האוניברסיטה העברית בירושלים
THE HEBREW UNIVERSITY OF JERUSALEM

The Hebrew University of Jerusalem

Syllabus

REAL TIME DIGITAL SIGNAL PROCESSING - 67630

Last update 13-02-2017

HU Credits: *4*

Degree/Cycle: *1st degree (Bachelor)*

Responsible Department: *computer sciences*

Academic year: *0*

Semester: *2nd Semester*

Teaching Languages: *Hebrew*

Campus: *E. Safra*

Course/Module Coordinator: *Dr. Doron Benzvi*

Coordinator Email: *doron.benzvi@mail.huji.ac.il*

Coordinator Office Hours: *Monday 14-15*

Teaching Staff:

Dr. Doron Ben-Zvi

Course/Module description:

The course teaches hardware and software aspects of digital signal Processors, particularly within the environment of the DSK6713 development kit.
The way the processor communicates with external signal sources, like a microphone, a signal generator or a media player is explained, and enables real-time processing.
With the above background, common signal processing methods are applied.

Course/Module aims:

To study the way signal processing is done in real-time, different from the off-line processing.
To get acquainted with signal processors and their hardware environment, enabling the real-time processing

Learning outcomes - On successful completion of this module, students should be able to:

1) To use a DSP for a wide range of real-time signal processing tasks
2) To understand the requirements of real-time processing

Attendance requirements(%):

80% at lab meetings

Teaching arrangement and method of instruction: Lectures covering the theory of signal processing and processing in real-time

Lab meetings to apply the theoretical material practically

Course/Module Content:

1) Signal Processors
2) The development Kit- DSK
3) Signal digitization
4) Use of interrupts to read/write samples
5) FIR filtering
6) IIR filtering
7) Signal representation in frequency
8) Signal filtering in frequency
9)Signal reconstruction with the inverse filter
10)Signal detection

11) Signal Estimation
12) Adaptive filtering
13) Signal Compression

Required Reading:
course lectures

Additional Reading Material:

Grading Scheme:

Additional information:
Mandatory presence in the lab meetings. At the end of each lab a report should be hand in