# Module Description/Course Syllabi



Study Programme : Magister of Soil Science Department of Soil Science and Land Resources

Faculty of Agriculture Universitas Andalas

#### 1. Course number and name

MIT 82108 Integrated Watershed Management

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

3 scs (2-1) /3,925

#### 3. Instructors and course coordinator

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

#### 4. Text book, title, author, and year

- 1. Arsyad, S. (2006). Soil and Water Conservation. IPB Press, Bogor. ISBN: [ISBN].
- 2. Asdak, C. (2010). *Hydrology and Watershed Management*. Gadjah Mada University Press, Yogyakarta. ISBN: [ISBN].
- 3. Agassi, M. (1996). *Soil Erosion, Conservation, and Rehabilitation*. Marcel Dekker Inc., New York. ISBN: [ISBN].
- 4. Vijay, S. (1991). Elementary Hydrology. Pearson. ISBN: [ISBN].

#### 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, classifyingwatershed, 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.** Course Content

Introduction, Watershed as an ecosystem

Rainfall and the analyses in a watershed

Rainfall Interception by several vegetation, and the measurement

Infiltration and water absorption in a watershed, the Model andthe calculation

Runoff, and the models

Evapotranspiration, and the calculation

models Erosion, soil erosion prediction

model by water MID TERM Exam

Hydrograph and the meaning

Unit hydrograph, the unit hydrograph models,

andSynthetichydrograph

Analyses of soil management and the watershed relationship

Application of Logical Frame Work Analyses (LFA) Model in

designing integrated watershed

Final Exam

#### C. Semester when the course unit is delivered

Even Semester

## D. Mode of delivery (face-to-face, distance learning)

Face to face

### 6. Intended Learning Outcomes (CPL)

- **ILO 2 :** An ability to classify soil, to evaluate land capability and suitability, as well as todetermine the alternative utilization for sustainable agriculture and environment
- PI 3 : Anability to determine suitable land use management
- **ILO 3:** An ability to use technology in identifying and solving problems of soil, landresource, 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 explainthe significance of current research about a particular topic.

1. Students will be able to determine suitable land management to reachsustainableagriculture and environment Students will be able to find out the best method to conserve soil problem forsustainableagriculture 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. Minutes paper