FLORIDA ATLANTIC UNIVERSITY

COURSE CHANGE REQUEST
Undergraduate Programs

Department Electrical Eng. 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**	CDA 4102	***Current* Course Title**	Structured Computer Architecture

*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:
Computer Architecture

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:
See attached syllabus for new course description.

Change prerequisites/minimum grades to:
CDA 3203 and COP 2220 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	Dan Meeroff	9/23/2021
College Curriculum Chair	Fred Blootscher	10-4-21
College Dean	Dan Meeroff	10-4-21
UUPC Chair	Edward Pratt	10-11-21
Undergraduate Studies Dean		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	
Computer Architecture – CDA 4102	3 credit hours
2. Course prerequisites, corequisites, and where the course fits in the program of study	
CDA 3203 and COP 2220	
3. Course logistics	
Term: TBD *Class location & time*:	
4. Instructor contact information	
Instructor's name *Office address* *Office Hours* *Contact telephone number* *Email*	TBD
5. TA contact information	
TA name *Office address* *Office Hours* *Contact telephone number* *Email*	TBD
6. Course description	
This course teaches fundamental concepts in computer architecture with emphasis on the impact of the architecture on software performance. Students will learn the concepts by implementing a series of small programming projects to learn and exercise concepts such as pipelining, caching, and instruction level parallelism.	
7. Course objectives/student learning outcomes/program outcomes	
Course objectives	This course is designed to teach the fundamental concepts of computer architecture and organization using a multilevel design approach.
Student learning outcomes & relationship to ABET 1-7 objectives	1. An ability to identify, formulate, and solve complex computing/engineering problems by applying principles of computing, engineering, science, and mathematics. (Problem solving) 2. An ability to apply the computing/engineering design process to produce solutions that meet a given set of computing/engineering requirements with consideration for public health and safety, and global cultural, social, environmental, economic, and other factors as appropriate to the discipline. (Design)
8. Course evaluation method	

Project - 10% Homework - 12% 3 Tests - 78%
9. Course grading scale
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."
10. Policy on makeup tests, late work, and incompletes
Late Assignments Policy – Make-up Policy for Tests: 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. Incomplete Grade Policy Incomplete grades are against the policy of the department. Unless there is solid evidence of a medical or otherwise serious emergency situation and the student is currently passing the class, incomplete grades will not be given.
11. Special course requirements
TBD
12. Classroom etiquette policy
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.
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: Computer Systems: A Programmer's Perspective, 3/E (CS:APP3e) by Randal E. Bryant and David R. O'Hallaron

18. Supplementary/recommended readings

TBD

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

- Intro to computer architecture
- Fundamental of computer design
- Instruction set architecture ISA, RISC system
- Pipelining Concept
- Branch Predictions and exceptions
- Instruction level parallelization
- Memory SRAM, DMA, and memory management
- Cache concept, policies, levels, and performance
- Multicore processor design, message passing, shared memory and consistency
- Multithreading, fine grained, coarse grained, and SMT
- Vector, SIMD, and GPUs
- Intro to SoC and RISC-V