

RECEIVED

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OFFICE OF THE  
SENATE COUNCIL**1. General Information**

1a. Submitted by the College of: AGRICULTURE, FOOD AND ENVIRONMENT

Date Submitted: 2/24/2014

1b. Department/Division: Animal and Food Sciences

1c. Contact Person

Name: Kristine Urschel

Email: klur222@uky.edu

Phone: 859-257-7748

Responsible Faculty ID (if different from Contact)

Name:

Email:

Phone:

1d. Requested Effective Date: Specific Term/Year<sup>1</sup> Spring 2015

1e. Should this course be a UK Core Course? No

**2. Designation and Description of Proposed Course**

2a. Will this course also be offered through Distance Learning?: No

2b. Prefix and Number: ASC 690

2c. Full Title: Macronutrient metabolism in domestic animals

2d. Transcript Title: Macronutrient metabolism in animals

2e. Cross-listing:

2f. Meeting Patterns

LECTURE: 2

2g. Grading System: Letter (A, B, C, etc.)

2h. Number of credit hours: 2

2i. Is this course repeatable for additional credit? No

If Yes: Maximum number of credit hours:

If Yes: Will this course allow multiple registrations during the same semester?

2j. Course Description for Bulletin: An in-depth study of macronutrient metabolism and how it can be influenced by nutrition in both ruminant and non-ruminant species. Students will learn the important principles of macronutrient metabolism in domestic animals through lectures, evaluation of the current scientific literature and presentations.

2k. Prerequisites, if any: 3 credits in biochemistry (BCH 401G, IBS 601, or equivalent) and 3 credits in animal nutrition, or consent of the instructor.

2l. Supplementary Teaching Component:

3. Will this course taught off campus? No

If YES, enter the off campus address:

4. Frequency of Course Offering: Spring,

Will the course be offered every year?: Yes

If No, explain:

5. Are facilities and personnel necessary for the proposed new course available?: Yes

If No, explain:

6. What enrollment (per section per semester) may reasonably be expected?: 8

7. Anticipated Student Demand

Will this course serve students primarily within the degree program?: Yes

Will it be of interest to a significant number of students outside the degree pgm?: Yes

If Yes, explain: [var7InterestExplain]

8. Check the category most applicable to this course: Traditional – Offered in Corresponding Departments at Universities Elsewhere,

If No, explain:

9. Course Relationship to Program(s).

a. Is this course part of a proposed new program?: No

If YES, name the proposed new program:

b. Will this course be a new requirement for ANY program?: No

If YES, list affected programs:

10. Information to be Placed on Syllabus.

a. Is the course 400G or 500?: No

b. The syllabus, including course description, student learning outcomes, and grading policies (and 400G-/500-level grading differentiation if applicable, from 10.a above) are attached: No

## Distance Learning Form

Instructor Name:

Instructor Email:

Internet/Web-based: No

Interactive Video: No

Hybrid: No

1.How does this course provide for timely and appropriate interaction between students and faculty and among students? Does the course syllabus conform to University Senate Syllabus Guidelines, specifically the Distance Learning Considerations?

2.How do you ensure that the experience for a DL student is comparable to that of a classroom-based student's experience? Aspects to explore: textbooks, course goals, assessment of student learning outcomes, etc.

3.How is the integrity of student work ensured? Please speak to aspects such as password-protected course portals, proctors for exams at interactive video sites; academic offense policy; etc.

4.Will offering this course via DL result in at least 25% or at least 50% (based on total credit hours required for completion) of a degree program being offered via any form of DL, as defined above?

If yes, which percentage, and which program(s)?

5.How are students taking the course via DL assured of equivalent access to student services, similar to that of a student taking the class in a traditional classroom setting?

6.How do course requirements ensure that students make appropriate use of learning resources?

7.Please explain specifically how access is provided to laboratories, facilities, and equipment appropriate to the course or program.

8.How are students informed of procedures for resolving technical complaints? Does the syllabus list the entities available to offer technical help with the delivery and/or receipt of the course, such as the Information Technology Customer Service Center (<http://www.uky.edu/UKIT/>)?

9.Will the course be delivered via services available through the Distance Learning Program (DLP) and the Academic Technology Group (ATL)? NO

If no, explain how student enrolled in DL courses are able to use the technology employed, as well as how students will be provided with assistance in using said technology.

10.Does the syllabus contain all the required components? NO

11.I, the instructor of record, have read and understood all of the university-level statements regarding DL.

