



**PHIL6312 Introduction to Modal Logic**  
**New Orleans Baptist Theological Seminary**  
**June 15-26, 2020**

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**Mission Statement**

New Orleans Baptist Theological Seminary and Leavell College prepare servants to walk with Christ, proclaim His truth, and fulfill His mission.

**Core Value Focus**

The seminary has five core values: Doctrinal Integrity, Spiritual Vitality, Mission Focus, Characteristic Excellence, and Servant Leadership. The core value focus for this year is Spiritual Vitality.

**Curriculum Competencies**

All graduates of NOBTS are expected to have at least a minimum level of competency in each of the following areas: Biblical Exposition, Christian Theological Heritage, Disciple Making, Interpersonal Skills, Servant Leadership, Spiritual and Character Formation, and Worship Leadership. The curriculum competencies addressed in this course are: Christian Theological Heritage.

**Course Description**

Modal logic is a course about the logic of Necessity and Possibility. Necessity and possibility are central notion in most branches of philosophy - Metaphysics, Epistemology, Philosophy of Science, Philosophy of Language, Philosophy of Logic, Philosophy of Mathematics, and Ethics- as well as in Computer Science, Linguistics, and Cognitive Science. The course will focus both on Possible-Worlds Semantics - the semantics of modal logic - and on axiomatizations and proofs concerning necessity and possibility.

This course will have a secondary focus in philosophical issues related to modal logic. Here, we will consider both philosophical arguments which employ modal logic (chiefly the ontological argument) and also the philosophical issues which modality itself raises (if I could have had a brother, is there something or someone who could have been my brother?).

**Student Learning Outcomes**

1. Students will be introduced to some basic issues related to possibility and necessity by attending class lectures.
2. Students will be introduced to some basic issues related to possibility and necessity by reading the primary texts and assigned readings.
3. Students will be introduced to the basic issues related to possibility and necessity through completing the assignments.

**Required Textbooks**

James W. Garson, *Modal Logic for Philosophers*. (Cambridge University Press, 2006. ISBN: 0521682290).

Additional Readings will be posted on Blackboard

## Course Teaching Methodology

The course will involve the following methodologies: Class will be held digitally via bluejeans  
Assignments will be turned in and evaluated via Blackboard.

## Course Requirements

1. Students are expected to attend class, read the assigned materials and participate in class discussion.
2. Students are expected to complete the required assignments.

## Assignments:

- **Daily Assignments:** Students will be required to complete a number of problems, from the text before every class. **40%**
- **Attendance/Participation:** Students shall be graded on both their attendance and on their actively engaging the material in class. **10%**
- **Final Exam: 50%**

## Technical Assistance

For assistance regarding technology, consult ITC (504-816-8180) or the following websites:

1. [Selfserve@nobts.edu](mailto:Selfserve@nobts.edu) - Email for technical questions/support requests with the [Selfserve.nobts.edu](http://Selfserve.nobts.edu) site (Access to online registration, financial account, online transcript, etc.)
2. [BlackboardHelpDesk@nobts.edu](mailto:BlackboardHelpDesk@nobts.edu) - Email for technical questions/support requests with the NOBTS Blackboard Learning Management System [NOBTS.Blackboard.com](http://NOBTS.Blackboard.com).
3. [ITCSupport@nobts.edu](mailto:ITCSupport@nobts.edu) - Email for general technical questions/support requests.
4. [www.NOBTS.edu/itc/](http://www.NOBTS.edu/itc/) - General NOBTS technical help information is provided on this website.

## Help for Writing Papers at “The Write Stuff”

NOBTS maintains a Writing Center designed to improve English writing at the graduate level. Students can receive writing guides, tips, and valuable information to help in becoming a better writer.

## Plagiarism on Written Assignments

NOBTS has a no tolerance policy for plagiarism. Plagiarism in certain cases may result in expulsion from the seminary. See the NOBTS Student Handbook for definition, penalties, and policies associated with plagiarism.

## Tentative Course Schedule

### Part 1: Review and Introduction (Class 1)

- Review of Propositional Logic
- System K
  - Garson Chapter 1

### Part 2: Semantics and Metatheory (Classes 2-5)

- Basic Concepts: Worlds, Intensions and Semantic (Diagram) Proofs for Proposition Logic
  - Garson 3
- Semantic (Diagram) Proofs For K
  - Garson 4
- The Accessibility Relation for Modal Logic
  - Garson 5.3, 5.7
- Trees Extensions of K

- Garson 6

### **Part 3: Modal Logic and Phil Religion (Class 6)**

- The Modal Ontological Argument
  - Supplementary Materials by Plantinga and Kane

Optional:

- A New Cosmological Argument and Replies
  - Supplementary Materials by Pruss & Gale and Almeda & Judisch
- The Modal Problem of Evil
  - Supplementary Materials by Guleserian

### **Part 4: Introduction to Quantified Modal Logic (And Associated Philosophical Problems) (Classes 7-8)**

- Domain Variance
- Rigidity
  - Garson Chapter 12
  - Supplementary Materials by Bennet and Menzel

### **Part 4: Semantics for Quantified Modal Logic (Classes 9-10)**

- Semantic Trees
  - Garson 13-14

## **Bibliography**

In addition to Garson (2006), we will read:

Almeida, M. J., & Judisch, N. D. (2002). A new cosmological argument undone. *International journal for philosophy of religion*, 51(1), 55-64.

Bennett, K. (2005). Two axes of actualism. *The Philosophical Review*, 114(3), 297-326.

Gale, R. M., & Pruss, A. R. (1999). A new cosmological argument. *Religious Studies*, 35(4), 461-476.

Guleserian, T. (1983). God and possible worlds: the modal problem of evil. *Nous*, 221-238.

Kane, R. (1984) The Modal Ontological Argument. *Mind* Vol. XCIII, 336-350

Menzel, Christopher, "Actualism", *The Stanford Encyclopedia of Philosophy* (Summer 2018 Edition), Edward N. Zalta (ed.), URL = <<https://plato.stanford.edu/archives/sum2018/entries/actualism/>>.

Plantinga, A. (1974). *The nature of necessity*. Oxford University Press on Demand. 196-221.