

COURSE SYLLABUS

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|------------------------|---------------------------------|----------------------|------------------------|
| COURSE TITLE: | <i>Plants and Human Affairs</i> | | |
| COURSE CODE: | Biol. 324 – CRN: 20016 | TERM: | Winter 2021 |
| COURSE CREDITS: | 3 | DELIVERY: | Lecture and laboratory |
| CLASS SECTION: | 1 | START DATE: | Jan. 11, 2021 |
| CLASS LOCATION: | Remote via Webex | LAB LOCATION: | Remote via Webex |
| CLASS TIME: | M, W, F from 9:30-10:20 am | LAB TIME: | Tuesday 1:30-4:30 pm |
| WEBSITE: | Accessible via PAWS/Canvas | | |

Course Description

- A consideration of economically important vascular plants, plant families, plant parts and products used as food, textiles and medicines. The origin, history and domestication of plants and major crops, diversification of crops and major centers of agriculture in the world and fundamental roles of plants in human societies are discussed.

Prerequisites

- 6 credit units selected from BIOL 107, 108, 120, and 121, or completion of 60 credit units at the university level.

Instructor Information

Dr. J. Hugo Cota-Sánchez, Professor and Curator
 Collaborative Science Research Building (CSRB), Office 320.9
<http://artsandscience.usask.ca/profile/HCotaSanchez>
<http://www.usask.ca/biology/cota-sanchez/lab/>

Webex Contact Information → Virtual Classroom

Webex Personal Room: <https://usask.webex.com/meet/hugo.cota>
 Webex Personal Number: 920 022 663

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.

He joined the University of Saskatchewan, where he is a full professor in biology and curator of the herbarium. He has been the recipient of five Teaching Excellence awards, including the Master Teacher Award. He has taken several administrative roles, including membership in the Cactaceae Specialist Group for the World Conservation Union, board of directors for the Flora of Saskatchewan Association and the Canadian Botanical Association.

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.

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.

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 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 the plant parts/products have been industrialized.

Learning Charter

The University of Saskatchewan Learning Charter is intended to define aspirations about the learning experience that the University aims to provide, and the roles to be played in realizing these aspirations by students, instructors and the institution. A copy of the Learning Charter can be found at:

<https://teaching.usask.ca/about/policies/learning-charter.php>

Remote Learning Context

We remind our students about the complex circumstances we are currently experiencing due to Covid-19 situation. Consequently, this course will be taking place remotely ([see Webex Virtual Classroom information in Instructor's section above](#)) and will be delivered synchronously. Please note that the remote teaching and learning context is new to most of us. I am therefore asking all the participants in the course to interact with empathy and care. There might be unforeseen circumstances in which digital technology and remote teaching will give us unexpected challenges to deal with.

This year Biol. 324 is using remote delivery tools. Several components of the course have been redesigned, including some of the laboratory activities. The University of Saskatchewan has created a number of resources for us to use as we teach and learn in the remote environment. The links to several of these resources are found in the Biol. 324 Canvas course. Please take the time to peruse these links. You will interact with other students, your professor and lab teaching personnel with various online course tools. If you have any questions about how to do something, please feel free to ask your instructor(s).

Remote classes pose additional challenges for many students. The University put together information on tools and technologies to help students navigate the resources needed to be ready for this new delivery style and reduce stress. You can access these resources at: <https://students.usask.ca/study/remote-learning.php#Accessingcoursework> We would also like to direct you to the USask Netiquette webpage and encourage you to be mindful of your online activities: <https://teaching.usask.ca/remote-teaching/netiquette.php> If you are experiencing difficulty, please contact the instructors or lab coordinator as soon as possible.

