

Agronomy 405
Crop Management Strategies
Fall 2025 Syllabus
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Instructor

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in Cropping Systems

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Student support hours

By appointment

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Course description

Application, expansion and integration of principles from agricultural, economic and social sciences into systems-level management of cropping systems

Overview

Students in this course will be active participants within a watershed project, led by Lewis and Clark Natural Resources District. The goal of the watershed project is to support farmers and advance crop management that improves profitability and reduces water pollution. You will act as “consultants” to interview farmers, learn more about their operations and goals, and ultimately produce a thoroughly researched plan to address problems and support improved water quality in the Bow Creek watershed. The Natural Resources District and producers will serve as your “clients” for this course. The teaching team’s expectation is that you engage substantively and professionally with clients and other stakeholders (crop consultants, industry professionals and USDA-NRCS representatives) throughout the course. Further, we expect you to contribute to the development of sustainable agricultural production systems, compatible with the reality of the farmers and the community in which they operate.

Course learning goals

- Synthesize information from prior courses to prepare a detailed farm improvement plan
- Communicate professionally and persuasively to external stakeholders and clients
- Collaborate with other students and stakeholders in a high functioning team to meet the requirements and expectations of course clients

Learning objectives

- Assess production practices presently used on the case-study farms, and recommend alternatives that are more economically and environmentally sound, based on goals of the producers and watershed project coordinators
- Write and orally defend, to a professional panel, the integration of improved management practices into the case-study farm operations
- Illustrate how agronomic science is inseparable from both social (production, human management, policy, economics) and ecological systems (soil, water, biology)
- Review and organize various resources and information related to crop management strategies, including but not limited to information from the Cooperative Extension Service, Private Industry, United States Department of Agriculture, and Natural Resource Districts

- Manage personal time and group interactions to complete tasks and facilitate a high functioning team

Course structure

Meeting times & Field trip

Our course will meet Thursdays from 2-4:50pm in Plant Sciences Hall, room 275. During the semester, we will have guest speakers who are experts in a related topic area to help guide you in your final reports. In-class time will also be used for development of employability skills that are critical to the course and your future. There are several weeks later in the semester when this meeting is cancelled but you are expected to be continuously working on your final projects with your team. Travel to visit stakeholders, farmers and others in the Bow Creek watershed will be expected of all students. Our summer field trip is planned from Monday, August 18th, through Wednesday, August 20st. Additionally, we will plan to travel back to Northeast Nebraska to deliver our final presentations. This will be on Thursday, December 11, and students should plan to be available to leave Lincoln in the morning and return in the evening. More information about the field trips will be available on Canvas.

Individual and collaborative assessments

The assessments in this course are based on approximately half individual work and half collaborative work (see Course Schedule and Grading below). The major outcome of this course is to produce a detailed farm improvement plan that supports stakeholder goals and improved water quality in the Bow Creek Watershed. Your achieving this goal will require both individual effort as well as effective collaborative work. The teaching team has prepared a number of step-by-step activities to help lead you to our ultimate goals. Your peers, the teaching team, and your clients will assess your participation.

Teaching team communication with students

We will strive to make course materials available to students as far in advance as possible, or at least one to two weeks in advance. Our goal is to make many modules available as soon as the semester begins. This will give you an opportunity to practice the important life skills of time management, and in particular, for starting tasks far in advance of deadlines. Additionally, I will prepare a “Monday Morning Message” to start every week. These messages, shared via Canvas announcements, will explain my expectations for the upcoming content and to share feedback on prior work.

Grading scale

| Grade | Percentage | Grade | Percentage |
|-------|---------------|-------|---------------|
| A+ | 98.0 – 100.0% | C+ | 78.0 – 79.9% |
| A | 92.0 – 97.9% | C | 72.0 – 77.9% |
| A- | 90.0 – 91.9% | C- | 70.0 – 71.9% |
| B+ | 88.0 – 89.9% | D+ | 68.0 – 69.9% |
| B | 82.0 – 87.9% | D | 62.0 – 67.9% |
| B- | 80.0 – 81.9% | D- | 60.0 – 61.9% |
| | | F | 59.9% or less |

