

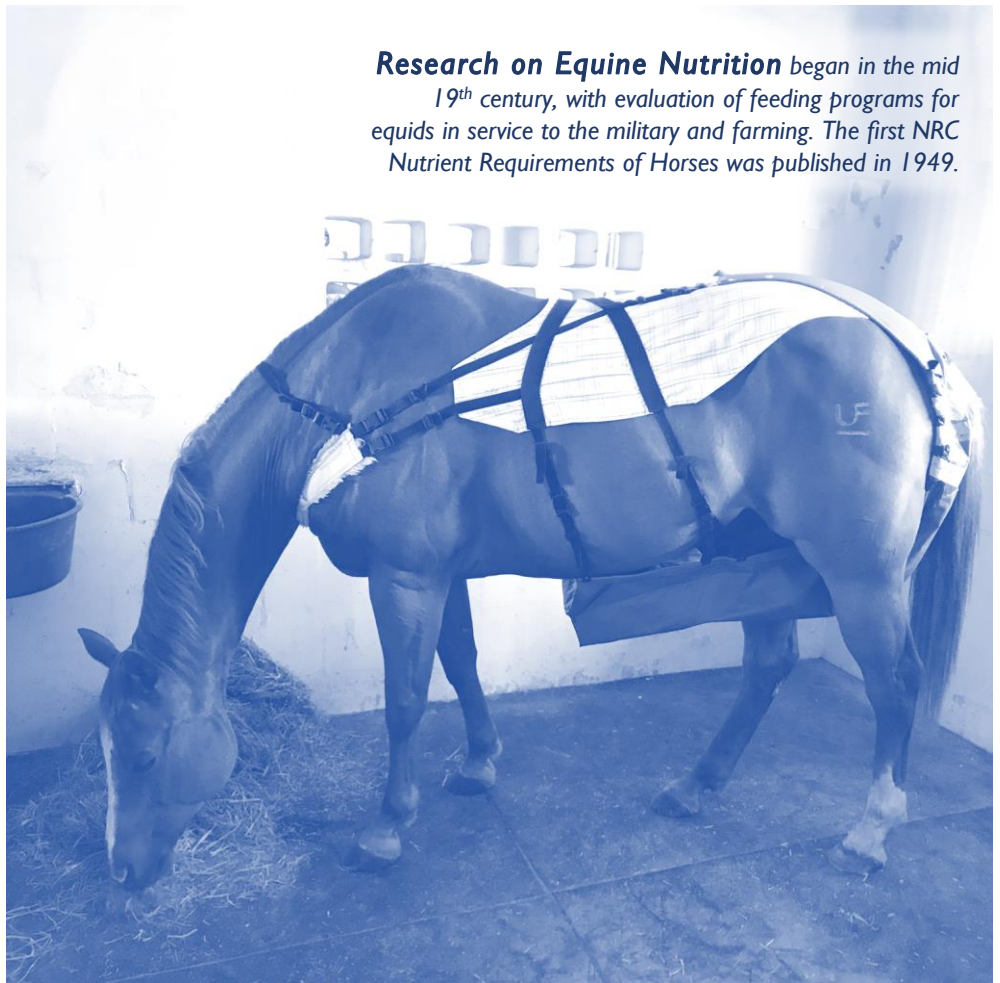
current concepts in equine nutrition

ANS 6711
FALL 2019

Tues & Thurs
8:30 – 9:20
ANS Rm 102

UNIVERSITY
OF FLORIDA

Research on Equine Nutrition began in the mid 19th century, with evaluation of feeding programs for equids in service to the military and farming. The first NRC Nutrient Requirements of Horses was published in 1949.



course description

ANS 6711 offers a detailed study of the anatomical, physiological and behavioral factors influencing nutrient requirements and feeding management of horses for maintenance, reproduction, lactation, growth, and work. Topics will include feed analysis and selection, feeding behavior, digestion and utilization of feeds by horses, derivation and application of nutrient requirements, and feeding considerations for different classes of horses. Course activities will integrate the science of nutrition with practical horse management and promote the use of evidence-based solutions to common feeding problems.

