# College Algebra Spring 2020

 **MAT 150 – Section#18D1**

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| Instructor Information |
| Instructor: | *Kate Johnson* |  **Email** *(preferred contact)* | kate.johnson@fayette.kyschools.us |
| Office/Mailbox: | *HCHS* | **Office Phone:** | 859-381-3423 ext 53081 |
| Office Hours: | *By appointment* |
| Mathematics and Statistics (MS) Division Information |
| Assistant Dean: | *Kausha Miller* | *Kausha.Miller@kctcs.edu* | *Newtown* *NCB 311-B* | *(859) 246 – 6417* |
| Math Coordinator: | *Jeff Herrin* | *Jeff.Herrin@kctcs.edu* | *Newtown* *NCB 311-R* |  *(859) 246 – 6856* |
| Faculty Support Coordinator: | *Angela Huddleston* | *Angela.Huddleston@kctcs.edu* | *Newtown* *NCB 311-Q4 Winchester 107* | *(859) 246 – 6334* |
| Website: | <https://bluegrass.kctcs.edu/education-training/programs/mathematics-statistics/index.aspx> |
| Bluegrass Community & Technical College Information |
| BCTC Website: | [www.bluegrass.kctcs.edu](http://www.bluegrass.kctcs.edu/) |  |
| KCTCS Blackboard: | [https://elearning.kctcs.edu](https://elearning.kctcs.edu/webapps/portal/frameset.jsp) |  |
| KCTCS MyPath: | Type in Browser: **mypath.kctcs.edu** | Single Sign-on KCTCS portal to Email, Blackboard, OneDrive, Student Self-Service, STARFISH, and more. |

## OFFICIAL COURSE INFORMATION:

**Course Description**: Includes selected topics in algebra and analytic geometry. Develops manipulative skills and concepts required for further study in mathematics. Includes linear, quadratic, polynomial, rational, exponential, logarithmic and piecewise functions; systems of equations; and an introduction to analytic geometry. (Students may not receive credit for both MAT150 and any other College Algebra or Precalculus course. Credit not available on the basis of special exam.) Lecture: 3 credits (45 contact hours). **Prerequisites:** 1. Math ACT score of 22 or above, 2. Math ACT score of 19-21 with concurrent MAT 100 workshop, 3. Successful completion of Intermediate Algebra, MAT 126, or equivalent, or 4. KCTCS placement exam recommendation.

NOTE: Students who plan to take MA 113 in the future must earn at least a “C” in MAT 150.

**NOTE: (For CoReq classes Only) Students enrolled in MAT 150- section must also enroll in MAT 100- section.**

## COURSE COMPETENCIES:

**OFFICIAL COURSE COMPETENCIES/OBJECTIVES**

Upon completion of this course, the student can:

1. Recognize functions and specify the domain and the range of a given function.

2. Graph linear, quadratic, polynomial, rational, exponential, logarithmic and piecewise functions.

3. Write expressions from data, verbal descriptions or graph.

4. Solve polynomial, rational, exponential and logarithmic equations.

5. Solve application problems using linear, quadratic, exponential, and logarithmic functions.

6. Perform operations with functions and find inverse functions.

7. Solve linear and nonlinear systems of equations.

8. Solve nonlinear inequalities

## COURSE MATERIALS

**Required Technology:** Regular and consistent access to a computer with reliable internet access is required. **Compatible Browsers:** Mozilla Firefox, Google Chrome, Safari

**Note**: Course is not compatible with Internet Explorer!

**Required Textbook/Supplies:**

* **Scientific or Graphing Calculator**  **TI-36X PRO or TI 30X IIS recommended**

A scientific or graphing calculator is allowed on assignments and during class/exams, unless specified otherwise. No TI-89 or above nor TI-Nspire nor anything with a computer algebra system will be allowed. Having notes and formulas programmed into calculators is considered cheating. The memory of graphing calculators used in class must be cleared before exams and math apps must be removed.

***No cell-phone, computer, tablet, or other electronic device calculators will be allowed.***

**Optional Textbook/Supplies:**

* *College Algebra, 7th* edition, Blitzer (***NOTE:*** This text can be viewed online within MyLabsPlus so you would only need to purchase the text if you wanted to have a physical copy in front of you!

