Please read the attached curriculum proposal. Then make your preliminary recommendation. If you have reservations or are against the proposal, please add your comments for the committee to discuss. After discussion, we will vote on the recommendations to forward to the Committee on Programs and Curricula (CPC).

**PRELIMINARY (non-binding) RECOMMENDATION**

<table>
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<tr>
<th>NAME</th>
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<td>Bates, Robert</td>
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<td>Matsumoto, Mieko</td>
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<td>Rubio, Brent</td>
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<td>Yonezawa, Shioko</td>
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<td>Maslowski, Jean</td>
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<td>Ferguson, Michael</td>
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<td>Higa-King, Jennifer</td>
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<td>Luke, Alapaki</td>
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<td>Roberts-Deutsch, Marcia</td>
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University of Hawai'i Honolulu Community College
CURRICULUM ACTION PROPOSAL
ADD a New Course

| Course Alpha & No.: | Math 75X | Proposer: | S. Foster & M. Chi | Effective Term: | Fall 2016 |

**PROPOSAL SUMMARY** (Include reasons for adding course, and similar courses offered elsewhere, i.e. college, alpha, number, title):

With the separation of math into pathways, the College transfer level Non-Calculus pathway (non-stem) needs a preparation course, it will be Math 75X (4 credit). From the system subcommittee on the math pathways; this new course is aligned with the title, number, and highly similar description & topics.

---

**SIGNATURES**


Initiator / Date

General Education Board (if applicable) / Date

Approval:

Division Curriculum Committee Chair / Date

Committee on Programs & Curricula Chair / Date

Vice Chancellor of Academic Affairs / Date

Chancellor / Date

Signed / 1/25/16

Division Chair / Date

Program Dean / Date

Signed / 1/25/16

Add a New Course Page 1 of 5
INSTRUCTIONS: Complete all applicable fields. Continue overflow text on p. 3 under “Additional Information”. Attach copies of all Catalog pages that are affected with changes marked.

<table>
<thead>
<tr>
<th>Course Alpha &amp; No.:</th>
<th>Math 75X</th>
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<tbody>
<tr>
<td>Effective Term:</td>
<td>Fall 2016</td>
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<td>Course Type:</td>
<td>Regular</td>
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<td>Experimental Course Expiration Date:</td>
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<tr>
<td>Title:</td>
<td>Introduction to Mathematical Reasoning</td>
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<td>Banner Title (30 characters):</td>
<td>Intro to Math Reasoning</td>
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</table>

- **YES ☐ NO ✓** Is this course certified to meet Career & Technical Education (AS/ AAS/ ATS) GEN ED Requirements? If "YES", select GEN ED below.
  - I. Communications (ASCM)
  - II. Quantitative or Logical Reasoning (ASQL)
  - III. Humanities and Fine Arts (ASGD)
  - IV. Natural Sciences (ASGA)
  - V. Social Sciences (ASGC)

- **YES ☐ NO ✓** Is this course certified to meet Liberal Arts (AA) GEN ED Requirements &/or UHM GEN ED Core Articulation? If "YES", select GEN ED below.
  - [Table showing LBART FOUNDATION, LBART DIVERSIFICATION, LBART OTHER options]

- Class Length: 16 weeks
- Credits: 4 credits
- Repeat & Credit Limit: Students may enroll \_ time(s) for a maximum of \_ credit(s)
- Schedule Type: LAL (Lecture Lab)
- Weekly Student Contact Hrs: 3 Hours Lecture per Week, 3 Hours Lab per Week, 6 Total Contact hrs per Week
- Grading Option: Letter Grade Only
- Enrollment Maximum: 25
- Major Restriction:
- Recommended Prep:
- Special Approval: Click To Select
- Cross-Listed Courses:

