



**USK**  
UNIVERSITAS  
SYIAH KUALA

**FACULTY OF AGRICULTURE**  
**DEPARTMENT OF SOIL SCIENCE**

**UNDERGRADUATE PROGRAM**

**MODULE HANDBOOK**

Module designation	Soil Fertility and Fertilization (SSOL2026)
Semester(s) in which the module is taught	4 <sup>th</sup> Semester
Person responsible for the module	Dr. Ir. Muyassir, M.P
Language	Indonesian, English
Relation to curriculum	Compulsory module for Soil Science Department
Teaching methods	Lecture, small group discussion, interactive discussion
Workload (incl. contact hours, self-study hours)	<ul style="list-style-type: none"><li>✓ 100 minutes lecture and discussion per week</li><li>✓ 120 minutes structured tasks per week</li><li>✓ 120 minutes learn to be independent per week</li></ul>
Credit points	2 SKS = 3.2 ECTS
Required and recommended prerequisites for joining the module	-
Module objectives/intended learning outcomes	<ul style="list-style-type: none"><li>✓ Students are able to understand the principles of plant growth and development, as well as the factors that influence them.</li><li>✓ Students can understand the process of nutrient supply and its management technologies, tailored to specific soil characteristics.</li><li>✓ Students can evaluate soil fertility and plant nutrient status using various testing methods.</li><li>✓ Students can classify various types of fertilizers and be skilled in their application to soil and plants.</li></ul>
Content	Soil Fertility (History of soil fertility, concepts of soil fertility, factors affecting plant growth, soil properties related to soil fertility, nutrients and nutrient acquisition, soil acidity and liming, evaluation of soil fertility (soil and plant testing), definitions/understanding of fertilizers, integrated nutrient management, organic matter management, soil fertility management, soil quality, global influences and nutrient pollution.) Prerequisite: Soil Chemistry.
Exams and assessment formats	Assignment, Quiz, Case Method, Midterm exam, Final exam
Study and examination requirements	<ul style="list-style-type: none"><li>✓ Quiz: 12,5%</li><li>✓ Assignment: 12,5%</li><li>✓ Case Method: 60%</li><li>✓ Midterm exam: 7,5%</li><li>✓ Final exam: 7,5%</li></ul>

Reading list	<ol style="list-style-type: none"><li>1. Syekhfani, M. S. (2017). Kesuburan Tanah dan Pemupukan. UB Press.</li><li>2. Suryantini, D. (2020). Kesuburan Tanah dan Strategi Pemupukan. Budi Utama.</li><li>3. Hartatik, W. et al. (2022). Analisis Kesuburan Tanah dan Evaluasi Lahan. BBSDLP.</li><li>4. Marschner, P. (2016). Marschner's Mineral Nutrition of Higher Plants (3rd ed.). Elsevier.</li><li>5. Hartemink, A. E. &amp; Scholten, T. (2018). Soil Fertility Management in Agroecosystems. Springer.</li></ol>
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