Instructor Name:

SIGNATURE[RHARMON]Robert J Harmon|ASC 690 NEW Dept Review|20140207

SIGNATURE[LGRABAU]Larry J Grabau|ASC 690 NEW College Review|20140224

SIGNATURE[ZNNIKO0]Roshan N Nikou|ASC 690 NEW Graduate Council Review|20140312

Courses	Request Tracking
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### New Course Form

<https://myuk.uky.edu/sap/bc/soap/rfc?services=>

[Open in full window to print or save](#)

Generate R

**Attachments:**

Upload File

Browse...

	ID	Attachment
Delete	3132	ASC 690_new syllabus version.pdf

First 1 Last

Select saved project to retrieve...

(\*denotes required fields)

**1. General Information**

a. \* Submitted by the College of:  Submission Date:

b. \* Department/Division:

c.

\* Contact Person Name:  Email:  Phone:

\* Responsible Faculty ID (if different from Contact):  Email:  Phone:

d. \* Requested Effective Date:  Semester following approval OR  Specific Term/Year

e.

Should this course be a UK Core Course?  Yes  No

If YES, check the areas that apply:

Inquiry - Arts & Creativity  Composition & Communications - II

Inquiry - Humanities  Quantitative Foundations

Inquiry - Nat/Math/Phys Sci  Statistical Inferential Reasoning

Inquiry - Social Sciences  U.S. Citizenship, Community, Diversity

Composition & Communications - I  Global Dynamics

**2. Designation and Description of Proposed Course.**

a. \* Will this course also be offered through Distance Learning?  Yes  No

b. \* Prefix and Number:

c. \* Full Title:

d. Transcript Title (if full title is more than 40 characters):

e. To be Cross-Listed <sup>2</sup> with (Prefix and Number):

f. \* Courses must be described by at least one of the meeting patterns below. Include number of actual contact hours<sup>3</sup> for each meeting pattern type.

<input type="text" value="2"/> Lecture	<input type="text"/> Laboratory <sup>1</sup>	<input type="text"/> Recitation	<input type="text"/> Discussion
<input type="text"/> Indep. Study	<input type="text"/> Clinical	<input type="text"/> Colloquium	<input type="text"/> Practicum
<input type="text"/> Research	<input type="text"/> Residency	<input type="text"/> Seminar	<input type="text"/> Studio
<input type="text"/> Other	If Other, Please explain: <input type="text"/>		

g. \* Identify a grading system:  Letter (A, B, C, etc.)  Pass/Fail  Graduate School Grade Scale

h. \* Number of credits:

i. \* Is this course repeatable for additional credit?  Yes  No

If YES: Maximum number of credit hours:

If YES: Will this course allow multiple registrations during the same semester?  Yes  No

## j. \* Course Description for Bulletin:

An in-depth study of macronutrient metabolism and how it can be influenced by nutrition in both ruminant and non-ruminant species. Students will learn the important principles of macronutrient metabolism in domestic animals through lectures, evaluation of the current scientific literature and presentations.

## k. Prerequisites, if any:

3 credits in biochemistry (BCH 401G, IBS 601, or equivalent) and 3 credits in animal nutrition, or consent of the instructor.

l. Supplementary teaching component, if any:  Community-Based Experience  Service Learning  Both3. \* Will this course be taught off campus?  Yes  No

If YES, enter the off campus address:

## 4. Frequency of Course Offering.

a. \* Course will be offered (check all that apply):  Fall  Spring  Summer  Winter

b. \* Will the course be offered every year?  Yes  No

If No, explain:

5. \* Are facilities and personnel necessary for the proposed new course available?  Yes  No

If No, explain:

## 6. \* What enrollment (per section per semester) may reasonably be expected? 8

## 7. Anticipated Student Demand.

a. \* Will this course serve students primarily within the degree program?  Yes  No

b. \* Will it be of interest to a significant number of students outside the degree pgm?  Yes  No

If YES, explain:

Some students from the Department of Veterinary Science may be interested in taking this course.

## 8. \* Check the category most applicable to this course:

Traditional – Offered in Corresponding Departments at Universities Elsewhere

Relatively New – Now Being Widely Established

Not Yet Found in Many (or Any) Other Universities

## 9. Course Relationship to Program(s).

a. \* Is this course part of a proposed new program?  Yes  No

If YES, name the proposed new program:

b. \* Will this course be a new requirement <sup>a</sup>for ANY program?  Yes  No

If YES <sup>a</sup>, list affected programs:

## 10. Information to be Placed on Syllabus.

a. \* Is the course 400G or 500?  Yes  No

If YES, the *differentiation for undergraduate and graduate students must be included* in the information required in 10.b. You must include: (i) identify additional assignments by the graduate students; and/or (ii) establishment of different grading criteria in the course for graduate students. (See SR

b.  \* The syllabus, including course description, student learning outcomes, and grading policies (and 400G-/500-level grading differentiation if applicable above) are attached.

