

# **Programme Specifications**

## **B.Voc.Programme**



**Programme: Bachelor of Vocation (B.Voc.)**

**Programme: Post-Harvest Technology**

**Faculty of Engineering and Technology**

**Directorate of Training & Lifelong Learning**

**Ramaiah University of Applied Sciences**

**University House, New BEL Road, MSR Nagar, Bangalore – 560 054**

[www.msruas.ac.in](http://www.msruas.ac.in)

### **Programme Specifications and Syllabus for awards**

Vocational Diploma, Vocational Advanced Diploma, Bachelor of Vocational Degree in Post-Harvest Technology

**1. Title of the Awards**

Vocational Diploma in Post-Harvest Technology  
Vocational Advanced Diploma in Post-Harvest Technology  
Bachelor of Vocational Degree in Post-Harvest Technology

**2. Modes of Study**

Full-Time

**3. Awarding Institution /Body**

Ramaiah University Of Applied Sciences – Bangalore, India

**4. Joint Award**

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**5. Teaching Institution**

Faculty of Engineering and Technology  
Ramaiah University of Applied Sciences - Bangalore, India

**6. Date of Programme Specifications**

July 2022

**7. Date of Programme Approval**

July 2022

**8. Next Review Date**

July 2025

**Programme Approving Regulating Body and Date of Approval**

Board of Studies, Academic Council

**9. Programme Benchmark**

UGC Guidelines

**10. Rationale for the Programme**

India is among one of the fastest growing economies in the world and is the second largest country in terms of population. Feeding the growing population by optimizing the natural resources with sustainability is the new challenge. Producing the food on a very large scale to the growing population is a major challenge. And changing eating habits and life style calls for adapting creative and modern engineering technologies and solutions to produce the food on a large scale.

Trend is changing from conventional way of processing food to a modern and sophisticated way of processing. Changing eating habits of the people calls for adapting new methodologies in developing sustainable solutions to meet the growing needs. Food processing plants, machineries and equipment's have to be ultra-modern and sophisticated enough to handle the present requirements.

To make the modern food production systems customer friendly, robust and to ensure ease of operation it calls for employment of skilled labor, built in automation and mistake proof technologies. Machines, equipment have to be manufactured with high precision that guarantee 100% quality food and customer and consumer satisfaction.

On the other hand, though food processing industry is a huge market, there is a big need for skilled and trained manpower to operate and maintain the plants, machines and equipment's. Another objective of this Programme is to impart adequate knowledge develop hands on skills of the young talents to operate and maintain the machines and equipment's.

Keeping the above needs in mind, B VOC in Post-Harvest Technology is designed in association with MSRUAS which would through sufficient light on the food / grain processing aspects and developing adequate knowledge and skills to operate and maintain the food / grain processing machines

**11. Programme Aim**

The aim of the Programme is to develop skilled professionals who can operate and maintain machines, tools and equipment's used for food / grain processing in the domestic market

**12. Programme Objectives**

The objectives of the Programme are:

1. To impart knowledge on general education including physics, mathematics, electrical, electronics and computer applications
2. To impart knowledge on fundamentals and advancements in food/grain processing technologies, machines and equipment's.
3. To repair and maintain various types of machines used in food / grain processing industry
4. To impart knowledge on working in dynamic situations in project sites, interaction with stake holders, managing people and projects, servicing aspects of the food / grain processing plants / machines
5. To create awareness on new technologies and trends in food/grain processing industry

### **13. Intended Learning Outcomes of the Programme**

The Intended Learning Outcomes (ILOs) are listed under three headings:

1. Knowledge and Understanding
2. Practical Skills and
3. Capability/Transferable Skills.

#### **12.1 Knowledge and Understanding**

After undergoing this Programme students will be able to:

1. To understand various mechanical, electronics and electrical systems present in food processing machines.
2. To understand the concepts of food processing.
3. Read and interpret various safety regulations, labor laws connected with industries.

