

COURSE SYLLABUS

COURSE TITLE:	<i>Plants and Human Affairs</i>		
COURSE CODE:	Biol. 324 – CRN: 20016	TERM:	02
COURSE CREDITS:	3	DELIVERY:	Lecture and laboratory
CLASS SECTION:	1	START DATE:	Jan. 3, 2019
CLASS LOCATION:	Room 124, Biol. Bldg.	LAB LOCATION:	Room 124, Biol. Bldg.
CLASS TIME:	M, W, F from 9:30-10:20 am	LAB TIME:	Tuesday 1:30-4:30 pm
WEBSITE:	Accessible via Blackboard on PAWS		

Course Description

- This is a 3-credit course open to any student of the U of S interested in human-plant interactions, not just biologists but also anthropologists, environmentalists, historians and people interested in the biological basis of human society.
- This course is designed for anyone who is interested in knowing the origin of current crop plants, and broadening their understanding on how plants have evolved throughout domestication processes according to numerous human needs, including enjoyment to daily human life. Though botanical terminology is desirable (and will be learned throughout the semester) technical terms are kept to a minimum but a botanical dictionary is highly recommended.
- **NOTE** Lectures and lab sessions include demonstrations with live plants or plant products or derivatives. **STUDENTS WITH FOOD ALLERGIES and/or reactions to plants or plant products are advised NOT to register for this course.**

Prerequisites

- Biol. 120 or 121, or permission of the instructor.

Learning Outcomes

By the completion of this course, students will be expected to:

- Understand the importance of plants and their role in the local and global community.
- Comprehend the principles about the origin and domestication of plants, and the major centers of origin and diversification of agriculture, and biodiversity and genetic resources in the world.
- Recognize major plant families, plant parts, and products used as food by human cultures around the world and have close encounters with food, textiles, medicines, perfumes, and oils derived from plants.
- Understand basic principles of plant domestication and the importance of genetic engineering in the plant and crop improvement, and know what plant parts/products have been industrialized.

Course Overview

- This course is designed for students interested in knowing the origin and evolution of crop plants, and broadening their understanding on how plants have evolved throughout domestication processes according to numerous human needs, including enjoyment to daily human life. Though botanical terminology is desirable (and will be learned throughout the semester) technical terms are kept to a minimum but a botanical dictionary is highly recommended.
- The course involves a series of hands-on demonstration in lecture and laboratory as well as student presentations on a topic related to plant domestication.

