

Module Descriptions

A **module** is a self-contained **learning unit** within a higher education program that includes thematically related courses and is assigned a **fixed number of credits**. It follows specific **learning objectives**, includes an **assessment component**, and contributes to achieving the qualifications of a degree program. In some countries, “modules” are also named “courses”.

Please provide a module description for each module. In addition to the compulsory and elective modules, this also includes credited internships and the final thesis.

Please summarize all module descriptions in one document (Module Handbook) and create a table of contents so that the modules can be found easily.

Module designation	<i>Weed Science and Control</i>
Semester(s) in which the module is taught	4
Person responsible for the module	<i>Prof. Dr. Ir. Elkawakib Syam'un, MP.</i>
Language	<i>Bahasa Indonesia</i>
Relation to curriculum	<i>Compulsory / elective / specialisation</i>
Teaching methods	<i>Face-to-face lectures and independent learning</i>
Workload (incl. contact hours, self-study hours)	1. Lectures: $2 \times 50 \times 16 = 1,600$ minutes (26.67 hrs) 2. Structured assignments: (total $2 \times 60 \times 16$) = 1,920 minutes (32 hrs) - Individual assignments: $2 \times 120 \times 3 = 720$ minutes (12 hrs) - Group assignments: $2 \times 120 \times 3 = 720$ minutes (12 hrs) - Quiz: $2 \times 15 \times 8 = 240$ minutes (4 hrs) - Discussion: $2 \times 30 \times 4 = 240$ minutes (4 hrs) 3. Independent study: (total $2 \times 60 \times 16$) = 1,920 minutes (32 hrs) - Accessing SIKOLA, participating in online discussion forums, reading materials, etc. 4. Practicum: (total: $1 \times 170 \times 16$) = 2,720 minutes (45.33 hrs) - Laboratory/field work: $1 \times 170 \times 16 = 2,720$ minutes
Credit points	<i>3 credits equal to 4.86 ECTS</i>
Required and recommended prerequisites for joining the module	-

Module objectives/intended learning outcomes	<i>In terms of:</i> - <i>Students are able to explain the definition of weeds and the losses they cause in crop cultivation.</i> - <i>Students are able to describe the morphological characteristics of weeds.</i> - <i>Students are able to explain the forms of weed association with cultivated plants.</i> - <i>Students are able to calculate the crop competition index and determine the critical period of crop growth.</i> - <i>Students are able to explain various weed control methods across different agroecosystems.</i>
Content	1. <i>Learning contract</i> 2. <i>Definition and concept of weeds</i> 3. <i>Characteristics and classification of weeds</i> 4. <i>Principles of weed ecology and weed dispersal</i> 5. <i>Characteristics of weed seeds and reproduction through vegetative organs</i> 6. <i>Dormancy</i> 7. <i>Germination</i> 8. <i>Amensalism (Competition and Allelopathy) and Parasitism</i> 9. <i>Critical period of crop growth with respect to weed interference</i> 10. <i>Weed control</i>
Examination forms	<i>Quiz, individual assignment, group assignment, discussion</i>
Study and examination requirements	<i>To successfully pass the module, students must attend at least 80% of the classes, complete all assignments and exams, and obtain a final grade of at least 45% (minimum passing grade: D).</i>

Reading list	1. Akobundu, I. O. (1987). <i>Weed Science in the Tropics: Principles and Practices</i>. John Wiley and Sons, New York, NY. 2. Aldrich, R. J. (1984). <i>Weed-Crop Ecology: Principles in Weed Management</i>. Breton Publisher, a Division of Wadsworth, Inc., Belmont. 3. Anderson, W. P. (1983). <i>Weed Science: Principles</i>. West Publishing Co., New York. 4. Alström, S. (1990). <i>Fundamentals of Weed Management in Hot Climate Peasant Agriculture: A Multidisciplinary Study of Principles, Potentials, and Practices Based on Indian and International Weed Science Literature</i>. Crop Production Science, Uppsala. 5. Patterson, D. T. (1982). <i>Comparative Ecophysiology of Weeds and Crops</i>. In S. O. Duke (Ed.), <i>Weed Physiology</i>, Vol. I: <i>Reproduction and Ecophysiology</i> (pp. 101–129). CRC Press, Boca Raton, FL. 6. Syam'un, E. (2012). <i>Weed Science and Characteristics of Weeds</i>. Identitas Press, Hasanuddin University, Makassar. 7. Sweet, R. D., & Minotti, P. L. (1980). <i>Studies in Weed-Crop Competition</i>. In I. O. Akobundu (Ed.), <i>Weeds and Their Control in the Humid and Subhumid Tropics</i> (pp. 252–263). IITA Proceedings Series No. 3, Ibadan, Nigeria. 8. Spitters, C. J. T., & van den Bergh, J. V. (1982). <i>Competition Between Crops and Weeds: A Systems Approach</i>. In W. Holzner (Ed.), <i>Biology and Ecology of Weeds</i> (pp. 137–148). Dr. W. Junk Publishers, The Hague; Boston; London
--------------	---