

AC – 20/05/2025

Item No. – 6.18 (N) (3b) Sem. IV

As Per NEP 2020

University of Mumbai



Syllabus for Basket of OE Vertical 3

Faculty of Science

Board of Studies in Chemistry

Second Year Programme

Semester

IV

Title of Paper

Credits

i) Chemistry of Beverages

2

From the Academic Year

2025-26

Title of Paper: Chemistry of Beverages

Sr. No.	Heading	Particulars
1	Description the course:	This course is intended for non-science students to give an overall view of different types of beverages.
2	Vertical :	Open Elective
3	Type :	Theory
4	Credit:	2 credits (1 credit = 15 Hours for Theory in a semester)
5	Hours Allotted :	30 Hours
6	Marks Allotted:	50 Marks
7	Course Objectives: • CO1. To study the classification of beverages. • CO 2. To understand the history, importance, health benefits and hazards of beverages • CO 3. To learn about FSSAI specifications of the beverages. • CO 4. To appreciate the sociocultural perspective of beverages.	
8	Course Outcomes: On completion of this module successful students will be able to: • Classify, describe various types of non-alcoholic and alcoholic beverages. • Apply knowledge of FSSAI specifications to ensure the quality and safety of beverages. • Evaluate the sociocultural significance of beverages in different contexts. • Critically analyse the impact of beverages on human health and society.	

9	Modules
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Semester	Module	Description	Credits
IV	I	Non- Alcoholic beverages	02
	II	Alcoholic beverages	

Unit (Module)	Description	Lecture
I	Non- Alcoholic beverages	(15)
	Introduction: 1.1 History and importance, economics aspects of beverages, 1.2 Definition, Classification of Beverages, 1.3 Types of non-alcoholic beverages, 1.4 Study of following types of beverages with respect to examples, Ingredients, nutritional values and health concern- Packaged drinking water, Fruit based beverages, Synthetic beverages, still beverages, carbonated beverages, low-calorie, sports drinks, dairy based beverages, tea, coffee, cocoa. 1.5 FSSAI specifications for synthetic beverages	01 01 01 10 02
II	Alcoholic Beverages	(15)
	2.1 History, definition, Classification, economics aspects of alcoholic beverages 2.2 General idea about Fermentation and Distillation 2.3 Study of following with respect to definition, raw material and constituents and sub-types of the following alcoholic beverages - Beer, Wine and Liquor. 2.4 FSSAI specifications of Brandy, Whiskey and Beer 2.5 Health benefits and Hazards. 2.6 Sociocultural perspective	02 02 06 03 01 01
	Total number of Lectures	30

10 Reference Books

1. BEVERAGES technology, chemistry and microbiology. Alan H. Vamam Consultant Microbiologist Southem Biological Reading UK and Jane P. Sutherland Head of Food and Beverage Microbiology Section Institute of Food Research Reading Laboratory Reading UK SPRINGER-SCIENCE+BUSINESS MEDIA, B.V.

2. Carbonated Beverages, Ibrahim M.Abu-Reidah Arab American University, West Bank, Palestine
3. Chemistry and Technology of Soft Drinks and Fruit Juices Second Edition Edited by Philip R. Ashurst Ashurst and Associates Consulting Chemists for the Food Industry Hereford, UK
4. <https://www.fssai.gov.in/> **Food Safety and Standards (Licensing and Registration of Food Businesses) Regulation**
5. Handbook of Food and Beverage Fermentation Technology”, 2nd edition, Marcel Dekker, 2004 Y. H. Hui Handbook of Brewing”, 1st edition, Marcel Dekker, 1995. W. A. Hardwick
6. Handbook of Fermented foods and Beverage Technology- Ravinder A, SriniviasMaloo, Fr. Dr. Emmanuel S.J.- Himalaya Publishing House.
7. <https://uja.in/blog/market-reports/food-and-beverage-industry-in-india>

11	Internal Continuous Assessment: 40%	External, Semester End Examination 60% Individual Passing in Internal and External Examination
12	Continuous Evaluation through: Quizzes, Class Tests, presentation, project, role play, creative writing, assignment etc. (at least 3)	

13

Format of Question Paper: for the final examination			
Theory	Credit	No. of Hours	Marks
	02	30	50
Internal Continuous Assessment: 40% (20 Marks)		External, Semester End Examination: 60% Individual Passing in Internal and External Examination (30 Marks)	
Continuous Evaluation through: Quizzes, Class Tests, presentation, project, role play, creative writing, assignment etc.(at least 3)		As per the Format of Question Paper	
Format of Question Paper: for the final examination			

Question Paper Pattern for 30 Marks:

Semester End Theory Examination:

1. Duration - These examinations shall be of **one-hour** duration.

2. Theory question paper pattern:

- a. There shall be **02** questions, Question 1 carries 15 Marks based on Unit I and Question 2 carries 15 Marks based on Unit II.
- b. All questions shall be compulsory with internal choice within the questions.

Question	Particulars	Marks	Questions Based on
Q.1	A) Objective Questions 06 out of 10	06	Unit I
	B) Subjective Questions 03 out of 05	09	
Q.2	A) Objective Questions 06 out of 10	06	Unit II
	B) Subjective Questions 03 out of 05	09	
Total		30	---

Sd/-
Sign of
Dr. Sunil Patil
Coordinator,
Board of Studies in
Chemistry

Sd/-
Sign of
Prin. (Dr.) Madhav Rajwade
Offg. Associate Dean,
Faculty of Science and
Technology

Sd/-
Sign of
Prof. (Dr.) Shivram Garje
Offg. Dean,
Faculty of Science and
Technology