FLORIDA ATLANTIC UNIVERSITY

COURSE CHANGE REQUEST
Undergraduate Programs

Department Comp & Electrical Eng and Comp Science

College Engineering and Comp Science

UUPC Approval 3-29-21
UFS Approval _____
SCNS Submittal _____
Confirmed _____
Banner Posted _____
Catalog _____

***Current* Course Prefix and Number**	COP 4331	***Current* Course Title**	Object-Oriented Design and Programming

*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:

Change prerequisites/minimum grades to:
COP 3530 or COP 3410

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:	Fall 2021	**Terminate course? Effective Term/Year for Termination:**	

Faculty Contact/Email/Phone Hari Kalva, hkalva@fau.edu

Approved by		***Date***
Department Chair	Hanqi Zhuang Digitally signed by Hanqi Zhuang Date: 2021.01.17 15:11:20 -05'00'	
College Curriculum Chair		3-10-21
College Dean		3/31/21
UUPC Chair	Jerry Haky	3-29-21
Undergraduate Studies Dean	Edward Pratt	3-29-21
UFS President		
Provost		

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

Object Oriented Design and Programming/ COP4331 –001 CRN 16729, 002 CRN 16730, 003 CRN 16731	3 credit hours (Online)

2. Course prerequisites, corequisites, and where the course fits in the program of study

Prerequisites: COP 3530 or COP 3410

3. Course logistics

Term: Spring 2021
Class location and time: Wed. & Friday 2:00PM - 3:30PM, Room ED119 (College of Education Bldg.)

The class includes a live lecture section and a distance learning section.

The course is accessible through FAU's learning management system— Canvas http://canvas.fau.edu . You must log into Canvas with your FAU ID and Password to access the materials and assignments in this course. If you do not know your FAU ID or Password click the following link for help. Link to Office of Information Technology Help. The course is organized into modules with dates provided for each module. Dates and durations for each module may vary so please pay close attention to start and due dates.

Course Delivery Mode:
The course is organized into modules with dates provided for each module. Dates and duration for each module may vary so please pay close attention to start and due dates. The course begins with the START HERE page, which will familiarize you with the organization and navigation of the course. You will open a new learning module to access the assigned reading materials, lecture notes, and other relevant materials for each subsequent module.

Time Commitment:
This course has 3 credit hours. For traditionally delivered courses, not less than one (1) hour of classroom or direct faculty instruction each week for fifteen (15) weeks per Fall or Spring semester, and a minimum of two (2) hours of out-of-class student work for each credit hour. Equivalent time and effort is required for Summer Semesters, which may be offered over a shortened time frame. Fully Online courses, hybrid, shortened, intensive format courses, and other non-traditional modes of delivery will demonstrate equivalent time and effort.

4. Instructor contact information

Instructor's name	Dr. Ionut Cardei
Office address	EE419
Office Hours	Posted on Canvas
Contact telephone number	(email is preferred) 561-297-3401
Email address	icardei@fau.edu

5. Communication policy

The preferred mode of communication for private messages to the instructor is using Canvas' Message tool. For questions or concerns related to the course, please check first the "Class Q&A" Discussion Board on Canvas. Expect answers within 48 hours from posting. For private messages sent via the Messages tool expect a reply within 48 hours, excluding the weekend period or holidays. For more urgent communication, contact the instructor via regular email from your FAU email account.

6. Course description

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

Brief introduction to Java; software development process; functional specification and use cases; Unified Modeling Language diagrams; design methodology; OO design principles; implementation in Java; design patterns; basics of GUI programming with the Swing library; reflection, serialization, multithreading, generic types, lambda expressions.

7. Course objectives/student learning outcomes/program outcomes

Learning Objectives	1. demonstrate and apply the methods of object-oriented design and programming in the context of the software development cycle; 2. demonstrate the use of Unified Modeling Language (UML) diagrams for analysis and design of object-oriented software; 3. apply elements of the Java programming language and implement object-oriented designs in Java; 4. apply the basic concepts for design patterns and apply several common design patterns to improve the quality of software architectures; 5. write programs using advanced features of the Java programming language, such as reflection, multithreading, and generic types.

8. Course evaluation method

Quizzes ..... 15 % Homeworks ..... 55 % Project ..... 25 % Participation ..... 5 % The lowest quiz score will be dropped.	The **quizzes** include multiple-choice type tests administered online using Canvas. The **homework** problems require programming in Java and/or design with UML diagrams using a UML modeling tool. The **project** takes groups of two students through all stages of the development cycle (analysis, design, implementation). It involves design using UML diagrams, patterns, and implementation with the Java language. The project topic can be a web application, an Android smartphone app, a distributed (or peer-to-peer) application running in a TCP/IP network, or an application using a Java Swing GUI. Attendance is mandatory for students registered for the live section. **Participation** points are given for posting non-trivial and relevant messages on the homework and project discussion board forums on Canvas and for classroom participation (for live-section students).

