

Subjects for SemAlg 2019

Combinatorial Game Theory

The two main references are:

SIEGEL: A.N. Siegel, Combinatorial Game Theory, AMS, 2013.

WINNINGWAYS: E.R. Berlekamp, J.H. Conway and R.K. Guy, Winning Ways for your Mathematical Plays, 1982/2001. (Note that there are two editions: the first has two volumes, the second has four volumes. Page numbers below refer to the second edition, and somewhat differ from those of the first edition. In all cases: Volume 1.)

And the subjects (first half of the course):

1. Introduction, SIEGEL, pp. 1–7.
2. Introduction (continued), SIEGEL, pp. 8–14.
3. Hackenbush, SIEGEL, pp. 15–21; WINNINGWAYS, pp. 2–7.
4. Nim and Sprague-Grundy, SIEGEL, pp. 179–183;
Wikipedia: en.wikipedia.org/wiki/Sprague-Grundy_theorem.
5. Heap games, SIEGEL, pp. 184–188.
6. Octal games, SIEGEL, pp. 188–192.
7. Ski-jumps, WINNINGWAYS, pp. 7–13.
8. Simplicity rule (intuition), WINNINGWAYS, pp. 19–28.
9. The group \mathbb{G} , SIEGEL, pp. 53–57 (first half).
10. Some simple games, SIEGEL, pp. 57 (second half)–60 (first half).
11. Incentives and stop, SIEGEL, pp. 62, 68–80.
12. Canonical form, SIEGEL, pp. 64–67.
13. Special sums $\uparrow n * m$, SIEGEL, pp. 87–88.
14. Tiny and miny, SIEGEL, pp. 88–89.
15. Flowers, SIEGEL, pp. 91–93.

www.liacs.leidenuniv.nl/~kosterswa/semalg/subjects.pdf

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