## CLASS POLICIES

**Attendance Policy**: Students are responsible for lecture material, assignments, and announcements given during missed classes.

**Technology Policy**:

The instructor reserves the right to request the student to discontinue use or to leave class if inappropriate use of a cell phone, laptop or tablet occurs in the classroom. Inappropriate use includes, but is not limited to, sending/receiving text messages, sending/receiving phone calls, using a phone or website as a calculator, or any use of social media, music or email during class time. **The instructor reserves final right to classify an activity as inappropriate and if the student is asked to leave, he/she will be counted as absent for that day.**

## CLASS REQUIREMENTS/EXPECTATIONS

**Homework and Quizzes** These assignments are due by the next class period unless otherwise noted. Late homework assignments will not be accepted. All homework assignments must be completed by the Exam in which the material is covered. Homework Quizzes may also be assigned as homework. Homework and Quizzes will be worth 20% of your overall class grade.

**Exams** Four in-class exams, each worth 150 points, will be given as listed on the daily schedule. Exams are worth 60% of your overall course grade.

**Final Exam**: The final exam, worth 200 points, will be comprehensive and is worth 20% of your overall course grade.

## MAKE-UP WORK/LATE WORK:

**“Excused” Absences** shall be defined by the instructor for this course as serious illness, death in the immediate family, and other situations which seem reasonable to the instructor.

**Makeup Work In The Case Of An “Excused” Absence** In the case of a documented “excused” absence, makeup work will be handled as follows: Homework should be submitted the next day. For exams, the student should contact the instructor immediately and a make-up exam will be given within one week of the missed exam.

**Late Work** No late homework will be accepted.

Exceptions may be considered by the instructor in extenuating circumstances.

 **COURSE GRADE:**

|  |  |  |
| --- | --- | --- |
|  | **Percentage** | **Grading Scale** |
| Homework and Quizzes | 200 points |  A 🡪 90 – 100% (900-1000 points) |
| Exams | 600 points |  B 🡪 80 – 89% (800-899 points) |
| Final Exam |  200 points  |  C 🡪 70 – 79% (700-799 points) |
|  |  |  D 🡪 60 – 69% (600-699 points) |
| **Total Possible Points** | **1000 points** |  E 🡪 0 – 59% (0-599 points) |

**An “I” grade** will be given only when a student is unable to complete the course for some reason that is satisfactory to the instructor. It shall be given only when there is a reasonable possibility that a passing grade will result from the completion of the work.

## WITHDRAWAL POLICY:

**A “W” grade** will be given to any student who officially withdraws from the course by the end of the last day of classes.

**For more information and Instructions on how to withdraw from a class:**

<https://bluegrass.kctcs.edu/current-students/registrar/withdrawal-policy.aspx>

## BCTC COLLEGE POLICIES AND RESOURCES

## BCTC College Policies and Resources

<https://bluegrass.kctcs.edu/academics/media/policies-and-procedures-updates/bctc_college_policies_and_resources.pdf>

Web document includes more information about BCTC College Policies and Resources, including College Contact Info, email, campus closing for weather information, withdrawal policies, Student Code of Conduct, financial aid, emergency closing, tutoring info, and more.

## ACCOMMODATIONS:

Students with disabilities who require accommodations (academic adjustments and/or auxiliary aids or services) for a course, must contact BCTC’s Disability Support Services (DSS) Office. Students should not request accommodations directly from the instructor.

• DSS Website:

<https://bluegrass.kctcs.edu/about/student-life/accessibility-services/index.aspx>

• DSS Email: BL\_DSS@kctcs.edu

• DSS Toll-Free Phone: 1 - 866 - 774 - 4872 ext. 6728

## GENERAL EDUCATION COMPETENCIES:

**GENERAL EDUCATION COMPETENCIES**

A. Knowledge of human cultures and the physical and natural worlds through study in the sciences and mathematics, social sciences, humanities, histories, languages, and the arts.

B. Intellectual and practical skills, including

• inquiry and analysis

• critical and creative thinking

• written and oral communication

• quantitative literacy

• information literacy

• teamwork and problem solving

C. Personal and social responsibility, including

• civic knowledge and engagement (local and global)

• intercultural knowledge and competence

• ethical reasoning and action

• foundations and skills for lifelong learning

D. Integrative and applied learning, including synthesis and advanced accomplishment across general and specialized skills.

