

SYLLABUS
Columbia Basin College
Math & Science Division

Prepared by: Math Department

Document created: Winter 2019

INSTRUCTOR

To be determined

CONTACT INFORMATION AND OFFICE HOURS

To be determined

COURSE TITLE

MATH 095 Intermediate Algebra

CATALOG DESCRIPTION

This course covers topics from elementary and intermediate algebra. Topics include: simplifying rational expressions, solving rational equations, graphs of functions, domain and range, solving systems of equations in two unknowns, sets and intervals, solving absolute value equations and inequalities in one unknown, solving compound inequalities in one variable, graphing two-variable systems of linear inequalities, rational exponents, radical expressions and equations, complex numbers, completing the square, the quadratic formula, quadratic functions, polynomial and rational inequalities, exponential and logarithmic equations and functions, composition of functions, and applications of the aforementioned topics. *(A grade of 2.0 or better in this class will satisfy the Intermediate Algebra Proficiency requirement for the AA degree.)*

PREREQUISITE OR BY PLACEMENT SCORE (AS APPROPRIATE)

Grade of 2.0 or better in Math 097 or satisfactory placement test score

CREDITS AND HOURS

Five (5) credit hours.

TEXT(S) AND MATERIALS

Textbook: Introductory & Intermediate Algebra w/ MML, 5th Edition, Bittinger, Pearson Education
MyMathLAB access code only

Optional: Introductory & Intermediate Algebra St. Solution Manual 5th Edition, Bittinger, Pearson Education

Materials: Materials and other supplementary texts will be a function of the assigned instructor.

CALCULATOR POLICY

The Casio fx-260 Solar is the recommended scientific calculator model. A scientific calculator is required for completing some exercises in Math 095 and Math 098. Any calculator with graphing capabilities or a dot-matrix display (e.g. MultiView, Natural or Textbook Display, ClassWiz, etc.) may not be used by students during exams. Also, four-function calculators may be used, but are not recommended.

GENERAL TEACHING METHODS

Will be provided by individual instructor addendum

STUDENT LEARNING OUTCOMES

CBC Student Learning Outcomes

Students who graduate from Columbia Basin College will have been exposed to skills, concepts, and methods of inquiry in many different disciplines. The totality of their learning experience is expressed in a set of general Student Learning Outcomes (SLOs), which all students, regardless of program, are expected to demonstrate:

1. Think Critically
2. Reason Quantitatively and Symbolically
3. Communicate Effectively
4. Apply Information Tools and Resources
5. Develop Cultural Awareness
6. Master Program Learning Outcomes

Course Outcomes

Math 095 is intended to develop critical thinking, quantitative and symbolic reasoning, and communicating effectively (CBC student learning outcomes 1, 2, and 3). At the end of the course, students will be able to solve problems, write using proper mathematical notation, and effectively communicate ideas involving the following concepts: rational expressions and equations, functions and graphs, domain and range, systems of linear equations, sets of real numbers, interval notation, absolute value and compound inequalities, systems of linear inequalities, radical expressions and equations, rational exponents, complex numbers, quadratic equations and functions, polynomial and rational inequalities, exponential and logarithmic functions, composition and decomposition of functions.

Performance Outline

Chapter 6 (6.1-6.8)

63. Find numbers for which a rational expression is not defined.
64. Reduce rational expressions.
65. Multiply and divide rational expressions.
66. Find the least common multiple of polynomial expressions.
67. Add and subtract rational expressions.
68. Simplify complex rational expressions.
69. Solve rational equations.
70. Solve applied problems using rational equations, including proportions.

Chapter 7 (7.1-7.5)

71. Identify functions by definition or vertical line test.
72. Draw the graph of a function.
73. Calculate function values.
74. Solve applied problems involving functions.
75. Find the domain and range of a function, given an equation or a graph
76. Find the slope and y -intercept of a linear function
77. Given two points find the slope of the line through the points
78. Solve applied problems involving slope.
79. Graph linear equations using intercepts.
80. Graph linear functions using the y -intercept and slope.
81. Graph lines of the form $x = a$ and $y = b$.
82. Determine whether two lines are parallel, perpendicular, or neither.

83. Find an equation of a line given the following: its slope and y -intercept; its slope and any point on the line; any two points on the line; any point on the line and the equation of a parallel or perpendicular line.
84. Solve applied problems involving linear functions.

Chapter 8 (8.1-8.4)

85. Solve a system of two linear equations using by graphing.
86. Solve a system of two linear equations by substitution.
87. Solve a system of two linear equations by elimination.
88. Solve applied problems involving a system of two linear equations, including total value problems, mixture problems, and motion problems.

