61-GNC

APR 20 2015

FORMAT 1

Submit original with signatures + 1 copy + electronic copy to Faculty Senate (Box 7500).

See http://www.uaf.edu/uafgov/faculty-senate/curriculum/course-degree-procedures-/ for a complete description of the rules governing curriculum & course changes.

TRIAL COURSE OR NEW COURSE PROPOSAL

SUBMITTED BY:

Department	Veterinary Medicine	College/School	CNSM
Prepared by	Cathy Griseto	Phone	474-1928
Email Contact	cagriseto@alaska.edu	Faculty Contact	Arleigh Reynolds, Assoc Dean Vet Med

1. ACTION DESIRED (CHECK ONE): Trial Course [ ] New Course [X]

2. COURSE IDENTIFICATION: Dept: DVM | Course #: 722 | No. of Credits: 4

Justify upper/lower division status & number of credits: Professional Program required course – see CSU syllabus attached

3. PROPOSED COURSE TITLE: Veterinary Pharmacology

4. TO BE CROSS LISTED? YES/NO: NO | If yes, Dept: | Course #:

Note: Cross-listing requires approval of both departments and deans involved. Add lines at end of form for additional required signatures.

5. TO BE STACKED? YES/NO: NO | If yes, Dept. | Course #:

How will the two course levels differ from each other? How will each be tailored to the appropriate level?:

Stacked course applications are reviewed by the (Undergraduate) Curriculum Review Committee and by the Graduate Academic and Advising Committee. Creating two different syllabi—undergraduate and graduate versions—will help emphasize the different qualities of what are supposed to be two different courses. The committees will determine: 1) whether the two versions are sufficiently different (i.e. is there undergraduate and graduate level content being offered); 2) are undergraduates being overtaxed?; 3) are graduate students being undertaxed? In this context, the committees are looking out for the interests of the students taking the course. Typically, if either committee has qualms, they both do. More info online – see URL at top of this page.

6. FREQUENCY OF OFFERING: Fall each year beginning 2016

Fall, Spring, Summer (Every, or Even-numbered Years, or Odd-numbered Years) — or As Demand Warrants

7. SEMESTER & YEAR OF FIRST OFFERING (AY2013-14 if approved by 3/1/2013; otherwise AY2014-15): AY2016-2017

8. COURSE FORMAT:

Note: Course hours may not be compressed into fewer than three days per credit. Any course compressed into fewer than six weeks must be approved by the college or school's curriculum council. Furthermore, any core course compressed to less than six weeks must be approved by the Core Review Committee.

COURSE FORMAT (check all that apply)	[ ] 1	[ ] 2	[ ] 3	[ ] 4	[ ] 5	[X] 6 weeks to full semester
OTHER FORMAT (specify)						
Mode of delivery (specify lecture, field trips, labs, etc)	Lectures					

9. CONTACT HOURS PER WEEK: [4] Lecture hours/weeks | [ ] Lab hours /week | [ ] Practicum hours /week

Note: # of credits are based on contact hours. 800 minutes of lecture=1 credit. 2400 minutes of lab in a science course=1 credit. 1600 minutes in non-science lab=1 credit. 2400-4800 minutes of practicum=1 credit. 2400-8000 minutes of internship=1 credit. This must match with the syllabus. See http://www.uaf.edu/uafgov/faculty-senate/curriculum/course-degree-procedures-/guidelines-for-computing-/ for more information on number of credits.

OTHER HOURS (specify type):

10. COMPLETE CATALOG DESCRIPTION including dept., number, title, credits, grade distribution, cross-listings and/or stacking (50 words or less if possible):

EXAMPLE OF A COMPLETE DESCRIPTION:

FISX F487 M, O — Fisheries Management
3 Credits — Offered Spring

RECEIVED
APR 15 2015
Dean's Office
College of Natural Science & Mathematics

THEORY AND PRACTICE OF FISHERIES MANAGEMENT, WITH AN EMPHASIS ON METHODS UTILIZED FOR THE MANAGEMENT OF FRESHWATER AND MARINE FISHERIES. *PREREQUISITES: COMUN F132X OR COMUN F142X; ENGL F111X; ENGL F211X OR ENGL F213X; ENGL F414; FISX F425; OR PERMISSION OF INSTRUCTOR.* CROSS-LISTED WITH NRM F487. (3+0)