Class Schedule

| Date | Lecture Topic | Suggested Reading / Lab Topic |
|------------|----------------------------------------------------|---------------------------------------------|
| Jan. 11 | Introduction and Course Overview | |
| Jan. 12 | No lab | |
| Jan. 13 | How to be a Plant | Chapter 1, pp. 5-21 |
| Jan. 15 | Food and Population | Chapter 21, pp. 472-480 |
| Jan. 18 | Classification | |
| Jan. 19 | Lab/Tutorial Session 1 | Introductions and Plant Morphology |
| Jan. 20 | Plants in our World and People | Chapter 1, pp. 1-5 |
| Jan. 22 | Origin of Agriculture | Chapter 2, pp. 22-35 |
| Jan. 25 | Major Centres of Agriculture in the World | Chapter 2, pp. 22-35 |
| Jan. 26 | Lab/Tutorial Session 2 | Domestication & Tutorials Start! |
| Jan. 27 | Cereals Plants – Overview grass morphology | Ch. 6, pp. 114-126 |
| Jan. 29 | Major Cereals I – Maize origin & evolution - cont. | Ch. 7, pp. 134-146 |
| Feb. 1 | Major Cereals II – Wheat origin & evolution | Ch. 7, pp. 132-127 |
| Feb. 2 | Lab/Tutorial Session 3 – Major Cereals | Corn & wheat evolution & Tutorials |
| Feb. 3 | Major Cereals III – Rice | Chapter 6, pp. 121-124 |
| Feb. 5 | Minor Cereals | Chapter 6, pp. 127-132 |
| Feb. 8 | Pseudocereals | Chapter 6, pp. 133; Ch. 7, pp. 146-147 |
| Feb. 9 | Lab/Tutorial Session 4 | Rice Evolution & Minor cereals & Tutorials |
| Feb. 10 | Edible Plant Parts | Chapter 9, pp. 172-190 |
| Feb. 12 | Midterm 1 (through Feb. 9) – In class | |
| Feb. 15-20 | No Class/Lab → Reading Week | |
| Feb. 22 | Root Crops & Starchy Plants I | Chapter 10, pp. 192-209 |
| Feb. 23 | Lab/Tutorial Session 5 | Starchy Plants & Tutorials |
| Feb. 24 | Starchy Plants II: Banana | Chapter 5, pp. 98-100 |
| Feb. 26 | Sugar Plants I: Sugar Cane and Slave Trade | Chapter 10, pp. 210-214 |
| March 1 | Sugar Plants II: Sugar Beet and Sugar Maple | Chapter 10, pp. 213-215 |
| March 2 | Lab/Tutorial Session 6 | Sugar Plants & Tutorials |
| March 3 | Legumes – Types and biological importance | Chapter 8, pp. 150-158 |
| March 5 | Survey Pulses/Legume Crops I | Chapter 8, pp. 158-171 |
| March 8 | Survey Pulses/Legume Crops II | Chapter 8, pp. 158-171 |
| March 9 | Lab/Tutorial Session 7 | Legumes / Pulse Crops & Tutorials |
| March 10 | Flower and Fruit Parts I - The Dance | Chapter 4, pp. 51-76 |
| March 12 | Midterm 2 (from Feb. 10 through March 9) -In class | |
| March 15 | Flower and Fruit Parts II | Chapter 4, pp. 51-76 |
| March 16 | Lab/Tutorial Session 8 | Temperate and Tropical Fruits - Tutorials |
| March 17 | Fruits and Vegetables - examples | Chapter 5, 9 |
| March 19 | Fruits versus Vegetables | TBD – Review Ch. 4 |
| March 22 | Spices I – Historical Uses and Spice Trade | Chapter 13, pp. 261-269 |
| March 23 | Lab/Tutorial Session 9 | Spices & Herbs - Tutorials |
| March 24 | Spices II – Survey of Spices | Chapter 13, pp. 269-285 |
| March 26 | Plant Fibers I | Chapter 18, pp. 397-402 |
| March 29 | Plant Fibers II | Chapter 18, pp. 402-416 |
| March 30 | Lab/Tutorial Session 10 | Fiber Plants - Tutorials |
| March 31 | Medicinal Plants I | Chapter 14, pp. 290-304 |
| April 2 | No Class → Good Friday | |
| April 5 | Medicinal Plants II | Chapter 14, pp. 304-317 |
| April 6 | Lab/Tutorial Session 11 | Virtual Field Trip to Supermarket & assign. |
| April 7 | Psychoactive Drugs & Poisons from Plants | Chapter 15, pp. 318-337 |
| April 9 | Stimulant Beverages | Chapter 6, pp. 347-369 |
| April 12 | Plant Gene Resources and Seed Banks | Virtual visit to PGR – Brochure PGR |
| April 13 | Lab/Tutorial Session 12 | Lab wrap-up + Q & A period |
| April 14 | Review | |