Grading

| Assessment | Assignment | Points | Due date(s) |
|------------|-------------------------------|--|--|
| Individual | Reflection assignments | 25 points x 2 = 50 points total | Pre-course reflection: August 27 Post-course reflection: December 12 |
| | Syllabus quiz | 25 points | August 29 |
| | Annotated bibliography | 50 points | September 26 |
| | Financing assignment | 75 points | October 3 |
| | Individual writing assignment | 100 points | October 10 |
| | Overall course participation | 100 points | Assessed during the field trip and throughout the semester |
| Group^ | Draft writing assignments | 100 points x 2 drafts = 200 points total | Draft 1: Overview of the farm challenges and goals due September 12 (75 pts), Feedback from producer due September 19 (25 pts) Draft 2: Complete draft – October 31 |
| | Final written report | 200 points | November 21 |
| | Final oral presentation | Practice: 25 points Final: 75 points | Practice: December 4 Final: December 11* turn in Wed 12/10 5pm to prepare for presentation trip |
| Total | | 900 points | |

*Most all assignments are due on Fridays at 11:59pm, unless otherwise noted.

^The teaching team reserves the right to adjust individual student grades should it become evident that there is unequal contributions to group assignments

Assignment information

Note that most all assignments will be due on Fridays at 11:59pm, unless otherwise noted on Canvas and in the syllabus. Late assignments will have 10% of the total points deducted for every day that they are turned in late.

Syllabus Quiz

You will be expected to complete a Canvas quiz about the contents of the syllabus and course expectations overall. This will be due at the end of the first week of the semester.

Participation

This course assigns 100 points (~10% of final grade) to your active participation in the course. Points will be assessed based on: 1) Instructor observations of trip participation and engagement and further engagement throughout the semester; 2) A mid-semester and end of semester survey of participation from your team as well as based on your active participation in group meetings with the teaching team and course meetings. Students will be expected to track their time and effort on various elements on the group project and submit this to the teaching team at the end of the semester so that it can be further incorporated into the participation scores.

Reflection assignments

Students will be expected to submit two individual reflections related to the course: one in the first week and one in the final week of the course. These reflections are an opportunity for us to assess your prior knowledge and perceptions as well as what you have gained during the course. These assignments represent an opportunity for you to synthesize ideas and consider what you have learned.

Annotated bibliography

Students will develop a list of at least 10 books, articles or documents that related to topics of interest for your farm improvement plans. This will be due during Week 5 of the course with a goal of collecting

well-researched information to support your final assignments. Our expectation is that at least 50% of the references included in your annotated bibliographies - across all members of the team - will also be included in your final farm improvement plan.

Conservation program or loan application assignment (financing assignment)

It is often necessary to seek additional funding to support the development of new enterprises in an operation. In this assignment we want to give you more confidence in seeking out such financial resources, be it through a government conservation program (such as the Environmental Quality Incentives Program) or a business loan. We would like you to select an enterprise of interest to your operation as well as of interest to your future, if such an overlapping enterprise can be identified. You will conduct an interview with someone who might help you secure financing for this idea (such as an FSA loan officer, an NRCS conservationist, or a bank loan officer). You will prepare for this interview by developing a one page concept paper and sharing it ahead of the scheduled interview. You will write up the results and learnings of the interview for this specific assignment, and then include pertinent information in your final reports.

Draft writing assignments

Each group will turn in two drafts of the final written farm improvement plan. Individuals will also develop one section of the final report that they will write on their own for feedback. More information about elements of the report included in each draft, as well as rubrics, will be made available via Canvas. We will also ask you to share "author notes" regarding your thoughts on the process/development of various drafts. Our expectation is that drafts will incorporate the important research analysis elements including synthesized research from the annotated bibliography, crop budgets, soil tests, and your individual interviews with conservation program coordinators or loan officers. Groups will be expected to set up a meeting with their clients shortly after submitting the first draft of the assignment to ensure that your ideas and summaries are on the right track.

Final report

Final written reports will be due during week 13, on Friday, November 21. Immediately following your submission via Canvas, we will print copies and mail to the external stakeholders and clients for their review. The reports will encompass all elements of the prior work and incorporate feedback from the teaching team, and external stakeholders. This should be considered a high quality final report for your client, and if we determine that the quality is not appropriate to be shared, we reserve the right not to submit it. This would result in a failing grade for the final report and at highest a C+ grade in the course.

