Course Syllabus
(Academic Year 2022)

1. Course No. and Title : KAED 224 Computer Programming
Credit (3 Hour) : 3(2-3-5)

2. Program Name : Bachelor of Environment Engineering and Disaster Management

3. Course Module : Major Required Course
Pre/co-requisite : None

4. Course Semester : 1/2022

5. Class Schedule & Venue: Computer Laboratory Room

6. Class Coordinator : Yutthana Phankamolsil (PhD)
Phone: (66) 81 695 4621
Email: yutthana.pha@mahidol.ac.th

7. Course Description

Introduction to computer concepts, computer components, hardware and software, hardware and software interaction, electronic data processing (EDP) concepts, introduction to program design and implementation using a high-level language: types and expression, iterative and conditional control statements, functions, Boolean logic, array and record structures, pointers, introduction to recursion.

8. Course Learning Outcomes (CLOs)

No	Objectives/CLOs	PLOs
1	Be able to understand the computer components, electronic data processing concepts and execution process of a computer program	1,2
2	Be able to generate computer programming for engineering problem solving	1,2,4
3	Develop the systems thinking skills for describing and understanding problem solving	1,2,4

9. Instructor

Yutthana Phankamolsil (YP) +66 816954621, Email: yutthana.pha@mahidol.ac.th
Maneerat Rumsamrong (MR) Email: maneerat.rum@mahidol.ac.th

9.1 Office Hours : 12:00 Noon – 15:00 PM, Mon
9.2 Office : L321 Laboratory Building

9.3 **Course Website**

(1) the classroom name is KAED224 in Moodle. Student have to register google account (xxxx.mahidol.edu) under Mahidol license.

(2) MS-Team

10. Course Outline

Week	Date	Contents	CLOs	Teaching & Learning Method	Instructor
1	8 Aug 2022	Introduction to teaching and learning process	1	Offline [Clips VDO, assignment] Online [Live meeting on WebEX, MS-team, presentstion] Practice in class	YP/MR
2	15 Aug 2022	Programming Languages	1		YP/MR
3	22Aug 2022	Program design and implementation I	1		YP/MR
4	29 Aug 2022	Program design and implementation II	1		YP/MR
5	5 Sep 2022	Conditional control statements	1		YP/MR
6	12 Sep 2022	Selection (If Statement, Two-Way if-else Statement, Multi-Way if-else Statement, Switch Statement)	1		YP/MR
7	19 Sep 2022	Selection (If Statement, Two-Way if-else Statement, Multi-Way if-else Statement, Switch Statement)	1		YP/MR
8	26 Sep 2022	Selection (If Statement, Two-Way if-else Statement, Multi-Way if-else Statement, Switch Statement)	1		YP/MR
		Mid-term Examination			
9	10 Oct 2022	Loops (While Loops, Do-While Loops, For Loop)	1	Offline [Clips VDO, assignment] Online [Live meeting on WebEX, MS-team, presentstion] Practice in class	YP/MR
10	17 Oct 2022	Loops (While Loops, Do-While Loops, For Loop)	1		YP/MR
11	31 Oct 2022	Loops (While Loops, Do-While Loops, For Loop)	1		YP/MR
12	7 Nov 2022	Single-Dimensional Array	1		YP/MR
13	14 Nov 2022	Multi-Dimensional Array	2		YP/MR
14	21 Nov 2022	Programming Application ▪ Control system	2		YP/MR
15	28 Nov 2022	Programming Application ▪ Control system	2		YP/MR
16	Make-up	Programming Application ▪ Other engineering filed	1,2		YP/MR
17	Final Examination				
18					

**(laboratory)*

11. Course Assessment

No.	Methods / Activities	Regulations	CLOs	Week	Weight Distribution (%)
10.1	Mid-term exam	☑ Content (Week 1-8) ☑ Live examination ☑ Faculty-approved calculator	1-2	8	20
10.2	Final exam	☑ Content (Week 10-16) ☑ Live examination ☑ Faculty-approved calculator	1-2	17,18	20
10.3	Assignments (Homework, activities, or tests)	Students must solve the problem in homework and complete the task in class activities	1-2	All	50
10.4	Class participation	Student must attend a class more than 80% of the whole course.	1-2	All	10
				Total	**100**

12. Grading System

☑ Criterion-referenced evaluation

Grade	Score	Grade	Score	Grade	Score	Grade	Score
A	≥ 80 %	B	70 – 74.99%	C	60 – 64.99%	D	50 – 54.99%
B+	75 – 79.99%	C+	65 – 69.99%	D+	55 – 59.99%	F	< 50 %

13. Reference

Daniel Liang, Y. (2009). Introduction to Java Programming, Comprehensive: Prentice Hall.