learning objectives

- 1) Differentiate the digestive anatomy and digestive physiology unique to equids;
- 2) Evaluate and select appropriate feeds for horses;
- 3) Investigate the basis for current nutrient requirements for horses;
- 4) Design diets and feeding programs that meet the horse's nutritional and psychological needs;
- 5) Analyze feeding-related problems and formulate practical solutions;
- 6) Critically evaluate published material relating to equine nutrition.

prerequisites

Greater success in this course can be achieved if you enter with the following:

- ✓ A course in animal or human nutrition
- ✓ One or more courses in biochemistry, metabolism, and/or physiology
- ✓ Experience formulating rations for horses or other livestock

NOTE: I also teach an undergraduate course in equine nutrition (ANS 3405) this semester. It meets Tuesdays & Thursdays from 11:45 – 12:35 in ANS Room 156. If you need a refresher, you are welcome to sit in on this class.

instructor

Dr. Lori K. Warren

office: Animal Sciences building
Suite 210, Office 210G

phone: (352) 392-1957

mobile: (352) 538-4716

email: LKWarren@ufl.edu

★ email is the preferred way to reach me

office hours

tues & thurs 10:00 – 11:30 a.m.

thurs 12:35 – 2:00 p.m.

or, email for an appointment

I will usually respond within 24 hours

what's in this syllabus?

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course resources

This course has no required textbooks; however, two books are highly recommended (see *References* at right). Additional reference material (eg, journal articles, videos, web links) will be posted to CANVAS or handed out in class. In some cases, I will ask you to review these materials prior to coming to class; in other cases they will serve as supplementary material. I will also post lecture notes and other handouts on CANVAS. This course requires access to scientific literature – contact library support if you need help.

references

2 books are recommended:

- Nutrient Requirements of Horses, 6th Rev. Ed. (2007)
 - National Research Council
 - ISBN 978-0-309-10212-4
 - ★ Access free-of-charge at: www.nap.edu/read/11653/chapter/1
- Equine Applied & Clinical Nutrition (2013) ■ R.J. Geor, P.A. Harris, M Coenen (Eds.) ■ ISBN: 978-0-0720-3422-0 ■ useful if you need additional background or “a place to start” for assignments. Also a nice resource if you intend to work in the field of equine nutrition.

CANVAS

- CANVAS will serve as our course website.
- <https://elearning.ufl.edu/>
- Click the “LOG IN TO E-LEARNING” button, then enter your Gatorlink username & password.
- Check your **Notifications** settings – make sure the “Announcements” setting is **set to ASAP**.
- **CANVAS will contain:**
 - ✓ Announcements
 - ✓ Course notes
 - ✓ Articles, Videos, Links
 - ✓ Assignments
 - ✓ Your Grades

course notes

- Course Notes (and any accessory materials) will be posted on CANVAS under the “**Modules**” link.
- Format of notes will be PowerPoint slides, other handouts/diagrams, and articles (all as PDF files).
- Print notes (and relevant handouts) before coming to lecture or bring your laptop/tablet and type on the PDF documents.
- **NOTE:** If materials are not posted by 6:00 p.m. the night before the lecture, then I will provide copies for you in class.

course requirements

ANS 6711 will provide a blend of the science of equine nutrition, as well as the application of nutrition to the feeding of horses. The course format will consist of traditional lectures, as well as discussions where you will be expected to contribute. Your comprehension of the material will be evaluated through exams, assignments, and a case study project. The course requires reading, group and individual work, simple and algebraic calculations, and effort outside of the classroom. To develop independent-thinking that will serve you beyond this course, you will be asked to research topics not covered in lecture and formulate diets and solve practical feeding problems. You will be expected to seek out reliable sources of information, critically evaluate and interpret equine nutrition research, and form independent, evidence-based solutions/opinions/recommendations. To get the most out of this course, come to lecture, ask questions, and get help before you get too far behind. **Learning is not a spectator sport!**

exams – This course will have **2 exams**, each covering approximately one-half of the course material. Exam format will consist of multiple choice, short answer, essay questions, and calculations.

