Xi'an Jiaotong-Liverpool University

西交利物浦大学

Department of Computing

MODULE HANDBOOK

CPT111

Java Programming

Erick Purwanto

Semester 1

2022-2023

SECTION A: Basic Information

❑ **Brief Introduction to the Module**

Students will learn the basics of programming in Java and in particular Object Oriented Programming. No previous knowledge of programming is assumed. There is a heavy emphasis on practical work and problem solving.

❑ **Key Module Information**

Module name: Java Programming

Module code: CPT111

Credit value: 5

Semester in which the module is taught: 1

Pre-requisites needed for the module: None

Programmes on which the module is shared:
- Information and Computing Science
- Computer Science and Technology
- Digital Media Technology

❑ **Delivery Schedule**

You will attend one lecture per week as per your timetable, and one lab session, either online or on-site.

We will have live broadcasted lectures and labs by the teachers, so students will be able to join online. Its recording will also be made available after. TA support will be available online during the lab sessions.

	Monday	+	Tuesday	+	Wednesday	+	Thursday	+	Friday	+
9 AM										
10 AM										
11 AM										
12 PM										
1 PM										
2 PM	CPT111-Lecture-D1/1 Erick Purwanto SIP-EE101 Week: 2-4,5-14						CPT111-Comp . Lab-D1/2 Nanlin Jin SIP-SD546 Week: 2-4,5-14		CPT111-Comp . Lab-D1/1 Nanlin Jin SIP-SD554 Week: 2-4,5-14	
3 PM										
4 PM							CPT111-Comp . Lab-D1/4 Nanlin Jin SIP-SD546 Week: 2-4,5-14		CPT111-Comp . Lab-D1/3 Nanlin Jin SIP-SD554 Week: 2-4,5-14	
5 PM	CPT111-Lecture-D1/2 Erick Purwanto SIP-EE101 Week: 2-4,5-14						CPT111-Comp . Lab-D1/6 TENG MA SIP-SD546 Week: 2-4,5-14		CPT111-Comp . Lab-D1/5 TENG MA SIP-SD554 Week: 2-4,5-14	
6 PM										
7 PM							CPT111-Comp . Lab-D1/8 TENG MA SIP-SD546 Week: 2-4,5-14		CPT111-Comp . Lab-D1/7 TENG MA SIP-SD554 Week: 2-4,5-14	
8 PM										

Lectures are timetabled at:
Monday   14:00 – 17:00   EE101
Monday   17:00 – 19:00   EE101

Lab Sessions are timetabled at:
Friday   14:00 – 15:30   SD554, SD546
Friday   15:30 – 17:00   SD554, SD546
Friday   17:00 – 18:30   SD554, SD546
Friday   18:30 – 20:00   SD554, SD546

❑   **Module Leader and Contact Details**

Name: Erick Purwanto

Email address: erick.purwanto@xjtlu.edu.cn

Room number, office hours: SD551, Tuesday 15:00-17:00

Preferred means of contact: email

❑   **Additional Teaching Staff and Contact Details**

Nanlin Jin   nanlin.jin@xjtlu.edu.cn   SD429   Thursday, 15:00-17:00
Teng Ma   teng.ma@xjtlu.edu.cn   SD459   Friday, 13:00-15:00

SECTION B: What you can expect from the module

❑   **Educational Aims of the Module**

The module aims to introduce concepts and principles of problem solving using the computer, and to discuss the construction of appropriate algorithms for problems solving. It also aims to demonstrate principles underlying the design of a high level programming language; and give students experience and confidence in the use of a high level programming language.

❑ **Learning Outcomes**

On successful completion of this module, students are expected to:

A. Understand and appreciate the principles of using object oriented programming techniques for the construction of professional robust, maintainable programs deployed to meet real world business goals;
B. Design, write, compile, test, debug and execute Java programs using an integrated development environment (IDE);
C. Be able to develop programs that the user can interact with either through graphical representation, or text based menus;
D. Use Java programming to represent, display, and manipulate data as objects while being cognizant of associated risk/safety for safe operation of computing and information systems.
E. Have an awareness of essential legal, social, ethical & professional issues related to software development

❑ **Assessment Details**

There are 3 coursework assignments for the module mark in total:

Coursework 1 – 15%
Coursework 1 is worth 15% and is a continuous assessment. This is a weekly auto-graded online coding task, which will make up part of your final grade. You must complete the tasks within one or two weeks. You must log into Learning Mall Core to access coursework throughout the semester.

Coursework 2 – 15%
Coursework 2 is an online test scheduled on your lecture time on Week 8 (tentative). The online coding test will take place on Learning Mall Core. You will be assigned one testing date according to your lecture group.

Coursework 3 – 30%
Coursework 3 is a programming task that you are expected to do in your own time. It is planned to be issued in Week 10 (tentative), with a submission date in Week 14 (tentative). Submission will be through either through online autograder or online dropbox on Learning Mall, with details provided later in the semester.

Exam - 40%
The exam will take place on exam week. The exam will be on-site (tentative) and open book. More details provided later in the semester.

❑ **Methods of Learning and Teaching**

Students will be expected to attend two hours of formal lectures as well as to participate in one-and-a-half hours of supervised labs in a computer lab in a typical week, either online or on-site.   Lectures will introduce students to the content and practical skills, which are the subject of the module, while computer labs will allow students to practice those skills. The instructors or TAs will lead the completion of lab tasks, but students are expected to try completing the tasks beforehand in their own time.

In addition, students will be expected to devote time to solve online ungraded exercises and continuous coding tasks during their private study.   Student may ask questions regarding these exercises and coding tasks in the online forum, monitored by the instructors and the TAs.   After the deadline, the solutions to these exercises and tasks are accessible online.

