



**Department of Computer and Electrical Engineering and Computer Science  
Florida Atlantic University  
Course Syllabus**

<b>1. Course title/number, number of credit hours</b>	
Digital Processing of Signals – EEE5502	3 credit hours
<b>2. Course prerequisites, corequisites, and where the course fits in the program of study</b>	
Prerequisites: Graduate standing	
<b>3. Course logistics</b>	
Term: . Class location and time:	
<b>4. Instructor contact information</b>	
Instructor's name Office address Office Hours Contact telephone number Email address	
<b>5. TA contact information</b>	
TA's name Office address Office Hours Contact telephone number Email address	
<b>6. Course description</b>	
An analysis of discrete signals and systems, difference calculus, sampling theory, Z-transform and the discrete Fourier transform, digital filter synthesis and implementation, and fast Fourier transform algorithms.	
<b>7. Course objectives/student learning outcomes/program outcomes</b>	
Course objectives	To provide students with the fundamental theory and up-to-date information in digital signal processing. This course is based on fundamentals covered in the Analysis of Linear Systems (EEL 4656) and should be followed with advanced level DSP courses. In this course students are expected to code in MATLAB at a level where they can use programming to verify and demonstrate algorithms used in signal processing. Students needing a refresher in DSP may consult sites such as <a href="http://www.dspguide.com/">http://www.dspguide.com/</a> .
Student learning outcomes & relationship to ABET a-k objectives	<ol style="list-style-type: none"> <li>1. The student will be able to understand the basics of signal processing: filtering, spectrograms, statistical estimation. (a,e,k)</li> <li>2. The student will develop computer programming skills for data processing. (a,e,k)</li> <li>3. The student will learn how to match signal processing techniques with the type of signal and the kind of information sought from the signal. (a, b, c, e, f, h, i, j, k)</li> <li>5. The student will be able to effectively communicate by writing 3</li> </ol>

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<b>8. Course evaluation method</b>	
A midterm exam, 3 assignments and a final exam given in-class in the open-book format. The final exam will test your understanding of the subjects at a theoretical level and will relate to the assignments, as well. The final exam will be on Tuesday May 2, 16:00-18:30. Each assessment is worth 20 %.	<i>Note:</i> The minimum grade required to pass the course is C.
<b>9. Course grading scale</b>	
Grading Scale: 90 and above: "A", 87-89: "A-", 83-86: "B+", 80-82: "B", 77-79: "B-", 73-76: "C+", 70-72: "C", 67-69: "C-", 63-66: "D+", 60-62: "D", 51-59: "D-", 50 and below: "F."	
<b>10. Policy on makeup tests, late work, and incompletes</b>	
<i>Makeup tests:</i> N/A <i>Late work</i> is not acceptable.  <i>Incomplete grades</i> are against the policy of the Department. Unless there is solid evidence of medical or otherwise serious emergency situation incomplete grades will not be given.	
<b>11. Special course requirements</b>	
MATLAB programming skills.	
<b>12. Classroom etiquette policy</b>	
University policy requires that in order to enhance and maintain a productive atmosphere for education, personal communication devices, such as cellular phones and laptops, are to be disabled in class sessions.	
<b>13. Attendance policy statement</b>	
Students are expected to attend all of their scheduled University classes and to satisfy all academic objectives as outlined by the instructor. The effect of absences upon grades is determined by the instructor, and the University reserves the right to deal at any time with individual cases of non-attendance. Students are responsible for arranging to make up work missed because of legitimate class absence, such as illness, family emergencies, military obligation, court-imposed legal obligations or participation in University-approved activities. Examples of University-approved reasons for absences include participating on an athletic or scholastic team, musical and theatrical performances and debate activities. It is the student's responsibility to give the instructor notice prior to any anticipated absences and within a reasonable amount of time after an unanticipated absence, ordinarily by the next scheduled class meeting. Instructors must allow each student who is absent for a University-approved reason the opportunity to make up work missed without any reduction in the student's final course grade as a direct result of such absence.	
<b>14. Disability policy statement</b>	
In compliance with the Americans with Disabilities Act Amendments Act (ADAAA), students who require reasonable accommodations due to a disability to properly execute coursework must register with Student Accessibility Services (SAS) and follow all SAS procedures. SAS has offices across three of FAU's campuses – Boca Raton, Davie and Jupiter – however disability services are available for students on all	

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campuses. For more information, please visit the SAS website at [www.fau.edu/sas/](http://www.fau.edu/sas/)

**15. Counseling and Psychological Services (CAPS) Center**

Life as a university student can be challenging physically, mentally and emotionally. Students who find stress negatively affecting their ability to achieve academic or personal goals may wish to consider utilizing FAU's Counseling and Psychological Services (CAPS) Center. CAPS provides FAU students a range of services – individual counseling, support meetings, and psychiatric services, to name a few – offered to help improve and maintain emotional well-being. For more information, go to <http://www.fau.edu/counseling/>

**16. Code of Academic Integrity Policy Statement**

Students at Florida Atlantic University are expected to maintain the highest ethical standards. Academic dishonesty is considered a serious breach of these ethical standards, because it interferes with the university mission to provide a high quality education in which no student enjoys an unfair advantage over any other. Academic dishonesty is also destructive of the university community, which is grounded in a system of mutual trust and places high value on personal integrity and individual responsibility. Harsh penalties are associated with academic dishonesty. For more information, see [University Regulation 4.001](#).

**17. Required texts/reading**

*Discrete-Time Signal Processing* by A. V. Oppenheim, R. W. Schaffer, Prentice Hall.  
ISBN-10: 0131988425, ISBN-13: 9780131988422

**18. Supplementary/recommended readings**

Instructor's notes which will be provided on Blackboard.

**19. Course topical outline, including dates for exams/quizzes, papers, completion of reading**

<p>Topics:</p> <ol style="list-style-type: none"> <li>1. Linear Discrete time systems: input/output relationships</li> <li>2. The z-transform, the discrete time Fourier transform, sampling theorem</li> <li>3. Filters and filtering, selective frequency operations.</li> <li>4. Filter design techniques</li> <li>5. Random signals and spectral estimation</li> <li>6. Non-stationary signals, short-time Fourier transforms and spectrograms</li> <li>7. Multirate systems</li> <li>8. modeling</li> </ol>	<p>Assignment # 1: Assignment # 2: Midterm exam: Assignment # 3: The final exam</p>
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