

# SE 3F03 MACHINE-LEVEL COMPUTER PROGRAMMING COURSE OUTLINE

NED NEDIALKOV  
DEPARTMENT OF COMPUTING AND SOFTWARE  
MCMASTER UNIVERSITY  
WINTER 2015

## LECTURE NOTES

- (1) [Unix commands](#)
- (2) [The shell](#)
- (3) [Basic sed by examples](#)
- (4) [Hardware basics](#)
- (5) [Assembly basics](#)
- (6) [Basic assembly instructions](#)
- (7) [Assembly directives](#)
- (8) [Makefiles](#)
- (9) [Subprograms I](#)
- (10) [Subprograms II](#)
- (11) [Subprograms III](#)
- (12) [Bit operations I](#)
- (13) [Bit operations II](#)
- (14) [Example: finding prime numbers](#)
- (15) [Arrays](#)
- (16) [Array string instructions](#)
- (17) [Structures. C++ and assembly](#)
- (18) [Floating-point: registers](#)
- (19) [Floating-point: instructions](#)
- (20) [Software optimizations](#)
- (21) [Finding constants in big-O notation](#)
- (22) [C pointers](#)