MAT1021.E1 Quantitative Methods for Business I
Spring 2023

PROFESSOR INFORMATION:
Name: Dr. Jackie Johnston
Phone Number: 972-279-6511 ext. 261
Email Address: **JJohnston**@Amberton.edu

COURSE INFORMATION:
MAT1021.E1 Quantitative Methods for Business I
Level: Undergraduate
Beginning Date of Session: Saturday, March 11, 2023
Ending Date of Session: Thursday, May 18, 2023
Student access available to the Student Portal: Saturday, March 11, 2023.

Students enrolled in distance learning courses are not assessed any additional fees for security or identity verification.

COURSE PREREQUISITES:
None

TEXTBOOK(S) AND REQUIRED MATERIALS:
Title: Business Precalculus
Author: David Lippman
Publisher: (Creative Commons Attributions 2.0) Lulu
Year Published: 2016
Edition: 1st
ISBN: 10:22667462 or 13:9780000129506
Price: Available at http://amberton.ecampus.com

Amberton University has an agreement with eCampus.com to provide a full-service online bookstore to students. The Amberton University Virtual Bookstore is accessible through the University's website, www.Amberton.edu. There is also a bookstore link in the Student Portal.

The AU Virtual Bookstore provides an easy to use interface, online buyback of books, and same day shipment of most titles with an average delivery time of 2-3 days depending on the student's location. Textbook options include new, used, rental, and electronic media as available.

Since no books are sold on campus, students should plan accordingly and purchase their books in advance of the first day of class, allowing time for shipping. Be certain you are enrolled in the course before purchasing your book(s). All textbook information (Title, Author, ISBN, etc.) is available in the course syllabi so students can shop competitively. Most textbooks can be purchased from many different textbook vendors. Some textbooks may only be available on the University's Virtual Bookstore. Students should be careful to obtain the exact resource(s) required for the course.

APA Requirement
APA (American Psychological Association) style is most commonly used to cite sources within the social sciences. This resource, revised according to the 7th edition, offers examples for the general format of APA research papers, in-text citations, endnotes/footnotes, and the reference page. For more information, please consult the Publication Manual of the American Psychological Association, (7th ed.). All coursework at Amberton University will comply with the standards contained in the APA Publication Manual.

COURSE COMPETENCIES:

The following represents the course competencies for this class. Competencies are equivalent for all lecture and distance learning courses. Following each competency is the assignment used to gain mastery of this area of study.

The course presents the application of common algebraic functions (including polynomial, exponential, logarithmic, and rational) to problems in business, economics, and the social sciences. The applications include mathematics of finance, including simple and compound interest and annuities; systems of linear equations; matrices; linear programming; and probability, including expected value.

UPON COMPLETION OF THE COURSE, THE STUDENT WILL BE COMPETENT IN:

1. Graphing on the coordinate plane.
2. Applying polynomials, rational expressions, exponents, and radicals.
3. Solving systems of equations.
4. Utilizing linear, quadratic, exponential and logarithmic functions.
5. Designing linear functions for business operations.
6. Graphically analyzing linear programming problems.
7. Maximizing and minimizing linear systems.
8. Identifying key steps in Gauss-Jordan elimination.
9. Utilizing laws of matrix algebra for problem solving.
10. Performing mathematical operations on matrices.
11. Illustrating identity and inverse matrix concepts.
12. Constructing an input/output matrix.
13. Designing linear programming models.
14. Expressing analytical thinking, orally and in writing, and applying that knowledge to other disciplines and to real-world situations.
15. Applying linear programming methods to solve application problems.
16. Applying probability analyses to model applications to solve real-world problems.
17. Solving mathematics of finance problems, including the computation of interest, annuities, and amortization of loans.
18. Demonstrating fundamental probability techniques and application of those techniques, including expected values, to solve problems.

COURSE POLICIES:
All assignments (homework/participation) and exams are due according to Moodle due dates. Late work may be accepted at the discretion of the instructor, so view the due dates in Moodle as the last possible moment for submission. No extra credit or makeup work will be given. All homework assignments and exams will be complete via MyOpenMath which will be accessed through Moodle. Participation is through emails, Moodle messaging, and discussion forums. Chats are NOT mandatory but may be very helpful.

