



# Scope and Sequence

**Cluster:** Career Development  
**Course Name:** Problems and Solutions (One-Half to One Credit).  
**Course Description:**

Problems and Solutions is a project-based research course for students who have the ability to research a real-world problem. Students develop a project on a topic related to career interests, use scientific methods of investigation to conduct in-depth research, are matched with a mentor from the business or professional community, compile findings, and present their findings to an audience that includes experts in the field. To attain academic success, students must have opportunities to learn, reinforce, apply, and transfer their knowledge, skills, and technologies in a variety of settings. This course is designed to provide students an opportunity to earn one advanced measure for the Distinguished Achievement Program.

**Course Requirements:** This course is recommended for students in Grades 11-12.

| Units of Study  | Knowledge and Skills  | Student Expectations   | Resources                     |
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| <b>A. Development of Research Techniques &amp; Strategies</b> | <b>1) The student applies mathematics, science, English language arts, and social studies in independent study.</b> | <b>(A) select an original independent study project for personal enrichment and professional development;<br/>           (D) identify community, state, national, or international issues to select a project;<br/>           (E) conduct a project under the supervision of a mentor;</b> | <b>Determined by Subject.</b> |

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|  | <p><b>(2) The student uses verbal and nonverbal communication skills.</b></p> <p><b>(3) The student demonstrates professional ethical behavior standards and legal responsibilities.</b></p> <p><b>(4) The student designs and develops a research project related to their career interests.</b></p> <p><b>(5) The student uses technology needed to complete a research project.</b></p> | <p><b>(F) use scientific methods of investigation;</b><br/> <b>(A) listen actively and effectively in group discussions;</b></p> <p><b>(B) use a variety of resources to access, process, and collect data relevant to the project; and</b></p> <p><b>(A) analyze ethical challenges posed by factors such as cost containment, new and emerging technologies, and allocation of limited resources; and</b></p> <p><b>(B) review legal issues related to the research project.</b><br/> <b>(A) identify processes to be used in the independent research project; and</b><br/> <b>(B) use resources to complete a project.</b></p> <p><b>(A) use search engines, databases, and other digital electronic tools effectively to locate information;</b><br/> <b>(B) evaluate quality, accuracy, completeness, reliability, and currency of information from any source;</b></p> |                               |
| <b>B. Compilation of Research Data</b> | <b>1) The student applies mathematics, science, English language arts, and social studies in independent study.</b>  | <b>(B) use reading and research skills to investigate self-selected topics and compile a research portfolio;</b>  | <b>Determined by Subject.</b> |

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|  | (6) The student evaluates the original research project.  | (C) collaborate with an interdisciplinary team to develop a project;<br>(A) create weekly progress reports that address time management and goal setting;<br><br>(B) meet periodically with the teacher for conferences about progress, concerns, successes, and needs;  |                        |
| <b>C. Organization &amp; Application of Findings</b>   | 1) The student applies mathematics, science, English language arts, and social studies in independent study.<br><br>(2) The student uses verbal and nonverbal communication skills.<br><br>(5) The student uses technology needed to complete a research project. | (G) apply statistical concepts to analyze data, evaluate results, and draw conclusions;<br><br>(H) compare and contrast findings in a coherent and organized manner; and<br>C) document the time and cost to accomplish the project goal.<br><br>(C) prepare, organize, and present independent research, mentor experiences, and processes; | Determined by Subject. |
| <b>D. Presenting Research Data by Written Presentation, Oral Presentation and/or Demonstration</b> | 1) The student applies mathematics, science, English language arts, and social studies in independent study.<br><br>(5) The student uses technology needed to complete a research project.  | (I) present the independent research project to an appropriate audience of experts in the field using a variety of technologies.<br><br>(D) accept constructive criticism and revise personal views when valid evidence warrants; and  | Determined by Subject. |

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|  | <p><b>(6) The student evaluates the original research project.</b></p> | <p><b>(E) prepare and present scientific/technical information in appropriate formats to a panel of experts in the field of the research project.</b></p> <p><b>(C) conduct self-evaluations of speech presentations;</b><br/> <b>(D) compose written reflections regarding strengths and weaknesses as well as areas of growth;</b><br/> <b>(E) analyze the feedback from the panel of experts; and</b><br/> <b>(F) submit project results and analysis to mentors and experts.</b></p> |  |
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**Resources:  
Determined by Subject.**