ANSC 406 Fall 2013

ANSC 406
Texas A&M University
Beef Cattle Production and Management
Fall 2013

Instructor: Andy D. Herring, Associate Professor
Kleberg Room 432
Phone: 845-9284 E-mail: andy.herring@tamu.edu
Office hours: MWF 10:00 AM to noon
R 8:30 to noon
Appointments are always encouraged, and lots of other times are available.

Lab Instructors: Isaac Olvera, Kleberg 435
Stefen Tucker, Kleberg 422A

Prerequisites: ANSC 305 Animal Breeding & Genetics
ANSC 303 (Nutrition) or 318 (Feeds and Feeding)
ANSC 433 Reproduction

It is not mandatory that students have completed all prerequisites before enrolling, but, extra reading/study time will probably be required for certain course components. Students that do not have any of the prerequisites (or similar courses), or are of freshman/sophomore standing should not remain enrolled in the course. Additionally, as a C designated course, there is additional work and specific guidelines on writing assignments and oral presentations.

Objective:

This course covers the major principles involved for profitable and sustainable, integrated beef cattle production from the perspective of the U.S. cow-calf sector and from a systems-based approach. The primary learning outcomes for this course will be to: (1) understand the fundamental concepts associated with cow-calf production and how they interact, (2) identify, interpret and convey research that addresses a specific beef cattle production topic through a research paper, and (3) communicate production recommendations for a specific scenario through an oral presentation and complementary written report through a group project.

Recommended Text:

Reference:
Class time and locations:

Lecture - 9:10 - 10:00 MWF, Kleberg 123
Lab sections 930/931 - 12:40 - 2:30 Wednesday, TAMU Beef Center
Lab sections 932/933 - 3:00 - 4:50 Wednesday, TAMU Beef Center

Topics:

History and utilization of biological types and breeds of cattle, Utilization of performance records, Breed differences and breeding systems, National cattle evaluation programs, Structure of U.S. cattle industry, Reproductive concepts and management, Replacement heifer development, Cow culling decisions, Herd health management, Nutritional/growth aspects/management, Management of feed/pasture resources, Marketing opportunities and considerations, Market grades and pricing of cattle, Systems approach to beef production, Current industry concerns, Global issues

Attendance:

Attendance is crucial for learning, is mandatory for this class, and will be monitored at each lecture and lab meeting. Students with no unexcused absences (lecture and lab) will be eligible for a two-point curve at the end of the semester (87.5 is an A, 77.5 is a B, etc.). More than six (6) unexcused absences will result in your final grade in the course to be reduced by one letter grade.

ADA Policy:

The department, college and university endorse PL 101-336, the “Americans with Disabilities Act of 1990”. Students with disabilities are encouraged to inform the instructor so that any needed accommodations can be provided. All attempts will be made to maintain confidentiality. More information is available at TAMU Student Disability Services: http://disability.tamu.edu; phone: (979) 845-1637.

Course grade

There will be three lecture exams and a final exam scheduled as:

<table>
<thead>
<tr>
<th>Exam</th>
<th>Date</th>
<th>Material ends</th>
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</thead>
<tbody>
<tr>
<td>Exam I</td>
<td>Friday, September 20</td>
<td>Sep 16</td>
</tr>
<tr>
<td>Exam II</td>
<td>Friday, October 18</td>
<td>Oct 14</td>
</tr>
<tr>
<td>Exam III</td>
<td>Friday, November 15</td>
<td>Nov 11</td>
</tr>
<tr>
<td>Final Exam</td>
<td>Monday, December 9</td>
<td>8:00 to 10:00 AM</td>
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Final grade will be based on:

<table>
<thead>
<tr>
<th>Component</th>
<th>Weight</th>
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<tbody>
<tr>
<td>Three lecture exams</td>
<td>33%</td>
</tr>
<tr>
<td>Individual research paper</td>
<td>15%</td>
</tr>
<tr>
<td>Group ranch project</td>
<td>15%</td>
</tr>
<tr>
<td>Homework exercises</td>
<td>25%</td>
</tr>
<tr>
<td>Final exam (all new material)</td>
<td>12%</td>
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</tbody>
</table>

