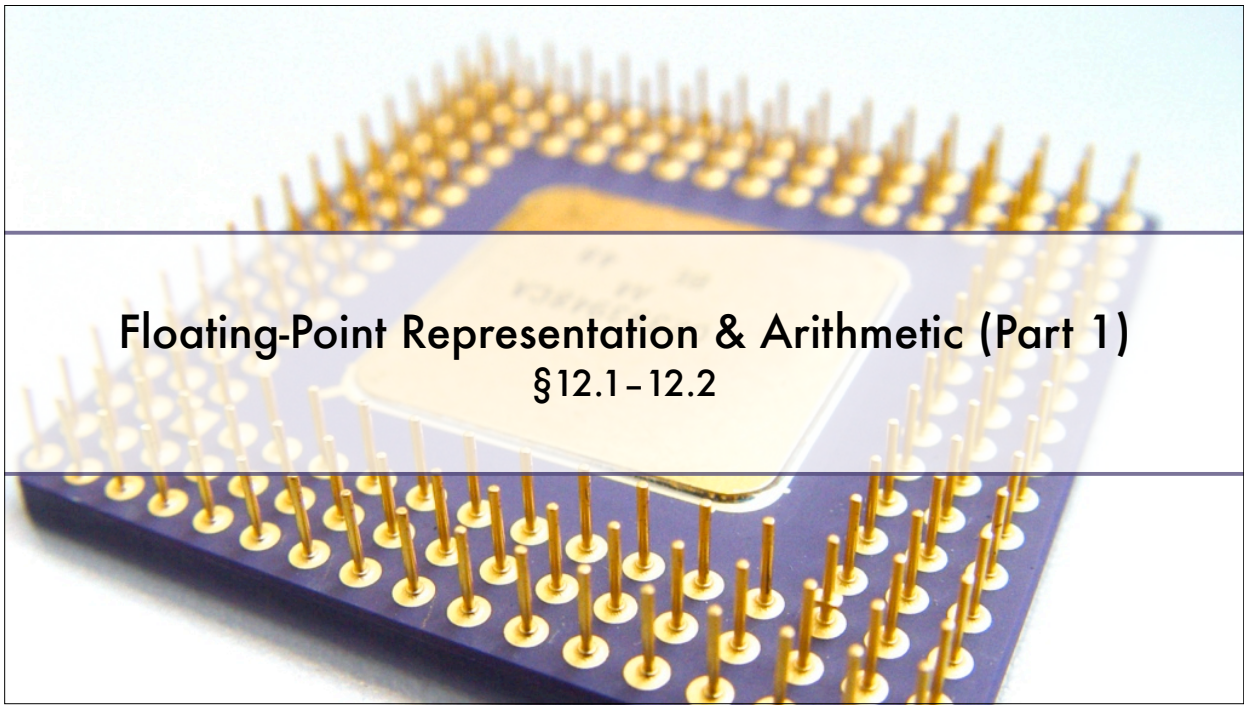
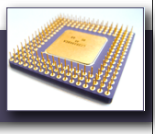


Floating-Point Representation & Arithmetic (Part 1)

§12.1–12.2

Topics Covered in Video/Notes:



- Floating-point representation
  - Sign, significand (~~mantissa~~), biased exponent
    - $(-1)^{sign\_bit} \times 1.significand\_bits \times 2^{exponent\_bits - bias}$
  - IEEE 754 single- and double-precision representations

	Sign Bits	Exponent Bits	Significand (fractional part)	Total Bits	Bias
Single-precision	1	8	23	**32**	127
Double-precision	1	11	52	**64**	1023

  - Special cases: ±∞, NaN, denormalized numbers