I. GVSU Catalogue Description:
What does it mean to think clearly and correctly? What rules govern classification and definition? What is the nature of propositions? What are the rules for correct reasoning? How can we improve our reasoning skills? This course addresses these questions with the help of a standard textbook in classical logic. Fulfills Mathematical Sciences Foundation. 3 Credits.

II. Introduction:
This course is an introduction to logic from a philosophical perspective. The primary focus of the course will be to introduce students to the systematic study of arguments, including the critical evaluation of arguments. In an argument one set of information consisting of a proposition or group of propositions is set over against another piece of information, usually a single proposition. The primary questions we will be interested in are (a) under what conditions does the first piece of information in an argument entail or (if it is also true) provide conclusive evidence for the second, and (b) how can we know, for any given argument, whether or not these conditions obtain? Addressing these questions requires exploring issues of language, meaning and truth, as well as reflecting on our own human capacities for rational thinking. Over the course of the semester we will examine some traditional and well established answers to questions (a) and (b), and in the process work on developing skills of identifying and evaluating arguments, fallacies and proofs that are applicable to any subject matter.

III. Course Goals:
1. In this course the student will acquire the ability to define and explain basic logical concepts such as “term”, “vagueness”, “ambiguity”, “proposition”, “argument”, “proof”, “validity”, “fallacy”, “deduction”, “abduction” and “induction”.
2. The student will learn to successfully apply basic skills in identifying arguments and in evaluating them for adequacy in terms of logical concepts and principles.
3. The student will consider and learn to express positions regarding the nature and goals of logic, as well as its relevance to philosophy, to science and to life.

Note on the Syllabus: The course and reading schedule contained in the syllabus are tentative and subject to mild revision, dependent on course progress, during the semester. Changes to the syllabus will be announced in class and posted on the course web-site.

Note on Studying Philosophy: Philosophy in general involves, amongst other things, challenging and critically evaluating ideas, claims and assumptions of many different kinds. This is especially so in a course on logic, the primary aim of which is the identification and evaluation of arguments as strong or weak, good or bad, valid or invalid. This course requires a willingness to critically evaluate many different perspectives and viewpoints, including the student’s own beliefs. It also requires the ability, on the part of all participants, to distinguish between criticizing an argument or idea, and criticizing a person, and to always engage in the former, not the latter, even in cases of strong disagreement.
Students with Disabilities: If you need academic accommodations because of a learning, physical or other disability, please contact Disability Support Services (DSS) at (616) 331-2490. Also, if you have a physical disability and think you will need assistance evacuating this classroom and/or building in an emergency situation, please make me aware so I can develop a plan to assist you.

IV. Texts:
Required:

Recommended:
Is recommended, not required for this course. Apologies for any confusion.

History of Logic-

Reference Works-

V. Course Web Site
Blackboard: The course syllabus, updates to the syllabus and other important course information, documents and links will all be available on the Blackboard site for the class. Log in at: http://bb.gvsu.edu/webapps/portal/frameset.jsp. I will post things on Blackboard regularly. I recommend checking it at least twice a week for updates.

Textbook Website and Technology: Your textbook has a companion website and other technology. I am still evaluating what features of this will be part of the class, but there are many helpful discussions and practice problems, as well as some downloadable software, at the companion site: http://www.wadsworth.com/cgi-wadsworth/course_products_wp.pl?fid=M20b&flag=student&product_isbn_issn=9780495503835&disciplinenumber=5 I will make more announcements about course technology as the semester progresses.

VI. Course Requirements and Grading:

Homework by Percentage of Grade:
1. (pop)-Quizzes (25%)
2. Homework (10%)
3. Mid-Term Exam (30%)
4. Final Exam (35%)
Your final grade will be calculated by dividing the total number of points received in a category of assignment (1—4) by the total number of points possible for that category. This number will be multiplied by the percentage (.05, .25, etc.) of the total grade that the assignment is worth. This will result in four separate numbers, which will be added together to determine your final percentage. Your final letter grade will be assigned based on the following scale and definitions:

