MATH-1200 College Algebra  
Fall 2019

Days, time & place:  MWF 1:00-1:50 pm in PRH - 6
Semester: Fall 2019
Credits: 3
Prerequisites: Grade of C- or better in MATH-0260 (or equivalent)

Instructor
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Course Description:
Brief review of algebraic essentials, graphs, functions and their graphs, linear and quadratic functions, polynomial and rational functions, exponential and logarithmic functions, systems of linear equations. Intended for students needing more preparation before taking MATH 1320 or MATH 1400. Fall, spring and summer.

Course Objectives
The main objective of this course is to introduce the fundamental mathematical concepts required for subsequent Calculus courses introducing and exploring in depth the concept of function. Incorporating the technical skills acquired in previous Algebra courses to the conceptual understanding of functions, students will learn the power and utility of mathematics in modeling the real world.

Review
- Algebra Essentials
- Factoring Polynomials
- Rational Expressions
- nth Roots; Rational Exponents
- The Distance and Midpoint Formulas
- Quadratic Equations
- Complex Numbers; Quadratic Equations in the Complex Number System
- Radical Equations; Equations Quadratic in Form; Absolute Value Equations
- Factorable Equations
- Solving Inequalities

Course Outline
Chapter 1: Graphs
- Intercepts; Symmetry; Graphing Key Equations
- Lines
- Circles
- Variation
Chapter 2: Functions and Their Graphs
- Functions
- The Graph of a Function
- Properties of Functions
- Library of Functions; Piecewise-Defined Functions
- Graphing Techniques: Transformations
- Mathematical Models: Building Functions

Chapter 3: Linear and Quadratic Functions
- Linear Functions and Their Properties
- Linear Models: Building Linear Functions from Data
- Quadratic Functions and Their Properties
- Build Quadratic Models from Verbal Descriptions and from Data
- Inequalities Involving Quadratic Functions

Chapter 4: Polynomial Functions
- Polynomial Functions and Models
- The Real Zeros of a Polynomial Function
- Complex Zeros; Fundamental Theorem of Algebra
- Polynomial Inequalities

Chapter 5: Exponential and Logarithmic Functions
- Composite Functions
- One-to-One Functions; Inverse Functions
- Exponential Functions
- Logarithmic Functions
- Properties of Logarithms
- Logarithmic and Exponential Equations
- Financial Models
- Exponential Growth and Decay Models

Chapter 6: Rational Functions
- Properties of Rational Functions
- The Graph of a Rational Function
- Rational Inequalities

Chapter 8: Systems of Equations and Inequalities
- Systems of Linear Equations: Substitution and Elimination

Student Learning Outcomes:
1. Students will demonstrate a knowledge of Lines and Circles and their graphs
2. Students will demonstrate a knowledge of Functions and Their Graphs
3. Students will demonstrate a knowledge of Inverse Functions
4. Students will demonstrate a knowledge of Linear Functions, Their Properties, and Linear Models
5. Students will demonstrate a knowledge of Quadratic Functions and Their Properties
6. Students will demonstrate a knowledge of Inequalities Involving Quadratic Functions
7. Students will demonstrate a knowledge of Polynomial and Rational Functions
8. Students will demonstrate a knowledge of Exponential Functions
9. Students will demonstrate a knowledge of Logarithmic Functions
10. Students will demonstrate a knowledge of Exponential Growth and Decay Models
11. Students will demonstrate a knowledge of Systems of Equations and Inequalities
12. Students will be prepared for MATH 1300, MATH 1320, MATH 1400, and MATH 1660
Saint Louis University - Madrid Campus is committed to excellent and innovative educational practices. In order to maintain quality academic offerings and to conform to relevant accreditation requirements, the Campus regularly assesses its teaching, services, and programs for evidence of student learning outcomes achievement. For this purpose anonymized representative examples of student work from all courses and programs are kept on file, such as assignments, papers, exams, portfolios, and results from student surveys, focus groups, and reflective exercises. Thus, copies of student work for this course, including written assignments, in-class exercises, and exams may be kept on file for institutional research, assessment and accreditation purposes. If students prefer that Saint Louis University - Madrid Campus does not keep their work on file, they need to communicate their decision in writing to the professor.

**Text book (optional)**


**Required work**

Online homework, three in-class exams, and a comprehensive final. Exams require at least 80% attendance. Homework will be assigned through Khan Academy. Registration in Khan Academy is mandatory, as all homework is conducted through it.

**Evaluation**

- **Online Homework:** Weekly homework will be mandatory and turned in through Khan Academy. No late homework will be evaluated.
- **In class exams:** 50 minutes exams consisting of some problems related to the material covered in class.
- **Final exam:** The final exam is cumulative. It will cover the *entire semester’s material*, will be a two or three hour exam, and will be similar in form to the midterm exams.
- **A positive evolution** in grades might have a positive impact in the overall grade.