DVM 722 Department of Veterinary Medicine
4 Credit Offered Fall
Veterinary Pharmacology
The course is designed to address the following areas:

Basic principles of pharmacology: Pharmacokinetics, pharmacodynamics, characteristics of selected classes of drugs and their basic mechanisms of action, etc. Individual agents will be introduced to provide examples, but providing highly detailed information on specific agents such as doses is not our objective.
Proper and effective use of drugs: This will introduce the basics of veterinary clinical therapeutics for selected classes of agents including selected species differences in drug response, side effects, toxicity, contraindications, interactions, and selected areas of pathophysiology.

Pre-requisites: Successful completion of fist year courses in Professional Veterinary Program

11. COURSE CLASSIFICATIONS: UNDERGRADUATE COURSES ONLY. CONSULT WITH CLA CURRICULUM COUNCIL TO APPLY S OR X CLASSIFICATION APPROPRIATELY; OTHERWISE LEAVE FIELDS BLANK.

X = Humanities		S = Social Sciences	

WILL THIS COURSE BE USED TO FULFILL A REQUIREMENT FOR THE BACCALAUREATE CORE? IF YES, ATTACH FORM.	YES:		NO:	X

IF YES, CHECK WHICH CORE REQUIREMENTS IT COULD BE USED TO FULFILL:

O = Oral Intensive, FORMAT 6		W = Writing Intensive, FORMAT 7		X = Baccalaureate Core	

11.A *IS COURSE CONTENT RELATED TO PARITIES, RACISM OR CHECKMATE SYSTEMS? IF YES, A "SHORTLIST" SYMBOL WILL BE ADDED IN THE PRINTED CATALOG, AND FLAGGED IN BANNER.*

YES		NO	X

12. COURSE REPEATABILITY:

IS THIS COURSE REPEATABLE FOR CREDIT?	YES		NO	X

JUSTIFICATION: INDICATE WHY THE COURSE CAN BE REPEATED (FOR EXAMPLE, THE COURSE FOLLOWS A DIFFERENT THEME EACH TIME).

HOW MANY TIMES MAY THE COURSE BE REPEATED FOR CREDIT?		TIMES
IF THE COURSE CAN BE REPEATED FOR CREDIT, WHAT IS THE MAXIMUM NUMBER OF CREDIT HOURS THAT MAY BE EARNED FOR THIS COURSE?		CREDITS
IF THE COURSE CAN BE REPEATED WITH VARIABLE CREDIT, WHAT IS THE MAXIMUM NUMBER OF CREDIT HOURS THAT MAY BE EARNED FOR THIS COURSE?		CREDITS

13. GRADING SYSTEM: *SPECIFY ONLY ONE. NOTE: CHANGING THE GRADING SYSTEM FOR A COURSE LATER OR CONSIDERING A MIXED COURSE CHANGE – FORMAT 2 FORM.*

LETTER:	X	PASS/FAIL:	

RESTRICTIONS ON ENROLLMENT *(IF ANY)*

14. PREREQUISITES Professional Veterinary Medical program student or permission of instructor

THESE WILL BE *REQUIRED* BEFORE THE STUDENT IS ALLOWED TO ENROLL IN THE COURSE.

15. SPECIAL RESTRICTIONS, CONDITIONS Professional Veterinary Medical program student or permission of instructor

16. PROPOSED COURSE FEES TBD

HAS A MEMO BEEN SUBMITTED THROUGH YOUR DEAN TO THE PROVOST FOR FEE APPROVAL? Yes/No: Yes

17. PREVIOUS HISTORY

HAS THE COURSE BEEN OFFERED AS SPECIAL TOPICS OR TRIAL COURSE PREVIOUSLY? Yes/No: No

If yes, give semester, year, course #, etc.:

18. Estimated Impact

What impact, if any, will this have on budget, facilities/space, faculty, etc.

