Arab Academy for Science and Technology and Maritime Transport
Computer Science Curriculum
Course Syllabus

Course Code: CS244	**Course Title:** Advanced Programming Applications	**Classification:**	**Coordinator's Name:** Dr Mohamed Mostafa **Lecturer Name:**	**Credit Hours:** 3
Pre-requisites: CS243 (Object-Oriented Programming)	**Co-requisites:** None	**Schedule:** Lecture: 2 hours Tutorial-Lab: 2-2 hours		
Office Hours:				

Course Description:
This course utilizes JAVA as an Object-Oriented Programming language. It introduces the advanced features of JAVA through applications. Among those advanced features: file I/O, exception handling, multithreaded programming, building user interface using JavaFX, database connectivity using JDBC, and network programming using sockets.

Textbook:
Y Daniel Liang, *Introduction to JAVA Programming*, *Comprehensive Version*, PEARSON.

References:
- Harold, Elliotte, *JAVA Network Programming*, O'Reilly Media.
- Herbert Schildt, Java: *The Complete Reference*, McGraw-Hill Osborne Media.
- Y Daniel Liang, *Introduction to JAVA Programming*, Prentice Hall.

Course Objective: Upon completion of this course, students should be able to demonstrate Knowledge of:	**Contribution to Program Student Outcomes:**
1. Write OOP programs using JAVA. **2.** Build advanced user interfaces using Java FX. **3.** Understand multithreaded programming. **4.** Communicate with a DBMS using JDBC. **5.** Discuss distributed computing. **6.** Build simple client-server applications using socket programming. **7.** Understand Event-driven programming.	SO2 - Design, implement and evaluate a computing-based solution to meet a given set of computing requirements in the context of program's discipline. SO6 - Apply computer science theory and software development fundamentals to produce computing-based solutions.
Course Outline: **1.** Basic Java Concepts **2.** Encapsulation and OO Relationships **3.** Polymorphism **4.** Exception and File I/O **5.** Build graphical user interface using Java **6.** GUI Layout managers **7.** 7th Week Exam **8.** Dealing with GUI Events	**9.** Multithreading in Java **10.** Multithreaded Application programming **11.** Network programming in Java **12.** 12th Week Exam **13.** Java Socket Programming **14.** Database programming in Java (JDBC) **15.** Revision **16.** Final exam

Grade Distribution:

7th Week Assessment (30%):
Exam (20%) + Programming Assignments 10%

12th Week Assessment (20%):
Exam (15%) + Programming Assignments 5%

Year Work (10%):
Project (10%)

Final Exam (40%)

Policies:

Attendance:
AASTMT Education and Study Regulations (available at aast.edu)

Academic Honesty:
AASTMT Education and Study Regulations (available at aast.edu)

Late Submission:
Late submissions are graded out of 75% (1 week late), 50% (2 weeks late), 25% (3 weeks late), 0% (more than 3 weeks late)