COURSE OUTLINE
Introduction to Logic

Course Description
PL 101. Introduction to Logic. 3 hours credit. This course will enable the student to understand the logical concepts and methods of critical thinking. The student will apply logical principles to contemporary issues and critically analyze the views and reasoning of others. The learning outcomes and competencies detailed in this outline meet, or exceed the learning outcomes and competencies specified by the Kansas Core Outcomes Project for this course, as approved by the Kansas Board of Regents (Transfers as PHL1030).

Required Materials
For complete material(s) information, refer to https://bookstore.butlercc.edu

Butler-assessed Outcomes
The intention is for the student to be able to
1. Explain the logical concepts and methods of critical thinking.
2. Apply the principles of critical thinking to contemporary issues.
3. Present and analyze personal views and construct arguments according to established standards of reason on contemporary issues in discussion and/or written documents in a clear and concise manner.

Learning PACT Skills that will be developed and documented in this course
Through involvement in this course, the student will develop ability in the following PACT skill areas:
Analytical Thinking Skills
• Critical thinking - Through the production of an argumentative paper, the student will demonstrate mastery of the concepts and methods for sound reasoning through the analysis of a contemporary issue.

Communication Skills
• Creation and delivery of messages - Through a variety of types of written work, the student will practice writing skills, including use of Standard English wording, phrasing, spelling, punctuation, and grammar.

Technology Skills
• General computer use - Through electronic-facilitated research and preparation of computer-generated assignments, the student will develop basic computer skills

Major Summative Assessment Task
These Butler-assessed Outcomes and Learning PACT skills will be demonstrated by
1. Preparing a five to seven-page essay (T skill) that examines a contemporary issue
(A skill) by presenting, analyzing, and critically evaluating opposing views and discussing the student’s own position on the issue (C skill) using logical principles and methods of critical thinking.

Skills or Competences
These actions are essential to achieve the course outcomes:
1. Recognize the difference between arguments and non-arguments.
   A. Distinguish between an argument and an explanation, report, or illustration
   B. Identify the premises and the conclusions of arguments.
   C. Recognize components of language and language use relevant to reasoning such as mean, definition, emotive force, denotation, and connotation.
2. Identify and explain the components of informal reasoning
   A. Recognize and define informal fallacies.
   B. Demonstrate an understanding of, and the ability to evaluate, inductive arguments such as analogical arguments and basic principles of probabilistic reasoning.
   C. Evaluate the cogency of arguments in specialized areas such as legal, moral, or scientific reasoning.
3. Identify and apply the basic concepts of logical discourse
   A. Distinguish formal from informal arguments.
   B. Distinguish deductive validity and soundness and be able to evaluate arguments for each.
   C. Recognize basic argument forms such as modus ponens, modus tollens, disjunctive syllogism, and chain.
4. Recognize the basic concepts of categorical logic (optional)
   A. Recognize the standard form, mood, and figure of categorical syllogisms.
   B. Use the traditional and the modern square of opposition as well as Aristotelian rules to evaluate the validity/invalidity of categorical syllogisms.
5. Recognize the basic concepts of propositional logic
   A. Symbolize natural language arguments in propositional logic.
   B. Use truth tables to evaluate the validity/invalidity of arguments in propositional logic.
   C. Demonstrate familiarity with and the ability to use logical operators.
   D. Recognize basic derivations groups using the techniques of formal logic.

Learning Units
I. Arguments and critical thinking
   A. Definitions
   B. Justification and explanation

II. Uses of language
   A. Linguistic acts
   B. Speech acts
   C. Conversation acts

III. Language and arguments
A. Warranting connectives  
B. Validity and soundness  
C. Standard forms  
D. Language evaluation

IV. Argument analysis  
C. Clarification of terms  
D. Validity and soundness  
E. Suppressed premises

V. Formal logic and deduction  
C. Propositional logic  
D. Categorical logic  
E. Squares of opposition  
F. Syllogisms

VI. Informal logic and induction  
C. Statistics  
D. Inference to best explanation  
E. Analogies  
F. Causal reasoning  
G. Probabilities

VII. Informal fallacies  
C. Vagueness  
D. Ambiguity  
E. Relevance  
F. Vacuity  
G. Refutation

Learning Activities
Learning activities will be assigned to assist the student to achieve the intended learning outcomes through lecture, instructor-led class discussion, guest speakers, group activities, drills/skill practice, and other activities at the discretion of the instructor. These activities may either be face-to-face or online.

Grade Determination
The student will be graded on learning activities and assessment tasks. Grade determinants may include the following: daily work, quizzes, chapter or unit tests, comprehensive examinations, projects, presentations, class participation, and other methods of evaluation at the discretion of the instructor.