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OFFICE OF THE
SENATE COUNCIL**1. General Information**

1a. Submitted by the College of: AGRICULTURE, FOOD AND ENVIRONMENT

Date Submitted: 10/14/2014

1b. Department/Division: Horticulture

1c. Contact Person

Name: Seth DeBolt

Email: sdebo2@uky.edu

Phone: 859-257-8654

Responsible Faculty ID (if different from Contact)

Name:

Email:

Phone:

1d. Requested Effective Date: Specific Term/Year¹ Fall 2015

1e. Should this course be a UK Core Course? No

2. Designation and Description of Proposed Course

2a. Will this course also be offered through Distance Learning?: No

2b. Prefix and Number: PLS 335

2c. Full Title: Distillation, Wine and Brewing Science

2d. Transcript Title: Distillation, Wine & Brewing Science

2e. Cross-listing:

2f. Meeting Patterns

LECTURE: 2

LABORATORY: 2

2g. Grading System: Letter (A, B, C, etc.)

2h. Number of credit hours: 3

2i. Is this course repeatable for additional credit? No

If Yes: Maximum number of credit hours:

If Yes: Will this course allow multiple registrations during the same semester?

2j. Course Description for Bulletin: Broad introduction into wine, brewing, and distillation science. Information includes viticulture (growing grapes for wine), wine making (production), wine flavor chemistry, commodities for fermentation, brewing science (beer making to distribution) and distilling. This class is not based on consumption, but rather the combination of science and management strategies needed to produce quality products. A structured vocabulary is associated with production, marketing and distribution of wine, brewing and distilled products. An overarching outcome of this course is that students can describe the chemistry, biology and technology involved in fermented beverages and apply these skills in a problem solving setting. The course will focus on introductory concepts, career paths available and problem solving skills required in each element of the production chain.

2k. Prerequisites, if any: none

2l. Supplementary Teaching Component:

3. Will this course taught off campus? No

If YES, enter the off campus address:

4. Frequency of Course Offering: Fall,

Will the course be offered every year?: Yes

If No, explain:

5. Are facilities and personnel necessary for the proposed new course available?: Yes

If No, explain:

6. What enrollment (per section per semester) may reasonably be expected?: 40-70

7. Anticipated Student Demand

Will this course serve students primarily within the degree program?: No

Will it be of interest to a significant number of students outside the degree pgm?: Yes

If Yes, explain: Students from virtually any major at the University of Kentucky could conceivably enroll in this course and the related undergraduate certificate program.

8. Check the category most applicable to this course: Not Yet Found in Many (or Any) Other Universities ,

If No, explain:

9. Course Relationship to Program(s).

a. Is this course part of a proposed new program?: Yes

If YES, name the proposed new program: It will be a required course for the undergraduate certificate program: Wine, Brewing and Distillation Studies

b. Will this course be a new requirement for ANY program?: Yes

If YES, list affected programs: It will be a required course for the undergraduate certificate program: Distillation, Wine and Brewing Studies

10. Information to be Placed on Syllabus.

a. Is the course 400G or 500?: No

b. The syllabus, including course description, student learning outcomes, and grading policies (and 400G-/500-level grading differentiation if applicable, from 10.a above) are attached: Yes

Distance Learning Form

Instructor Name:

Instructor Email:

Internet/Web-based: No

Interactive Video: No

Hybrid: No

1. How does this course provide for timely and appropriate interaction between students and faculty and among students? Does the course syllabus conform to University Senate Syllabus Guidelines, specifically the Distance Learning Considerations?

2. How do you ensure that the experience for a DL student is comparable to that of a classroom-based student's experience? Aspects to explore: textbooks, course goals, assessment of student learning outcomes, etc.

3. How is the integrity of student work ensured? Please speak to aspects such as password-protected course portals, proctors for exams at interactive video sites; academic offense policy; etc.

4. Will offering this course via DL result in at least 25% or at least 50% (based on total credit hours required for completion) of a degree program being offered via any form of DL, as defined above?

