Math 090 College Arithmetic
Spring 2018

Instructor's Name:
Office Location:
Office Hours:
Office Phone:
E-mail:

Course Description
This course is a study of the concepts and practices of arithmetic. The course is designed to teach the concepts and facts of arithmetic and to develop computational skills. Topics studied include: the arithmetic of integers, fractions, decimals, ratio and proportion, and percent. Applications of these topics are an integral part of this course. Not intended for transfer.

Illinois Articulation Initiative (IAI) number: N/A

Credit and Contact Hours:
| Lecture | 3 |
| Lab     | 0 |
| Credit Hours | 3 |

Prerequisites: Satisfactory placement test score

Books, Supplies, and Supplementary Materials

A. Textbooks
   Required for online sections:
   Required for Math Redesign Program sections only:

B. Other Required Materials
   Scientific calculators allowed after completion of addition, subtraction, multiplication and division of fractions and decimals. Calculators may be used only for chapters 4, 5, 6, 7, and Section 7.10 (if covered). Graphing calculators are not allowed.

Methods of Instruction: Lecture, Redesign, or Online
Student Learning Outcomes: General Education Student Learning Outcomes:

Students will demonstrate the ability to accurately apply correct mathematical methods and techniques in various applications such as applied sciences, theoretical mathematics, physics, natural sciences and other applied sciences.

Objectives

Chapter 1
1. To convert numbers from standard notation to expanded notation and vice versa.
2. Add, subtract, multiply and divide whole numbers.
3. Solve word problems involving addition, subtraction, multiplication and division of whole numbers.
4. Evaluate expressions following the rules for order of operations.
5. Round to nearest ten, hundred, or thousand.

Chapter 2
7. Find factors of a number.
8. Identify prime and composite numbers.
10. Simplify fractions.
11. Rewrite a mixed number as an improper fraction and vice versa.
12. Add, subtract, multiply and divide fractions.
13. Find least common multiple of a set of two or more whole numbers.
14. Add, subtract, multiply and divide mixed numbers.
15. Solve word problems involving fractions.

Chapter 3
16. List a set of decimal numbers in order from smallest to largest.
17. Add, subtract, multiply and divide decimals.
18. Solve word problems involving decimals.
19. Converting from fractional to decimal notation.
20. Estimate sums, differences, products and quotients involving decimals.

Chapter 4
21. Use ratios and rates to compare two quantities.
22. Write fractional notation for ratios.
23. Determine whether two pairs of numbers are proportional.
25. Find unit prices and use them to determine which of two possible purchases has the lower unit price.
26. Solve problems involving proportions.

Chapter 5
27. Convert from percent to decimal notation.
28. Convert from decimal to percent notation
29. Convert from fractional to percent notation.
30. Convert from percent to fractional notation.
31. Translate percent problems to number sentences.
32. Solve percent problems.
33. Solve percent problems involving percent increase or decrease.
34. Solve word problems involving percent and sales tax.
35. Solve word problems involving commission and percent.
36. Solve word problems involving discount and percent.
37. Solve simple interest problems.
Chapter 6
38. Convert from one American unit of length, weight, mass & volume to another.
39. Convert from one metric unit of length, weight, mass & volume to another.
40. Convert between Fahrenheit and Celsius degrees of temperature.
41. Solve application problems involving metric and American units.

Chapter 7
42. Find the measures of angles in a triangle.
43. Find the perimeter and area of triangles, rectangles, squares, parallelograms, trapezoids and rhombuses.
44. Evaluate square roots of perfect squares.
45. Apply the Pythagorean theorem to find the missing sides of special right triangles.
46. Find the area and circumference of a circle.
47. Find the volume of rectangular solids, cylinders, spheres, cones and pyramids.
48. Find corresponding parts of similar geometric figures.
49. Solve applied problems involving geometric shapes.

Chapter 9
50. Add, subtract, multiply, and divide signed numbers.
51. Solve applied problems involving signed numbers.
52. Evaluate expressions by following the rules for order of operations.
53. Convert numbers from standard notation to scientific notation and vice versa.

TOPICAL OUTLINE

<table>
<thead>
<tr>
<th>Chapter</th>
<th>Sections</th>
<th>Objectives</th>
<th>Pacing (includes testing)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chapter 1</td>
<td>1.1-1.8 (no calculator)</td>
<td>1 – 6</td>
<td>2 weeks</td>
</tr>
<tr>
<td>Chapter 2</td>
<td>2.1-2.9 (no calculator)</td>
<td>7 – 15</td>
<td>2.5 weeks</td>
</tr>
<tr>
<td>Chapter 3</td>
<td>3.1-3.7 (no calculator)</td>
<td>16 – 20</td>
<td>2 weeks</td>
</tr>
<tr>
<td>Chapter 4</td>
<td>4.1-4.4 (calculator allowed)</td>
<td>21 – 26</td>
<td>1-1.5 weeks</td>
</tr>
<tr>
<td>Chapter 5</td>
<td>5.1-5.5 (calculator allowed)</td>
<td>27 – 37</td>
<td>1.5-2 weeks</td>
</tr>
<tr>
<td>Chapter 6</td>
<td>6.1-6.5 (calculator allowed)</td>
<td>38 – 41</td>
<td>1-1.5 weeks</td>
</tr>
<tr>
<td>Chapter 7</td>
<td>7.1-7.9, may omit 7.10 (calculator allowed)</td>
<td>42 – 49</td>
<td>1.5 weeks</td>
</tr>
<tr>
<td>Chapter 8</td>
<td>Optional</td>
<td>Optional</td>
<td></td>
</tr>
<tr>
<td>Chapter 9</td>
<td>9.1-9.5 (no calculator)</td>
<td>50 – 53</td>
<td>1-1.5 weeks</td>
</tr>
<tr>
<td>Chapter 10</td>
<td>Cover sections 10.1 &amp; 10.2 if time permits</td>
<td>Optional</td>
<td></td>
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</tbody>
</table>

