



SENATE COMMITTEE ON CURRICULAR AFFAIRS
COURSE SUBMISSION AND CONSULTATION FORM

Principal Faculty Member(s) Proposing Course

Name	User ID	College	Department
DENNIS R DECOTEAU	drd10	Agricultural Sciences (AG)	Not Available

Academic Home: Agricultural Sciences (AG)

Type of Proposal: Add Change Drop

Current Bulletin Listing

Abbreviation: **HORT**

Number: **150**

I am requesting recertification of this course for the new Gen Ed and/or University Requirements Guidelines

Course Designation

(HORT 150N) Plants in the Human Context

Course Information

Cross-Listed Courses:

Prerequisites:

Corequisites:

Concurrents:

Recommended Preparations:

Abbreviated Title: Plants and Humans

Discipline: General Education

Course Listing: Inter-Domain

Special categories for Undergraduate (001-499) courses

Foundations

Writing/Speaking (GWS)

Quantification (GQ)

Knowledge Domains

Health & Wellness (GHW)

Natural Sciences (GN)

Arts (GA)

Humanities (GH)

Social and Behavioral Sciences (GS)

Additional Designations

Bachelor of Arts

International Cultures (IL)

United States Cultures (US)

Honors Course

Common course number - x94, x95, x96, x97, x99

Writing Across the Curriculum

First-Year Engagement Program

First-Year Seminar

Miscellaneous

Common Course

GE Learning Objectives

GenEd Learning Objective: Effective Communication

GenEd Learning Objective: Creative Thinking

GenEd Learning Objective: Crit & Analytical Think

GenEd Learning Objective: Global Learning

GenEd Learning Objective: Integrative Thinking

GenEd Learning Objective: Key Literacies

GenEd Learning Objective: Soc Resp & Ethic Reason

Bulletin Listing

Minimum Credits: 3

Maximum Credits: 3

Repeatable: NO

Department with Plant Science (UPAG_PLTSC)

Curricular Responsibility:

Effective Semester: After approval, the Faculty Senate will notify proposers of the effective date for this course change. Please be aware that the course change may not be effective until between 12 to 18 months following approval.

Travel Component: NO

Course Outline

A brief outline or overview of the course content:

This course provides an introduction to the many fascinating and vital relationships between plants and human society.

A listing of the major topics to be covered with an approximate length of time allotted for their discussion:

1. Plant Structure and Function – 1 week

1.1 Intro to class

1.2 What are plants and how are they built

1.3 Photosynthesis & Function

2. Human Civilization as Influenced by Plants – 3 weeks

2.1 Sugar and the Slave Trade

2.2 Cotton and the American South

2.3 Irish potato famine

2.4 Rubber and WWII

2.5 Plant Hormones and Vietnam

GN topics/content:

- Areas of plant origin - sugar, cotton, potato and rubber
- Migration of plants across continents and ocean - sugar, cotton, potato and rubber
- Climatic and cultural needs of plants and plant adaptability to new climates - sugar, cotton, potato and rubber
- Insect and disease interactions - sugar, cotton, potato and rubber
- Plants as weeds and use of plant hormones as herbicides – Jungles and guerilla warfare during the Vietnam war

topics/content GS topics/content

GS topics/content:

- Colonization, industrialization, labor needs, slave trade, Civil War
- Production, processing, and cultivation of sugar and cotton – cotton in south – textile mills in NE
- Irish and English – famine and immigration, settlement in US
- Rubber – WWI
- Hormones
- Food safety & Regs
- Nomadic/hunter gather to settlements – change in society civilization and advancement
- How does food processing and preservation impact civil society

3. History of Drink from Plants – 3 weeks

3.1 Tea

3.2 Coffee

3.3 Wine

3.4 Wines and the US

3.5 Beer and Spirits

GN topics/content:

- Health effects of caffeine and alcohol.
- Environment effects on the growing of tea, coffee, and wine grapes.
- Types of tea, coffee, wine and beer.
- The production of wine, beer, and spirits.