Final presentations

A final presentation to our clients and other stakeholders will be held on December 11. There is no final exam in this course. The final presentation is one of most important culminating activities of the course. To help students prepare, we will schedule a session with the teaching team where you will be expected to come prepared for a full "dress rehearsal" with your presentation powerpoint and "script" ready to be rehearsed. In final presentations, we expect students to behave professionally in business casual attire and in your speaking.

Additional information and policies

Collaborating with external colleagues and stakeholders

Given the engagement that this course incorporates with those outside of the teaching team, your work will be made available to our farmer “clients”, as well as other collaborators including the Lewis and Clark Natural Resources District staff. Your work may also be made available to help support future students in being successful in their final projects. If you have any concerns about this, please reach out to the teaching team to let them know.

General advice about groupwork and employability skills

Collaboration is an important learning outcome from this course, as are critical employability skills such as professional communication (written and oral) and time management. The teaching team suggests assigning roles to members of the team based on your own strengths and interests. These might include the following (teammates need not be limited to one of the below roles): correspondence lead (lead correspondence with teaching team and/or clients); scheduler (scheduling time with clients, group and teaching team/sending meeting reminders); note-taker (records meeting notes and shares via email, google docs or other platforms); facilitator (keeps track of time during meetings, leads discussion to ensure all team members are contributing). In my experience in Agro 405, students often break writing into sections, with individuals tackling separate topics. While this can appear to be effective, it often leads to inconsistencies in writing and a lower quality product overall. I encourage you to view your final reports and presentations as a true reflection of your collective brainpower and talents, rather than a patchwork of separate pieces. There are many strategies you might use to get to this end goal, including ensuring that someone takes on an editor role to ensure consistency in voice, ideas, tone, etc. Others might focus more on the research intensive elements of the projects. Early in the semester, we will discuss strategies for effective teamwork, and will work in collaboration to support you in being successful.

Professional communication with stakeholders and the teaching team

In this course you will be expected to communicate with a range of stakeholders involved in the watershed project, including producers, NRD and NRCS staff, extension educators and other agriculture professionals. Your professional communication is always expected in these interactions as your participation in this class is a reflection not only of yourselves but also of the Agronomy Department and the University of Nebraska-Lincoln. The teaching team strives to make itself available to students via student help hours, e-mail and phone. As the lead instructor, I always try to respond to student questions within 24 hours on Mondays through Fridays but will not respond to student requests on Saturdays and Sundays. Further, if you are reaching out for help with an assignment that is due very soon (less than 48 hours in advance), I may not have the chance to reply to your request. I also ask that students refer to me as Dr. or Professor Basche. Please keep in mind that e-mail communication is a professional form of writing. I encourage you to see the Inside Higher Ed article, available online at the below link, for more specific guidance: <https://www.insidehighered.com/views/2015/04/16/advice-students-so-they-dont-sound-silly-emails-essay>

Academic Integrity

Academic honesty is essential to the existence and integrity of an academic institution, and it is even more critical that we engage in best practices during our remote learning. In particular for this class, plagiarism in writing is a specific concern. The responsibility for maintaining that integrity is shared by all members of the academic community. The University's [Student Code of Conduct](#), available [here](#), addresses academic dishonesty. Students who commit acts of academic dishonesty, such as plagiarism, will receive a "0" for an assignment. You may also be subject to further disciplinary action and are granted due process and the right to appeal any decision.