- ⓘ Courses are typically made effective for the semester following approval. No course will be made effective until all approvals are received.
- ⓘ The chair of the cross-listing department must sign off on the Signature Routing Log
- ⓘ In general, undergraduate courses are developed on the principle that one semester hour of credit represents one hour of classroom meeting per week for a semester, exclusive of any laboratory meeting. Laboratory meeting, generally, is two hours per week for a semester for one credit hour. (Item SR 5.2.1)
- ⓘ You must also submit the Distance Learning Form in order for the proposed course to be considered for DL delivery.
- ⓘ In order to change a program, a program change form must also be submitted.

Rev 8/09

Submit as New Proposal    Save Current Changes

## COURSE OUTLINE AND SYLLABUS

### ASC 690: Macronutrient Metabolism in Domestic Animals Spring XXXX, 2 credit hours

**Course Coordinator and Instructor:** Kristine L. Urschel, PhD; Assistant Professor,  
Department of Animal and Food Sciences  
**Office:** 612 W.P. Garrigus Building  
**Office hours:** drop by or e-mail for an appointment (generally available from 10 am – 12 pm)  
**E-mail:** [klur222@uky.edu](mailto:klur222@uky.edu)  
**Office phone:** 257-7748

**Lecture:** 8:00 – 8:50 am, TR in Room S221 Ag Sci Ctr N

**Course Description:** An in-depth study of macronutrient metabolism and how it can be influenced by nutrition in both ruminant and non-ruminant species. Students will learn the important principles of macronutrient metabolism in domestic animals through lectures, evaluation of the current scientific literature and presentations.

**Pre-requisites:** 3 credits in biochemistry (BCH 401G, IBS 601, or equivalent) and 3 credits in animal nutrition, or consent of the instructor.

#### **Student Learning Outcomes:**

The major learning outcomes of this course are as follows:

1. Describe the major metabolic pathways involved in macronutrient metabolism in domestic mammals, the role that inter-organ metabolism plays in each pathway, and how these pathways are influenced by nutrition and other factors.
2. Compare and contrast differences in nutrient metabolism between ruminant and monogastric species.
3. Critically evaluate relevant published scientific literature and formulate peer-review comments on fellow classmates' research papers.
4. Develop a research paper related to the course topics, respond to peer-reviewer comments related to the paper and present the topics covered in the research paper in a formal presentation to the course instructor and fellow students.

#### **Reference Materials:**

**Required textbook:** Salway, J.G. *Metabolism at a Glance*, 3<sup>rd</sup> Edition. Blackwell Publishing Ltd: Malden MA, 2004. (ISBN 1-4051-0716-2)

**Other readings:** Students will be expected to read ~3 peer-reviewed journal articles per week for this class. Reference information for these required readings will be provided in class and on the Blackboard page.

**Class homepage:** Course information, announcements, assignment submission and exam and assignment grades will be available through the ASC 782 page on Blackboard ([www.elearning.uky.edu](http://www.elearning.uky.edu)).

**Class Organization:**

For each topic area, we will cover the major metabolic pathways involved with a focus on the tissue and cellular localizations, interspecies differences and the influences of dietary nutrients and other physiological factors on these pathways in a lecture-style format. During the semester, students will also present summaries of relevant scientific literature related to the specific metabolic pathways, with discussion of the methods used, key study findings and limitations in the research.

**Course Grading:**

Category	% of final grade
1 midterm exam (in class and oral)	10
1 cumulative final exam (in class and oral)	15
Paper critique summaries (1 page) and presentations (10 min)- 2 per semester	10
Written assignments- 2 per semester	20
Research paper	25
Peer-review comments on a classmate's research paper	5
Response to reviewer comments on the research paper	5
Presentation of research paper	10
<b>Total</b>	<b>100</b>

Exams: The midterm exam will be a combination of an in class written exam and an oral exam with the course instructor, based on the written responses. The final exam will be a written exam only. The midterm exam will include information up to the March XX, 2015 lecture, and the final exam will be cumulative, with emphasis on the course topics covered after the midterm exam

Paper critique summaries and presentations: Over the course of the semester, each student will prepare 2, 1 page summaries of peer-reviewed scientific papers (students will be given guidelines for the selection of the paper) related to the specific subject areas and will give a 10 minute presentation of the paper to the class. Specific criteria will be given at the time that the individual papers are assigned, but students will be expected to summarize the study rationale, describe the methods used (how they work and why), outline the key results and discuss the significance of the findings. Students will also be expected to comment on any shortcomings of the study and suggest alternative ways to overcome these limitations and possible follow-up studies. All students will be given the papers in advance and will be expected to read them prior to class and be prepared to participate in a discussion about the paper.