Graded Assignments and Policies

Graded Assignments

Grading Policy
In class Quizzes 0 – 20%
Participation 0 - 5%
Projects 0 – 20%
Homework 0 – 30%
Tests 50 - 85%
Final 15 – 30%
The individual instructor will determine which items he or she considers essential for the student to memorize without error and test accordingly.

Each instructor will set minimum standards for performance on tests.

**Grading Scale**

<table>
<thead>
<tr>
<th>Percentage</th>
<th>Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>90-100%</td>
<td>A</td>
</tr>
<tr>
<td>80-89%</td>
<td>B</td>
</tr>
<tr>
<td>70-79%</td>
<td>C</td>
</tr>
<tr>
<td>60-69%</td>
<td>D</td>
</tr>
<tr>
<td>0-59%</td>
<td>F</td>
</tr>
</tbody>
</table>

**Major Tests and Quizzes**

The individual instructor will determine which items he or she considers essential for the student to memorize without error and test accordingly. Each instructor will set minimum standards for performance on tests.

A comprehensive proctored final examination will be given.

**Classroom Policies and Procedures**

**General Information**

**Attendance Policy**

**Make-up Policy**

**Extra-credit Policy**

**Final Exam Information**

A comprehensive proctored final examination will be given.

**Academic Honor Code**

The objective of the academic honor code is to sustain a learning-centered environment in which all students are expected to demonstrate integrity, honor, and responsibility, and recognize the importance of being accountable for one’s academic behavior.

**College Statement about grades of “F” and Withdrawal from Class**

Students may withdraw from a course by processing an add/drop form during regular office hours through the Registration and Records Office at Main Campus or Romeoville Campus, or by phone at 815-744-2200. Please note the withdrawal dates listed on your bill or student schedule. Every course has its own withdrawal date. Failure to withdraw properly may result in a failing grade of “F” in the course.

At any time prior to the deadline dates established, an instructor may withdraw a student from class because of poor attendance, poor academic performance or inappropriate academic behavior, such as, but not limited to, cheating or plagiarism.

**Intellectual Property**

Students own and hold the copyright to the original work they produce in class. It is a widely accepted practice to use student work as part of the college’s internal self-evaluation, assessment procedures, or other efforts to improve teaching and learning and in promoting programs and recruiting new students. If you do not wish your work to be used in this manner, please inform the instructor.

**Student Code of Conduct**

Each student is responsible for reading and adhering to the Student Code of Conduct as stated in the college catalog.
Sexual Harassment
Joliet Junior College seeks to foster a community environment in which all members respect and trust each other. In a community in which persons respect and trust each other, there is no place for sexual harassment. JJC has a strong policy prohibiting the sexual harassment of one member of the college community by another. See the Catalog or Student Handbook.

Student Support [http://jjc.edu/services-for-students/pages/default.aspx](http://jjc.edu/services-for-students/pages/default.aspx)

   Student Accommodations and Resources (StAR): If you need disability-related accommodations, specialized tutoring, or assistive technology in this class, if you have emergency medical information you wish to share with me, or if you need special arrangements in case the building must be evacuated, please inform me immediately. Please see me privately after class. New students should request accommodations and support by scheduling an appointment with the Student Accommodations and Resources (StAR) Office, Campus Center 1125, (815) 280-2230.

b. Tutoring: [http://jjc.edu/tlc/Pages/default.aspx](http://jjc.edu/tlc/Pages/default.aspx)

c. Counseling and Advising: [http://www.jjc.edu/counseling-advising/Pages/default.aspx](http://www.jjc.edu/counseling-advising/Pages/default.aspx)

d. Academic Resources: [http://www.jjc.edu/academic-resources/Pages/default.aspx](http://www.jjc.edu/academic-resources/Pages/default.aspx)

e. Support Programs and Services:
   [http://www.jjc.edu/support-programs-services/Pages/default.aspx](http://www.jjc.edu/support-programs-services/Pages/default.aspx)

f. Technology Support: [http://jjc.edu/services-for-students/Pages/technology-support.aspx](http://jjc.edu/services-for-students/Pages/technology-support.aspx)

g. My Degree Progress: My Degree Progress is a computerized system to track a student's progress toward graduation. The report indicates every course and places these courses into their appropriate category as a General Education, Major Course, or Elective, according to the degree requirements. This tool is useful for preparing before an advising appointment, for planning, for registering, and for checking that the student is on track for graduation. [https://eresources.jjc.edu](https://eresources.jjc.edu)
Prepared by: Prof. Laura Egner
Mathematics Department

Reviewed by: Prof. Jean McArthur
Department Chair

Date

Revised 6/16
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Revised 07/95
Revised 10/93
Revised 02/92
Revised 11/91
Revised 11/89