

**ANFS 468 Undergraduate Research Experience**  
**Department of Animal and Food Science**

ANFS 468 is a course for students who want to receive credit for a supervised, faculty-monitored experience in research in the fields of animal science or food science. Students may obtain a maximum of 3 credits per semester (1 credit will require a minimum of 40 h of research). A student may register for research during any semester (Fall, Winter, Spring or Summer). A contract form (see attached) must be completed prior to registering. Students are responsible for securing the research position with a faculty member. Research experiences vary among labs and semesters. Beginning students usually will assist in on going research projects while learning techniques. Advanced students may be assigned to specific research projects of their own.

**Student Learning Goals:**

1. Think critically; use quantitative reasoning, skeptical inquiry and the scientific approach to solve problems in animal and food sciences.
2. Effectively communicate scientific ideas orally and through writing
3. Demonstrate knowledge of major scientific concepts, social, economic and ethical implications in the animal and food sciences
4. Work collaboratively and independently, learning from diverse perspectives to assimilate knowledge and synthesize new solutions and ways of thinking.

**Responsibilities/Requirements:**

1. Students will maintain a lab journal describing their daily experiences and what they have learned. This should include detailed instructions for conducting various assays and notes describing the various projects they are working on. A semi monthly report (see form) should be submitted to the faculty supervisor for review.
2. At the end of the semester students must submit: a) their lab journal, b) a completed student evaluation form (see attached) and c) a final report (see format) to the faculty supervisor on or before the last day of classes for the semester.

**Grading for the course:**

Students that receive a grade of C- or higher in ANFS 468 for 3 credits, will satisfy the University Discovery Learning Experience (DLE) requirement. Grades are assigned by the faculty supervisor. The requirements for achieving a grade in ANFS 468 follow and are weighted as indicated:

Faculty Supervisor's Evaluation 25%  
Semi Monthly Reports and Lab Journal 25%  
Final Report 50%

## ANFS 468 MEMORANDUM OF AGREEMENT

Student Name: \_\_\_\_\_ Student Year (FR, SO, JR, SR) \_\_\_\_\_

Student Email: \_\_\_\_\_ Student Phone: \_\_\_\_\_

GPA: \_\_\_\_\_ Student Year (FR, SO, JR, SR) \_\_\_\_\_ Research Semester \_\_\_\_\_

Faculty Supervisor: \_\_\_\_\_ Faculty Email: \_\_\_\_\_

Students enrolled in ANFS 468 will be expected to keep a written journal of procedures, experiments, results and experiences gained, value of these experiences, and their importance in the research program. The weekly logs are summarized in semi-monthly reports which are submitted to the faculty supervisor. A final report summarizing the total program experience will be submitted to the faculty supervisor by the student. The student should plan to reserve sometime during the last week of the research for preparation of the final report, which is due on the last day of class for the semester. Standard grading will be the responsibility of the faculty Supervisor (this course may not be taken for P/F).

A maximum of 3 credits of ANFS 468 may be taken in a semester. It is anticipated that the student will spend a minimum of 40 hours working on research for each credit hour received. Students who receive a grade of C- or higher in ANFS 468 for 3 credits will satisfy the University Discovery Learning Experience (DLE) requirement.

**Description of the research in terms of anticipated experiences and activities: (to be completed by faculty supervisor)**

**APPROVED:**\_\_\_\_\_  
STUDENT signature\_\_\_\_\_  
DATE\_\_\_\_\_  
FACULTY SUPERVISOR signature\_\_\_\_\_  
DATE\_\_\_\_\_  
CHAIRPERSON or designee\_\_\_\_\_  
DATE

**ANFS 468 SEMIMONTHLY REPORT**

Student Name: \_\_\_\_\_

Email \_\_\_\_\_

Faculty Supervisor Name: \_\_\_\_\_

Date: \_\_\_\_\_

**INSTRUCTIONS:** Provide the information requested below. A written comment is expected in each category. Expected due dates will be established at the beginning of the semester in consultation with the advisor.

Brief outline of activities since the last report including number of hours worked:

What new insights, knowledge and experiences have been gained since the last report?

Identify any areas of concern, frustration or problems which have surfaced or may develop in the future.

What general comments or suggestions can be made at this point?

## ANFS 468 GUIDELINES FOR THE FINAL REPORT

### Purpose of Report

As indicated in the memorandum of agreement, each student is to submit a final report to the faculty supervisor. The purpose of this final report is to summarize the research experience. New or unique experiences should be emphasized, particularly those concerning the objectives of the research. The report gives the student an opportunity to write his or her reflection on the program and express those things that have the most meaning now that this course for credit is completed.

