High Speed Digital System Laboratory

A research & teaching laboratory

http://diglab.technion.ac.il
A little bit of history

• The High Speed Digital Systems Laboratory (HS-DSL) was established in 1964 as a research and teaching laboratory.
• Its mission: to train students in up to date digital techniques.

And The present...

• HS-DSL is one of the biggest and most senior laboratories in the Electrical engineering faculty.
• The activities in the lab are involved with technological developments, and modern hardware systems, using the latest available processing, logic and memory devices.

The lab's graduates have leading roles in the Israeli high-tech industry.
Academic

Course - High-Speed Digital Systems Design
Lecturer – Dr. M. Werner

Research

High speed PCB & IC technologies
Peta Cloud – Fast optic network for data centers

Lab. Educational Activities

Projects – 25 projects yearly (~50 students)
Experiments (~400 students yearly)
1. High Speed Circuits (Signal Integrity)
2. SOPC Experiment
3. Jitter phenomenon
Academic supervisor: Professor Tzahi Birk

Technical Staff:

Laboratory manager: Mony Orbach
Application Engineer: Ina Rivkin
Projects coordinator: Eli Shoshan
Technician: Bruria Zohar
Project – Life cycle

Problem analysis

Solution algorithm

Project design

Implementing algorithm

PDR (Characterization) Presentation
26/4/17

Midterm Presentation
4/6/17
Project – Life cycle, cont...

- Simulation and debugging
  - Improvements
  - Integration
  - Result Analysis
  - Final presentation
  - Project end
PDR – Preliminary Design Review Presentation

26/4/17

- Motivation/Background
- Project goals
- Project Top Block diagram
  - project inputs & outputs
  - Function
- Solution algorithm
- Development environment
  - Software development platforms
  - Hardware development platforms
- Project Gantt (time table) per week
  - till MidTerm presentation

Registration to PDR presentation started on Labadmin
must coordinate with project supervisor
1. Project supervisor is your first help source.

2. Supervisor weekly meeting is mandatory!
   • Set a day and time for weekly meeting

3. Schedule a weekly working hours on the project

4. The lab staff is your second help source. Use Us!
Lab Rules

1. Lab safety procedure
   a. Follow the safety training
   b. Do not work alone

2. Lab entrance rules
   a. Only students working on the project.
   b. Do not leave the door open.

3. Lab Behavior rules
   a. No food or drinks
   b. Do not “fix” lab equipment
High Speed Digital Systems Lab. - Computing Infrastructure

**TD-EF domain**
Authentication

**NetApp**
Network storage

**Windows Application Server**
diglabapps.ef.technion.ac.il

**SVN Server**
redsvn.ef.technion.ac.il

Windows 7/Linux workstations
כניסה למעבדה – יש לקודד את תכנית是你سجلת על מבנה בימות (דומיין TD-EF)

כניסה למעבדה מתבצעת ע"י שימוש בחשבון
פקולטי (דומיין TD-EF).

לצרכי עבודה על הפרויקט לכל קבוצת הקצבה ובראשה מנהיגת ע"י שיצור דייסק גוף.

המיפוי לתיקייה מתבצע אוטומטית בכל מחשבים המועברים.

המחיצה תמרופת לכונן P:

ניתן להתחבר למעבדה בכל מחשב אחר מחוץ למעבדה ע"י מיפוי הכונן ל-132.68.62.3/Diglab_Projects/022016/Prj_<מס' קבוצתך>

ה디יסקים המקוברים והוספים שלתוכם (פרט למדריך
C:\TEMP
שהכרונ ב업체 פינס).

את הקובצים יש לשלוח ב располож וב里斯ק שיברה המובנה בכונו:
P:

שרת ספריךית

然後ית תואם - diglabapps.ef.technion.ac.il

ה디יסק – ה디יסק מתבצעת למפקדה שלامعة בדיחה למעבדה
הלוחה שלולשIntermediate בלע.

 remote desktop – המבחנה ע"י שירות ב-
Main Development tools

FPGA flow
- FPGA design
- FPGA Simulation
- FPGA Debugging
- HLS – High Level Synthesis
- C -> H
- Embedded systems – Hardware & Software
  - ARM
  - Microblaze

• Xilinx
• Altera
• Mentor

System Design
- LabView

Board design & SI Simulation
- Schematic Capture
- PCB
- SI Simulation

- Cadence
- Mentor

Algorithm Development
- HDL code Generation & Hardware in the Loop
  - Matlab
    - DSP Builder
    - System Generator
    - HDL Coder

Embedded Systems - DSP
- TI- Code Composer Studio

Software development
- Microsoft Visual Studio
- Embedded software tools
רישום למאגון

labadmin.ef.technion.ac.il

הרשמה למאגנה מתבצעת באתר labadmin.ef.technion.ac.il

"כניסה לפרויקט, לחיצה על register to Event/Presentation"anut"הכניסה לפורייהר, לחיצה על register to Event/Presentation"anut"

הרישום למאגנה אפיון (PDR) של (PDR) של ההלים

ההרשמה להתקדם

ההרשמה להתקדם

ההרשמה להתקדם

ההרשמה להתקדם
About High Speed Digital Systems Laboratory

The Prof. Israel Cedarbaum High Speed Digital Systems Laboratory (HS-DSL) has been established in 1964 as a research and teaching laboratory, to train students in up to date digital techniques. The High Speed Digital Systems Lab focuses on quality education and research at the cutting edge of digital system technology. Our graduates move on to assume important positions in the High-Tech industry. Using its breadth and ability to build systems that really work, the Lab reaches out to apply its core expertise in diverse domains such as Medical Sensing, Signal Processing, Internet of Things, High Speed Digital Communication, and Intelligent Computing. HSDSL has strong connections and collaborations with both industry and academia, in Israel and worldwide. This provides a vital channel to exchange ideas and technology, promoting future research and development. The Lab puts strong emphasis on projects and research that benefit society.
Thank you