Mathematical Applications

MATH 121 – 06A

Fall 2026

Instructor:	Dr. Atul Anurag	**Meeting Days:**	Tuesday and Thursday
Email:	aanurag@lander.edu	**Meeting Time:**	11:00 a.m.–12:15 p.m.
Office:	LL 315	**Classroom:**	LL 117
Phone:	864-388-8297	**Course Platform:**	Blackboard and WebAssign

Office Hours

Office hours are provided for your benefit. You are encouraged to stop by whenever you need clarification, help with course material, or guidance on preparing for assessments.

Day	Time
Monday	10:50–11:50 a.m.
Tuesday	9:50–10:50 a.m.
Wednesday	10:50–11:50 a.m.
Thursday	9:50–10:50 a.m.

By Appointment: If you are unable to attend my scheduled office hours, appointments may be arranged by email. Please email me at least 24 hours in advance to schedule a meeting.

Course Description and Rationale

This course introduces students to a variety of mathematical topics and methods used in management, life, and the social sciences. The course provides opportunities for students to:

1. analyze written problems and identify relevant information;
2. select and apply appropriate mathematical methods;
3. interpret mathematical results in context; and
4. communicate solutions clearly using appropriate terminology, notation, and symbols.

Textbook and Required Materials

Textbook: *Mathematical Applications for the Management, Life, and Social Sciences*, 12th edition, by Ronald J. Harshbarger and James J. Reynolds.

Required materials:

- Cengage WebAssign access;
- regular access to a computer and reliable internet connection;
- a scientific calculator, such as the TI-30XS MultiView; and
- writing materials for classwork, quizzes, and examinations.

Calculators with computer algebra system capabilities are not permitted on examinations. The instructor reserves the right to inspect or clear calculator memory before an examination or quiz.

Student Learning Outcomes

Upon successful completion of the course, students should be able to:

1. analyze and graph linear and quadratic functions;
2. solve linear equations, inequalities, and systems of linear equations;
3. formulate and solve elementary linear-programming problems;
4. work with exponential and logarithmic functions;
5. solve applied problems involving growth and decay;
6. apply formulas involving simple interest, compound interest, annuities, amortization, and present value; and
7. communicate mathematical reasoning clearly and accurately.

Course Topics

- functions and problem solving;
- linear equations and linear functions;
- systems of linear equations;
- linear inequalities and elementary linear programming;
- quadratic equations and quadratic functions;
- exponential and logarithmic functions;
- applications of exponential and logarithmic models; and
- mathematics of finance.

Evaluation and Grading

Course Component	Weight
Four in-class examinations (16% each)	64%
Comprehensive final examination	16%
Class assignments and WebAssign homework	20%
Total	**100%**

Grade	Range
A	90–100
B+	87–89
B	80–86
C+	77–79
C	70–76
D+	67–69
D	60–66
F	Below 60

Course Policies

Attendance and Participation

Regular attendance and active participation are essential for success. Students are expected to attend every class, arrive on time, participate appropriately, and contribute to a respectful learning environment. Every absence beyond three may result in a one-letter-grade penalty. Documented university-approved absences will be handled according to university policy. Students are responsible for material and announcements missed during an absence.

Homework and WebAssign

Homework will normally be assigned through WebAssign. Due dates will be announced in WebAssign and/or Blackboard. Students should begin assignments early and should not wait until the final hours before a deadline. Extensions will be granted only in exceptional circumstances and should be requested before the deadline whenever possible.

Examinations

There will be four in-class examinations and a comprehensive final examination. Tentative exam dates will be announced in the course schedule and confirmed in class. Make-up examinations will be permitted only for documented, legitimate circumstances and at the instructor's discretion.

Email Communication

Course announcements may be sent through Blackboard or Lander email. Students are expected to check both regularly. When emailing the instructor, include your full name, course number, section, and a clear description of your question.

Electronic Devices

Electronic devices may be used only when they support the instructional activity taking place. Phones should be silenced and put away during class. Students who must take an urgent call or message

should quietly step outside.

Artificial Intelligence

Generative artificial intelligence tools may not be used to complete work submitted for a grade unless the instructor gives explicit written permission for a particular assignment. Unauthorized AI-generated or AI-assisted work may receive a grade of zero and may be referred as a possible academic-integrity violation.

Important Fall 2026 Dates

Academic Dates		Holidays and Breaks	
August 17	Classes Begin	**September 7**	Labor Day; University Closed
August 21	Drop/Add Ends	**October 8–9**	Fall Break
December 4	Last Day to Withdraw	**November 3**	Election Day; University Closed
December 7	Reading Day	**November 25–27**	Thanksgiving Break
December 8–14	Final Examinations		

The final-examination date and time for this section will be announced after confirmation of the official university examination schedule.

Tentative Course Schedule

The schedule below is tentative and may be adjusted to support student learning, accommodate university closures, or respond to the pace of the class. Changes will be announced in class and through Blackboard.