**University of Hawai‘i Honolulu Community College**

**CURRICULUM ACTION PROPOSAL**

**ADD a New Course**

<table>
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<tr>
<th>Course Alpha &amp; No.: Math 75X</th>
<th>Effective Term: Fall 2016</th>
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<tr>
<th><strong>Prerequisite:</strong></th>
<th><strong>Prerequisite:</strong> None (Open Placement)</th>
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<td>(*) State minimum grade if not a &quot;D&quot;</td>
<td>Prerequisite or Co-requisite:</td>
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<tr>
<td>Co-requisite:</td>
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**Catalog Course Description:**
This course prepares students for College transfer level Non-Calculus pathway: Math 100, Math 111, Math 115, Math 150. Course topics include ratio and percent, unit conversions, graphs, basic algebra, solving linear equations, working with formulas, and also includes system of linear equations with substitution, quadratic formula, and GCF factoring. (3 hrs. Lec.; 3 hrs. Lab. per week)

**Additional Information to print with Catalog Course Description:**

**Class Availability Comment (Web viewable):**

**Course SLOs:** (Attach Course Outline Form)

**Course Outline:** (Attach Course Outline Form)

**Impact:**

- **YES □ NO** Are any PROGRAMS impacted by this proposal? (i.e. Program Credits, Courses, Prerequisites, Requirements, Electives, etc.) If “Yes” attach Program Modification Form(s) and briefly explain below.

- **YES □ NO** Are any COURSES impacted by this proposal? (i.e. Course Prerequisites, Co-requisites, Recommended Prep, Cross-Lists, etc.) If “Yes” attach Course Modification Form(s) and briefly explain below.

- **YES □ NO** Were the affected Programs/Departments consulted and notified of the proposed changes?

Describe impact on Programs and/or Courses (Attach appropriate Program Modification and Course Modification Forms.) Changes prerequisites or placement choices for MANY programs and courses. Those departments need to review the new math course options and file the appropriate curriculum changes.

**Misc.**: Does this proposal require additional resources? (i.e. staff, equipment, facilities, etc.) If yes, provide details below.

This Non-Algebra/Non-Calculus pathway will increase the number of students in college-level courses that are underprepared in the subject and the requirements of college responsibilities. Students will need additional help. Therefore the Math department is requesting a bigger tutoring center, more math tutors, and computers with math software to handle the increase.

**Additional Information:**
### Course Outline

See Instructions for information on each item.

<table>
<thead>
<tr>
<th>Course Alpha &amp; No.: Math 75X</th>
<th>Semester Credit Hours: 4</th>
<th>Effective Term: Fall 2016</th>
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</table>

**Course Title:** Introduction to Mathematical Reasoning

**Prerequisite:** None

**Co-requisite:**

**Prerequisites or Co-requisite:**

**Recommended Prep:**

**Major Restriction:**

**Instructor Approval or other Approval:**

1. **Catalog Course Description:**
   This course prepares students for College transfer level Non-Calculus pathway: Math 100, Math 111, Math 115, Math 150. Course topics include ratio and percent, unit conversions, graphs, basic algebra, solving linear equations, working with formulas, and also includes system of linear equations with substitution, quadratic formula, and GCF factoring. (3 hrs. Lec.; 3 hrs. Lab. per week)

2. **Student Learning Outcomes:**
   Upon successful completion of this course, a student will be able to:
   - Perform arithmetic operations with integers and rational numbers, without a calculator
   - Compute powers and square roots of rational numbers
   - Convert Scientific Notation
   - Convert unit measurements with arithmetic operations, metric or English systems
   - Simplify expressions including distribution and like terms
   - Perform algebraic distribution, monomial multiplication and monomial division
   - Solve linear equations with distribution, variable on each side, and clearing the fractions
   - Solve percent or proportion problems in an application
   - Solve for a variable in a simple formula
   - Graph a linear equation with ordered pairs, intercepts, and slope
   - Solve a linear system of equations with substitution, only two variables
   - Demonstrate factoring out the GCF from a polynomial expression
   - Solve a quadratic equation with the quadratic formula

3. **Means by which the assessment of the SLOs will be accomplished:**
   Homework, Quizzes, and/or Exams