GS topics/content:

- Tea Tax, English rule, coffee production, class hierarchy
- Wine – origins and cultural impact – local foods and microbrew popularity
- Cultural adaptation and use of plants to produce alcohol, Coke, cocoa

4. History of Food from Plants – 3 weeks

4.1 Corn

4.2 Apples

4.3 Spices

4.4 Chili Peppers

4.5 Chocolate

GN topics/content:

- Major areas of production of corn, apples, spices, Chili peppers, and chocolate
- North American farming methods versus European farming methods
- Vitamins and other essential elements in the human diet
- Major types of corn, apples, and peppers

GS topics/content:

- Corn and rice – staple
- Genetic selection – consumer choice – GMOs
- Organic vs conventional – access and affordability – food deserts
- Cost, accessibility, familiarity, and preparation – limiting Socioeconomic factors

5. Chemicals from Plants- 2 weeks

5.1 Quinine

5.2 Aspirin

5.3 Herbals & Coca

5.4 Perfumes

GN topics/content:

- Understanding infectious diseases
- Important secondary metabolites in plants
- Discovery of healing compounds in plants.

GS topics/content:

- Herbal and natural homeopathic
- Personal care and cosmetics

6. Other Plant Uses – 2 weeks

6.1 Wood & Paper

6.2 Tobacco

6.3 Biomimicry

6.4 Forensic Botany

GN topics/content:

- Uses of plants for energy generation
- Types of wood and alternatives
- Role of nature in developing new products and systems
- Plant use in solving crimes

GS topics/content:

- PA forest industry – impact on economy
- Paper and related product
- Fuel and use to mediate spills, filters, cooling/living roof/walls

7. Cultural Events – 1 week

7.1 Columbus Day and Apples (Spring semester)

7.2 Jack o lanterns and pumpkins (Fall semester)

GN topics/content:

- Old world versus new world crops

GS topics/content:

- Columbus and ecological imperialism

Course Description:

Plants have played a dynamic role in shaping our life. In reality, human existence on Earth is made possible by the breath of plants through photosynthesis. Likewise, our botanical connections and interactions are many: we need plants for food, beverages, medicines, materials, healthy lifestyles, and aesthetics. Plants have also played an important role in where our ancestors settled and where we live today. Some of the important topics discussed in this class will include the role of tea in transforming world cultures, the importance of sugar in the Civil War and the establishment of the Caribbean nations, the effect of the Irish potato famine on Europe and the US, and the use of plants in solving crimes.

The name(s) of the faculty member(s) responsible for the development of the course:

1 Name: DENNIS R DECOTEAU (drd10)

Title: Professor of Horticulture and Plant Ecosystem Health

Phone: 814-865-5587

Address: 18 Tyson BUilding

Campus: UP

City: University Park

Fax:

Name: TRACY HOOVER (TSH102)

Title: Associate Dean for Undergraduate Education and Professor Ag & Extension Education

Phone: 814 8657521

Address: 101 Ag Admin Building

Campus: UP

City: University Park

Fax:

Course Justification

Instructional, Educational, and Course Objectives:

This section should define what the student is expected to learn and what skills the student will develop.

Upon completion of the course students will be able to :

- Explain and analyze the contributions of plants and plant use in cultures, civilization, and communities. (Critical and analytical thinking / Integrative thinking)
- Identify and compare cultural and production practices in the cultivation, research, processing, and distribution of plants for human and animal use. (Key literacies/ Global Learning)
- Investigate factors that lead to consumer preferences, perceptions, choice, access, and affordability of plants, plant derived products. (Effective communication)

Evaluation Methods:

Include a statement that explains how the achievement of the educational objective identified above will be assessed.

The procedures for determining students' grades should be specifically identified.

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Grading

Category Percentage of final grade

Exams (2) 40%

Assignments (3) 42%

Quizzes (8) 8%

Class Participation 10%

TOTAL 100%

Exams: Two in-class exams (a midterm and a final) will be administered during the semester. Students who have a conflict with the assigned exam period must notify the instructor as soon as possible, but no later than one week before the exam. For all missed exams the student is required to bring in a legitimate written excuse.

Assignments: Three assignments, covering topics outside of the lecture material, will be posted on Canvas. Each assignment is based on readings and short videos. Students are expected to work individually on assignments and will have one attempt to complete the corresponding short answer questions on Canvas.

Quizzes: Eight quizzes, reviewing lecture material, will be administered on Canvas. Students will have unlimited attempts to complete each quiz, which consist of multiple choice questions only. However, each attempt must be completed within one hour. The lowest quiz grade will be dropped in order to compensate for unexpected and/or extraordinary circumstances. Therefore, the highest six quiz scores will be included in the final grade, and no make-ups will be offered.

Class participation/Active Learning Activities: Class attendance and participation are expected. Ten unannounced, in-class active learning activities will be administered throughout the semester to document student attendance and engagement. The lowest participation grade will be dropped in order to compensate for unexpected and/or extraordinary circumstances. Excessive absences may result in a lowering of the final grade.

