

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

1. Course title/number, number of credit hours	
COP5339 – Object Oriented Software Design	3 credit hours (Online)
2. Course prerequisites, corequisites, and where the course fits in the program of study	
Prerequisites: COP 3530 Data Structures and Algorithm Analysis	
3. Course logistics	
<p>Term: Spring 2019</p> <p>Lecture time: Thu. 4:00 PM – 6:50 PM, CM 128</p> <p>All course material and assignments are handled using Canvas, at http://canvas.fau.edu.</p>	
4. Instructor contact information	
<i>Instructor's name</i> <i>Office address</i> <i>Office Hours</i> <i>Contact telephone number</i> <i>Email address</i>	<p>Dr. David Jaramillo</p> <p>EE403</p> <p>by appointment, email or slack</p> <p>(email is preferred) 561-703-6860</p> <p>djaramil@fau.edu</p>
5. Communication Policy	
<p>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 24 hours, excluding the weekend period or holidays. For more urgent communication, contact the instructor via regular email from your FAU email account.</p>	
6. Course description	
<p>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; advanced Java topics: reflection, serialization, multithreading, generic types, lambda expressions, streams.</p>	
7. Course objectives/student learning outcomes/program outcomes	
Learning Objectives	<ol style="list-style-type: none"> 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 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, lambda expressions, and generic types
8. Course evaluation method	

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<p>Quizzes 20 % Homeworks 50 % Project 30 %</p> <p>The lowest quiz score will be dropped.</p>	<p>The quizzes include multiple-choice type tests administered online using Canvas.</p> <p>The homework problems require programming in Java and/or writing UML diagrams using a UML modeling tool.</p> <p>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.</p>
9. Course grading scale (tentative)	
<p>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</p>	
10. Policy on makeup tests, late work, and incomplete grades	
<p><i>Late work</i> is not acceptable, except for special (e.g. medical) circumstances and advance notice.</p> <p><i>Incomplete grades</i> 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.</p>	
11. Computing Resources and Software	
<p>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.</p> <p>Students should have access to a PC running Windows, Linux, or Mac OS with internet access .</p> <p>Students are required to download and install</p> <ul style="list-style-type: none"> • Java Development Kit (JDK) 8 : http://www.oracle.com/technetwork/java/javase/downloads/index.html . Choose the version that comes with Netbeans. <p>It is recommended students install a Java development environment from this list, or use any text editor for editing programs.</p> <ul style="list-style-type: none"> • The BlueJ integrated Java environment: http://bluej.org/ • Eclipse: http://eclipse.org (classic is fine) • Netbeans (comes with the JDK). We use this IDE in class. <p>Students must install a UML modeling tool. Pick from this list or from a wide range of other tools available online:</p> <ul style="list-style-type: none"> • Violet UML Modeling tool: http://sourceforge.net/projects/violet/ • ArgoUML Modeling tool : http://argouml.tigris.org/ <p>Also, install the JUnit tool for unit testing, from http://junit.org/.</p>	
12. Participation	

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Students registered for the live section are required to attend the lectures.

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 (ADA), students who require special accommodations due to a disability to properly execute coursework must register with the *Student Accessibility Services* office, located in Boca Raton (SU 133), in Davie, and in the Jupiter campuses, and should follow all SAS procedures. <http://www.fau.edu/sas/>

14. Honor code policy

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 allowed to work together for homeworks involving programming. However, all submitted programs must be **the original work of individual students**.

15. 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

16. 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. Craig Larman, "Applying UML and Patterns", 3rd edition, Prentice Hall, 2004. (a great reference for UML and patterns)
5. Erich Gamma et al. "Design Patterns", Addison-Wesley Professional

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17. Course topical outline

Week #	Start Date	Unit #	Topic	Homeworks	Quiz	Project
1	01/10/19	1	Introduction to Java (Ch. 1)			
2	01/17/19	1	Introduction to Java (Ch. 1)	Homework 1	Quiz 1	
3	01/24/19	2	Object-oriented Design Process (Ch. 2)			Project posted
4	01/31/19	2	Object-oriented Design Process (Ch. 2)	Homework 2	Quiz 2	Team and topic
5	02/07/19	3	Guidelines for Class Design (Ch. 3)			#1. Requirements
6	02/14/19	4	Interface Types and Polymorphism (Ch. 4)	Homework 3	Quiz 3	
7	02/21/19	5	Patterns and GUI Programming (Ch. 5)			
8	02/28/19	5	Patterns and GUI Programming (Ch. 5)		Quiz 4	#2. Design
	03/07/19	-	Spring Break – no classes			
9	03/14/19	6	Inheritance and Abstract Classes (Ch. 6)			
10	03/21/19	6	Inheritance and Abstract Classes (Ch. 6)	Homework 4	Quiz 5	
11	03/28/19	7	More Design Patterns (Ch. 10) + The Java Object Model (Ch. 7)			
12	04/04/19	7	The Java Object Model (Ch. 7)	Homework 5		
13	04/11/19	8	Frameworks (Ch. 8) + Multithreading (Ch. 9)			
14	04/18/19	8	Multithreading (Ch. 9)			
15	04/25/19	9	Project Demonstration			#3. Report & demo

18. Computer Requirements / Technical Skills

Computer Requirements

- Operating System
 - A computer that can run Linux, Mac OS X, 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 PDF format.

19. 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:

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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.

20. 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

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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.

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/UCFW
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://osd.fau.edu/
Office of International Programs and Study-abroad:	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.