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case study project – each student will be assigned a case study project that must be completed by the end of the semester. The project will involve practical equine nutrition problems that will require you to provide evidence-based solutions. It will involve searching of the scientific literature, interpretation of research data, and development of feeding programs. You will need to put in consistent effort on this project throughout the semester – it is not something that can be done at the last minute. Projects will be assigned in Sept. An **outline** of your approach to addressing each portion of the project will be **due Oct 8**. A **written project report** will be **due Nov 19**. Typically reports are 15-30 pages. You are also expected to prepare a **15-20-minute presentation** on your solution(s). Oral presentations will take place during the **last 3 class periods of the semester**. Further detail will be provided when the projects are assigned.

other assignments – approximately every other week, a for-credit assignment will be given. Assignments may include, but are not limited to: feed or supplement evaluation, basic nutrition calculations, ration formulation, critique of research or popular press articles, and answering questions from horsemen. Some assignments may occur during class, while others will require work outside of class.



grading policy

grade distribution

Exam 1.....	125 pts
Exam 2.....	125 pts
Assignments.....	125 pts
Case Study Project.....	125 pts

grading scale

A =	90 – 100 %	450–500 pts
B =	80 – 89.9 %	400–449 pts
C =	70 – 79.9 %	350–399 pts
D =	60 – 69.9 %	300–349 pts
E =	less than 60 %	0–299 pts

- +/- letter grades will not be assigned.
- There will be NO grading curve.
- Go to CANVAS to view grades earned on individual assignments & exams, as well as your cumulative course grade.
- Retain all graded items until assigned a final course grade.
- Do not wait until the end of the semester to discuss problems you are having. Your success in this course is important!
- View UF policies for assigning grade points at: <https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx>

attendance, make-up and late work

attendance

Regular attendance is expected and active participation is necessary for successful completion of this course.

If you know you will be absent from class, please contact the instructor at least one week in advance of the date(s) missed. If you have an unforeseen emergency, you will need to provide written documentation to support your absence (eg, if you are sick, a doctor's note is required).

make-up work

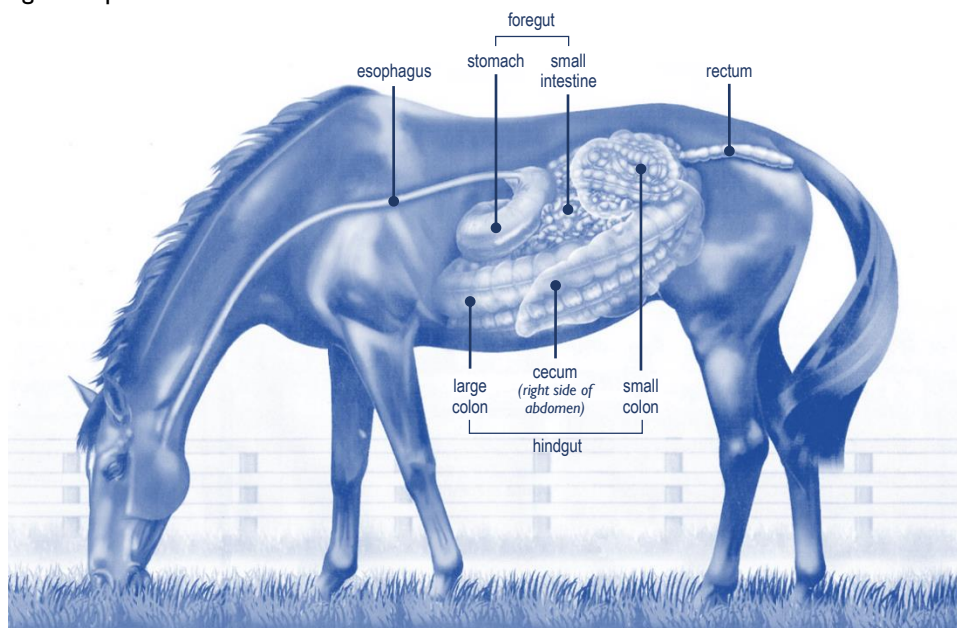
It is your responsibility to contact the instructor to develop a plan to make-up any work you miss. Missed work for excused class absences will be accepted with no penalty if completed by the agreed-upon extended deadline.

