



Natural Language Processing

Module name	Natural Language Programming
Module level, if applicable	Bachelor of Informatics
Code, if applicable	21D12142103
Subtitle, if applicable	-
Course, if applicable	
Semester(s) in which the module is taught	6 th or 7 th
Person responsible for the module	1. Dr. Amil Ahmad Ilham., ST., M.IT
Lecturer	1. Dr. Amil Ahmad Ilham., ST., M.IT 2. Anugrayani Bustamin., ST., MT
Language	Indonesian Language [Bahasa Indonesia]
Relation to Curriculum	This course is an elective course and offered in the 6 th or 7 th semester.
Type of teaching, contact hours	Teaching methods: [group discussion], [case study], [collaborative learning] Teaching forms: [lecture], [tutorial] CH : 8.00 - 16.00
Workload	For this course, students are required to meet a minimum of 136.00 hours in one semester, which consist of: - 40.00 hours for lecture, - 48.00 hours for structured assignments, - 48.00 hours for private study
Credit points	3 credit points (equivalent with 5.1 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; Language Theory and Automata</p>
<p>Module objectives/intended learning outcomes</p>	<p>After completing the course, Students are able:</p> <p>Intended Learning Outcomes (ILO):</p> <p>ILO 3: Apply the knowledge of computing and other related disciplines to analyse and identify solutions for any computing-based problem</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 solutions.</p> <p>Course Learning Objective (CLO): After attending the Natural Language Processing course for one semester, students can apply basic knowledge and understanding of the latest Natural Language Processing concepts and techniques and knowledge of the limitations of these techniques.</p> <p>Sub CLO :</p> <p>ILO 3 → CLO 1: Students are able to understand the fundamentals concept and basic technique of NLP CLO2: Students are able to describe and apply core concepts and methods from various disciplines in Linguistics (including morphology, syntax, semantics, and pragmatics) to natural language processing.</p> <p>ILO 7 → CLO 3: Students are present to categorize various NLP tools as rule-based, statistical, or machine learning and compare the advantages of and disadvantages of each strategy.</p>
<p>Content</p>	<p>Students will learn about :</p>



	<ol style="list-style-type: none"> 1. Introduction of NLP 2. N-gram Language Models 3. part of Speech Tagging and Sequence Labelling 4. LSTM RNN 5. Syntactic parsing 6. Semantic Analysis 7. Information Extraction 8. Machine Translation
Forms of Assessment	<p>Assessment techniques: [observation], [participation], [written test].</p> <p>Assessment forms: [final term exam], [assignment].</p> <p>CLO 1 --> ILO 3 Mid Exam (written test) : 40%</p> <p>CLO 2: ILO 3 Assignment(participation): 30%</p> <p>CLO 3: ILO 7 Assignment(participation) : 30%</p>
Study and examination requirements and forms of examination	<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 the final grade. <p>Form of examination: Written exam:</p>
Media employed	Video conference, slide presentation, Learning Management System (LMS)
Reading list	<p>Main :</p> <ol style="list-style-type: none"> 1. Daniel Jurafsky, Daniel and James H. Martin, 2000, Speech and Language Processing, Prentice-Hall. 2. Dale, Robert, Hermann Moisl and Harold Somers, eds., 2000, Handbook of Natural Language Processing. 3. Iwanska , Lucja M. and Stuart C. Shapiro, eds., 2000, Natural Language Processing and Knowledge Representation, MIT Press.



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