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|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | <p style="text-align: center;"><b>Module Description/Course Syllabi</b></p> <p>Study Programme : Magister of Soil Science<br/> Department of Soil Science and Land Resources<br/> Faculty of Agriculture Universitas Andalas</p> |
| <b>1.Course number and name</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                  |
| MIT 82110 Land Evaluation and Suitability                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                  |
| <b>2.Credits and contact hours/Number of ECTS credits allocated</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                  |
| 3 scs (3-0) / 5,739                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                  |
| <b>3.Instructors and course coordinator</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                  |
| 1. Prof. Dr. Ir. Dian Fiantis, MSc;<br>2. Prof. Dr. Ir. Azwar Rasyidin, M Agr Sc;<br>3. Dr. Juniarti, SP, MP                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                  |
| <b>4.Text book, title, outhor, and year</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                  |
| 1. Verheye, W. H., Koohafkan, P., Nactergaele, F. <a href="#">The Fao Guideline for Land Evaluation</a> . UNESCO-EOLSS.<br>2. Alan Wild · 1993. Soils and the Environment<br>3. Constantini, E. A. C. 2009. <a href="#">Manual of Methods for Soil and Land Evaluation</a> .Science Publishers. 570 p.<br>4. Deckers, J., O. Spaargaren, S. Dondeyne. 2005. <a href="#">Soil Survey as a BasisforLand Evaluation</a> . Encyclopedia of Life Support System (EOLSS).<br>5. de la Rosa D., Van Diepen, C. A. 2002. <a href="#">Qualitative and Quantitative Land Evaluation</a> .<br>6. Verdoodt, A., Van Ranst, E., Van Averbeke, W. 2003. <a href="#">Modelling crop production potentials for yield cap analysis under semiarid conditions in Guquka, South Africa</a> . Soil Use and Management 19. 372-380.<br>7. Willy H. Verheye. 2009. <a href="#">Encyclopedia of Land Use, Land Cover and Soil Sciences</a> . EOLSSPublications, 1322 pSys, C.,<br>8. Van Ranst, E., J. Dibaveye. 1991. Land Evaluation Part I, II and III.Agricultural Publications No. 7. General Administration for Development Cooperation. Brussels – Belgium. 733 p.<br>9. Van Ranst, E., A. Verdoot. 2005. Land Evaluation, Part I, II and III. International Centre for Physical Land Resources Universiteit Gent, Gent – Belgium. 550 p. |                                                                                                                                                                                                                                  |
| <b>5. Specific course information</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                  |
| <b>A. Brief description of the content of the course (catalog description)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                  |
| This course discusses the importance of land survey and mapping in relation to land use planning; explanation of soil characteristics and the differences due to the influence ofsoil formation factors; methods of land survey; interpretation of survey data for land                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                  |
| suitability, capability, and for irrigation, as well as for non- agricultural use; use of computer                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                  |

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| in creating land survey and suitability as well as agricultural production potential modeling.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>B. Course Content</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <ol style="list-style-type: none"> <li>1 Definition and role of Evaluation of Land Suitability Influencing factors, Evaluation of Land Suitability, History of Evaluation of Land Suitability</li> <li>2 Land use planning: project identification, phases and stages of land use planning,</li> <li>3 Land resources, climate, vegetation, hydrology and water, landform, soil</li> <li>4 Evaluation of climate suitability according to Papadakis, USDA, parametric system</li> <li>5 Evaluation of land characteristics and land quality: limited approach and parametric approach</li> <li>6 Plant production, minimum climate data, photosynthesis and plant adaptation, plant growth models (FAO and Wageningen)</li> <li>7 Rainfall (predicted rain, effective rain), evapotranspiration, maximum plant evapotranspiration, actual evapotranspiration, water use efficiency</li> <li>8 Determination of planting start and period, crop coefficient, harvest response factor, crop water requirement for maximum yield</li> <li>9 The potential for crop production based on solar radiation, water-stress conditions, land productivity potential</li> <li>10 Land evaluation method based on specific plant needs, FAO land suitability classification</li> <li>11 Land evaluation method for irrigated land.</li> <li>12 Classification of land capability for the tropics, approaches, land properties and characteristics, land capability index, parametric approach</li> <li>13 Plant growth agro-ecological zone</li> </ol> <p>Land evaluation application based on visual basic, web and android</p> |
| <b>C. Semester when the course unit is delivered</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Even Semester                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>D. Mode of delivery (face-to-face, distance learning)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Face to face                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>6. Intended Learning Outcomes (CPL)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <p><b>ILO 2</b> : An ability to classify soil, to evaluate land capability and suitability, as well as to determine the alternative utilization for sustainable agriculture and environment</p> <p><b>PI 2</b> : An ability to evaluate soil capability</p> <p><b>PI 3</b> : An ability to determine suitable land use management</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <p><b>ILO 3</b> : An ability to use technology in identifying and solving problems of soil, land resource, environment problems independently, eligibly, and accurately</p> <p><b>PI 2</b> : An ability to work independently in determining soil properties</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>7. Course Learning Outcomes (CPMK) ex. The student will be able to explain the significance of current research about a particular topic.</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| A. Students will be able to use soil data to evaluate soil capability and land suitability                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |

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| B. Students will be able to determine suitable land management to reach sustainable agriculture and environment                                                                                                                                                                                                                             |
| C. Students will be able to analyze soil independently either at laboratory or at field site                                                                                                                                                                                                                                                |
| <b>8. Learning and teaching methods</b>                                                                                                                                                                                                                                                                                                     |
| Cooperative and Case Base Method                                                                                                                                                                                                                                                                                                            |
| <b>9. Language of instruction</b>                                                                                                                                                                                                                                                                                                           |
| Indonesia and English (English Class)                                                                                                                                                                                                                                                                                                       |
| <b>10. Assessment methods and criteria</b>                                                                                                                                                                                                                                                                                                  |
| <p>Summative Assessment :</p> <ol style="list-style-type: none"> <li>1. Tasks : 5%</li> <li>2. Quiz : 5 %</li> <li>3. Mid Semester : 25%</li> <li>4. Final Semester : 25%</li> <li>5. Practicum :30%</li> <li>6. Attendance : 5%</li> </ol> <p>Formative Assessment:</p> <ol style="list-style-type: none"> <li>1. Minutes paper</li> </ol> |