The opportunity to make-up missed work will not be offered without a valid excuse. This policy applies to all exams, quizzes, and assignments. Class attendance and make-up work policies are consistent with UF policies found at: <https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>

late work

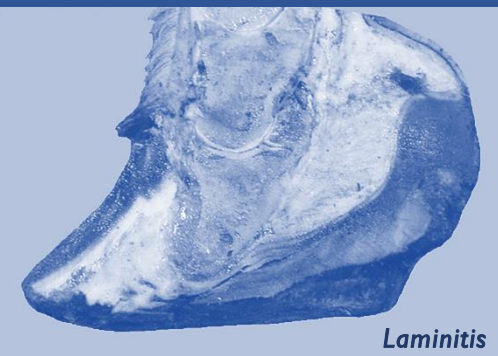
It is expected that ALL assignments will be submitted on time. Without a valid absence, assignments turned in late will receive the following penalty:

- 0.1 – 24 hrs late = – 25%
- 24 – 48 hrs late = – 50%
- >48 hrs late = NOT accepted



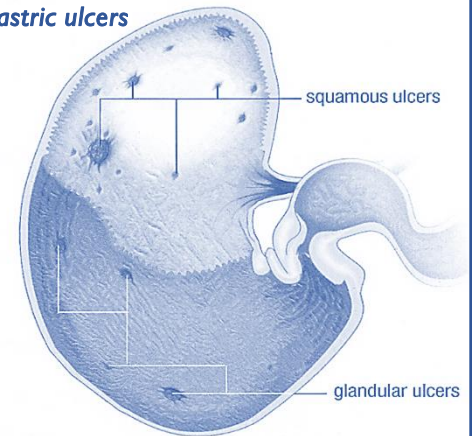
At 100 feet long with a 50 gallon capacity, the horse's gastrointestinal tract is massive! Like a human, horses are a monogastric animal. However, the horse's "hindgut" makes up two-thirds of its digestive system and enables them to be a grass-eating herbivore.

