



Module Description

Module name	Artificial Intelligence and Robotics
Module level, if applicable	Bachelor of Informatics
Code, if applicable	21D12131504
Subtitle, if applicable	-
Course, if applicable	-
Semester(s) in which the module is taught	6 th
Person responsible for the module	Dr. Indrabayu., ST., MT., M.Bus.Sys
Lecturer	<ol style="list-style-type: none"> 1. Dr. Indrabayu., ST., MT., M.Bus.Sys 2. A.Ais Prayogi., ST., M.Eng 3. Anugrayani Bustamin., ST., MT
Language	Indonesian Language [Bahasa Indonesia]
Relation to Curriculum	This course is a compulsory course for the Artificial Intelligence and Robotics research group and is offered in the 6 th semester.
Type of teaching, contact hours	Teaching methods: [group discussion], [project-based learning]. Teaching forms: [lecture], [tutorial], [practicum]. CH : 8.00 - 16.00
Workload	For this course, students are required to meet a minimum of 181.33 hours in one semester, which consist of: <ul style="list-style-type: none"> - 53.33 hours for lecture, - 64 hours for structured assignments, - 64 hours for private study,
Credit points	4 credit points (equivalent with 6.8 ECTS)



<p>Requirements according to the examination regulations</p>	<p>Students have participated in at least 80% of the learning activities (Academic Regulations, Chapter VII)</p>
<p>Recommended prerequisites</p>	<p>Artificial Intelligence, Algorithm and Data Structure</p>
<p>Module objectives/intended learning outcomes</p>	<p>Intended Learning Outcomes (ILO):</p> <p>ILO 4 : Apply the knowledge of computing and other related disciplines to analyze and identify solutions for any computing-based problem. (C)</p> <p>ILO 7 : Perform a logical systematic procedure to solve problems, then communicate their ideas in a convincing and effective manner, either in written or orally, to propose solution. (S)</p> <p>Course Learning Objective (CLO): After completing the Applied Artificial Intelligence Course for one semester, students can innovatively apply the knowledge of Artificial Intelligence. Able to analyze and identify problems involving computational learning, mathematics, and Algorithms and Programming independently in the field of artificial intelligence.</p> <p>Sub CLO : CLO 1 : Students are able to define the Method and Basic Algorithm of Artificial Intelligence CLO 2 : Students are able to define Neural Network, Convolutional Neural Network, and Genetic Algorithm CLO 3 : Students are able to demonstrate the applications of artificial intelligence in Image Processing, Optimization Technology, and Game Technology</p>
<p>Content</p>	<p>Students will learn about :</p> <ol style="list-style-type: none"> 1. Methods and basic Algorithms of Artificial Intelligence 2. Machine Learning 3. Neural Network 4. Convolutional Neural Network 5. Genetic Algorithm 6. Applications of Artificial Intelligence in Image Processing 7. Applications of Artificial Intelligence in Natural Language 8. Applications of Artificial Intelligence in Game Technology 9. Applications of Algorithm Optimization Techniques



<p>Forms of Assessment</p>	<p>Assessment techniques: [observation], [participation], [written test].</p> <p>Assessment forms: [quiz], [midterm exam], [assignment], [presentation].</p> <p>Course exam = 30%, Assignment = 20%, Presentation = 50%</p> <p>CLO 1 => ILO 2: 20% (Assignment: participation)</p> <p>CLO 2 => ILO 4: 30% (course exam: written test)</p> <p>CLO 3 => ILO 7: 50% (Presentation: observation)</p>
<p>Study and examination requirements and forms of examination</p>	<p>Study and examination requirements:</p> <ul style="list-style-type: none"> - Students must attend 15 minutes before the class starts. - Students must switch off all electronic devices. - Students must inform the lecturer if they will not attend the class due to sickness, etc. - Students must submit all class assignments before the deadline. - Students must attend the exam to get a final grade. <p>Form of examination:</p> <p>Presentation</p>
<p>Media employed</p>	<p>Video conference, slide presentation, Learning Management System (LMS)</p>
<p>Reading list</p>	<p>Main :</p> <ol style="list-style-type: none"> 1. Bishop, C.M., <i>Pattern Recognition and Machine Learning</i>, Springer: 2006. 2. Suyanto, <i>Algoritma Genetika dalam Matlab</i>, Andi Publisher, 2005