



Purpose: It is the intention of this Administrative-Master Syllabus to provide a general description of the course, outline the required elements of the course and to lay the foundation for course assessment for the improvement of student learning, as specified by the faculty of Wharton County Junior College, regardless of who teaches the course, the timeframe by which it is instructed, or the instructional method by which the course is delivered. It is not intended to restrict the manner by which an individual faculty member teaches the course but to be an administrative tool to aid in the improvement of instruction.

Course Title – Fundamentals of Mathematics II

Course Prefix and Number – MATH 1351

Department - MATH

Division – Math and Science

Course Type: (check one)

- Academic General Education Course (from ACGM – but not in WCJC Core)
- Academic WCJC Core Course
- WECM course (This course is a Special Topics or Unique Needs Course: Y or N)

Semester Credit Hours # : Lecture hours # : Lab/Other Hours # **3:3:0**

Equated Pay hours for course - 3

Course Catalog Description – Concepts of geometry, probability, and statistics, as well as applications of the algebraic properties of real numbers to concepts of measurement with an emphasis on problem solving and critical thinking. This course is designed specifically for students who seek middle grade (4 through 8) teacher certification.

List Lab/ Other Hours
Lab Hours 0
Clinical Hours 0
Practicum Hours 0
Other (list) 0

Prerequisite: MATH 1350, College Algebra (MATH 1314) or the equivalent

Type: ACAD

Prepared by Dale Neaderhouser

Date 8-24-13

Reviewed by department head Dale Neaderhouser

Date 8-24-13

Accuracy verified by Division Chair Kevin Dees

Date 8-24-13

Approved by Dean or Vice President of Instruction *gghunt*

Date 8-24-13



I. Topical Outline – Major areas of coverage:

- A) Probability concepts
 - 1. Describing and analyzing data
 - 2. Graphing data and making predictions
 - 3. Sampling and simulations
- B) Probability: simple and multistage
- C) Geometric figures
 - 1. Plane
 - 2. Polygons
 - 3. Space
 - 4. Symmetric
- D) Systems of measurement
- E) Area and perimeter
- F) Volumes and surface area
- G) Congruence
- H) Similarity
- I) Constructions

II. Course Learning Outcomes

Course Learning Outcomes	Methods of Assessment
<p>Upon successful completion of this course, student will:</p> <p>To have prospective K_8 teachers prepared to teach elementary mathematics.</p> <ul style="list-style-type: none"> A) Basic statistics: <ul style="list-style-type: none"> 1. Describing, analyzing, and graphing data 2. sampling techniques and simulations B) Simple probability C) Geometric figures: Plane, polygons, space, and symmetric figures D) Area, perimeter, volume, and surface area E) Congruence and constructions 	<ul style="list-style-type: none"> 1. Hour exam and departmental final. 2. Hour exam and departmental final. 3. Hour exam and departmental final. 4. Hour exam and departmental final. 5. Hour exam and departmental final. <p>Outcomes assessed by:</p> <p>Hour exams Final Short Answer Discussion Board</p>

III. Required Text(s), Optional Text(s) and/or Materials to be Supplied by Student.

A Problem Solving Approach to Mathematics for Elementary School Teachers, 10th edition,
Billstein/Libeskind/Lott, Pearson Addison-Wesley Publisher (required)
Calculator (instructor's discretion)

IV. Suggested Course Maximum - 35

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

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.

VI. 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. Average of four or more one hour exams | 65-85% |
| b. Homework grade | 0-10% |
| c. Comprehensive Department Final | 15-25% |
- Or grading as specified by the instructor.

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

VII. Curriculum Checklist

- **Academic General Education Course** (from ACGM – but not in WCJC Core)
No additional documentation needed

- **Academic WCJC Core Course**
Attach the Core Curriculum Review Forms

- Critical Thinking
- Communication
- Empirical & Quantitative Skills
- Teamwork
- Social Responsibility
- Personal Responsibility

- **WECM Courses**
If needed, revise the Program SCANS Matrix & Competencies Checklist.



