Syllabus (Fall 2019)

**MAT 137S – Intermediate Algebra Embedded**

**M,W, 130-3:05, 3:20-4:25, D122, B116**

**Course Information**

* **Instructor Information**

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| Robert S. Coughlin, Jr.Office: Phone: Email: Rcoughlin@ccc.commnet.edu  | Office Hours: M, W 4:25-5:00 |

* **Course Description**

Prerequisite: MAT\* K095 or MAT\* K095I with a “C-#” grade or better or appropriate placement through multiple-measures assessment process.

This course represents the Intermediate Algebra instruction with embedded support. The course cultivates understanding and different representations of functions. Topics covered include linear, quadratic, exponential, rational, radical functions, equations, and expressions and operations on them with emphasis on modeling and solving real world problems. A graphing calculator is required.

* **Required Materials**

Text: *Elementary and Intermediate Algebra, 5th ed.* by Baratto & Bergman.

Graphing calculator

ALEKS access class code: LEF4A-X6U6D

* **Learning Outcomes**

Upon successful completion of this class a student should be able to:

**FACTORING**

1. Factor monomials
2. Factor polynomials by grouping
3. Factor perfect square trinomials, difference of squares, sum/difference of cubes
4. Factor quadratics

**Quadratic Functions and/or Expressions**

1. Provide multiple representations of quadratic functions or expressions by hand and/or using technology
2. Determine identifying characteristics of quadratic functions or expressions (e.g., factors)
3. Evaluate, simplify, and perform operations on quadratic functions or expressions
4. Solve quadratic equations algebraically (e.g., factoring, completing the square, and quadratic formula with rational solutions) and/or graphically
5. Solve real world applications involving quadratic equations and functions

**Radical Functions and/or Expressions**

1. Provide multiple representations of simple radical functions or expressions by hand and/or using technology, with primary emphasis on square root
2. Determine identifying characteristics of radical functions or expressions
3. Evaluate, simplify, and perform operations on simple radical functions or expressions
4. Solve simple radical equations algebraically and/or graphically
5. Solve real world applications involving radical functions
6. Identify imaginary numbers

**Exponential Functions and/or Expressions**

1. Provide multiple representations (e.g., tables, graphs, symbols) of exponential functions or expressions by hand and/or using technology
2. Determine identifying characteristics of exponential functions or expressions
3. Evaluate, simplify, and perform operations on exponential functions or expressions
4. Identify real world applications involving exponential functions and/or solve graphically

**Rational Functions and/or Expressions**

1. Provide multiple representations of simple rational functions or expressions by hand and/or using technology
2. Determine identifying characteristics of rational functions or expressions
3. Evaluate, simplify, and perform operations on simple rational functions or expressions
4. Solve simple rational equations algebraically and/or graphically
5. Solve real world applications involving rational functions

**Mathematical Practices**

1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning

**Grading**

* **Methods of Evaluation**

Grades will be calculated using the following weighted system:

|  |  |  |
| --- | --- | --- |
| 1. Discussions/ Class Participation
 | Discussions will take place weekly using Blackboard. Discussions will help with problem solving, sharing ideas, and collaboration. The discussions will also assist in developing critical thinking and writing skills. Class participation helps to develop oral communication skills.  | 15% |
| 2. Homework | Homework will be assigned and collected at each class meeting. Homework is the opportunity to practice problem-solving skills and is essential for success in every mathematics course. | 30% |
| 3. Presentations | Presentations can occur throughout the course and is an opportunity for students to communicate their knowledge and understanding of the content orally. | 20% |
| 5. Quizzes/Tests | Quizzes must be taken weekly. Tests will occur at the end of each chapter. These assessments help to communicate understanding throughout the course. The average of quiz and test grades will be used here. | 35% |

* **Grading Policies**
* **Late Work**: Students must complete missed work within two class meetings.
* **Extra Credit:** Students will receive extra credit for problems outside of the normal problem set.
* **Letter Grade Equivalents**

|  |  |  |  |
| --- | --- | --- | --- |
| **Grade** | **Percent of Points Earned** |  |  |
| A |  93% or more |  |  |
| A- | 90 – 92% |  |  |
| B+ | 87 – 89% |  |  |
| B | 83 – 86% |  |  |
| B- | 80 – 82% |  |  |
| C+ | 77 – 79% |  |  |
| C | 73 – 76% |  |  |
| C- | 70 – 72% |  |  |
| D | 60 – 69% |  |  |
| F | less than 60% |  |  |

**Classroom Policies**

* **Attendance:** Attendance is mandatory. Mathematics is learned by regular application and practice of the essential skills. The skills will be modeled and practiced during class meetings. As our textbook publisher states, “math is not a spectator sport”. Laptops, cell phones, iPads, iPods, smart watches, and any other smart devices must be silenced and completely put away out of sight during class.
* **Communication:** All communication will occur by email. Please make sure that you check your TRCC email or set it up to forward to another account. Check your email regularly to be informed of any changes in schedule.
* **Class Cancellation:**

**If school is cancelled**, notification of cancellation due to inclement weather will be available by telephone by 6:00 am for daytime classes and by 2:30 pm for evening classes by calling the College's main telephone at (860) 215-9000, pressing 1, and listening to the taped announcement. The College’s website will also have announcements available by accessing the www.threerivers.edu home page. The myCommnet Alert Notification System will also be used to deliver important information regarding weather-related class cancellations, via both email messages and text messages, to registered individuals. To register, log on to your myCommnet account at http://my.commnet.edu/ and follow the link to myCommnet Alert.

**If class is cancelled by the instructor**, a notice will be placed on the classroom door. If time permits, students may be notified by a message via email.