Professional Program approved by BOR, Chancellor and Provost – Impact to budget in second year will ease with second cohort of students

19. Library Collections

Have you contacted the Library Collection Development Officer (kljensen@alaska.edu, 474-6695) with regard to the adequacy of library/media collections, equipment, and services available for the proposed course? If so, give date of contact and resolution. If not, explain why not.

No	x	Yes		Departments will keep complete library of required course materials in RXRB office. UAF library will provide additional resources with current holdings (according to current catalogue).

20. Impacts on Programs/Depts

What programs/departments will be affected by this proposed action?

Include information on the Programs/Departments contacted (e.g., email, memo)

Impact on Animal Resource Center facility for necropsy and specialized needs. ARC contacted and approved (jeblake@alaska.edu)

21. Positive and Negative Impacts

Please specify positive and negative impacts on other courses, programs and departments resulting from the proposed action.

There should be no impact on other departments.

Justification for Action Requested

The purpose of the department and campus-wide curriculum committees is to scrutinize course change and new course applications to make sure that the quality of UAF education is not lowered as a result of the proposed change. Please address this in your response. This section needs to be self-explanatory. Use as much space as needed to fully justify the proposed course.

The course is required for second year veterinary students and the syllabus is provided by CSU CVMBS. The course has been approved by their accreditation requirements and will be offered at UAF as part of the 2+2 program (first two years at UAF and last two years at CSU).

Approvals: Add additional signature lines as needed.

	Date	4/15/15	
Signature, Chair, Program/Department of:	Veterinary Medicine		
	Date	4/16/15	
Signature, Chair, College/School Curriculum Council for:	CNSM		
	Date	4/16/15	
Signature, Dean, College/School of:	CNSM		

Offerings above the level of approved programs must be approved in advance by the Provost.

	Date	
Signature of Provost (if above level of approved programs)		

ALL SIGNATURES MUST BE OBTAINED PRIOR TO SUBMISSION TO THE GOVERNANCE OFFICE

	Date	

Signature, Chair
Faculty Senate Review Committee: ___Curriculum Review ___GAAC
___Core Review ___SADAC

ADDITIONAL SIGNATURES: (As needed for cross-listing and/or stacking)

	Date	
Signature, Chair, Program/Department of:		
	Date	
Signature, Chair, College/School Curriculum Council for:		
	Date	
Signature, Dean, College/School of:		

Attach complete SYLLABUS (as part of this application). This list is online at:
http://www.uaf.edu/uafgov/faculty-senate/curriculum/course-degree-procedures-/uaf-syllabus-requirements/
The Faculty Senate curriculum committees will review the syllabus to ensure that each of the items listed below are included. If items are missing or unclear, the proposed course (or changes to it) may be denied.

Syllabus checklist for all UAF courses
During the first week of class, instructors will distribute a course syllabus. Although modifications may be made throughout the semester, this document will contain the following information (as applicable to the discipline):

1. Course information:
❑title, ❑ number, ❑credits, ❑prerequisites, ❑ location, ❑ meeting time
(make sure that contact hours are in line with credits).

2. Instructor (and if applicable, Teaching Assistant) information:
❑ Name, ❑ office location, ❑ office hours, ❑ telephone, ❑ email address.

3. Course readings/materials:
❑ Course textbook title, ❑ author, ❑ edition/publisher.
❑ Supplementary readings (indicate whether ❑ required or ❑ recommended) and
❑ any supplies required.

4. Course description:
❑ Content of the course and how it fits into the broader curriculum;
❑ Expected proficiencies required to undertake the course, if applicable.
❑ Inclusion of catalog description is *strongly* recommended, and
❑ Description in syllabus must be consistent with catalog course description.

5. ❑ Course Goals (general), and (see #6)

6. ❑ Student Learning Outcomes (more specific)

7. Instructional methods:
❑ Describe the teaching techniques (eg: lecture, case study, small group discussion, private instruction, studio instruction, values clarification, games, journal writing, use of Blackboard, audio/video conferencing, etc.).