Diet modification is key to managing several equine clinical diseases



Laminitis

Gastric ulcers



Cushing's and other metabolic diseases



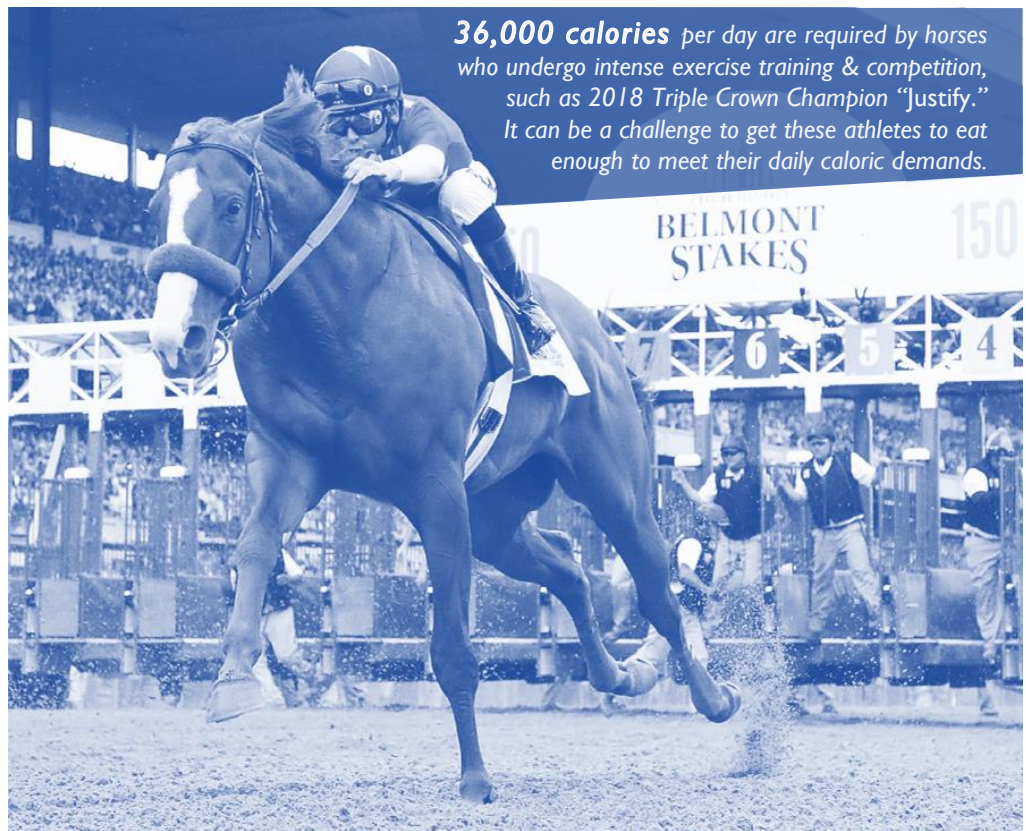
class etiquette

- Questions and discussion are encouraged during lecture. Come prepared to share your thoughts with the class. This is a learning opportunity. Don't be afraid to participate!
- Be respectful of other students' opinions, knowledge and background. If you have more "horse sense" than your neighbor, be a helper, not a hater.
- Avoid electronic distractions. Silence (& ignore!) your phone during class. Use your laptop or tablet to take notes, not to check social media and surf the 'Net.
- Photographing lecture slides is not allowed.
- As a courtesy to me and others, please arrive to class on time.

online course evaluation process

Student assessment of instruction is an important part of efforts to improve teaching & learning. At the end of the semester, you will have the opportunity to provide feedback on the quality of instruction in this course using a standard set of university and college criteria. These evaluations are conducted online at <https://evaluations.ufl.edu>. You will be notified when the evaluation system is open (typically the last two weeks of the semester). It is expected that you will contribute your feedback for this course and the others in which you are enrolled this term. Summary results of course evaluations are available at <https://evaluations.ufl.edu/results>

I value your feedback!



36,000 calories per day are required by horses who undergo intense exercise training & competition, such as 2018 Triple Crown Champion "Justify." It can be a challenge to get these athletes to eat enough to meet their daily caloric demands.

UF policies

academic honesty – UF students are bound by the Honor Pledge which states: "We the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honesty and integrity by abiding by the Honor Code." On all work submitted for credit at the University of Florida, the following pledge is either required or implied: "On my honor, I have neither given nor received unauthorized aid in doing this assignment." The Honor Code specifies a number of behaviors that are in violation of this code and the possible sanctions (<http://www.dso.ufl.edu/sccr/process/student-conduct-honor-code/>).

It is assumed that you will complete all work independently in this course unless the instructor provides explicit permission for you to collaborate on course tasks (eg, assignments, quizzes, exams).

Furthermore, you are obligated to report any condition that facilitates academic misconduct to appropriate personnel. If you have any questions or concerns, please consult with the instructor of this class.

software use – All faculty, staff and students of the university are required and expected to obey the laws and legal agreements governing software use. Failure to do so can lead to monetary damages and/or criminal penalties.

students with disabilities – the Disability Resource Center coordinates the needed accommodations of students with disabilities, including recommending accommodations, accessing special equipment, and providing interpretation services. Students requesting accommodations should first register with the Disability Resource Center by providing appropriate documentation. Once registered, students will receive an accommodation letter which must be presented to the instructor when requesting accommodation. **Students with disabilities should follow this procedure as early as possible in the semester.**

Disability Resource Center ■ 352-392-8565
■ <https://disability.ufl.edu/>

UF services

health and wellness

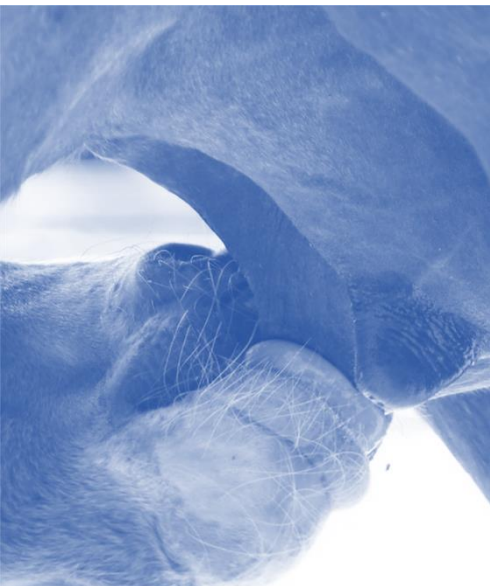
- **U Matter, We Care** ■ if you or a friend is in distress, call (352) 392-1575 or contact umatter@ufl.edu
- **counseling & wellness center** <https://counseling.ufl.edu/> ■ (352) 392-1575 ■ *counseling services* ■ *workshops* ■ *self-help library* ■ *wellness coaching*
- **sexual assault recovery services** ■ (352) 392-1161 ■ Student Health Care Center

