

CATALOG DESCRIPTION: A scientific study of the history, identification and use of the native plants by indigenous cultures. A focus on the interactions between people, cultures and plants, with a particular emphasis given to the plant use of the Lakota people. BHSU Campus – 3 credit hours. Prerequisite: BIOL 101/151 or permission of instructors.

INSTRUCTORS: John Dixson LSB 129; John.Dixson@bhsu.edu; (605) 642-6284
Justin & Tara Ramsey Jonas 168; ramsey.teaching@gmail.com; (605) 642-6616
Jace DeCory CAIS/Jonas 101; Jace.DeCory@bhsu.edu; (605) 269-1578 (cell)

OFFICE HOURS: To be announced in class and posted on faculty offices

MEETING TIMES & LOCATION: Mondays: 2:00 - 4:50 PM (Jonas Science 143)

REC'D TEXT: Larson, G.E., and J.R. Johnson. 2007. Plants of the Black Hills and Bear Lodge Mountains, 2nd ed. South Dakota State University, Brookings, USA.

(additional materials distributed in class or via course website; specimens on reserve, Jonas 143)

COURSE WEBSITE: <http://www.ramseylab.org/> (follow links under the Teaching heading)

The course website provides handouts, copies of the course syllabus and schedule, study guides, names and images of plants introduced in class, photographs of class activities, and helpful web links. Please visit frequently!

IMPORTANT DATES: Census date (last day to drop without transcript entry): 31 August 2017
Last day to drop course with a "W": 3 November 2017
IDEA surveys administered: 13 November - 1 December 2017

OVERVIEW: Through this course, students will gain a working knowledge of uses of indigenous plants and obtain an understanding of ways in which plants have shaped past and modern culture. We will cover the multiple uses of native plants, healing theory, and oral traditions. Ethnographic information will be combined with current knowledge of the biological activity of major classes of phytochemicals. Students will be able to identify common species, understand plant taxonomy and inspect specimens growing in natural habitats. Media presentation and/or guest speakers may be incorporated. This course is primarily a lecture format with some classroom discussion. Lab and fieldwork is required, as well as word processing, database acquisition, and use of computer software. Other general objectives include:

- To develop an understanding and appreciation of plants for medicine, food, fiber, and cultural uses;
- To increase awareness of the diversity of plant species in the local region;
- To increase the ability to analyze the cultural significance of plant materials;
- To foster a recognition of the influence of cultural, social and environmental factors on self and other groups;
- To augment an appreciation of the indigenous knowledge of plant use, management and phytochemistry;
- To increase an awareness of the valuable contributions and philosophy of indigenous peoples.

OUTLINE OF COURSE:

- I. Why Plants are Important
- II. Indigenous Philosophy & Cultural Aspects in Securing Plants
- III. Oral Tradition and Introduction of Plants Important to Lakota People
- IV. Plant Structures and Functions
- V. Classification of Plants and Identification of Specimens
- VI. Major Groups of Plants (families, genera, etc.)
- VII. Introduction to Pharmacologically Active Compounds (alkaloids, glycosides, steroids, terpenoids, etc.)
- VIII. Biological Activities of Different Phytochemicals
- IX. Plant Species Commonly Used By Indigenous People in Northern Plains
- X. Cultural Uses of Plants – Healing Theory and Plants as Medicine
- XI. Medicine Men and Women as Helpers/Healers
- XII. Notable Plants Used Outside of North America
- XIII. Sustainable Development – Ethics, Proprietary Plants, Genetics

COURSE SCHEDULE: The schedule of classroom and field sessions is presented on the final page of the syllabus. Note that the schedule is subject to change based on inclement weather (especially relevant for field sessions!), school closings, and flow of classroom discussion. Exam dates and assignment deadlines are also identified on the schedule.

FIELD & LAB WORK: Hands-on experience with plants in the field and lab is an essential component of the course. Field trips to natural habitats in the vicinity of the BHSU campus will be held during the first six weeks of the semester to introduce common plants of the region; lab sessions will reinforce and expand on course content presented in the field. Each student is required to acquire and use a clipboard or small notebook for notes on field trips and lab sessions.

PLANT ID & FIELD QUIZZES: Students are required to learn thirty common plant species found in our region—details on these plant species are posted on the course website and will be presented in class. There will be a take-home assignment on plant identification (30 points) and two short quizzes during field sessions (10 points each) to assist students in learning to recognize and learn key characteristics of the thirty species covered in the course.

