Syllabus

Instructor:

Sean Hunter

Email: ghunter@ucsc.edu or g.s.hunter@gmail.com

Zoom Office Hours: TBD

Teaching Assistants:

Aaron Franklin (Email: afrank11@ucsc.edu)

Zoom Office Hours: TBD

Thomas Rule (Email: trule@ucsc.edu)

Zoom Office Hours: TBD

James McCord (Email: pjmcord@ucsc.edu)

Zoom Office Hours: TBD

Course Goals: This course will provide a rigorous grounding in the fundamental concepts and techniques of contemporary formal logic. Students will master translations of ordinary English sentences into the language of our system and become proficient in testing arguments for validity, consistency, inconsistency, implication, and equivalence. The methods taught in this course suffice for tests of validity in polyadic first order logic. In order to better explain the importance and utility of our logical system, historically significant developments and applications of formal logic will also be covered as time allows. (Possible topics, subject to student interest, might be: Logic and the history of computer science, logic and the foundation of mathematics, introductory metalogic, etc.)
Required Texts:

The only required text for this course is the free e-book: *How 2 Logic*, written by me, which will be posted on Canvas.

I suggest that you acquire a copy of W.V. Quine’s *Method’s of Logic, Fourth Edition*. You should be able to find a used copy for less than $10. My book covers the exact same material as the first 30 or so chapters of Quine’s book, but in a far more accessible format.

I will give extra credit for the completion of the exercises in Quine’s book, in proportion to the difficulty. (They are very difficult.)

Supplementary materials, if needed, will be posted on Canvas.

Course Communication: Major course announcements such as assignments and changes to the reading schedule will be regularly posted on Canvas. It is expected that each student enrolled in the course will regularly check Canvas (and their e-mail) so as to stay apprised of the pace of the course. Because this is an online course, it is essential that you check Canvas and your e-mail regularly for updates. You must be proactive in keeping up with the course, or you will not do well.

Disability Resource Center: If you qualify for classroom accommodations because of a disability, please submit your Accommodation Authorization from the Disability Resource Center (DRC) to one of the instructors in a timely manner, preferably within the first two weeks of the quarter. Contact the DRC at 459-2089 (voice), 459-4806 (TTY). If you are hearing-impaired or visually-impaired it is ESSENTIAL that you notify me as soon as possible. Due to the nature of the material, I will need to work closely with the DRC to accommodate students with visual or auditory impairment.

Academic Misconduct: By enrolling in the University, students are automatically agreeing to abide by University policies, including those on academic misconduct. Academic integrity and scholarship are core values that should guide our conduct and decisions as members of the UCSC community. Plagiarism and cheating contradict these values, and as such are very serious academic offenses. Penalties can include a failing grade in an assignment or in the course, and/or suspension or expulsion from the university. Students are expected to familiarize themselves with and follow citation practices. The instructor in this course will pursue disciplinary action in all instances of academic misconduct.

Your final exam will be proctored through the online proctoring service ProctorU, and you must have a PC or laptop with a webcam in order to use that service. To be honest, I find the idea of being monitored by someone through a webcam to be extremely creepy, so you will have the option to take the final exam in person if you are in Santa Cruz, but you are not required to do so.
Evaluation and Grading:

20% Canvas Quizzes – The course is divided into a series of modules, each of which corresponds to a chapter in the textbook. For each module, you are required to watch a video lecture and complete a Canvas quiz. These quizzes will not be very difficult, and are meant to encourage you to learn the material, not to punish you.

20% Textbook Exercises – For each chapter, there is a set of exercises. You are required to attempt all of the exercises and upload by the date that the module closes. These will not be graded for correctness but if you do not demonstrate a serious attempt to complete the problems, you will not receive credit. If you do not attempt the exercises, you cannot do well in this course.

30% Learning Practices (10% Each x 3) – During the quarter you will have to complete three learning practices. A learning practice is an open book, open note exam that you have a week to complete and upload.

