



# UNIVERSITAS GADJAH MADA

Faculty of Mathematics and Natural Sciences

Department of Computer Science and Electronics

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## Doctoral Programme of Computer Science

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Module name : **INFORMATION RETRIEVAL**

Module level, if applicable : **DOCTORAL**

Code, if applicable : MII7570

Semester(s) in which the module is taught : 1 (Odd)

Person responsible for the module : Drs. Edi Winarko, M.Sc., Ph.D.

Lecturer(s) : Drs. Edi Winarko, M.Sc., Ph.D.

Language : Indonesia

Relation to curriculum : Doctoral degree program, compulsory, 1<sup>st</sup> or 2<sup>nd</sup> semester

Credit points : 3

Type of teaching, contact hours :

Workload : 1. Lectures: 3 x 50 = 150 minutes per week.  
2. Private study, Assignment: 3 x 50 = 150 minutes per week

Requirements according to the examination regulations : There is no exam, but a student must have attended at least 75% of the lectures to be eligible for grading

Recommended prerequisite : -

Module objectives/ intended learning outcomes : After completing this module, a student is expected to:  
CO1: Be able to explain the architecture of Information Retrieval System.  
CO2: Be able to explain Information Retrieval System components: indexing and query components.  
CO3: Be able to explain state of the art methods used in student's research area.  
CO4: Be able to do literature survey on the methods related to the student's research area.  
CO5: Be able to write survey paper about methods related to the student's research area.

Content : 1. Architecture of information retrieval system  
2. Data acquisition, data transformation, indexing, query processing, query result ranking  
3. Similarity (neural) search

	4. Data exploration and data Preparation 5. Survey paper of state of the art methods related to student's research
Study and examination requirements and forms of examination	: The evaluation is based on: student's attendance, weekly assignment, and a draft article for publication
Media employed	: e-learning Platform, LCD, website, You tube video
Reading List	: 1. Introduction to information retrieval, Christopher D. Manning, Prabhakar Raghavan, Hinrich Schultze, 2009. 2. Search Engines: Information Retrieval in Practice, Bruce Croft, Donald Metzler, and Trevor Strotman, Addison-Wesley, 2010. 3. Journal and conference papers.

### The Mapping of COs to PLOs

COs	PLOs							
	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7	PLO8
CO1								
CO2								
CO3								
CO4								
CO5								

### The PLO of DP-CS

PLO	Knowledge Area	PLO Description
<b>PLO1</b>	[Values and principles]	A graduate should be devoted to God Almighty, uphold the humanity values, internalize academic values and ethics, responsible in working around expertise independently.
<b>Managerial Capability</b>		
<b>PLO2</b>	[Professional attitudes]	A graduate should have good interpersonal skills; able to work together within the organization, both as a leader and a member; able to be the initiator; able to manage and delegate tasks; and have a sense of responsibility for their own work as well as take responsibility for the achievement of the organization's work.
<b>PLO3</b>	[Communication skills]	A graduate should be able to communicate effectively and efficiently with stakeholders from various backgrounds; use English well; and able to write and present scientific papers correctly and well.
<b>PLO4</b>	[Life-long learning]	A graduate should be up to date with the state-of-the-art especially in computer science field, able to take parts in the development of computer science field that is engaged in and relate it to other fields throughout life.
<b>Working Capability</b>		

<b>PLO5</b>	[Problem-solving and Scientific skills]	A graduate should be able to analyse science and technology problems in the computer science field, develop alternative solutions through intra disciplinary, interdisciplinary, and trans disciplinary approaches to produce innovative, original, and tested works.
<b>PLO6</b>	[Ability to formulate and do research]	A graduate should be able to formulate research problems through critical, exploratory, and innovative studies both independently and in groups of computer science field that is engaged in and present research results in a scientific paper at regional or international level.
<b>Mastering Knowledge</b>		
<b>PLO7</b>	[Fundamental knowledge]	A graduate should be able to develop knowledge in the field of computer science that is engaged, which includes abstraction, complexity, evolution and philosophy of changes or developments in the field of science.
<b>PLO8</b>	[Applied knowledge]	A graduate should be able to develop theoretical, philosophical, and applied concepts in the field of computer science that is engaged in, and to represent them in a structured and systematic manner.