



## Regression Analysis

<b>Module name</b>	Course Module
<b>Module level</b>	Undergraduate Programme
<b>Code, if applicable</b>	3115-213-3
<b>Sub-title, if applicable</b>	-
<b>Courses, if applicable</b>	Regression Analysis
<b>Semester(s) in which the module is taught</b>	Semester 5, 6, or 7
<b>Person responsible for the module</b>	Lecturer of course
<b>Lecturer(s)</b>	13. Dra. Widyanti Rahayu, M.Si. 14. Qorry Meidianingsih, M.Si.
<b>Language</b>	Bahasa Indonesia
<b>Relation to curriculum</b>	This course is an elective course and is offered starting in semester 5.
<b>Type of teaching, contact hours</b>	Teaching methods used in this course are: <ul style="list-style-type: none"> <li>- Lecture (i.e. presentation of lecture material, group discussion, case-based learning)</li> <li>- Structured assignments (case studies)</li> <li>- Project-based Learning</li> </ul> <p>The class size for the lecture is 40 students. Contact hours for lecture is 40 hours.</p>
<b>Workload</b>	Students are required to fulfill a minimum of 136 hours in one semester, which consists of: <ul style="list-style-type: none"> <li>- 40 hours for lecture,</li> <li>- 48 hours for structured assignments,</li> <li>- 48 hours for self-study</li> </ul>
<b>Credit points</b>	4,5 ECTS
<b>Requirements according to the examination Regulations</b>	Students should have attended all lectures and submitted all scheduled individual and group assignments prior to the final examination.
<b>Recommended prerequisites</b>	<ul style="list-style-type: none"> <li>- Linear Algebra</li> <li>- Mathematical Statistics II</li> </ul>



**MINISTRY OF EDUCATION, CULTURE, RESEARCH, AND TECHNOLOGY**  
**UNIVERSITAS NEGERI JAKARTA**  
**FACULTY OF MATHEMATICS AND NATURAL SCIENCE**

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<b>Program intended learning outcomes</b>	<p>Programmes Learning Outcome (PLO) that can be achieved with this course are:</p> <p>PLO 5 : Mastering the theoretical concept of mathematics, including mathematical logic, discrete mathematics, algebra, analysis and geometry, probability, and statistics.</p> <p>PLO 6 : Mastering in modeling mathematical concepts, linear programs, differential equations, dan numerical methods.</p> <p>PLO 7 : Able to conduct, analyze, and apply research outcomes to improve the mathematics learning process.</p> <p>PLO 10 : Able to solve problems in real situations based on knowledge of mathematics education.</p> <p>The Course Learning Outcomes (CLO) to be achieved in this course are:</p> <p>CLO 1 : Mastering basic concepts and principles in regression analysis.</p> <p>CLO 2 : Mastering the basic principles and application of simple linear regression in the field of mathematics education and other fields.</p> <p>CLO 3 : Mastering the basic principles and application of multiple linear regression in the field of mathematics education and other fields.</p> <p>CLO 4 : Diagnosing violations of linear regression assumptions as a means of achieving thorough and informative data analysis.</p> <p>CLO 5 : Mastering the concepts, theories, and applications of various procedures in selecting the best regression model based on certain criteria.</p> <p>CLO 6 : Formulating concepts and theories about the influence of dummy variables in regression.</p> <p>The relationship between PLO and CLO in this course is described as follows.</p> <table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th rowspan="2" style="width: 10%;">CLO</th> <th colspan="4" style="width: 90%;">PLO</th> </tr> <tr> <th style="width: 22.5%;">5</th> <th style="width: 22.5%;">6</th> <th style="width: 22.5%;">7</th> <th style="width: 22.5%;">10</th> </tr> </thead> <tbody> <tr> <td>1</td> <td style="background-color: #cccccc;"></td> <td></td> <td></td> <td></td> </tr> <tr> <td>2</td> <td style="background-color: #cccccc;"></td> <td style="background-color: #cccccc;"></td> <td></td> <td></td> </tr> <tr> <td>3</td> <td style="background-color: #cccccc;"></td> <td style="background-color: #cccccc;"></td> <td style="background-color: #cccccc;"></td> <td style="background-color: #cccccc;"></td> </tr> <tr> <td>4</td> <td style="background-color: #cccccc;"></td> <td></td> <td style="background-color: #cccccc;"></td> <td></td> </tr> <tr> <td>5</td> <td style="background-color: #cccccc;"></td> <td></td> <td style="background-color: #cccccc;"></td> <td style="background-color: #cccccc;"></td> </tr> <tr> <td>6</td> <td style="background-color: #cccccc;"></td> <td></td> <td style="background-color: #cccccc;"></td> <td style="background-color: #cccccc;"></td> </tr> </tbody> </table>	CLO	PLO				5	6	7	10	1					2					3					4					5					6				
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<b>Content</b>	<p>Students will learn about:</p> <ol style="list-style-type: none"> <li>31. Introduction to Regression Analysis</li> <li>32. Simple Linear Regression</li> <li>33. Multiple Linear Regression</li> <li>34. Regression Diagnostics</li> <li>35. Selection of the Best Regression Model</li> <li>36. Regression with Qualitative Predictor Variables</li> </ol>
<b>Forms of Assessment</b>	<p>The components of assessment in learning consist of assignments (30%), mid-exams (35%), and final exams (35%).</p>
<b>Study and examination requirements and forms of examination</b>	<ul style="list-style-type: none"> <li>• Study and examination requirements:             <ol style="list-style-type: none"> <li>41. Students must be present 15 minutes before the lecture begins.</li> <li>42. Students who do not attend more than 20% of the total meeting are considered failed in this course.</li> <li>43. Students are not allowed to use communication tools for purposes that are not related to learning.</li> <li>44. Students must submit all assignments before the deadline.</li> <li>45. Students must take the exam to get the final grade.</li> </ol> </li> <li>• Form of examination:             <ul style="list-style-type: none"> <li>written examination</li> </ul> </li> </ul>
<b>Media employed</b>	<p>Computer/ personal laptop, internet, LCD, whiteboard, online learning platforms (Microsoft Teams/ Zoom, LMS), Microsoft Excel, and Microsoft Power Point.</p>
<b>Reading list</b>	<p>References:</p> <ol style="list-style-type: none"> <li>16. Chatterjee, Samprit &amp; Hadi, S. Ali. 2006. <i>Regression Analysis by Example</i>. Fourth Edition. Canada: John Wiley.</li> <li>17. Draper &amp; Smith. <i>Applied Regression Analysis</i>, John Wiley &amp; sons inc., NY.</li> <li>18. Myers, H. Raymond. 1990. <i>Classical and Modern Regression with Applications</i>. Second Edition. Boston: PWS-KENT Publishing Company.</li> </ol>