**Syllabus for B.Sc. (Hons) Agriculture Year – I (Sem. I)**

**Subject Code:** 16AS0115

**Subject Short Name:** SEC. 1.2

**Subject Name:** Mushroom Production Technology

**Objective:**

- To identify the edible and poisonous mushrooms.
- To learn about medicinal and nutritional value of mushroom.
- To provide hands-on training for mushroom cultivation and its harvesting.
- To learn pests and diseases control, post harvesting management and value addition of mushroom.
- To give the students exposure to the experiences of experts in the field and to functioning mushroom farms.
- To help the students to learn a means of self-employment and income generation.

**Credits Earned:** 2 Credits (0+2)

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

- Understand types (edible & poisonous) of mushrooms and its production.
- Learning cultivation of different edible mushrooms.
- Building knowledge on diseases and pests of mushroom and their management.
- Setup entrepreneurial small-scale units for self-employment.

| 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) | |
| 0 | 0 | 4 | 2 | 0 | 30 | 20 | 25 | 25 | 100 |

**Practical Content:**

| Unit | Topics | Contact Hours |
|---|---|---|
| 1 | Current status and scope of mushroom cultivation in India | **2** |
| 2 | To study edible mushroom, poisonous mushroom and medicinal mushroom | **2** |
| 3 | Nutritional and medicinal value of mushrooms | **2** |
| 4 | Preparation of various types of compost and media which use for cultivation of mushroom and Spawn preparation techniques | **4** |
| 5 | To study the cultivation techniques of *Agaricus* mushroom | **4** |
| 6 | To study the cultivation techniques of *Pleurotus* mushroom | **4** |
| 7 | To study the cultivation techniques of *Calocybe indica* mushroom | **4** |
| 8 | Various requirement for setting up a mushroom cultivation unit | **4** |
| 9 | Entrepreneurship in cultivation of mushroom | **2** |
| 10 | To study common fungal, bacterial, viral and insect born disease of mushroom | **2** |
| 11 | Preparation of value-added products from mushrooms | **6** |
| 12 | Exposure visits to commercial farms | **4** |
| | **Total** | **40** |

**Reference Books:**


- Bahl, N. (2015). Hand Book on Mushroom. Page no. 1-166. Oxford & IBH Publishing Company.
- Russell, S. (2014). The Essential Guide to Cultivating Mushroom. Storey Publishing. North Adams, M.A. 01247.
- Zied, D. C., Gimenez, A. P. (2017) Edible and Medicinal Mushroom page no. 1- 585.John Wiley & Sons Ltd.UK
- Chang, S.T., Miles, P.G. (2004) Mushrooms Cultivation, Nutritional Value, Medicinal effect and Environmental Impact, CRC Press.
- Fletcher, J.T., Gaze, R.H. (2007). Mushroom Pest and Disease Control. CRC Press.
- Ahlawat, O.P., Tewari, R.P. (2007). Cultivation Technology of Paddy Straw Mushroom (*Volvariella volvacea*). Pages 1-44 National Research Center for Mushroom (Indian Council of Agricultural Research) Chambaghat, Solan (HP)

- Rai, R.D., Arumuganathan, Y. (2008). Post Harvest Technology of Mushrooms. National Research Center for Mushroom (Indian Council of Agricultural Research) Chambaghat, Solan (HP)
- Singh, M., Vijay, B., Kamal, S., Wakchaure, G. C. (2011). Mushrooms Cultivation, Marketing and Consumption., Publishers Directorate of Mushroom Research (ICAR) Chambaghat, Solan(HP)


**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.