

## Syllabus for B.Sc. (Hons) Agriculture Year – III (Sem. VI)

**Subject Code:** 16AS0617

**Subject Short Name:** GPB 6.5

**Subject Name:** Fundamentals of Seed Science & Technology

### Objective:

1. To impart basic and fundamental knowledge on principles and practices seed science and technology
2. To impart practical skills on scientific seed production and post-harvest quality management

**Credits Earned:** 2 Credits (1+1)

**Course Outcomes:** After completion of this course, Students will be able to

- Acquaint with scope and importance of seed technology in agriculture and the role of officials and legislation, seed act and seed order in quality of seed production.
- Develop an understanding of various seed production techniques for different field crops, the importance of maintenance of purity of crop varieties, and factors causing deterioration of variety.
- Execute various phases of seed certification, field inspection, and seed purity testing.
- Analyze the factors related to genetic and physical purity of seed and its health status of seeds of a variety during seed processing

Teaching Scheme (Hours)			Credits	Theory Marks			Tutorial/ Practical Marks		Total Marks
Theory	Tutorial	Practical		ESE (E)	Mid Sem (M)	Progressive Assessment (PA)	Viva (V)	Term work (TW)	
1	0	2	2	40	20	20	10	10	100

### Theory Content:

Unit	Topics	Contact Hours
1	Introduction to seed technology, definition and importance	1
2	Seed quality -definition, characters of good quality seed	1

3	Causes of deterioration of varietal purity and assessment of genetic purity, different classes of seed	1
4	Foundation and certified seed production of important cereals, pulses and oilseed	2
5	Field inspection, importance and procedures	1
6	Post-harvest seed quality management	1
7	Seed processing and seed drying	1
8	Seed treatment- its importance, method of application and seed packing	1
9	Seed storage - general principles, stages and factors affecting seed longevity during storage and Seed health management during storage	2
10	Seed Certification and legislation, Seed Act and Seed Act enforcement and Seed Control Order and New Seed Bill	3
11	Basics of seed quality testing and enhancement techniques	1
	<b>Total</b>	<b>15</b>

### Practical Content:

Unit	Topics	Contact Hours
1	Introduction of Seed and Seed Structure	2
2	Principles and Procedures of Seed sampling	2
3	Principles and Procedures of Physical purity	2
4	Moisture determination test	2
5	Germination test	2
6	Seed and seedling Vigour test	2
7	Seed Viability	2
8	Principles and Procedures of Genetic purity test: Grow out test	2
9	Field inspection	2
10	Seed health test	2
11	Visit to seed production farms, seed testing laboratories and seed processing plant.	2

<b>Total</b>	<b>22</b>
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**Reference Books:**

- Agarwal, R. L. (1995). Seed Technology (2nd edition). Oxford & IBH Publishing Co. Pvt. Ltd., New Delhi, India.
- Khare, D. and Bhale, M. S. (2019). Seed Technology (2nd revised & enlarged edn.), Scientific Publishers, Jodhpur, India.
- Vanangamudi, K. (2014). Seed Technology (An illustrated book), New India Publishing Agency, New Delhi, India.
- McDonald, M. B. Jr and Copeland, L. O. (1997). Seed Production: Principles and Practices. Chapman & Hall Publication, United Kingdom.
- Tunwar, N. S. and Singh, S. N. (1988). Indian Minimum Seed Certification Standards. CSCB, Ministry of Agriculture, New Delhi.

**Suggested Theory distribution:**

The suggested theory distribution as per Bloom’s taxonomy is as per follows. This distribution serves as guidelines for teachers and students to achieve effective teaching-learning process.

Distribution of Theory for course delivery and evaluation					
Remember	Understand	Apply	Analyze	Evaluate	Create
25%	25%	20%	10%	10%	10%

**Instructional Method:**

1. 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.
2. The internal evaluation will be done on the basis of continuous evaluation of students in the class-rooms.
3. Practical examination will be conducted at the end of semester for evaluation of performance of students in laboratory/ field.
4. Students will use supplementary resources such as online videos, NPTEL videos, e-courses, Virtual Laboratory.