UNDERGRADUATE PROGRAM IN COMPUTER SCIENCE
DEPARTMENT OF COMPUTER SCIENCE AND ELECTRONICS
FACULTY OF MATHEMATICS AND NATURAL SCIENCES
UNIVERSITAS GADJAH MADA

Module name	**Cryptography and Network Security**	
Module level	Undergraduate	
Code	MII-3601	
Courses (if applicable)	Cryptography and Network Security	
Semester	Fall (Gasal)	
Contact person	Anny Kartika Sari, M.Sc., Ph.D.	
Lecturer	Anny Kartika Sari, M.Sc., Ph.D. Lukman Heryawan, M.Kom.	
Language	Bahasa Indonesia and English	
Relation to curriculum	Undergraduate degree program, mandatory, 5th semester.	
Type of teaching, contact hours	Lectures, < 60 students, regular: Mondays, 10.30-13.00, international: Thursdays, 10.30-13.00.	
Workload	1. Lectures: 3 x 50 = 150 minutes (2.5 hours) 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.	
Mandatory prerequisites	● Discrete Mathematics ● Computer Networks	
Learning outcomes and their corresponding PLOs	After completing this module, a student is expected to: CO-1: understand and are able to explain the basic concepts of data ciphers and the use of cipher algorithms in data security systems. CO-2: understand and are able to explain classical cipher algorithms. CO-3: understand and are able to explain symmetric cipher algorithms. CO-4: understand and are able to explain asymmetric cipher algorithms. CO-5: understand the basic of network security. CO-6: understand the basic of internet security.	 PLO2 PLO3 PLO3 PLO3 PLO3 PLO4
Content	This course provides the students with the knowledge of cipher algorithms and network security, including symmetric chipper, asymmetric chipper, cryptographic data integrity algorithms and data and internet security.	
Study and examination requirements and forms of examination	● In-class exercises ● Assignment 1, 2, 3, 4 ● Mid-term examination ● Final examination	
Media employed	LCD, whiteboard, websites (eLisa).	

Assessments and Evaluation	CO-1: Question no 1 in midterm exam (10%) CO-2: Assignment 1 (5%) Question 2 in mid term exam (10%) CO-3: Assignment 2 (5%) Question 3 in mid term exam (10%) Question 4 in mid term exam (10%) CO-4: Question 1 in final exam (10%) Question 2 in final exam (10%) CO-5: Assignment 3 (5%) Question 3 in final exam (10%) CO-6: Assignment 4 (5%) Question 4 in final exam (10%)
Reading List	Stallings, W., Cryptography and Network Security: Principles and Practice, 5th Edition, Prentice Hall, 2011. Stallings, W., Network Security Essentials: Applications and Standards, 4th Edition, Prentice Hall, 2011.