

Administrative Master Syllabus

Course Information

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|--------------------------------------|--|
| Course Title | Contemporary Mathematics (Quantitative Reasoning) |
| Course Prefix, Num. and Title | MATH 1332 |
| Division | Math & Physical Sciences |
| Department | Mathematics |
| Course Type | Academic WCJC Core Course |
| Course Catalog Description | Intended for Non STEM (Science, Technology, Engineering, and Mathematics) majors. Topics include introductory treatments of sets and logic, financial mathematics, probability and statistics with appropriate applications. Number sense, proportional reasoning, estimation, technology, and communication should be embedded throughout the course. Additional topics may be covered. |
| Pre-Requisites | Meet TSI college-readiness standard for Mathematics; or concurrently enrolled in NCBM 0232 |
| Co-Requisites | None |

Semester Credit Hours

| | |
|--|-------|
| Total Semester Credit Hours (SCH): Lecture Hours: | 3:3:0 |
| Lab/Other Hours | |
| Equated Pay Hours | 3 |
| Lab/Other Hours Breakdown: Lab Hours | 0 |
| Lab/Other Hours Breakdown: Clinical Hours | 0 |
| Lab/Other Hours Breakdown: Practicum Hours | 0 |
| Other Hours Breakdown | 0 |

Approval Signatures

| Title | Signature | Date |
|-------------------------|-----------|------|
| Department Head: | | |
| Division Chair: | | |
| VPI: | | |

Additional Course Information

Topical Outline: Each offering of this course must include the following topics (be sure to include information regarding lab, practicum, and clinical or other non-lecture instruction).

Unit 1: Algebraic Expressions, Equations, and Functions

- 6.1 – Algebraic Expressions and Formulas
- 6.2 – Linear Equations in One Variable and Proportions
- 6.3 – Linear Applications
- 6.5 – Quadratic Equations
- 7.1 – Graphing and Functions
- 7.2 – Linear Functions and Their Graphs
- 7.6 – Modeling Data: Exponential, Logarithmic, and Quadratic Functions

Unit 2: Personal Finance

- 8.1 – Percent, Sales Tax, and Discounts
- 8.3 – Simple Interest
- 8.4 – Compound Interest
- 8.6 – Cars
- 8.7 – The Cost of Home Ownership
- 8.8 – Credit Cards

Unit 3: Sets and Logic

- 2.1 – Basic Set Concepts
- 2.2 – Subsets
- 2.3 – Venn Diagrams and Set Operations
- 2.5 – Survey Problems
- 3.1 – Statements, Negations, and Quantified Statements
- 3.2 – Compound Statements and Connectives
- 3.8 – Arguments and Euler Diagrams

Unit 4: Counting Methods and Probability

- 11.1 – The Fundamental Counting Principle
- 11.2 – Permutations
- 11.3 – Combinations
- 11.4 – Fundamentals of Probability
- 11.6 – Events Involving *Not* and *Or*; Odds
- 11.7 – Events Involving *And*; Conditional Probability

Unit 5: Data and Statistics

- 12.1 – Sampling, Frequency, Distributions, and Graphs
- 12.2 – Measures of Central Tendency
- 12.3 – Measures of Dispersion
- 12.4 – The Normal Distribution

Course Learning Outcomes:**Learning Outcomes – Upon successful completion of this course, students will:**

1. Apply the language and notation of sets.
2. Determine the validity of an argument or statement and provide mathematical evidence.
3. Solve problems in mathematics of finance.
4. Demonstrate fundamental probability/counting techniques and apply those techniques to solve problems.
5. Interpret and analyze various representations of data.
6. Demonstrate the ability to choose and analyze mathematical models to solve problems from real-world settings, including, but not limited to, personal finance, health literacy, and civic engagement.

Methods of Assessment:

Final Exam (Required)

Other Methods of Assessment:

- Hour Exams
- Homework
- Quizzes
- Short Answer
- Discussion Board
- Participation
- Projects

Required text(s), optional text(s) and/or materials to be supplied by the student:

“Thinking Mathematically” by Blitzer; 8th edition; Pearson

Students must have computer access to the WCJC website, their WCJC student email and online accounts. WCJC has open computer labs, with internet access, on all campuses for students to use.

Suggested Course Maximum:

35

List any specific or physical requirements beyond a typical classroom required to teach the course.

None

Course Requirements/Grading System: Describe any course specific requirements such as research papers or reading assignments and the generalized grading format for the course.

- A. Final Exam 15-30%
- B. Other Course Requirements 70-85%

A = 90-100
B = 80-89
C = 70-79
D = 60-69
F = 59 or below



Curriculum Checklist:

- Administrative General Education Course** (from ACGM, but not in WCJC Core) – No additional documents needed.
- Administrative WCJC Core Course** – Attach the Core Curriculum Review Forms
 - Critical Thinking
 - Communication
 - Empirical & Quantitative Skills
 - Teamwork
 - Social Responsibility
 - Personal Responsibility
- WECM Course** – If needed, revise the Program SCANS Matrix and Competencies Checklist

Core Curriculum Review Form

Foundational Component Area: Core 020: Mathematics

Course Prefix & Suffix: MATH 1332 Contemporary Mathematics (Quantitative Reasoning)

Core Objective:

Critical Thinking Skills—to include creative thinking, innovation, inquiry, and analysis, evaluation and synthesis of information

Student Learning Outcome Supporting Core Objective:

For each core objective, there must be at least two different methods of assessment.

| SLO Status | Student Learning Outcome (SLO) | Learning Activity | Assessment |
|----------------------|---|---|---|
| State Mandated | Interpret and analyze various representations of data. (SLO #5) | A word problem (application) where the student must identify variables, assemble the correct formulas and solve for the desired result, including a brief paragraph explaining what was done. | A quiz, test, or discussion board artifact showing the student’s written answer. Grading for correctness and the rubric for critical thinking will assess this objective. |
| Choose a SLO status. | Insert SLO (from Administrative Master Syllabi) | Provide a brief name and description of the sample learning activity. | Provide a brief name and description of the sample quiz, exam, rubric, assignment, etc. for assessing the objective. |
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Core Curriculum Review Form

Foundational Component Area: Core 020: Mathematics

Course Prefix & Suffix: MATH 1332 Contemporary Mathematics (Quantitative Reasoning)

Core Objective:

Communication Skills—to include effective development, interpretation and expression of ideas through written, oral and visual communication

Student Learning Outcome Supporting Core Objective:

For each core objective, there must be at least two different methods of assessment.

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Core Curriculum Review Form

Foundational Component Area: Core 020: Mathematics

Course Prefix & Suffix: MATH 1332 Contemporary Mathematics (Quantitative Reasoning)

Core Objective:

Empirical and Quantitative Skills—to include the manipulation and analysis of numerical data or observable facts resulting in informed conclusions

Student Learning Outcome Supporting Core Objective:

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| SLO Status | Student Learning Outcome (SLO) | Learning Activity | Assessment |
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