



## Module Description/Course Syllabi

Study Programme : Magister of Soil Science  
Faculty of Agriculture Universitas  
Andalas

### **1. Course number and name**

MIT 81205 Integrated Watershed Management

### **2. Credits and contact hours/Number of ECTS credits allocated**

3 sks (2-1)

### **3. Instructors and course coordinator**

1. Prof. Dr. Ir. Aprisal, MP; 2. Dr.Ir. Adrinal, MS

### **4. Text book, title, outhor, and year**

1. Agassi, M. 1996. Soil erosion, conservation, and rehabilitation, editor, Marcel Dekker, Inc., New York, NY, (1996), 204 pages
2. Arsyad, S., 2010. Konservasi Tanah dan Air. IPB Press. Bogor
3. Asdak, C. 2010. Hidrologi dan Pengelolaan Daerah Aliran Sungai. Cetakan Kelima (revisi). Gadjah Mada University Press. Yogyakarta.
4. Vijay, S. (1991) Elementary Hydrology Published December 23rd 1991 by Pearson (first published December 13th 1991)

### **5. Specific course information**

#### **A. Brief description of the content of the course (catalog description)**

In this course, students learn about the definition of watersheds, classifying watershed, watershed characteristics, watershed problems and threats, factors affecting water management, predicting watershed damage, analyzing socio-economic influences and the role of institutions and regulations in watershed management, how to observe and formulate watershed problems, find out the solutions and write down a paper as well as presentations and discussions.

<b>B. Course Content</b>	
Week	Course content
1	Introduction, Watershed as an ecosystem
2	Rainfall and the analyses in a watershed
3	Rainfall Interception by several vegetations, and the measurement
4	Infiltration and water absorption in a watershed, the Model and the calculation
5	Runoff, and the models
6	Evapotranspiration, and the calculation models
7-8	Erosion, soil erosion prediction model by water
9	MID TERM Exam
10	Hydrograph and the meaning
11-12	Unit hydrograph, the unit hydrograph models, and Synthetic hydrograph
13	Analyses of soil management and the watershed relationship
14-15	Application of Logical Frame Work Analyses (LFA) Model in designing integrated watershed
16	Final
<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>ILO 2 : An ability to classify soil, to evaluate land capability and suitability, as well as to determine the alternative utilization for sustainable agriculture and environment  PI 3 : An ability to determine suitable land use management</p>	

ILO 3 : An ability to use technology in identifying and solving problems of soil, land resource, environment problems independently, eligibly, and accurately

PI 3 : An ability to conserve soil for sustainable agriculture and environment

**7. Course Learning Outcomes (CPMK) ex. The student will be able to explain the significance of current research about a particular topic.**

7. Students will be able to determine suitable land management to reach sustainable agriculture and environment

3. Students will be able to find out the best method to conserve soil problem for sustainable agriculture and environment

**8. Learning and teaching methods**

Cooperative Learning and Case Base Method

**9. Language of instruction**

Indonesia and English (English Class)

**10. Assessment methods and criteria**

Summative Assessment :

1. Tasks : 5%
2. Quiz : 5 %
3. Mid Semester : 25%
4. Final Semester : 25%
5. Practicum :30%
6. Attendance : 5%

Formative Assessment:

1. Thumb up and thumb down
2. Minutes paper