Written assignments: There will be two written assignments related to the course material. In these assignments, students will be expected to apply the material taught in the lectures to answer questions related to how metabolic pathways function in the whole-animal.

Research paper and presentation: Each student will select a metabolic pathway and prepare a ~8-10 page (double spaced) research paper about this metabolic pathway, with particular emphasis on the importance of, the tissue distribution, and regulation of this metabolic pathway in various



classes of domestic animal species (ruminants, non-ruminants and avian species). At the end of the semester, each student will present their paper topic to the rest of the class in a ~15 minute presentation. Topic areas should be approved by the instructor no later than February 1, 2015.

Research paper peer-review and response to reviewers: Each student will be given 1 week to read another student's (to be assigned by the instructor) research paper and provide written comments in the format of a peer-review of a scientific manuscript. The original author will then be given 2 weeks to respond to the reviewer's comments and make changes where applicable to the final paper before submitting it to the instructor for grading.

**Grading Scale:**

The scale for grades is shown below:

**A** (*High achievement*) = 90 – 100%

**B** (*Satisfactory achievement*) = 80 – 89%

**C** (*Minimum passing grade*) = 70 – 79%

**E** (*Failing*) = < 70%

**Exam Dates:**

<b>Exam</b>	<b>Date and Time</b>	<b>Material Covered</b>
Midterm	The in class exam will be March XX, 2015. Appointments for the oral portion of the exam will be scheduled for March XX-XX, 2015.	All material covered from January XX – March XX, 2015.
Final	The date and time of the written exam will be May XX, 2015 at XXXX.	All course material, with an emphasis on material covered from March XX – April XX, 2015.

**Assignment Due Dates:**

Assignment	Due Date and Time
Paper critique summaries and presentations	Due in class on March XX and April XX, 2015. Students will be given at least 2 weeks to prepare each summary and presentation and must provide the class with a copy of the paper one week prior to the presentation date.
Research proposal	First version submitted for peer-review March XX, 2015; final draft due April XX, 2015
Peer-review of a research proposal	April XX, 2015
Response to peer-review comments	April XX, 2015
Final research proposal presentation	April XX, 2015

**Course Policies:**

**Attendance:** Attendance is expected in all regularly scheduled lectures and in the event that a student cannot attend class, he/she will be responsible for all missed material. If you know that you are going to be absent from a class (for either excused or non-excused reasons), please do not sign up to give a paper summary/presentation that day. If you have an unexpected, but excused, absence on a day you are scheduled to give a paper summary/presentation, alternate arrangements to make up those points must be made with the instructor as soon as possible. According to the University of Kentucky's Faculty Senate Rules (5.2.4.2), absences will be excused for the following reasons: serious illness (documentation required), illness or death of a family member (documentation required), University related trips (documentation required), major religious holidays (please notify me of these requests in writing no later than January 20), and other circumstances found to be reasonable cause for non-attendance. **If you know in advance that you will need to miss a class for an excused absence reason listed above, please e-mail Dr. Urschel as soon as possible to make arrangements to make-up any missed assignments or material.**

**Late assignments:** Late assignments will not be accepted and will result in a grade of "0", unless prior arrangements (with justification) have been made with Dr. Urschel.

**Academic integrity:** Per university policy, students shall not plagiarize, cheat, or falsify or misuse academic records. Students are expected to adhere to University policy on cheating and plagiarism in all courses. The minimum penalty for a first offense is a zero on the assignment on which the offense occurred. If the offense is considered severe or the student has other academic offenses on their record, more serious penalties, up to suspension from the university may be imposed.

Plagiarism and cheating are serious breaches of academic conduct. Each student is advised to become familiar with the various forms of academic dishonesty as explained in the Code of Student Rights and Responsibilities. Complete information can be found at the following website: <http://www.uky.edu/Ombud>. A plea of ignorance is not acceptable as a defense against

the charge of academic dishonesty. It is important that you review this information as all ideas borrowed from others need to be properly credited.