The lab journal, semimonthly reports and any notes should be used to write the final report. It is encouraged to begin the writing of the final report during the last two or three weeks of the program in order to complete it by the last day of class.

### Format

The length of the typed report should fall between 3500-5000 words. A typed copy is required. Care should be given to format, correct spelling, punctuation, and grammar.

### Content

All final reports must include an "Introduction" describing the general objectives of the research experience. A section on "Materials and Methods" may be included if appropriate. Appropriate tables, figures, photos, etc. should be included in a "Results and Discussion" section for those students who generate specific data. For students that may not have an individual or personal research project, the final report should include a discussion of the different aspects of the research experience (e.g. techniques learned, how knowledge gained in classes related to the research experiences, etc.). The major content of the report should relate to those items that seem of prime importance to the student in terms of what was learned, unique experiences and new methodology observed and/or gained. This part of the report provides the opportunity to write considerable detail about a facet(s) of the research experience that was most educational or meaningful. The report should also include appropriate citations relative to methods utilized and references made to past research. The report should discuss how your research data compares or contrasts with other research that has been published. Future directions for the project should also be discussed. All reports should have a section on "Conclusions" that reflects on the most important conclusions about the experience. Finally, all reports should have a section on "Reflection" where the student reflects upon their learning experiences throughout their research.

### Due Date

The report and evaluations are due on or before the last day of class for the semester in which you are registered for the course.

### ANFS 468 RESEARCH SUPERVISOR STUDENT LEARNING OUTCOMES ASSESSMENT

Student Name: \_\_\_\_\_ Student Year (FR, SO, JR, SR) \_\_\_\_\_

Research Project Title \_\_\_\_\_ Research Semester \_\_\_\_\_

Faculty Name \_\_\_\_\_ Signature \_\_\_\_\_ Date \_\_\_\_\_

Using the rubric below, please evaluate the following learning goals for the above named student. Not all of the examples will be appropriate for each research experience so please consider the general categories if you do not see examples relevant to your research experience. Please circle the appropriate score for each learning goal.

<b>Learning Goals</b>	<b>Excellent (A)</b>	<b>Good (B)</b>	<b>Average (C)</b>	<b>Needs Improvement (D)</b>
<b>1. Critical Thinking</b> <i>Ability to learn, solve problems, generate new ideas, and evaluate alternative points of view. Asks relevant questions. Evidence of self-directed research. (20 pts)</i>	20	17	15	13
<b>2a. Written Communication</b> <i>Courtesy and professionalism in email. Effectiveness of written reports, lab journals, educational materials, newsletters, fact sheets, research papers. (10 pts)</i>	10	8	7	7
<b>2b. Oral Communication</b> <i>Courtesy and professionalism in Interactions with peers, interactions with supervisor. Effective oral presentations, oral reports. Ability to communicate new ideas. (10 pts)</i>	10	8	7	7
<b>3. Topic Knowledge</b> <i>Mastered topic knowledge during the course of this experience. (20 pts)</i>	20	17	15	13
<b>4. Work collaboratively and independently</b> <i>Learning from diverse perspectives to synthesize new solutions (20 pts)</i>	20	17	15	13
<b>5. Professional Development Skills</b> <i>Works without supervision, willing to receive guidance, dependable, thorough, works effectively in a team, views failure as opportunity; respects diversity, listens, dresses appropriately. (20 pts)</i>	20	17	15	13
<b>COLUMN TOTAL</b>				
<b>GRAND TOTAL</b> _____				

**Faculty Research Mentor, please return this form (or a copy) to the Assessment Committee.**

## ANFS 468 STUDENT LEARNING OUTCOMES SELF-ASSESSMENT

Student Name: \_\_\_\_\_ Student Year (FR, SO ,JR, SR) \_\_\_\_\_

Research Project Title \_\_\_\_\_ Research Semester \_\_\_\_\_

Print Name \_\_\_\_\_ Signature \_\_\_\_\_ Date \_\_\_\_\_

Using the rubric below, please evaluate your own performance during this research experience for each of the following learning goals. Not all of the examples will be appropriate for each research program so please consider the general categories if you do not see examples relevant to your experience. Please circle the appropriate score for each learning goal.

