

 FLORIDA ATLANTIC UNIVERSITY	NEW COURSE PROPOSAL Undergraduate Programs		UUPC Approval <u>3-29-21</u> UFS Approval _____ SCNS Submittal _____ Confirmed _____ Banner Posted _____ Catalog _____
	Department Comp & Elec Eng and Comp Science College Engineering and Comp Science <i>(To obtain a course number, contact erudolph@fau.edu)</i>		
Prefix COT Number 2004	<i>(L = Lab Course; C = Combined Lecture/Lab; add if appropriate)</i> Lab Code	Type of Course <div style="border: 1px solid red; padding: 2px;">Lecture</div>	Course Title Foundations of Computing
Credits <i>(Review Provost Memorandum)</i> 3	Grading <i>(Select One Option)</i> Regular <input checked="" type="radio"/> Pass/Fail <input type="radio"/> Sat/UnSat <input type="radio"/>	Course Description <i>(Syllabus must be attached; Syllabus Checklist recommended; see Guidelines)</i> Basic course that introduces foundational concepts in computing including common tools for software development.	
Effective Date <i>(TERM & YEAR)</i> Fall 2021			
Prerequisites, with minimum grade*	Corequisites	Registration Controls <i>(Major, College, Level)</i>	
*Default minimum passing grade is D-. Prereqs., Coreqs. & Reg. Controls are enforced for all sections of course			
WAC/Gordon Rule Course <input type="radio"/> Yes <input checked="" type="radio"/> No <small>WAC/Gordon Rule criteria must be indicated in syllabus and approval attached to proposal. See WAC Guidelines.</small>	Intellectual Foundations Program (General Education) Requirement <i>(Select One Option)</i> None <small>General Education criteria must be indicated in the syllabus and approval attached to the proposal. See GE Guidelines.</small>		
Minimum qualifications to teach course MS in Computer Science or related disciplines			
Faculty Contact/Email/Phone Hari Kalva/hkalva@fau.edu/561-297-0511	List/Attach comments from departments affected by new course		
Approved by Department Chair <u>Hanqi Zhuang</u> College Curriculum Chair _____ College Dean _____ UUPC Chair _____ Undergraduate Studies Dean <u>Jerry Haky</u> UFS President _____ Provost _____		Date _____ <u>3-10-21</u> <u>3/11/21</u> <u>3-29-21</u> <u>3-29-21</u> _____ _____	

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

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

1. Course title/number, number of credit hours	
COT 2004 Foundations of Computing	3 credit hours
2. Course prerequisites, corequisites, and where the course fits in the program of study	
Prerequisites: None	
3. Course logistics	
<i>Term:</i> Fall 2021 <i>Class location and time:</i> <i>Online interaction with class:</i>	
4. Instructor contact information	
<i>Instructor's name</i> <i>Office address</i> <i>Office Hours</i> <i>Class time:</i> <i>Contact telephone number</i> <i>Email address</i>	Dr. Hari Kalva Engineering East Bldg., EE440 TBA 561-297-0511 hkalva@fau.edu ; Contact via Canvas email for all class related matters
5. TA contact information	
<i>TA's name</i> <i>Office address</i> <i>Office Hours</i> <i>Contact telephone number</i> <i>Email address</i>	TBA
6. Course description	
Three-CREDITS. Basic course that introduces foundational concepts in computing including common tools for software development.	
7. Course objectives/student learning outcomes/program outcomes	
<i>Course objectives</i>	Provide students with basic understanding of foundational aspects of computer science and introduce a set of tools for computer science practice.
<i>Student learning outcomes & relationship to ABET 1-7 outcomes</i>	Covers ABET outcomes 1 and 2
8. Course evaluation method (tentative)	
<ul style="list-style-type: none"> • Assignments 50% • Midterm 20% • Final exam 30% 	
9. Course grading scale	
Grading Scale: 90 and above: "A, A-", 80-89: "B+, B, B-", 60-79: "C+, C, C-", 40-59: "D+, D, D-", 0-39: F.	

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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 of participating in the exam. Makeup exam should be administered and proctored by department personnel unless there are other pre-approved arrangements

Late work is not acceptable.

Incomplete grades 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.

11. Special course requirements

N/A

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

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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

To reduce costs for our students, we strongly encourage you to explore the adoption of open educational resources (OER), textbooks and other materials that are freely accessible. We also encourage you to clearly state in the syllabus if course materials are available on reserve in the Library.

Instructor's notes and Online assigned reading

18. Supplementary/recommended readings

None.

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

Digital Logic Foundations (6 hours)

- Simple logic gates, logical expressions
- Combinational vs. sequential logic
- Boolean logic simplification
- Digital Building blocks

Machine Level Representation of Data (3 hours)

- Bits, bytes, and words
- Numeric data representation and number bases
- Fixed- and floating-point systems
- Signed and twos-complement representations
- Representation of non-numeric data (character codes, graphical data)

Assembly Level Machine Organization (6 hours)

- Basic organization of the von Neumann machine
- Control unit; instruction fetch, decode, and execution
- Instruction sets and types (data manipulation, control, I/O)
- Assembly/machine language programming
- Instruction formats
- Addressing modes
- Subroutine call and return mechanisms

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Discrete Structures (6 hours)

- Induction
- Functions
- Logic
- Counting
- Graphs and Trees

Computer Networks (6 hours)

- Organization of the Internet (Internet Service Providers, Content Providers, etc.)
- Physical pieces of a network (hosts, routers, switches, ISPs, wireless, firewalls, etc.)
- Roles of the different layers (application, transport, network, datalink, physical)
- Distributed applications (client/server, peer-to-peer, cloud, etc.)
- HTTP, HTTPS, and Cybersecurity

Software Development Tools (16 hours)

- Version Control (Git)
- Linux/Command line tools
- Shell Scripting
- Build systems
- Data wrangling
- Debugging
- Performance Evaluation
- Cloud Computing (computing, storage, service)