If yes, which percentage, and which program(s)?

5. How are students taking the course via DL assured of equivalent access to student services, similar to that of a student taking the class in a traditional classroom setting?

6. How do course requirements ensure that students make appropriate use of learning resources?

7. Please explain specifically how access is provided to laboratories, facilities, and equipment appropriate to the course or program.

8. How are students informed of procedures for resolving technical complaints? Does the syllabus list the entities available to offer technical help with the delivery and/or receipt of the course, such as the Information Technology Customer Service Center (<http://www.uky.edu/UKIT/>)?

9. Will the course be delivered via services available through the Distance Learning Program (DLP) and the Academic Technology Group (ATL)? NO

If no, explain how student enrolled in DL courses are able to use the technology employed, as well as how students will be provided with assistance in using said technology.

10. Does the syllabus contain all the required components? NO

11. I, the instructor of record, have read and understood all of the university-level statements regarding DL.

Instructor Name:

SIGNATURE|RHOUTZ|Robert L Houtz|PLS 335 NEW Dept Review|20140826

SIGNATURE|LGRABAU|Larry J Grabau|PLS 335 NEW College Review|20140910

SIGNATURE|JMETT2|Joanie Ett-Mims|PLS 335 NEW Undergrad Council Review|20150331

Courses	Request Tracking
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New Course Form

<https://myuk.uky.edu/sap/bc/soap/rfc?services=>

Generate R

[Open in full window to print or save](#)

Attachments:

Upload File

	ID	Attachment
Delete	3995	PLS 335 UGC Review Checklist.docx
Delete	4723	PLS 335 Syllabus 3 credit hr 03-26-15.docx

1

Select saved project to retrieve...

(*denotes required fields)

1. General Information

a. * Submitted by the College of: Submission Date:

b. * Department/Division:

c.

* Contact Person Name: Email: Phone:

* Responsible Faculty ID (if different from Contact): Email: Phone:

d. * Requested Effective Date: Semester following approval OR Specific Term/Year

e.

Should this course be a UK Core Course? Yes No

If YES, check the areas that apply:

Inquiry - Arts & Creativity Composition & Communications - II

Inquiry - Humanities Quantitative Foundations

Inquiry - Nat/Math/Phys Sci Statistical Inferential Reasoning

Inquiry - Social Sciences U.S. Citizenship, Community, Diversity

Composition & Communications - I Global Dynamics

2. Designation and Description of Proposed Course.

a. * Will this course also be offered through Distance Learning? Yes No

b. * Prefix and Number:

c. * Full Title:

d. Transcript Title (if full title is more than 40 characters):

e. To be Cross-Listed ² with (Prefix and Number):

f. * Courses must be described by at least one of the meeting patterns below. Include number of actual contact hours³ for each meeting pattern type.

<input checked="" type="checkbox"/> 2 Lecture	<input checked="" type="checkbox"/> 2 Laboratory ⁴	<input type="checkbox"/> Recitation	<input type="checkbox"/> Discussion
<input type="checkbox"/> Indep. Study	<input type="checkbox"/> Clinical	<input type="checkbox"/> Colloquium	<input type="checkbox"/> Practicum
<input type="checkbox"/> Research	<input type="checkbox"/> Residency	<input type="checkbox"/> Seminar	<input type="checkbox"/> Studio
<input type="checkbox"/> Other	If Other, Please explain: <input type="text"/>		

g. * Identify a grading system:

Letter (A, B, C, etc.)