Class Schedule

Date	Lecture Topic	Suggested Reading / Lab Topic
Jan. 4	Introduction and Course Overview	
Jan. 7	Plants and People and Classification	Chapter 1, pp. 1-5
Jan. 8	Laboratory Session 1	Classification and Plant Morphology
Jan. 9	How to be a Plant	Chapter 1, pp. 5-21
Jan. 11	Food and Population	Chapter 21, pp. 472-487
Jan. 14	Major Cereals I – Wheat origin & evolution	Ch. 6, pp. 114-126
Jan. 15	Tutorial Session 2 – Major Cereals I	Wheat Evolution (Lect. & Lab)
Jan. 16	Major Cereals II – Maize origin & evolution	Ch. 7, pp. 134-146
Jan. 18	Major Cereals II – Maize origin & evolution - cont.	
Jan. 21	Major Cereals III – Rice	Chapter 6, pp. 121-123
Jan. 22	Tutorial Session 3 – Major Cereals II	Corn Evolution, Rice
Jan. 23	Minor Cereals I	Chapter 6, pp. 127-32
Jan. 25	Minor Cereals II	Chapter 6, pp. 127-32
Jan. 28	Pseudocereals	Chapter 6, pp. 133; Ch. 7, pp. 146
Jan. 29	Tutorial Session 4 – TUTORIALS	Tutorials; Minor cereals, Pseudocereals
Jan. 30	Edible Plant Parts	Chapter 9, pp. 172-190
Feb. 1	Starchy Plants I	Chapter 10, pp. 192-209
Feb. 4	Starchy Plants II: Banana	Chapter 5, pp. 98-100
Feb. 5	Tutorial Session 5	Tutorials - Starchy Plants & Parts
Feb. 6	Midterm 1 through Feb. 4th	
Feb. 8	Sugar Plants I: Sugar Cane and Slave Trade	Chapter 10, pp. 210-215
Feb. 11	Sugar Plants II: Sugar Beet and Sugar Maple	Chapter 8, pp. 150-170
Feb. 12	Tutorial Session 6	Tutorials & Sugar Plants
Feb. 13	Legumes – Types and biological importance	Chapter 8, pp. 150-170
Feb. 15	Pulses/Legume Crops	Chapter 8, pp. 150-170
Feb. 18-22	No Class/Lab – Reading Week	
Feb. 25	Flower and Fruit Parts I - The Dance	Chapter 4, pp. 51-76
Feb. 26	Tutorial Session 7	Tutorials & Legumes / Pulse Crops
Feb. 27	Flower and Fruit Parts II	Chapter 4, pp. 51-76
March 1	Fruits and Vegetables I	Chapter 4
March 4	Fruits and Vegetables II	Chapter 5
March 5	Tutorial Session 8	Tutorials & Temperate and Tropical Fruits
March 6	Fruits and vegetables - examples	Chapter 9
March 8	Midterm 2 through March 6	
March 11	Spices I – Historical Uses and Spice Trade	Chapter 13, pp. 261-289
March 12	Laboratory Session 9	Tutorials & Spices & Herbs
March 13	Spices II – Survey of Spices	Chapter 13, pp. 261-289
March 15	Plant Fibers I	Chapter 18, pp. 397-416
March 18	Plant Fibers II – Agave Plant and Tequila	Chapter 18, pp. 397-416
March 19	Tutorial Session 10	Field Trip
March 20	Origin of Agriculture - Overview	Chapter 2, pp. 22-35
March 22	Origin of Agriculture - Continued	
March 25	Domestication and Selection	Chapter 3, pp. 36-50
March 26	Tutorial Session 11	Tutorials & Fibers
March 27	Major Centres of Agriculture in the World	Reading: Mol. Evol. of Crop Plants
March 29	Medicinal Plants I – Historical Use and Chemistry	Chapter 14, pp. 290-317
April 1	Medicinal Plants II	
April 2	Tutorial Session 12	Tutorials & Multicultural Lab
April 3	Stimulant Beverages I	Chapter 16, pp. 347-390
April 5	Review - Last Day of Classes	

INSTRUCTOR INFORMATION

Dr. Hugo Cota-Sánchez, Professor and Curator

Contact Information

Office: Room 320.9, CSRB Building. **Tel.** 966-4405

Email: hugo.cota@usask.ca

Office Hours

TR 10:30 am -1:00 pm

Instructor Profile

Hugo was born in Mexico. He has a B.Sc. in Biology from the Escuela Nacional de Ciencias Biológicas, M.Sc. in Botany from the Claremont Graduate University, and a Ph.D. in botany from Iowa State University. He was a postdoctoral fellow and research associate at the Missouri Botanic Garden (1998-2000) while simultaneously supervising the DNA sequencing and plant molecular systematics labs at the University of Missouri-St. Louis.

At present, he is a full professor in the Department of Biology and herbarium curator at the University of Saskatchewan, Canada. He has been the recipient of five Teaching Excellence awards, including the UofS Master Teacher Award. He has taken several administrative roles, including membership in the Cactaceae Specialist Group for the World Conservation Union (1996-), board of directors for the Flora of Saskatchewan Association (2007-), and board of directors for the Canadian Botanical Association (2004-2007).

Hugo speaks English, French, Italian, Portuguese, and Spanish and frequently travels to Mexico and other parts of Central and South America to conduct collaborative fieldwork. His research interests within the cactus family are: 1) systematics and phylogeny, and 2) reproductive biology, with emphasis in the biology and evolution of viviparity. In his role as curator of the W.P. Fraser Herbarium he conducts floristic, taxonomic, and biodiversity studies dealing with carnivorous plants and other native species of Saskatchewan. His lab and herbarium research programs are funded by national, provincial and international agencies.

Resources

Readings/Textbooks – (Recommended)

Levetin, E. & K. McMahon. 2019. *Plants and Society*. 8th Ed. McGraw-Hill Publishers, New York. ISBN: 978-0-07-722125-6.

