SOUTHEAST COMMUNITY COLLEGE
DIVISION OF ARTS AND SCIENCES
Humanities
Revision Date: 01-01-21

I. CATALOG DESCRIPTION

Course Number:	PHIL2110
Course Title:	Introduction to Modern Logic
Prerequisite(s):	None
Catalog Description:	Introduction to symbolic logic, focusing on propositional and predicate logic. Translating to and from formal languages, determining the logical characteristics of arguments, and constructing proofs within a formal system. This class may be used as math credit.
Credit Hours:	3.0
Class hours:	45
Lab Hours:	0
Total Contact Hours:	45

II. COURSE OBJECTIVES: *Course will introduce students to:*

A. The logical characteristics of arguments, statements, and sets of statements, for example validity, logical truth, and logical consistency.
B. The language of propositional logic.
C. Truth tables and their use in determining the logical characteristics of arguments, statements, and sets of statements.
D. Rules of inference for propositional logic, including conditional and indirect proof.
E. The language of predicate logic.
F. Rules of inference for predicate logic.

III. STUDENT LEARNING OUTCOMES AND GENERAL EDUCATION LEARNING OUTCOMES

A. Student Learning Outcomes**:** *Student will be able to:*
- **1**. Translate English language sentences into the language of propositional logic and vice versa.
- **2**. Translate English language sentences into the language of predicate logic and vice versa.
- **3**. Use truth tables to determine the logical characteristics of arguments, statements, and sets of statements.
- **4**. Use valid rules of inference to prove the validity of arguments in propositional logic.
- **5**. Use valid rules of inference to prove the validity of arguments in predicate logic.

B. General Education Learning Outcomes
- **1.** GELO #3: Critical Thinking & Problem Solving
  Outcome: Evaluate the validity of arguments, alternatives, data, outcomes, and/or impacts of actions.
- **2**. GELO #5: Analytical, Quantitative, and Scientific Reasoning
  Outcome: Understand and create logical arguments supported by quantitative and scientific evidence and communicate those arguments in a variety of formats.
  Outcome: Manipulate formulas, data sets, graphs, tables, etc. in a way to produce a meaningful outcome.

IV. CONTENT/TOPICAL OUTLINE (*course outline may provide more detailed information*)

A. Propositional logic
- **1**. Symbols and translations
- **2**. Truth functions
- **3**. Truth tables
- **4**. Proofs in propositional logic

B. Predicate logic
- **1**. Symbols and translations
- **2**. Proofs in predicate logic

V. INSTRUCTIONAL MATERIALS

A. Required Text(s):
- **1**. Patrick J. Hurley and Lori Watson, *A Concise Introduction to Logic*. 13th Ed., Cengage, 2017. ISBN-13: 9781305958098.

B. Other Resources:
- **1**. Hand-outs supplied by instructor or appropriate links for Internet access to textbook website

C. Outside reading/research required at the discretion of instructor.

VI. METHODS OF PRESENTATION/INSTRUCTION

A. Methods of presentation typically include a combination of the following:
- **1**. Lectures
- **2**. Small and large discussion groups
- **3**. Collaborative projects
- **4**. Research
- **5**. Peer response
- **6**. Essays & student presentation on assigned topics.

VII. METHODS OF EVALUATION

A. Methods of evaluation typically include a combination of the following:
- **1**. In-class and collaborative project participation
- **2**. Daily work
- **3**. Assessments
- **4**. Oral and written assignments.

B. SCC GRADING SCALE

A+	95-100	C+	75-79	F	59 or less
A	90-94	C	70-74		
B+	85-89	D+	65-69		
B	80-84	D	60-64		

VIII. SPECIFIC COURSE REQUIREMENTS

A. General Requirements
- **1**. In order to receive a passing grade, students must complete all work assigned by the instructor, attend class and follow instructor guidelines.
- **2**. Content, assessment and schedule determined by instructor.