

Hopewell Valley Regional School District

Dr. Vicky Pilitsis, *Director of STEM*

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51 South Timberlane Drive

Pennington, NJ 08534



Central High School

New Course Elective: Topics in Math

Course Description:

This full year course is geared to students in 11th and 12th grade. The first half of the year focuses on statistical reasoning. Students will learn how to use the four steps of the statistical process in the context of sports and the media, which include asking questions, collecting and analyzing data, and making conclusions. Each unit will begin with either a sports or media related statistical question drawn from current news. These include (but are not limited to)- analyzing distributions of univariate and bivariate data, using graphs and summary statistics, correlations and least squares regressions. The second half of the year will explore topics in discrete mathematics and quantitative analysis. This course offers the study of such topics as mathematical codes, combinatorial problems and optimization, graph theory, spanning trees, efficient scheduling, and mathematical concepts of fairness. Problem solving techniques are emphasized. Prerequisites include completion of Algebra 2 or Algebra 3. Students are not allowed to take this course concurrently with AP Statistics. Students who have already completed AP Statistics are not eligible for this course.

Rationale:

- These courses have been running as two semester courses; however, we never receive enough interest to run both courses. We hope by offering this course as a full year (rather than two semester electives) students will be more inclined to enroll.
- This would be a fourth year mathematics course for students who are not on the AP track or calculus track. We currently don't have a full year math course for those students.

District Goals:

- This course aims to align with the district initiative of implementing an inquiry-based learning and blended learning models as well as provide equitable opportunities for students of different abilities.

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Assessment:

- Monitoring for future refinement by instructors and supervisor
- Students' completed projects and presentations
- Various differentiated in-class activities

Cost/Logistics:

- Curriculum Writing, 40 hours X \$53=\$2,120
- Staffing will be absorbed by Math Department
- \$2500 for textbooks
- Total cost for implementation \$4,620