Support Services and Policy Statements

Student health related course considerations

We consider student participation in this out of classroom experience to be essential and hope to ensure all students health and safety throughout the trips and semester. If you are feeling sick, please reach out to the teaching team so that we can assess your health and safety to travel for the trips. We would ask all students in the course is to prioritize your health and safety as well as the health and safety of the teaching team, your classmates, and the broader community. Please plan to communicate with the teaching team if you are feeling sick, quarantining or struggling in any other way. *We are here to help everyone succeed in the course!* As a teaching team we strive to be as supportive and accommodating as possible but *ask that you to communicate your needs and challenges with us.*

Policy on Artificial Intelligence

The use of AI tools such as ChatGPT is allowed in this course under some circumstances. Acceptable uses of AI in this course help you learn, understand, and improve your academic skills. This includes:

- Using AI to help brainstorm ideas and organize thoughts.
- Using AI to help with grammar and spelling checks.
- Using AI to explain confusing concepts in simple language as a supplementary tool during your study times.
- Using AI to suggest steps to complete your assignment(s) or provide feedback during your assignment completion.
- Maintaining transparency in your use of AI-based tools, including what work is your original contribution in assignments where you have used AI-based tools. Two parts to this:
 - Clearly identify the use of AI-based tools in your work. For example, if you use ChatGPT-3, you must cite "ChatGPT-3. (YYYY, Month DD of query). "Text of your query." Generated using OpenA.I.. <https://chat.openai.com/>"
 - Provide information/context on what part of the work was yours and what you used the AI for.

Unacceptable uses of AI replace your individual effort or original work with AI-generated work or do not include transparency in the usage of AI. This includes:

- Using AI to generate content for assignments.
- Using AI to automate the completion of assignments, whether written, visual, or auditory in nature.
- Using AI to plagiarize content from other sources.

- Using AI without citing AI usage and providing context on what portion of the work is your and what the AI contributed to the product (see last point above on transparency requirements).

In summary, do not use AI to cheat or to automate the completion of assignments.

Using AI-generated content without proper citation could result in academic dishonesty charges. If the teaching team suspects your inappropriate use of AI in the course, we will ask students to provide evidence that they have not done so within five days. If proper evidence is not provided (i.e. prior drafts of assignments), students will receive a zero for the assignment.

Diversity & Inclusion

The University of Nebraska-Lincoln does not discriminate on the basis of race, ethnicity, color, national origin, sex (including pregnancy), religion, age, disability, sexual orientation, gender identity, genetic information, veteran status, marital status, and/or political affiliation.

Services for students with disabilities or other special needs

The University strives to make all learning experiences as accessible as possible. If you anticipate or experience barriers based on your disability (including mental health, chronic or temporary medical conditions), *please let me know immediately so that we can discuss options privately*. To establish reasonable accommodations, I may request that you register with Services for Students with Disabilities (SSD). If you are eligible for services and register with their office, make arrangements with me as soon as possible to discuss your accommodations so they can be implemented in a timely manner. SSD can be located at 232 Canfield Administration Building or at 402-472-3787. Please know that I am constantly working to improve inclusivity and accessibility in my classroom. If there is something you feel that I can do to better support you, please do not hesitate to reach out to me.

Experiencing difficulties?

I understand that college is a period of transition in life that can be exciting at some times, but also extremely challenging and stressful at other times. If you are experiencing difficulties in this class, please do not hesitate to visit with me to discuss on how you can respond to improve your performance. Below I have included a few additional resources that might be helpful if you are struggling with class or beyond. Remember that **everyone** goes through periods of life when they need to ask for help from others.

Classes: If you are experiencing difficulties with more than just my class, you may want to visit with your advisor or take advantage of the CASNR Cares program make an appointment with Megan Schaefer, Student Development Coordinator, (megan.schaefer@unl.edu; (402) 472-7812) in 103 Ag Hall. From the CASNR Cares website: "CASNR Cares is the first point of contact for students, faculty, staff and parents when there are questions, concerns or situations that affect a student's educational experience at CASNR."

Mental health and well-being: If you feel like you are overwhelmed and/or experiencing general problems with depression, anxiety or other issues, I encourage you to contact the Counseling and Psychological Services office in the Student Health Center to utilize the resources that they have available to students (<http://health.unl.edu/counseling-and-psychological-services-caps>; (402) 472-7450). In addition, Big Red Resilience & Well-Being (BRRWB) provides one-on-one well-being coaching to

any student who wants to enhance their well-being. Trained well-being coaches help students create and be grateful for positive experiences, practice resilience and self-compassion, and find support as they need it. More information about BRRWB is available at <https://resilience.unl.edu/home> or 402-472-8770.