Resources**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. 2014. *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.](#)

Supplementary Resources

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

Electronic Resources

Online resources will be provided to students according to course development.

REQUIRED EXAMINATION, COURSE WORK & GRADING SYSTEM FOR BIOL. 324

| INPUT | % OF GRADE | DATE(S) |
|--------------------------------------------------------------|------------|------------------|
| Theory Midterm I - during class time (synchronous) | 12.5% | February 12 |
| Theory Midterm II - during class time (synchronous) | 12.5% | March 12 |
| Lab Tutorial/Presentation (individual - synchronous) | 35% | Starting Jan. 26 |
| Contributions to course & discussions (lecture & lab) | 10% | |
| Final Exam | 30% | April xx, 2021 |
| TOTAL | 100% | |

Evaluation of Student Performance

Midterm Exam 1 and 2 (to be synchronous, i.e., written live during lecture time slot (50 min)).

Value: Each midterm is worth 12.5% of final grade.

Date: See Course Schedule.

Type: These exams will be virtual and invigilated remotely.

Description: These exams consist of fill-in-the-blank, short answers, and essay questions.

Final Exam/Assignment– it will be written as scheduled by USASK's Exam Schedule Office.

Value: Final exam is worth 30% of final grade.

Date: As determined by scheduling office.

Type: Take-home. Students will have 72 hours to complete this exam and return it to the instructor via email.

Description: The exam will consist of reading and/or watching, analyzing and summarizing an assignment and then answering short answer and essay questions provided by the instructor.

Note that all exams, especially midterms 1 and 2 will be cumulative, i.e., cover all material studied from the first day of class until the date of the exam. We will emphasize material covered since the last exam.

Student Tutorial/Presentation

Value: 35% of final grade.

Date: Synchronous, during lab sessions - see Course Schedule

Type: Student oral presentation.

Description: In every lab, there will be three (or four) presenters discussing a specific economic, cultural or edible plant part or crop.

- Students will select a topic upon approval of instructor and **sign-up for a presentation date by Jan. 19.**
- **Presentations will start on Jan. 26.** These should have a minimum duration of 30-35 min and will be followed by a Q/A period. Students are expected to participate in the discussion of the topic. A rubric for the requirement and grading of this assignment will be available on Canvas.

Contributions to Course and Discussions (participation in synchronous online sessions)

Value: 10% of final grade

Date: Each lecture and lab session - see Course Schedule

Format: In Webex synchronous lecture and lab meetings and take-home assignments.

Description: Students are expected to attend each synchronous lecture and lab meeting and be well prepared for these meetings. You are also expected to actively contribute to the work being performed within your group. Rubrics that will be used to determine these contributions will be posted on Canvas.

Submitting Assignments

- Students should submit exams and individual assignments as PDF or MSWord format files via email. Number of words/pages and citation of literature references should be provided as required by instructor.
- For the oral lab presentation, each student must submit a one-page abstract/summary of the mini-seminar and make it available to instructor, TA, and all students in the course via Canvas at least three hours prior to the presentation.
- The lab oral presentation will be graded by the instructor and teaching assistant, who will also watch for plagiarism. A rubric and weighting scheme for assessing the components of the presentation will be posted on Canvas. Presenters will be provided with written feedback about their performance 7 to 10 days after the presentation.

Late Exams/Exams

I will accept late exams/assignments only for three (3) working days beyond the due date. The penalty for your delay is 10% of each day of lateness deducted from the value of the exam/assignment, including weekend days. Extensions may be granted only in exceptional verifiable circumstances.