8. Course calendar:
❑ A schedule of class topics and assignments must be included. Be specific so that it is clear that the instructor has thought this through and will not be making it up on the fly (e.g. it is not adequate to say "lab". Instead, give each lab a title that describes its content). You may call the outline tentative or Work in Progress to allow for modifications during the semester.

9. Course policies:
❑ Specify course rules, including your policies on attendance, tardiness, class participation, make-up exams, and plagiarism/academic integrity.

10. Evaluation:

☐ Specify how students will be evaluated, ☐ what factors will be included, ☐ their relative value, and ☐ how they will be tabulated into grades (on a curve, absolute scores, etc.) ☐ Publicize UAF regulations with regard to the grades of "C" and below as applicable to this course. (Not required in the syllabus, but is a convenient way to publicize this.) Link to PDF summary of grading policy for "C":
http://www.uaf.edu/files/uafgov/Info-to-Publicize-C_Grading-Policy-UPDATED-May-2013.pdf

11. Support Services:

☐ Describe the student support services such as tutoring (local and/or regional) appropriate for the course.

12. Disabilities Services: Note that the phone# and location have been updated. http://www.uaf.edu/disability/ The Office of Disability Services implements the Americans with Disabilities Act (ADA), and ensures that UAF students have equal access to the campus and course materials.

☐ State that you will work with the Office of Disabilities Services (208 WHITAKER BLDG, 474-5655)to provide reasonable accommodation to students with disabilities.

5/21/2013

DVM 722 VETERINARY PHARMACOLOGY

SYLLABUS – Fall Year 2

Department of Veterinary Medicine, University of Alaska Fairbanks

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1. Course Information:

Title:	Veterinary Pharmacology
Number:	DVM 722
Credit:	4
Prerequisites:	Successful Completion of First Year Veterinary Medical Program
Location:	TBD
Meeting time:	TBD

2. Instructor Contact Information:

Name:	Dr. Todd O'Hara
Office Location:	182 Arctic Health Research Building
Office Hours:	By appointment
Office Phone:	474-1838
Email:	tmohara@alaska.edu

Email is the best way to reach the instructor. You should receive a response to your email within 24 hours when it is received. If you do not receive a reply within this time frame, assume that the email was not received and please resend your message.

3. Course Reading/Materials:

Reading: None required. Reading and study material will be provided by the instructor, such as selected articles.

Recommended

- ***Veterinary Pharmacology and Therapeutics***. Riviere and Papch. 9th edition. Wiley-Blackwell. 2009. ISBN: 978-0-8138-2061-3

- ***Plumb's Veterinary Drug Handbook***. Plumb, Donald C. 7th edition. Wiley-Blackwell. 2011. **ISBN: 978-0-4709-5964-0**

4. Course Description:

DVM 722 The course is designed to address the following areas:

- **Basic principles of pharmacology:** Pharmacokinetics, pharmacodynamics, characteristics of selected classes of drugs and their basic mechanisms of action, etc. Individual agents will be introduced to provide examples, but providing highly detailed information on specific agents such as doses is not our objective.

- **Proper and effective use of drugs:** This will introduce the basics of veterinary clinical therapeutics for selected classes of agents including selected species differences in drug response,

side effects, toxicity, contraindications, interactions, and selected areas of pathophysiology.

5. Course Goals:

The goals of this course are to provide students with information on major drug classes and their action as they apply to veterinary medicine. The students will learn about drug effects, drug uptake distribution and elimination of drugs, and drug toxicity of major drugs used in veterinary medicine.

6. Learning outcomes
At the end of the course the Students will:

Drug effects

1. Be able to describe the important characteristics of a receptor.
2. Be able to describe the relationship between [drug], binding to receptors and effect using a dose-response curve.
3. Be able to compare & contrast potency and efficacy.
4. Be able to compare & contrast agonists and antagonists.
5. Be able to describe classes of simple signal transduction pathways.
6. Be able to describe three situations where binding of drugs to receptors is not proportional to drug effect.

