

**Govt. T. R. S. (Autonomous) College Rewa (M.P.)**

**Department of Chemistry**

**Syllabus for B.Sc. (Hons.) Chemistry on CBCS**

**Session 2023-24**

<b>Part A - Introduction</b>			
<b>Program: UG</b>	<b>Class: B.Sc. (Hons) Chemistry</b>	<b>Semester: IV</b>	<b>Session: 2023-24</b>
<b>Subject: Chemistry (Honours)</b>			
<b>1</b>	<b>Course code</b>	<b>CHGT-04 B</b>	
<b>2</b>	<b>Course title</b>	<b>Beverage Industry</b>	
<b>3</b>	<b>Course type</b>	<b>Generic elective</b>	
<b>4</b>	<b>Pre-requisite (if any)</b>	<b>This course can be opted as an elective by the students of following subjects : Open for all</b>	
<b>5</b>	<b>Course Learning Outcomes (CLO)</b>	<b>By the end of the this paper Students will be able to</b> <ul style="list-style-type: none"><li>• Learn characteristics and production methods of alcoholic beverages</li><li>• Learn about characteristics and production methods of non-alcoholic beverages</li><li>• Learn about Packaged drinking water</li><li>• Know about Specialty beverages</li></ul>	
<b>6</b>	<b>Credit Value</b>	<b>04 (Theory)</b>	
<b>7</b>	<b>Total Marks</b>	<b>Max. Marks (40+60) :</b>	
<b>Part B – Content of the course</b>			
<b>Total No. of Lectures-Tutorials-Practical (4 hours per week):</b>			
<b>L-T-P: 60-0-00</b>			
<b>Unit</b>	<b>Topic</b>		<b>No. of Lectures</b>
<b>1</b>	Types of beverages and their importance status of beverage industry in India Manufacturing technology for juice-based beverages synthetic beverages technology of still, carbonated, low-calorie and dry beverages isotonic and sports drink's role of various ingredients of soft drinks, carbonation of soft drinks.		<b>9</b>
<b>2</b>	Specialty beverages based on tea, coffee, cocoa, spices, plant extracts, herbs, nuts, dairy and imitation dairy-based beverages.		<b>9</b>
<b>3</b>	Alcoholic beverages- types, manufacture and quality evaluation the role of yeast in beer and other alcoholic beverages, ale type beer, lager type beer. Technology of brewing		<b>12</b>

	process, equipment used for brewing and distillation, wine and related beverages, distilled spirits.	
<b>4</b>	Technology of brewing process, equipment used for brewing and distillation, wine and related beverages, distilled spirits.	<b>6</b>
<b>5</b>	Packaged drinking water- definition, types, manufacturing processes, quality evaluation and raw and processed water, methods of water treatment, BIS quality standards of bottled water mineral water, natural spring water, flavored water, carbonated water	<b>9</b>

### Part C – Learning Resources

#### Text Books, Reference Books, Other resources

#### Suggested Reading:

1. David McClements, Food emulsionsz, CRC Press
2. Varnam and Sutherland, Beverages: Technology, Chemistry and Microbiology, CRC press
3. Woodroof and Phillips, Beverages: Carbonated and Non-Carbonated, CRC Press
4. Hui, Handbook of Food and Beverage Fermentation Technology, CRC Press

#### Suggested equivalent online:

- MOOCs
  - NPTEL:
  - MIT:
  - Web resources:
- (all URLs accessed in May 2021)
1. <http://egyankosh.ac.in>

### Part D – Assessment & Evaluation

#### Suggested Continuous Evaluation Method

Any remark / suggestion:

This course can be opted as an elective by the students of the following subjects:

**Open for All**

Continuous & Comprehensive Evaluation shall be based on allotted Assignment and Class Test


#### Keywords:

Beverages, Soft drinks, dairy Based beverages, specialty beverages, Alcoholic beverages, Beer, Wine, Brewing, Distillation, BIS quality, Packaged water.

**Govt. T. R. S. (Autonomous) College Rewa (M.P.)**

**Department of Chemistry**

**Syllabus for B.Sc. (Hons.) Chemistry on CBCS**

**Session 2021-22**

<b>Part A - Introduction</b>			
<b>Program: UG</b>	<b>Class: B.Sc. (Hons) Chemistry</b>	<b>Semester: IV</b>	<b>Session: 2023-24</b>
<b>Subject: Chemistry (Honours)</b>			
<b>1</b>	<b>Course code</b>	<b>CHGP-04 B</b>	
<b>2</b>	<b>Course title</b>	<b>Beverage Industry</b>	
<b>3</b>	<b>Course type</b>	<b>Generic Elective (GE)</b>	
<b>4</b>	<b>Pre-requisite (if any)</b>	<b>This course is Open for all</b>	
<b>5</b>	<b>Course Objective</b>	<b>The objective of this course to make students aware about the roll of chemistry in surroundings.</b>	
<b>6</b>	<b>Course Learning Outcomes (CLO)</b>	<b>By the end of this paper Students will be able to:</b> <ul style="list-style-type: none"><li>• Extract caffeine from tea leaves.</li><li>• Determine hardness of water.</li><li>• Prepare soft drink and coffee.</li></ul>	
<b>7</b>	<b>Credit Value</b>	<b>2</b>	
<b>8</b>	<b>Total Marks</b>	<b>Max. Marks (40+60):</b>	<b>Min. Passing Marks:</b>
<b>Part B – Content of the course</b>			
<b>Total No. of Lectures-Tutorials-Practical (4 hours per week):</b>			
<b>L-T-P: 00-0-30</b>			
<b>Unit</b>	<b>Topic</b>		<b>No. of Lectures</b>
<b>1</b>	1. To identify the functional groups, present in an organic compounds. 2. To determine the water hardness by EDTA. 3. Extraction of caffeine from tea leaves. 4. To find the percentage of pesticides in carbonate soft drinks. 5. Preparation of soft drinks. 6. Preparation of alcohol. 7. Preparation of coffee.		<b>30</b>
<b>Part C – Learning Resources</b>			

**Text Books, Reference Books, Other resources**

**Suggested Reading:**

**Suggested equivalent online:**

1. <http://amrita.olabs.edu.in/?brch=8&cnt=1&sim=141&sub=73>
2. [https://biocyclopedia.com/index/enivronmental\\_science\\_engineering\\_laboratory\\_methodology/determination\\_of\\_hardness\\_of\\_water\\_by\\_edta\\_titrimetric\\_method.php](https://biocyclopedia.com/index/enivronmental_science_engineering_laboratory_methodology/determination_of_hardness_of_water_by_edta_titrimetric_method.php)

**Part D – Assessment & Evaluation**

Suggested Continuous Evaluation Method

Any remark / suggestion:

This course can be opted as an elective by the students of the following subjects:

**Open for All**

Continuous & Comprehensive Evaluation shall be based on allotted Assignment and Class Test


**Keywords:**

Separation, Detection, Chromatography, distillation,