Grading scale:

<table>
<thead>
<tr>
<th>Range</th>
<th>Grade</th>
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<tbody>
<tr>
<td>89.5 - 100</td>
<td>A</td>
</tr>
<tr>
<td>79.5 – 89.4</td>
<td>B</td>
</tr>
<tr>
<td>69.5 – 79.4</td>
<td>C</td>
</tr>
<tr>
<td>59.5 – 69.4</td>
<td>D</td>
</tr>
<tr>
<td>Below 59.5</td>
<td>F</td>
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</table>
Research Paper:

You will be required to write an in-depth, scientific review of information specific to a topic related to the U.S. beef industry. This paper will follow the general writing style of the Journal of Animal Science. Possible topics and the schedule and expectations associated with the outline, summary/draft, and final version (due by 5:00 PM on Monday, November 4) are attached at the end of the syllabus. You are encouraged to incorporate information from your research paper into the Group Ranch Project.

Ranch Project:

You will be assigned to a group of 4 or 5 students to conduct an in-depth ranch plan for a specific production scenario within Texas. Your group will give a 15-minute presentation during lab on November 22 that highlights your most important points. This presentation must be done in Microsoft Powerpoint™. A written report that describes the ranch project will be due on November 20. Details on the ranch project will be given during the second lab, and you will work on components of the project as well as activities in lab as a group throughout the semester. Your group will give two short (5-minute) practice presentations before the final presentation.

Participation by all members of your group is crucial for your success! You will confidentially evaluate all members of your group (and they will evaluate you). This peer evaluation will add or subtract up to 20 points for the project grade. Unfavorable evaluations of you by your group may result in you receiving a grade of “F” for the project. The peer evaluation form is attached.

Lab:

The lab period is designed to complement lecture topics with a more “hands on” type of approach and group activities. You will be meeting at the TAMU Beef Center (approximately six miles west of campus on FM 60-Raymond Stotzer Parkway) during lab periods. You will be assigned approximately 6 homework assignments during the semester. Don’t start or try to finish your homework a few minutes before class/lab time.

Take home assignments that are turned in one to seven days after the due date will receive an automatic 25-point discount. Assignments turned in over 7 days late will not be accepted, and the resulting grade will be a “0.” Students with excused absences will be allowed to make up homework assignments within these same guidelines with modified due dates.

Field trip:

We will go on a field trip this semester to J.D. Hudgins, Inc. in Hungerford, TX. It is for your educational benefit and enjoyment to attend the field trip. We have to go outside of lab time. This counts as a university-sponsored activity; a memo will be provided for your other courses.
Attendance for the field trip is not mandatory; however, you should plan on going, and, you will receive extra credit for going (such as removal of 1 or 2 unexcused absences, dropping your lowest homework grade, or something else beneficial......).

Class conduct:

As participants in a senior-level course at one of the main universities in the United States, there is a lot expected of you because you have a lot of potential for success in life. Asking of questions and discussion of relevant information in and outside class is highly encouraged; however, talking to neighbors, texting, sleeping, or studying for other courses during class time will not be tolerated. Come to class ready for discussions (you will be called upon).

NO CELL PHONES. If you have a cell phone that rings during class, you will automatically receive an unexcused absence for that class meeting. If you have an emergency situation where you need to have a cell phone on during class, let me know ahead of time. Cell phones, iPhones, BlackBerries, or other electronic communication devices with built-in calculators can not be used for exams; only actual calculators will be allowed.

Aggies do not lie, cheat, or steal, or tolerate those who do.

