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**Course Outline for VWT 20**

**INTRODUCTION TO ENOLOGY**

**Effective: Fall 2018**

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

This course is an overview of the history of wine, modern viticulture and enology principles and practices, the science of fermentation, and standard winery operations. There is a primer on grape varieties and wine styles produced in major wine-producing regions of the world including California which will focus on regional stylistic expression of specific, heritage varietals. Instruction covering the physiology of wine consumption will precede practical exercises which will include the sensory evaluation of wines. 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

**Grading Methods:**
Letter Grade

**Discipline:**
- Agriculture Production

| | 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:

IV. MEASURABLE OBJECTIVES:

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

A. outline the history of wine production;
B. depict the history of winemaking in California;
C. describe globally located wine producing regions and what contributes to the resulting wines;
D. name the California wine producing regions;
E. characterize grape varieties used for wine production;
F. explain traditional European wine styles and how they might differ from domestic wine styles;
G. provide an objective assessment of wine including wines that are actively fermenting, unfinished, finished, young, aged, flawed and sound using a learned method of sensory evaluation;
H. describe climatic specifics of world wide wine producing regions including California;
I. explain how climate, soils and topography influence wine quality;
J. outline the process of fermentation;
K. detail the specifics of fermentation chemistry including yeast and bacterial driven fermentations;
L. describe grape processing and the equipment used for crushing and pressing;
M. explain the processing options of pre and post fermentation treatment of wines;
N. detail the vessel options for wine storage and aging;
O. describe the pre-bottling practices of wine racking, filtration, and fining;
P. describe winery sanitation practices and winery safety protocols;
Q. analyze the smell and taste of wine using organoleptic skills.

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

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. Group Projects
5. Class Participation
6. Home Work
7. Final Performance

B. **Frequency**

1. At least two exams/tests/quizzes per semester
2. At least one written paper (approximately 2-4 pages) per semester
3. At least one group project per semester
4. Daily class participation
5. Weekly homework
6. Final presentation of group project

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.* 2nd ed., University of California Press, 2014.
3. *The Science of Wine: From Vine to Glass.* Second ed., University of California Press, 2014.
4. *The Oxford Companion to Wine.* Fourth ed., Oxford University Press, 2015.
5. *Wine Science: Food Science and Technology.* Fourth ed., Academic Press, 2014.
6. Grainger, Keith, and Hazel Tattersall. *Wine Production and Quality.* 2nd ed., Wiley Blackwell, 2016.
7. Bonne', John. *The New Wine Rules: A Genuinely Helpful Guide to Everything You Need to Know.* 1st ed., Ten Speed Press, 2017.
8. "Wines and Vines." Vineyard and Winery Services Inc. Pub 2017.
9. "Practical Winery and Vineyard Journal." Vineyard and Winery Services Inc. Pub 2017.
10. "Wine Business Monthly." Wine Communications Group Inc. Pub 2017.
11. 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. Computer access for internet research.
B. Chemical splash goggles