Pass/Fail

Medicine Numeric Grade (Non-medical students will receive a letter grade)

Graduate School Grade Scale

h. * Number of credits:

i. * Is this course repeatable for additional credit? Yes No

If YES: Maximum number of credit hours:

If YES: Will this course allow multiple registrations during the same semester? Yes No

j. * Course Description for Bulletin:

Broad introduction into wine, brewing, and distillation science. Information includes viticulture (growing grapes for wine), wine making (production), wine flavor chemistry, commodities for fermentation, brewing science (beer making to distribution) and distilling. This class is not based on consumption, but rather the combination of science and management strategies needed to produce quality products. A structured vocabulary is associated with production, marketing and distribution of wine, brewing and distilled products. An overarching outcome of this course is that students can describe the chemistry, biology and technology involved in fermented beverages and apply these skills in a problem solving setting. The course will focus on introductory concepts, career paths available and problem solving skills required in each element of the production chain.

k. Prerequisites, if any:

none

l. Supplementary teaching component, if any: Community-Based Experience Service Learning Both3. * Will this course be taught off campus? Yes No

If YES, enter the off campus address:

4. Frequency of Course Offering.

a. * Course will be offered (check all that apply): Fall Spring Summer Winter

b. * Will the course be offered every year? Yes No

If No, explain:

5. * Are facilities and personnel necessary for the proposed new course available? Yes No

If No, explain:

6. * What enrollment (per section per semester) may reasonably be expected? 40-70

7. Anticipated Student Demand.

a. * Will this course serve students primarily within the degree program? Yes No

b. * Will it be of interest to a significant number of students outside the degree pgm? Yes No

If YES, explain:

Students from virtually any major at the University of Kentucky could conceivably enroll in this course and the related undergraduate certificate program.

8. * Check the category most applicable to this course:

Traditional – Offered in Corresponding Departments at Universities Elsewhere

Relatively New – Now Being Widely Established

Not Yet Found in Many (or Any) Other Universities

9. Course Relationship to Program(s).

a. * Is this course part of a proposed new program? Yes No

If YES, name the proposed new program:

It will be a required course for the undergraduate certificate program: Wine, Brewing and Distillation Studies

b. * Will this course be a new requirement ⁵ for ANY program? Yes No

If YES ⁵, list affected programs:

It will be a required course for the undergraduate certificate program: Distillation, Wine and Brewing Studies

10. Information to be Placed on Syllabus.

a. * Is the course 400G or 500? Yes No

If YES, the *differentiation for undergraduate and graduate students must be included* in the information required in 10.b. You must include: (i) identify additional assignments by the graduate students; and/or (ii) establishment of different grading criteria in the course for graduate students. (See SR

b. * The syllabus, including course description, student learning outcomes, and grading policies (and 400G-/500-level grading differentiation if applicable 10.a above) are attached.

⁵ Courses are typically made effective for the semester following approval. No course will be made effective until all approvals are received.
⁶ The chair of the cross-listing department must sign off on the Signature Routing Log

¹² In general, undergraduate courses are developed on the principle that one semester hour of credit represents one hour of classroom meeting per week for a semester, exclusive of any laboratory meeting. Laboratory meeting, generally, is two hours per week for a semester for one credit hour. (from SR 5.2.1)

¹³ You must also submit the Distance Learning Form in order for the proposed course to be considered for DL delivery.

¹⁴ In order to change a program, a program change form must also be submitted.

Rev 8/08

Submit as New Proposal Save Current Changes

General Course Information

- Full and accurate title of the course
- Departmental and college prefix
- Course prefix, number and section number
- Scheduled meeting day(s), time and place

Instructor Contact Information (if specific details are unknown, "TBA" is acceptable for one or more fields)

- Instructor name
- Contact information for teaching/graduate assistant, etc.
- Preferred method for reaching instructor
- Office phone number
- Office address
- UK email address
- Times of regularly scheduled office hours and if prior appointment is required