Relationship/Linkage of Course to Other Courses:

This statement should relate the course to existing or proposed new courses. It should provide a rationale for the level of instruction, for any prerequisites that may be specified, or for the course's role as a prerequisite for other courses.

This course does not link to any existing course.

Relationship of Course to Major, Option, Minor, or General Education:

This statement should explain how the course will contribute to the major, option, or minor and indicate how it may function as a service course for other departments.

For the Plant Science major, this course will satisfy an elective requirement. HORT 150 is already classified as a GN.

A description of any special facilities:

We will need a lecture hall with a digital projector.

Frequency of Offering and Enrollment:

This course will be offered every fall and spring semester and the projected enrollment would be capped at around 50 students each semester.

Justification for Changing The Proposal:

Include a justification for each change to the course. Particular attention should be paid to the effects of the course change within the discipline and in other disciplines where the course may be required within a major or used as a service course. When a unit submits several course changes, with or without new course proposals, a general statement covering the programmatic effects of the changes should be submitted.

This is a recertification of the course for gen ed and request for interdomain listing as GN and GS.

Alignment with General Education Objectives

EFFECTIVE COMMUNICATION – the ability to exchange information and ideas in oral, written, and visual form in ways that allow for informed and persuasive discourse that builds trust and respect among those engaged in that exchange, and helps create environments where creative ideas and problem-solving flourish.

KEY LITERACIES – the ability to identify, interpret, create, communicate and compute using materials in a variety of media and contexts. Literacy acquired in multiple areas, such as textual, quantitative, information/technology, health, intercultural, historical, aesthetic, linguistic (world languages), and scientific, enables individuals to achieve their goals, to develop their knowledge and potential, to lead healthy and productive lives, and to participate fully in their community and wider society.

CRITICAL AND ANALYTICAL THINKING – the habit of mind characterized by comprehensive exploration of issues, ideas, artifacts, and events before accepting or formulating a conclusion. It is the intellectually disciplined process of conceptualizing, applying, analyzing, synthesizing, and/or evaluating information gathered from, or generated by, observation, experience, reflection, reasoning, or communication, as a guide to belief and action.

INTEGRATIVE THINKING – the ability to synthesize knowledge across multiple domains, modes of inquiry, historical periods, and perspectives, as well as the ability to identify linkages between existing knowledge and new information. Individuals who engage in integrative thinking are able to transfer knowledge within and beyond their current contexts.

CREATIVE THINKING – the capacity to synthesize existing ideas, images, or expertise in original ways and the experience of performing, making, thinking, or acting in an imaginative way that may be characterized by innovation, divergent thinking, and intellectual risk taking.

GLOBAL LEARNING – the intellectually disciplined abilities to analyze similarities and differences among cultures; evaluate natural, physical, social, cultural, historical, and economic legacies and hierarchies; and engage as community members and leaders who will continue to deal with the intricacies of an ever-changing world. Individuals should acquire the ability to analyze power; identify and critique interdependent global, regional, and local cultures and systems; and evaluate the implications for people's lives.

SOCIAL RESPONSIBILITY AND ETHICAL REASONING – the ability to assess one's own values within the social context of problems, recognize ethical issues in a variety of settings, describe how different perspectives might be applied to ethical dilemmas, and consider the ramifications of alternative actions. Individuals should acquire the self-knowledge and leadership skills needed to play a role in creating and maintaining healthy, civil, safe, and thriving communities.

What component(s) of the course will help students achieve the General Education Learning Objectives covered in the course? Provide evidence that students in the course have adequate opportunities to achieve the identified learning objectives.

This course is designed to align with the new General Education requirements and is intended as an interdomain course with the Natural Sciences (GN) and Social and Behavioral Sciences (GS). It utilizes the disciplinary methods taken from the natural sciences (Plant Science) and the Social Sciences to illustrate the important roles that plants play in the establishment of human culture (Critical and analytical thinking / Integrative thinking). By the end of the course, students should have amassed a wide knowledge of the multiple positive (e.g. food, fiber, shelter) and negative (e.g. drugs and poisons) ways plants and humans have interacted and contributed to the establishment of past and present societies (Creative thinking). The students will have a working knowledge of the historical, scientific, ecological, and sociological context that plants have played on the development of human culture (Integrative thinking). Enrolled students will possess a variety of analytical skills, including gaining experience comparing and contrasting multiple disciplinary approaches (Critical and analytical thinking / Integrative thinking). The assignments provide opportunities to immerse themselves into timely topics through readings and video clips to evaluate current trends and suggest creative future possibilities (Critical and analytical thinking/creative thinking). The discussions allow students to postulate and discuss in small group questions contemporary topics of concern (Integrative thinking).

