

MONTGOMERY COLLEGE - Germantown Campus**Mathematics & Statistics Department****Course Syllabus****I. Instructor Information**

Professor: Dr. Zhou Dong

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¹Phone: (240) 567-7810

²Office: HT 134

Office Hours: [By appointment](#)

II. General Course Information

Scientific Research Honors Module – SCIR 297HC

PREREQUISITE:

MATH 181

HONORS ELIGIBILITY:

- SAT score of 600 or above on each section
- OR
- Completion of at least 12 Montgomery College credits with 3.2+ GPA
 - Grade of A or B in ENGL 101/011 or Eligible for ENGL 102

Summer 2021: CRN 47103

Class Times: TBA

Teams meeting link for class meetings

III. Specific Outcomes

Designed for the promising science, engineering, or mathematics (SEM) student who would like to build upon general SEM skills learned from general courses in order to generate competency in scientific critical thinking and research. This course enables SEM students to pursue research topics of their own choosing with the guidance and supervision of an assigned faculty member. Students should have a strong interest in SEM and be committed toward completion of a multi-semester and interdisciplinary-spanning research project. Projects will not duplicate curriculum content but will expand on that content.

¹ If you call, please leave a message.

² I will not be available in my office during Remote Instruction. Virtual class meetings and office hours held online via Microsoft Teams. Best way to reach me during Remote Instruction is to message me on Microsoft Teams.

The professor reserves the right to make changes to this syllabus.

Last Updated June 29, 2021

IV. Text and Supplies

Language, Proof and Logic (2nd edition), by Dave Barker-Plummer, Jon Barwise and John Etchemendy, in collaboration with Albert Liu, Michael Murray and Emma Pease, CSLI Publications, 2011

Packaged Software: Boole, Fitch, and Tarski's World

Free online course (audit): <https://www.edx.org/course/language-proof-and-logic>

Open Logic Text: An Open-Source, Collaborative Logic Text, by Richard Zach, Andrew Arana, Jeremy Avigad, Tim Button, Walter Dean, Gillian Russel, Nicole Wyatt, and Audrey Yap

Download at: <https://openlogicproject.org/>

V. Grading

A. Requirements

The student is required to

- Attend and participate in all class meetings
- Complete readings and homework as assigned
- Present in class on a topic from the Open Logic Text which is not covered in the Language, Proof and Logic course
- Create a group presentation at the end of the semester to be give as a math department student talk during the Fall 2021 semester

B. Course Grade

Attendance/Participation	20%	A = 90% – 100%
Midterm Exam	20%	B = 80% – 90%
Final Exam	20%	C = 70% - 80%
Individual Presentation	20%	D = 60% - 70%
Group Presentation	20%	F < 60%

VI. Student Code of Conduct and Collegewide Policies and Procedures

<http://cms.montgomerycollege.edu/mcsyllabus/>

VII. Campus Resources

A. Student Health and Wellness

<http://cms.montgomerycollege.edu/student-health-and-wellness/fuel-for-success/>

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VIII. Course Schedule

Week	Language, Proof and Logic Course	Open Logic Text
<i>Week 1</i> <i>June 1 – 4</i>	Welcome to Proof, Language and Logic	Discuss possible individual presentation topics
<i>Week 2</i> <i>June 7 – 11</i>	Chapter 1: Atomic Sentences Assignment 1 Chapter 2: The Logic of Atomic Sentences Assignment 2	Select individual presentation topics
<i>Week 3</i> <i>June 14 – 18</i>	Chapter 3: The Boolean Connectives Assignment 3 Chapter 4: The Logic of Boolean Connectives Assignment 4	Read selected topic
<i>Week 4</i> <i>June 21 – 25</i>	Chapter 5: Methods of Proof for Boolean Logic Assignment 5 Chapter 6: Formal Proofs and Boolean Logic Assignment 6	Read selected topic
<i>Week 5</i> <i>June 28 – July 2</i>	Chapter 7: Conditionals Assignment 7 Chapter 8: The Logic of Conditionals Assignment 8	Read selected topic
<i>Week 6</i> <i>July 6 – 9</i>	Propositional Logic Summery Midterm Exam Chapter 9: Introduction to Quantification Assignment 9 Chapter 10: The Logic of Quantifiers Assignment 10	Read selected topic
<i>Week 7</i> <i>July 12 – 16</i>	Chapter 11: Multiple Quantifiers Assignment 11 Chapter 12: Methods of Proof for Quantifiers Assignment 12	Draft individual presentation
<i>Week 8</i> <i>July 19 - 23</i>	Chapter 13: Formal Proofs and Quantifiers Assignment 13 Chapter 14: More About Quantification Assignment 14	Finalize individual presentation
<i>Week 9</i> <i>July 26 – 30</i>	Course Summary Final Exam	Individual Presentations
<i>Week 10</i> <i>August 2 - 6</i>	Draft group presentation	
<i>Week 11</i> <i>August 9 - 13</i>	Finalize group presentation	

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