

August 29, 2016

Dear Dr. Ruch:

Please find below my evaluation of course *AGRI 275: Introduction to Precision Agriculture (On-Line)* offered by Lake Region State College.

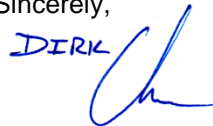
As presented in the syllabus, the course content meets the stated objectives of providing students with knowledge and understanding of basic precision agriculture principles.

From my experience, this on-line version of the course is presented at the upper-class undergraduate- or graduate student-level typical of a land-grant university.

Please feel free to provide me feedback and/or questions on my review. You are welcome to email (charlsond@gmail.com) or call (479-445-4339) me.

Thank you for this opportunity to join you in promoting precision agriculture education, and I am looking forward to continuing our collaboration.

Sincerely,

 **DIRK**

Dirk Charlson, Ph.D.

Course Review

Summary of Course:

The *AGRI 275: Introduction to Precision Agriculture* course introduces students to the basic principles and practices of precision agriculture. The course provides in-depth discussions on satellite-based positioning systems, yield monitoring and mapping, soil sampling and analyses, remote sensing, geographic information systems, and variable-rate technology. The course concludes with students applying what they learned in the course through completion of a final project. The on-line version of this course incorporates several learning tools, such as lecture videos with accompanying power point-slide decks, discussion boards, on-line quizzes and homework, and business and governmental websites, and use of a commercially available, farm management system (i.e. FarmWorks).

On-Line Course Delivery Rubric:

Using the *On-line Course Delivery Rubric for Third Party Review of Deliverables*, please find below my evaluation and comments for each category.

Course Organization - Score 3

- Syllabus outlines course expectations and assignment deadlines well. The quiz on the syllabus reinforces the importance of the syllabus and encourages the student to read the syllabus.
- All topics important to understanding Precision Agriculture are included in the course, as mentioned above in the *Summary of the Course* comments of this review.
- In addition, the evaluation and allocation of points for the course are presented clearly.

Course Content - Score 3

- Organization of the website allows the student to choose the best method for them to access learning materials and assignments (i.e. links located either on a navigation bar, calendar, or course outline).
- Students have multiple choices to obtain lecture materials through lecture videos, printable and downloadable power point-slide decks, and textbook.
- The course introduces and re-enforces the 4 R's of Precision Agriculture. For example during Week 1 of the course, a real-world example for nitrogen application and management is a timely topic and reinforces the 4 R's concept.
- The reviewer lacks knowledge on ADA compliance standards to comment on the course fulfilling these standards.

Level of Interaction, Participation, and Collaboration - Score 3

- This on-line course encourages students to participate in daily discussion boards to discuss current topics in precision agriculture.
- Assignments are due weekly; this course is not geared toward independent study or work-at-your-own pace by the student.

Media Use - Score 3

- This on-line course was accessed and completed using an iPad. The majority of the course was iPad compatible. Lectures created in YouTube worked well; however, the video lectures for Week 5 and beyond are not iOS compatible. Some commercial website multi-media also are not compatible with iOS.
- There is a nice selection of supporting videos, especially in regards to soil science, obtained from leaders in agriculture, such as AgPhD.
- The videos on the types and operation of commercially available yield monitors, as well as, a demonstration for how to retrofit a combine are

informative and very practical for students, considering adding yield monitors post-commercially will be a common occurrence.

- The reviewer lacks knowledge on Section 508 compliance standards to comment on the course fulfilling these standards.

Assignments - Score 3

- Discussion boards provided real-world, thought provoking questions to encourage students to engage and think outside of the box, such as asking students to provide their thoughts on the most important piece of variable-rate technology.
- Textbook questions are challenging and push students to learn the course material.
- The Trimble tutorial on GPS is excellent!
- The introduction to arcGIS is nicely done. The instructions are intuitive and using the impact of Mt. St. Helens eruption on vegetation is a good example to reinforce the use of satellite imagery. In addition, the detailed instructions on how to make maps is very practical and useful to the student.
- The final project focuses on applying a commercially-available, farm management-software package. The lessons have clear goals, rationale for the goal, and instructions on how to use each feature in the tool. The reviewer commends the instructors for including accounting in the assignment, since precision agriculture is driven by economics and farm profitability.

Assessment of Student Learning - Score 3

- Quizzes are straight forward and 20-minute timeframe is appropriate to complete the quiz. Answers to quizzes are provided the following Monday of class; students may retain information and learning motivation if the answers are provided immediately upon completion of the quiz.

(This is a personal preference of the reviewer as a student enrolled in on-line courses. I encourage the instructors to use the quiz grading approach that works best for their academic space).

- The review questions provided for exams are excellent. Questions are directly from the textbook and students are able to navigate through the review questions.

Instructional Materials - Score 3

- Learning objectives are clearly stated in the syllabus, and all assignments and quizzes/exams support student learning and provide instructors with effective means to measure student performance.

- The course provides multiple activities to facilitate student learning, such as video-based lectures, on-line quizzes and examinations, discussion boards, commercial and governmental web-sites, and commercially-available software packages.
- At the end of the course, students are given an opportunity to provide feedback and supply their opinions.

Technical Considerations and Recommendations:

Below are some technical issues the reviewer experienced, while evaluating the course. Also, please feel free to consider the reviewer's editorial comments.

Syllabus:

- *"If arrangements are not made prior to the exam date, exams taken after the scheduled exam date will be (recorded as follows:)*
- Deadline Penalties are aligned with the classroom.
- Good use of bolding and underscores for emphasis and organization.
- (The use of words) *and/or ideas of another and claiming them as your own without giving appropriate credit to the original source (is plagiarism).*
- FAQ: *Online courses require regular access to a computer with an Internet connection. If one is not available on a regular basis, you will have (difficulty) completing the course requirements.*

On-Line Format:

- Assignments and Discussion links for Week 3 direct the student to the Week 5 homepage.
- The AgLeader Video for Week 3 is not available on the page.
- In Week 7, Green Seeker Basics link did not work.

End of Review