**STUDENT LEARNING OUTCOMES FOR QUANTITATIVE REASONING (Approved Fall 2017)**

In MAT 150, students will learn to:

1. Interpret information presented in mathematical and/or statistical forms by (Gen Ed Comp B):

• Recognizing functions and specify the domain and the range of a given function

1. Illustrate and communicate mathematical and/or statistical information symbolically, visually, and/or numerically by

 (Gen Ed Comp A, B, C):

• Graphing linear, quadratic, polynomial, rational, exponential, logarithmic and piecewise functions

3. Determine when computations are needed and execute the appropriate computations by (Gen Ed Comp A, B):

• Solving polynomial, rational, exponential and logarithmic equations.

• Performing operations with functions and find inverse functions.

• Solving nonlinear inequalities.

4. Apply an appropriate model to the problem to be solved by (Gen Ed Comp A, B, C):

• Writing expressions from data, verbal descriptions or graph.

• Solving application problems using linear, quadratic, exponential, and logarithmic functions.

5. Make inferences, evaluate assumptions, and assess limitations in estimation modeling and/or statistical analysis by (Gen Ed Comp A, D):

• Solving linear and nonlinear systems of equations

**MAT 150 – Spring 2020 Tentative Calendar**

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| --- | --- | --- | --- | --- |
| Monday | ***Tuesday*** | ***Wednesday*** | ***Thursday*** | ***Friday*** |
| **January 6****Begin Unit 1**1.2 Linear and Rational Equations | 7 1.2 cont | 81.5 Quadratic Equations | 91.5 cont | 10No school |
| 131.6 Other Types of Equations | 141.6 | 151.7 Linear & Abs Val Ineq’s | 163.6 PolynomialInequalities | 173.6 cont |
| **January 20****MLK Day –****Academic Holiday** | 28 Parent Graphs | 292.1 Basics of Functions & Their Graphs | 30 2.1 cont | 31review |
| **February 3**Review for Exam 1 | 4review | 5**Unit 1 Exam** | 6ACT practice | 7ACT  |
| February 10 **Begin Unit 2**2.2 Graphs and Properties of Functions | 112.1 | 122.3-2.4 Linear Functions and Slope | 132.3 | 142.4 |
| **February 17****President’s Day –****Academic Holiday**  | 182.5 Transformations of Fns.  | 192.6 Composition Functions | 20 2.7 Inverse Functions | 21Review |
| 24Review for Exam 2 | 25review | 26**Unit 2 Exam** | 27 Intro to Factoring | 28 Intro toFactoring |
| March 2 **Begin Unit 3****Factoring** | 3factoring | 43.1 Quadratic Functions | 53.1 | 63.1 |
| 93.2 Polynomial Functions and Their Graphs | 10 More 3.2 | 113.3 Remainder/Factor Thms | 123.3 | 13Quiz |
| 163.4 Zeros of Poly’l Functions  | 173.5 Rational Functionsand Their Graphs | 183.5 Rational Functionsand Their Graphs | 193.5 | 203.5 |
| 23Review for Exam 3 | 24**review** | 25**Unit 3 Exam** | 26Review  | 27Review |
| Spring Break March 30-April 3 |  |  |  |  |
| April 6 **Begin Unit 4**4.1 Exponential Functions | 7More 4.1 | 84.2 Logarithmic Functions | 9 4.2 | 104.2 |
| 134.3 Properties of Logarithms | 144.3 | 154.4 Exponential and Logarithmic Equations | 164.4 | 174.4 |
| 204.5 Exp’l Growth and Decay | 21review | 22 Review for Exam 4 | 23review | 24review |
| 27 Unit 4 Exam | 2**8 Begin Unit 5**5.1 Systems of Linear Eqns | 29 More 5.1 | 305.4 Systems of Nonlinear Eqns | May 1More 5.4 |
| 4 Review | 5 Review | 6Unit 5 Quiz | 7 Review | 8 Review |
| 11 Review | 12 Review | 13 Review | 14 Review | **15 Review** |
| 18  **Final Exam Week** | 19 No School-Election Day | 20 | 21 | **22** |