Attendance Expectations

Students are expected to attend all scheduled synchronous lectures and labs.

- A student who does not attend a laboratory session and does not have a valid excuse will automatically receive a 10% reduction in the Contributions to Course grade for synchronous activities.
- Students who are absent from synchronous lectures will receive a 25% reduction when three lectures are missed, a 50% reduction when six lectures are missed, a 75% reduction when nine lectures are missed and a 100% reduction when 10 or more lectures are missed.
- The instructor and TA will monitor student participation and attendance at the beginning and end of every lecture and lab.
- Students who are experiencing technical difficulties with the internet connection during synchronous activities are required to contact their instructor by phone or email immediately and arrange to discuss their situation. A plan to address the connectivity issues will be part of that discussion.

Midterm and Final Examination Scheduling

Midterm and final examinations must be written on the date scheduled. The final course examinations may be scheduled at any time during the examination period (April 15-30); students should therefore avoid making prior travel, employment, or other commitments for this period that will compromise their internet connectivity. If a student is unable to write the midterm exam through no fault of their own for medical, compassionate or other valid reasons, documentation must be provided and an opportunity to write the missed exam may be given. Students who miss the final exam must contact the College of Arts & Science and apply for a deferred final exam. Deferred exams may utilize a different format than the regular exam, at the sole discretion of the course instructors. Students are encouraged to review all University examination policies and procedures: <http://students.usask.ca/academics/exams.php>
If you experience internet connectivity issues during the midterm or final exam, you must phone one of the course instructors immediately to advise them of the situation.

Criteria That Must Be Met to Pass

Completion of *all* required course components as indicated in the Grading Scheme category are compulsory to pass the course.

Experiential Learning

Students are encouraged to participate actively in lecture, laboratory sessions, and get involved in discussions dealing with plant parts and their functions in their own living environment. Similarly, students are encouraged to explore and review class material when visiting the produce and fruits stands in local supermarkets. It is extremely important that students devote extra time to develop the minimum skills and knowledge to identify edible plant parts.

Recommended Technology for Remote Learning

Students are reminded of the importance of having the appropriate technology for remote learning. The list of recommendations can be found at <https://students.usask.ca/remote-learning/tech-requirements.php>.

Recording of the Course

Course instructors may record the synchronous activities conducted in Webex meetings for the purpose of determining course contribution marks. These recordings will be retained for one year and then destroyed. Students are not allowed to record any aspect of this course, except with the permission of the instructors or as provided for by arrangements with Access and Equity Services.

Any recording made under these provisions are to only be used for the personal learning of the student who made the recording. For questions about recording and use of sessions in which you have participated, including any concerns related to your privacy, please contact your instructor. More information on class recordings can be found in the Academic Courses Policy <https://policies.usask.ca/policies/academic-affairs/academic-courses.php#5ClassRecordings>.

Required Video Use

At times in this course, you will be required to have your video on during video conferencing sessions. It will be necessary for you to have use of a webcam built into or connected to your computer. For questions about use of video in your sessions, including those related to your privacy, contact your instructor.

Copyright

Course materials are provided to you based on your registration in a class, and anything created by your professors and instructors is their intellectual property, unless materials are designated as open education resources. This includes exams, PowerPoint/PDF slides and other course notes. Additionally, other copyright-protected materials created by textbook publishers and authors may be provided to you based on license terms and educational exceptions in the Canadian Copyright Act (see <http://laws-lois.justice.gc.ca/eng/acts/C-42/index.html>).

Student Feedback

I would appreciate student feedback. Anonymous or not, information regarding the new remote course delivery systems course content and structure, or any other suggestion is useful to improve course content and delivery.

Integrity in a Remote Learning Context

Although the face of teaching and learning has changed due to covid-19, the rules and principles governing academic integrity remain the same. If you ever have questions about what may or may not be permitted, ask your instructor. Students have found it especially important to clarify rules related to exams administered remotely and to follow these carefully and completely.

