Course: Logic I and Logic II
PEIMS Code: N1290100, N1290101
Abbreviation: LOGIC1, LOGIC2
Grade Level(s): 9-10
Number of Credits: 0.5 per course

Course description:

Logic I will provide course content in informal logic which includes intensive experience with logical fallacies and an emphasis on inductive reasoning, strong versus weak and fallacious arguments, and probability. Informal logic concentrates on evaluating the content of an argument, and deals almost entirely with "ordinary language arguments" in the interchange of ideas between people.

Logic II is a course in formal logic, or the logic that pertains to pure reasoning in the abstract – deductive reasoning, valid or invalid arguments, and certainty (given the premise). In Logic II, students will be fully engaged in the world of syllogism where focus is placed on understanding the form of an argument, and arguments can be analyzed using symbols.

Essential knowledge and skills:

Logic I (One-Half Credit), Beginning with the School Year 2015-2016

(a) General requirements. Students shall be awarded one-half credit for successful completion of this course.

(b) Knowledge and Skills:

(1) Logic. The student understands the historical development of logic and the differences between informal and formal logic. The student is expected to:
   (A) define logic and argument; and
   (B) describe the differences between informal and formal logic.

(2) Ad Fontem Arguments. The student uses knowledge about an audience to employ ad fontem arguments that produce desired reactions. The student is expected to:
   (A) recognize and analyze fallacious arguments including ad hominem abusive, ad hominem circumstantial, tu quoque, and genetic fallacy;
   (B) analyze the purposes and power of using ad fontem arguments; and
   (C) create and apply ad fontem arguments in speech and in writing.

(3) Appeals to Emotion. The student uses knowledge about an audience to employ an appeal that produces a desired reaction. The student is expected to:
   (A) recognize fallacious arguments including appeal to fear (argumentum ad baculum), appeal to pity (argumentum ad misericordiam), mob appeal (argumentum ad populum), snob appeal, appeal to illegitimate authority (argumentum ad vercundiam), and chronological snobbery;
   (B) analyze the purposes and power of using appeals to emotion; and
(C) create and apply appeals to emotion in speech and in writing.

(4) Red Herrings. The student uses knowledge about an audience to employ red herrings that produce desired reactions. The student is expected to:
   (A) recognize and analyze fallacious arguments including appeal to ignorance, irrelevant goals or functions, irrelevant thesis, and straw man fallacy;
   (B) analyze the purposes and power of using red herrings; and
   (C) create and apply red herrings in speech and in writing.

(5) Fallacies of Presumption. The student uses knowledge about an audience to employ fallacies of presumption that produce desired reactions. The student is expected to:
   (A) recognize and analyze fallacious arguments including begging the question (petitio principii), bifurcation (false dilemma), fallacy of moderation, is-ought fallacy, fallacy of composition, and fallacy of division;
   (B) analyze the purposes and power of using fallacies of presumption; and
   (C) create and apply fallacies of presumption in speech and in writing.

(6) Fallacies of Induction. The student uses knowledge about an audience to employ fallacies of induction that produce desired reactions. The student is expected to:
   (A) recognize and analyze fallacious arguments including sweeping generalization (accident), hasty generalization (converse accident), false analogy, false cause, and fake precision;
   (B) analyze the purposes and power of using fallacies of induction; and
   (C) create and apply fallacies of induction in speech and in writing.

(7) Fallacies of Clarity. The student uses knowledge about an audience to employ fallacies of clarity that produce desired reactions. The student is expected to:
   (A) recognize and analyze fallacious arguments including equivocation, accent, and distinction without a difference;
   (B) analyze the purposes and power of using fallacies of clarity; and
   (C) create and apply fallacies of clarity in speech and in writing.

Logic II (.5 Credit), Beginning with the School Year 2015-2016

(a) General requirements. Students shall be awarded one-half credit for successful completion of this course.

(b) Knowledge and Skills:

(1) Introduction to Formal Logic. The student understands the various categories of logic and its historical development. The student is expected to:
   (A) describe the differences between informal and formal logic, discuss the differences between deductive and inductive reasoning, and explain categorical and propositional logic; and
   (B) explain the Classical origins and medieval recovery of logic and summarize the development of logic from Aristotle to modern times.

(2) Formal Logic and Three Acts of the Mind. The student understands the nature of formal logic and the acts of the mind. The student is expected to:
   (A) analyze the nature of formal logic; and
   (B) describe the three acts of the mind: apprehension, judging, and reasoning.

(3) Translating Propositions into Categorical Form. The student understands propositions and translates arguments. The student is expected to:
   (A) define argument translation, categorical forms, and propositions; and
   (B) translate into categorical form by finding the subject term and the predicate term, identifying quantity and quality, and supplying the proper quantifier.
(4) Relationships of Opposition. The student identifies relationships of opposition. The student is expected to:
   (A) recognize the following: square of opposition, contradiction, contrariety and
       subcontrariety, subimplication and superimplication, and the square of opposition and
       inference analysis.
(5) Relationships of Equivalence. The student recognizes logical equations and relationships of equivalence. The student is expected to:
   (A) perform logical equations; and
   (B) analyze the following relationships: the obverse relationship, the converse relationship,
       and the relationship of contraposition.
(6) Syllogism and Validity. The student understands syllogisms and validity. The student is expected to:
   (A) arrange syllogisms;
   (B) explain categorical syllogisms;
   (C) analyze enthymemes; and
   (D) discuss moods and figures.
(7) Determining the Validity of Syllogisms. The student understands how to determine whether any given syllogism is valid or invalid.
   The student is expected to:
   (A) describe and apply the validity and counterexample model; and
   (B) evaluate validity by following the terminological and the qualitative rules - and by
       establishing validity.
(8) Definitions and Disagreements. The student uses logic to make statements of truth.
   The student is expected to:
   (A) identify types of disagreements and definitions;
   (B) describe the difference between extension and intention;
   (C) explain modes of definition;
   (D) discuss presuppositional disputes; and
   (E) pursue truth via logic.

Description of specific student needs this course is designed to meet:

Logic courses will enable students to learn informal and formal logic, both of which are inherent parts of a liberal arts and sciences curriculum. Instruction in logic will help students master the English language, enhance student learning in Latin, mathematics, debate and philosophy and will provide preparation for students as they enter into studies in the art of rhetoric - including AP English Language and Composition.

Major resources and materials:

• "The Art of Argument, An Introduction to Informal Fallacies" by Joelle Hodge, Aaron Larsen, and Chris Perrin.
• "The Discovery of Deduction, An Introduction to Formal Logic" by Joelle Hodge, Shelley Johnson, and Aaron Larsen
• "Socratic Logic" by Peter Kreeft
• "Ten Philosophical Mistakes" by Mortimer Adler
• "The Discovery of Deduction, An Introduction to Formal Logic" by Joelle Hodge, Shelley Johnson, and Aaron Larsen
• “Socratic Logic” by Peter Kreeft
• “Ten Philosophical Mistakes” by Mortimer Adler

Suggested course activities:

Students will engage in class discussions, debates, reading and analysis of philosophical works, speeches, editorials, and other print media and marketing campaigns, and expository writing activities.

Suggested methods for evaluating student outcomes:

Formative and summative assessments will be used to evaluate student performance. Assessment will include short written responses, extended essays, multiple-choice items, oral assessment (student interview), debate, and research papers. Rubrics will be used to score essays, papers and projects.

Teacher qualifications:

Teachers should be certified to teach 8-12 English-Language Arts, History, Mathematics, or Social Studies.

Additional information: