UNIVERSITAS MATARAM

(University of Mataram)

FAKULTAS TEKNIK

(Faculty of Engineering)

PROGRAM STUDI TEKNIK INFORMATIKA

(Department of Informatics Engineering)

MODULE HANDBOOK DESCRIPTION

Parallel Processing (D18KP214)

Module designation	Parallel Processing
Semester(s) in which the module is taught	*4 / fourth year*
Person responsible for the module	*Dr.Eng I Gde Putu Wirarama Wedashwara Wirawan ST., MT.*
Language	*Indonesian*
Relation to curriculum	*Compulsory*
Teaching methods	*Lectures, Discussions, Problem*
Workload (incl. contact hours, self-study hours)	Contact Hours every week, each week of the 16 weeks/semester including Evaluation ● 3 x 50 minutes lecturer/week ● 3 x 60 minutes class exercise/week ● Self Study hours = 120 minutes/week Total workload 340 minutes/week
Credit points	*3 (~ 3,2 ECTS)*
Required and recommended prerequisites for joining the module	-

Module objectives/intended learning outcomes	The main objective of Parallel Processing is ability to uses message passing interface (MPI) programming in general and uses functions in MPI for applications in big data processing and algorithm processing optimization. Problem-based courses to train responsible analysis and programming assignments. Based on these main objectives, the Parallel Processing courses have subject learning outcomes, namely: 1. Able to contribute and be responsible for the task of analysis and programming in the field of parallel processing 2. Able to do message passing interface (MPI) programming in general and use functions in MPI for programming 3. *Able to apply parallel processing in big data processing and algorithm processing optimization.*
Content	Parallel Processing discusses message passing interface (MPI) programming in general and uses functions in MPI for applications in big data processing and algorithm processing optimization. Problem-based courses to train responsible analysis and programming assignments.
Examination forms	*Assignments, Quiz, Simulation, Problem Based Assignments*
Study and examination requirements	*Assignments 10%,* *Quiz 25%,* *Problem based assignments 40%*

Reading list	1. Roosta, S. H. (2012). Parallel processing and parallel algorithms: theory and computation. Springer Science & Business Media. 2. Gropp, W., Gropp, W. D., Lusk, E., Skjellum, A., & Lusk, A. D. F. E. E. (1999). Using MPI: portable parallel programming with the message-passing interface (Vol. 1). MIT press. 3. Singh, A., & Singh, K. K. (2010). Faster and efficient web crawling with parallel migrating web crawler. International Journal of Computer Science Issues, 7(3), 28-32. 4. Esplà-Gomis, M., Forcada, M. L., Ramírez-Sánchez, G., & Hoang, H. (2019). ParaCrawl: Web-scale parallel corpora for the languages of the EU. In Proceedings of Machine Translation Summit XVII Volume 2: Translator, Project and User Tracks (pp. 118-119). 5. Bekkerman, R., Bilenko, M., & Langford, J. (Eds.). (2011). Scaling up machine learning: Parallel and distributed approaches. Cambridge University Press. 6. 6. Upadhyaya, S. R. (2013). Parallel approaches to machine learning—A comprehensive survey. Journal of Parallel and Distributed Computing, 73(3), 284-292.