Learning practices work a bit differently than a typical exam, in that higher grades on subsequent learning practices replace lower grades on previous ones. The idea is that, even if you fall behind or bomb one of them, you’ll have the opportunity to save your grade. Here’s an example to make this clear:

Suppose that Juan gets a 70% on the first learning practice, and 80% on the second learning practice, and a 95% on the final learning practice. The 95% for the final learning practice replaces the 70% and 80%, so Juan’s grade for the entire learning practice section of the course would be a 95%.

You may consult all notes, lecture videos, the textbook, etc on the learning practices, but you are forbidden from collaborating with each other. If I suspect cheating, I reserve the right to switch out learning practices for traditional proctored exams. Also, you will assuredly fail the final if you cheat your way through the LPs...

30% Final Exam – There will be a proctored cumulative final exam. You have two options for taking the final exam:

1) You may take the exam online through ProctorU. More details about how to take the exam in this manner will be provided as we get closer to the end of the course. You must have a webcam and some means of scanning documents in order to take the final online.

2) If you will be in Santa Cruz, you may take the final exam in person. I will announce the date, time, and location for the in-person final exam at a later point.

I reserve the right to curve any assignments or the course overall, but I will only curve upwards. If the class average is lower than a B, I will curve the class to (at least) a B average. A low average tells me that I have done something wrong and that you should not be penalized.
Schedule of Assignments:

Week 1: June 24-30

Module 1:

Read: *How 2 Logic*, Ch. 1 “Sentences and Statements”
Watch: Video Lecture 1: “Sentences and Statements”
Do: *How 2 Logic* Ch.1 Exercises and upload to Canvas by 11:59 P.M Sunday June 30th
Do: Module 1 Quiz on Canvas by 11:59 P.M Sunday June 30th

Module 2:

Read: *How 2 Logic*, Ch. 2 “Truth-Functional Connectives”
Watch: Video Lecture 2: “Truth-Functional Connectives”
Do: *How 2 Logic* Ch.2 Exercises and upload to Canvas by 11:59 P.M Sunday June 30th
Do: Module 2 Quiz on Canvas by 11:59 P.M Sunday June 30th

The material in the modules for this week corresponds to chapters 1-3 of *Methods of Logic*.

Week 2: July 1-7

Module 3:

Read: *How 2 Logic*, Ch. 3 “Grouping, Ambiguity, and Dot Notation”
Watch: Video Lecture 3: “Grouping, Ambiguity, and Dot Notation”
Do: *How 2 Logic* Ch.3 Exercises and upload to Canvas by 11:59 P.M Sunday July 7th
Do: Module 3 Quiz on Canvas by 11:59 P.M Sunday July 7th

Module 4:

Read: *How 2 Logic*, Ch. 4 “Truth Value Analysis”
Watch: Video Lecture 4: “Truth Value Analysis”
Do: *How 2 Logic* Ch.4 Exercises and upload to Canvas by 11:59 P.M Sunday July 7th
Do: Module 4 Quiz on Canvas by 11:59 P.M Sunday July 7th

The material in the modules for this week corresponds to chapters 4-6 of *Methods of Logic*.
Week 3: July 8-14

Module 5:

Read: *How 2 Logic*, Ch. 5 “Implication and Equivalence”
Watch: Video Lecture 5: “Implication and Equivalence”
Do: *How 2 Logic* Ch.5 Exercises and upload to Canvas by 11:59 P.M Sunday July 14th
Do: Module 5 Quiz on Canvas by 11:59 P.M Sunday July 14th

Module 6:

Read: *How 2 Logic*, Ch. 6 “Translation”
Watch: Video Lecture 6: “Translation”
Do: *How 2 Logic* Ch.6 Exercises and upload to Canvas by 11:59 P.M Sunday July 14th
Do: Module 6 Quiz on Canvas by 11:59 P.M Sunday July 14th

The material in the modules for this week corresponds to chapters 6-8 of *Methods of Logic*.