Core Curriculum Review Form

Foundational Component Area: **Mathematics**

Course Prefix & Suffix: Math 1351

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
The SLO is:	Insert SLO (from Administrative Master Syllabi(AMS)) below	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:
<input checked="" type="checkbox"/> Existing <input type="checkbox"/> Revised <input type="checkbox"/> New <input type="checkbox"/> State Mandated	Simple probability (AMS SLO #B)	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.
<input checked="" type="checkbox"/> Existing <input type="checkbox"/> Revised <input type="checkbox"/> New <input type="checkbox"/> State Mandated	Basic statistics: 1. Describing, analyzing, and graphing data (AMS SLO #A1)	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.
<input checked="" type="checkbox"/> Existing <input type="checkbox"/> Revised <input type="checkbox"/> New <input type="checkbox"/> State Mandated	Area, perimeter, volume, and surface area. (AMS SLO #D)	Have the student grade an incorrect problem. The student should write a brief paragraph stating what was done incorrectly and what must be done to correct the solution.	A quiz, test or scanned artifact showing the student's written answer. Grading for correctness and the rubric for critical thinking will assess this.



Core Curriculum Review Form

Foundational Component Area: **Mathematics**

Course Prefix & Suffix: Math 1351

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.

SLO Status	Student Learning Outcome (SLO)	Learning Activity	Assessment
The SLO is:	Insert SLO (from Administrative Master Syllabi (AMS)) below	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:
<input checked="" type="checkbox"/> Existing <input type="checkbox"/> Revised <input type="checkbox"/> New <input type="checkbox"/> State Mandated	Simple probability (AMS SLO #B)	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 communication will assess this.
<input checked="" type="checkbox"/> Existing <input type="checkbox"/> Revised <input type="checkbox"/> New <input type="checkbox"/> State Mandated	Basic statistics: 1. Describing, analyzing, and graphing data (AMS SLO #A1)	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 communication will assess this.
<input checked="" type="checkbox"/> Existing <input type="checkbox"/> Revised <input type="checkbox"/> New <input type="checkbox"/> State Mandated	Area, perimeter, volume, and surface area. (AMS SLO #D)	Have the student grade an incorrect problem. The student should write a brief paragraph stating what was done incorrectly and what must be done to correct the solution.	A quiz, test or scanned artifact showing the student's written answer. Grading for correctness and the rubric for communication will assess this.



Core Curriculum Review Form

Foundational Component Area: **Mathematics**

Course Prefix & Suffix: Math 1351

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:

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

SLO Status	Student Learning Outcome (SLO)	Learning Activity	Assessment
The SLO is:	Insert SLO (from Administrative Master Syllabi) below	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:
<input checked="" type="checkbox"/> Existing <input type="checkbox"/> Revised <input type="checkbox"/> New <input type="checkbox"/> State Mandated	Basic statistics: 1. Describing, analyzing, and graphing data (AMS SLO #A1)	A problem where the student computes the sample mean, sample variance and standard variation. Work for each step should be shown. This is not a calculator problem.	A quiz, test or discussion board artifact showing the student's written steps and answer. Grading for correctness and the rubric for EQS will assess this.
<input checked="" type="checkbox"/> Existing <input type="checkbox"/> Revised <input type="checkbox"/> New <input type="checkbox"/> State Mandated	Area, perimeter, volume, and surface area. (AMS SLO #D)	A problem where the student computes a numerical result. All steps should be shown. This can be a calculator problem requiring given significant digits and rounding.	A quiz, test or discussion board artifact showing the student's written steps and answer. Grading for correctness and the rubric for EQS will assess this.
<input checked="" type="checkbox"/> Existing <input type="checkbox"/> Revised <input type="checkbox"/> New <input type="checkbox"/> State Mandated	Simple probability (AMS SLO #B)	A problem where the student computes a simple probability. Work for each step should be shown. This is not a calculator problem.	A quiz, test or scanned artifact showing the student's written steps and answer. Grading for correctness and the rubric for EQS will assess this.