

An important aspect of embedded system design is being able to communicate effectively using the technical vocabulary associated with embedded systems. You should be able to define and communicate using the following terms before the end of the semester.

Embedded System, Microprocessor, Microcontroller  
RAM, SRAM, DRAM, NVRAM, DDR, DMA  
ROM, EPROM, EEPROM, Flash Memory, OTP  
Oscillator, Crystal, Start-up Time, Clock Oscillator  
Clock, Race Condition, Glitch, Jitter, Eye Diagram  
Reset, Power-on, Manual, Brown-out  
Noise, Ground Bounce, Noise Margin, Bus, Crosstalk  
Transmission Line, Ringing, Reflections, Termination  
EMI, EMC, Ground/Power Plane, Signal Integrity  
CMOS, TTL, Logic Families, Switching Threshold  
Totem-Pole Output, Open Collector/Open Drain Output  
Fan-out, Fan-in, Pull-up/Pull-down Resistor, Floating  
Contention, Drive Fight, Wire-OR/Wire-AND  
Bypass/Decoupling Capacitor, ESR, ESL  
In-rush Current, Voltage Droop  
Transistor, MOSFET, BJT, Beta, Saturation  
Diode, Switching, Power, Zener, LED  
Clamping Diode, Protection Diode, Leakage Current  
Interrupt, NMI, Maskable, Edge/Level Triggered  
Voltage Regulator, Thermal Grease, Heat Sink  
Multiplexer, Multiplexed Address/Data  
Buffer, Latch, Flip-Flop, State Machine  
IC, ASIC, LSI, VLSI, Integration  
Propagation Delay, Setup/Hold Time  
Glue Logic, Chip Selects, PLD, FPGA, PAL/GAL  
Address Decoding, Complete, Incomplete  
Address Space, Memory Map, Aliasing, Ghosting  
EPROM Emulator, Device Programmer  
In-Circuit Emulator (ICE), Breakpoints, Traces  
Debugger, JTAG, Scan Chain, Boundary Scan  
Logic Analyzer, Pod, Disassembler, Trigger  
ESD, Antistatic, Conductive, 'Walking Wounded'  
Serial/Parallel Communication, SERDES  
Asynchronous/Synchronous  
RS-232, SPI, I2C, USB, IEEE 1394, IEEE 802.3  
Op-Amp, Gain-Bandwidth Product, Slew Rate  
Frequency Response, Unity Gain Buffer  
Reconfigurable Logic, SoC, Platform FPGA  
Cache, Pipeline, Embedded Core  
Peripheral (PIC, PIT, LCD, etc.)  
ADC, DAC, Resolution, Monotonic  
Successive Approximation, Flash Conversion  
Schematic, Wiring Diagram, Block Diagram, Layout  
Wire-wrapping, Soldering, Cold Solder Joint  
PCB, PCA, PWB, PWA, Via, Trace  
Supervisory Circuit  
Watchdog Timer, Low Voltage Detector  
Transient Failures, Memory Hits, Signature Byte  
Error Handling, ECC, EDC  
RoHS, Pb Free, Green, EuP/ErP  
ARM, Atom

Exception, Trap, Interrupt  
Vector Table, Reset Vector, Re-vectoring Interrupt  
ISR, Interrupt Service Routine, Interrupt Handler  
Build Process, Editor, Preprocessor, Compiler  
Assembler, Disassembler, Inline Assembly  
Linker, Linkage Editor, Resolving  
Profiler, Optimizer, Types of Optimization  
Simulator, Interpreter  
Monitor, Debugger, Source Level Debug  
Tracepoint, Trace Buffer  
Target, BSP, Board Support Package, Host  
IDE, Eclipse  
Lint/Splint, Version Control, Code Review  
Source Code, Object/Machine Code, Library  
Relocatable Object Code, Reentrant  
Stack, Heap, Stack Pointer, Malloc, Free  
Register, Register Variable  
Interrupt Masking, Priorities, Latency  
OS, RTOS (VxWorks, PSOS+, etc.), Executive  
Processes, Tasks, Multi-tasking, Deadline  
Preemptive, Cooperative, Time Slice, Scheduling  
Context Switch, Latency  
Blocked, Deadlock, Priority Inversion, Round Robin  
Interprocess Communication, Messages, Mailbox  
Queues, Signals, Semaphores, Mutex  
Critical Section, Atomic Operation/Instruction  
Resource Protection  
Firmware, Embedded Software, BIOS, Microcode  
Initialization Code, 'C Machine', Boot, Startup, POST  
Memory Test, Walking 1's  
Pointer, Dereferencing, Uninitialized  
Main Loop, Infinite Loop  
Interrupt Driven, Polling  
Firmware State Machine  
Big-Endian, Little Endian, Byte Order/Swapping  
Native Word Size, Condition Codes  
Globals, Locals, Scope, Initialized, Uninitialized  
Scoping of variables and functions  
Binary, ASCII, Hex, Hex Records, Intel, Motorola  
Unsigned/Signed Variables  
Function Prototype  
Data Structures, Linked List, Struct, Union  
FIFO, Circular Buffer, Lookup Table  
Bandwidth, Throughput, Latency, Utilization  
Floating Point, Coprocessor, Floating Point Library  
Bank Switching  
Switch Bounce, Software/Hardware Debouncing  
Serial Interface, Bit Banging, I/O, GPIO  
Testing - black box, white box, unit, regression  
Code Review/Code Inspection  
Encapsulation, Partitioning, Extern, Refactoring