WRITING ASSIGNMENTS: Students are required to complete four short essays, which are responses to guest speakers and video presentations made in class (10 points each). In addition, students will complete a writing assignment that reviews Ethnobotany-focused websites online (20 points). Details on these assignments, including length requirements and due dates, will be provided in class and posted to the course website.

EVALUATION: Grading will be based on the instructors' evaluation of the following:

- Three major exams consisting of T/F, multiple choice, short answer, and/or short essay problems;
- Plant identification assignment and two quizzes given during field and lab sessions;
- Four short writing assignments (response papers) and one review of Ethnobotany-focused websites;
- Group project (poster presentation about plant species of ethnobotanical interest; see below).

GRADING SCALE:

91 – 100 =	A	Exam No. 1	100 points
81 – 90 =	B	Exam No. 2	100 points
71 – 80 =	C	Exam No. 3	100 points
61 – 70 =	D	ID Assignment & Quizzes	50 points
<u><60 =</u>	<u>F</u>	Short Response Papers	40 points
		Review of Ethnobotany Websites	20 points
		Group Poster Project	80 points
		<u>Participation</u>	<u>60 points</u>
		TOTAL POSSIBLE	550 POINTS

POSTER PROJECT: Working in groups of two, student will select a plant species of ethnobotanical interest among those discussed in class or that occur elsewhere in North America. Based on review of scientific papers, published historical or ethnobotanical works, and online resources, students will report on the biological, chemical, medicinal, and cultural significances of the species—including geographic range and environmental affinities of taxa; noteworthy phenotypic characteristics (life-history, vegetative and reproductive morphology, etc.); ecological importance to natural habitats and wildlife; known or hypothesized chemical constituents and their biological properties; traditional uses in the context of medicine, food, fiber, decoration, and ceremony by American Indians and/or European settlers; and broader historical significance. Students are encouraged to use creative approaches in designing posters and may include graphics with written text and list of cited references. Groups will be evaluated based on poster content (technical features like organization, grammar, spelling + creative features like graphical design and effective use of imagery) and the clarity of oral presentations. Poster presentations are made on the last day of class (4th December) and are worth 80 points.

PARTICIPATION: Participation points will be assigned for attendance and engagement in four field trips (40 points) and two guest speaker presentations (20 points), for a total of 60 possible points through the semester.

ATTENDANCE POLICY: Generally, attendance will **not** be taken at each class. However, attendance **will** be taken (attendance sheet used) when we have field trips or a guest speaker—this is the basis of the aforementioned participation points (60 total for the semester). It is your responsibility, however, to attend **all** class sessions, unless ill or attending sponsored university events. If you miss class, it is your responsibility to contact a classmate, a group member, or a faculty team member to find out what content you missed; keep in mind that there is no such thing as a dumb question!

ADA STATEMENT: Reasonable accommodations, as arranged through the Disabilities Services Coordinator, will be provided students with documented disabilities. Contact the BHSU Disabilities Services Coordinator, Jennifer Lucero, at 605-642-6099 (Woodburn 134), fax number 605-642-6095, or via email at Jennifer.Lucero@bhsu.edu for more information. Additional information can also be found at the following URL address: <http://www.bhsu.edu/StudentLife/Learning/DisabilityServices/tabid/162/Default.aspx>

ACADEMIC DISHONESTY/PLAGIARISM: Cheating and other forms of academic dishonesty run contrary to the purpose of higher education and will not be tolerated in this course. Academic dishonesty includes (but is not limited to) plagiarism, copying answers or work done by another student (either on an exam or on out-of-class assignments), allowing another student to copy from you, and using unauthorized materials during an exam. Academic dishonesty is a serious offense and could result in failure on an assignment or course. To the extent possible, all incidents will be resolved in discussions between the student and faculty member. As necessary, the chair and then the dean may become involved to resolve the issue. If academic dishonesty is established, a report describing the incident and its resolution will be filed in the offices of the dean and provost. In cases where a satisfactory outcome is not achieved through this process, students may appeal to the University's Academic Appeals Committee. Formal procedures for filing a complaint for academic misconduct are in the Student Conduct Code in the Student Handbook. Cheating and plagiarism are defined in Section 2, Part B, 1. Disciplinary sanctions are outlined in Section 3, Judicial Policies.