Drug effects 2

1. Be able to contrast the effects of competitive and noncompetitive antagonists on the dose-response curve of an agonist.
2. Be able to explain the effects of partial agonists, inverse agonists etc. using a receptor model where active and inactive receptors are in equilibrium.
3. Be able to describe how the ED50 may be lower than the Kd for a drug in the case of spare receptors.
4. Be able to explain how a cumulative distribution curve (quantal, population) may be used to explain the effects of different doses of a drug in a population.
5. Be able to define therapeutic index and compare the safety of drugs with different therapeutic indexes.
6. Be able to define the therapeutic window of a drug using dose-response and toxicity curves.
7. Be able to define down regulation, tolerance, and tachyphylaxis.

Uptake & distribution

1. Be able to describe the general characteristics/advantages of each of the following routes of administration: i.v. bolus, i.v. infusion, subcutaneous, intramuscular, intraperitoneal, pulmonary and oral.
2. Be able to describe which processes (uptake, elimination) predominate in regions of a curve describing the blood levels of a single dose of drug given orally.
3. Be able to describe which processes (uptake, elimination) predominate in regions of a curve describing the blood levels of multiple doses of drug given orally.
4. Be able to define bioavailability.
5. Be able to describe the characteristics of a drug that allow it to penetrate a biological membrane/epithelium.
6. Be able to describe how changes in pH affect movements of acidic and basic drugs across membranes.
7. Be able to define:
    a. "First pass" effect of the liver on drugs.
    b. Volume of distribution
    c. Central & peripheral compartments

8. Be able to describe the effect of the binding of drugs to plasma proteins on the binding of drugs to receptors.

Elimination

1. Be able to describe how Phase I and Phase II reactions by the liver may decrease the concentration of a drug in the body. Be able to recognize some of the typical types of reactions that occur in each phase.
2. Be able to describe how excretion of drugs by the kidney and liver may decrease the concentration of a drug in the body.
3. Be able to compare and contrast the mechanisms by which filtration and secretion move drugs from the blood into the urine.
4. Be able to define the 3 measures of elimination (half-life, clearance, and the rate constant of elimination). How are they related?
5. Be able to use half-life and clearance to predict changes in drug concentration.

Blood concentrations

1. Be able to describe in approximate terms how blood levels of a drug will vary over time if the drug is given by i.v. bolus or by continuous rate of infusion.
2. Be able to describe how the steady state blood concentrations are related to the half-life of a drug.
3. Be able to describe the effect of increasing the dose rate on the steady state plasma concentration.
4. Be able to describe how giving repeated doses rather than continuous infusion affects the steady state levels of a drug.
5. Be able to describe/calculate the effects of the following on steady state concentrations:
    a. Dosage
    b. Dose interval
    c. Bioavailability
    d. Clearance (or half-life or rate constant of elimination)
6. Be able to describe/calculate the effects of the following on the fluctuations induced by repeated doses at steady state:
    a. Dose interval
    b. Half-life (or clearance or rate constant of elimination)
    c. Slow absorption
7. Be able to define a loading dose and describe why it is useful.

Variance & transporters

1. Be able to list three factors whose variations contribute to the typical 9-fold range in blood-levels (pharmacokinetics) seen in many drugs.
2. Be able to explain using a population dose-response curve and a dose-toxicity curve how variation may contribute to adverse effects.
3. Be able to describe how changes in receptor number or prior changes in the activity of signal transduction pathways can lead to pharmacodynamic variability.
4. Be able to contrast the types of molecules that move across membranes without transporters with those that may be carried across membranes by transporters. Which type is saturable?
5. Be able to list important drugs transported by the p glycoprotein and explain how variations in p glycoprotein expression contribute to toxicities.
6. Describe where in the kidney transporters are important for drug secretion.