*Remark:* No complaints about the grade of an exam will be accepted one week after the results have been announced.

**Grading system**

The final grade will be obtained as follows:

- 15% Online Homework.
- 50% In class exams
- 35% Final exam (comprehensive).

**Attendance Policy**

Attendance is mandatory. If attendance falls below 80% before any exam you will be able to take the exam but it will not be graded until attendance is above 80%. Any exam not graded will receive a grade of 0. Entering class 5 minutes late will count as 75% attendance, 10 minutes late 50% attendance, later than 10 minutes will count as an absence.

**College Algebra Lab – MATH 1200 M59**

College Algebra Lab is a completely free of charge course in order to help students fill knowledge gaps they might have.

Attendance is mandatory to all students performing poorly, so *any student might be required to register and attend the lab* any time at the professor’s discretion. This is not to be considered as a punishment but as the path for improving for students with poor performance in the exams. For the rest of the students, even though attendance is not required, it is highly recommended.
Missed exams policy
Midterm and final examinations must be written on their respective dates. No alternative examinations will be scheduled except in the case of excused medical absences (see paragraph below). Cases of excused medical absences must be petitioned for through the Chair of the department. Make-up exams are subject to approval by the professor, the Chair and the Division of Mathematics. As a rule, if approved, a make-up exam will be given the same day of the final exam.
Exams that are missed illegitimately result in a score of 0 in the final grade. Missing more than one exam results in an F grade for the entire course.

All changes to the final examination must be approved by the Academic Dean.

Excused Absences
Legitimate conflicts and excuses require written documentation and are limited to death or near death instances in the immediate family, a student's illness that requires immediate doctor's care (with the corresponding doctor’s note), a University sponsored event (not club sports) and regularly scheduled religious obligations. The documentation must be presented on the day the student returns to the university. Excuses that will NOT be considered include personal travel arrangements, non-University sponsored events, a conflicting appointment, or an illness that does not prevent you from coming to the exam.

E-mail
Campus and course announcements will often be handled by e-mail. Students should check their "@slu.edu" e-mail regularly.

Assessment of Student Learning
In order to maintain quality academic offerings and to conform to accreditation requirements, SLU-Madrid regularly assesses its teaching, services and programs for evidence of student learning. For this purpose, SLU-Madrid keeps representative examples of student work from all courses and programs on file, including assignments, papers, exams, portfolios and results from student surveys, focus groups and reflective exercises. Copies of your work for this course may be kept on file for institutional research, assessment and accreditation purposes. If you prefer SLU-Madrid not to retain your work for this purpose, you must communicate this decision in writing to your professor.

Important dates

- September:
  - 4 Wed: First day of classes.
  - 15 Sun: Last day to DROP a class without a grade of “W” and/or add a class. Last day to choose audit (AU), or Satisfactory/Unsatisfactory (S/U) Options.
  - 27 Fri: First in-class exam.

- October:
  - 11 Fri: Holiday (University closed).
  - 15 Tue: Last day to submit transfer application for Spring semester.
  - 25 Fri: Second in-class exam.

- November:
  - 1 Fri: Holiday (University closed).
  - 6 Wed: Registration for spring semester begins.
- 10 Sun: Last day to drop a class and receive a grade of W.
- 29 Fri: Third in-class exam.

- **December:**
  - 6 Fri: Holiday (University closed).
  - 9 Mon: Holiday (University closed).
  - 13 Fri: Final day of classes.
  - 19 Thu: Final Exam at 12:00 pm.

For other important dates, visit http://www.slu.edu/madrid/services-and-departments/registrar/academic-final-exams-calendar.php

**Things that you should do in order to get a good grade in this class:**

- Don’t miss classes, but if you ever have to miss one, ask one of your classmates (not me) for the notes as soon as possible and go over them before the next lecture.
- Do ALL the solved exercises recommended or as many as you need. I can’t emphasize this enough. All math classes require a lot of practice and this is not an exception.
- Work every week, and if possible, every day. If you don’t have an assignment or exercises to practice (that would be very rarely), review your class notes and go over the problems we have solved in class on your own one more time.
- Feel free to pass by my office to ask me if something is not clear from the lecture before the next lecture, you will probably have trouble understanding it otherwise.
- Form study groups and make sure that all members participate and learn from each other. Experience shows that math is more effectively learned when you work in groups.
- Write your homework and exams neatly and in an organized way. Remember that you are going to be evaluated **not only** on your knowledge of facts beyond the surface level, **but also** on your creative and critical thinking, your ability to draw conclusions and make connections, and to communicate information in a reasoning and organized way.