Course Description

- Reasonably detailed overview of the course
- Student learning outcomes
- Course goals/objectives
- Required materials (textbook, lab materials, etc.)
- Outline of the content, which must conform to the Bulletin description
- Summary description of the components that contribute to the determination of course grade
- Tentative course schedule that clarifies topics, specifies assignment due dates, examination date(s)
- Final examination information: date, time, duration and location
- For 100-, 200-, 300-, 400-, 400G- and 500-level courses, numerical grading scale and relationship to letter grades for undergraduate students
- For 400G-, 500-, 600- and 700-level courses, numerical grading scale and relationship to letter grades for graduate students. (Graduate students cannot receive a "D" grade.)
- Relative value given to each activity in the calculation of course grades (Midterm=30%; Term Project=20%, etc.)
- Note that undergraduate students will be provided with a Midterm Evaluation (by the midterm date) of course performance based on criteria in syllabus
- Policy on academic accommodations due to disability. Standard language is below:
 If you have a documented disability that requires academic accommodations, please see me as soon as possible during scheduled office hours. In order to receive accommodations in this course, you must provide me with a Letter of Accommodation from the Disability Resource Center (Room 2, Alumni Gym, 257-2754, email address jkarnes@email.uky.edu) for coordination of campus disability services available to students with disabilities.

Course Policies

- Attendance
- Excused absences
- Make-up opportunities
- Verification of absences
- Submission of assignments
- Academic integrity, cheating & plagiarism
- Classroom behavior, decorum and civility
- Professional preparations
- Group work & student collaboration

UGE Review (11/6/14)
Committee Review ()
Comments

PLS 335
WINE, BREWING AND DISTILLATION SCIENCE

Instructor: Seth DeBolt, Professor
Office Address: 309 Plant Science Building;
Email: sdebo2@email.uky.edu
Phone: 859 257-8654
Department of Horticulture

Office Hours: 9:30-10:30 am Thur.

Other times when requested. Email/Call for appointment outside office hours

Course Description: Broad introduction into wine, brewing, and distillation science. Information includes viticulture (growing grapes for wine), wine making (production), wine flavor chemistry, commodities for fermentation, brewing science (beer making to distribution) and distilling. This class is not based on consumption, but rather the combination of science and management strategies needed to produce quality products. A structured vocabulary is associated with production, marketing and distribution of wine, brewing and distilled products. An overarching outcome of this course is that students can describe the chemistry, biology and technology involved in fermented beverages and apply these skills in a problem solving setting. The course will focus on introductory concepts, career paths available and problem solving skills required in each element of the production chain.

Course Background:

The **wine, brewing and distillation science** class is a 3-credit hour introductory science class that will provide the incoming student with information on viticulture (growing grapes for wine), wine making (production), brewing science (beer making to distribution) and distilling. Involving numerous guest lectures, we will cover:

- A brief history of wine, brewing and distillation.
- The metabolic pathways in grapes that make the grapevine a special plant for fermented end-products
- Basics of fermentation and cellar management
- Winemaker, viticulturist, brewmaster and distillers provide key information on career development and potential employment
- For brewing we examine beer styles, barley as the base, malting, mashing, hops and fermentation
- For Bourbon, we examine distillation, available stills and product management
- We provide an overview on what happens after the product is made in terms of distribution and logistics

Prerequisites No prerequisites are requested for this class.

Student Learning Outcomes

When you finish this course you should be able to:

- Outline the history of fermentation and its influence on human health and culture
- Describe basic fermentation processes

- Apply fermentation knowledge to different starting point (fruit, malt)
- Broadly recognize components of the grape berry and resulting wine that influence to acidity, mouth feel, flavor and aroma.
- Recognize and describe the basic cultural system for growth of grape vines.
- Describe how grapes are grown on trellis systems and how this influences their vigor and fruit set.
- Recognize the processes used to protect wine against oxidation,
- Define the main chemical reactions that occur in wine aging.
- Be able to define malting, mashing and fermentation
- Describe several beer styles
- Be able to discuss the use of hops in beer
- Explain the importance of water chemistry in beer production
- Define the distribution and product logistics chain that is critical to economic viability.
- Be able to explain the basic distillation process,
- Define the standards for defining a bourbon and styles.
- Compare and contrast the different between types of stills used in modern distillation
- Be able to recognize problems and pitfalls that may arise during distillation.

Course goal or objective

To provide a broad portfolio of information that will allow students finishing the class to describe and interpret key features of the brewing/winemaking/distilling systems.

