

ICS Midterm Review



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Basic

1. Bit-level operations
2. Integers
3. Floating-point numbers

Enhanced

1. Big Endian and Little Endian, **string**
2. Casting: change the way of interpreting, **implicit**
3. Overflow and roundings
4. Special floating point numbers: **norm, denorm, inf, nan**



Basic

1. Program Encodings, registers
2. Control
3. Procedures
4. Data

Enhanced

1. Alignment
2. Arrays and Pointers, **complex and nested**
3. Condition Code Combinations
4. Misc: **sizeof, jump & switch, RISC & CISC, gdb**



Basic

1. Instruction Set Architecture
2. Sequential Logic
3. Pipeline

Enhanced: new instructions

1. Stages
2. Pipeline correction, HCL
3. Hazards



Basic

1. Performance Metrics and Analysis
2. Loop Unrolling & Parallelism

Enhanced

1. Modern Processors
2. Memory Performance



Basic

1. Memory Hierarchy
2. Caches

Enhanced

1. Cache Organization: simulations and optimizations
2. Locality
3. Substitution Policies



Thank you for your attention!

