

GENERAL INFORMATION

BIOLOGY 324.3.2 – PLANTS AND HUMAN AFFAIRS – SPRING 2009

INSTRUCTOR: J. Hugo Cota-Sánchez, Ph.D.

Office: Room 141, Biology Building. **Tel.** 966-4405

Office hours: TR 9:30 am -11:00 am, Biol. 141

E-mail: hugo.cota@usask.ca

Lectures: MWF 9:30-10:20 am, Room 125 Biology

Laboratory: Lab & Tutorial - Monday 1:30 - 4 pm, Room 213 Biology.

TAs: TBA

COURSE STRUCTURE

- 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 has no prerequisites. Class meets three times a week, 1hr/meeting. In addition, a laboratory/tutorial session is scheduled weekly.
- 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.

COURSE OBJECTIVES

- To learn the principles about the origin and domestication of plants, and the major centers of origin and diversification of agriculture in the world.
- To introduce the students to the major plant families, plant parts, and plant products used as food by human cultures around the world and have close encounters with food, textiles, medicines, perfumes, and oils derived from numerous plant species.
- To learn what plant parts/products have been industrialized, and the importance of genetic engineering in the plant production and crop improvement.

Please note that students with food allergies and/or strong reactions to plants or plant products are advised not to register to this course. The lectures and lab sessions often include demonstrations with live plants or plant products or derivatives.

BOOK RESOURCES

LECTURE RESOURCE AND LABORATORY MANUAL FOR BIOL. 324 BY J. H. COTA-SÁNCHEZ. Available in instructor's website only to registered students:

<http://www.usask.ca/biology/cota-sanchez/courses/courses324.html>

SUGGESTED TEXTBOOK

Simpson B. B. and M. M. Ogorzaly. 2001. *Economic Botany: Plants in our World*. 3rd. Ed. MacGraw-Hill Publishers, New York. ISBN: 0-07-290938-2.

RECOMMENDED TEXTBOOKS

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

Levetin, E., and K. McMahon. 2008. *Plants and Society*. 6nd. Ed. MacGraw-Hill Publishers, New York. ISBN: 978-0-07-722125-6.

For more references see list for supplemental resources in pages 10z-13.

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DATE	Lecture Topic	Suggested Reading / Lab Topic
Jan. 5	Introduction and Course Overview	
Jan. 7	Plants and People and Classification	Chapter 1, pp 2-20
Jan. 9	How to be a Plant	Chapter 1, 21-38
Jan. 12	Food and Population	Chapter 19, pp 458-476
Jan. 12	Laboratory Session 1	Classification and Plant Morphology
Jan. 14	Major Cereals I – Wheat origin - Montreal – no class?	Chapter 5, pp 108-118
Jan. 16	Major Cereals II – Maize origin - No class? montreal	Chapter 5, pp 126-134
Jan. 19	Major Cereal III - Rice	Chapter 5, pp 119
Jan. 19	Laboratory Session 2 – Major Cereals I	Wheat/Corn Evolution – Tortilla making
Jan. 21	Minor Cereals I	Chapter 5, pp 119-134
Jan. 23	Minor Cereals II	Chapter 5, pp 119-134
Jan. 26	Pseudocereals	Chapter 5, pp 119-134
Jan. 26	Laboratory Session 3 – Major Cereals II	Rice, Minor Cereals & Pseudocereals
Jan. 28	Edible Plant Parts	Chapter 7, pp 155-178
Jan. 30	Starchy Plants I	Chapter 7, pp 180-186
Feb. 2	Starchy Plants II: Banana	Chapter 7, pp 180-186
Feb. 2	Laboratory Session 4	Starchy Plant Parts
Feb. 4	Midterm 1 through Feb. 2	
Feb. 6	Sugar Plants I: Sugar Cane and Slave Trade	Chapter 7, pp 187-191
Feb. 9	Sugar Plants II: Sugar Beet and Sugar Maple	Chapter 7, pp 187-191
Feb. 9	Laboratory Session 5	Sugar Plants
Feb. 11	Legumes – Types and biological importance	Chapter 6, pp 136-154
Feb. 13	Pulse/Legume Crops I	Chapter 6, pp 136-154
Feb.16-20	No Class – Reading Week	
Feb. 23	Pulse/Legume Crops II	Chapter 6, pp 136-154
Feb. 23	Laboratory Session 6	Legumes / Pulse Crops
Feb. 25	Flower and Fruit Parts I - The Dance	Chapter 5, pp 53-74
Feb. 27	Flower and Fruit Parts II	Chapter 6 pp 75-104
March 2	Fruits and Vegetables I	Chapter 7
March 2	Laboratory Session 7	Temperate and Tropical Fruits & Nuts
March 4	Fruits and Vegetables II	
March 6	Midterm 2 through March 4	
March 9	Spices I – Historical Uses and Spice Trade	Chapter 8, 172-217
March 9	Laboratory Session 8	Leaf, Stem & Root vegetables
March 11	Spices II – Survey of Spices	Chapter 8, 172-217
March 13	Plant Fibers I	Chapter 15, pp 355-376
March 16	Plant Fibers II – Agave Plant and Tequila	
March 16	Laboratory Session 9	Spices & Herbs
March 18	Origin of Agriculture - Overview	Chapter 2, pp 40-52
March 20	Domestication and Selection	Chapter 2, pp 40-52
March 23	Major Centres of Agriculture in the World	Chapter 2, pp 40-52
March 23	Laboratory Session 10	Supermarket Safari
March 25	Medicinal Plants – Historical Use and Chemistry	Chapter 11, pp 262-285
March 27	Medicinal Plants - Examples	Chapter 11, pp 262-285
March 30	Stimulant Beverages I	Chapter 13, pp 313-330
March 30	Laboratory Session 11	Group/Class Assignment
April 1	Stimulant Beverages II	
April 3	Review	