9. Course grading scale (tentative)

Grading Scale:
A: 100-95, A-: 94-90, B+: 89-85, B: 84-80, B-:79-75, C+: 74-72, C: 71-68, C- 67-60, D: 59-50, F:49-0

10. Policy on makeup tests, late work, and incomplete grades

Late work is not acceptable, except for special (e.g. medical) circumstances and with advance notice.

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. Computing Resources and Software

Students are responsible for applying proper backup procedures to preserve their work on homework assignments and the project. Common methods involve copying files periodically and as necessary to USB flash drives, the FAU drives, Google Drive, DropBox, or some other online service.

A) Students should have access to a PC running Windows, Linux, or Mac OS with internet access .
Students are **required** to download the Java Development Kit (JDK) and a Java Integrated Development Environment (IDE):

- The newest Java JDK from Oracle: https://www.oracle.com/technetwork/java/javase/downloads/index.html and
- An IDE, such as one of these:
  - NetBeans, the latest version from https://netbeans.apache.org/download/
    We use NetBeans in class.
  - Eclipse: https://www.eclipse.org/downloads/
  - the BlueJ integrated Java environment: http://bluej.org/ (this is much less powerful than Eclipse or NetBeans).

B) Students must install a UML modeling tool. We will write class, sequence, and state transition diagrams. Pick from this list or from a wide range of other tools available online:

- Violet UML Modeling tool: http://sourceforge.net/projects/violet/ . This is very simple and easy to use, with no model validation. We use it in class.
- ArgoUML Modeling tool : http://argouml.tigris.org/

C) Optional: install the JUnit tool for unit testing, from http://junit.org/, only if it does not come with your choice of IDE.

D) Internet Connection

- Recommended: Broadband (high-speed) Internet connection with a speed of 4 Mbps or higher
- To function properly, Canvas requires a high-speed Internet connection (cable modem, DSL, satellite broadband, 4/5G cellular). The minimum Internet connection speed to access Canvas is a consistent 1.5 Mbps (megabits per second) or higher.

12. 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.

All class material and assignments will be posted on Canvas. Students should log in at least two times per week to make

sure they are up to date with announcements, postings, messages, and assignments.

13. 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/.

14. 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/.

15. 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 unfair advantage over any other. Academic dishonesty is also destructive of the university community, which is grounded in a system of mutual trust and place high value on personal integrity and individual responsibility. Harsh penalties are associated with academic dishonesty. See University Regulation 4.001 at
www.fau.edu/regulations/chapter4/4.001_Code_of_Academic_Integrity.pdf

Students are **NOT** allowed to work together for homeworks, except for the term project, where collaboration in a team is required.

All submitted assignments (including all Java programs and models/diagrams) must be the **original work** of the student.

16. Required texts/reading

Cay Horstmann, "Object Oriented Design & Patterns", 2nd Ed., Wiley, 2005
ISBN 0-471-74487-5
Textbook webpage: http://www.horstmann.com/design_and_patterns.html

A textbook PDF file is posted on the Canvas course page.

17. Supplementary/recommended readings

1. Textbook webpage: http://www.horstmann.com/design_and_patterns.html
2. Textbook problem solutions: http://www.horstmann.com/oodp2/solutions/solutions.html
3. Java Tutorial from Oracle: http://docs.oracle.com/javase/tutorial/index.html
4. Erich Gamma et al. "Design Patterns", Addison-Wesley Professional, 1994 – **the pattern reference book.**
5. Craig Larman, "Applying UML and Patterns", 3rd edition, Prentice Hall, 2004. (a great reference for UML and patterns)

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

18. Course topical outline

Unit #	*Topic*
1	Introduction to Java (Ch. 1)
2	Object-oriented Design Process (Ch. 2)
3	Guidelines for Class Design (Ch. 3)
4	Interface Types and Polymorphism (Ch. 4)
5	Patterns and GUI Programming (Ch. 5)
6	Inheritance and Abstract Classes (Ch. 6)
7	More Design Patterns (Ch. 10)
7	The Java Object Model (Ch. 7)
8	Frameworks (Ch. 8)
8	Multithreading (Ch. 9)

19. Computer Requirements / Technical Skills

Computer Requirements

- Operating System
  - A laptop computer that can run Linux, Mac OSX, or Windows 7 or higher
- Peripherals
  - A backup option should be available to minimize the loss of work. This can be an external hard drive, a USB drive, cloud storage, or your folder on the FAU servers.
- Software
  - Once logged in to Canvas, please visit the students located at the top of each Canvas page for LMS compatibility with your computer. Make sure your Internet browser is compatible and that you have all the recommended plug-ins installed.