Students can seek help and guidance in the online/on-site lab sessions and online forum.

❑ **Syllabus & Teaching Plan**

Xi'an Jiaotong-Liverpool University 2022-2023 Academic Calendar

Semester	Month	Mon	Tues	Wed	Thur	Fri	Sat	Sun	Description
		29	30	31	1	2	3	4	
Semester 1	September	5	6	7	8	9	10	11	Week 1: Registration and induction; Mid-Autumn day
		12	13	14	15	16	17	18	Week 2： Teaching starts
		19	20	21	22	23	24	25	Week 3
	October	26	27	28	29	30	1	2	Week 4; National day
		3	4	5	6	7	8	9	University closed days
		10	11	12	13	14	15	16	Week 5
		17	18	19	20	21	22	23	Week 6
		24	25	26	27	28	29	30	Week 7
	November	31	1	2	3	4	5	6	Week 8
		7	8	9	10	11	12	13	Week 9
		14	15	16	17	18	19	20	Week 10
		21	22	23	24	25	26	27	Week 11
	December	28	29	30	1	2	3	4	Week 12
		5	6	7	8	9	10	11	Week 13
		12	13	14	15	16	17	18	Week 14
		19	20	21	22	23	24	25	Reading Week
		26	27	28	29	30	31	1	Reading Week; University closed day; New Year
	January	2	3	4	5	6	7	8	University closed days; Examination days
		9	10	11	12	13	14	15	Examination days

Throughout this syllabus, the conceptual aspects of problem solving, algorithm design and the nature of data are expressed alternately with the more specific and implementation-directed aspects of programming and the importance of a reliable, robust and maintainable solution. It is expected that, in teaching the module, the lecturer will further integrate and intermingle these vital topics with the technical aspects of the syllabus.   Topics are listed below:

Week 1 – September 5-9 – Course Admins
- *No lectures, no labs*

Week 2 – September 12-13 – Introduction
- Bits & Bytes
- What is Java?
- Data
- Variables
- A simple Java program

Week 3 – September 19-23 – Data Types
- Data types
- Scanner/Strings
- Arithmetic and logic operations
- Coding Style
- Cast and convert

Week 4 – September 26-30 – Flow Control
- Boolean (and operators)
- Branching – if – else – else if
- While Loops

National Holiday Week – October 3-7

Week 5 – October 10-14 – Arrays and For Loops
- Arrays
- Array Processing
- For Loops

Week 6 – October 17-21 – Strings and Functions
- String manipulation
- Static Methods

Week 7 – October 24-28 – Introduction to Objects
- Classes and Objects
- Object Methods

Week 8 – October 31 - November 4 – Midterm Break
- *No lectures, no labs*
- *CW2 is scheduled*

Week 9 – More Objects
- Inheritance
- Overriding
- Static

Week 10 – November 14-18 – Exception and User Interface
- Exceptions
- User Interfaces
- Switch

Week 11 – November 21-25 – OOP Principles and Design
- OOP Principles
- UML and documentation

Week 12 – November 28 - December 2- File IO and ArrayList
- Collections
- ArrayList
- Java Time

Week 13 – December 5-9 – Recursion
- Recursion

Week 14 – December 12-16 – Ethics and Conclusion
- Ethics
- Review

❑ **Reading Materials**

Mandatory (Essential) Textbook: None

Optional Textbooks:

Title	Author	ISBN/Publisher
Head First Java, 2nd Edition	Kathy Sierra, Bert Bates	978-0596009205
Effective Java, 3rd Edition	Joshua Bloch	978-0134685991

SECTION C: Additional Information

❑ **Student Feedback**

The University is keen to elicit student feedback to make improvements for each module in every session. It is the University policy that the preferred way of achieving this is by means of an Online Module Evaluation Questionnaire Survey. Students will be invited to complete the questionnaire survey for this module at the end of the semester.

You are strongly advised to read the policies mentioned below very carefully, which will help you better perform in your academic studies. All the policies and regulations related to your academic study can be found in 'Student Academic Services' section under the heading "Policies and Regulations" on E-bridge.

❑ **Plagiarism, Cheating, and Fabrication of Data.**
Offences of this type can result in attendance at a University-level committee and penalties being imposed. You need to be familiar with the rules. Please see the "Academic Integrity Policy" available on e-Bridge in the 'Student Academic Services' section under the heading 'Policies and Regulations'.

❑ **Rules of submission for assessed coursework**
The University has detailed rules and procedures governing the submission of assessed coursework. You need to be familiar with them. Details can be found in the "Code of Practice for Assessment" available on e-Bridge in the 'Student Academic Services' section under the heading 'Policies and Regulations'.

❑ **Late Submission of Assessed Coursework**
The University attaches penalties to the late submission of assessed coursework. You need to be familiar with the University's rules. Details can be found in the "Code of Practice for Assessment" available on e-Bridge in the 'Student Academic Services' section under the heading 'Policies and Regulations'.

❑ **Mitigating Circumstances**
The University is able to take into account mitigating circumstances, such as illness or personal circumstances which may have adversely affected student performance on a module. It is the student's responsibility to keep their Academic Advisor, Programme Director, or Head of Department informed of illness and other factors affecting their progress during the year and especially during the examination period. Students who believe that their performance on an examination or assessed coursework may have been impaired by illness, or other exceptional circumstances should follow the procedures set out in the "Mitigating Circumstances Policy", which can be found on e-Bridge in the 'Student Academic Services' section under the heading 'Policies and Regulations'.

❑ **Learning Mall Core**
Copies of lecture notes and other materials are available electronically through Learning Mall, the University's virtual learning environment at: https://core.xjtlu.edu.cn/course/view.php?id=4392 .