Syllabus (Fall 2019)

**MAT K137 – T5, INTERMIDIATE ALGEBRA , 30169, Fall 2018,**

**M 6:00 pm – 8:45 pm, room D212**

**Course Information**

* **Instructor Information**

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| Name: **Irina Lavruk**Office: D207Office Hours: **Mondays: 5:15pm – 5:55 pm (Room D207) & after class 8:50 pm – 9:20 pm (Room D212);****Fridays: 4:15 pm – 4:55 pm (room D207) & after class 7:50 pm-8:30 pm (room D104)**; Phone: N / AEmail: ilavruk@trcc.commnet.edu or lavruki@newlondon.org |  |

* **Course Description**

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

This course cultivates understanding and different representations of functions. Topics covered include linear, quadratic, exponential, rational, radical functions, equations, and expressions 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. ( You may choose to either use an electronic version of the text of a print copy of the text)
* Graphing calculator;
* Notebook with at least 3 sections or binder (preferably with graph paper);
* Pencils and color pens;
* **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:**

Your final grade will be based on scores in three categories: tests and exams, homework, and classwork.

**Tests and Quizzes (approximately 50% of final grade)**

Throughout the semester there will be three/four Tests, several quizzes. Tests & quizzes schedule will be known to you at least one week prior to the scheduled Test/Quiz.

**Final Exam: (25 % of your grade)**

Final Exam will be given on the last day of the semester.

**Graded Homework & classwork assignments (approximately 15 % of your grade):**

You are responsible for completing assignments from the book on daily basis and possible additional work/sheets distributed by professor. You will receive a grade based on the percentage of the homework graded or checked by the instructor.

**Classwork (approximately 10% of final grade)**

Attendance and participation in classwork is required to be successful in this class. Each class you will earn points by showing up on time and being ready at the beginning of class, participating in all aspects of the class, including mini classwork project and/or classwork assignments and working for the entire class time.

Letter grade equivalents are listed below:

|  |  |
| --- | --- |
| **Grade** | **Weighted Average of Categories** |
| A# | 93-100 |
| A-# | 90-92 |
| B+# | 87-89 |
| B# | 83-86 |
| B-# | 80-82 |
| C+# | 77-79 |
| C# | 73-76 |
| C-# | 70-72 |
| D# | 65-69 |
| F# | Below 65 |

* **Homework:**

Most of the homework will be assigned from the book. I will indicate which questions I will be checking. Though I cannot possibly check every problem that you do, it is in your best interest to complete as many practice problems as possible. Graded homework could be either given from the textbook or work/sheets distributed by the professor.

The expectation is that you are spending 2 hours of reading and doing homework for this class for every “academic” hour we meet in class. We meet about 3 “academic” hours per week; therefore you should expect to spend ***at least* 4-6 hours per week** on this class, outside of class meetings, every week!

* **Extra** Credit**:** There will be no extra credit assignments, but some of the tests/quizzes might include Extra credit questions.
* **Late Work**: Late work will not be accepted.
* **Missed Work Make-Up Policy:** Any missed graded work must be submitted for grading. Any missed Test / Quizzes must be retaken within next 10 days.
* **Letter Grade Equivalents are listed below:**

|  |  |
| --- | --- |
| **Grade** | **Weighted Average of Categories** |
| A# | 93-100 |
| A-# | 90-92 |
| B+# | 87-89 |
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| C+# | 77-79 |
| C# | 73-76 |
| C-# | 70-72 |
| D# | 65-69 |
| F# |  |

* **Attendance:**

Attendance in classes is strongly recommended. *I will teach a class only once;* you are responsible for getting the class notes, homework, and any other assignments from another student and completing that work by the next class after any missed class. Short unannounced quizzes may be given, and they cannot be made up. Written homework that is due on a day you do not attend class cannot be turned in late. Keep in mind that I will be also teaching another section of the same course on Monday, from 6:00 to 8:45 pm in Rm. 212, but this class will be two weeks behind in material, compared to our Friday class. (First Day in this class will September 09th)

**Attendance at exams is mandatory.** You will be informed of the dates of tests at least one week in advance. Make-up exams may be given *with my prior consent*. If you must miss an exam, please speak with me before the date of the exam so that arrangements can be made.

