

You can find the final exam and withdrawal date info on the PSC website; search for “final exam schedule” and “academic calendar”

Math 151 – Section # – College Algebra

### Syllabus – Semester/Year

**Instructor Information**

**Instructor:** YourName **Email**: Your PSC email

**Phone:** ????? (may delete this line if don’t have direct line at PSC)

**Office Hours:** List times available or put “by appointment”; givelocation

**Course Information**

**Class Meetings:** Day/Time **Classroom:** Room #

**Credit Hours:** 4 (Face-to-face lecture)

**Text:** College Algebra: A Concise Approach; Paul Sisson; ISBN: 9871935782049

 (lifetime access code required—includes electronic textbook)

**Other Materials:** Graphing calculator (TI-83 or TI-84 recommended)

 

If you do not have the means to purchase the textbook(s) for this class, the Prairie State College Foundation encourages you to visit [www.prairiestate.edu/foundation](https://email.prairiestate.edu/owa/redir.aspx?C=BqMMugfd3bQSke4iL1yE-r47vxn_OSh1HKGoLJGGq_K1zQI0ZwHWCA..&URL=http%3a%2f%2fwww.prairiestate.edu%2ffoundation) to learn if you qualify for scholarship assistance. Simply complete an application and you will be notified, either way, if you can be awarded. Apply today as scholarship applications are reviewed in the order in which they are received. Scholarships are awarded until the funds for the semester are exhausted. For questions, please contact Susan Sebastian at [ssebastian@prairiestate.edu](https://email.prairiestate.edu/owa/redir.aspx?C=AmYDzC-CV5StPyBwLamCtqSe8OJDWU_7eRCapQp1ywK1zQI0ZwHWCA..&URL=mailto%3assebastian%40prairiestate.edu)

**Prerequisites:** A “C” or better inMATH 095 (Elementary Algebra) and MATH 096 (Geometry), or a “C” or better in MATH 095 and one year of high school Geometry, or qualifying score on the Math Placement Test.

**Course Description:** This course extends on the concepts previously studied in Intermediate Algebra. Course material is approached both algebraically and graphically. The graphing calculator is used extensively. Topics covered include linear, quadratic, polynomial, rational, exponential, and logarithmic functions and their applications.

**College-wide General Education Learning Outcomes:** Prairie State College’s general education outcomes encapsulate the core knowledge and skills that we believe equip students to develop personally, as critical thinkers, and as global citizens. The specific general education learning outcome for this course is:

***Problem Solving*:** Students will locate and identify information, determine what problem exists, develop solutions, evaluate results, and extend results to new situations.

**More Course Information:** You can find further information about this course, such as the review for the final exam, on the Math Department Math 151 webpage <http://prairiestate.edu/academics/academic-programs/mathematics/courses/math-151.aspx>

**Methods of Evaluation**

**Quizzes & Tests:** Include information here about the number of quizzes and tests, how they are weighted/points each is worth, and how many (if any) will be dropped

**Homework**:

Include information here about the number of homework assignments, how they are weighted/points each is worth, and how many (if any) will be dropped. Also, be sure to include supplemental homework assignments to achieve the objectives not met in the HAWKES homework.

Sample statement on HAWKES mastery based learning system: All homework is graded using a mastery approach—you will have to get a certain percentage correct in order to get credit, but **you may do the assignment as many times as you want up until the deadline**

**Final exam**:

The final, which is cumulative, has 40 problems and is worth number of points or percentage. It will be held on Date/Time of final

**Grades**: Grades will be determined using the following (a points system may be used as long as the percentages fall within the allowed ranges)

Homework (at least 15%)

Quizzes

Other

 Tests (must be between 40-60%)

 Final (must be between 15-25%)

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 Total

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Grading Scale:** | 90%-100%A | 80%-89%B | 70%-79%C | 60%-69%D | 0%-59%F |

Grades will be rounded to the nearest whole percent.

**Note:** You need at least a C (70%) in this class in order to take the next course.

**Drop Deadline**: The last day to drop this class for a “W” grade is Drop deadline.

**Class Policies and Keys to Success**

**Keys To Success In This Course**: *Assuming that you have the prerequisites knowledge for this course*, your success depends on your willingness to exert sufficient effort. **This means a minimum of 8 hours of study (outside of class) per week**. Specifically, to succeed in this course you must:

1. Attend every class (arrive on time, and remain engaged in the class for the entire time)
2. Take notes
3. Participate in every class in ways that are beneficial to your learning
4. Work on your homework every day
5. Help your peers
6. Communicate with me when there is a problem
7. Seek help as soon as the need arises

**Assistance:** Numerous resources are available to assist you. These include your textbook, your study group, other class members, and the Student Success Center (located in **Room 2629**). You can schedule a **FREE** tutoring appointment by going to Room 2643 or calling Hattie at 708-709-3663 or Lisa at 708-709-3507.