<table>
<thead>
<tr>
<th>Grade</th>
<th>Points</th>
<th>Description</th>
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<tbody>
<tr>
<td>A</td>
<td>100—92</td>
<td>C+ 79—78</td>
</tr>
<tr>
<td>A-</td>
<td>91—90</td>
<td>C 77—72</td>
</tr>
<tr>
<td>B+</td>
<td>89—88</td>
<td>C- 71—70</td>
</tr>
<tr>
<td>B</td>
<td>87—82</td>
<td>D+ 69—68</td>
</tr>
<tr>
<td>B-</td>
<td>81—80</td>
<td>D 60—67</td>
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<tr>
<td></td>
<td></td>
<td>F 59—0</td>
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A: Outstanding. The individual displays thorough mastery of all material and genuine engagement with the subject matter. This grade is reserved for those individuals who attain the highest levels of excellence in thought and expression. Exceptionally good writing.
B: Good. The individual displays accurate understanding of the bulk of material. Writing is clear and free of mechanical errors.
C: Adequate. The individual displays basic grasp of roughly three fourths of the course material. There may arise occasional misunderstanding or inaccuracy. Writing is acceptable.
D: Marginal. The individual displays a grasp of the course material that deserves credit. Quality of apprehension of material indicates lack of effort and/or lack of aptitude.
F: Unacceptable. The individual displays virtually no grasp of the material as addressed in the course.
Homework Assignments:

1. (pop- or take-home)-Quizzes (25%)
I will regularly give quizzes on the course material. These quizzes will either occur in class, or they will be take home assignments. (The majority of quizzes will be given in class). These quizzes will be the primary real-time mechanism for evaluating your progress and your understanding of the course material. Consistent poor performance on quizzes is indicative of failure to grasp some important part of the course material, and you should consult with me if you find yourself in this situation. Quizzes can be given at any time and can cover reading and lecture material as well as study questions from the textbook.

2. Homework (10%)
You will not learn the course material if you do not do the exercises located at the end of chapter sub-sections in your book, as well as on-line at the textbook’s companion website. Further, the elements of this course are cumulative. Failure to master material early on will cause problems later in the semester. I recommend that you attempt to do all of the exercises located in your textbook, and that you avail yourself of the textbook’s online website. Each week I will assign a small but representative portion of homework questions from the book, which will be due at the beginning of the next class period, as indicated on the syllabus. I will post homework assignments on Blackboard and reserve the right to do this as long as 24 hours after a class meeting. This homework should be typed, with the exception that homework requiring the drawing of graphs, diagrams or other unusual structures may be done by hand. If you are unsure about whether or not an assignment should be typed, ask me.

3. Mid-Term Exam (30%)
The mid-term exam will consist of multiple-choice, true/false and short-answer questions (especially definitions or explanations of key logical concepts, e.g. “argument”, “validity”, etc.), as well as exercises similar or identical to those in the textbook. The details of the exam will be discussed as the date for it draws closer.

4. Final Exam (35%)
The final exam will consist of multiple-choice, true/false and short-answer questions (especially definitions or explanations of key logical concepts, e.g. “argument”, “validity”, etc.), as well as exercises similar or identical to those in the textbook. The details of the exam will be discussed as the date for it draws closer.

Attendance: Students will not master the course material for this class if they do not attend. There is no formal attendance component of the grade, however quizzes can occur at any time and some material on quizzes and exams will only be discussed and clarified in class.

Late Assignments: Assignments are due on the day for which they are assigned, as indicated in the course syllabus. If you are going to be late handing in an assignment and you have a good reason, you must contact me prior to the due date for the assignment in order to discuss the matter. Decisions about whether or not to accept late work will be made at the instructor’s discretion.

Academic Conduct & Plagiarism:
Students are permitted and encouraged to work together in studying for this course and in attempting to do the homework exercises in the book. Students may work together in completing the assigned homework questions, however, they must still hand their homework in separately and they may not simply copy and hand in someone else’s work. I will deal with concern that this sort of copying is happening, if it arises, on a case by case basis.

Students are prohibited from working together or sharing answers for (i) take home or in class quizzes, (ii) the mid-term or (iii) the final.

A violation of academic integrity will result in an automatic F on the assignment for which it occurs. For severe cases the student may be given an F for the entire course. If you are unsure about whether or not something constitutes cheating, you should consult me prior to handing it in.
# Schedule of Readings and Assignments

