

SOUTH FLORIDA STATE COLLEGE

DIVISION OF ARTS AND SCIENCES

COURSE SYLLABUS

Semester

MGF 1106 Liberal Arts Math I (3 credit hours)

Meeting Days, Meeting Times, Meeting Location

Instructor:

Phone:

Office Location:

Email:

Office Hours:

Welcome:

Welcome to MGF 1106, Liberal Arts Math II! Be prepared to take a dive into a variety of mathematical topics, the beauty of mathematics and how, in some instances, it can be applied in the real-world. It is designed for you if your major does not require math courses that lead to the Calculus sequence. Please feel free to contact me via email or phone if you have any questions.

Catalog Description:

Topics included are problem solving, deductive and inductive reasoning, set theory, logic, systematic counting, probability and statistics, plane geometry, and history of mathematics. You will be required to demonstrate college-level understanding and competency of these topics through multiple assignments and assessments and must earn a grade of C or higher in this course.

Course Specific Outcomes:

Upon successful completion of this course, you should be able to:

1. identify the major techniques for problem solving;
2. explain the difference between inductive reasoning and deductive reasoning; identify common patterns from a given list of objects;
3. determine whether a list of numbers form an arithmetic progression or geometric progression;
4. distinguish between a finite sequence and an infinite sequence;
5. explain the concept of an infinite series and partial sum;
6. describe the meaning of the word set, and write a given set in two ways;
7. identify well-defined sets, finite sets, and infinite sets;
8. identify equal sets, equivalent sets, and disjoint sets;
9. find the subsets and proper subsets of a given set;
10. identify a universal set and find the complement of any set contained in some universal set;
11. find the intersection and union of two or more sets;
12. draw Venn diagrams to show the relationship between sets;

13. show a one-to-one correspondence between any two equivalent sets and find the cardinality of sets;
14. distinguish between simple statements and compound statements and identify the various types of compound statements;
15. write compound verbal statements in symbolic form;
16. construct a truth table for a given compound statement containing up to three variables;
17. determine whether two statements are logically equivalent by means of truth tables or DeMorgan's laws;
18. determine whether a given argument is valid or invalid by means of truth tables using up to three variables;
19. use Venn diagrams to determine whether two statements are consistent or inconsistent, and to determine whether an argument is valid or invalid;
20. identify the various forms of the conditional statement and write the conditional statement in any of these forms;
21. compute the probability of a given event occurring;
22. compute the probability of the event not A, given the probability of A;
23. use the fundamental counting principle to determine how many ways two or more events can occur together;
24. construct a sample space showing the possible outcomes for an experiment;
25. construct a tree diagram for an experiment and use it to list possible outcomes of the experiment;
26. compute the odds in favor or against an event;
27. compute the mathematical expectation for an event;
28. determine whether two events are dependent or independent, and determine whether two events are mutually exclusive;
29. compute the probability of event A and B and the probability of event A or B, given the probability of A and the probability of B;
30. determine the number of permutations that can occur for n things taken r at a time and number of combinations that can occur for n things taken r at a time;
31. state four measures of central tendency and two measures of dispersion and distinguish among them;
32. compute the mean, median, mode, midrange, range, and standard deviation for a given set of data;
33. find the percentile or quartile of a single datum from a given set;
34. represent data graphically;
35. construct a frequency distribution and a histogram from a given set of data;
36. describe the normal distribution and determine what percentage of normally distributed data is within a given number of standard deviations from the mean;
37. identify specific ways in which statistics can be used or misused or misinterpreted;
38. identify points, lines, half-lines, planes, half-planes, rays and line segments and find their intersections and unions;
39. identify and find the measure of acute, obtuse, right, straight, vertical, complementary, and supplementary angles, and angles formed by two parallel lines cut by a transversal;
40. state and apply the Pythagorean theorem;
41. identify and find the values of certain parts of various types of triangles;
42. identify the various types of polygons and find their perimeter and area;

43. find the circumference and area of circles;
44. find the surface area and volume of certain solids;
45. set up and solve word problems involving applications of the mathematics topics covered; and
46. identify historical persons and developments in the areas of mathematics covered.

Required Course Materials:

Mathematical Ideas, 13th edition, by Miller, Hereen, and Hornsby. ISBN 9780321977076

Instructional Methods:

Lecture, demonstration and question-answer format. Students will have the opportunity to practice the correct procedures and techniques demonstrated. If the student does not understand a concept, it is the responsibility of the student to seek assistance.

Course Resources:

The college provides tutoring in various subjects. On Brightspace, a “Tutoring” link appears on the course navbar. From the dropdown menu, students can access **Tutor.com** and **SFSC Tutoring**. **Tutor.com** is currently available year-round in the Fall, Spring and Summer. Tutor.com offers one hour of free tutoring per term. If you have questions about Tutor.com or to request additional free hours, contact Brightspace Support at 863-784-7017 or BrightspaceSupport@southflorida.edu. For **SFSC Tutoring** (Math, Science and Writing Labs), appointments can be made by accessing the link in the dropdown menu. SFSC Tutoring is available to all SFSC students and there is no limit to the number of requests. Tutors’ schedules are usually available two or more weeks in advance. The **Math Lab** is located in Y-103 on the first floor of Building Y (the library) and offers appointments via Zoom and in-lab; Phone: 863-784-7369.

Class Attendance and Tardy Policy:

Attendance is vital to success in this course. Ideally, you should attend all classes. It is in the student’s best interest to keep the instructor advised about the reason for absences. Absences will be noted and treated accordingly. If the student is absent, it is their responsibility to cover the lesson for the day.

Tardiness (and/or leaving class early) is also detrimental to your work and disruptive to other students’ concentration. Tardy students disrupt the continuity of the class and affect the students’ ability to learn.

Students with excessive absences, tardies and/or leaving class early may be withdrawn from the class. Be aware that a withdrawal in any course may impact your financial aid or scholarship status.

Medical Illness:

Students who miss class or web assignments because of an illness will only receive accommodations if they submit the required medical documentation to the Office of the Dean of Students, Dr. Mark Bukowski, 863-784-7104, or bukowskim@southflorida.edu. Please note: The professor will not provide accommodations without instruction from the Office of the Dean of Students.

Students who miss class because of an illness must seek medical care and submit the necessary documentation to the Office of the Dean of Students. Upon compliance, the professor will make all reasonable efforts to accommodate the student and provide an opportunity to make up missed work (except for in-class participation points).

SFSC recommends that you keep up with classwork depending on how well you feel. Please keep your professors informed about what you need, so they can provide academic advice that is in your best interest.

Course Requirements:

Assignments: Practice exercises will be assigned for each section of the textbook that is discussed in class. The purpose of these assignments is to help you develop an understanding of the concepts discussed. Remember that it is your responsibility to keep up with missed assignments if you are absent.

Quizzes: Unannounced quizzes may be given at the start of a class meeting. There will be no make-ups for a missed quiz.

Tests: Tests will be given during the semester to determine your level of understanding. There will be no make-ups for a missed test. **See course calendar for dates.**

Final Exam: An optional final exam will be given at the end of the semester. This exam will serve as a replacement grade for any student wishing to replace a low or missing test score. **See course calendar for dates.**

Grading:

Your final course grade will be determined by dividing the sum of the points accumulated by the student by the total points possible. The following percentages will be used for your final course grade computation:

100 – 90 A 89 – 80 B 79 - 70 C 69 – 60 D Below 60 F

Disclaimer: Course policies, procedures and schedule may be changed at any time at the discretion of the instructor. You will be advised of any changes orally, in D2LBrightspace or in writing.