Reference Materials: Texts to be used

All text books are optional reading texts and will be available on short-term loan in the Agricultural Information Center Library located in the AGN Building. The wine text-books are particularly expensive, but brewing texts are available inexpensively on Amazon.com.

Wine texts

- Patrick Iland et al.: 2012 The grapevine: from the science and practice of growing vines for wine. Patrick Iland Wine Promotions, Adelaide, Australia.

Brewing texts

- George Fix 1999. Principles of Brewing Science: A study of serious brewing issues. 2nd Edition (November 16, 1999), Brewers Publications.
- Jamil Zainasheff 2010. Yeast: The Practical Guide to Beer Fermentation (Brewing Elements Series). Brewers Publications
- John Palmer and Colin Kaminski (2013) Water – a comprehensive guide for brewers. Brewing Elements Series Brewers Publications
- Stan Hieronymus (2013) For the love of hops – a practical guide to aroma, bitterness and the culture of hops. Brewing Elements Series Brewers Publications

Distilled product texts

- Bill Owens 2009. The Art of Distilling Whiskey and Other Spirits: An Enthusiast's Guide to the Artisan Distilling of Potent Potables. 1st Edition. Quarry Books

	14	We	Milling, water and wort production
	19	Mo	Mashing
	21	We	Hops
	26	Mo	Class Discussion: evolution of beer styles and the future
	28	We	Exam II
Nov	2	Mo	Exam review
	4	We	Introduction to Bourbon, and other distilled spirits
	9	Mo	Introduction to Bourbon, and other distilled spirits
	11	We	Commodities and fermentation
	16	Mo	Cooperage
	18	We	Lignin pyrolysis – where do the compounds in bourbon come from?
	23	Mo	Working operations of stills
	25	We	THANKSGIVING
	30	Mo	THANKSGIVING
Dec	2	We	Marketing, legal
			Exam III
	7	Mo	Exam III
	9	We	Class discussion on craft and local products, how to develop new innovations?
	17	W	Final Exam - 10:30 am - 12:30 pm

Laboratory Schedule – Wed (3:00 – 4:50 pm)

September	
2	ABT Teaching lab – yeast and fermentation
9	ABT Teaching lab – yeast cont.
16	Plant Diagnostic Laboratory – grapevine disease
23	UK Vineyard at the Horticulture farm
30	UK Wine Science Laboratory at the Horticulture farm
October	
7	Country Boys brewery
14	No laboratory
21	Movie “Wine styles”, “Sommelier” or “Drinking buddies” Craft brewery
28	Assignment discussion on “major problems in the winery”
November	
4	Town Branch (or other) Distillery –
11	Branding, Distribution and Marketing
18	No laboratory
25	No lab - Thanksgiving
December	

1	Assignment discussion on “major problems in the brewery”
8	Review

Course Assignments (grading):

Evaluation of learning objectives will be accomplished by three examinations that will utilize multiple choice and short answer questions. One major written assignment will be generated and assessed during semester. In class participation, such as group learning activities are proposed and will be graded based on attendance and participation over the duration of the semester.

- Three exams for the primary subject areas are distributed throughout the semester: 60 points are available to be gained by correct answers in these exams
- One assignment worth 20 points will be given as a synthesis piece focused on creating a fermented beverage: grades will be gained based on the inclusion of the main processes, quality of writing and correct citations. Grades will be lost based on incorrect or lacking citations and incomplete description of a key process needed to create your product.
- Class participation is graded worth 5 points. Throughout the semester, participation will be evaluated through attendance slips with questions about the class within them. These will be spread out throughout the semester and more than two missed attendance slips will result in loss of a grade point, three missed attendance slips will result in the loss of three grade points. Four missed attendance slips will result in four grade points.
- A final examination worth 15 points will compile learning objectives from throughout the semester. Grades are available to be gained by correct answers in this exam, which will be short answer and multiple choice.

Grading scale:

Final letter grades will be determined based on the percentage of total points earned on the exams and quizzes described above.