<table>
<thead>
<tr>
<th>Date</th>
<th>Class</th>
<th>Reading</th>
<th>Hand In</th>
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| August Th. 28 | First Class: Terms, Propositions, Arguments: Form and Content | Mary Anne Warren: “On the Moral and Legal Status of Abortion”:
  [http://instruct.westvalley.edu/lafave/warren_article.html](http://instruct.westvalley.edu/lafave/warren_article.html)
John T. Noonan, Jr.: “An Almost Absolute Value in History”,
 [http://faculty.mc3.edu/barmstro/noonan.html](http://faculty.mc3.edu/barmstro/noonan.html) | HW: tba                  |
| September Th. 4 | Basic Concepts I | *Cohen & Nagel*: Chapter 1  
*Hurley*: Chapter 1 | HW: tba                  |
| Th. 11  | Basic Concepts II | *Cohen & Nagel*: Chapter 1  
*Hurley*: Chapter 1 | HW: tba                  |
| Th. 18  | Meaning and Definition | *Hurley*: Chapter 2 | HW: tba                  |
| Th. 25  | Meaning and Definition Informal Fallacies | *Hurley*: Chapter 3 | HW: tba                  |
| October Th. 2 | Informal Fallacies  
Categorical Propositions | *Hurley*: Chapter 4  
*Cohen & Nagel*: Chapters II & III | HW: tba                  |
| Th. 9   | Categorical Propositions | *Hurley*: Chapter 4  
*Cohen & Nagel*: Chapters II & III | HW: tba                  |
| Th. 16  | Mid-Term Exam  
Informal Fallacies  
Categorical Propositions | Mid-Term Exam  
Other Assignment: TBA | Mid-Term Exam               |
| Th. 23  | Categorical Syllogism | *Hurley*: Chapter 5 All  
*Cohen & Nagel*: Chapter IV | HW: tba                  |
| Fri. 24* | Not a Class: FYI | 5pm: Last Day to Withdraw from Class | HW: tba                  |
| Th. 30  | Categorical Syllogism | *Hurley*: Chapter 5  
*Cohen & Nagel*: Chapter IV | HW: tba                  |
| November Th. 6 | Propositional Logic | *Hurley*: Chapter 6 | HW: tba                  |
| Th. 13  | Propositional Logic | *Hurley*: Chapter 6 | HW: tba                  |
| Th. 20  | Natural Deduction | *Hurley*: Chapter 7 | HW: tba                  |
| Th. 27  | Fall Recess | No Class | Fall Recess                |
| December Th. 4 | Philosophy of Logic  
& Review | *Hurley*: Chapter 7  
*Cohen & Nagel*: Chapter IX  
Review for Final; course evaluations | HW: tba                  |
| Th. 11  | Final Exam | 6:00 pm—8:50pm: Mackinac Hall (MAK) Room B-1 138 | Final Exam               |
Courses in the Category

CS 160 – Programming With Visual BASIC
Emphasis on problem solving, algorithms, structure, style, and object-oriented/event-drive programming. Includes subroutines, loops, arrays, sorting, debugging, files, graphics, and graphical user interface. Prerequisite: MTH 110.

MTH 122 – College Algebra
A study of functions and their graphs, including polynomial, rational, radical, exponential, logarithmic, and inverse functions; equations of circles, sequences, and series. Emphasis is on applications, problem solving, and using graphic, numeric, and symbolic methods to understand and solve equations, inequalities, and systems of nonlinear equations. Prerequisite: MTH 110 or satisfactory completion of placement requirements.

MTH 123 – Trigonometry
A study of the trigonometry functions with an emphasis on graphing, identities, inverse trigonometric functions, and solving equations. Additional topics include solving triangles, vectors, complex numbers, and polar coordinates. Prerequisites: MTH 110 and MTH 122 or satisfactory completion of placement requirements.

MTH 125 – Survey of Calculus
A study of the concepts of calculus for students majoring in business, economics, life sciences, and social sciences. Differentiation and integration of algebraic, exponential, and logarithmic functions. Emphasis on applications. Prerequisite: MTH 110.

MTH 131 – Introduction to Mathematics
A survey for non-mathematics majors. Topics selected from inductive and deductive reasoning, geometry, statistics, computers, modeling, number theory, numeration systems, the mathematics of decision-making, and applications. Prerequisite: MTH 110.

MTH 201 – Calculus I
Analytic Geometry. Differentiation and integration of function of a single variable with applications. Prerequisites: MTH 122 and MTH 123.

MTH 221 – Mathematics for Elementary Teachers I
Emphasis is on concepts, relationships, problem solving, reasoning, communicating, and connecting ideas in elementary school mathematics: geometry, measurement, patterns and functions, classification, logic, probability, and statistics. MTH 221 and 222 or MTH 223 is required of all elementary teachers applying to the College of Education. Does not count toward a major or minor in mathematics. Prerequisite: MTH 110.

PHI 103 – Logic
What does it mean to think clearly and correctly? What rules govern classification and definition? What is the nature of propositions? What are the rules for correct reasoning? How can we improve our reasoning skills? This course addresses these questions with the help of a standard textbook in classical logic.

STA 215 – Introductory Applied Statistics
A technique-oriented approach to statistical problems with emphasis on applications. Descriptive statistics, probability distributions, estimation, testing hypotheses, t-test, regression, correlation, chi-square tests, and one-way analysis of variance. A statistical software package will provide computational assistance. Prerequisite: MTH 110 or equivalent.