**Las Positas College**
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**Course Outline for VWT 20**

**INTRODUCTION TO ENOLOGY**

**Effective: Fall 2016**

I. CATALOG DESCRIPTION:
VWT 20 — INTRODUCTION TO ENOLOGY — 3.00 units

An overview of the history of wine including a study of modern viticulture and enology principles and practices, an introduction to the science of fermentation, understanding winery operations, the physiology of wine consumption, and a primer on the varieties and wine styles produced in California and other major wine-producing regions of the world. Practical exercises will include the sensory evaluation of wines. There will be a focus on the regional stylistic expression of heritage varietals. Students under the age of 21 must have a declared major of either viticulture and/or enology to participate in any tasting activities as stated in the California State Assembly Bill 1989.

3.00 Units Lecture

**Strongly Recommended**
CHEM 30A - Intro and Applied Chemistry I
with a minimum grade of C

**Grading Methods:**
Letter Grade

**Discipline:**

| | MIN |
|---|---|
| **Lecture Hours:** | 54.00 |
| **Total Hours:** | 54.00 |

II. NUMBER OF TIMES COURSE MAY BE TAKEN FOR CREDIT: 1

III. PREREQUISITE AND/OR ADVISORY SKILLS:

**Before entering this course, it is strongly recommended that the student should be able to:**

A. CHEM30A
1. Make unit conversions in the metric system using the prefixes mega, kilo, deci, centi, milli, and micro;
2. Use standard nomenclature;
3. Identify properties of states of matter;
4. Write balanced equations for chemical reactions including those in aqueous solution and those involving elementary oxidation-reduction (not in acidic or alkaline solution);
5. Interpret reactions according to acid-base theory;
6. Use the pH scale to compare acidity;
7. Perform laboratory experiments in an efficient, safe and purposeful manner;
8. Collect and analyze scientific data;
9. Use an electronic balance and various pieces of volumetric glassware;
10. Record laboratory observations in a useful, detailed manner;
11. Maintain laboratory records in standard scientific style;
12. Perform a titration.

IV. MEASURABLE OBJECTIVES:

**Upon completion of this course, the student should be able to:**

1. Present a brief overview of the history of wine world wide including California
2. Differentiate between the California wine regions and provide specifics that contribute to wine styles and types
3. Accurately summarize the climate, soil and geographic factors that contribute to the uniqueness of a wine
4. Distinguish between important grape varieties used for fine wine production
5. Describe and explain basic winery operations and practices that take place in a wine making facility
6. Define specific requirements for safe wine storage including storage in barrel, bottle and tank
7. Discuss the concept of an objective evaluation method that is used for an accurate sensory assessment of all wines including active fermenting, unfinished, finished, young, aged, flawed and sound wines.

V. CONTENT:
A. An overview of the history of winemaking
1. early winemaking processes
2. the evolution to modern winemaking practices

B. History of California winemaking
    1. the Mission period
    2. the CA gold rush
    3. Prohibition and its impacts
    4. judgement in Paris
    5. modern wines to cult classics
C. World wine-producing regions
    1. ground zero: the Caucuses
    2. Greater Europe including Greece
    3. Classic European France, Italy, , Germany, Spain and Portugal
    4. Southern hemisphere including Australia, New Zealand, South Africa and South America
    5. The United States
D. California wine-producing regions
    1. The big 3: Napa, Sonoma, Mendocino
    2. North Coast, Central Coast
    3. Central Valley
    4. understanding sub-appellations
E. Grape varieties used for wine production
    1. European Vitus vinifera
    2. the prowess of cabernet and chardonnay
F. Traditional European wine styles
    1. Sparkling wines, Reds, whites and rose'
G. Sensory evaluation techniques
    1. visual assessment
    2. olfactory exploration
    3. palate; tastes and textures
H. World and California climate regions
    1. comparisons and contrasts
    2. a study of wine latitudes
I. Influence of climate, soils and topography on wine quality
    1. macroclimate, mesoclimate and microclimates
    2. soil depths, fertility and textures and layers
    3. vineyard altitude, exposure, aspect
J. Introduction to fermentation chemistry
    1. yeast activity
    2. yeast nutrients
    3. malolactic bacteria
    4. native fermentations
K. The role of yeasts and bacteria in wine fermentation
    1. practices for successful primary and secondary fermentations
L. Grape crushing, pressing and processing
    1. introduction to equipment
    2. equipment safety
    3. whole cluster, whole berry or maceration?
M. Pre and post-fermentation handling of wine
    1. cold soaking techniques
    2. temperature specifics
    3. the SO2 factor
    4. post maceration
N. Barrel and tank storage of wine
    1. barrel specifics including oak sources and sizes
    2. the functionality of stainless steel
    3. cooling jackets
    4. storage alternatives
O. Filtration, fining, racking and bottling practices
    1. filter types
    2. fining materials
    3. moving wine from container to container
    4. sanitary bottling practices
P. Wine spoilage disorders
    1. introduction to terminologies
    2. how wine goes bad
    3. brettanomyces, 2,4,6 trichloranisole, volatile acidity, oxidation
Q. Winery sanitation and safety practices
    1. understanding the differences between cleaning, sanitizing, and sterilizing
R. Sensory analysis of wines
    1. how to effectively analyze smell and taste

