Bahir Dar Institute of Technology – Bahir Dar University
Faculty of Computing
Advanced Programming Course Guidebook

Course Title: Advanced Programming	**Lecture:** Monday 2:25 PM @ Room NDB8 Thursday 9:50 AM @ Room NDB9
Course Code: SEng2072	**Instructor:** Getnet Mamo **Lab Instructors:** Getnet M + Tirusew S.
Prerequisite: Object-Oriented Programming	**Email:- getnetmamomulaw@gmail.com**
Credits: 5 CP **Contact Hours:** ● Lecture: 2hrs/week ● Laboratory: 2:30 hrs/week	**Consultation hours**: Thursday 2:30 PM **Office Number:** CS Bld, 001
Target Group: Software Engineering, 2nd year	

Course Goals or Learning Outcome:

At the end of this course, students should be able to:

- ✔ Carry out design and development of complex elements, such as user interfaces, multiprocessing, and fault-tolerant components;
- ✔ Write TCP/IP Client Server applications using Sockets;
- ✔ Write Java applications using the JDBC to make database independent queries; and

Course Description:

This course covers topics on Java which includes: Java FX I/O Streams, Multithreading, Network Programming, Java database connectivity (JDBC) and brief introduction to JSF.

Outline of the course with reading portions:

The following is an outline of the order in which syllabus contents will be covered. The exact dates and due dates for assignments and exams can be found on the class calendar and are subject to change with notice.

Week	Topics	Reading Assignment
Week 1 -2	**Chapter 1 -JavaFX** 1.1.Concepts of JavaFX 1.2. Shapes and Nodes 1.3.Event Handling	Text book [2]: chap.12, 14, 17
Week 3	**Chapter 2 – Streams and File I/O** 2.1. Streams 2.2. Various Stream classes 2.3. Using Streams 2.4. Object Streams 2.5. File Management	Text book[2]: chap. 14, 19
Week 4	**Chapter 3 – Multi threading Concept** **3.1.** Threads Vs process **3.2.** Multiple threads **3.3.** Thread priorities **3.4.** Synchronization	Text book[1]: chap. 1 Text book[2]: chap. 32
Week 5	**Chapter 4 – Networking in Java** 4.1. Connecting to a server 4.2. Implementing Servers in Java 4.3. Sockets, ports, URIs	Text book[1]: chap. 3 Text book[2]: chap. 33
Week 6	**Chapter 5 – Java Database Connectivity** 5.1. Database Systems – an Introduction 5.2. Structured Query Language 5.3. Installing and setting up JDBC 5.4. Basic JDBC Programming concepts 5.5. Populating a database 5.6. Executing Queries	Text book[1]: chap. 4 Text book[2]: chap. 34
Final Exam		

Assessment

Assessment Type	Weight (100%)
Ind. Assignment I	15
Ind. Assignment II	15
Test	20
Final	50

NB: Attendance Requirement >= 85%

Ways of delivery

For the course to meet its objective, it will be delivered through lectures and laboratory sessions. Both of these sessions do have their own specific objective in achieving the general objective of the course. The course does have detailed java programming contents to be delivered in each of the sessions which will enable students to thoroughly understand programming and develop small and large applications.

NB: The following early/late assignment/project submission policy will be applied:

- Assignments submitted one day earlier – the mark earned is increased by 5%.
- Assignments submitted one day delayed – the mark earned is decreased by 5%.
- Assignments submitted between one and two days later – the mark earned is decreased by 25%.
- Submissions more than two days late are not accepted!

Software Requirements: Java compiler and windows operating system environment.

TextBook:

1. *S. Horstmann and Gary Cornell***, Core Java 2 – Volume II- Advanced Features,** Sun Microsystems Press
2. ***Introduction to Java programming: comprehensive version 9th Ed, Liang, Y. Daniel.***
3. *Java™ How to Program, 10th Edition, By H. M. Deitel - Deitel & Associates, Inc., P. J. Deitel - Deitel & Associates, Inc.*

***NB**: Students can collect **e-books** of the above text and other reference books from the laboratory and/ or the instructor.*

Approval:

Instructor's name and signature: _____

Chair person's name and signature: _____

Program manager's name and signature: _____