Because of consequences for the student, knowledge of the Aggie Honor Code, from definitions of academic misconduct to the process and sanctions that may result should be familiar to both faculty members and students. All aspects are described fully on the Aggie Honor System website http://aggiehonor.tamu.edu/.
<table>
<thead>
<tr>
<th>Date</th>
<th>Lecture topic(s)</th>
<th>Date</th>
<th>Lecture topic(s)</th>
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<tbody>
<tr>
<td>8/26 M</td>
<td>Introduction and structure of U.S. beef cattle industry</td>
<td>10/16 W</td>
<td>Calf nutritional aspects - preweaning and postweaning</td>
</tr>
<tr>
<td>8/28 W</td>
<td>Historical and current approaches to genetic improvement</td>
<td>10/18 F</td>
<td><strong>Exam II</strong></td>
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<tr>
<td>8/30 F</td>
<td>Genetic resources – breed and animal choices</td>
<td>10/21 M</td>
<td>Nutritional management of cow herd</td>
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<tr>
<td>9/2 M</td>
<td>Fundamentals of crossbreeding</td>
<td>10/23 W</td>
<td>Protein and energy supplementation</td>
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<tr>
<td>9/4 W</td>
<td>Crossbreeding programs – terminal crosses and systems</td>
<td>10/25 F</td>
<td>Grazing animal considerations</td>
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<tr>
<td>9/6 F</td>
<td>Crossbreeding programs – continuous systems</td>
<td>10/28 M</td>
<td>Pasture management/grazing systems</td>
</tr>
<tr>
<td>9/9 M</td>
<td>Combination crossbreeding systems and management considerations</td>
<td>10/30 W</td>
<td>Grazing systems</td>
</tr>
<tr>
<td>9/11 W</td>
<td>Genotype by Environment interactions</td>
<td>11/1 F</td>
<td>General pasture management considerations</td>
</tr>
<tr>
<td>9/13 F</td>
<td>Current information available for selection of replacement animals</td>
<td>11/4 M</td>
<td>Considerations to minimize feed expenses</td>
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<tr>
<td>9/16 M</td>
<td>Non-traditional inheritance aspects such as imprinting, epigenetics, etc.</td>
<td>11/6 W</td>
<td>Management of environmental resources</td>
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<tr>
<td>9/18 W</td>
<td>Animal identification and which records to keep</td>
<td>11/8 F</td>
<td>U.S. industry structure and market structure</td>
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<tr>
<td>9/20 F</td>
<td><strong>Exam I</strong></td>
<td>11/11 M</td>
<td>Marketing alternatives and considerations for cattle producers</td>
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<tr>
<td>9/23 M</td>
<td>Controlled breeding and calving seasons</td>
<td>11/13 W</td>
<td>To be determined</td>
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<tr>
<td>9/25 W</td>
<td>Calf and cow size considerations and implications for production traits</td>
<td>11/15 F</td>
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<tr>
<td>9/27 F</td>
<td>Body condition score and associated management considerations</td>
<td>11/18 M</td>
<td>Retained ownership and end-product considerations/Value-added</td>
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<tr>
<td>9/30 M</td>
<td>Replacement heifer development management</td>
<td>11/20 W</td>
<td>Profitability, business and management philosophy considerations</td>
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<tr>
<td>10/2 W</td>
<td>General cow herd reproductive culling and longevity considerations</td>
<td>11/22 F</td>
<td>Production system comparisons and considerations</td>
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<tr>
<td>10/4 F</td>
<td>Reproductive health management for bulls and females</td>
<td>11/25 M</td>
<td>Societal issues affecting U.S. beef cattle operations and production</td>
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<tr>
<td>10/7 M</td>
<td>To be determined</td>
<td>11/27 W</td>
<td>Global issues and perspectives</td>
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<tr>
<td>10/9 W</td>
<td>Bull reproduction and management</td>
<td>11/29 F</td>
<td><strong>Thanksgiving holiday – No class</strong></td>
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<tr>
<td>10/11 F</td>
<td>Fundamentals of health, vaccination and immunity</td>
<td>12/2 M</td>
<td>Threats and opportunities for the U.S. beef industry</td>
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<tr>
<td>10/14 M</td>
<td>Growth and development of cattle</td>
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<tr>
<td>Date</td>
<td>Lab topic(s)</td>
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<tr>
<td>August 28</td>
<td>Cattle biological types and breeds</td>
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<td>September 4</td>
<td>Crossbreeding system comparisons</td>
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<td>September 11</td>
<td>Beef cattle performance records</td>
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<td>September 18</td>
<td>Breeding cattle evaluation and selection</td>
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<td>September 25</td>
<td>Body condition scoring and cow culling decisions</td>
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<td>October 2</td>
<td>Reproductive management and herd health</td>
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<td>October 9</td>
<td>Stocker/feeder calf evaluation and beef quality assurance</td>
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<tr>
<td>October 16</td>
<td>Feed resources management</td>
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<tr>
<td>October 23</td>
<td>Pasture evaluation and stocking rate problems</td>
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<tr>
<td>October 30</td>
<td>Field trip – J.D. Hudgins, Inc., Hungerford, TX</td>
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<td>November 6</td>
<td>Fed cattle evaluation and value determination</td>
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<td>November 13</td>
<td>Lab practicum</td>
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<td>November 20</td>
<td>Ranch Project Presentations</td>
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<tr>
<td>November 27</td>
<td>No lab – Thanksgiving holiday</td>
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1All labs will meet at the Beef Center, a component of the TAMU O.D. Butler Animal Science Teaching, Research and Extension Complex, which is approximately six miles southwest of campus on FM 60, unless otherwise indicated.