Basic needs and security: It can be challenging to do your best in class if you have trouble meeting basic needs like safe shelter, sleep, and nutrition. If you have difficulty affording groceries or accessing sufficient food to eat every day, or lack a safe and stable place to live, I urge you to contact the Husker Pantry (<https://pantry.unl.edu/welcome>) located at the University Health Center room 123 (550 N. 19th Street). From the Husker Pantry website: *"Food and shelter insecurities are an unfortunate reality for students at the University of Nebraska-Lincoln and nationwide. Nearly one in three students on our campus worries about not having enough food until they have money to buy more."* They are there to help and can provide food, other items and resources to students with their NCard.

Childcare, family care or other responsibilities: Given the current public health crisis, we may all find ourselves in situations never imagined with new responsibilities for caregiving, within our families or communities. I encourage you to speak with me privately if you have any concerns about managing workload in this class with your other life responsibilities. While I maintain the same high expectations for all students in my classes regardless of parenting or caregiving status, I am happy to problem-solve with you in a way that makes you feel supported as you strive for balance. You may also find support and connection via the Students with Children RSO (<https://womens-center.unl.edu/student-parents>).

| Week Meeting date | Weekly topic(s) & guest speaker | Learning objectives | Assignments due: individual (I) or group (G) |
|----------------------------|---|--|--|
| Week 1 Thurs. August 28 | Team work assessment Planning for group tasks Group work and time management part 1 Ben Reed, UNL Writing Center | Create organizational systems to support productive and successful groupwork | -Reflection assignment (I) -Syllabus quiz (I) |
| Week 2 Thurs. Sept 4 | Group work and time management part 2 Follow up producer interview Working time to discuss integrating available information into the reports, review of prior reports | Create organizational systems to support productive and successful groupwork | |
| Week 3 Thurs. Sept 11 | Public and private conservation programs Nathan Pflueger, Pheasants Forever Morgan Jennings, Practical Farmers of Iowa Sarah Gray, State Conservation Planning Specialist, Nebraska NRCS | Research and execute the beginning steps required to acquire a business loan or conservation program contract that would advance yours and your client's goals/interests | Draft 1, Overview of operations and proposed ideas (G) |
| Week 4 Thurs. Sept 18 | Research and library resources Melissa Gomis, UNL Libraries | Develop an annotated bibliography of reliable resources that will support crop management recommendations | Feedback from producers on Draft 1 (G) |
| Week 5 Thurs. Sept 25 | Review of soil tests & integrating into recommendations | Interpret physical, chemical and biological soil properties in order to integrate information into farm improvement plan recommendations | Annotated bibliography (I) |
| Week 6 Thurs. Oct 2 | Transition planning Anastasia Meyer, Agricultural Economics Extension Educator | Organize and integrate transition planning approaches into your farm improvement plan | Financing assignment (I) |
| Week 7 Thurs. Oct 9 | Soybean management practices to optimize yield Nicolas Cafaro La Menza, Cropping Systems Specialist, Department of Agronomy and Horticulture | Consider various strategies for achieving high yielding soybean | Individual writing draft (I) |
| Week 8 Thurs. Oct 16 | On-Farm Research and the Testing of Agricultural Production Systems Programs | Explore options for thorough testing of different practices on-farm | |

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|--------------------------|--|--|---|
| | Victor de Sousa Ferreira & Adam Leise, Nebraska Extension | | |
| Week 9 Thurs. Oct 23 | Networking to follow up on questions related to recommendations Open time for group feedback | | |
| Week 10 Thurs. Oct 30 | Effective messaging | Develop a message box to support persuasive written and oral communication | Draft 2 (G) |
| Week 11 Thurs. Nov 6 | No class meeting | | |
| Week 12 Thurs. Nov 13 | No class meeting | | |
| Week 13 Thurs. Nov 20 | No class meeting | | Final report (G) |
| Thurs. Nov 27 | Thanksgiving break No class meeting | | |
| Week 14 Thurs. Dec 4 | Practice presentations | | Presentation practice (G) |
| Week 15 Thurs. Dec 11 | Return trip to Northeast Nebraska for final presentations | | -Final presentation (G) -End of course reflection assignment (I) |
| Finals Week | Back up final presentations date in case of weather or other emergencies | | |