CPIT-305 Syllabus

Catalog Description

CPIT-305 Advanced Programming
Credit: 3 (Theory: 3, Lab: 0, Practical: 1)
Prerequisite: CPCS-204
Classification: Department Required

The objective of this course is to study advanced techniques in Java programming. Topics include how to build applications for different purposes, methods for Java programs to interact with other existing technologies, exception and error handling, streams and files operations, concurrent programming, network and socket programming, and Java Database Connectivity (JDBC).

Class Schedule

Lab/Tutorial 90 minutes 1 times/week

Meet 50 minutes 3 times/week or 80 minutes 2 times/week

Textbook

Cay S. Horstmann, , "Core Java Volume I--Fundamentals", Prentice Hall; 11 edition (2018-05-28)

ISBN-13 9780135166307 **ISBN-10** 0135166306

Grade Distribution

Week	Assessment	Grade %
1	Graded Lab Work 1	1
2	Graded Lab Work 2	1
3	Graded Lab Work 6	1
4	Graded Lab Work 7	1
5	Quiz 1	2
5	Graded Lab Work 3	1
7	Exam 1	10
8	Graded Lab Work 4	1
9	Quiz 2	2
9	Graded Lab Work 5	1
10	Graded Lab Work 8	1
11	Exam 2	20
11	Graded Lab Work 9	1
12	Quiz 3	2
12	Graded Lab Work 10	1
14	Lab Exam	10
14	Group Project	14
16	Exam	30

Last Articulated

December 21, 2017

Relationship to Student Outcomes

a	b	c	d	e	f	g	h	i	j	k	l	m	n
x								x				x	

Course Learning Outcomes (CLO)

By completion of the course the students should be able to

1. Discover how to immune Java program against potential exceptions (a)
2. Define and compare between different methodologies to deal with well-known exceptions (a)
3. Create and implement user-defined exceptions using java exception mechanisms. (i)
4. **Compose API and IO Streams to access and manage Files and Folders (m)**
5. Analyse concurrent execution of Java applications in multi-threading environment (i)
6. **Apply synchronization mechanisms in multi-threaded applications (m)**
7. **Devise thread execution with appropriate flow control, priority and scheduling (m)**
8. Explore different types of streams in order to handle Input-Output operations (a)
9. Distinguish between binary and text data handling in different streams like random access, object IO streams (i)
10. Differentiate connection-oriented and connectionless communications in client-server environment (a)
11. Implement sending and receiving data through datagram and stream sockets (i)
12. **Devise network systems to handle concurrent sending and receiving of data over the network (i)**
13. Construct communication using URL with suitable HTTP GET and POST requests (i)
14. Connect to database from Java programs using respective database driver connectivity (a)
15. Execute SQL statements in Java to define, query and modify relational database tables (a)
16. **Manipulate results set and meta data obtained from database using Java program (m)**

Coordinator(s)

Dr. Muhammad Khamis, Assistant Professor

CPIT-305 Syllabus

Topics Coverage Durations

Topics	Weeks
OOP Review	1
introduction to GUI	1
Exception and Error Handling I	1
Streams & Files I	1
Streams & Files II	2
Threads I	1
Threads II	1
Threads III	1
Network I	1
Network II	1
Network III	1
DataBase I	1
DataBase II	1
Review	1