

Module designation	<i>Survey and Experimental Design</i>
Semester(s) in which the module is taught	<i>3<sup>th</sup></i>
Person responsible for the module	<i>Dr.Ir.Paul Benyamin Timotiwu,M.S.</i>
Language	<i>Indonesian language</i>
Relation to curriculum	<i>Compulsory</i>
Teaching methods	<i>Lectures (100 minutes) Practicum sessions (170 minutes)</i>
Workload (incl. contact hours, self-study hours)	<i>Contact hours : 14 weeks x 100 minutes Structured learning: 14 weeks x 120 minutes Independent study: 14 weeks x 120 minutes Practicum sessions: 14 weeks x 170 minutes</i>
Credit points	<i>3 (2-1) CP or 4.76 (ECTS) ((14 weeks x 100 minutes) + (14 weeks x 120 minutes) + (14 weeks x 120 minutes) + (14 weeks x 170 minutes)) : 60 minutes/hour = 119 hours : 25 study hours/ECTS = 4.76 (ECTS)</i>
Required and recommended prerequisites for joining the module	<i>Completion of course: Statistics for Agriculture</i>
Module objectives/intended learning outcomes	<ul style="list-style-type: none"> <li>- <i>Students are able to analyze and interpret data and apply logical, critical, and systematic thinking by avoiding plagiarism</i></li> <li>- <i>Students are able to assess and develop knowledge of science and technology by paying attention to the humanities and scientific ethics, able to work in a collective collegial team, and being a motivator in society</i></li> <li>- <i>Students are able to identify, formulate, solve problems, and apply plant science, plant protection, soil science, socio-economic agriculture, and plant production engineering principles that are oriented towards good agricultural practices (GAP).</i></li> </ul>

Content	<p><i>The Survey and Experimental Design course is a 3 (2-1) credit course. This course contains studies on: the main principles in designing experiments, explaining the advantages and disadvantages of each form of experimental design (RCD, RBD, Latin Square Design, Factorial in RCD, Factorial in RBD, Split Plot Design, and Strip Plot Design), explains the steps that necessary in determining an experimental design to be used, estimation the mean of each treatment, the significance test between treatments (LSD, DNMRT, HSD, SNK, SCHEEFFEE, and Dunnett) or between treatment groups (Box and Whisker Plot) and contrast tests (Orthogonal Contrast and Polynomials), and analysis of variance. Lost data &amp; data transformation, quadratic regression correlation, regression equation, graph and the analysis. Also equipped with survey research principles: essence scientific research, problem formulation, research variables, literature review, research hypothesis, research design, research population and sample, research instruments, data analysis.</i></p>
Examination forms	<p><i>oral presentation, essay</i></p>
Study and examination requirements	<p><i>Participants are evaluated based on their performance in class (lectures) (70%) and lab (practicum) (30%).</i></p> <p><i>Performance in theory (100%):</i>  <i>Mid Exam (20%)</i>  <i>Final Exam (20%)</i>  <i>Assignments (40%)</i>  <i>Class participation (10%)</i>  <i>Individual quiz (10%)</i></p> <p><i>Performance in practicum (100%):</i>  <i>Practicum exam (30%)</i>  <i>Pre-test or post-test (10%)</i>  <i>Experiment reports (60%)</i></p>
Reading list	<ol style="list-style-type: none"> <li><i>1. Steel, R.G.D., Torrie, J.H. and Dickey, D.A. (1997) Principles and Procedures of Statistics: A Biometrical Approach. 3rd Edition, McGraw-Hill, New York.</i></li> <li><i>2. Gomez, K.A. and A.A. Gomez, (1984). Statistical procedures for agricultural research (2 ed.). John Wiley and Sons, NewYork,</i></li> <li><i>3. Susilo, F.X. dan P.B. Timotiwu. (2021). Penggunaan Regresi untuk Analisis Data Riset Pertanian dan Biologi. Edisi Revisi. Penerbit AURA.Bandar Lampung</i></li> <li><i>4. Ryan, T. P., &amp; Morgan, J. P. (2007). Modern experimental design. Journal of Statistical Theory and Practice, 1(3-4), 501-506.</i></li> <li><i>5. Tabachnick, B. G., &amp; Fidell, L. S. (2007). Experimental designs using ANOVA (Vol. 724). Belmont, CA: Thomson/Brooks/Cole..</i></li> </ol>