Two traditional exams (midterm and final) will be given assess student learning. The exams will consist of terminology matching, multiple choice, true/false; and short answer and will focus on lecture materials. Students also will be required to complete a series of online quizzes and assignments. Three assignments, covering topics outside of the lecture material, will be posted on Canvas. Each assignment is based on readings, investigation, and short videos, which are available as a.pdf file on Canvas. Students are expected to work individually on assignments. There will be additional opportunity to learn material via in-class active learning activities.

How will students be assessed to determine their attainment of the Learning Objective(s) of General Education covered in this course? This assessment must be included as a portion of the student's overall performance in this course.

Exams - Two in-class exams (a midterm and a final) will be administered during the semester. Exams will contain GN and GS content relevant to the syllabus format as indicated earlier. A variety of assessment formats will be used including T/F; Multiple Choice; Matching; and short answer. (Critical and analytical thinking, Integrative thinking, Creative thinking)

Assignments –

- 1.Plant Domestication and Human Civilization (Critical and analytical thinking / Integrative thinking)
2. Genetic Modification by Engineering (Creative thinking)
3. Medicine/Poisons from Plants (Integrative thinking)

Quizzes -

Active Learning Activities – Depending upon the lecture topics ten active learning activities will engage learners throughout the class – examples include, think-pair-share; concept mapping; myth busters; what's in your backpack; current events; simulations; game/simulation; etc.

(Critical and analytical thinking, Integrative thinking, Creative thinking)

General Education Domain Criteria

General Education Designation: Inter-Domain

GN Criteria

- Explain the methods of inquiry in the natural science fields and describe how the contributions of these fields complement inquiry in other areas
- Construct evidence-based explanations of natural phenomena
- Demonstrate informed understandings of scientific claims and their applications
- Evaluate the quality of the data, methods, and inferences used to generate scientific knowledge
- Identify societal or philosophical implications of discoveries in the natural sciences, as well as their potential to address contemporary problems

What components of the course will help students achieve the domain criteria selected above?

This course is designed to use foundational/fundamental scientific information in the plant sciences to better understand the role that plants have on the development of human civilizations and culture (Construct evidence-based explanations of natural phenomena). Discussions and assignments on the validity and use of plant herbals in understanding plant uses throughout history, the role of native plants in the success and failures of explorers from the "Old World" to develop human establishments in the "New World", how the native plants from the "New World" that were transported to the "Old World" (and vice versa) affected those societies (such as the Irish potato famine), the development of plant domestication and agriculture on where societies eventually developed, and discuss the scientific and non-scientific claims of plants on human health and culture (Demonstrate informed understandings of scientific claims and their applications). For example, preconceived notions and claims (often in religious ceremonies) highlighted the importance of plants during the development of civilizations and examples of such claims will be discussed during lecture and reevaluated with our contemporary knowledge of the plant sciences. While historical claims are important, new emerging claims of plant attributes (such as the benefits of various herbal medicines, the psychoactive effect of plant compounds to influence mood and health, the therapeutic uses of plants in the healing process of the mind and body) are equally important to understand in today's world (Identify societal or philosophical implications of discoveries in the natural sciences, as well as their potential to address contemporary problems). All discussion of plants in societies will highlight their influence on the human condition and resulting civilizations (Construct evidence-based explanations of natural phenomena). During the course students will be required to read relevant scientific literature, engage with scientific discussions, explore data accumulation and analysis, and provide effective communication of current past and present issues of the role of plants in societies through appropriate oral and written communication (Demonstrate informed understandings of scientific claims and their applications).

GS Criteria

- Explain the various methods of inquiry used in the social and behavioral sciences and describe how the contributions of these fields complement inquiry in other areas
- Identify and explain major foundational theories and bodies of work in a particular area of social and behavioral sciences
- Describe the ways in which many different factors may interact to influence behaviors and/or institutions in historical or contemporary settings
- Explain how social and behavioral science researchers use concepts, theoretical models and data to better understand and address world problems
- Recognize social, cultural, political and/or ethical implications of work in the social and behavioral sciences

What components of the course will help students achieve the domain criteria selected above?

In this course we will link several theories associated with consumer behavior, food-related attitudes, and food choice. – Identify and explain major foundational theories and bodies of work of social and behavioral sciences.

We will explore factors such as culture, affordability, access, and perceptions of food and their impact on health-based decisions, food purchases and consumption. Over time how has plant cultivation, use, processing and preparation impact nutritional content and civil societies? – Describe ways in which many different factors may interact to influence behaviors in historical or contemporary setting.

