

# CS-E4500 Advanced Course in Algorithms

## *Week 04 – Tutorial*

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1. Consider an instance of SAT with  $m$  clauses, where every clause has exactly  $k$  literals from the tutorial sheet of Week 3. The randomized algorithm that yields an assignment that satisfies at least  $m(1 - 2^{-k})$  clauses in expectation is simple: assign the values independently and uniformly at random. Give a derandomization of the randomized algorithm using the method of conditional expectations.