The University of Texas at Tyler  
Department of Electrical Engineering  

EENG 5309: Statistical Signal Processing  

Syllabus  

Catalog Description:  
Review of digital signal processing concepts, wavelets, autoregressive modeling, Wiener filtering, adaptive filtering, power spectral estimation, introduction to advanced topics: higher order moments and spectra.  

Prerequisites:  
Digital Signal Processing (EENG 5308)  

Credits:  
3 (3 hours lecture, 0 hours laboratory per week)  

Text(s):  

Additional Material:  
MATLAB  

Course Coordinator:  
TBA  

Topics Covered:  

Evaluation Methods:  
1. Examinations / Quizzes  
2. Homework  
3. Report  
4. Computer Programming  
5. Project  
6. Presentation  
7. Course Participation  
8. Peer Review  

Course Objectives:  
1. Describe and discuss probability and discrete time systems  
2. Apply Levinson recursion  
3. Apply Wiener filter to engineering problems  
4. Realize spectral estimation to signals  
5. Design and simulate adaptive filter to engineering problems  
6. Design and simulate wavelets  

*Numbers in brackets refer to method(s) used to evaluate the course objective.*
Relationship to Program Outcomes\(^2\): This course supports the following Electrical Engineering Program Outcomes, which state that our students will:

1. Graduates of the program will possess a breadth and depth of knowledge in electrical and computer engineering.
2. Graduates of the program will possess and demonstrate oral and written communication skills.
3. Graduates of the program will demonstrate the capability to perform independent learning and investigation.

\(^2\)Numbers in brackets refer to course objective(s) that address the Program Outcome.

Prepared By: Hector A. Ochoa, Assistant Professor	Date: 3 June 2009