





**VASANTDADA SUGAR INSTITUTE**  
**Manjari (Bk), Pune- 412307, Maharashtra**

WBAT			alcohol	professional ethics
			Composition of Wash, RS, EQRS, ENA, EQENA, FA, AA and IS. Denaturation of spirit	Human values & professional ethics
			By products of alcohol manufacture – CO <sub>2</sub> , fusel oil & yeast sludge.	Environment & sustainability
			Manufacture of Extra Neutral Alcohol, Anhydrous alcohol/Fuel ethanol: Azeotropic mixture commercial production of ethanol by azeotropic distillation.	Environment & sustainability
			Analytical aspects of alcohol and alcoholic beverages: various alcohol and alcoholic beverages	Environment & sustainability
	WT 3.2	Brewing technology-II	Brewery by - products and waste valorization	Environment & sustainability

**Semester-IV**

Programme Name	Course code	Course Name	Topic	Cross cutting issues
MSc WBAT	WT 4.2	Industrial Waste Treatment & Environmental Management	Biological treatment fundamentals: Waste treatment methods	Environment
			Winery and brewery sanitization and waste disposal regulations	Environment
			Waste water disposal systems in industries	Environment
			Water conservation in distilleries.	Environment & sustainability
	Air pollution control principles & equipments, Environmental Audit, Disposal of effluent & soil fertility, Environmental laws	Human values & professional ethics		
	WT 4.3	Alcohol Technology-III	Alcohol from Non-molasses sources and manufacture of malt alcohol	Environment & sustainability



**VASANTDADA SUGAR INSTITUTE**  
**Manjari (Bk), Pune- 412307, Maharashtra**

			Multipressure distillation and Molecular sieve dehydration system	Environment sustainability &
			Alcohol production from sugar processing intermediates	Environment sustainability &
	WT 4.41	Second Generation Biofuels	Value added products Syngas, Bio-butanol/bio-ethanol production.	Environment sustainability &
			Algal biofuels	Environment sustainability &
	WT 4.43	Advance Enology	Maturation and aging of wine: Factors affecting maturation of wine	Human values & professional ethics

**Total number of subjects integrated the cross cutting issues in the syllabus of MSc WBAT course are 9.**

**Principal**