FLORIDA ATLANTIC UNIVERSITY

NEW COURSE PROPOSAL
Graduate Programs

Department Electrical Engineering and Computer Scence

College Engineering and Computer Science

*(To obtain a course number, contact **erudolph@fau.edu**)*

UGPC Approval _____
UFS Approval _____
SCNS Submittal _____
Confirmed _____
Banner _____
Catalog _____

Prefix CEN **Number** 6091	*(L = Lab Course; C = Combined Lecture/Lab; add if appropriate)* **Lab Code**	**Type of Course** Lecture	**Course Title** Advanced Software Engineering in Practice

Credits *(See Definition of a Credit Hour)*
3

Effective Date *(TERM & YEAR)*
Fall 2024

Grading *(Select One Option)*
Regular (●)
Sat/UnSat ( )

Course Description *(Syllabus must be attached; see Template and Guidelines)*
This course delves into various facets of software engineering, blending technical skills with leadership, management, and digital transformation insights. Students will explore topics such as software development practices, team dynamics, project management, and leadership strategies, gaining a holistic understanding of the complexities in modern software engineering environments.

Prerequisites
graduate standing

Prerequisites, Corequisites and Registration Controls are enforced for all sections of course.

Academic Service Learning (ASL) course ☐
Academic Service Learning statement must be indicated in syllabus and approval attached to this form.

Corequisites

Registration Controls *(For example, Major, College, Level)*

Minimum qualifications needed to teach course:
Member of the FAU graduate faculty and has a terminal degree in the subject area (or a closely related field).

List textbook information in syllabus or here

Faculty Contact/Email/Phone
Michael DeGiorgio / mdegiorg@fau.edu / 561-297

List/Attach comments from departments affected by new course

Approved by	***Date***
Department Chair Hai Kalva	3/11/2024
College Curriculum Chair Masoud Jahandar Lashaki	7/29/2024
College Dean M Cavdei	7/29/2024
UGPC Chair	
UGC Chair	
Graduate College Dean	
UFS President	
Provost	

Email this form and syllabus to UGPC@fau.edu 10 days before the UGPC meeting.

CEN 6091
Advanced Software Engineering in Practice

DAY X – X
3 credits

Semester, Year
Prof. XXXXX YYYYY
Office: XXXXXX
Office hours: DAY X-X
Classroom: XXXX
Telephone: 561-297-XXXX
Email: zzzzz@fau.edu

TA name	xxxxxx xxxxxxxxx
Office	xxxxxxxx
Office hours	DAY xx:xx – xx:xx
Telephone	561-297-xxxx
Email	xxxxxx@fau.edu

Course Description
This course delves into various facets of software engineering, blending technical skills with leadership, management, and digital transformation insights. Students will explore topics such as software development practices, team dynamics, project management, and leadership strategies, gaining a holistic understanding of the complexities in modern software engineering environments.

Instructional Method
In-Person. There is no remote option for this course.

Prerequisites
Graduate standing

Course Objectives/Student Learning Outcomes
After taking this course, students will

- Understand how to handle legacy code and perform unit testing
- Employ diverse data architectures for AI-driven software projects
- Evaluate the trade-offs of staffing and how to navigate dynamic work environments
- Effectively deploy AI tools to assist in software development

Course Evaluation Method
This course will have topics distributed on roughly a weekly basis, where a take home assignment will be assigned for each week's topic. Specifically, the course will be evaluated as:

Attendance and participation 10%

Capstone project	20%
14 take home assignments	5% each
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Total	100%

Course Grading Scale

Grade	Total (%)
A	[93 – 100]
A-	[90 – 92)
B+	[87 – 89)
B	[83 – 86)
B-	[80 – 82)
C+	[77 – 79)
C	[73 – 76)
C-	[70 – 72)
D+	[67 – 69)
D	[63 – 66)
D-	[60 – 62)
F	[0 – 59)

Policy on Makeup Tests, Late Work, and Incompletes

Late work will not be accepted. All assignments will be posted well in advance, and students may submit assignments early. Any assignment not turned in by the due date will result in a zero.

Incomplete grades are against the policy of the department, and they will only be assigned if there is solid evidence of medical or otherwise serious emergency situation.

Policy on the Recording of Lectures

Students enrolled in this course may record video or audio of class lectures for their own personal educational use. A class lecture is defined as a formal or methodical oral presentation as part of a university course intended to present information or teach students about a particular subject. Recording class activities other than class lectures, including but not limited to student presentations (whether individually or as part of a group), class discussion (except when incidental to and incorporated within a class lecture), labs, clinical presentations such as patient history, academic exercises involving student participation, test or examination administrations, field trips, and private conversations between students in the class or between a student and the lecturer, is prohibited. Recordings may not be used as a substitute for class participation or class attendance and may not be published or shared without the written consent of the faculty member. Failure to adhere to these requirements may constitute a violation of the University's Student Code of Conduct and/or the Code of Academic Integrity.

Attendance Policy

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.

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/

Disability Policy

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/.

Code of Academic Integrity

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.

Required Texts/Readings

Readings will derive from a number of sources, which will be distributed on Canvas as needed.

Course Topical Outline

Professional attitude
Changing software
Data architecture foundations for AI-driven software
Unit testing strategies
Modern testing approaches
Efficiency in engineering
Implementing continuous integration
Principles of DevOps
The cost of overstaffing

Work environment transformation
Innovative leadership
AI-assisted code development
Lage language models
Software architecture in an AI world
Capstone project