Lab attendance is mandatory and is reflected in the overall class attendance (see Attendance in the class syllabus). If a person must attend lab at a time for which they are not assigned, it is their individual responsibility to report their attendance to the lab instructor of their assigned lab. Keep your instructors informed.

As a part of lab (and as another extra credit opportunity), you will be given the opportunity to complete the NCBA Master of Beef Advocacy Program. You can read more about this program at: [http://www.beef.org/mastersofbeefadvocacy.aspx](http://www.beef.org/mastersofbeefadvocacy.aspx).
ANSC 406
Guidelines for Research Papers

There will be three stages in the development of your research paper: (1) an outline, (2) a draft stage with 2-3 pages of writing, and (3) the final version. The goal is to have the final version as a scientific, technically accurate, and up-to-date coverage of your selected topic that could serve as an information source for people who are searching for information on specific beef cattle related topics.

Schedule for Research Paper development:
(1) Outline    Due by 5:00 PM on Monday, September 16
(2) Draft      Due by 5:00 PM on Monday, October 7
(3) Final Version Due by 5:00 PM on Monday, November 4

(1) Outline
The outline should be no more than two pages in length and should have your name and topic at the top of the first page. There are 3 specific components to the outline: (i) the first component will be a general guide as to how your paper will be laid out, showing the sub-topic areas and the flow of the paper; (ii) the second component will be a typed, double-spaced paragraph, 75 to 100 words long describing what you know about the topic at that point, and (iii) the third component will be at least 3 references you have to this point as a Literature Cited section. The paragraph must be double-spaced, written in third-person, passive tense, and, the references must be presented in the Journal of Animal Science format as a Literature Cited section (example shown below). The points of the outline are to develop and practice organization of thoughts, writing style and format for the Literature Cited section. The outline grade counts as one homework grade.

Literature Cited


The sources in the Literature Cited section need to be in alphabetical order by the last name of the first author.

The citation fields of the sources in the Literature Cited section follow the order of:
(1) author(s) of the paper, web page etc., (2) year of publication, (3) the title of the paper, chapter, web page, (4) the source journal, book, organization, etc., and (5) volume and page numbers if journal article (or URL and date accessed if web source, or, name of publishing company and city if a book).

Any journal article that is obtained through the internet is to be cited as a journal article, NOT as a web source.