Part II of *Student Rights and Responsibilities* (available online <http://www.uky.edu/StudentAffairs/Code/part2.html>) states that all academic work, written or otherwise, submitted by students to their instructors or other academic supervisors, is expected to be the result of their own thought, research, or self-expression. In cases where students feel unsure about the question of plagiarism involving their own work, they are obliged to consult their instructors on the matter before submission.

When students submit work purporting to be their own, but which in any way borrows ideas, organization, wording or anything else from another source without appropriate acknowledgement of the fact, the students are guilty of plagiarism. Plagiarism includes reproducing someone else's work, whether it be a published article, chapter of a book, a paper from a friend or some file, or something similar to this. Plagiarism also includes the practice of employing or allowing another person to alter or revise the work which a student submits as his/her own, whoever that other person may be.

Students may discuss assignments among themselves or with an instructor or tutor, but when the actual work is done, it must be done by the student, and the student alone. When a student's assignment involves research in outside sources of information, the student must carefully acknowledge exactly what, where and how he/she employed them. If the words of someone else are used, the student must put quotation marks around the passage in question and add an appropriate indication of its origin. Making simple changes while leaving the organization, content and phraseology intact is plagiaristic. However, nothing in these Rules shall apply to those ideas which are so generally and freely circulated as to be a part of the public domain (Section 6.3.1).

**Please note:** Any assignment you turn in may be submitted to an electronic database to check for plagiarism.

Classroom and learning accommodations: If you have a physical or learning disability, please make an appointment to see me as soon as possible to discuss things that can be done to help insure your academic success in this class. In order to receive academic accommodations in this course, you will need documentation from the Disability Resource Center (257-2754, Room 2 Alumni Gym, [jkarnes@uky.edu](mailto:jkarnes@uky.edu)).

Classroom behavior:

*Cell phones/pagers* must be turned off during the class.

*Food and drink:* It is fine to have a drink with you in class. Food will be permitted prior to the start of the class, but is not permitted during the class because it can be distracting. If you do chose to bring food or a drink into the classroom, please make sure that you remove all containers and wrappers when you leave.

### Lecture Topics Schedule:

Date	Lecture topic (tentative schedule)
Week 1- R	Course introduction and peer review process
Week 2- T	Review: structure, digestion and absorption of macronutrients
Week 2- R	Review: structure, digestion and absorption of macronutrients
Week 3- T	Carbohydrate metabolism: gluconeogenesis and glycolysis
Week 3- R	Carbohydrate metabolism: gluconeogenesis and glycolysis
Week 4- T	Carbohydrate metabolism: lactate metabolism and Kreb's cycle
Week 4- R	Carbohydrate metabolism: glycogenesis and glycogenolysis
Week 5- T	Carbohydrate metabolism: pentose phosphate pathway
Week 5- R	Volatile fatty acid metabolism
Week 6- T	Volatile fatty acid metabolism
Week 6- R	Lipid metabolism: lipogenesis
Week 7- T	Lipid metabolism: lipogenesis ( <b>Assignment #1 due</b> )
Week 7- R	Lipid metabolism: lipolysis
Week 8- T	Lipid metabolism: lipolysis
Week 8- R	Paper discussions ( <b>1 page Summary and PowerPoint presentation due</b> )
Week 9- T	Exam 1
Week 9- R	Lipid metabolism: membrane metabolism and eicosanoids
Week 10- T	Spring break
Week 10- R	Spring break
Week 11- T	Lipid metabolism: membrane metabolism and eicosanoids
Week 11- R	Signaling pathways of protein synthesis and breakdown
Week 12- T	Signaling pathways of protein synthesis and breakdown ( <b>Research paper draft due</b> )
Week 12- R	Amino acid metabolism: transamination and deamination
Week 13- T	Amino acid metabolism: amino acid catabolism ( <b>Peer-review comments on research paper due</b> )
Week 13- R	Amino acid metabolism: synthesis of dispensable amino acids
Week 14- T	Amino acid metabolism: metabolic fates other than protein ( <b>Assignment #2 due</b> )
Week 14- R	Paper presentations ( <b>1 page Summary and PowerPoint presentation due</b> )
Week 15- T	Student presentations
Week 15- R	Student presentations ( <b>Final research paper, response to reviewer comments due</b> )
Week 16- T	Urea metabolism
Week 16- R	Urea metabolism