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 (<https://secretariat.usask.ca/student-conduct-appeals/academic-misconduct.php>) as well as the Standard of Student Conduct in Non-Academic Matters and Procedures for Resolution of Complaints and Appeals (<https://secretariat.usask.ca/student-conduct-appeals/academic-misconduct.php#IXXIIAPPEALS>)

For more information on what academic integrity means for students see the Academic Integrity section of the University Library Website at: <https://library.usask.ca/academic-integrity#AboutAcademicIntegrity>

You are encouraged to complete the Academic Integrity Tutorial to understand the fundamental values of academic integrity and how to be a responsible scholar and member of the USask community - <https://library.usask.ca/academic-integrity.php#AcademicIntegrityTutorial>

Access and Equity Services (AES) for Students

Students who have disabilities (learning, medical, physical, or mental health) are strongly encouraged to register with Access and Equity Services (AES) if they have not already done so. Students who suspect they may have disabilities should contact AES for advice and referrals at any time. Those students who are registered with AES with mental health disabilities and who anticipate that they may have responses to certain course materials or topics, should discuss course content with their instructors prior to course add / drop dates. In order to access AES programs and supports, students must follow AES policy and procedures. For more information or advice, visit <https://students.usask.ca/health/centres/access-equity-services.php>, or contact AES at 306-966-7273 or aes@usask.ca.

Students registered with AES may request alternative arrangements for mid-term and final examinations. 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.

For information on AES services and remote learning please visit <https://updates.usask.ca/info/current/accessibility.php#AccessandEquityServices>

Student Supports

Academic Help for Students

The University Library offers a range of learning and academic support to assist USask undergrad and graduate students. For information on specific services, please see the Learning page on the Library web site <https://library.usask.ca/support/learning.php>.

- Remote learning support information <https://students.usask.ca/study/remote-learning.php>
- Remote learning tutorial https://libguides.usask.ca/remote_learning
- Study skills materials for online learning <https://libguides.usask.ca/studyskills>
- A guide on netiquette, principles to guide respectful online learning interactions <https://teaching.usask.ca/remote-teaching/netiquette.php>

Teaching, Learning and Student Experience

Teaching, Learning and Student Experience (TLSE) provides developmental and support services and programs to students and the university community. For more information, see the students' web site <http://students.usask.ca>.

Financial Support

Any student who faces challenges securing their food or housing and believes this may affect their performance in the course is urged to contact Student Central (<https://students.usask.ca/student-central.php>).

Aboriginal Students' Centre

The Aboriginal Students' Centre (ASC) is dedicated to supporting Aboriginal student academic and personal success. The centre offers personal, social, cultural and some academic supports to Métis, First Nations, and Inuit students. The centre is also dedicated to intercultural education, bringing Aboriginal and non-Aboriginal students together to learn from, with and about one another in a respectful, inclusive and safe environment. Students are encouraged to visit the ASC's Facebook page (<https://www.facebook.com/aboriginalstudentscentre/>) to learn more.

College Supports

Students in Arts & Science are encouraged to contact the Undergraduate Student Office and/or the Trish Monture Centre for Success with any questions on how to choose a major; understand program requirements; choose courses; develop strategies to improve grades; understand university policies and procedures; overcome personal barriers; initiate pre-career inquiries; and identify career planning resources. Contact information is available at: (<http://artsandscience.usask.ca/undergraduate/advising/>).

Treaty Acknowledgement

As we engage in Remote Teaching and Learning, we would like to acknowledge that the Saskatoon campus of the University of Saskatchewan is on Treaty Six Territory and the Homeland of the Métis. We pay our respect to the First Nation and Métis ancestors of this place and reaffirm our relationship with one another. We would also like to recognize that some may be attending this course from other traditional Indigenous lands. We ask that you take a moment to make your own Land Acknowledgement to the peoples of those lands. In doing so, we are actively participating in reconciliation as we navigate our time in this course, learning and supporting each other.