

**Course Code : AGR 305**

**Course Title : Principles and Practices of Seed Technology**

**Credit Hours : 2(1+1) Full Marks: 50 Theory: 25 Practical: 25**

## **OBJECTIVES**

Upon the completion of this course, the student will be able to know, skills and basic concepts of seed production technologies of some important crops.

## **I. SYLLABUS**

Seed as basic unit of crop production, seed, fruit, grain, propagating materials; seed development process and factor affecting it, seed dormancy, germination and quality seed and factor affecting it, seed longevity, types of seed and their multiplication techniques, certification and distribution, National and International organization involved in seed, seed law, farmer's seed and Intellectual property right.

## **II. COURSE OUTLINES**

### **A. Course outline**

<b>S. N.</b>	<b>Topics</b>	<b>No. of Lecture</b>
1	Fruits, grains, seed and seed materials	1
2	Seed formation and development	1
3	Factors affecting seed development	1
4	Seed dormancy and methods of breaking it	1
5	Seed germination and its pattern	1
6	Seed vigor and its role in crop establishment	1
7	Quality seed and factors affecting it	1
8	Types of seed and their production	1
9	Seed longevity and causes of seed deterioration	1
10	Harvesting and threshing	1
11	Seed cleaning, drying and storage	1
12	Basic principles of seed production	1
13	Seed certification	1
14	Seed distribution system in Nepal	1
15	International Seed Testing Association and National Seed Law	1
<b>Total</b>		<b>15</b>

## B. Practical

S. N.	Topic	No. of practicals
1	Identification of seeds of various field crops	1
2	Measurements of Agronomical Characteristics of Crop Seeds	1
3	Study of the differences in Agronomical Characteristics of Different Varieties of Rice, Maize, Wheat, Grain Legumes, Oil seeds, Potato and Others crops	6
4	Practice on Seed Purity Test	1
5	Practice on Seed Viability Testing	1
6	Practice on Seed Germination Test in Lab and Field	1
7	Practice on Seed Vigor Testing	1
8	Methods Preparations of Seeds for Planting	1
9	Tour to Seed Processing Plant and Seed Testing Laboratory Hetauda	1
10	Visit to Seed Multiplication Farms of National Maize Development Research Rampur and National Grain Legume Research Station Rampur	1
<b>Total</b>		<b>15</b>

## REFERENCES

Agrawal R. L. 2005. Seed Technology. Oxford and IBH Publishing Co. Pvt. Ltd. New Delhi.

Bhattachan B.K. 2010. Manual of Principles and Practices of Seed Technology.

Bhattachan B.K. 2011. Research Manual of Seed Technology. Mrs. Lekha (Chhetri) Bhattachan.

Copeland L.O. and M.B. McDonald. 1985. Principles of Seed Science and Technology. Burgess publishing Company, Minneapolis, Minnesota USA.

Justice OL and NB Louis. 1978. Principles and Practices of Seed Storage. Agric. Hand Book No 506