



UNIVERSITAS GADJAH MADA

Faculty of Mathematics and Natural Sciences

Department of Computer Science and Electronics

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Bachelor in Computer Science

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MODULE HANDBOOK

Module name	Semantic Web
Module level	Undergraduate
Code	MII-3502
Courses (if applicable)	Mobile Application Development
Semester	Odd
Contact person	Dr. Tech. Khabib Mustofa, S.Si., M.Kom
Lecturer	Dr. Tech. Khabib Mustofa, S.Si., M.Kom Anny Kartikasari, M.Sc., Ph.D.
Language	Bahasa Indonesia
Relation to curriculum	1. Undergraduate degree program, compulsory, 5th semester. 2. International undergraduate program, compulsory, 5th semester.
Type of teaching, contact hours	1. Undergraduate degree program: lectures, < 60 students, 2. International undergraduate program: lectures, < 30 students.
Workload	1. Lectures: 3 x 50 = 150 minutes (2 hours 30 menit) per week. 2. Exercises and Assignments: 3 x 60 = 180 minutes (3 hours) per week. 3. Private study: 3 x 60 = 180 minutes (3 hours) per week.
Credit points	3 credit points (sks).
Requirements according to the Examination regulations	A student must have attended at least 75% of the lectures to sit in the exams.
Recommended prerequisites	Discrete Mathematics
Learning outcomes (course outcomes) and their corresponding PLOs	After completing this module, a student is expected to: CO1 be able to understand and explain the background and concepts in the semantic web architecture. CO2 be able to understand and explain the triple RDF model and the concept of RDF graph-based data representation. CO3 be able to understand, explain, and model data/information/ knowledge by utilizing semantic web language/technology (ontology, RDF, RDF(S), OWL). CO4 be able to understand, re-explain and perform data search either through basic queries, or inference by using Rule language. CO5 be able to develop basic applications with a semantic web platform

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Contents	<p>(a) Semantic Web Concepts, Technologies and Architecture</p> <p>(b) XML and Resource Description Framework (RDF)</p> <p>(c) RDF Schema for formal semantic representation</p> <p>(d) Web Ontology Language (OWL) as standard language</p> <p>(e) Ontology, Development and Utilization with Protege</p> <p>(f) SPARQL and other RDF based Query languages bahasa</p> <p>(g) Semantic Web and Description Logic</p> <p>(h) Rule Language and inference</p> <p>(i) Semantic Web technology-based applications</p>																																																	
Study and examination requirements and forms of examination	<p>The evaluation is done in 3 forms, namely:</p> <ol style="list-style-type: none"> 1. Trial/Exam, either midterm or semester exam, 2. Four tasks: two individual tasks, two group tasks; including individual or group assignments to be completed within a certain timeframe, and team project 3. Two quizzes, held on face-to-face, once before midterm exam and once after midterm exam, with a short answer form. <p>Assessment is done using benchmark assessment, with the aim of measuring the level of student understanding related to the target and class rank.</p>																																																	
Media employed	LCD, blackboard, and websites.																																																	
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Reading List	<ol style="list-style-type: none"> 1. Antoniou, G. and Harmelen, F. 2008 , A Semantic Web Primer, second edition, The MIT Press, Cambridge, Massachusetts, London, England 2. Allemang,D. and Hendler,J., 2011, Semantic Web for the Working Ontologist: Effective Modeling in RDFS and OWL, Elsevier 3. Mika, P., 2007, Social Networks and he SemanticWeb, Springer 4. Segaran, T., Evans, C. and Taylor, J., 2009, Programming The Semantic web, O'Reily Media Inc. 5. BERNERS-LEE, T.,HENDLER,J. and LASSILA, O., 2002, The Semantic web, Scientific America 																																																	

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