#### **12.2 Practical Skills**

1. Identify various machines, tools and their applications connected with food / grain processing
2. Read and interpret complex drawings related to machines, plants and equipment's
3. Independently operate and maintain the machines
4. Visit the sites, gather information and translate into business needs

#### **12.3 Capability/Transferable Skills**

After undergoing this Programme , the student will be able to :

1. Identify and develop an academic project on food / grain processing
2. Plan, organize and execute the activities by keeping in mind the safety, cost and productivity aspects within the team

3. Communicate effectively with stake holders
4. Identify and develop the provisions for continuous improvements

**14. Programme Structure**

A student is required to successfully complete the following modules for the award of the degree. The Programme is delivered as per the Time-Table for every batch.

## Vocational Diploma

### Trimester-1

<b>General Education: 8 Credits, 120 Hours</b>				
S. No.	Code	Module Title	Credit	Hours
1	VGE057	Physics	4	60
2	VGE071	Mathematics & Statistics	4	60
<b>Vocational Education: 12Credits, 180 Hours</b>				
S. No.	Code	Module Title	Credit	Hours
1	VPT001	Basic Workshop Practices	6	90
2	VPT002	Computer Application	6	90

### Trimester-2

<b>General Education: 8 Credits, 120 Hours</b>				
S. No.	Code	Module Title	Credit	Hours
1	VGE074	Bio - Chemistry	4	60
2	VGE008	Basic Electrical Systems	4	60
<b>Vocational Education: 12 Credits, 180Hours</b>				
S. No.	Code	Module Title	Credit	Hours
1	VPT003	Engineering Drawing	6	90
2	VPT004	Introduction to Food & Grain Technology	6	90

**Trimester-3**

<b>General Education: 8Credits, 120 Hours</b>				
<b>S. No.</b>	<b>Code</b>	<b>Module Title</b>	<b>Credit</b>	<b>Hours</b>
1	VGE039	General Communication - English	4	60
2	VGE030	Engineering Materials	4	60
<b>Vocational Education: 12 Credits, 180 Hours</b>				
<b>S. No.</b>	<b>Code</b>	<b>Module Title</b>	<b>Credit</b>	<b>Hours</b>
1	VPT005	Turning & Milling Operations	6	90
2	VPT006	Metrology, GD & T Measurements	6	90

## Vocational Advanced Diploma

### Trimester - 1

<b>General Education: 8 Credits, 120 Hours</b>				
<b>S. No.</b>	<b>Code</b>	<b>Module Title</b>	<b>Credit</b>	<b>Hours</b>
1	VGE075	Basic Electronic Circuits	4	60
2	VGE011	Basics of Hydraulics & Pneumatics	4	60
<b>Vocational Education: 12Credits, 180 Hours</b>				
<b>S. No.</b>	<b>Code</b>	<b>Module Title</b>	<b>Credit</b>	<b>Hours</b>
1	VPT007	Fundamentals of Food Engineering	6	90
2	VPT008	Inspection & Quality Control	6	90

### Trimester - 2

<b>General Education: 8 Credits, 120Hours</b>				
<b>S. No.</b>	<b>Code</b>	<b>Module Title</b>	<b>Credit</b>	<b>Hours</b>
1	VGE072	Elements of Mechanical Design	4	60
2	VGE011	Elements of Mechatronics	4	60
<b>Vocational Education: 12 Credits, 180 Hours</b>				
<b>S. No.</b>	<b>Code</b>	<b>Module Title</b>	<b>Credit</b>	<b>Hours</b>
1	VPT009	Machine Drawing and 3D Modeling	6	90
2	VPT010	Food Processing Engineering - 1	6	90



**Trimester-3**

<b>General Education: 8 Credits, 120 Hours</b>				
<b>S. No.</b>	<b>Code</b>	<b>Module Title</b>	<b>Credit</b>	<b>Hours</b>
1	VGE063	Sensors & Signals	4	60
2	VGE059	Principles of Management	4	60
<b>Vocational Education: 12 Credits, 180 Hours</b>				
<b>S. No.</b>	<b>Code</b>	<b>Module Title</b>	<b>Credit</b>	<b>Hours</b>
1	VPT011	Electrical & Electronics Systems Simulation & Analysis	6	90
2	VPT012	Industry Internship/Project	6	90

