FLORIDA ATLANTIC UNIVERSITY

COURSE CHANGE REQUEST
Undergraduate Programs

Department Electrical Engineering and Comp Science

College Engineering and Computer Science

UUPC Approval 10-11-21
UFS Approval _____
SCNS Submittal _____
Confirmed _____
Banner Posted _____
Catalog _____

***Current* Course Prefix and Number**	EEE 4510	***Current* Course Title**	Introduction to Digital Signal Processing

*Syllabus must be attached for **ANY** changes to current course details. See Checklist. Please consult and list departments that may be affected by the changes; attach documentation.*

Change title to:

Change prefix

From: **To:**

Change course number

From: **To:**

Change credits*

From: **To:**

Change grading

From: **To:**

Change WAC/Gordon Rule status**

Add ☐ **Remove** ☐

Change General Education Requirements***

Add ☐ **Remove** ☐

*Review Provost Memorandum

**WAC/Gordon Rule criteria must be indicated in syllabus and approval attached to this form. See WAC Guidelines.

***General Education criteria must be indicated in syllabus and approval attached to this form. See GE Guidelines.

Change description to:

Please see attached syllabus for new course description.

Change prerequisites/minimum grades to:

EEL 3514 with "C" or better

Change corequisites to:

Change registration controls to:

Please list existing and new pre/corequisites, specify AND or OR and include minimum passing grade (default is D-).

Effective Term/Year for Changes:	Spring 2022	**Terminate course? Effective Term/Year for Termination:**	

Faculty Contact/Email/Phone Hanqi Zhuang, zhuang@fau.edu, 561-297-3413

Approved by	***Date***
Department Chair	9/23/2021
College Curriculum Chair Dan Meeroff	10-4-21
College Dean Fred Bloetscher	10-4-21
UUPC Chair Dan Meeroff	10-11-21
Undergraduate Studies Dean Edward Pratt	10-11-21
UFS President	
Provost	

Email this form and syllabus to mjenning@fau.edu seven business days before the UUPC meeting.

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

1. Course title/number, number of credit hours	
Introduction to Digital Signal Processing - EEE 4510	3 credit hours
2. Course prerequisites, corequisites, and where the course fits in the program of study	
Prerequisite: EEL 3514 with "C" or better	
3. Course logistics	
Term: TBD *Class location and time*:	
4. Instructor contact information	
Instructor's name *Office address* *Office Hours* *Contact telephone number* *Email address*	TBD
5. TA contact information	
TA's name *Office address* *Office Hours* *Contact telephone number* *Email address*	TBD
6. Course description	
Introduction to Digital Signal Processing, Review of Fourier, Laplace, and Z-transforms, discrete Fourier transform, the FFT algorithm, digital filter design and implementation, basic theory of adaptive filter design and implementation, LMS algorithm, Wavelet transform and filtering.	
7. Course objectives/student learning outcomes/program outcomes	
Course objectives *Assessment*	1. The student will be able to understand the principles and concepts of digital processing of continuous-time and discrete-time signals. 2. Understand the mathematical and analytical tools of DSP. 3. Understand and apply simulation techniques for digital filter design.
Student learning outcomes & relationship to ABET 1-7 outcomes	1. Outcome 1- An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics. (Problem Solving) 2. Outcome 2- An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors. (Design) 3. Outcome 6 - An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering

	judgement to draw conclusions. (Experimentation and/or simulation).

8. Course evaluation method

Homework - 20% Quiz 1 - 20% Quiz 2 - 20% Quiz 3 - 20% Quiz 4 - 20%	*Note*: The minimum grade required to pass the course is C.

9. Course grading scale

Grading Scale:

A	A-	B+	B	B-	C+	C	c-	D+	D	D-	F
100-93	92-88	87-83	82-78	77-73	72-68	67-63	62-58	57-53	52-48	47-43	42-0

10. Policy on makeup tests, late work, and incompletes

Makeup tests are given only if there is solid evidence of a medical or otherwise serious emergency that prevented the student from participating in the exam.

Late work is not acceptable unless the instructor previously agreed.

Incomplete grades are against the policy of the department. Unless there is solid evidence of a medical or otherwise serious emergency situation incomplete grades will not be given.

11. Special course requirements

TBD

12. Classroom etiquette policy

Due to the casual communication common in the online environment, students are sometimes tempted to relax their grammar, spelling, and/or professionalism. Please remember that you are adult students and professionals—your communication should be appropriate.

Disruptive behavior is defined in the FAU Student Code of Conduct as "... activities which interfere with the educational mission within the classroom." Students who disrupt the educational experiences of other students and/or the instructor's course objectives in a face-to-face or online course are subject to disciplinary action. Such behavior impedes students' ability to learn or an instructor's ability to teach. Disruptive behavior may include, but is not limited to non-approved use of electronic devices (including cellular telephones); cursing or shouting at others in such a way as to be disruptive; or, other violations of an instructor's expectations for classroom conduct.

13. Attendance policy statement

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.

14. Disability policy statement

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 campuses. For more information, please visit the SAS website at 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. If your college has particular policies relating to cheating and plagiarism, state so here or provide a link to the full policy—but be sure the college policy does not conflict with the University Regulation.

17. Required texts/reading

Textbook: John G. Proakis and Dimitris G. Manolakis, Digital Signal Processing: Principles, Algorithms, and Applications, 4th edition, 2007

18. Supplementary/recommended readings

N/A

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

Introduction to Digital Signal Processing, Review of Fourier, Laplace, and Z-transforms, discrete Fourier transform, the FFT algorithm, digital filter design and implementation, basic theory of adaptive filter design and implementation, LMS algorithm, Wavelet transform and filtering

- Discrete Time-Signals and Systems
- Review of Fourier, Laplace, and Z-transforms
- Discrete Fourier Transform
- Fast Fourier Transform Algorithms
- Digital Filter Design
- Introduction to Adaptive Filtering
- Autoregressive and Moving Average Modelling
- Linear Prediction
- Lattice Filters
- Least Mean Square (LMS) Algorithms
- Kalman Filtering
- Optional: Continuous and Discrete Wavelet Transform
- Optional: Wavelet Filtering