Course Syllabus

1. **Program of Study**   Bachelor of Science (Computer Science)

    Faculty/Institute/College   Mahidol University International College

2. **Course Code** ICCS414   **Course Title**   Information Storage and
                                                       Retrieval

3. **Number of Credits**   4(Lecture/Lab) (4-0)

4. **Prerequisite(s)**   ICCS 207, ICCS 321

5. **Type of Course**   Elective

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

7. **Course Description**

        To deal with the automated storage and retrieval of documents, computer scientists need to use the concept called *information retrieval* (IR). Information Retrieval systems are deployed in university, company, and also libraries or any fields that depends on documents to do its work can benefit from Information Retrieval techniques.

        The goal of this course is aimed to analyze the advanced data structures, file structure databases. Concepts of key decoding by tree and Rainzd techniques as well as Document retrieval and question and answering systems will also be discussed in the class. Furthermore, algorithms and techniques for automatic classification and storage of documents and algorithms of Information Retrieval must be instructed in the class. Relevant empirical studies which compare algorithms and data structures are also included. Students are also able to have practical exercises for implementing of such algorithms.

8. **Course Objective(s)**

    1. To be able to understand concepts of Information retrieval systems used widely from spam filters to cross lingual document retrieval systems

    2. To be able to examine information retrieval systems in their design

    3. To be able to understand underlying models and algorithms, and methods for assessing information retrieval systems' performance.

    4. To be able to criticize selected applications rely on information retrieval including information extraction and text mining.

9. Course Outline

Week	Lecture Topic	Hour
1	Course Outline, File Structures	4
2	Inverted Files, Signature Files	4
3	PAT trees and PAT arrays	4
4	Term and Query Operations	4
5	Lexical Analysis and Stoplists	4
6	Stemming Algorithms, Thesaurus Construction	4
7	String Searching Algorithms and Relevance Feedback	4
8	Document Operations: Boolean Operations	4
9	Hashing Algorithms	4
10	Ranking Algorithms	4
11	Clustering Algorithms	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

Mid-Term Exam	25 %
Final Exam	40 %
Term Project	25 %
Assignment and/or quiz	10 %

14. References
W. B. Frakes and R. Baeza-Yates (Eds.), <u>Information Retrieval: Data Structures & Algorithms</u>, Prentice-Hall

15. Instructors
Mr.Poramin Bheganan