เทคนิคการออกแบบและใช้งานระบบดิจิตอลเบื้องต้นด้วยเอฟพีจีเอ

Digital Design and Implementation using FPGAs: The Basics

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<u>Tentative Course Contents</u> (Subject to change if appropriate 😊)

- FPGA Introduction
  - Xilinx FPGA Series vs. Zynq

- Xilinx Design Tools
  - Xilinx Development Platforms and Design Suites (ISE / Vivado / Vitis)
  - Tool setup and Development Boards Introduction for Labs

- Vivado/Vitis IDEs Design Flow

- Designing with IP and IP Catalog

- Using IP Integrator and Connecting to FPGA Peripherals (GPIOs, UARTs, Timers)

- Creating and Adding Custom AXI IPs

- Hardware Debugging Technique

- Case Studies/Examples (Time Permitted)
  - ADCs/DACs Interface
  - Other Hardware/Peripheral Examples