Chapter 9 (9.1-9.4)

89. Solve an inequality in one variable and represent the solution set using set notation, interval notation, and a graph.
90. Find the intersection and union of intervals.
91. Solve compound inequalities.
92. Solve absolute value equations and absolute value inequalities.
93. Graph a system of linear inequalities in two variables.

Chapter 10 (10.1-10.6, 10.8)

94. Graph square root functions and find their domain and range.
95. Convert between rational exponent and radical notation.
96. Given an expression containing negative exponents, use the rules of exponents to reduce and rewrite the expression without negative exponents.
97. Multiply and divide expressions that contain radicals.
98. Write radicals in simplified form.
99. Add and subtract radical expressions.
100. Use the distributive property to multiply and simplify radical expressions.
101. Rationalize the denominator of radical expressions.
102. Solve radical equations and check the solutions.
103. Add, subtract, multiply and divide complex numbers, writing the result in the form $a + bi$.
104. Determine whether a given complex number is a solution of an equation.

Chapter 11 (11.1-11.3, 11.6, 11.8)

105. Use completing the square to solve quadratic equations.
106. Use the quadratic formula to solve quadratic equations and approximate the solutions using a calculator.
107. Solve an applied problem by developing a quadratic equation that represents the problem.
108. Solve a formula for a specified variable.
109. Find the vertex, line of symmetry, and maximum or minimum value of a quadratic function.
110. Find the intercepts of a quadratic function.
111. Graph a quadratic function.
112. Solve polynomial and rational inequalities.

Chapter 12 (12.1-12.6)

113. Graph an exponential function.
114. Solve applied problems involving exponential functions.
115. Determine if a function is one-to-one.
116. Find the inverse of a one-to-one function.
117. Graph a function and its inverse.
118. Find the composition of two functions.
119. Graph logarithmic functions.

120. Rewrite equations in exponential or logarithmic form.
121. Approximate the value of common logarithms using a calculator.
122. Expand or condense logarithms using appropriate properties.
123. Use logarithmic properties to simplify expressions or solve equations.
124. Approximate the value of logarithmic and exponential expressions with base e .
125. Use the change-of-base formula to find values of logarithmic expressions.
126. Graph natural exponential and natural logarithmic functions.
- 127.** Solve exponential and logarithmic equations using properties of exponents and logarithms.

ASSESSMENT METHODS AND GRADING SCALE

Will be provided by the individual instructor addendum. All students will be required to take a comprehensive final exam, written by the Mathematics Department. Any student scoring below 60% on the departmental final exam will not receive a grade above 1.5. For students scoring 60% or better, the final exam will count for at least 25% of the course grade. The actual percentage and other grading criteria will be the function of the assigned instructor.

Note: A student may score 60% or better on the final exam but still fail the course due to the other grading criteria required.

Final exams for all fall, winter, and spring classes are scheduled in advance of each academic year and will occur at the times listed on the Finals Schedule published by CBC. A link to this schedule can be found under “Current Students” at www.columbiabasin.edu.

All daytime Math 095 and 098 students will take the final exam during a special period listed on the Finals Schedule. Evening students will take the final exam at the normally scheduled time, also listed on the Finals Schedule. During the summer term, final exams are held on the last day of class.

Please arrange your schedule to accommodate the final exam. Exceptions to the time of the final exam are not normally granted.

.....

Grades will be available to the student after official grades are posted on the KIOSK or if an instructor chooses to let a student know what their grade is face to face. No grades will be sent via email, nor will grades be given over the phone due to student privacy issues.

EVALUATION METHODS

Will be provided by individual instructor addendum

ACADEMIC SUCCESS CENTER

The Academic Success Center provides CBC students free drop-in instructional support in subject areas for which there is high demand. Our services include drop-in and online tutoring, a writing center, and academic success workshops. The Academic Success Center is equipped with computers and printers for student use, as well as whiteboards and group study areas. You can access free e-tutoring by going to etutoring.org and selecting the Western eTutoring Consortium when logging in. The center is in room T 433 in the Lee R. Thornton Center on the Pasco campus. The phone number is (509) 542-4672. For more information, please visit www.columbiabasin.edu/tutor or click [Academic Success Center](#).

STUDENT RIGHTS AND RESPONSIBILITIES

The purpose of Student Rights and Responsibilities, is to advance student learning, development and a culture of respect and responsibility. CBC promotes a community of acceptance and accountability by supporting and empowering students and campus partners to uphold Columbia Basin College mission.