Adverse drug reactions

1. Be able to distinguish between the different types of adverse drug reactions.
2. Be able to use a population dose-response curve to estimate what fraction of animals remains unresponsive at any dose and explain how this may contribute to ineffective drug therapy.
3. Be able to describe the mechanisms by which a drug could produce atopy (rash), anaphylactic shock, cytotoxicity and other types of hypersensitivity.
4. Be able to define a therapeutic ratio. If you are given a dose-response curve and a dose-toxicity curve, at a given dose be able to estimate what fraction of animals are responding to the drug and what fraction of animals are showing a toxic reaction.

Special populations

1. Be able to describe qualitatively the most accurate way to adjust drug dosage for differences in animal size. Predict whether large/small animals are under/overdosed if drug doses are calculated using the weight of the animal.
2. Be able to describe how liver disease may alter drug levels through changes in:
   a. metabolic rate
   b. blood protein binding
   c. secretion of drug in bile

At what level does liver damage cause clinically significant changes in drug levels?

3. Be able to describe how renal disease may alter drug elimination. What clinical test(s) give you a good estimate of renal function?
4. Be able to describe how drug levels and responses may be altered in neonates and old animals.

Toxicity

1. Be able to describe receptor mediated and non-receptor mediated toxicities.
2. Be able to describe excitotoxicity and acetaminophen toxicities.
3. Be able to contrast pharmacology and toxicology.

Autonomic drugs

- Be able to diagram the autonomic nervous system.
  - general synaptic organization, major receptors and neurotransmitters
- Understand basic autonomic neurotransmitter metabolism.
  - acetylcholine, norepinephrine/epinephrine
- Understand general receptor signal transduction mechanisms.
  - nicotinic, muscarinic, cholinergic, adrenergic receptors
- Know autonomic effects at target organs.
  - heart, blood vessels, lungs, gastrointestinal, urinary bladder, eye
- For specific autonomic drugs know:
  - generic name and drug class (i.e. what receptors they influence)
  - target organ effects (desired and undesired)
  - general clinical considerations (emphasize critical care)
- Specific autonomic drugs:

adrenergic agonists	**adrenergic antagonists**
epinephrine (α1, β1, β2; endogenous)	phenoxybenzamine (α1, α2; non-competitive)
norepinephrine (α1, β1; endogenous)	phentolamine (α1, α2; competitive)
dopamine (*D1*, β1, (α1); endogenous)	prazosin (α1)
dobutamine (β1)	atipamezole (α2)
albuterol (β2)	propranolol (β1, β2)
clenbuterol (β2)	timolol (β1, β2; ocular for glaucoma)

phenylephrine (α1)	atenolol (β1)
medetomidine (α2)	

cholinergic agonists	cholinergic antagonists
acetylcholine (direct; endogenous)	atropine
muscarine (direct)	scopolamine
pilocarpine (direct)	ipratropium
bethanechol (direct; some M3 selectivity)	glycopyrrolate
physostigmine (AChE inhibitor; indirect)	tropicamide
neostigmine (AChE inhibitor; indirect)	propantheline

Neuromuscular junction blockers **(one lecture)**

- Understand the basic functional components of the neuromuscular junction.
  - acetylcholine, nicotinic receptor, acetylcholinesterase
- Understand the mechanistic differences between depolarizing and non-depolarizing NMJ blocking drugs.
  - nicotinic receptor agonists (depolarizing) vs. competitive antagonists (non-depolarizing)
- Know general clinical considerations of NMJ blocking drugs:
  - clinical uses
  - monitoring of NMJ block (e.g. train-of-four)
  - toxicity (histamine release, ganglionic blockade, anticholinergic activity, malignant hyperthermia, hyperkalemia)
  - problem with monitoring depth of anesthesia during NMJ block
- Understand reversal of NMJ blockade
  - depolarizing vs. non-depolarizing NMJ blocking drugs
- For specific NMJ blocking drugs know:
  - general duration of action (short, long, etc.)
  - metabolism and elimination (also factors which with these processes)
  - drug-specific degrees of toxicity (ganglionic blockade, etc)
- Specific NMJ blocking drugs:

depolarizing NMJ blockers	nondepolarizing NMJ blockers
succinylcholine (short lasting)	pancuronium (long lasting)
	atracurium (intermediate)
	mivacurium (short lasting)

7. Instructional Methods:

The course is designed based on the scientific teaching method. This method includes active learning and group activities as well as formative assessments. The students are expected to read assigned material ahead of class so that class time can be spend on discussion of assigned reading, problem solving as well as other active learning activities. Formative assessment will be used throughout the course to help students judge their learning progress and help identify areas in need of focused attention.

