Course Syllabus

1. **Program of Study** Bachelor of Science (Computer Science)
   Faculty/Institute/College Mahidol University International College

2. **Course Code** ICCS199 **Course Title** Computer Concepts and Fundamentals
3. **Number of Credits** 4(Lecture/Lab) (4-0)

4. **Prerequisite(s)** None

5. **Type of Course** Core

6. **Trimester/ Academic Year** First and Third trimester / every academic year

7. **Course Description**

This course is aimed to be the preliminary computer course for students. The knowledge in computer concepts and fundamentals are very important because they will be the basic for the students when they move on to other computer-related courses. Besides, these concepts will lead us to be more understanding with real effects of computers on society. The students are expected to understand the nature of problem solving process in computer-related fields and the way to deploy these concepts in the each situation. Tools and techniques such as structured flow chart, and pseudo code will be used throughout this course. For the implementation of the solution, practical exercises are also included. Problems are programmed in the structured programming languages. C language will be introduced to use during in the class as examples and exercises.

8. **Course Objective(s)**

1. Students will be able to understand the different interested area of study in computer science program and the future career path.
2. Students will understand different components in computer system and operations of the computer systems.
3. Students will be able to solve the algorithmic problems using pseudo code and flow chart.
4. Students will be able to use the software development methods to solve the programming problems.

9. Course Outline

Week	Lecture Topic	Hour
1	Course Outline and Introduction to computers	4
2&3	Computer Components	8
4	Computer Network, Internet and WWW	2
	Data representation: bits and bytes and operations of data	2
5	The effects of computers on society – security, privacy, and ethics.	4
6	Computer Software and Intellectual property law	4
	Computer viruses	
	Unauthorized access and use of computer system: Identification Vs Authentication	
	Backup of data, basic data encryption	
7&8	Computer Languages - Levels of computer languages - Variables, Constant - Data Type - Expressions evaluation	8
9	Problem solving Process Algorithm: Pseudo code and Flowchart	4
10	Straight through logic structure Decision making using if/else, switch, case Repetition	4
11	Concepts of array	4
	Total	**44**

10. Teaching Methods

Lecturing, Laboratory practices and presentations

11. Teaching Media

Slides, handouts

12. Course Achievement

Assessment made from the set-forward criteria according to the MUIC's grading policy.

13. Course Evaluation

Class attendance	5 %
Assignment and/or quiz	10%
Midterm exam.	30%
Final exam.	40%
Term Project	15%

14. References

1. Problem solving and program design in C, Hanly and Koffman, Addison-Wesley, 2004
2. Fundamentals of Computing I C++ Edition, Allen B. Tucker et al., McGrawHill
3. Schaum's outlines of programming with C++, John R. Hubbard, McGrawHill
4. Discovering computers 2005, Concept for a connected world, Garry B.Shelly, Thomas J. Cashman, Misty E. Vermaat, Tim J. Walker, Thomson Learning

15. Instructors

Mr.Poramin Bheganan

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