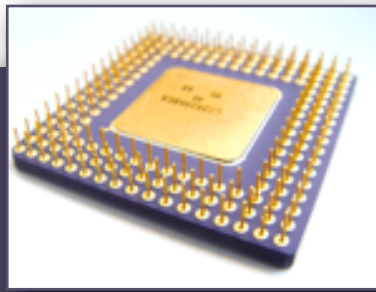


Floating-Point Representation & Arithmetic (Part 1)

§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: $\pm\infty$, NaN, denormalized numbers