Magazine articles, newspaper articles, information from internet blogs, and information from internet discussion groups cannot be used as references. Scientific journal articles are the preferred source, but any report or information from any governmental agency or university web site is fine. Industry group web pages may or may not be appropriate, depending upon the paper topic or information provided. Private web pages of ranches, etc. are usually not appropriate, but this also depends upon the topic and information.

(2) Draft
This must be comprised of 500 to 750 words (2 to 3 pages) of writing as it will appear in the final version. The purpose of this stage is to evaluate your writing style, interpretation and presentation of pertinent data, and use of citations. Citations are used in the text of the paper with the author and year format (i.e. Smith, 1999; Smith and Jones, 2007; Smith et al., 2009, etc.) as done in the Journal of Animal Science as opposed to MLA or some other format. This draft must include a minimum of 5 references in the Literature Cited section. This draft is to be written in the same style as the final version (double-spaced, passive tense, third person, reporting actual values from references, use of citations in text, etc.). The draft grade counts as one homework grade.

Examples of bad and good writing styles:

Bad:
You need to watch your cows to see how fat they are if you want them to drop calves.

Good:
Cow-calf producers should monitor body condition of their cows if they want to enhance reproductive performance.

Bad:
Angus have more marbling than Limousin. Limousin have better yield grades than Angus.

Good:
Wheeler et al. (2005) reported that Angus-sired steers had more marbling than Limousin-sired
steers (584 vs. 504), but had less desirable yield grades (3.4 vs. 2.4).

**Bad:**
I believe that calves should be implanted because ...

**Good:**
Many studies have shown that use of implants ...

The TAMU Writing Center has many resources for students online about academic writing at [http://writingcenter.tamu.edu/](http://writingcenter.tamu.edu/). It is very important to understand what plagiarism is, and how to avoid it. The main ways to avoid plagiarism are: (1) do not turn in the same or a very similar paper for more than one course (someone else’s or your own), (2) paraphrase what your resources have said, don’t ever copy, and (3) give credit to where you got information through use of citations.

**(3) Final Version**
The actual paper (final version) will follow the general style and format of the *Journal of Animal Science* (which can be viewed at [http://www.asas.org](http://www.asas.org)). The final version should be comprised of approximately 1250 words (about 4 to 5 pages of writing not counting cover page or Literature Cited section). The final version of the paper should include somewhere between 10 and 15 sources in your Literature Cited section, but exceptions may occur with specific topics. The paper layout will consist of the following sections:

1. **Cover page** (your name, paper title, date and “Student Research Summary ANSC 406 Texas A&M University, College Station 77843”) – this will be on a separate page.
2. **Introduction** (75 to 100 words) – why is this topic important, and what will you discuss.
3. **Literature Review** (summary of research findings, what were the actual results of the study and how do they fit with results from other studies; you can use sub-headings or not, this must contain only writing in paragraph style, i.e. no bulleted lists, no tables, figures, graphs, pictures, etc.)
4. **Summary** (75 to 100 words) – why was it important to discuss this topic, and what were the take-home main points, how should producers/consumers use this information, etc.
5. **Literature Cited** (single spaced within citations, double spaced between citations and in alphabetical order based on last names of first authors as shown on previous page)

The headings (2 through 5 above) should be boldfaced and centered (like “Literature Cited” is first page). Your paper should be typed as a single Microsoft WORD file or converted to a single pdf file, be double-spaced (this is single-spaced), have one-inch margins, have a ragged right edge (i.e. not right-hand justified), use 12 point font (this is Calibri 12 pt), and emailed as an attachment to andy.herring@tamu.edu along with a printed copy of the final version. The grade for the final version of the paper is worth 15% of the grade in the course. The review and grading instrument used for the final version is found on the following page.
ANSC 406 Research Paper Review Sheet

Paper content (65 points) ________ points

Adequate coverage of topic:

Important questions/areas not included:

Importance of topic conveyed to reader:

