

Modern Digital System Design Using VHDL: A Practical Introduction

Department of Computer Engineering
King Fahd University of Petroleum and
Minerals
Dhahran 31261, Saudi Arabia

on Digital System Design

Using VHDL: A Practical Introduction

Short Course Offered by:

Department of Computer Engineering
King Fahd University of Petroleum
and Minerals
Dhahran, Saudi Arabia

Course Schedule/Objectives

- Saturday
 - » Introduction to the course
 - . VHDL Overview
 - . Basic Terminology & Concepts
 - . Structured Modeling
 - . Familiarization with VHDL Simulator
 - . Hands-on Exercise

Course Schedule/Objectives

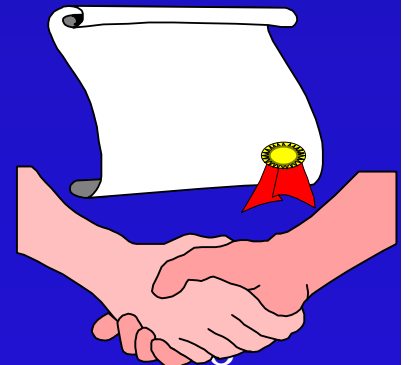
- Sunday
 - » Behavioral Modeling
 - » Subprograms/Packages
 - » Modeling Flipflops
 - » Modeling FSMs
 - » Building a utility package

Course Schedule (contd.)

- Monday
 - » Data Types and Attributes
 - » Structural Modeling (revisited)
 - » Laboratory Exercise
- Tuesday
 - » Timing Models & Signal Transactions
 - » Dataflow Modeling
 - » Timing Models
 - » Laboratory Exercise

Course Schedule

- Wednesday
 - » Constraints Check & VHDL-93 Vs VHDL-87
 - » Coding Styles for Synthesis
 - » Conclusion



Logistics

- Refreshments
- Restaurants
- Rest rooms
- Prayer facilities
- Parking (pass provided)
- Messages/Phone
- Security
- Other items

Computer Engineering

- » Computer Engineering (COE) is the discipline concerned with the design, analysis, modeling and implementation of **Computers and Networks systems**. Both the software and the hardware aspects of these systems are studied in a balanced and coherent manner. The COE program at KFUPM provides a comprehensive coverage of a wide range of COE subjects including hardware design, computer networks and data communications, computer architecture and operating systems, microprocessor-based systems, computer programming languages and software.

Goals

- Graduate students in Computer Engineering.
- Provide engineers who are capable of coping with a rapidly growing computer technology.
- Conduct research activities that will enhance the country's industry, and broaden the scope and ability of faculty members.
- Provide necessary channels for transferring computer engineering technology into country.
- Adapt new and appropriate technologies for the country's need.

COE Disciplines

- Computer Networks and Data Communications
- Computer Architecture and Design
- Digital Design Automation
- Computer Based Systems
- Testability and Fault Tolerance

COE Tracks

- The new curriculum has three tracks for students to concentrate. The tracks are:
 - » Software
 - » **Computer Networks**
 - » **Computer Systems**

Laboratory Facilities

- » Computer Networking and Data Communications Laboratory
- » Logic Design Laboratory
- » Microprocessors Laboratory
- » Design Automation Research Laboratory
- » Printed Circuit Boards Manufacturing Center
- » PC Laboratory
- » Computer Graphics Center
- » Digital Systems Design Laboratory
- » And Others...

Community Services

- Seminars
- Computer Exhibition
- **Short Courses**
 - » Personal Computers
 - » Computer Networks
 - » Internet services and applications
 - » Mobile Networks
 - » PC Hardware and Maintenance
 - » WWW Development
 - » **VHDL Modeling**
 - » etc..

Instructors

- Dr. A. A. Almulhem almulhem@ccse.kfupm.edu.sa
- Dr. Atef Al-Najjar alnajjar@ccse.kfupm.edu.sa
- Dr. Aiman El-Maleh aimane@ccse.kfupm.edu.sa
- Dr. Alauddin Amin amin@ccse.kfupm.edu.sa
- Dr. Sadiq M. Sait sadiq@ccse.kfupm.edu.sa