

TO: The Faculty of the College of Engineering
FROM: The Faculty of the School of Electrical and Computer Engineering
RE: ECE 64900 Change in Requisites

The faculty of the School of Electrical and Computer Engineering has approved the following changes in ECE 64900. This action is now submitted to the Engineering Faculty with a recommendation for approval.

From: **ECE 649 Speech Processing By Computer**
Sem. 2. Class 3, cr. 3.
Prerequisite: ECE 638; programming experience in C or FORTRAN. Authorized equivalent courses or consent of instructor may be used in satisfying course pre- and co-requisites.

Covers the main aspects of speech processing by computer. Topics include: models of the vocal tract; identification and extraction of speech features; speech transmission and compression systems; recognition of speech and speakers by computer; and control of speech synthesizers. Computer projects are required.

To: **ECE 64900 Speech Processing By Computer**
Sem. 2. Class 3, cr. 3
Prerequisite: ECE 53800.

Covers the main aspects of speech processing by computer. Topics include: models of the vocal tract; identification and extraction of speech features; the recognition of speech and speakers by computer; and control of speech synthesizers. Computer projects are required.

Reason: The course prerequisite has been changed to reflect the updated content of the course. To be offered in odd numbered years.

M. J. T. Smith, Head
School of Electrical and Computer Engineering

ECE 64900 – Speech Processing By Computer

Required Text: *Fundamentals of Speech Recognition*, L. Rabiner and B.-H. Juang, Prentice Hall, 1993, ISBN No. 0-13-015157-2.

<i>Weeks</i>	<i>Principal Topics</i>
2	Speech production and representation; Articulation, classification of phonic units; Digital representations of speech; Short-time Fourier analysis
5.5	Speech analysis and analysis-synthesis systems; Vcoders; Format analysis; Linear predictive coding; Cepstrum analysis and homomorphic processing; Vector quantization; Pitch determination and excitation identification
5.5	Automatic recognition of speech; Acoustic-phonetic processing; Word recognition: dynamic time warping, hidden Markove models, neural nets; Continuous speech recognition and understanding: use of syntax and semantics; Relation of natural language processing; Example systems - case studies
0.5	Speaker Verification
1	Speech synthesis; Speech synthesizers; Text-to-speech systems
0.5	Exams