Student's Responsibilities
This syllabus contains information, policies and procedures for a specific course. By enrolling, the student agrees to read, understand and abide by the policies, rules, regulations, and ethical standards of Amberton University as contained in the current university catalog and schedule of classes.

Attendance Policy:
Regular and punctual class attendance and engagement is expected at Amberton University. In case of an absence, it is the student's responsibility to contact the professor as soon as possible. If a student intends on withdrawing from a course, it is the student's responsibility to follow the university's policy on formally withdrawing from a course. **Ceasing to attend classes does not constitute an official withdrawal.**

Attendance in a lecture course is defined as punctual arrival to, and engagement in, a full lecture session. Attendance in a distance learning course is defined as active participation in the weekly online class sessions. "Active participation" can be defined as: submitting an academic assignment, taking an exam, engaging in an interactive tutorial, participating in an online discussion forum (or chat session), or initiating (or responding to) a

communication with a faculty member about an academic assignment or the subject matter of the course. A student not meeting these requirements may be dropped at the discretion of Amberton University.

Plagiarism Policy
Plagiarism is the presentation of someone else's work as though it were your own. If you use another person's words, ideas, or information; or if you use material from an outside source – whether a book, magazine, newspaper, business publication, broadcast, speech, or electronic media – you must acknowledge that source. Plagiarism is a violation of the University's code of student ethical conduct and is one that is taken seriously. Amberton University operates on an honor system; therefore, honesty and integrity are essential characteristics of all who are associated with the institution. All Amberton students are expected to abide by the honor system and maintain academic integrity in all their work. Amberton University and its instructors monitor student work for plagiarism and reserve the right to submit such work to technology-based plagiarism detection services and applications at any time.

Students agree that by taking this course, all required assignments may be subject to submission for a textual similarity review to Turnitin.com for the detection of plagiarism. All submitted papers will be included as source documents in the Turnitin.com reference database solely for the purpose of detecting plagiarism in future papers. Use of Turnitin.com service is subject to the Usage Policy posted on the Turnitin.com website.

Turnitin is a writing improvement and plagiarism prevention tool which uses special algorithms, to compare text-based student submissions to the Turnitin database and other online sources. Turnitin produces a detailed **similarity report** that can be customized and viewed by instructors and students.

Turnitin "Draft Coach" is a Google based add-on to Turnitin which supports students in developing high-quality academic writing; and serves as an integrity coach. Draft Coach, helps address errors and improve the quality of student's writing by highlighting grammar mistakes, identifying incorrectly cited sources, and scanning for similarity across several databases. By providing formative feedback on how to address citation issues, incorrect grammar, and matches with the Turnitin database, Draft Coach provides explanations to help students become more confident writers, capable of producing higher quality work both in academics and in the workplace.

COURSE OUTLINE AND CALENDAR:
 I. Algebra Reference
    A. Polynomials
    B. Factoring
    C. Expressions and Equations
    D. Inequalities
    E. Exponents and Radicals

 II. Linear Functions
    A. Slopes and Equations of Lines
    B. Applications
    C. Systems of Linear Equations
    D. Graphical Methods
    E. Substitution and Addition Methods

 III. Matrices
    A. Addition and Subtraction
    B. Multiplication
    C. Inverses
    D. Row Reduction Methods
    E. Input-Output Models

 IV. Linear Programming
    A. Linear Inequalities

B. Graphical Methods
C. Applications
D. Slack Variables and Pivoting
E. Simplex Method
F. Maximization and Minimization

V. Non-linear Functions
A. Functional Properties and Graphs
B. Quadratic and Polynomial Functions
C. Rational, Exponential and Logarithmic Functions
D. Applications to Business

Week	Topic	Assignment	Competencies Covered	Due Date
1	Functions	Sections 1.1 – 1.3	2, 5	3/22/23
2	Functions and Lines, Inequalities	Sections 1.4 – 1.5, 3.1 Discussion Forum #1: Introduction	1, 2, 4, 5	3/22/23
3	Functions and Lines, Systems of Equations	Sections 1.6 – 1.7, 2.1	2, 3, 4, 5	3/29/23
4	Systems of Equations & Matrices	Sections 2.2 – 2.4	3, 9, 12, 13, 14, 16	4/5/23
5	Midterm	Discussion Forum #2: Midterm Concepts Midterm Exam	1, 2, 3, 4, 5, 9, 12, 13, 14, 16, 18	4/12/23
6	Linear Programming	Sections 3.2 – 3.3, 3.5	6, 7, 8, 15, 17	4/19/23
7	Polynomial and Rational Functions	Sections 4.1 – 4.3	2, 4, 18	4/26/23
8	Exponential and Logarithmic Functions	Sections 5.1 – 5.3	4	5/3/23
9	Finance & Probability	Sections 6.1 – 6.4, 8.1, 8.4	18	5/10/23
10	Final	Discussion Forum #3: Final Concepts Final Exam	2, 4, 6, 7, 8, 15, 17, 18	5/17/23

