolving Faculty-Student</u>
    a) Student first attempts to resolve issue with instructor.
    b) Student submits written notification of problem to department chair.
    c) Chair forwards student letter to instructor.
    d) Instructor responds in writing to chair.
    e) Chair meets with instructor and/or student if necessary.
    f) Chair forwards response/recommendation to Dean's office.
    g) Dean decides what further course of action is available to the student.

<u>College of Science & Technology Grievance Deadlines /Intent to Grieve Form</u>
Students must submit Intent to Grieve Forms, online, within two weeks of grades being made available for students to view in accordance with the University Registrar's calendar. Students cannot submit an Academic Grade Grievance without submitting an Intent to Grieve Form unless they receive an exception from the Academic Dean.
Grievances submitted to the College of Science and Technology Grievance Committee for Fall Semester grade disputes must be communicated to the College of Science and Technology Dean's office by the deadlines listed below. These will only be reviewed if an Intent to Grieve Form was filed by the stated deadline or an exception is provided by the Associate Dean allowing the student to submit a grievance without filing an Intent to Grieve Form.
Biology, Chemistry, Math, Physics courses—student must submit the grievance no later than March 1st (or next business day).
CIS courses- No later than three weeks after the student receives notification of the outcome of the Academic Complaint Process from the CIS chairperson.

Assignment Guidelines

<u>Math Learning Lab (MLL)</u>
Location: Dyson Pharmacy Building, Room 128
Hours of Operation: 9am – 5pm Monday – Friday.

You are required to visit the MLL for two hours each week starting with the second week of class.

The Math Learning Lab (MLL) is a computer-equipped laboratory staffed by Learning Lab Assistants (LLA) who provide tutorial assistance for MAC 1105 students. Students are expected to devote one or more hours per week in the MLL, where they can work on My Math Lab assignments, Math Gym exercises, and/or receive tutorial assistance. The MLL provides opportunities for students to work side-by-side with other students, each on your own individual computers or together on the same computer.

During the first week of class in the semester, students need to visit and familiarize yourself with the MLL. Student ID cards are used to record attendance in the MLL. Be sure to bring your ID card with you each time to the MLL.

WebAssign (WA)

WA is an online learning platform where students will complete homework assignments. Following the instructions in the Canvas orientation module to access WA. Please note that it is possible to get two weeks access to WA before needing to pay for the service.
WA is required for this course. Failure to be enrolled in the correct WA course can result in failing this course. Students who enroll in WA after the due date for any assignment, tests included, will receive a zero all assignments, tests included, that are past due. You will sign up for WA through Canvas. Please note that it is possible to get free access to WebAssign for two weeks before needing to pay for the service.

Gym
Math Gym provides students opportunity to work in teams and collaboratively with fellow students on solving problems, including more challenging problems. 2 sets of Math Gym problems will be assigned to teams of students during each of the course units (8 assignment over the full semester). Each assignment consists of basic review questions, upcoming test related questions, and more challenging and questions encouraging more in-depth analysis. Students will spend a portion of regular class meetings (after course material for that day or week has been covered) working together on Math Gym problems. On occasion, if time allows, students will have opportunity to present solutions to their classmates as well as to critique presentations by their classmates.

Projects

Projects provide students with the opportunity to practice using the skills that they have learned in data-rich real-world situations. The projects come with guided examples and clear rubrics that help students formulate solutions to these complex problems. Students will have a few weeks to complete the projects, and it is expected that you review your project with your professor before formally submitting if for grading.

Weekly Schedule

Read sections in textbook (see pacing guide), take handwritten notes, and review your notes prior to coming to class. Complete the remaining WA homework and Quizzes by the end of the weekend (Sunday night at 11:59 pm). Visit the Math Learning Lab for at least two hours. There will be two gyms per test (see the pacing guide). Generally, the projects are due a week after the Unit test.

Additional Free Tutoring

The university provides on demand tutoring after hours and on evenings/weekends through tutor.com. To logon to the service logon to Canvas, go to Tools on the left-hand menu, and look for the Tutor.com link. Then follow the on-screen instructions.

Subscribe to the course YouTube channel.
https://www.youtube.com/channel/UCse9UQNanhZyXqb_Jc08FnA/?sub_confirmation=1

Holidays   Labor Day (September 5), Veteran's Day (November 11), Thanksgiving (November 23 – 25).

MAC 1105 Schedule

Important Note:

This is a tentative schedule for the course, and the instructor may change it without any prior notice. Refer to the course calendar for specific meeting dates and times. Activity and assignment details will be explained in detail within each week's corresponding learning module. If you have any questions, please contact your instructor.

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Remember

1. Each weekly homework and Quizzes are due by the end of the weekend (Sunday at 11:59 pm).
2. Gyms are due on at the end of the week assigned
3. Tests are the start of the week

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For the week <u>starting</u>	Material to be <u>covered in class</u>
WEEK 1 Aug 22	**Sections 1.1, 1.2 start 1.3**
WEEK 2 Aug 29	**Sections 1.3,2.1, GYM**
WEEK 3 Sept 5 Mon – Labor Day	**Sections 2.1, 2.4, 2.6, 2.7 GYM**
WEEK 4 Sept 12	**TEST 1; Sections 2.2, 2.6**
WEEK 5 Sept 19	**Sections 1.4, 1.6 GYM, Project 1 due**
WEEK 6 Sept 26	**Sections 3.1, 1.7 GYM**
WEEK 7 Oct 3	**TEST 2; 1.5, 1.8**
WEEK 8 Oct 10	**Sections 3.6, 2.1, 3.7, Project 2 and 5 due**
WEEK 9 Oct 17	**Sections 2.7 GYM**
WEEK 10 Oct 24	**Sections 2.8 GYM**
WEEK 11 Oct 31	**TEST 3; Sections 4.1, 4.2, 4.3**
WEEK 12 Nov 7 Thurs – Veterans Day	**Sections 4.3, 4.4 GYM, Project 3 due**
WEEK 13 Nov 14	**Sections 4.5 GYM**
WEEK 14 Nov 21 Thu & Fri – TG Break	**TEST 4**
WEEK 15 Nov 28	**Sections 5.1, 5.2 (Online), Project 4 and 6 due**
WEEK 16 Dec 5	**FINAL EXAMINATION**