## VI. METHODS OF INSTRUCTION:

A. **Guest Lecturers** - by local industry professionals
B. **Lecture** -
C. **Discussion** -
D. **Projects** -
E. **Field Trips** -
F. **Classroom Activity** - Student hands-on activities
G. **Demonstration** - with student participation
H. **Audio-visual Activity** -

## VII. TYPICAL ASSIGNMENTS:

A. Weekly reading assignments in text related to lecture topics
    1. Read chapter 5 in Understanding Wine Technology; “Producing the must."
    2. Read the article on “Terroir” in the supplied issue of Practical Vineyard and Winery magazine as posted in Blackboard
B. Participation on field trips at specific field and industry locations:
    1. Local wineries
    2. Local grape and wine production facilities
    3. On campus Fermentation Room
C. Short topical essays
    1. Write a two-page essay discussing the advantages of fining and filtering wines
    2. Write a short paper listing and explaining all the factors affecting "native fermentation."

VIII. EVALUATION:

A. **Methods**

1. Exams/Tests
2. Quizzes
3. Papers
4. Oral Presentation
5. Group Projects
6. Class Participation
7. Class Work
8. Home Work

B. **Frequency**

1. 2 to 3 Exams including at minimum a mid term and final.
2. Tests, exams and quizzes will be scheduled as appropriate to insure that students receive regular and adequate feedback of thier understanding of the content
3. 1-two page, industry related research paper due at the end of the semester
4. 1-industry related, student team project; presented orally to the class due at the end of the semester
5. Readings and homework assigned and due weekly

IX. TYPICAL TEXTS:

1. Margalit, Y. *Concepts in Winery Technology*. 3rd ed., Wine Appriciation Guild, 2012.
2. Smith, Clark. *Post Modern Winemaking: Rethinking the science of an Ancient Craft.* 1st ed., University of California Press, 2013.
3. Jancis, Robinson , and Julia Harding. *The Oxford Companion to Wine.* Fourth ed., Oxford University Press, 2015.
4. Jackson, Ronald. *Wine Science: Food Science and Technology.* Fourth ed., Academic Press, 2014.
5. Goode, Jamie . *The Science of Wine: From Vine to Glass.* Second ed., University of California Press, 2014.
6. "Wine Business Monthly." Wine Communications Group Inc. Pub 2015.
7. "Wines and Vines." Vineyard and Winery Services Inc. Pub 2015.
8. "Practical Winery and Vineyard Journal." Vineyard and Winery Services Inc. Pub 2015.
9. Reference Texts:
   1.Bird, D. Understanding Winery Technology, 3rd Ed. Wine Appreciation Guild, 2011 print
   2. Miller, E. Vintner's Apprentice, An Insider's Guide to the Art and Craft of Wine Making, 1st Ed., Quarry Books, 2011 print

X. OTHER MATERIALS REQUIRED OF STUDENTS:

A. will need computer access to read articles posted on Blackboard or internet for resources.
B. personal safety goggles