

COURSE SYLLABUS
MH 113-03 Pre-Calculus Algebra

Instructor: <u>Dr. James Cook</u>	Class Days and Time: <u>MWF 12:20-1:10</u>
Semester: <u>Fall 2020</u>	Room: <u>BG 222</u>
Office: <u>BG 126A</u>	
Contact: <u>(205) 652-3826 jcook@uwa.edu</u>	
Office Hours: Monday – Friday 10:00am-12:00pm.	

Final Exam Date and Time: Monday, December 7, 11:00am – 1:00pm.

Course Description: This course includes linear functions and relations; linear functions and graphs; quadratic functions; polynomial functions; rational functions; exponents and logarithms; the binomial theorem; and systems of nonlinear equations. No credit is allowed for this course if a student has previous credit in Pre-calculus or a higher mathematics course.

Prerequisite: “C” or Higher in MH 101 or appropriate standardized test score.

Credit Hours: 3 credit hours.

Course Objectives: Enable students to understand the following topics:

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| 1. Linear functions and relations | 5. Rational functions |
| 2. Linear functions and graphs | 6. Exponents and logarithms |
| 3. Quadratic functions | 7. Binomial theorem |
| 4. Polynomial functions | 8. Systems of nonlinear equations |

Course Materials: The following is recommended:

1. Textbook: Precalculus: Mathematics for Calculus, by James Stewart, Lothar Redlin, and Saleem Watson, Seventh Edition, Brooks/Cole Publishing Company. 2015.
2. A scientific calculator is strongly recommended.

Course Outcomes: The learner will be able to

- Perform operations on polynomials, rational, exponential, and logarithmic functions.
- Graph polynomials, rational, exponential, and logarithmic functions.
- Solve linear, nonlinear, quadratic, exponential, logarithmic, and absolute value equations and inequalities.
- Recognize and manipulate complex numbers.
- Solve systems of linear equations in two or more variables.
- Expand binomials with any natural number power.

Evaluation and Grading Policy: Grades will be determined on the basis of academic work provided by the student. Each assignment will be given a point value. Any student who is dissatisfied with his/her grade during this course is urged to discuss this with the instructor. Grading will be as follows:

Homework: 150pts
Quizzes: 100pts
Participation: 50pts
Tests: 450pts
Final Exam: 250pts

Further details about the scheduling of the above items is provided in the Course Planner which is posted in Blackboard under Course Content. Letter grades follow: let x denote the total points earned in the course:

- A** if $x \geq 900$,
B if $800 \leq x \leq 899$,
C if $700 \leq x \leq 799$,
D if $600 \leq x \leq 699$,

F if $x < 600$

Course Content:

Chapter 1: Fundamentals

- 1.1 Real Numbers
- 1.2 Exponents and Radicals
- 1.3 Algebraic Expressions
- 1.4 Rational Expressions
- 1.5 Equations
- 1.6 Complex numbers
- 1.7 Modeling with equations
- 1.8 Inequalities
- 1.9 Coordinate geometry
- 1.10 Lines

Chapter 2: Functions

- 2.1 What is a function?
- 2.2 Graphs of function
- 2.3 Getting information from the graphs of a function
- 2.4 Average rate of change of a function
- 2.5 Transformation of functions

2.6 Combining functions

2.7 One to one functions and their inverses

Chapter 3: Polynomial and Rational Functions

- 3.1 Quadratic functions and models
- 3.2 Polynomial functions and their graphs
- 3.3 Dividing polynomials
- 3.4 Real zeros of polynomials
- 3.5 Complex roots and the Fundamental Theorem of Algebra
- 3.6 Rational functions

Chapter 4: Exponential and Logarithmic Functions

- 4.1 Exponential function
- 4.2 The natural exponential function
- 4.3 Logarithmic functions
- 4.4 Laws of logarithms
- 4.5 Exponential and logarithmic equations
- 4.6 Modeling

Rescheduling of Examinations:

Students may request to reschedule one or two of their final examinations if they have three or four exams on the same day. The student must submit a formal written request to reschedule an exam at least two weeks before the first day of final exams. The request must be made to the dean of the college in which the course(s) is taught.

Student Conferences:

Any student making a failing grade during the semester is urged to make a conference with the instructor.

