# Requirements for the Altera™ DE3

The following recommendation is based off a standard Altera™ DE3 with the MTDB, the DDR2 SO-DIMM, and the THDB-ADA (A2D & D2A Board).

## Software/Tools

Instead of the GUI Top-level FPGA Module, give us the exact pins so we can work on it ourselves.

Make sure the back-boxed programmable power modules work correctly.

## Hardware

### General Requirements

ZigBee Connectivity (IEEE 802.15.4) over SPI

Bluetooth Connectivity over UART/RS232

16-bits of Test Headers (100 mil)

### DE3 Specific High Priority

No programmable power

8 7-Segment Displays

8 or 16 LEDs

8 Pushbuttons

16 Slide/DIP Switches

Character LCD (16 × 2)

SDRAM

* non-DDR preferred
* any DDR or DDR2 controller would need to be evaluated by course staff, as there are educational issues attached to this matter.

Gigabit Ethernet PHY

HTSC Connector Pin-outs

### DE3 Specific Medium and Low Priority

Rotary Encoder

VGA In

DVI/HDMI In/Out

SRAM

Other Media Sources & Sinks

Heatsink (May or may not need one)