**Group Participation Goals (*recommended statement if using group work)****:* The format of this class includes the use of small group problem solving activities. While students are in small groups, the following behaviors are expected:

* Work together to develop a solution.
* Have a solution that makes sense to you.
* Explain your thinking to your partner.
* Listen to each other and try to understand your partner’s solutions.
* Ask questions of each other when you do not understand or do not agree.
* Record your solution so that others will know what you did.

**Respect**: (***Recommended statement)*** Please conduct yourself in a way that is respectful of your fellow classmates and of your instructor. Respectful behavior allows the class to function effectively and encourages student success. If a student disrupts the class, everyone loses valuable class time. Violations will be reported to the Dean of Counseling.

**Cell Phones/Electronic Devices**: (***Recommended policy)*** When you come to class, cell phones should be silenced and all electronic devices, including tablets, should be put away (unless we are working on Hawkes). **Cell phones may not be used as a calculator on exams and quizzes**.

**Attendance**: (***Recommended policy-add policy on accepting late work/missed quizzes/exams)*** I trust you understand that regular class attendance is an essential component of successful learning. Students who miss class are responsible for content covered and for any information given out in class; please consult the class schedule to find out what you missed.

**Important Information**

**Accommodations:** Your success is important to me. If you have a disability (learning, physical, psychological, or other) that may require some accommodations, please see me early in the semester. I can refer you to the Disability Services Office (**Room 1200**) to register and arrange reasonable accommodations. All discussions are confidential.

Pregnant and parenting students attending Institutions of Higher Education have rights under the Title IX of the Education Amendments of 1972 (Title IX) 20 U.S.C. 1681 et seq. This is a federal civil rights law that prohibits discrimination on the basis of sex – including pregnancy and parental status in educational program and activities. All public and private schools, school districts, colleges and universities receiving any federal financial assistance must comply with Title IX. For assistance regarding pregnant and parenting accommodations, please contact the Title IX Coordinator, Tiffany Brewer at tbrewer1@prairiestate.edu, or 708-709-3653, office number 2143. The full policy is located on the Prairie State College website at: prairiestate.edu/assets/global/pdf/sexdiscmharabooklet.pdf

**Academic Honesty**: All students are expected to adhere to the PSC academic honesty expectations: http://[prairiestate.edu/academics/acadhonest.aspx](http://prairiestate.edu/academic/acadhonest.aspx). In a Math class, it is extremely important that the work you present to your instructor is genuinely something that you have produced.  Relying heavily on other people and/or technology can create a false sense of achievement that ultimately leads to failure on quizzes and tests when those resources are no longer available.  Part of my role as instructor is to communicate to you in what situations use of technology, such as a calculator, website or app, is acceptable, and when it is not.  In general, the use of any technology that allows students to simply type in a problem and have the entire problem solved for them is prohibited. You can add to the statement here. Make sure you spell out exactly what your expectations are for your particular class and what the penalty is for breaking them.

**Religious Observance**: Prairie State College is required to excuse students who need to be absent from class, examinations, study, or work requirements because of their religious beliefs, and provide students with a make – up opportunity, unless to do so would unreasonably burden the institution. Students must notify their instructor well in advance of any absence for religious reasons. If you require special accommodation for observance of a religious holiday, please let me know during the first week of the semester.

**Student Veterans:**  Veterans and those currently serving in the Armed Services may be eligible for various benefits.  Information and support are available in the Student Veterans Center (Room1240)or go to:  <http://prairiestate.edu/student-services/veterans-services/index.aspx>.

Math 151-Section# Tentative Class Schedule

|  |  |  |  |
| --- | --- | --- | --- |
| **Date** | **Schedule** | **Homework** | **HW Due Date** |
| Add rows for  | Intermediate Algebra Review §§ 1.3a, 1.5, 1.6, 2.1a, 2.1b, 2.3, 3.2, 3.3 | (may assign a handful of most critical review sections or create review handout) |  |
| holidays/breaks so | § 4.1 Relations and Functions | Sec 4.1 |  |
| students are clear on | § 4.2a Linear and Quadratic Functions | Sec 4.2a |  |
| when they occur | § 4.2b Max/Min Applications of Quadratic Functions  | Sec 4.2b |  |
| You can add rows  | § 4.3a Other Common Functions | ----- |  |
| by highlighting  | § 4.3a (continued)§ 4.4 Transformations of Functions | Sec 4.3a |  |
| a row and right clicking | § 4.4 Transformations of Functions | Sec 4.4 |  |
| to Insert a row | § 4.5 Combining Functions | Sec 4.5 |  |
|  | § 4.6 Inverses of Functions | Sec 4.6 |  |
|  | Catch-up/ Review for Test 1 | Study! |  |
|  | **Test 1** | ----- |  |
|  | § 5.1 Intro to Polynomial Equations and Graphs | ----- |  |
|  | § 5.1 Intro to Polynomial Equations and Graphs | Sec 5.1 |  |

