

# Syllabus for Bachelor of Agriculture

## AGRICULTURAL ENGINEERING

Subject code: 16AS0205

Subject Name: **Introductory Soil and Water Conservation Engineering**

B. Sc. (Hons.) Agri., **First Year (Sem. - II)**

### Objective:

To create the awareness of the students about soil and water conservation practices.

**Credit Earned:** 1+1= 2 Credit

### Course Outcomes:

After completion of this course, student will be able to:-

1 Find out the best technique for to check the soil and water erosion through various ways.

### Teaching and Evaluation Scheme

Teaching Scheme (hours)		Credits	Theory Marks			Practical Marks		Total Marks
Theory	Practical		ESE (E)	IA	CSE	Viva (V)	Term Work (TW)	
1	2	2	50	30	20	25	25	150

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### Contents:

Unit	Topics	Contact Hours
<b>Theory</b>		
1.	Introduction to soil and water conservation causes of soil erosion.	
2.	Definition and agents of soil erosion, water erosion: Forms of water erosion.	
3.	Gully classification and control measures.	
4.	Soil loss estimation by universal loss soil equation.	
5.	Soil loss measurement techniques, principles of erosion control:	
6.	Introduction to contouring, strip cropping.	
7	Contour bund. Graded bund and bench terracing. Water ways and their design.	
8	Water harvesting and its techniques.	
9	Wind erosion: mechanics of wind erosion, types of soil movement.	
10	Principles of wind erosion and its control measures.	
11	Surveying: Field area calculation. Machineries required for land leveling.	

Unit	Topics	Contact Hours
<b>Practical</b>		
1.	General status of soil conservation in India	
2.	Calculation of erosion index.	
3.	Estimation of soil loss. Measurement of soil loss.	
4.	Preparation of contour maps of grassed water ways.	
5.	Design of contour bunds. Design of graded bunds. Design of bench terracing system.	
6.	Problems on wind erosion.	
7	Water lifting pump capacity, power calculation required.	

**Instructional Method:**

- a. The course delivery method will depend upon the requirement of content and need of students. The teacher in addition to conventional teaching method by white board may also use any of tools such as demonstration, role play, quiz, brain storming, MOOCs *etc.*
- b. The internal evaluation will be done on the basis of continuous evaluation of students in the class-rooms
- c. Practical examination will be conducted at the end of semester for evaluation of performance of students in laboratory
- d. Students will use supplementary resources such as online videos, NPTEL videos, e-courses, Virtual Laboratory.