Module Title: **Logic**
Module Code: **505 PLOG**
Level: **5**
Credit rating: **20 credits**
Duration: **200 hours**
Teaching hours: **40**
Academic Responsibility: **Séamus Mulholland OFM, PhD**

Module Aims:

- To obtain the ability to identify common fallacies in arguments,
- To understand the structure of different kinds of arguments,
- To grasp the features of traditional logic
- To develop the ability to think critically
- To realise that the proper use of logic is a reasonable way to solve problems

Indicative Module Content

This class introduces students to formal techniques for evaluating arguments. These are the principles that underlie all sound reasoning as well as the design of all contemporary computer systems. We will study a number of different techniques including Venn Diagrams, truth tables, and systems of proof known as natural deduction systems. Exams are designed to test skill with the formal systems, particularly translation from English into the languages of the systems, proof techniques, and methods for showing invalidity. The module covers the following areas of classical logic:

- Concepts, Definitions, Propositions.
- Uses of Language.
- Recognizing and Analysing Arguments.
- The Validity of Arguments and Fallacies.
- Deductive Logic.
- Categorical Propositions and Categorical Syllogisms.
- Rudimentary Propositional Calculus and Truth-functional Arguments.
- Inductive Logic

Learning Outcomes:

By the end of this module students should be able to

1. demonstrate a systematic understanding of the principles Logic and be able to offer a coherent appreciation of Logic and its purpose and importance.
2. An ability to critically dialogue philosophically about Logic and meaning
3. A development of critical and analytical skills especially in the use of Logic
4. A knowledge of understanding of differentiations between arguments and their structure and the ability to evaluate the validity/invalidity or structured arguments and their truth claims
5. Think and work creatively and intellectually and be stimulated in their search for useful knowledge and insight through their use of Logic both in classes and in tests and its practical applications.
6. Critically reflect, assess and offer problem solving solutions to aspects of their work both in this area of study and others by adopting a systematic logical approach.

Learning and Teaching Strategies:

The module will be taught through a variety of teaching methods: delivered lectures, question/discussion, power point presentation, and most especially the presentation of logical statements, fallacies, arguments and solutions to fuzzy thinking.

Assessment:

This module will be assessed by a series of 1 hour tests on a two weekly basis. [1]

Illustrative Bibliography

Barker, Stephen F. *The Elements of Logic*. Fifth Edition. McGraw-Hill, 1989.

Bergmann, Merrie, James Moor, and Jack Nelson. *The Logic Book*. Second Edition. McGraw-Hill, 1990.

Cohen, Morris, and Nagel, Ernest. *An Introduction to Logic*. Harcourt, Brace and World, 1932, 1962.

Copi, Irving M. and Cohen, Carl. *Introduction to Logic*. Eighth Edition. Macmillan, 1990.

Gianelli, A.P. *Meaningful Logic.* Bruce Publishing Company, 1962.

Gilbart, Helen W. *Reading With Confidence.* Scott, Foresman and Company,1988.

Jason, Gary. ***I****ntroduction to Logic.* Jones and Bartlett,1994.

Kahane, Howard. *Logic and Philosophy: A Modern Introduction****.*** Wadsworth, 1990.

Kelly, David***.*** *The Art of Reasoning****.*** W.W. Norton, 1988.

Pospesel, Howard. *Introduction to Logic: Propositional Logic****.*** Second Edition. Prentice-Hall, 1984.

Purtill, Richard L. *Logic for Philosophers.* Harperand Row, 1971.

Quine, Willard Van Orman. *Methods of Logic.* Fourth Edition. Harvard University Press, 1950, 1959.

Rescher, Nicholas. *Introduction to Logic.* St. Martin's Press, 1964.

Salmon, Merrilee. *Introduction to Logic and Critical Thinking*. Harcourt Brace Jovanovich, 1984.

Salmon, Wesley. *Logic.* Third Edition. Prentice-Hall, 1983.

Thomason, Richmond***.*** *Symbolic Logic: An Introduction****.*** Collier-Macmillan, 1970.

Weston, Anthony. *A Rulebook for Arguments.* Hackett, 1987.

1 For an example of a test see appendix.