<b>Learning Goals</b>	<b>Excellent (A)</b>	<b>Good (B)</b>	<b>Average (C)</b>	<b>Needs Improvement (D)</b>
<b>1. Critical Thinking</b> <i>Ability to learn, solve problems, generate new ideas, and evaluate alternative points of view. Asks relevant questions. Evidence of self-directed research. (20 pts)</i>	20	17	15	13
<b>2a. Written Communication</b> <i>Courtesy and professionalism in email. Effectiveness of written reports, lab journals, educational materials, newsletters, fact sheets, research papers. (10 pts)</i>	10	8	7	7
<b>2b. Oral Communication</b> <i>Courtesy and professionalism in Interactions with peers, interactions with supervisor. Effective oral presentations, oral reports. Ability to communicate new ideas. (10 pts)</i>	10	8	7	7
<b>3. Topic Knowledge</b> <i>Mastered topic knowledge during the course of this experience. (20 pts)</i>	20	17	15	13
<b>4. Work collaboratively and independently</b> <i>Learning from diverse perspectives to synthesize new solutions (20 pts)</i>	20	17	15	13
<b>5. Professional Development Skills</b> <i>Works without supervision, willing to receive guidance, dependable, thorough, works effectively in a team, views failure as opportunity; respects diversity, listens, dresses appropriately. (20 pts)</i>	20	17	15	13
<b>COLUMN TOTAL</b>				
<b>GRAND TOTAL</b> _____				

**On the back of this page, please comment on the value of this research experience to your personal and professional development.** Please return this evaluation to your Faculty Research Mentor by the last day of the class.  
**Faculty Research Mentor, please return this form (or a copy) to the Assessment Committee.**

# ANFS ASSESSMENT ORAL RUBRIC

COURSE ID: \_\_\_\_\_

STUDENT YEAR: FR SO JR SR (please circle one)

	Excellent (A)	Good (B)	Average (C)	Needs Improvement (D)	STUDENT GRADE
Content/Knowledge base 30pts	Material presented is accurate and relevant. Excellent use of examples, facts, and/or statistics to provide depth and focus. (30pts)	(25pts)	(22pts)	Material presented contains many inaccuracies and lacks relevance. Examples, facts, and/or statistics are lacking or inappropriate. (20pts)	
Presentation & Delivery 30pts	Effective, direct eye contact. Displays enthusiasm and confidence. Speaks clearly and at an appropriate pace. Does not read support material. (30pts)	(25pts)	(22pts)	No eye contact with audience. Reads from support material. Speaker displays nervousness and has trouble recovering from mistakes. No interest in topic displayed. Talks very fast or speaks too quietly. (20pts)	
Organization 15pts	Presentation is logical and interesting. Captivates audience and flows well. (15pts)	(13pts)	(11.5pts)	Cannot understand presentation because there is no sequence of information. (10pts)	
Language 10pts	Excellent use of appropriate vocabulary. No grammatical errors. (10pts)	(8.5pts)	(7.5pts)	Inappropriate use of vocabulary. Excessive grammatical errors. (6.5pts)	
Visual Aids & Multimedia Support 10pts	Figures, tables, images, and sounds are well prepared, informative, and effective, enhance overall presentation. Excellent balance of text and images. (10pts)	(8.5pts)	(7.5pts)	Figures, tables, images, and sounds are lacking, poorly chosen, and/or distracting. Nearly all text or all aids. (6.5pts)	
Timing 5pts	Within assigned time limits. (5pts)	(4pts)	(3pts)	Excessively long or short. (2pts)	
Total					

Faculty Member, please return this form (or a copy) to the Assessment Committee.

# ANFS ASSESSMENT WRITING RUBRIC

COURSE ID: \_\_\_\_\_

STUDENT YEAR: FR SO JR SR (please circle one)

	Excellent (A)	Good (B)	Average (C)	Needs Improvement (D)	STUDENT GRADE
Content/Ideas 30pts	Writing is confident and clearly focused. It holds the reader's attention. Relevant details enrich writing. (30pts)	(25pts)	(22pts)	Writing does not clearly communicate knowledge. Length is not adequate for development. Reader is left with questions. (20pts)	
Organization 25pts	Writing includes a strong beginning, middle, and end, with clear transitions and a focused closure. (25pts)	(21pts)	(18pts)	Writing is brief and loosely organized. Transitions and closure is weak. (16pts)	
Vocabulary/ Word Choice 25pts	Effective and engaging use of word choice. Writing is skillfully adapted to the audience. (25pts)	(21pts)	(18pts)	Language is vague or flat. Shows limited use of varied word choice. Writer's point of view shows little or vague sense of their audience. (16pts)	
Sentence Fluency 10pts	Consistent variety of sentence structure throughout. (10pts)	(8.5pts)	(7.5pts)	Presence of run-ons or fragments. There is limited variety in sentence structure. (6.5 pts)	
Conventions 10pts	Consistent agreement between parts of speech. No mechanical errors. Creative and effective spelling strategies used. (10pts)	(8.5pts)	(7.5pts)	Errors present in agreement between parts or speech and mechanics. Little evidence of spelling strategies. (6.5pts)	
Total					

*Faculty Member, please return this form (or a copy) to the Assessment Committee.*