Week 4: July 15-21

DO: FIRST LEARNING PRACTICE.
Upload to Canvas by 11:59 P.M Sunday July 21st

Module 7:

Read: *How 2 Logic*, Ch. 7 “Interchange and Some Useful Equivalents”
Watch: Video Lecture 7: “Interchange and Some Useful Equivalents”
Do: *How 2 Logic* Ch.7 Exercises and upload to Canvas by 11:59 P.M Sunday July 21st
Do: Module 7 Quiz on Canvas by 11:59 P.M Sunday July 21st

Module 8:

Read: *How 2 Logic*, Ch. 8 “Conjunctive Normal Form”
Watch: Video Lecture 8: “Conjunctive Normal Form”
Do: *How 2 Logic* Ch.8 Exercises and upload to Canvas by 11:59 P.M Sunday July 21st
Do: Module 8 Quiz on Canvas by 11:59 P.M Sunday July 21st

The material in the modules for this week corresponds to chapters 9-10 of *Methods of Logic*. 
Week 5: July 22-28

Module 9:

Read: *How 2 Logic*, Ch. 9 “Term Logic and Venn Diagrams”
Watch: Video Lecture 9: “Term Logic and Venn Diagrams”
Do: *How 2 Logic* Ch.9 Exercises and upload to Canvas by 11:59 P.M Sunday July 28th
Do: Module 9 Quiz on Canvas by 11:59 P.M Sunday July 28th

Module 10:

Read: *How 2 Logic*, Ch. 10 “Boolean Schemata”
Watch: Video Lecture 10: “Boolean Schemata”
Do: *How 2 Logic* Ch.10 Exercises and upload to Canvas by 11:59 P.M Sunday July 28th
Do: Module 10 Quiz on Canvas by 11:59 P.M Sunday July 28th

The material in the modules for this week corresponds to chapters 14-16,18 of Methods of Logic.

Week 6: July 29-August 4

REVIEW MODULE 10 BEFORE BEGINNING MODULE 11

Module 11:

Read: *How 2 Logic*, Ch. 11 “The Method of Existential Conditionals”
Watch: Video Lecture 11: “The Method of Existential Conditionals”
Do: *How 2 Logic* Ch.11 Exercises and upload to Canvas by 11:59 P.M Sunday August 4th
Do: Module 11 Quiz on Canvas by 11:59 P.M Sunday August 4th

The material in the module for this week corresponds to chapter 19 of Methods of Logic.
Week 7: August 5-11

DO: SECOND LEARNING PRACTICE.
Upload to Canvas by 11:59 P.M Sunday August 11th

Module 12:

Read: How 2 Logic, Ch. 12 “Quantifiers and Quantificational Schemata”
Watch: Video Lecture 12: “Quantifiers and Quantificational Schemata”
Do: How 2 Logic Ch.12 Exercises and upload to Canvas by 11:59 P.M Sunday August 11th
Do: Module 12 Quiz on Canvas by 11:59 P.M Sunday August 11th

Module 13:

Read: How 2 Logic, Ch. 13 “Rules of Passage”
Watch: Video Lecture 13: “Rules of Passage”
Do: How 2 Logic Ch.13 Exercises and upload to Canvas by 11:59 P.M Sunday August 11th
Do: Module 13 Quiz on Canvas by 11:59 P.M Sunday August 11th

The material in the modules for this week corresponds to chapters 22-24 of Methods of Logic.

Week 8: August 12-18

Module 14:

Read: How 2 Logic, Ch. 14 “Polyadic Quantificational Schemata”
Watch: Video Lecture 14: “Polyadic Quantificational Schemata”
Do: How 2 Logic Ch.14 Exercises and upload to Canvas by 11:59 P.M Sunday August 18th
Do: Module 14 Quiz on Canvas by 11:59 P.M Sunday August 18th

The material in the module for this week corresponds to chapter 27 of Methods of Logic.
Week 9: August 19-25

DO: THIRD LEARNING PRACTICE.
Upload to Canvas by 11:59 P.M Sunday August 25th

Module 15:

Read: How 2 Logic, Ch. 15 “The Main Method”
Watch: Video Lecture 15: “The Main Method”
Do: How 2 Logic Ch.15 Exercises and upload to Canvas by 11:59 P.M Sunday August 25th
Do: Module 15 Quiz on Canvas by 11:59 P.M Sunday August 25th

The material in the module for this week corresponds to chapter 30 of Methods of Logic.

Week 10: August 26-30

Review Module 15 Material

Watch: Video Lecture 16: “The Main Method: More Examples and Applications”

STUDY FOR THE FINAL EXAM! (Dates TBA)