**Pittsburg State University**

**MATH 133 - Quantitative Reasoning**

**Semester, Year and Instructor Name**

**Office Hours**

**Course Syllabus**

Course delivery method: Lecture, discussion, and problem-solving

# PSU CATALOG COURSE DESCRIPTION

Designed for the students NOT planning to major in a field that requires advanced mathematical skills.

Prepares students for the mathematics encountered in other college courses that use quantitative reasoning. Emphasis on developing critical thinking and quantitative reasoning skills needed to understand major issues in society. Prerequisite: MATH 019 Intermediate Algebra or one unit of high school algebra.

# COURSE OBJECTIVES/LEARNING OUTCOMES

Upon completion of this course, the student should be able to:

* Identify the basic concepts of logic and problem solving and be able to apply those concepts;
* Understand and be able to apply basic set theory including operations and Venn Diagrams to solve problems;
* Identify the uses and abuses of quantitative information in everyday life: percentages, ratios, scientific notation, rounding, powers;
* Use technology in dealing with quantitative information;
* Use managing money skills such as budgeting, calculating simple and compound interest, and using savings plans and investments.
* Apply formulas for loan payments and loan costs.
* Use tax tables and complete state and federal income tax forms.
* Apply basic probability counting strategies including multi-step experiments and odds;
* Recognize and apply counting strategies (e.g. permutations and combinations) associated with probability simulations;
* Understand the basic principles of descriptive statistics;
* Identify the uses and abuses of statistics in everyday life;
* Draw graphs such as box and whisker, histogram, circle graph, stem and leaf plots, scatter and stacked plots to represent a set of data;
* Apply the tools and techniques of measurement for the organization and analysis of data;
* Define and recognize relations and functions when using mathematical models;
* Interpret functions in both tabular and equation form.

**Pitt State Pathways:**

**Quantitative/Analytic Methods:** Quantitative literacy and its methods refer to competency in working with numerical data. Students with strong quantitative skills possess the ability to reason and solve problems from a wide array of contexts and everyday life situations. They can create sophisticated arguments supported by objective evidence and can communicate those arguments in a variety of formats (e.g. text, tables, graphs, mathematical equations, etc.) as appropriate. Competency in this element means:

* *Applying* a set of formal tools to interpret, represent, calculate, and analyze quantitative data;
* *Explaining* assumptions and rationale for selecting a mathematical approach to solve a problem;
* *Explaining* assumptions and rationale for selecting a mathematical or formal logical approach to solve a problem;
* *Drawing* and *communicating* conclusions to support decisions

**ASSESSMENT:** As a Milestone I PSP course, the student is expected to:

* Apply tools of analysis and communicate results

# TEACHING METHODS

 Lecture, class discussion, worksheets, written assignments, online assignments, quizzes, and exams will be used. Canvas, MyLab and Mastering (an online learning website, MyMathLab) will be used.

# CLASS ATTENDANCE POLICY

1. Class attendance is the responsibility of each student. Students are expected to attend and check class materials on Canvas, MyLab and Mastering regularly.
2. Students with excessive absence could be dropped from class with a grade of “W.” Please be aware of the deadlines to drop a class.
3. Students who have school-sponsored activities that will conflict with the class should let the instructor know prior to the activity.

**CLASSROOM CONDUCT POLICY**

It is expected that the student will maintain behavior appropriate for a collegiate learning environment.

# TEXTBOOK OR OTHER STUDENT PROVIDED MATERIALS

Using and Understanding Mathematics: A Quantitative Reasoning Approach; Sixth Edition; Bennett, Briggs,

Pearson/Addison Wesley. (Electronic textbook is included in MyMathLab)

Use Canvas, MyLab and Mastering to access MyMathLab Calculator

# COURSE EVALUATION METHODS

* Assignments will be made using Canvas, MyLab and Mastering.
* There will also be worksheets, written assignments, and quizzes throughout the semester.
* There will be 4 to 5 unit tests plus a comprehensive final exam. These tests will be based on the text, lectures, and assignments and will include questions to assess your ability to apply tools of analysis and communicate results.

Grading Scale:

 A: 90%-100% B: 80%-89% C: 70%-79% D: 60%-69% F: below 60%

# ADDITIONAL INFORMATION

For a list of important dates, policies, and other information, please consult the PSU Syllabus Supplement. <https://www.pittstate.edu/registrar/_files/documents/syllabus-supplement-fall-2018>

**THE INSTRUCTOR RESERVES THE RIGHT TO AMEND AND TO REORGANIZE THIS SYLLABUS AT ANY TIME.**