WAC 132S-90-010 Student Rights:

All students have rights and responsibilities when pursuing their academic goals at Columbia Basin College. www.columbiabasin.edu/rightsandresponsibilities [Complete text.](#)

WAC 132S-90-020 Student Responsibilities:

Students who choose to attend CBC also choose to participate actively in the learning process that is offered. www.columbiabasin.edu/rightsandresponsibilities [Complete text.](#)

STUDENT CODE OF CONDUCT

WAC 132S-100-280 Academic dishonesty:

Academic dishonesty includes, but is not limited to, cheating, plagiarism, and fabrication or falsification of the information, research, or other findings for the purpose of fulfilling any assignment or task as part of the student's program of instruction. Any student who commits or aids and abets the accomplishment of an act of academic dishonesty will be subject to disciplinary action.

WAC 132S-100-410 Academic dishonesty process:

Academic dishonesty minimizes the learning process and threatens the learning environment for all students. As members of the CBC learning community, students are not to engage in any form of academic dishonesty.

- (1) The class instructor is responsible for handling each case of academic dishonesty in the classroom and for determining a penalty grade as outlined in the course syllabus.
- (2) If, within the instructor's professional judgement, reasonable evidence would suggest a student engaged in academic dishonesty, the instructor will provide notice to the student, either written or verbal, of their assertion of academic dishonesty and of the academic penalty grade within thirty instructional days of the occurrence or when the instructor is made aware of the occurrence.
- (3) The instructor will submit a report of the assertion of academic dishonesty, the explanation of the notice or actual notice given to the student and a copy of all applicable evidence to the Student Conduct Officer (SCO). At this time, the instructor can request that the incident only be documented with the SCO unofficially, or they can officially refer the matter for disciplinary action. If the student has a previous academic dishonesty record, then the SCO can choose to move forward with the disciplinary process without an official referral.

STUDENTS WITH DISABILITIES/HEALTH CONCERNS

Columbia Basin College provides reasonable accommodations to students with disabilities. Students who need auxiliary aids or course accommodations, have emergency medical information, or need special arrangements in case the building must be evacuated, should notify their instructors as soon as possible. Students needing accommodations should contact the Resource Center, Disability Services office for an appointment. They are located in T402 in the Lee R. Thornton Center on the Pasco campus. They can be reached at (509) 542-4412 or (509) 542-5525.

TITLE IX

As faculty members of Columbia Basin College, we are concerned about the well-being and academic achievement of our students. If you inform me of an incident of sexual harassment, sexual assault, stalking and/or discrimination, I will keep the information as private as I can, but I am required to bring it to the attention of the institution's Title IX Coordinator/EEO Office. If you would like to talk to the Title IX/EEO Office directly, contact Megan Pylican, Deputy Title IX Coordinator at (509) 542-4407 or visit the Human Resources Office in the A building.

Students who believe they have been harassed based on protected class status or gender, discriminated against, or involved in sexual violence should contact the Title IX Coordinator/EEO Office at (509) 542-4407 for information about campus support services, including confidential counseling services.

[Please refer to CBC's Title IX website for additional information](http://www.columbiabasin.edu/titleix) or access www.columbiabasin.edu/titleix

COPYRIGHT NOTICE

Many of the materials used in this course are protected by copyright law. These materials are only for the use of students enrolled in this course and only for the purposes of this course. No part of these materials may be reproduced or transmitted in any form or by any means, electronic, mechanical, photocopying, recording or otherwise, other than for use in this class, or for exemptions defined in copyright law, without the consent of the copyright holder. For more information, check www.columbiabasin.edu/copyright - the CBC copyright page.

PRIVACY

Columbia Basin College abides by the Family Educational Rights and Privacy Act (FERPA), a federal law that maintains the students' right to the privacy of their academic records. CBC will not release student information or student records to a parent or guardian without the student's written permission. Students who wish to authorize an instructor to provide information to their parent(s), guardian(s), or others, must complete the necessary authorization, which is available at Hawk Central.

CBC SAFETY

Columbia Basin College strives to provide a safe and secure environment for students, staff, and visitors. For more information, visit www.columbiabasin.edu/safety or click [Campus Security & Safety](#). Sign up for emergency notification text messages and/or emails at www.columbiabasin.edu/ens or click [Emergency Notification System](#).

Pasco Campus Security: (509) 542-4777

Richland Campus Security: (509) 539-8167

After Hours Security: (509) 521-4599