FREEDOM IN LEARNING: Under Board of Regents and University policy student academic performance may be evaluated solely on an academic basis, not on opinions or conduct in matters unrelated to academic standards. Students should be free to take reasoned exception to the data or views offered in any course of study and to reserve judgment about matters of opinion, but they are responsible for learning the content of any course of study for which they are enrolled. Students who believe that an academic evaluation reflects prejudiced or capricious consideration of student opinions or conduct unrelated to academic standards should contact the chair of the department in which the course is being taught to initiate a review of the evaluation.

MAKE-UP EXAMS: Exams are to be taken on dates as scheduled. Unless there are extenuating circumstances (death in family, sudden illness, etc.), no make-up exams are given. If warranted, make-up (early) exams can be given with prior notification and arrangements made with the instructors' approval.

LABORATORY & FIELD SAFETY RECOMMENDATIONS:

1. Eyes should be protected by either wraparound safety glasses or by goggles when working around chemicals, powders, etc. Protective eyewear should completely cover your normal eyeglasses to protect your eyes from all angles. Glasses are recommended instead of contact lenses to protect the eyes from chemicals, which may adhere to a lens instead of being flushed out by either tears or an eye wash station. Even if contacts are protected with goggles, soft contacts can absorb fumes and still cause problems. South Dakota requires students be told that they cannot wear contacts to class when hazardous chemicals will be used. If students still wish to wear their contacts in the lab, they must sign a waiver form.
2. Food, drinks and smoking are not allowed in lab rooms; wash hands with soap and water after leaving the lab.
3. Wear shoes instead of sandals or open-toed shoes while in the laboratory to protect toes from physical and chemical harm. Appropriate clothing (i.e., slacks) is recommended while dresses, shorts, and loose clothing are discouraged.
4. Please attend field sessions with appropriate footwear and clothing, including raingear if warranted. Be mindful of hazards in the field, including steep terrain, sinkholes, biting or stinging insects, toxic plants, and venomous snakes. Please warn the instructor if you have allergies or other conditions that may affect your safety in the field.

Best wishes in this course! We anticipate a productive and interesting semester and look forward to your participation in the class! Mitakuye Oyasin – we are all related.

John Dixon
Chemistry
Natural Sciences

Justin & Tara Ramsey
Plant Biology
Natural Sciences

Jace DeCory
American Indian Studies
Liberal Arts

Black Hills State University, Spearfish, SD 57799

August 2017

Week	Tuesday session	Lead(s)
1: Aug. 21	Introductions; Course Organization, Requirements, & Objectives; Stress Reduction; Overview of BHSU Plant Facilities; Guidelines for Field & Lab Activities	All
2: Aug. 28	Plant Structures & Morphology (roots, stems, leaves, flowers, inflorescences, fruits); Field Trip No. 1 (Crow Peak Game Production Area)	Ramseys
3: Sept. 4	Labor Day Holiday – No Class	
4: Sept. 11	Understanding Plant Uses; Considerations in Studying & Securing Native Plants; 2nd Field Trip (Botany Bay)	Ramseys
5: Sept. 18	Plant Classification & Nomenclature; Major Plant Groups (angiosperms, etc.) 3rd Field trip (McNenny Hatchery)	Ramseys
6: Sept. 25	Major Plant Families (Asteraceae, Fabaceae, Lamiaceae, Poaceae, Salicaceae, etc.); 4th Field Trip (Higgins Gulch)	Ramseys
7: Oct. 2	Ecology of the Great Plains & Black Hills; Safety in Consuming Wild Plants	Ramseys
8: Oct. 9	Native American Day – No Class	
9: Oct. 16	Guest Speaker; Discussion of Plant ID Assignment; Exam No 1. (take-home exam)	Ramseys
10: Oct. 23	Pharmacologically Active Compounds (alkaloids, glycosides, steroids, etc.)	Dixson
11: Oct. 30	Chemistry Lab (extraction and purification protocols, analysis methods, etc.) Field Trip to Life Sciences Lab Building	Dixson
12: Nov. 6	Polysaccharides & Proteins; Phytochemistry; Review of Chemistry Materials; Exam No. 2 (take-home exam)	Dixson
13: Nov. 13	Guest Speaker	All
14: Nov. 20	Oral Tradition; North Plains Indigenous Plants & Ceremonial Uses	Jace
15: Nov. 27	Healing Theory; Plants as Pejuta; Role of Medicine Men/Women	Jace
16: Dec. 4	Sustainable Development; Ethics, Proprietary Plants, & Reflections on the Future; Poster Presentations; Final Exam Review	Jace

The Final Exam will be held Tuesday, Dec. 12, 2017, from 9:45 – 11:15 AM