UNIVERSITAS MATARAM
(University of Mataram)
FAKULTAS TEKNIK
(Faculty of Engineering)
PROGRAM STUDI TEKNIK INFORMATIKA
(Department of Informatics Engineering)

MODULE HANDBOOK DESCRIPTION

Blockchain (P22B04)

Module designation	Blockchain
Semester(s) in which the module is taught	*8 / fourth year*
Person responsible for the module	*Heri Wijayanto ST MT Ph.D*
Language	*Indonesian*
Relation to curriculum	*Electives*
Teaching methods	*Lectures, Discussions, Project*
Workload (incl. contact hours, self-study hours)	Contact Hours every week, each week of the 16 weeks/semester including Evaluation 2 x 50 minutes lecturer/week 2 x 60 minutes class exercise/week - Self Study hours = 120 minutes/week Total workload 340 minutes/week
Credit points	*2 (~ 3,2 ECTS)*
Required and recommended prerequisites for joining the module	Big Data

Module objectives/intended learning outcomes	The main objective of PR courses is to provide students with knowledge, simulation techniques, application techniques, and analysis of a physical object/data/event in one or more categories. The learning outcomes of the BlockChain course are: 1. Be able to differentiate between the centralized and distributed trust system 2. Be able to simulate the simple calculation of public key cryptography, and digital signature 3. Be able to simulate the hash function and basic blockchain 4. Be able to use Ethereum network 5. Be able to use Truffle framework 6. Be able to construct Smart Contract
Content	This course provides students with knowledge, design, and analysis about the pattern of object/event and how to apply it to solve certain cases. This course contains important topics: 1. Blockchain technology: Why, What, How 2. Technological and Cryptographic Elements in Blockchain 3. Blockchain Platforms 4. Blockchain Applications 5. The Limitations, Opportunities and Challenges of Blockchain 6. The "Evil Sides" of Blockchain and Legal Regulations for Blockchain
Examination forms	*Assignments, Quiz, Simulation, Project (Oral Presentation)*
Study and examination requirements	*Assignments 10%,* *Quiz 25%,* *Simulation 25%,* *Project 40%*

Reading list	1. Hirsh, S., & Alman, S. W. (2019). Blockchain (Library Futures Series, Book 3). ALA Neal-Schuman.. 2. Bashir, I. (2017). Mastering blockchain. Packt Publishing Ltd. 3. Angraal, S., Krumholz, H. M., & Schulz, W. L. (2017). Blockchain technology: applications in health care. Circulation: Cardiovascular quality and outcomes, 10(9), e003800. 4. Lim, M. K., Li, Y., Wang, C., & Tseng, M. L. (2021). A literature review of blockchain technology applications in supply chains: A comprehensive analysis of themes, methodologies and industries. Computers & Industrial Engineering, 154, 107133. 5. Miraz, M. H., & Ali, M. (2018). Applications of blockchain technology beyond cryptocurrency. arXiv preprint arXiv:1801.03528.