MATH 597.01R & 41S: WAVELETS
Summer II 2012

CONTACT INFORMATION:

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Office Hours	: MW 12:00-1:00pm (MPLX), otherwise by appt.

DESCRIPTION and POLICIES:

1. Class Schedule: MW 8:00-11:50am, MPLX 131 (41S) & BA 244 (01R)

2. Textbook: A First Course in Wavelets with Fourier Analysis, 2nd edition, by Albert Boggess and Francis J. Narcowich.

3. Website: An eCollege website has been created for the course which may be accessed from student myLEO accounts following the eCollege and then the My Courses tabs. All files and documents that the instructor shares with the class will be posted in the Doc Sharing folder in course website.

4. Course Description: Inner Product Spaces; Fourier Series; Fourier Transform; Discrete Fourier Analysis; Haar Wavelet Analysis; Multiresolution Analysis; The Daubechies Wavelets; Advanced Wavelet Topics. Recommended background: Calculus and Linear Algebra.

5. Software: *Mathematica* software is required for the course. It will be used extensively for manipulating data and carrying out computations in classroom discussions and in homework exercises and projects. Student licenses may be purchased online at the Wolfram Mathematica website at the url address http://www.wolfram.com/products/student.

6. Homework and Quizzes: Homework will be assigned in every class meeting on a regular basis. Assignments will be due the next class day and will be turned in electronically through eCollege website created for the course. Selected assignments and problems will be graded only, but all homework problems should be worked out. You may work in groups unless otherwise instructed, however the paper you turn in must be your own work. Late homework is not accepted. Homework and quiz score will make 50 points of the final grade.

7. TESTS & PROJECTS: There will be one test/project (200 points) and a comprehensive final/project (200 points). Test problems will be similar to homework exercises. No make-up test will be given without an official, written, university accepted excuse. The student must contact the instructor the next working day and present the documented excuse to make up a test.

8. LEARNING OUTCOMES: Students who complete this course successfully will
a) gain factual knowledge (*terminology*, classifications, methods) in the field of Wavelet Analysis;
b) learn *methods*, fundamental principles, generalizations and theories;
c) learn and use effective computing tools for the *applications* of theoretical results to practical problems.

9. TENTATIVE COURSE OUTLINE:

    0. Intrduction to Mathematica
    1. Inner Product Spaces
    2. Fourier Series
    3. The Fourier Transform
    4. Discrete Fourier Analysis
    5. Haar Wavelet Analysis
    6. Multiresolution Analysis
    7. The Daubechies Wavelets
    8. Advanced Wavelet Topics

10. TENTATIVE EXAM SCHEDULE:

| Midterm | 200 pts | Wednesday July 25, 2012 |
| Final | 200 pts | Thursday August 09, 2012 |

11. GRADING SCALE: All scores will be added and a letter grade will be assigned according to the following table.

A	406 - 450 pts
B	361 - 405 pts
C	316 - 360 pts
D	271 - 315 pts
F	0 - 270 pts

12. OTHER IMPORTANT DATES:

July 26, 2012	Last day to drop a class
August 02, 2012	Last day to withdraw from Summer I 2012
August 09, 2012	Last class day

13. MISCELLANEOUS: Your enrollment in this course indicates that you agree to observe all the conditions and regulations of this syllabus and the Student Handbook. Your test and homework scores may be filed to be used anonymously for educational research.

    Students are required to attend every class meeting and be punctual. Policies pertaining to absences, tardiness and scholastic dishonesty are identical to TAMU-Commerce regulations given in the Student Handbook. All students enrolled at the University shall follow the tenets of common decency and acceptable behavior conducive to a positive learning environment (See Student's Guide Handbook, Policies and Procedures, Conduct). Disruptive behavior (including use of electronic devices in classroom) and scholastic dishonesty in any form will not be tolerated.

    Students requesting accommodations for a disability should contact the Director of Disability Resources and Services, Halladay Student Services Bldg. Room 303D, (903) 886-5835.

    Any possible changes to be made in this syllabus by the instructor during the semester will be announced in class.