GRADING CRITERIA:

Midterm Homework/Participation	25%
Midterm Exam	25%
Final Homework/Participation	25%
Final Exam	25%
Total:	100%

Undergraduate
90 – 100   A
80 – 89   B
70 – 79   C
60 – 69   D
Below 60   F

GRADE NOTIFICATION AND INSTRUCTOR FEEDBACK:
A successful distance learning experience requires a flow of communication between instructor and student throughout the session. Instructor comments are considered essential to the learning process. Therefore,

each assignment/exam submitted will be reviewed, graded and returned to the student in a timely manner along with the appropriate commentary. Students should carefully review all comments.

Final grades are processed approximately one week after the last day of the session and may be located in the My Grades section of the online registration portal as well as being emailed to the student's Amberton University email. Amberton University staff will not release grades over the phone. University instructors will not leave a message with comments or grades in any type of media that is not secure.

For questions regarding grades after the semester has ended, students should use their university email account and contact the instructor at the faculty email address as provided above in *Professor Information* area.

Incomplete Grades
An "I" (incomplete grade) is given at the discretion of the professor and may be given only when an emergency or illness prevents the student from completing course requirements. Should an "I" be granted, the student has 30 days from the end of the session to complete the conditions of the incomplete. An "I" which is not properly removed within 30 days following the session enrolled will become an "F" grade.

How To Withdraw From a Course
To be official, the class withdrawal must be in writing and signed by the student requesting the withdrawal; no withdrawal is accepted verbally. Please review the "Schedule of Classes" (online or in-print) for procedures for class changes or withdrawals and the refund policy and schedule.

COURSE DELIVERY METHODOLOGY:
This course is offered as a distance-learning course through the Moodle Learning Platform. Amberton's distance learning courses, called e-Courses, are identical to classroom courses in terms of learning outcomes, competencies, and instructor expectations. A student choosing to take an e-Course must have the following skills and technical capabilities:

1. Access to the Internet
2. General knowledge in:
    Internet browser settings and configuration
    e-mail and file attachments
    Uploading and downloading files
    Using a word processing package
3. Ability to conduct on-line research

Students who have not mastered these skills should not enroll for this course, but should consider enrolling in MIS2110 Computer Concepts and Internet Technologies for instruction in these areas.

HOW TO ACCESS YOUR COURSE:

Through the Amberton University Student Portal
Students enrolled in distance learning courses using the Moodle Learning Platform may access the course through the Amberton University Student Portal. The site may be accessed through the University's main page (http://www.Amberton.edu) or at http://apps.Amberton.edu. After selecting the "Student Portal" link, you will be prompted for a Username and Password.

Use your assigned **username and password** (AUID) as described below to enter the AU Student Portal:

Username = your capitalized firstname **initial**+lastname+last 3 digits of your SSN.
* Use your name exactly as it is listed on the University's records, including any suffixes or hyphenations, such as Jr, Sr, or II, as a part of your username.

For example: James Jones, Jr.   SSN: 123-45-6789
Username: JJonesJr789

Password = your Amberton University ID# (AUID) **including the dashes**

For example: 04-999-999

Once your login has been validated, you may select from a variety of menu options, including your individual E-Course, email account, Remote Research, General Tools, all Syllabi, Research Tutorials and Electronic Instructor Folders (FTP).

If you are accessing the Student Portal from a public or shared computer, close the browser completely when finished, or click on the Logout button. For security purposes, no other person should have access to your Username or Password. If you feel your information has been compromised or if you experience technical difficulties, contact the e-course system administrator at: e-sysop@amberton.edu

If you have lost or do not know your Amberton ID#, please contact the Student Services Office 972/279-6511 or advisor@Amberton.edu for a replacement AUID card. You must know your Amberton ID# to gain access to the course and to send email to your professor.