Required Technical Skills [in addition to prerequisites]
Word editing and ability to export documents to the PDF file format.

20. Technical Problems

Technical Problem Resolution Procedure
In the online environment, there is always a possibility of technical issues (e.g., lost connection, hardware or software failure). Many of these can be resolved relatively quickly, but if you wait until the last minute before due dates, the chances of these glitches affecting your success are greatly increased. Please plan appropriately. If a problem occurs, it is essential you take immediate action to document the issue so your instructor can verify and take appropriate action to resolve the problem.

Please take the following steps when a problem occurs:

1. Contact the eSuccess Advisor for assistance:

eLearning Success Advisor - 561-297-3590

2. If you can, make a Print Screen of the monitor when the problem occurs. Save the Print Screen as a .jpg file. If you are unfamiliar with creating a Print Screen file, visit http://en.kioskea.net/faq/141-print-screen-screen-capture-windows-mac-os-x-and-unix-linux.
3. If the problem seems to be with Canvas or another system managed by FAU IRM or TSG complete a Help Desk ticket http://helpdesk.fau.edu/. Make sure you complete the form entirely and give a full description of your problem so the Help Desk staff will have the pertinent information in order to assist you properly. This includes:
    1. Select "Canvas (Student)" for the Ticket Type.
    2. Input the Course ID.
    3. In the Summary/Additional Details section, include your operating system, Internet browser, and Internet service provider (ISP).
    4. Attach the Print Screen file, if available.
4. If the problem is with the tools/code used in class then send an email to your instructor to notify him of the problem. Include all pertinent information of the problem – attach/paste course code or include the screenshot if it makes sense.
5. If you do not hear back from the Help Desk within a timely manner (48 hours), it is your responsibility to follow up with the appropriate person until a resolution is obtained.
6. In case you contacted your instructor and you don't get a reply in two days, please send the message again, call or stop by the instructor's office during office hours.

21. Selected University and College Policies

Religious Accommodation Policy Statement
In accordance with rules of the Florida Board of Education and Florida law, students have the right to reasonable accommodations from the University in order to observe religious practices and beliefs with regard to admissions, registration, class attendance and the scheduling of examinations and work assignments. For further information, please see Academic Policies and Regulations.

University Approved Absence Policy Statement
In accordance with rules of the Florida Atlantic University, students have the right to reasonable accommodations to participate in University approved activities, including athletic or scholastics teams, musical and theatrical performances and debate activities. It is the student's responsibility to notify the course instructor at least one week prior to missing any course assignment.

Incomplete Grade Policy Statement
A student who is passing a course, but has not completed all work due to exceptional circumstances, may, with consent of the instructor, temporarily receive a grade of incomplete ("I"). The assignment of the "I" grade is at the discretion of the instructor, but is allowed only if the student is passing the course.

Withdrawals
Any student who decides to drop is responsible for completing the proper paper work required to withdraw from the course.

Grade Appeal Process
A student may request a review of the final course grade when s/he believes that one of the following conditions apply:

- There was a computational or recording error in the grading.
- Non-academic criteria were applied in the grading process.

- There was a gross violation of the instructor's own grading system.
- The procedures for a grade appeal may be found in Chapter 4 of the University Regulations.

Disruptive Behavior Policy Statement

Disruptive behavior is defined in the FAU Student Code of Conduct as "*... activities which interfere with the educational mission within classroom."* Students who behave in the face-to-face and/or virtual classroom such that the educational experiences of other students and/or the instructor's course objectives are disrupted 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.

Netiquette

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. For more in-depth information, please see the FAU statement on Netiquette.

Support Services and Resources

Office of Information Technology Online Help Desk:	http://helpdesk.fau.edu
FAU Libraries Website:	http://www.fau.edu/library
Center for Learning and Student Success Website:	http://www.fau.edu/class
University Center for Excellence in Writing:	http://www.fau.edu/UCEW
Math Learning Center:	http://www.math.fau.edu/mlc/
Office of Undergraduate Research and Inquiry:	http://www.fau.edu/ouri
Office for Students with Disabilities Website:	http://www.fau.edu/sas/
Office of International Programs and Study-abroad:	http://www.fau.edu/goabroad/
Freshman Academic Advising Services:	http://www.fau.edu/freshmanadvising

Faculty Rights and Responsibilities

Florida Atlantic University respects the right of instructors to teach and students to learn. Maintenance of these rights requires classroom conditions which do not impede their exercise. To ensure these rights, faculty members have the prerogative:

- To establish and implement academic standards
- To establish and enforce reasonable behavior standards in each class
- To refer disciplinary action to those students whose behavior may be judged to be disruptive under the *Student Code of Conduct*.

Instructor reserves the right to adjust this syllabus as necessary.