Absence Policy:

Your presence is required in order to learn the course material. **You must attend 2/3 of all scheduled classes days. (This means you can miss no more than 14 days of class, excused or unexcused.)** Let the instructor know if you are going to be absent in order that you may get the assignments ahead of time. **You MUST make arrangements with the instructor if you are going to miss a test. ONLY ONE MAKEUP will be allowed! DO NOT MISS A TEST!!!**

Lecture Videos:

I usually post videos of my lectures within a day or two of class. If you do not wish to be in the video please take beware of the camera. Also, I may ask you to serve your classmates by operating the camera from time to time. That counts towards your Participation grade.

Assessment Day: As a part of the University's plan to assess institutional effectiveness, a day is set aside each semester (except Summer Semester) for assessment activities. Although no day classes meet on this designated day, students are required to participate in assessment activities when they are called upon to do so.

Disability: The University of West Alabama strives to make its programs accessible to qualified persons defined as disabled under Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act. Students who have special needs that require accommodation are responsible for notifying instructors in each course in which they are enrolled and appropriate staff members, who in turn will refer the student to the ADA Compliance Coordinator. Following verification of the student's status, the ADA Compliance Coordinator will work with the instructor or staff member in implementing an appropriate plan for accommodation of the student's needs. Support documentation of special needs from a physician or other qualified professional will be required if deemed necessary. For additional information, students should contact the Student Success Center, Foust Hall Room 7, (205) 652-3651, or the Office of Student Life, Webb Hall, Room 311, (205) 652-3581.

Honesty/Integrity: The UWA Academic Dishonesty policy stated in the *General Catalogue* and the student handbook will be followed in this course.

COVID-19 Syllabus Statement: safety procedures during the pandemic

Due to the COVID-19 pandemic, faculty, staff, and students will be required to take necessary safety precautions to reduce the risk of spread of COVID-19. The following procedures are required for the duration of the pandemic and may be updated as circumstances require:

- Staying at home or self-isolating. When you are sick with any known symptoms of COVID-19 or encounter someone known or suspected to have or have been exposed to COVID-19, you are advised to contact your health care provider and are not allowed to come to class until you meet the return to campus guidelines provided for in the University's Operational Plan for Fall Semester 2020. Please contact your instructor through email or phone as soon as possible. Your instructor will work with you to provide any content or materials in an alternate format, so you should not fear missing valuable information. Knowingly attending classes or participating in university functions following a possible exposure, after the onset of suspected symptoms, or while awaiting test results will result in potential disciplinary action.
- Practicing hand hygiene and respiratory etiquette. Frequent hand washing with soap and water for at least 20 seconds or use of hand sanitizer that contains at least 70% alcohol is highly recommended. Cover your coughs and sneezes.
- Wearing facial coverings. All faculty, staff, and students must wear facial coverings in classrooms, labs, shared office spaces, during on-campus gatherings, and in any other setting on campus when social distancing is difficult to maintain. In the classroom setting, faculty, at their discretion, may require students to wear facial coverings at all times during class regardless of whether social distancing is achievable. Review the proper way to wear, remove, and wash your facial covering. Video tutorials are available.
- Social distancing. Academic departments have rearranged schedules and physical spaces to maintain, so far as possible, workable and safe social-distancing arrangements.
- Cleaning and disinfecting learning spaces between use. To minimize sharing of high touch surfaces, students will be assigned specific seating, lab equipment, and computers when feasible. Faculty and students will have ample opportunity to wipe down/disinfect their workspace before and after each class.
- Scheduling virtual meetings between faculty and students. While faculty members will maintain their regularly scheduled office hours, they will also work with you to conduct these office hour meetings via telephone or teleconference. If a virtual meeting is neither possible nor desired, other arrangements, such as meeting outside or in a large space, will be made.

Please note that due to the ever-changing nature of COVID-19, the course schedule is subject to change. Should university officials need to suspend campus operations for any reasons, and if said closures affect scheduled class meetings and/or assignment due dates, the course will proceed through alternate means. In such circumstances, your instructor will contact you through email with instructions for how to proceed.

Contingency Statement:

If the University suspends in-person class meetings and we begin all online instruction then you should expect to complete Tests and Quizzes at the same time as was previously indicated in the

Course Planner. Homework which was to be collected in person will be collected as pdfs through some online method. Further advice on the creation of pdf-scans of homework and the method of communication of said pdf's will be announced soon after the event we suspend residential classes.

Content/Schedule Change: The instructional schedule reflects expected class progress in course subject matter and is considered tentative. The schedule is subject to change in content and scope at the instructor's discretion. The instructor will make corrections as needed and will announce changes in the class.