IMPLEMENTATION OF DIGITAL SIGNAL PROCESSING (IDSP):

ORGANIZATION

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GOALS

• Becoming familiar with system-level issues relevant for the implementation of signal-processing algorithms.
• Knowledge of design flow and design automation tools.
• Becoming familiar with functional blocks typically used in implementations of signal processing (e.g. CORDIC, FFT)
• Becoming familiar with typical signal-processing algorithms as used in modern multimedia applications.
• Practical design experience.

RECOMMENDED KNOWLEDGE

• From the Master’s program:
  – System-on-Chip Design (191210750) or
  – System-on-Chip Design for Embedded Systems (191211590) or
  – Design of Digital Systems (192130022) or
  – Equivalent preparation with some basic knowledge of VHDL.

• Students without knowledge of System-on-Chip Design (for ES) will need to some reparation exercises costing about 10 hours.

• Knowledge of digital signal processing is convenient but not required.
COURSE MATERIAL

• Not necessary to buy a book.

• Mainly journal articles, conference papers and book chapters distributed via Blackboard or through the course’s web page with URL:

http://wwwhome.cs.utwente.nl/~gerezsh/vlsidsp/

LECTURES

• 7 or 8 lectures of (2 x 45 mins.) on Fridays 6th/7th hour (see WWW page for schedule details).

STUDY LOAD: 5 ECTS (140 hours)

• 7 or 8 lectures of 1.5 hours: about 10-12 hours.
• Studying the written material: about 28-30 hours.
• Practical projects and homework problems: about 100 hours.

HOMEWORK/PROJECT TEAMS

• To be performed in teams of two (rule), teams of three (exception), or alone (exception):
  – Team constitutions to be mailed to instructor and published on Blackboard page.
  – Blackboard page also to be used to announce partner search.
  – A higher level of performance is expected from teams of three.

• Team members are supposed to contribute equally.
  – Contact instructor if you feel in disadvantage due to partner failing to contribute.
  – Signal problems in time, not just a few days before final deadline.

EXAMINATION

• Based on homework exercises, most likely involving Bibix tool Arx. Details to be published on public web page.

• All projects need to be completed by the end of quarter; see web page for exact dates.

• Students can propose alternatives for projects, especially for the larger final one.
SERVER ACCESS

- The exercises are to be performed on server soc1.ewi.utwente.nl.
  - Login permissions need to be arranged for all students.
  - Enrollment data from Blackboard are used.
  - Late registrants should contact instructor.