
Schedule Logic, Language and Philosophy Course

version 1.0

15th October 2020

1 Preliminary

Basic parameters:

- The course runs for 16 weeks
- Assessment consists of 2 intermediate exams
- Each week has two meetings, of 95 minutes

Manuscript *Logic, Language and Philosophy* by Fenrong Liu and Martin Stokhof. The course will be taught in English.

The course is supplemented by philosophical material that illustrates the philosophical relevance of the various logical concepts and techniques.

2 Assessment

Assessment consists of:

- Exam 1: 30 points
- Exam 2: 30 points
- Homework assignments: 30 points
- Presentation: 10 points

3 Schedule

The schedule is organised by week in order to introduce sufficient flexibility in planning and execution. There is additional flexibility in that every exam is preceded by a 'review & quiz' section that could also be used as a reserve.

The specification for each week contains:

- *Topics*: the logical concepts and techniques that are treated
 - *Theme*: the philosophical theme associated with those concepts and techniques
 - *Reading*: the draft chapters where the topics are explained
 - *Exercises*: the relevant exercises
 - *Additional reading*: reading material that is related to the theme
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Week 1 (Sep.14 and 16): why logic?

Topics

Informal characterisations of argument, argument scheme, validity; historical backgrounds; examples

Theme

Usefulness and limitations of application of logic in philosophy

Reading

Book, chapter 1, 2

Exercises

Not applicable

Additional reading

Frege: preface from *Begriffsschrift*; Russell: 'Logic as the Essence of Philosophy' in *Our Knowledge of the External World* (chapter 2, pp. 26–48)

Proposition logic

Week 2 (Sep 21 and 23): syntax

Topics

Truth functional connectives, truth tables; translation; syntax

Theme

Truth-functional, non-truth-functional and nonsensical connectives

Reading

Chapters 3, 4

Exercises

1, 2, 3, 4, 5

Additional reading

Prior: The Runabout Inference Ticket; Belnap: Tonk, Plink and Plonk[◊]

Week 3 (Sep 28 and 30): semantics

Topics

Valuations; equivalence; tautology, contradiction, contingency.

Theme

Paradoxes of material implication: the limits of truth-functionality

Reading

Chapter 5, 6

Exercises

6, 7, 8

Additional reading

Suber: Paradoxes of Material Implication; Sanford: introduction to 'If *P* then *Q*' *Conditionals and the Foundations of Reasoning* (introduction)

Week 4 (Oct 5 and 7): validity

Topics

Validity, counterexamples; functional completeness

Theme

Relationship between logic and natural language, logical consequence

Reading

Chapter 7, 8

Exercises

Additional reading

Tarski, The Semantics of Conception of Truth

Natural deduction

Week 5 (Oct 12 and 14): proposition logic

Topics

Derivability versus validity; introduction rules and elimination rules; conjunction, implication, disjunction

Theme

Deduction and Meaning

Reading

Chapter 9, 10

Exercises

Additional reading

R.J.G.B. de Queiroz, On Reduction Rules, Meaning-as-use, and Proof-theoretic Semantics

Week 6 (Oct 19 and 21): proposition logic (cont.)

Topics

Negation

Theme

Deduction and Meaning (cont.)

Reading

Chapter 9, 10

Exercises

Additional reading

R.J.G.B. de Queiroz, On Reduction Rules, Meaning-as-use, and Proof-theoretic Semantics

Week 7 (Oct 26 and 28): summary & exam

Predicate logic

Week 8 (Nov 2 and 4): syntax

Topics

Atomic sentences, domains, quantification; translation; scope and binding

Theme

Quantification and existence; nominalism and universalism

Reading

Chapter 12, 13

Exercises

Additional reading

Quine: On What There Is

Week 9 (Nov 9 and 11): semantics, validity

Topics

Substitutional semantics; validity, counterexamples

Theme

Quantification in natural language

Reading

Exercises

Additional reading

Predicate logic with identity

Week 10 (Nov 16 and 18): identity

Topics

Identity, descriptions, cardinals

Theme

Reference and existence

Reading

Exercises

Additional reading

Russell: On Denoting

Week 11 (Nov 23 and 25): properties of relations

Topics

Properties of relations; orders

Theme

Construing properties from relations

Reading

Exercises

Additional reading

Strawson: On Referring

Week 12 (Nov 30 and Dec 2): natural deduction, predicate logic

Topics

Quantifiers

Theme

Deduction and Meaning (cont.)

Reading

Exercises

Additional reading

Engel: Logic, Reasoning and the Logical Constants

Week 13 (Dec 7 and 9): soundness and completeness

Topics

Soundness and completeness

Theme

Meta-logic

Reading

Exercises

Variations and limitations

Week 14 (Dec 14 and 16): many-valued logic

Topics

Strong and weak three-valued logics (Łukaciewics, Kleene); four-valued logics (Bochvar)

Theme

Future contingent propositions; presupposition and presupposition failure

Reading

Additional reading

Aristotle: *De Interpretatione IX* (chapter 9);

Anscombe: Aristotle and the Sea Battle

Week 15 (Dec 21 and 23): Pragmatics; summary

Topics

Conversational and conventional implicatures

Theme

The limits of literal meaning and the limits of logic

Reading

Exercises

Additional reading

Grice: Logic and Conversation

Week 16 (Dec 28 and 30): exam