## Vocational Degree

### Trimester-1

<b>General Education: 8Credits, 120 Hours</b>				
<b>S. No.</b>	<b>Code</b>	<b>Module Title</b>	<b>Credit</b>	<b>Hours</b>
1	VGE023	Customer Relationship Management	4	60
2	VGE013	Business Communication English	4	60
<b>Vocational Education: 12 Credits, 180Hours</b>				
<b>S. No.</b>	<b>Code</b>	<b>Module Title</b>	<b>Credit</b>	<b>Hours</b>
1	VPT013	Food Processing Engineering - 2	6	90
2	VPT014	PLC & Its Applications	6	90

### Trimester-2

<b>General Education: 8 Credits, 120 Hours</b>				
<b>S. No.</b>	<b>Code</b>	<b>Module Title</b>	<b>Credit</b>	<b>Hours</b>
1	VGE073	Industrial Automation	4	60
2	VGE054	Operations Management	4	60
<b>Vocational Education: 12 Credits, 180 Hours</b>				
<b>S. No.</b>	<b>Code</b>	<b>Module Title</b>	<b>Credit</b>	<b>Hours</b>
1	VPT015	New Product Development	6	90
2	VPT016	Emerging Technologies in Food Processing	6	90

**Trimester-3**

<b>General Education: 8 Credits, 120 Hours</b>				
<b>S. No.</b>	<b>Code</b>	<b>Module Title</b>	<b>Credit</b>	<b>Hours</b>
1	VGE041	Good Shop Floor Practices	4	60
2	VGE047	Labour laws, Occupational Health and Safety	4	60
<b>Vocational Education: 12 Credits, 180 Hours</b>				
<b>S. No.</b>	<b>Code</b>	<b>Module Title</b>	<b>Credit</b>	<b>Hours</b>
1	VPT017	Seminars & Presentations	2	30
2	VPT018	Industry Internship / Project Work	10	150

**15. Delivery Structure**

The Programme is in a tri semester pattern with an average of 30 hours of interactions per week and 12-13 weeks per semester

**16. Teaching and Learning Methods**

The module delivery comprises of a combination of few or all of the following:

1. Face to Face Lectures using Audio-Visuals
2. Demonstrations
3. Laboratory/Field work/Workshop
4. Industry Visit
5. Group Exercises
6. Project Exhibitions
7. Technical Festivals

**17. Assessment and Grading**

Students' performance is assessed through Component 1 (Continuous Evaluation CE) and component 2 (Semester End Examination SEE)

**1. Component 1 (Continuous Evaluation CE):**

Two tests of 25 marks each will be conducted in each subject. The average of the marks will be considered. An average of 40% is compulsory in each subject. This is applicable for both general and vocational education

**2. Component 2 (Semester End Examination SEE):**

A semester end exam of 50 marks will be conducted in each subject. An average of 40% is compulsory in each subject. This is applicable for both general and vocational education

A student must score 40% of the combined CE and SEE scores to pass the subject and module

**18. Failure**

If a student fails in a module, he/she is required to take up the make-up examination.

**19. Attendance**

A student is required to have a minimum attendance of 75% in each of the modules.

**20. Award of Class**

As per the Academic Regulations for Vocational Programme.

**21. Student Support for Learning**

Student are given the following support:

1. Module notes
2. Reference books in the library
3. Magazines and Journals
4. Internet facility
5. Computing facility
6. Laboratory facility
7. Workshop facility
8. Staff support
9. Lounges for discussions
10. Any other support that enhances their learning

## **22. Quality Control Measures**

Following are the Quality Control Measures:

1. Review of module notes
2. Review of question papers
3. Student feedback
4. Opportunities for the students to see their assessed work
5. Staff student consultative committee meetings
6. Student exit feedback
7. Subject Assessment Board
8. Programme Assessment Board

