

**Punyashlok Ahilyadevi Holkar Solapur University, Solapur**



NAAC Accredited-2015  
'B' Grade (CGPA 2.62)

**Name of the Faculty: Science & Technology**

**CHOICE BASED CREDIT SYSTEM**

**Syllabus: Wine Technology**

**(Skill Enhancement Course)**

**Name of the Course: M. Sc. Part- II (Sem. III)**

**(Syllabus to be implemented from w.e.f. June 2021)**

## SIC : WINE TECHNOLOGY SYLLABUS

SIC WT	<b>Paper II: Fundamentals of Wine Technology</b>	<b>40</b>
	<b>Section I</b>	
UNIT I	<p>Introduction</p> <p>Winemaking: Introduction to winemaking, definition and terminologies. Viticulture: Introduction to viticulture, definition and terminologies.</p> <p>History of to winemaking and viticulture,</p> <p>Wine producing regions of the World and different practices of winemaking and viticulture, Status of Indian winemaking and viticulture</p>	10
UNIT II	<p>Introduction to grapevine and concept of Terrior:</p> <p>Grapevine: Classification, anatomy and function of various parts of grapevine. Cultivars and development of varieties of grapevine.</p> <p>Introduction to soil and influence on the grapevine, structure of soil and Growth of grapevine roots and shoots system.</p> <p>Effect of climatic conditions on the cultivation of grapevine (sunlight Temperature, wind, rain, hail, frost).</p> <p>Terrior: Concept of Terrior, Terrior units and importance of Terrior</p>	10
	<b>Section II</b>	
UNIT III	<p><b>Wine making</b></p> <p>Classification of wine: Generic classification. varietal classification, vinitication classification and classification on the basis of chemical constituents.</p> <p>Flow charts of white wine production and recommended varieties.</p> <p>Flow charts of red wine production and recommended varieties.</p> <p>Flow charts of Fortified wine production and recommended varieties.</p> <p>Production of wine from fruits other than grapes.</p>	10
UNIT IV	<p><b>Vine and wine</b></p> <p>Present seenario of viticulture in different countries: Variation in varieties selection vines harvesting, irrigation practices, clonal selection and other practices, Grape variety</p> <p>as criteria for quality wine production: Study of criteria such as tractability. distinctive flavors, and other special characteristics.</p> <p>Introduetion to barrel: Distribution. species and advantages of oak, anatomical and chemical constituents of oak and liberation of oak flavors from the barrel or cask in wine.</p> <p>Barrel making and maintenance: Harvesting of oak wood. selection and seasoning of wood for barrel making and maintenance or storage of barrels in the winery. Automation in wine industry :Importance of automation operation in wine</p> <p>Industries and concept of Programmed Logic Control System</p>	10

WP	Wine Technology Practicals	
	<p>WTP 102: Microbiological &amp; Analytical Techniques Microbiological Techniques</p> <ol style="list-style-type: none"> <li>1 Microscopic observation of yeast during wine production Recording percentage of budding of the yeast.</li> <li>2. Media preparation for yeast liquid and solid media, media sterilization. pouring of the plates and preparation of slants. Sub-culturing of wine yeast and Lactobacillus cultures on agar media slants.</li> <li>3 Isolation and purification of wine yeast culture from stock culture by streak pate method</li> <li>4 The isolation of pure monoclonal population of wine yeast Dilution-plate method. 1 ransfer of single cell colony to the agar medium slant and a part of it in nutrient broth tube simultaneously for sterility testing.</li> <li>5. Growth of wine yeast in shake flasks on a shaker: Determination of exponential phase of growth of yeast by packed cell volume (PCV).</li> <li>6. Determination of the total yeast cell count microscopically using cell counting chamber.</li> <li>7. Vital staining of yeast cultures with methylene blue. Determination of percentage of live cells of yeast during wine production.</li> <li>8. Gram staining for acetic acid bacteria (Gram negative) and lactic acid bacteria (Gram Positive).</li> <li>9. Isolation and purification techniques for wine yeast from flower'fruits</li> <li>10. Whole cell immobilization of yeast. Determination of the sugar alcohol conversion coefficient.</li> <li>B. Analytical Techniques Determination of total carboiy drates by Anthrone method.</li> <li>11. Estimation of proteins from grapes and wort by Lowry's method.</li> <li>12. Production of cattle feed/Poultry feed from the waste of fruits</li> <li>13. Monitoring of fermentation kinetics by amount of sugar consumed and alcohol formed or carbon dioxide released. Graphical representation. (A case study at time of examination).</li> <li>14. Determination of tannins in wine by Folin--Dennis method.</li> </ol>	