

Coventry Public Schools

Course Proposal

Coventry High School Core Values and Belief Statement:

Our community believes in preparing students to become life-long learners by providing a challenging environment that supports the development and use of concepts, knowledge, skills, and ethics that meet the expectations of the global, interdependent society of the 21st century.

The Course Proposal presented here aligns with Coventry High School's Core Values and Beliefs Statement, will align with content standards if approved, is recommended by the Coventry High School Principal, the Director of Teaching and Learning, and Coventry High School's Leadership Team.

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| Course Title | Probability and Statistics |
| Course Description | This course will cover the same material as the Manchester Community College MAT 109: Quantitative Literacy course while enriching students' prior learning. Two thirds of the course will be spent discussing statistics and data analysis, while the other third will focus on probability. |
| Rational for the Addition of the Course | Most colleges require students to complete one 3-Credit course covering statistics. This foundational course will provide students with the problem solving skills, as well as curriculum to succeed in the college course. Even though this course follows the MCC curriculum, due to MCC's NEASC requirements we are unable to award MCC credit for this course at this time. We are looking to award MCC credit in the future, when MCC reopens new course articulations |
| Highlights of Topics of Study to be Included in the Course | <ul style="list-style-type: none"> • Design of surveys and experiments: <ul style="list-style-type: none"> ○ Random sampling ○ Survey design, wording, and sampling errors ○ Good vs bad samples ○ Bias and variability ○ Experiments in the real world <ul style="list-style-type: none"> ▪ Observational study vs experiments ▪ Census studies ▪ Phone vs online vs other polls ▪ Election polls ▪ Challenge of internet surveys ▪ Questions to ask before believing a poll • Organizing and interpreting information from samples: <ul style="list-style-type: none"> ○ Can you trust a sample ○ Inferences about a population from a sample ○ Confidence intervals and margin of error ○ Data ethics ○ Organizing visual representations ○ Experiments in the real world: <ul style="list-style-type: none"> ▪ Graphs and scales in the media ▪ Income inequality • Elementary Probability: <ul style="list-style-type: none"> ○ Probability models/simulations <ul style="list-style-type: none"> ▪ Risk ▪ Where do probabilities come from |

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| | <ul style="list-style-type: none"> ○ Analyzing chance <ul style="list-style-type: none"> ▪ Myths vs behavior ○ Expected value |
| Semester or Year Course | Year-long course |
| Open to Grade Levels | Course is intended for Seniors, but open to students in grades 10-12. |
| Course Prerequisites | Algebra 2. (May be taken concurrently with teacher recommendation). |
| Impact of Course on Current Programming | This course will provide a fourth year math course in addition to life skills math. This course is part of a greater program shift to increase rigor in the mathematics curriculum. |
| Resources Needed for Implementation of Course | <ul style="list-style-type: none"> • At no additional cost: <ul style="list-style-type: none"> ○ Texas Instrument Calculators, iPads, online applets • Textbook: <ul style="list-style-type: none"> ○ Statistics Concepts and Controversies 8th Edition ○ Complete electronic version available. Including diagnostic and assessment tools, tutorials, and enrichment opportunities. |
| Budgetary Impact of Addition of Course | <ul style="list-style-type: none"> • Textbook: <ul style="list-style-type: none"> ○ 6-year access for 55 students \$7,104.50 |
| Other Considerations | Should cost no additional FTEs. |