- A = 90-100%,
- B = 80-89.5%,
- C = 70-79.5%,
- D = 60-69.5,
- E = < 59.5%.

Mid-term Grade

Mid-term grades will be posted in myUK by the deadline established in the Academic Calendar (<http://www.uky.edu/Registrar/AcademicCalendar.htm>)

Course Policies

A score of 0 will be assigned for any missed exit slips or assignments. Make-up exams, due to an excused absence, will be allowed to be re-taken. There will be no make-ups given for exit slips and no make-ups for missed field trips for non-excused absences. For non-excused absences, the rules for allocating grades are described under Course Assignments (grading) and this will apply to field trips. If you have an excused absence, a missed class or field trip will not count against your participation grade. Please notify the instructor of excused absences in advance, if possible, and within one class day of unforeseen missed exams or quizzes.

Excused Absences:

An instructor may not penalize a student for an excused absence. However, students need to notify the professor of absences prior to class when possible. S.R. 5.2.4.2 defines the following as acceptable

reasons for excused absences: (a) serious illness, (b) illness or death of family member, (c) University-related trips, (d) major religious holidays, and (e) other circumstances found to fit “reasonable cause for nonattendance” by the professor. Students anticipating an absence for a major religious holiday are responsible for notifying the instructor in writing of anticipated absences due to their observance of such holidays no later than the last day in the semester to add a class. Information regarding dates of major religious holidays may be obtained through the religious liaison, Mr. Jake Karnes (859-257-2754).

Students are expected to withdraw from the class if more than 20% of the classes scheduled for the semester are missed (excused or unexcused) per university policy.

Verification of Absences

Students may be asked to verify their absences in order for them to be considered excused. Senate Rule 5.2.4.2 states that faculty have the right to request “appropriate verification” when students claim an excused absence because of illness or death in the family. Appropriate notification of absences due to university-related trips is required prior to the absence.

Academic Integrity:

Per university policy, students shall not plagiarize, cheat, or falsify or misuse academic records. Students are expected to adhere to University policy on cheating and plagiarism in all courses. The minimum penalty for a first offense is a zero on the assignment on which the offense occurred. If the offense is considered severe or the student has other academic offenses on their record, more serious penalties, up to suspension from the university may be imposed.

Plagiarism and cheating are serious breaches of academic conduct. Each student is advised to become familiar with the various forms of academic dishonesty as explained in the Code of Student Rights and Responsibilities. Complete information can be found at the following website: <http://www.uky.edu/Ombud>. A plea of ignorance is not acceptable as a defense against the charge of academic dishonesty. It is important that you review this information as all ideas borrowed from others need to be properly credited.

Accommodations due to disability:

If you have a documented disability that requires academic accommodations, please see me as soon as possible during scheduled office hours. In order to receive accommodations in this course, you must provide me with a Letter of Accommodation from the Disability Resource Center (Room 2, Alumni Gym, 257-2754, email address: jkarnes@email.uky.edu) for coordination of campus disability services available to students with disabilities.

Classroom Emergencies:

If an emergency arises in this classroom, building or vicinity, your instructor will advise you of actions to follow to enhance your safety. If a situation requires emergency shelter (i.e., during a severe weather event), the nearest shelter location is posted on the classroom door. If building evacuation occurs (i.e., fire alarm), follow posted evacuation routes and assemble at north side of the building so the instructor can help ensure their students have evacuated the building safely and they are not hindering emergency personnel access to the building. If you may require assistance during an emergency, notify the instructor at the beginning of the semester. In order to prepare for

emergencies while on campus please continue to the below links for detailed emergency response guidelines: the UK Division of Crisis Management & Preparedness website (<http://www.uky.edu/EM/emergency-response-guide.html>) and the College of Agriculture, Food and Environment (<http://www.ca.uky.edu/>). To receive emergency messages, sign up for UK Alert (<http://www.uky.edu/EM/UKAlert>). Always turn cellular phones to silent mode when entering the classroom. If you observe or receive an emergency alert, immediately and calmly inform your instructor.