Through the Amberton University Moodle Website
Students enrolled in distance learning courses using the Moodle Learning Platform may also access the course by going to: http://moodle.Amberton.edu

For those utilizing Moodle for the first time, the **username and password** for the Moodle Learning Platform will be emailed to the student's University email account prior to the start of the course. For those returning to Moodle who do not remember their username and password, click on the link "*Forgotten your username or password*" available on the Moodle log in page (http://moodle.Amberton.edu). Otherwise use the same username and password as previous session.

Moodle Tutorial:
Upon successful log in and access to the Moodle learning platform, there is a *Student Moodle Tutorials* course available, to learn about the basics of Moodle. Simply click on the link for the *Student Moodle Tutorials* and read through the various learning topics: Navigating; Communicating; Assignments & Exams; Grades; and Student Resources.

COURSE COMMUNICATIONS:
Students will communicate with faculty through the Moodle Learning Platform or the Amberton University email system.
Each student enrolled is assigned an Amberton email account, which gives the student access to the Amberton email system (my.Amberton.edu). This email account is provided by Google Apps for Education. Students are encouraged to check their email regularly for University news, notices, and to communicate with instructors.

The student's assigned email address would be Username@my.Amberton.edu

Example: LJones-Smith789@my.Amberton.edu

The student Username is determined by:

firstname initial+lastname+last 3 digits of student ssn.

For example: Linda Jones-Smith   SSN: 123-45-6789
Email Address = LJones-Smith789@my.Amberton.edu

Students will be prompted for a Username and Password when accessing their email account. Use the Username portion of the email address as the username (Example: LJones-Smith789) and your Amberton ID# (including the dashes) as the password.

If you already have a Google gmail account, you might be prompted to add this account to your current account. Click 'Yes' and you will be logged into your my.Amberton.edu email account. It will be a separate email account from your personal gmail account.

If you need assistance with your email account, please visit https://support.google.com/mail

Students are responsible for reviewing the "Communication Guidelines" provided on the individual E-Course for specific instructor requirements.

Upon completion of a session, all communication and course specific information is removed from the Moodle system. If a student needs to maintain a record of communications or assignments, the student is strongly encouraged to print out or download these items to a disk for their own records.

FORMAT AND SUBMISSION OF ASSIGNMENTS:
Assignments are to be submitted to the appropriate assignment Drop Box in the Moodle system. Specific directions and guidelines for submission of assignments are located on-line in the "Communication Guidelines" of the e-course. Due to compatibility issues, Office 2007 files cannot be read by earlier versions of Microsoft Office. Before submitting an exercise file, confirm the file is in the proper format for grading by the instructor.

INSTRUCTOR/COURSE EVALUATION:
Each session, all Amberton students are provided with the opportunity to evaluate their courses and instructors. The evaluation process is an important one and provides students with an anonymous and confidential way to give meaningful feedback to the University. Summary information and comments are provided to faculty after the close of the session. All information provided is anonymous.

The Instructor/Course Evaluation will be open for completion during week 9 of the session. An evaluation assignment will be placed in week 9 of the Moodle course, along with the instructions on how to complete the evaluation. Prior to week 9, the University will send out an email containing instructions and dates for the evaluation period.

RESEARCH RESOURCES:
The Library provides access to full-text, and peer reviewed articles, and digital research tools. Students can search Library holdings through the online catalog and databases search engines available on the Library website or browse the physical library space and holdings located at the Garland campus.

Research items not contained in the Amberton Library collection can be located through interlibrary Loan (ILL) or through the TexShare program with the help of the Library staff. Students with questions about available services, resources, or research, may contact the Library via email at Library@amberton.edu.

RESEARCH ACCESS:
Databases can only be accessed by authorized users, and students at Amberton must enter their Amberton ID credentials-same as Moodle login-to gain access when off-campus. Use an Amberton website, such as the University site (Amberton.edu) or the library site (Library.amberton.edu) to find links to databased and digital books. Online resources are available all day, every day.

Library Live Chat Feature
Library staff are available to assist students with research problems or questions during Library hours through a live online chat feature, telephone, email, "How-to" videos, or in person. The Library telephone is (972-279-6511 ext. 136, 137, or 138. You can email questions to library@amberton.edu or visit the Library in person on the Garland campus for assistance.