- **campus police department** ■ 392-1111 ■ or 9-1-1 for emergencies

academic resources

- **e-learning technical support** ■ (352) 392-4357 ■ helpdesk@ufl.edu ■ <https://elearning.ufl.edu>
- **career connections center** Reitz Union ■ <https://career.ufl.edu/> (352) 392-1601 ■ *career guidance*
- **library support** ■ *receive assistance with using libraries or finding resources* ■ <https://cms.uflib.ufl.edu/ask>

- **teaching center** ■ *assistance with study skills* ■ *tutoring* ■ *study groups* ■ <https://teachingcenter.ufl.edu/>
- **writing studio** ■ *help brainstorming, formatting, & writing papers* ■ (352) 846-1138 ■ <https://writing.ufl.edu/>
- **student complaints** ■ <https://sccr.dso.ufl.edu/policies/student-honor-code-student-conduct-code/> ■ or contact the Animal Sciences Undergraduate Office (352-392-2186) and speak to Mrs. Allyson Trimble (trimbleak@ufl.edu) or Dr. Sandra TenBroeck (sht@ufl.edu).



4 - 5 gallons of milk are consumed by the foal each day. But at 2 months of age, milk no longer meets his nutrient requirements

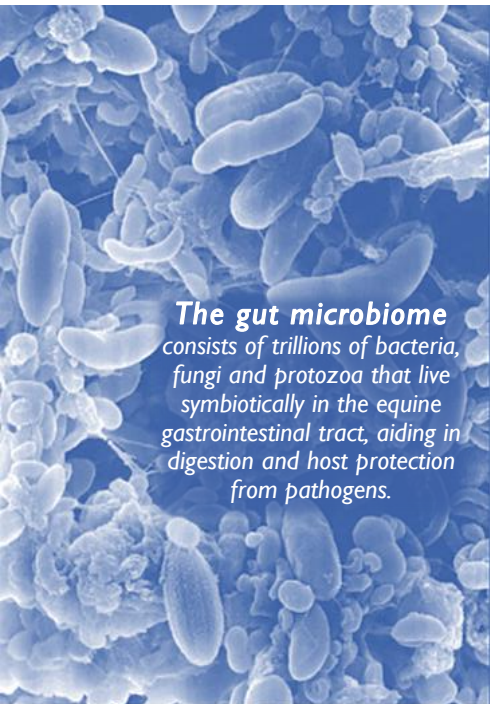
important dates

project due

- oct 8 (outline)
- nov 19 (report)
- nov 21 – dec 3 (presentations)

exams

- oct 1
- dec 11



The gut microbiome consists of trillions of bacteria, fungi and protozoa that live symbiotically in the equine gastrointestinal tract, aiding in digestion and host protection from pathogens.

course schedule*

date	lecture topic
tues – aug 20	course intro / anatomy of equine GI tract
thurs – aug 22	feed analysis
tues – aug 27	feed selection
thurs – aug 29	feed selection
tues – sept 3	feed selection
thurs – sept 5	feed selection
tues – sept 10	feed manufacturing (<i>Larry Mack – Seminole Feeds</i>)
thurs – sept 12	digestion and absorption
tues – sept 17	digestion and absorption
thurs – sept 19	digestion and absorption
tues – sept 24	digestion and absorption
thurs – sept 26	feeding behavior
tues – oct 1	EXAM 1
thurs – oct 3	feeding behavior
tues – oct 8	Using the NRC
thurs – oct 10	review of ration balancing
tues – oct 15	feeding for maintenance
thurs – oct 17	feeding performance horses
tues – oct 22	feeding performance horses
thurs – oct 24	feeding performance horses
tues – oct 29	feeding broodmares
thurs – oct 31	feeding broodmares
tues – nov 5	feeding broodmares
thurs – nov 7	feeding growing horses
tues – nov 12	feeding growing horses
thurs – nov 14	feeding growing horses
tues – nov 19	feeding growing horses
thurs – nov 21	project – oral presentations
tues – nov 26	project – oral presentations
thurs – nov 28	THANKSGIVING – no class
tues – dec 3	project – oral presentations
wed – dec 11	EXAM 2 – 3:00-5:00pm – Room 102

* Lecture topics and Exam/Assignment due dates are subject to change. If any changes are made, you will receive at least 1 week notice.