

MATH 107 – Survey of Mathematics Ideas in Sports and Games

General arts course for mathematics course. Flores and games. Introductory measurement, algebra

This course may be taken for general education credit (2 for non-math and non-science majors). Only one of Math 100, 102, 107, and 108 may be taken for general education credit.

Prerequisites

MATH 090 with a grade of C- or higher, or MPT 100.

Course Objectives

By the conclusion of this course the successful student will be able to:

Demonstrate competence with various undergraduate-level mathematical concepts and procedures.

Demonstrate recognition of how mathematics can be applied to modern sports, athletic competitions, and games.

Use mathematics to analyze a variety of sports, athletic competitions, and games.

Make connections among mathematics topics that occur across sports, athletic competitions, and games.

Assessment

Assessment of student achievement of the course objectives will vary from one instructor to another. Typical tools for evaluating students performance may include: Journal Entries, Problem Sets, a Student Presentation, and a Final Exam.

Use of Technology

The student is required to access required readings on the Course Management System and on an MU Library web page dedicated to the course. Use of a scientific calculator is also required.

Topics

Course resources include chapters from the following:

- S. D’Agostino [2020]. How to Free Your Inner Mathematician: Notes on Mathematics and Life. Oxford University Press.
- Winston, W. [2009]. Mathletics: How Gamblers, Managers and Sports Enthusiasts use Mathematics in Basketball, Baseball, and Football. Princeton University Press.
- Gallian, J. [2010]. Mathematics and Sports. American Mathematical Society.
- Millennium Mathematics Project | Maths and Sport. <https://sport.maths.org/content/>
- Mathematics and Sports WebQuests. <https://www.mathgoodies.com/Webquests/sports>

Themes and associated activities include:

Theme	Activities	Course readings/Resources
Math is reasoning & problem solving: examples from sports & games	Examples of inductive reasoning: Number puzzles Examples of deductive reasoning: Strategy games & puzzles Game Theory	S. D’Agostino [2020] Gallian, J. [2010]

