COURSE SYLLABUS - IC 776CA

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FALL 2003
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NATIONAL TECHNOLOGICAL UNIVERSITY
IC 776CA- FALL 2003 - 3 Units
Analysis & Design of VLSI Analog-Digital Interface Circuits
Professor Bernhard Boser
(UC Berkeley EECS 247)

Special Note: This syllabus reflects the sequence of lectures in the course as it was videotaped in the Fall of 2002. You must take the exams by the deadlines below. If you have a conflict, call BEFORE the deadline to arrange an alternative Time.

Reference Texts (not required, please see course website for additional reference material):

TBA
Conference Call: There will be two conference calls with Prof. Boser during the semester. Details will be provided when available.

Tues. August 26
Lecture #1 – Analog Interface circuits overview

Thurs. August 28
Lecture #2 – Introduction to filters

Tues. September 2
Lecture #3 – Second-Order transfer functions

Thurs. September 4
Lecture #4 – Noise and dynamic range
Conference Call Sign - In: You must call the Cal VIEW office (510) 642-5776 to sign up for the MANDATORY introductory conference call with Boris Murmann on 9/9.
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Tues. September 9  Lecture #5 – Higher order filters
               Conference Call -
               MANDATORY Introductory telephone discussion with
               Boris Murmann at 4 pm PT.

Thurs. September 11  Lecture #6 - Ladder filters
     HOMEWORK #1 DUE: BACKGROUND
     QUESTIONNAIRE IS DUE WITH HW #1. Must be
     postmarked no later than 9/11.

Tues. September 16  Lecture #7 – Finite amplifier bandwidth

Thurs. September 18  Lecture #8 – Sampling and reconstruction

Tues. September 23  Lecture #9 – SC filters.

Thurs. September 25  Lecture #10 – Bilinear transform
     HOMEWORK #2 DUE: Must be postmarked
     by than 9/25.

Tues. September 30  Lecture #11 – Digital filters

Thurs. October 2  Lecture #12 – Amplitude quantization

Tues. October 7  Lecture #13 – DFT testing

Thurs. October 9  Lecture #14 – D/A Converters
     HOME WORK #3 DUE: Must be postmarked
     by 10/9.

Tues. October 14  Lecture #15 – Sampling
     Conference Call Sign-In: You must call the Cal
     VIEW office (510) 642-5776 to sign up for the
     conference call with Boris Murmann on 10/16.

Thurs. October 16  Lecture #16 –ADC architectures
     Conference Call - Telephone discussion with at
     4 pm PT.

Week of October 20- 24  MIDTERM EXAMINATION: ANY TIME THIS
     WEEK. MUST BE POSTMARKED BY 10/24.
Tues. October 28     Lecture #17 – Flash converters
Thurs. October 30    Lecture #18 – Pipeline converters
                        **HOMEWORK #4 DUE:** Must be postmarked by 10/30.
Tues. November 4      Lecture #19 – Oversampled A/D Converters
Thurs. November 6     Lecture #20 – 5th order modulator example
Tues. November 11     **VETERAN’S DAY HOLIDAY**
Thurs. November 13    Lecture #21 – Tones
Tues. November 18     Lecture #22 – Nonlinearities in sigma-delta modulators
                        **HOMEWORK #5 DUE:** Must be postmarked by 11/18.
Thurs. November 20    Lecture #23 – Decimation filters
Tues. November 25     Lecture #24 – Multi-rate decimation filters
Thurs. November 27    **THANKSGIVING DAY HOLIDAY**
Tues. December 2      Lecture #25 – Digital data receivers
                        **HOMEWORK #6 DUE:** Must be postmarked by 12/2.
Thurs. December 4     Lecture #26 – Equalization
Tues. December 9      Lecture #27 – Offset control
                        **Conference Call Sign-Up:** Please call the Cal VIEW office at 642-5776 to sign up for the conference call with Boris Murmann on 12/11.
Thurs. December 11    **Conference Call:** Telephone discussion to review for final exam with Boris Murmann at 4 pm PT.
Week of December 15 - 19     **FINAL EXAMINATION:** Must be postmarked by Fri. 12/19.