**SUSSEX COUNTY COMMUNITY COLLEGE**

**Master College Syllabus**

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| --- | --- | --- | --- | --- |
| MATH104 |  | CONTEMPORARY MATH |  |  |
| COURSE # |  | COURSE TITLE |  | CLASSIFICATION |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 3 |  | 3 |  | 0 |
| CREDITS |  | CLASS HOURS |  | LAB HOURS |

**RECOMMENDED COURSE MATERIALS:**

Title: Mathematical Ideas

Author: Miller, Heeren, Hornsby

Publisher: Pearson

Edition: 12th

ISBN: 9780321693815

**OR**

Title: MYLAB Math with Pearson Etext – 18 Week Standalone Access Card – For Mathematical Ideas

Author: Miller, Heeren V, Hornsby, Heeren C

Publisher: Pearson

Edition: 14th

ISBN13: 9780135910269

**Required:** Scientific Calculator (Required); Suggested Model: Casio FX-260

**CATALOG DESCRIPTION**

This course surveys several basic concepts of mathematics designed to give non-scientific/non-technical majors an understanding of the breadth of mathematics in areas other than computational application. Topics include: Counting Methods, Probability, Statistics, Logic, Geometry, and Personal Financial Management.

**RECOMMENDATION:** SCCC has embraced a practice of directed self-choice whereby students are encouraged, through guided conversations with an advisor, to best determine their readiness for this course. Students should be aware that developmental courses exist and are available to help strengthen skills and encourage success. Pursuing testing and/or developmental courses are entirely up to the student. Further, testing, though providing a valuable reference point for reflection, does not create for the student an obligation to follow Accuplacer recommendations.

**TOPICS TO BE INCLUDED**

|  |  |
| --- | --- |
| *Logic* | Statements and Quantifiers |
|  | Truth Tables and Equivalent Statements |
|  | The Conditional |
|  | Analyzing Arguments with Euler Diagrams |
|  | Analyzing Arguments with Truth Tables |
| *Geometry* | Points, Lines, Planes and Angles |
|  | Curves, Polygons and Circles |
|  | Perimeter, Area and Circumference |
|  | Triangles: Congruence Similarity and the Pythagorean Theorem |
|  | Space Figures, Volume and Surface Area |
| *Personal Financial Management* | Time Value of Money |
|  | Annuities |
|  | Consumer Credit |
|  | Truth in Lending |
|  | Purchasing a House |
|  | Investing |
| *Counting Methods* | Counting by Systematic Listing |
|  | Fundamental Counting Principle |
|  | Permutations and Combinations |
|  | Pascal’s Triangle |
|  | Counting Problems Involving “Not” and “Or” |
| *Probability* | Basic Concepts |
|  | Events Involving “Not” and “Or” |
|  | Events Involving “And” |
|  | Binomial Probability |
|  | Expected Value |
| *Statistics* | Frequency Distributions and Graphs |
|  | Measures of Central Tendency |
|  | Measures of Dispersion |
|  | Measures of Position |
|  | The Normal Distribution |
|  | Regression and Correlation |
|  |  |

**COURSE COMPETENCIES**/**LEARNING OUTCOMES**

**Student Learning Outcomes:**

In a manner deemed appropriate by the instructor and approved by the department, students will be able to:

1. Write negations of statements with universal quantifiers. (GE2)

2. Write the inverse, converse and contrapositive of a conditional statement. (GE2)

3. Determine the truth value of a compound statement. (GE2)

4. Determine the validity of an argument. (GE2)

5. Calculate the perimeter and/or surface area of two dimensional figures. (GE2)

6. Calculate the volume and/or surface area of space figures. (GE2)

7. Solve problems using similar triangles and the Pythagorean Theorem. (GE2)

8. Calculate simple and compound interest. (GE2)

9. Calculate the APR and unearned interest on closed-end credit accounts. (GE2)

10. Calculate finance charges on an open-end credit account (credit cards) using the unpaid balance method and the average daily balance method. (GE2)

11. Calculate the monthly payment for a mortgage. (GE2)

12. Solve counting problems using the fundamental counting principles, permutations and combinations. (GE2)

13. Determine the probability of random events, including conditional probabilities and binomial probabilities. (GE2)

14. Calculate the odds of a random event. (GE2)

15. Find the expected value of a given event. (GE2)

16. Organize data. (GE2)

17. Calculate measure of central tendency, measures of dispersion and measures of position. (GE2)

18. Use the normal distribution in problem solving. (GE2)

The ability of students to demonstrate the course competencies is assessed by a departmental midterm and a departmental final exam designed to test the knowledge and skills specified by the learning outcomes. All students are required to take the departmental exams in a proctored setting. Each of the exam grades must count for at least 25% of each student’s final grade.

Summary statistics describing student performance on the departmental exams are compiled twice a year. A comprehensive item analysis of the departmental exam performance is conducted every two years. Assessment results are used to improve the teaching and learning of Contemporary Mathematics.

**GRADES COUNTED IN THE GRADE POINT AVERAGE (GPA)**

|  |  |  |
| --- | --- | --- |
| Letter Grade | Grade Points | Percent Range |
| A | 4.0 | 93-100% |
| A- | 3.67 | 90-92 |
| B+ | 3.5 | 88-89 |
| B | 3.0 | 83-87 |
| B- | 2.67 | 80-82 |
| C+ | 2.5 | 78-79 |
| C | 2.0 | 70-77 |
| D | 1.0 | 65-69 |
| F | 0.0 | 0-64 |
| FN | Fail no-show |  |

MATH104

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