Date	Class	Topics and Assessments
August		
Aug. 18	1	Course introduction; syllabus; Section 1.1: Functions and Problem Solving
Aug. 20	2	Section 1.2: Solutions of Linear Equations
Aug. 25	3	Section 1.2: Solutions of Linear Equations, continued
Aug. 27	4	Section 1.3: Graphs of Linear Functions
September		
Sept. 1	5	Section 1.3: Graphs of Linear Functions, continued
Sept. 3	6	Section 1.4: Systems of Linear Equations
Sept. 8	7	Section 1.4: Systems of Linear Equations, continued
Sept. 10	8	Section 1.5: Applications of Linear Equations and Systems
Sept. 15	9	Section 1.5: Applications, continued; Chapter 1 review
Sept. 17	10	**Exam 1: Chapter 1**

Date	Class	Topics and Assessments
Sept. 22	11	Section 2.1: Solutions and Graphs of Linear Inequalities in One Variable
Sept. 24	12	Section 2.2: Graphs of Linear Inequalities in Two Variables
Sept. 29	13	Section 2.2: Graphs of Linear Inequalities in Two Variables, continued
October		
Oct. 1	14	Section 2.3: Applications of Linear Inequalities and Feasible Regions
Oct. 6	15	Section 2.3: Elementary Linear Programming; Chapter 2 review
Oct. 8	–	**Fall Break—No Classes**
Oct. 13	16	**Exam 2: Chapter 2**
Oct. 15	17	Section 3.1: Quadratic Equations
Oct. 20	18	Section 3.2: Graphing Quadratic Functions
Oct. 22	19	Section 3.2: Graphing Quadratic Functions, continued
Oct. 27	20	Section 3.3: Applications of Quadratic Functions
Oct. 29	21	Section 3.3: Applications, continued; Chapter 3 review
November		
Nov. 3	–	**Election Day—University Closed**
Nov. 5	22	**Exam 3: Chapter 3**
Nov. 10	23	Section 4.1: Exponential Functions
Nov. 12	24	Section 4.2: Logarithmic Functions
Nov. 17	25	Section 4.2: Logarithmic Functions, continued
Nov. 19	26	Section 4.3: Exponential and Logarithmic Applications
Nov. 24	27	Section 4.3: Applications, continued; Chapter 4 review
Nov. 26	–	**Thanksgiving Holiday—No Classes**
December		
Dec. 1	28	**Exam 4: Chapter 4**
Dec. 3	29	Sections 5.1–5.2: Simple Interest and Compound Interest
Dec. 7	–	**Reading Day—No Classes**
Dec. 8–14	–	**Comprehensive Final Examination** at the university-scheduled time; the final examination will include the remaining mathematics-of-finance material and cumulative course content

Note: Homework assignments will generally be completed through WebAssign and will be announced in class and through Blackboard. Examination dates and topic coverage may be adjusted if necessary.

Academic Integrity

Students are expected to comply with the Lander University Academic Honor Code. Academic dishonesty includes, but is not limited to:

- discussing examination or quiz problems with unauthorized persons;
- using unauthorized resources during an assessment;
- submitting work completed by another person;
- copying another person's work and presenting it as one's own;
- looking at another student's work during an examination;
- using materials not explicitly approved by the instructor;
- altering graded work and resubmitting it; and
- using generative AI tools when their use has not been authorized.

Violations will be handled according to university procedures and may result in a failing grade on the assignment, a failing grade in the course, and/or additional university sanctions.

Classroom Responsibilities

Students are expected to:

- read and follow the syllabus and all course procedures;
- prepare for class and complete assigned work on time;
- check Lander email and Blackboard regularly;
- communicate questions and concerns promptly;
- treat classmates, the instructor, and the learning environment respectfully;
- avoid disruptive behavior, including inappropriate device use; and
- refrain from giving, receiving, or using unauthorized assistance.

University Policies and Resources

Inclement Weather

Students should not risk traveling when conditions make travel unsafe. When the university cancels classes, official information will be communicated through university channels. If the university remains open and a student cannot travel safely, the student should contact the instructor and remains responsible for material covered.

Accessibility and Accommodations

Students who require academic accommodations should contact the appropriate Lander University office and provide the required documentation. Approved accommodations will be implemented after

the instructor receives official notification.

Nondiscrimination and Title IX

Lander University is committed to equal opportunity and prohibits discrimination and harassment as described in university policy. Students should consult the university's current nondiscrimination and Title IX resources for reporting options, support services, and grievance procedures.

Student Support

Students experiencing academic difficulty are encouraged to contact the instructor early, attend office hours, use available tutoring and academic-support services, and communicate before problems become unmanageable.

Changes to the Syllabus

The instructor reserves the right to modify this syllabus when necessary to meet the learning objectives of the course or respond to changes in the university calendar. Students will be notified of substantive changes in class and/or through Blackboard.

Successful mathematics students practice consistently, ask questions early, and learn from mistakes.