Supporting data from sources:

Interpretation and presentation of data from sources:

Style and form, adherence to guidelines (35 points) ________ points

Writing style:

Use of citations:

Flow of paper:

Grammatical/typographical errors:

_________ Grade
ANSC 406 - Potential Research Paper Topics

Cow-calf
1. Heterosis for beef cow reproduction and calf growth
2. Factors that affect calf survival to weaning
3. Breed differences for age of puberty
4. Comparison of fixed-time vs. observed estrus synchronization protocols
5. Genotype-environment interactions for beef cow productivity
6. Effects of cow size on maintenance cost
7. Beef breed differences for calf growth and/or weaning weight
8. Effects of early calf weaning on beef cow reproduction
9. Feeding of distiller’s grains in developing bulls and heifers (or mature animals)
10. Factors affecting longevity of beef cows
11. Disease (fill in the blank) considerations for beef cow herds
12. Impacts of temperament on beef cow productivity
13. Identification of factors that affect profitability for cow-calf producers
14. Retained ownership considerations for cow-calf producers
15. Factors that affect prices/value of culled cows and bulls
16. Grazing distribution/pasture utilization of beef cows
17. Incidence of beef carcass injection site lesions from calfhood vaccinations/injections
18. Factors affecting prices of U.S. feeder calves
19. Alternate calf selling strategies for cow-calf producers
20. Factors that impact mature cow size
21. Effects of reciprocal Bos indicus-Bos taurus crosses

Stocker/Feedlot
1. Comparison of distiller's grains vs. corn in feedlot finishing diets
2. Calf health related to cost of gain in stocker programs/finishing systems
3. Effects of stocking rate on calf performance
4. Management aspects and feedlot cattle behavior
5. Genetic aspects of feed intake
6. Supplement considerations for stocker calves
7. Comparisons of different forages for stocker operations
8. Nutritional management of early weaned beef calves
9. Comparison of internal parasite control products
10. Comparison of grain processing techniques on feedlot cattle performance
11. Rotational vs. continuous grazing systems for stocker calves
12. Impacts of respiratory disease on feedlot cattle performance
13. Does eating behavior/pattern of cattle impact their performance?
14. Use of chicken litter on pastures grazed by cattle
15. Identification of PI (persistently infected) BVDV cattle
16. Factors that impact prices of feeder calves
17. Use of ractopamine (Optiflexx) in cattle finishing systems
18. Use of ultrasound in feedlot cattle management/marketing
19. Impacts of corn prices on feedlot cost of gain and profitability
20. Use of zilpaterol in cattle finishing systems
21. Impacts of disease (fill in the blank) on feedlot cattle
End Product Considerations
1. Effects of implants on beef tenderness
2. Breed differences for marbling ability
3. Use of genetic tests/genetic markers for beef quality traits
4. Survey of carcass traits of U.S. beef cattle (National Beef Quality Audits)
5. Factors that affect consumers’ decisions in purchases of beef
6. Impacts of cattle health on carcass traits
7. Effects of electrical stimulation on beef characteristics
8. Factors that affect external fat on beef carcasses
9. Fatty acids in beef as related to quality/palatability and/or consumer health
10. Relationship between marbling and tenderness in beef
11. Factors that affect shelf life of fresh beef
12. Breed differences for traits affecting red meat yield (ribeye area, fat thickness)
13. Use of EPDs for carcass traits
14. Evaluation of “organic” and/or “natural” beef programs vs. conventional programs
15. Grass-fed beef production considerations for U.S. producers
16. Relationship between fat thickness and marbling of beef carcasses
17. Survey of USDA certified beef programs
18. Fatty acid profiles of beef from cattle fed different feeds (or different types of beef cuts)
19. Comparison of beef grading programs in different countries
20. High beef prices – good or bad for industry?
21. Impacts of instrument grading of beef carcasses