4. **Program Learning Outcomes addressed by this course:**

5. **Method(s) of Instruction:**
   Lecture, online

6. **Method(s) of Evaluation:**
7. Course Content:
   Arithmetic Operations
   • Signed Numbers
   • Addition and Subtraction of Signed Numbers
   • Multiplication and Division of Signed Numbers
   • Powers and Roots
   • Order of Operations
   • Scientific Notation (maybe include comparing values with handout)
   • Problem Solving
   Intro to Algebra
   • Basic Algebra Expressions
   • Addition and Subtraction of Algebraic Expressions
   • Multiplication of Algebraic Expressions (distributing a monomial, very little on FOIL)
   • Division of Algebraic Expressions (only dividing by a monomial)
   Equations and Inequalities
   • Solving a Simple Equation
   • Simple Formulas and Literal Equations
   • Simple Inequalities
   • Problem-Solving Strategies and Word Problems
   • Working with Formulas
   Proportions & Unit Conversions
   • Ratio, Proportion, and Variation
   • Percents
   • Working with Units of Measure
   • Units of Measure: The Metric System
   • Reduction and Conversion of Units
   Graphs
   • The Rectangular Coordinate System
   • Graphs of Linear Functions
   System of Linear Equations
   • Graphical Solution to Two Simultaneous Equations
   • Substitution Method
   Factoring
   • The Distributive Property and Common Factors, GCF
   • The Difference of Two Squares
   Quadratic Equations
   • The Quadratic Equation
   • Solving Quadratic Equations Using the Quadratic Formula

8. Possible Texts:
   Beginning Algebra, 12th edition; Lial, Hornsby, McGinnis
   Introduction to Technical Mathematics, 5th edition; Washington, Triola, Reda
   (Math 24/25)
   (Math 50/150)

9. Reference and/or Auxiliary Materials (if any):
   Suggesting the TI-30XS Multiview calculator, to be used after arithmetic operations with integers and Rational numbers.

10. Resource Requirements (if applicable):

11. Relationship to other courses in the program (if applicable):

12. General Education or other requirement(s) satisfied:

13. Articulation (if applicable):

14. Additional information of importance:
Course outline Proposal

Math 75 – Introduction to Mathematical Reasoning

Credits:
3 credit Lecture and 1 credit Lab, total of 6 contact hours per week.

Prerequisites:
Open placement

Description:
This course prepares students for College transfer level Non-Calculus pathway: Math 100, Math 111, Math 115, Math 150. Course topics include ratio and percent, unit conversions, graphs, basic algebra, solving linear equations, working with formulas, and also includes system of linear equations with substitution, quadratic formula, and GCF factoring. (3 hrs. lec.; 3 hrs. lab. per week)

Possible Textbooks, yet to be decided:
Beginning Algebra, 12th edition; Lial, Hornsby, McGinnis (Math 24/25)
Introduction to Technical Mathematics, 5th edition; Washington, Triola, Reda (Math 50/150)

Calculator:
Suggesting the TI-30XS Multiview, to be used after arithmetic operations with Integers and Rational numbers.

SLOs:
• Perform arithmetic operations with integers and rational numbers, without a calculator
• Compute powers and square roots of rational numbers
• Convert Scientific Notation
• Convert unit measurements with arithmetic operations, metric or English systems
• Simplify expressions including distribution and like terms
• Perform algebraic distribution, monomial multiplication and monomial division
• Solve linear equations with distribution, variable on each side, and clearing the fractions
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• Solve a linear system of equations with substitution, only two variables
• Demonstrate factoring out the GCF from a polynomial expression
• Solve a quadratic equation with the quadratic formula
Course Outline Proposal

Course Topics:

**Arithmetic Operations**
- Signed Numbers
- Addition and Subtraction of Signed Numbers
- Multiplication and Division of Signed Numbers
- Powers and Roots
- Order of Operations
- Scientific Notation (maybe include comparing values with handout work)
- Problem Solving

**Intro to Algebra**
- Basic Algebra Expressions
- Addition and Subtraction of Algebraic Expressions
- Multiplication of Algebraic Expressions (distributing a monomial, very little on FOIL)
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**Graphs**
- The Rectangular Coordinate System
- Graphs of Linear Functions

**System of Linear Equations**
- Graphical Solution to Two Simultaneous Equations
- Substitution Method

**Factoring**
- The Distributive Property and Common Factors, GCF
- The Difference of Two Squares

**Quadratic Equations**
- The Quadratic Equation
- Solving Quadratic Equations Using the Quadratic Formula