**Things that you shouldn’t do in this class:**

- Miss classes… Have I made it clear? Attendance is mandatory.
- Be late to the lectures, it is very disruptive to the other students and very disrespectful. Also, you miss the most important part of the lecture, where I say what we are going to do and sometimes do a short review of what we did in the previous class.
- Use your phone during the lectures, whether it is for texting or using internet or, obviously, talking, it is extremely disrespectful. I will not allow it and you will be invited to leave the room.
- Work on something else during classes. Again, you will be invited to leave the room.
- Get up and walk out of the class. It is very disruptive. If you are planning to get out to take care of some urgent issue, let me know in advance.
- Think that by just coming to class, you have all the work done. If you don’t practice, you will not learn the material.
- Try to study everything two days before the test. It is impossible to really understand this topic by rushing over the material in a few hours.
- Skip homework.
• Copy the homework from someone else. It is completely useless. The only purpose of the homework is to help you learn.
• Use graphing calculators or any other type of electronic device during tests or exams. It will be considered a violation of the Academic Honesty Code.

Academic Honesty/Integrity:

Academic integrity is honest, truthful and responsible conduct in all academic endeavors. The mission of Saint Louis University is “the pursuit of truth for the greater glory of God and for the service of humanity.” Accordingly, all acts of falsehood demean and compromise the corporate endeavors of teaching, research, health care, and community service through which SLU fulfills its mission. The University strives to prepare students for lives of personal and professional integrity, and therefore regards all breaches of academic integrity as matters of serious concern.

The full University-level Academic Integrity Policy can be found on the Provost’s Office website. Additionally, SLU-Madrid has posted its academic integrity policy online. As a member of the University community, you are expected to know and abide by these policies, which detail definitions of violations, processes for reporting violations, sanctions and appeals.

The professor will review these matters during the first weeks of the term. Please direct questions about any facet of academic integrity to your faculty, the chair of the department of your academic program or the Academic Dean of the Madrid Campus.

If allowed, only non-graphing scientific calculators may be used in tests or in the final examination. Other calculators and devices will be taken from students during the exam and students may have to start the exam again. Not following this regulation will be considered a violation of the academic honesty code.

Title IX Statement:

Saint Louis University and its faculty are committed to supporting our students and seeking an environment that is free of bias, discrimination, and harassment. If you have encountered any form of sexual misconduct (e.g. sexual assault, sexual harassment, stalking, domestic or dating violence), we encourage you to report this to the University. If you speak with a faculty member about an incident of misconduct, that faculty member must notify SLU's Title IX deputy coordinator, Marta Maruri, whose office is located on the ground floor of Padre Rubio Hall, Avenida del Valle, 28 (marta.maruri@slu.edu; 915-54-5858, ext. 213) and share the basic facts of your experience with her. The Title IX deputy coordinator will then be available to assist you in understanding all of your options and in connecting you with all possible resources on and off campus.

If you wish to speak with a confidential source, you may contact the counselors at the SLU-Madrid's Counseling Services on the third floor of San Ignacio Hall (counselingcenter-madrid@slu.edu; 915-54-5858, ext. 230) or Sinews Multipletherapy Institute, the off-campus provider of counseling services for SLU-Madrid (www.sinews.es; 917-00-1979). To view SLU-Madrid's sexual misconduct policy and for resources, please our policy posted online. Additional information is available at the University’s website “SLU is here for you.”

Disability Accommodations and Learning Resources:
In recognition that people learn in a variety of ways and that learning is influenced by multiple factors (e.g., prior experience, study skills, learning disability), resources to support student success are available on campus. Students who think they might benefit from these resources can find out more about:

- Course-level support (e.g., faculty member, departmental resources, etc.) by asking your course instructor.
- University-level support (e.g., tutoring/writing services, Disability Services) by visiting the Academic Dean's Office (San Ignacio Hall) or by reviewing the Academic Resources website online.

Students with a documented disability who wish to request academic accommodations must contact Disability Services to discuss accommodation requests and eligibility requirements. Once successfully registered, the student also must notify the course instructor that they wish to access accommodations in the course. Please contact Disability Services at disabilityservices-madrid@slu.edu or +915 54 58 58, ext. 230 for an appointment. Confidentiality will be observed in all inquiries. Once approved, information about the student's eligibility for academic accommodations will be shared with course instructors via email from Disability Services. For more information about academic accommodations, see the Disability Services webpage.

Note: Students who do not have a documented disability but who think they may have one are encouraged to contact Disability Services.

**Basic Needs Security Statement:**

Students in personal or academic distress and/or who may be specifically experiencing challenges such as securing food or difficulty navigating campus resources, and who believe this may affect their performance in the course, are encouraged to contact Marta Maruri, SLU-Madrid’s Director of Student Life (marta.maruri@slu.edu or 915 54 58 58, ext. 213) for support. Furthermore, please notify the instructor if you are comfortable in doing so, as this will enable them to assist you with finding the resources you may need.