We will also investigate the impact of marketing advertisements and influences on nutrition and consumer perceptions of food quality and safety. For example, are GMOs bad? Organic vs Conventional Foods? – Recognize social, cultural, political and/or ethical implications of work in the social and behavioral sciences.

Integrative Studies

Explain how the intellectual frameworks And methodologies of the two Knowledge Domains will be explicitly addressed in the course and practiced by the students.

By using the principles of plant sciences and the history of cultures we will not only provide a scientific framework on agriculture across the globe and the ages. Scientific knowledge of plants and agriculture alone do not explain the existence and modifications of cultures. This is coupled with discussions of societal changes and needs to better understand the role that plants had on developing societies and people. Students will be required to read relevant literature in the course content areas in both the plant sciences and the social sciences. Assignments and discussions will highlight how natural laws and societal issues worked hand in

Demonstrate that each Of the two domains will receive approximately equal attention, providing evidence from course topics, assignments, or other course components, and that students will integrate material from both domains.

The course outline provides faculty responsibility for course content on the natural sciences and the social sciences. Both faculty will be present for each lecture to ask and answer interdisciplinary questions and spark discussions. See the example syllabus on page 2 for the distribution of content.

Briefly explain the staffing plan. Given that each Inter-Domain course is approved for two Knowledge Domains, it will be taught by an instructor (or instructional team) with appropriate expertise in both domains.

This course will be taught by faculty with expertise in the plant sciences (Dr. Decoteau) and agricultural education and assessment (Dr. Hoover). This course content will be delivered with appropriate distribution of the faculties' areas of specialization (see lecture outline). Dr. Decoteau will provide course content on the plant sciences and the scientific components and Dr. Hoover will provide course content on the social sciences.
See course outline.

Describe the assessments that will be used to determine students' ability to apply integrative thinking.

Two traditional exams (midterm and final) will be given to assess student learning and integrative thinking. The exams will consist of terminology matching, true/false, multiple choice, and short essays. Particular emphasis will place on determining the student's knowledge in how plants have influence societies. Also during the semester students will be required to complete three online assignments. Each assignment is based on readings, investigation, and short videos and cover issues such as Plant Domestication (where information will be presented on the history of how humans began modifying the genes of plant species and learned the traditional steps of plant breeding), Genetic Modification by Engineering (where students will learn more in depth the relatively new science of plant improvement using genetic engineering including the risk/benefits of this technology to societies), and Medicines/Poisons from Plants (where students will learn how man utilizes secondary metabolites from plants for their unique properties such as supplying us with essential nutrients, acting as medicines, poisonous aspects, and affecting our brain function), and completion of a in-depth concept map on a plant identifying its cultural, nutritional, functional, and lifestyle use.

Campuses That Have Offered (HORT 150) Over The Past 4 Years

semester	AB	AL	BK	BR	BW	CR	DS	ER	FE	GA	GV	HB	HN	HY	LV	MA	NK	PC	SH	SL	UP	WB	WC	WS	XC	XP	XS	YK
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UPLOADED DOCUMENTS FOLLOW:

SYLLABUS FOR GENERAL EDUCATION COURSE PROPOSAL

Course Abbreviation and Number: Hort 150

Credits: 3

Prerequisites/Co-requisites/Concurrent Requirements/Recommended

Preparation: None

Course Attributes/Designations: Gen Ed (GN, GS)

General Education Learning Objectives:

Critical And Analytical Thinking

Integrative Thinking

Creative Thinking

Course Description:

Plants have played a dynamic role in shaping our life. In reality, human existence on Earth is made possible by the breath of plants through photosynthesis.

Likewise, our botanical connections and interactions are many: we need plants for food, beverages, medicines, materials, healthy lifestyles, and aesthetics.

Plants have also played an important role in where our ancestors settled and where we live today. Some of the important topics discussed in this class will include the role of tea in transforming world cultures, the importance of sugar in the Civil War and the establishment of the Caribbean nations, the effect of the Irish potato famine on Europe and the US, and the use of plants in solving crimes.

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- Explain and analyze the contributions of plants and plant use in cultures, civilization, and communities. (Critical and analytical thinking / Integrative thinking)
- Identify and compare cultural and production practices in the cultivation, research, processing, and distribution of plants for human and animal use. (Key literacies/ Global Learning)
- Investigate factors that lead to consumer preferences, perceptions, choice, access, and affordability of plants, plant derived products. (Effective communication)