

Paper Code	Paper Name	Credit	Int. Mark	Ext. Mark
BOT-VAC-401	Mushroom Cultivation	2	50	50

<b>Objective</b>	<ul style="list-style-type: none"> <li>• Enable the students to identify edible and poisonous mushrooms</li> <li>• Provide hands on training for the preparation of bed for mushroom cultivation and spawn production</li> <li>• Give the students exposure to the experiences of experts and functioning mushroom farms</li> <li>• Help the students to learn a means of self employment and income generation</li> </ul>
<b>Outcome</b>	<p>By successfully completing the course, students will be able to:</p> <ul style="list-style-type: none"> <li>• Identify edible types of mushroom</li> <li>• Gain the knowledge of cultivation of different types of edible mushrooms and spawn production</li> <li>• Manage the diseases and pests of mushrooms</li> <li>• Learn a means of self-employment and income generation</li> </ul>

### Detailed Syllabus

#### **Module 1: Mushroom morphology:**

Different parts of a typical mushroom & variations in mushroom morphology. Key to differentiate Edible from Poisonous mushrooms. Biology of Mushrooms: Button, Straw & Oyster- General morphology, distinguishing characteristics, spore germination and life cycle.

#### **Module 2: Nutrient Profile and Health benefits of Mushroom:**

Nutrient Profile of Mushroom: Protein, aminoacids, calorific values, carbohydrates , fats, vitamins & minerals. Therapeutic aspects: Antiviral value, antibacterial effect, antifungal effect and anti-tumour effect.

#### **Module 3: Principles of mushroom cultivation:**

Structure and construction of mushroom house. Sterilization of substrates. Spawn production - culture media preparation- production of pure culture, mother spawn, and multiplication of spawn. Composting technology, mushroom bed preparation. Spawning, spawn running, harvesting. Cultivation of oyster and paddy straw mushroom. Problems in cultivation - diseases, pests and nematodes, weed moulds and their management strategies.

#### **Module 4: Post harvest technology:**

Preservation of mushrooms - freezing, dry freezing, drying, canning, quality assurance and entrepreneurship. Value added products of mushrooms.

**Module 5: Training/ Workshop/ Field visit:**

Sterilization and sanitation of mushroom house, instruments and substrates Preparation of mother culture, inoculation, incubation and spawn production. Cultivation of oyster mushroom using paddy straw/agricultural wastes.

**Reference Book:**

1. Mushroom Cultivation, Tripathi, D.P.(2005) Oxford & IBH Publishing Co. PVT.LTD, New Delhi.
2. Mushroom Production and Processing Technology, Pathak Yadav Gour (2010) Published by Agrobios (India).
3. A hand book of edible mushroom, S.Kannaiyan&K.Ramasamy (1980). Today & Tomorrows printers & publishers, New Delhi
4. Handbook on Mushrooms, Nita Bahl, oxford & IBH Publishing Co.

**Guidelines for**  
**VALUE ADDED COURSES (VACs)**  
**2020-2021**



**Fakir Mohan University**  
**Balasore-756089,Odisha.**

### **1. Contextual relevance of Value added courses(VAC)**

The value added courses(VACs) offered by Fakir Mohan University intends to bridge the gap between the curriculum offered by institution and changing demands of the job market. It makes the curriculum dynamic by adding additional skill component to the existing curriculum and helps to enrich the students' capability and cope with the dynamic environment. This University has introduced VAC from academic session 2020-21 in different domain areas to provide students wider options of choices to enhance their employability.

### **2. Objectives of VACs at Fakir Mohan University**

The objectives of VACs are to

1. To enable students to unleash their potential in the field of their interest.
2. To enhance capability of the students in specific domain area.
3. To meet the requirements of the industry by imparting the skills that enhances employability.
4. To strengthen the students capability for innovation by developing inter-disciplinary orientation.

### **3. Floating of VAC**

The University invites proposal from different departments independently or in association with other departments or industry or any other recognized institute or society to float the VAC in the beginning of the academic session. The proposals is evaluated at PG Council and passed by respective Board of Studies and same is approved by the Academic Council. The courses are e given a proper code and cover those aspects which are not part of the existing curriculum. The courses offered in academic session 2020-21 are listed in Annexure I.

### **4. Duration of the Course and Guideline for Designing the course**

Each course floated is of minimum 30 hrs. duration and extends up to 50 hrs. depending on the rigor of the course. Each course has five module and each module mentions the allotment hours for instructor led training and evaluation hours for both continuous and end-term assessment. Each course clearly mention the course objectives, outcome, pedagogy to be followed and learning materials to be used.

### **5. Guidelines for Conducting the Course**

- The VAC is of 2 credit or 3 credit depending on the hours allotted which should be beyond the total credit requirement prescribed for award of the degree. Each VAC is to be coordinated by a faculty member of the respective department from which the course is floated.
- VAC is conducted beyond regular class hours/during vacation/week end/specific slot allotted time in the time-table for the said purpose.
- VAC can be conducted in off-line/on-line/blended mode depending on suitability and availability of the experts/availability of time-slot.

- VAC is inter-disciplinary that can be also opted by the students of other departments.
- Minimum number of students required for running a VAC is 05 (Five).
- Existing teaching faculty members having expertise in the field/ eminent faculty members of other institutes/industry experts/scientist can be the instructor of the course.
- The students opting for the course is to register through the link created for this purpose to be provided by Chairman PG Council.
- All records of the attendance and assessment are to be maintained by respective course coordinators/HOD and to be sent to the Chairman PG Council.
- The final grade/assessment certificate is to be provided by Controller of Examination.

## 6. Assessment

The assessment constitute two parts. The first part is continuous assessment throughout the course consisting two components and total marks allotted is 50. The second part is end-term assessment consisting of 50 marks to be assessed through two components.

Sl.No.	Continuous Assessment (Components)	Total no.	Mark Allotted	Total Marks
1	MCQ to be administered at the end of the module	05	0.5X10=5	25
2	Assignment(Theory/Lab.)(Based on Individual/Group activities)	05	05	25
Sl.No.	End-Term Assessment(Components)	Total no.	Mark Allotted	Total Marks
3	Demonstration(Presentation based on field work/Practical/Roleplay/Group Discussion/Presentation)	01	25	25
4.	Written Test(Pattern to be decided by concerned Instructor/coordinator of the course/Department)	01	25	25

## 7. Award of the Degree

The passing requirement of VAC course is minimum 40% in continuous assessment and end-term assessment individually. The combined performance should be more than or equal to 50%. Candidates securing less than 50% will be given one more chance to undergo assessment process as laid down at clause no.6 and to be declared by Controller of Examinations. The percentage of marks obtained by students will be reflected in letter grade as given in the following table:

Letter Grade	Grade Category	Percentage of Marks
E	Outstanding	90 and above
A+	Excellent	80-89
A	Very Good	70-79
B+	Good	60-69
B	Above Average	55-59

C	Average	50-54
RE	Re-Evaluation	Less than 50
W	Registered but Not Appeared	Not Applicable

### 8. Award of the Certificate

The candidate is eligible to get certificate from CoEafter successfully registering, appearing in all continuous assessment, end-term assessment, and successfully passed the said course with minimum of 50%.

**Description of course code:**IT-VAC-501 (Name of the Department in abbreviation –Value Added course – 1<sup>st</sup> digit stand for semester; 2<sup>nd</sup> digit 0; and 3<sup>rd</sup> digit stand for serial number of the course)