* **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

**Final Exam for the class will be discussed not later then on November 4th, 2019**

**Dates for the Chapter Tests and/or Quizzes will be announced at least two classes prior to the date of the Test/Quiz.**

**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 ensuring 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.

**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.

**Section Topic Exercises**

**Ch. 6 09/09/19; 09/16/19; 09/23/19**

6.1 An Introduction to factoring p. 486: # 9, 13, 31, 39, 43, 59, 67, 71, 79, 82

6.2 Factoring special products p. 497: # 1, 6, 13, 23, 25, 43, 51, 53, 59, 60, 65, 69

6.3 Factoring: Trial and Error p. 507 & 508: # 17, 22, 43, 53, 54, 57

6.4 Factoring: The ac method p. 517 & 518: # 2, 15, 21, 31, 32, 38, 40, 59, 60, 78, 82

6.5 Factoring strategies p. 524 & 525: # 1, 17, 23, 31, 43, 44, 53, 59, 77, 81

6.6 Factoring and problem solving p. 537 - 539: # 5, 10, 21, 35, 45, 53, 58, 72, 90

 **Test # 1 (Ch. 6) 10/07/19; (Tentative)**

**Ch. 7** **09/30/19; 10/07/19; 10/14/19**

7.1 Roots and radicals p. 560 & 570: # 1, 9, 14, 38, 49, 50, 57, 58, 69, 72

7.2 Simplifying radical expressions p. 573: # 1, 2, 10, 26, 27, 41, 49, 71, 72

7.3 Operations on radicals p. 584 - 587: # 1, 6, 11, 20, 33, 58, 61, 67, 75, 89

7.4 Solving radical equations p. 593 & 594: # 4, 8, 9, 16, 26, 27, 40, 48

7.5 Rational exponents p. 603 & 604: # 1, 5, 6, 15, 23, 33, 46, 53, 65, 69

7.6 Complex numbers p. 611 & 612: # 1, 5, 11, 15, 27, 36, 40, 51, 55

 **Test # 2: Ch. 7: 10/28/19 (Tentative)**

**Ch. 8 10/21/19; 10/28/19; 11/04/19**

8.1 Solving quadratic equations p. 633 - 635: # 1, 8, 11, 22, 34, 35, 46, 55, 63, 83

8.2 The quadratic formula p. 651 - 653: # 2, 5, 8, 21, 29, 46, 55, 72, 73

8.3 An introduction to parabolas p. 665 - 667: # 1, 2, 3, 9, 14, 21, 25, 35, 45

8.4 Quadratic equations and problem-solving. p. 678 - 679: # 1, 3, 6, 23, 31, 35, 37

**Ch. 9 11/11/19; 11/18/19; 11/25/19;**

9.1 Simplifying rational expressions p. 699 - 700: # 2, 10, 18, 25, 36, 48, 67, 74, 79

9.2 Multiplying and dividing rational expressions p. 710 - 711: # 2, 6, 11, 17, 28, 34, 37, 44

9.3 Adding and subtracting rational expressions p. 721 - 723: # 1, 11, 23, 33, 36, 43, 55, 60

9.6 Rational equations and problem-solving. p. 762 - 765: # 2, 3, 18, 25, 51, 61, 67, 81,

 **Test # 3 Ch. 8-9: 12/02/19 (Tentative)**

**Ch.10 12/02/19; 12/09/19;**

10.4 Exponential functions p. 819 - 821 : # 1, 2, 3, 10, 25, 37, 51, 59

10.7 Logarithmic and exponential equations p. 859 - 861 : # 1, 2, 14, 21, 31, 39, 47, 53, 57

 **FINAL EXAM: To be determined**

**Disclaimer**

The instructor maintains the right to adjust the course syllabus as needed. The syllabus provides a tentative framework. **Homework assignment might be changed/adjusted during class.**

**Exact Dates for all test will be announced two weeks prior to the test.**