General and/or Public Issues
1. Effects of grazing cattle on public lands
2. Issues of land fragmentation and its impacts on U.S. beef cattle industry
3. Effects of stress on beef cattle productivity
4. Role and potential of fetal programming to influence beef cattle production
5. Hormones in beef products
6. Production of methane by beef cattle
7. Environmental impacts of manure from cattle feedlots
8. Production and utilization of cloned and/or transgenic cattle
9. Considerations for red meat levels in human diets
10. Cattle vs. wildlife considerations for Texas ranches
11. Impacts of beef cattle industry on U.S. (or Texas) economy
12. Import markets of beef products or export markets for U.S. beef products
13. Influences of animal rights groups on U.S. beef production
14. Comparisons of beef production in USA versus other areas of world
15. Keeping Foot and Mouth Disease (FMD) out of the USA
16. Consumer surveys and/or perceptions about U.S. beef and/or beef production
17. Do cattle contribute to global warming?
18. U.S. downer cows at packing plants
19. Economic impacts of high fuel and/or feed prices on U.S. beef production
20. Is tick fever a real threat to U.S. cattle industry?
21. Risks of external threats to U.S. beef cattle industry
ANSC 406
Ranch Enterprise Project

As a group, you will develop a ranch management plan with a beginning scenario and certain fixed factors that will be provided. Your goal is to act as a consultant group and provide the owners of the ranch with recommendations. At the end of the semester you will turn in a written report (due November 20) and make a 15-minute presentation in lab (November 27 20) highlighting the main points in the report. Copies of reports from previous years will be provided.

The outline below should be followed to prepare the written report.

I. Introduction
   - County and ranch location
   - Starting scenario and owner profile
   - Initial financial aspects (cash on hand, what is invested, etc.)

II. Topography
   - Types of grasses (predominant species, improved vs. native, warm season vs. cool season, etc.)
   - Soil type
   - Historical annual rainfall
   - Water table and sources
   - Predominant mineral deficiencies and/or concerns for area

III. Improvements
   - Fences that need repair (options in fence type and costs, time frame for completions, etc. if necessary)
   - Types of materials used and costs
   - Pasture improvements (improved forages, cost of grass seed and establishment, fertilizer, installing new cross fences, annual maintenance issues, etc.)
   - Water improvements (wells drilled, pipeline put in, tanks/ponds built, etc. and associated costs and maintenance considerations)
   - Facilities (working facilities, pens, pen layout, new cross fences, etc.)

IV. Production Systems
   - Identify which production systems need to be and/or could be used (purebred/seedstock, commercial cow-calf, replacement heifers, stocker cattle, bull development, etc., and, which combination(s) might be most effective)
• Breed(s) and/or crossbred combination(s) – breed production advantages and disadvantages, regional adaptation, market acceptance, target market etc.

• Sire selection criteria (reasons for selection, EPDs emphasized, traits to evaluate, etc.)

• Calving and breeding season(s) considerations

V. Animal Health and Nutritional Considerations

• Mature cows
• Bulls
• Replacement heifers
• Calves pre-weaning and post-weaning
• Other cattle (i.e. stocker calves, animals destined for specialized marketing programs, etc.)

VI. Marketing Strategies

• What types of animals (calves, steers, heifers, cows) can be marketed in different ways
• Target market(s) to go after

VII. Financial Aspects

• Total annual operational budget
• Expenses and income projected on a per cow annual basis

VIII. Summary and Overall Recommendations
Group Members for Ranch Project:

On a scale of 0 to 10 (0 = extremely poor, 10 = superior) rank each member of your group, including yourself, for the following points:

Overall level of participation

Contribution of ideas for project

Ability to draw useful information from sources, references, etc.

Willingness to work for success of your group
INSTRUCTOR EVALUATION
ANSC 406
Group Ranch Projects
Fall 2013

Instructor: _________________________

County/Members for Ranch Project:

Organization:

Thoroughness:

Presentation Aspects:

General Comments:

________ points out of 100