Simpson B.B. & M.M. Ogorzaly. 2013. *Economic Botany: Plants in our World*. 4th Ed. McGraw-Hill Publishers, New York. ISBN: 0-07-290938-2. [Syllabus' reading assignments based on this book.](#)

Prance, G. & M. Nesbitt. 2005. *The Cultural History of Plants*. Routledge, New York. ISBN: 0-415-92746-3.

Textbooks are available from the University of Saskatchewan Bookstore:

www.usask.ca/consumer_services/bookstore/textbooks AND the U of S Sciences library.

Supplementary Resources

Laboratory handouts will be provided on a weekly basis by the instructor.

Grading Scheme

INPUT	% OF GRADE	IMPORTANT DATES
Theory Mid-term I	25%	February 6
Midterm II	25%	March 8
Laboratory Tutorial (presentation)	15%	Starting Jan. 29
Comprehensive Theory Final Exam	35%	April ???

Criteria that must be met to pass

Students must complete all the assignments indicated above. Students who DO NOT complete one or more assignments will receive an "INC" (incomplete) grade

Mid-term and final exams:

There will be two mid-term exams. The mid-term and final exams will test material covered in lecture and any of the assigned readings. The exams will include a combination of fill-in-the-blank, short answer questions and essay questions. Material covered from the start of the course up to the date of the exam is eligible to be included on an exam.

Missed exams / Make-up policy:

You must take examinations during their scheduled periods. Make-up tests will be allowed only if there are extenuating circumstances, in which case the test will be given orally. If there is a medical problem that causes a student to miss an exam, the student must contact the instructor within 3 days of the exam to provide documentation of the illness and make necessary arrangements for a make-up exam. Failure to do so will result in a zero grade for the exam.

Late assignments:

Assignments, tutorials in this case, presented late will be penalized/deducted 10 points (out of a total 100 points). If there is a medical reason for the delay, the student must contact the instructor within 3 days of the assignment due date to provide documentation of illness and make necessary arrangements for a new due date for the assignment. Students who are struggling with unexpected, major life issues that conflict with an assignment due date are advised to contact the instructor BEFORE the assignment is due to discuss the possibility of arranging a new due date.

The **Laboratory sessions** are very important because that is where you will learn a great deal of information about uses and cultural issues of plants. They will consist of demonstration and study of plant material related to the class, reports prepared by class members, and discussion of lecture material, and reading assignments. Most labs are fun, cultural and illustrative. We often prepare and taste food made from the plants or families discussed. We may have international feasts depending on the class cultural enrollment. I strongly recommend you to attend the labs and cover all the material provided. Please share with us your heritage/cultural experiences.

Remember that this is an *integrative course* and that lecture and laboratory sessions make up the entire content of this course. Hence, the exams will include material from both components.

Integrity Defined (from the Office of the University Secretary)

The University of Saskatchewan is committed to the highest standards of academic integrity and honesty. Students are expected to be familiar with these standards regarding academic honesty and to uphold the policies of the University in this respect. Students are particularly urged to familiarize themselves with the provisions of the Student Conduct & Appeals section of the University Secretary Website and avoid any behavior that could potentially result in suspicions of cheating, plagiarism, misrepresentation of facts and/or participation in an offence. Academic dishonesty is a serious offence and can result in suspension or expulsion from the University.

All students should read and be familiar with the Regulations on Academic Student Misconduct (http://www.usask.ca/university_secretary/honesty/StudentAcademicMisconduct.pdf) as well as the Standard of Student Conduct in Non-Academic Matters and Procedures for Resolution of Complaints and Appeals (http://www.usask.ca/university_secretary/honesty/StudentNon-AcademicMisconduct2012.pdf)

For more information on what academic integrity means for students see the Student Conduct & Appeals section of the University Secretary Website at:
http://www.usask.ca/university_secretary/pdf/dishonesty_info_sheet.pdf

Examinations with Access and Equity Services (AES)

AES' duty is to help individuals requiring accommodations based on disability, religion, family status and gender identity. Students who have disabilities (learning, medical, physical, or mental health) are strongly encouraged to register with AES for advice and referrals. In order to access AES programs and support, students must follow AES policy and procedures. For more information, check <https://students.usask.ca/health/centres/access-equity-services.php#AssistiveTechnologyRoom>

Students registered with AES may request alternative arrangements for mid-term and final examination. Students must arrange such accommodations through AES by the stated deadlines. Instructors shall provide the examinations for students who are being accommodated by the deadlines established by AES.