|  |  |  |  |
| --- | --- | --- | --- |
| **Date** | **Schedule** | **Homework****(all on Hawkes)** | **HW Due Date** |
|  | § 5.2 Polynomial Division and the Division Algorithm | Sec 5.2 |  |
|  | § 5.3 Locating Real Zeros of Polynomials | Sec 5.3 |  |
|  | § 5.4 The Fundamental Theorem of Algebra | Sec 5.4 |  |
|  | § 6.1a Rational Functions | Sec 6.1a |  |
|  | § 6.1b Rational Inequalities | Sec 6.1b |  |
|  | Catch-up/Review for Test 2 | Study! |  |
|  | **Test 2** | ----- |  |
|  | § 7.1 Exponential Functions and Their Graphs | Sec 7.1 |  |
|  | § 7.2 Applications of Exponential Functions | Sec 7.2 |  |
|  | § 7.3 Logarithmic Functions and Their Graphs | Sec 7.3 |  |
|  | § 7.4 Properties and Applications of Logarithms | Sec 7.4 |  |
|  | § 7.5 Exponential and Logarithmic Equations | ------ |  |
|  | § 7.5 Exponential and Logarithmic Equations | Sec 7.5 |  |
|  | Catch-up/Review for Exam 3 | Study! |  |
|  | **Test 3** | ------ |  |
|  | § 8.1 & 8.2 Systems and Matrices | Sec 8.1 |  |
|  | § 8.1 & 8.2 Systems and Matrices | Sec 8.2 |  |
|  | Final Exam Review | Study! |  |
| Date of Final | **FINAL EXAM Time of Final** | ------ |  |

Math 151 Course Objectives

1. Determine whether a relation is a function. Given a graphical, tabular, or algebraic representation for a function (possibly a piecewise-defined function), evaluate the function and find its domain and range.

2. Given an algebraic representation of a function, evaluate the function using variable inputs (such as x − 1, x + h, etc.), and simplify difference quotients involving the function.

3. Graph an algebraically defined function by plotting points (including the intercepts) and using calculator technology. [Students should be familiar with the graphs of basic functions: x, x2,x3, |x|, 1/x, mx + b, , .]

4. Given the graph of y = f(x), sketch the graph of y = f(x) + c, y = f(x + c), y =

cf(x), or y = f(cx). Also know how the algebraic representation of a function is affected by translations, reflections, compressions, or stretches of its graph.

5. Solve application problems by using functions to model problem situations.

6. Use the graph of a function to find extreme values and to find intervals on which the function is increasing/decreasing. Use algebraic techniques to find

the maximum or minimum value of a quadratic function.

7. Given two functions f and g, simplify and evaluate the composition f ◦ g.

8. Determine if a function has an inverse function. Given a graphical, tabular, or algebraic representation for a function, find the corresponding representation for the inverse function.

9. Solve polynomial and rational inequalities algebraically and graphically.

10. Use factoring and other algebraic techniques to find the real and non-real zeros of a polynomial. [The algebraic techniques may include long division,

synthetic division, the quadratic formula, Descartes’ rule of signs, the rational zeros test, etc. The graphing calculator may also be used in conjunction with algebraic techniques.]

11. Recognize that non-real zeros of a polynomial with real coefficients occur in complex conjugate pairs. Find a polynomial with real coefficients given some (or all) of its zeros.

12. Sketch, in detail, the graph of a polynomial and demonstrate a conceptual understanding of turning points, end behavior, intercepts, and the relationship between the shape of the graph and the number and multiplicity of the polynomial’s zeros.

13. Use algebraic techniques to sketch the graph of a rational function. These techniques include, but are not limited to, finding x- and y-intercepts; finding horizontal, vertical, or slant asymptotes; constructing sign charts; and plotting points.

14. Sketch and interpret the graphs of logarithmic and exponential functions.

15. Use the properties of logarithms to expand and simplify logarithmic expressions and to algebraically solve logarithmic equations.

16. Algebraically solve exponential equations.

17. Solve application problems involving exponential growth or decay.

18. Use the graphing calculator to approximate solutions of equations.

19. For a given set of data, use the linear regression capabilities of the graphing calculator to find the line of best fit and the corresponding linear correlation coefficient. Use the results for prediction and interpretation.

20. Solve 2×2 and sparse 3×3 systems of linear equations by using any method except the calculator.

21. Solve systems of linear equations by using augmented matrices and Gauss-Jordan elimination. Recognize when an augmented matrix is in reduced row-echelon form and interpret the reduced form. [Students may use their calculators to reduce augmented matrices.]

22. Solve application problems involving systems of linear equations.