School of: Arts and Sciences          Prepared by: Committee          IAI Code: NA

Department: Mathematics          Date (prepared for CCC): Spring 2012

Major Curriculum or market served: Career Areas

Annual Review Date: Fall, 2013

Course Data:

<table>
<thead>
<tr>
<th>Prefix No.</th>
<th>Course Title</th>
<th>Credit</th>
<th>Lecture</th>
<th>Lab</th>
<th>Clinical Lab</th>
<th>*Fee</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAT 103</td>
<td>Applied Intermediate Algebra</td>
<td>3.0</td>
<td>3.0</td>
<td>0.0</td>
<td>0.0</td>
<td>None</td>
</tr>
</tbody>
</table>

Prerequisite(s): MAT 055 (minimum grade of “C”) or qualifying score on placement test

Catalog Course Description: Intermediate-level course in algebra, including topics in exponential and radical manipulation, functions, relations, rational expressions and solving fraction and quadratic equations. Heavy emphasis is on applications rather than theory. May not be used to fulfill the mathematics requirement in the AS or AA degree.

I. Overall Learning Goals (1 or 2 sentences):

Upon successful completion of this course, the student will be able to understand the concepts of intermediate algebra and apply the concepts to problem solving.

*List course fee amount for new courses only. List ‘None’ if course fee not required.*
II. Resources utilized:
   A. Required textbook(s)/workbook(s) example: (list author, year of publication, *title of work*, location: (i.e. New York, NY), and publisher - Any acceptable Standard may be utilized to cite textbook(s)
      
   
   B. Supplementary texts/and materials:
   
   C. Other resources utilized:

(HINT: Double-click on the □ and mark ‘checked’ or ‘not checked’)

III. Instructional Strategies: Check and comment as needed on the instructional methods utilized to attain the course objectives:

- Lecture
- Lecture/Demonstration
- Clinical Lab
- Internship
- Other:

- Discussion
- Laboratory
- Independent Study
- Power Point
- Problem solving/case situations

Comments: instructional methods utilized (optional): MyMathLab

IV. Formative Evaluation: Check the evaluation methods utilized to monitor progress toward attainment of course objectives:

- Quizzes
- Examinations
- Journal
- Mid-term examination
- Other:

- Laboratory skills
- Oral participation
- Written assignments
- Clinical progress reports
- Coop experience Progress report

- Presentations
- Projects
- Portfolio

V. Summative Evaluation: Check the evaluation method utilized to determine whether final course objectives have been attained:

- Final (written) examination
- Final (oral) examination
- Final clinical/laboratory exam
- Final skills test
- Other:

- Course projects
- Term papers
- Portfolio
- Final coop experience evaluation

VI. Assessment: Check the assessment method(s) utilized to determine if the learning goals and objectives have been attained:

- Pre/post test/paper
- One-minute paper
- Portfolio assessments
- Student survey
- Departmental final examination
- License/certification exam results
- Journal assignment
- Common writing assessment
- Employer survey
### VII. Course Plan

Indicate the distribution of contact hours by topic.

<table>
<thead>
<tr>
<th>Topic</th>
<th>Contact Hours</th>
<th>Clinical/Laboratory</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operations with integers; properties of real numbers; simplifying expressions; translating verbal statements</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Solving linear and absolute value equations and inequalities; word problems involving sums</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Operations on polynomials; word problems involving polynomials</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Factoring polynomials</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Operations on rational expressions;</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Simplifying complex fractions; solving rational equations; solving word problems</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Functions; graphing linear equations and inequalities; determining the equation of a line; finding the inverse of a linear function; solving percent word problems</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Solving systems of linear equations by graphing, by substitution and by addition; solving word problems using systems of equations</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Simplifying radicals, operations with complex numbers; solving quadratic equations by factoring, completing the square and the quadratic formula</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Solving radical equations; solving quadratic inequalities; solving word problems with quadratic equations</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Properties of exponents; simplifying higher order radical and exponential expressions</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td>45</td>
<td></td>
</tr>
</tbody>
</table>

Other:
VII. Learning Objectives: For courses approved by ICCB, it is presumed students will spend a minimum of 2 hours outside study for each 1 hour of lecture in class; and a minimum of 1 hour of outside study for each 2 hours of lab or clinical in class, in order to meet the following objectives. Attach additional pages as needed. (Learning objectives must be stated in measurable terms)

<table>
<thead>
<tr>
<th>Objective</th>
<th>Lecture</th>
<th>Laboratory</th>
<th>Clinical</th>
</tr>
</thead>
<tbody>
<tr>
<td>State, apply and explain the properties of the real number system</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perform the operations of addition, subtraction, multiplication and division on polynomials, rational expressions and radical expressions.</td>
<td>X</td>
<td></td>
<td></td>
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<tr>
<td>Identify functions as graphs, ordered pairs and formulas and be able to state the key properties.</td>
<td>X</td>
<td></td>
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</tr>
<tr>
<td>State and apply the concepts related to linear functions including slope, x and y-intercepts, graphing, slope-intercept form, point-slope form, parallel and perpendicular lines.</td>
<td>X</td>
<td></td>
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<tr>
<td>Rationalize radical expressions and perform operations on complex numbers.</td>
<td>X</td>
<td></td>
<td></td>
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<tr>
<td>Factor trinomials, special binomials and by grouping</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Solve linear equations and inequalities, absolute value equations and inequalities, systems of linear equations and inequalities, quadratic equations and rational equations</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Demonstrate competence in appropriate problem-solving skills and an ability to apply the concepts of intermediate algebra to a variety of real-world situations.</td>
<td>X</td>
<td></td>
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</tbody>
</table>