* **Withdrawal Policy:** You may withdraw from this class any time up to and including November 5 and you will receive a W grade on your transcript. However, you must complete a withdrawal form in the Registrar’s Office at the time of withdrawal; *if you merely stop attending classes you will be assigned a grade of F*. Any eligibility for refund of tuition is based on the date that the registrar receives the withdrawal.
* **Academic Integrity:** The effective operation of any organization is dependent on the honesty and goodwill of its members. In an organization devoted to the pursuit of knowledge, acting with integrity is essential to effective teaching and learning. Furthermore, academic dishonesty erodes the legitimacy of every degree awarded by the College. To emphasize the importance of academic integrity, Three Rivers Community College adheres to the Student Code of Conduct and Discipline Policy, as provided by the Connecticut State Colleges and Universities (CSCU) - Board of Regents for Higher Education. (Please refer to BlackBoard for the complete statement.)

**Some** of the behaviors that will be considered cheating are:

* + Communicating with another student during a quiz or exam
	+ Copying material from another student during a quiz or exam or from any assignment being graded
	+ Allowing another student to copy from your quiz, exam, or any assignment being graded
	+ Use of unauthorized assistance on any assignment being graded
	+ Use of unauthorized notes or books during a quiz or exam
	+ Providing or receiving a copy of a quiz or exam used in the course
	+ Use of a cell phone or pager to transmit information during a quiz or exam

**Tentative Schedule**

This is the tentative schedule – instructor reserves the right to change dates throughout the semester. It is your responsibility to attend class to learn of any changes in schedule.

Expand this table as needed

|  |  |  |
| --- | --- | --- |
| **Dates** | **Content** | **Assignments** |
| 9/18-9/25 | Review | Chapter 1 summary exercises EOO |
| 9/25-10/2 | Factoring | Chapter 6.1-6.3 EOO |
| 10/2-10/9 | Factoring | Chapter 6.4-6.6 EOO |
| 10/9-10/16 | Radicals and Exponents | Chapter 7.1-7.3 EOO |
| 10/16-10/23 | Radicals and Exponents | Chapter 7.4-7.6 EOO |
| 10/23-10/30 | Quadratics | Chapter 8.1-8.2 EOO |
| 10/30-11/6 | Quadratics | Chapter 8.3-8.4 EOO |
| 11/6-11/13 | Rational Expressions  | Chapter 9.1-9.3 EOO |
| 11/13-11/20 | Rational Expressions | Chapter 9.4-9.6 EOO |
| 11/20-11/27 | Exponential Functions | Chapter 10.1-10.2 EOO |
| 11/27-12/4 | Exponential Functions | Chapter 10.3-10.4 EOO |
| 12/4-12/11 | Final Exam | Review |

# Online graphing calculators

* [Desmos](https://www.desmos.com/calculator)
* [Graphingcalculator/wtable](https://my.hrw.com/math06_07/nsmedia/tools/Graph_Calculator/graphCalc.html)
* [Mathway](https://www.mathway.com/graph)

# Additional practice

* [AlgebraLab](http://www.algebralab.org/default.aspx)
* [Braingenie](http://braingenie.ck12.org/courses/2)
* [Classzone Quizzes](http://www.classzone.com/books/algebra_2/lessonquiz_national.cfm)
* [Coolmath](http://www.coolmath.com/precalculus-review-calculus-intro)
* [IXL](https://www.ixl.com/math/algebra-2)
* [Khanacademy](https://www.khanacademy.org/math/algebra)
* [Mathisfun](https://www.mathsisfun.com/algebra/index-2.html)
* [Purplemath](https://www.purplemath.com/index.htm)

# Online Mathematics Resources

[VirtualMathLab](http://www.wtamu.edu/academic/anns/mps/math/mathlab/beg_algebra/)

[Kutasoftware](http://kutasoftware.com/)

[Paul’sonlinenotes](http://tutorial.math.lamar.edu/Classes/Alg/Alg.aspx)

# Online Mathematics Videos

* [OpenAlgebra](https://www.openalgebra.com/search/label/intermediate%20algebra)
* [KhanAcademy](https://www.khanacademy.org/)
* [Teachertube](https://www.youtube.com/user/teachertubemath)

# Online Mathematics Resources

[Free Printable Graph Paper](https://ck022.k12.sd.us/graphpaperpages/graphpaper.htm)

[More Graph Paper](https://rcoughlin.webs.com/graphpaperpage.htm)

[College Algebra Formulas](https://www.lsco.edu/learningcenter/CollegAlgFormulasRules.pdf)

 [Paul’s Online Notes](http://tutorial.math.lamar.edu/Classes/Alg/Alg.aspx)

**School Policies**

Please refer to BlackBoard or the TRCC website for a link to the entire policy.

* **Digication:** All students are required to maintain an electronic portfolio using the College template within Digication. Digication can be accessed at https://threerivers.digication.com.
* **Disability:** Three Rivers Community College (TRCC) is committed to the goal of achieving equal educational opportunity and full participation for individuals with disabilities. To this end, TRCC seeks to ensure that no qualified person is excluded from participation in, is denied the benefit of, or otherwise is subjected to discrimination in any of its programs, services, or activities.
* **Non-discrimination:** Three Rivers Community College does not discriminate on the basis of race, color, religious creed, age, sex, national origin, marital status, ancestry, present or past history of mental disorder, learning disability or physical disability, sexual orientation, gender identity and expression, or genetic information in its programs and activities.
* **Sexual Misconduct:** The Board of Regents for Higher Education (BOR) in conjunction with the Connecticut State Colleges and Universities (CSCU) is committed to e\nsuring that each member of every BOR governed college and university community has the opportunity to participate fully in the process of education free from acts of sexual misconduct, intimate partner violence and stalking.