This course will use Blackboard (classes.uaf.edu) to make additional information available. All information associated with this course will be posted there, including lecture notes, slides, handouts, or study guides etc.

8. Course Calendar:
   See tentative lecture schedule at end of syllabus.

9. Course Policies:

Attendance:

Students are expected to attend all classes. Exams will draw on lecture material and students that do not attend class will likely not to do well in exams.

Classroom **B**ehavior:

Any type of behavior in the classroom that is disruptive, distracting, or disrespectful to the instructor or to your fellow students will not be tolerated and will result in dismissal from the classroom. This includes, but is not limited to, disrespectful comments, and the use of tobacco products. All cell phones or other such devices must silenced while in the classroom. Do not browse the Internet, text message or IM while in the classroom. You can use such devices for note taking or other class related activities.

Plagiarism**:**

Plagiarism is the overt or covert use of other people's work or ideas without acknowledgement of the source. This includes using ideas or data from a classmate or colleague without permission and acknowledgement, including sentences from journal articles in your writing without citing the author, or copying parts of a website into your essay. Plagiarism and cheating are serious offenses that violate the student code of conduct which may result in an "F" in the course and/or referral to the university disciplinary committee.

10. Evaluation:
    The evaluation will be based on 4 exams. That are weighted equally.

Grades will be calculated on a 100-point scale.

A+	96-100	%
A	92-95.9	%
A-	88-91.9	%
B+	84-87.9	%
B	80-83.9	%
B-	76-79.9	%
C+	72-75.9	%
C	68-71.9	%
C-	64-67.9	%
D	60-63.9	%
F	<60	%

All exams must be taken at the scheduled time. Exams cannot be taken before or after the scheduled date/time. If you miss an exam, you will receive a zero as your grade.
***Note:** If you have a conflict due to a university-sponsored event, you must notify me prior to the exam with a confirmation letter from University authority. If you miss an exam for medical reasons you need to inform the instructor as soon as possible and provide a statement from a licensed physician.

11. Support Services:
    If you require more assistance than can be provided in class, and office hours, you may want to contact Student Support Services (http://www.uaf.edu/sssp/) or the Department of Veterinary Medicine for assistance.

12. Disability Services:

All students, including those with disabilities, are welcome in this course, and we are committed to providing equal access to this course for all students. If you have a disability (including learning disabilities) please inform us during the first week of class so that we can accommodate your specific needs. If you have not already done so, you will also need to contact UAF's Office of Disabilities Services (474-5655). Everyone should have the opportunity to participate fully in the course and to complete assignments and exams to the best of their ability. If accommodations are needed to enable you to do so, we will gladly work with you to provide them.

Tentative Lecture Schedule

DATE:	TOPIC
August TBD	Capstone Exam at CSU
Week 1	Drug Effects Uptake & Distribution
Week 2	Elimination Blood concentrations Variability & transport Adverse drug reactions
Week 3	Drug toxicities Special patient populations Exotic populations
Week 4	**EXAM 1** Introduction to autonomic pharmacology Cholinergic agonists & antagonists Neuromuscular junction blockers
Week 5	Adrenergic agonists Adrenergic antagonists Autonomic drugs & critical care
Week 6	Cardiac electrophysiology Antiarrhythmics Modulators of cardiac contraction
Week 7	Opioids Phenothiazines & alpha-2 agonists Injectable anesthetics
Week 8	Anticonvulsants Inhalation anesthetics Local anesthetics
Week 9	**Exam 2** Cancer chemotherapy Antimicrobial pharmacokinetics/pharmacodynamics

Week 10	Quinolones, flexible dosing & package inserts Antiparasitics
Week 11	Penicillins & cephalosporins Tetracyclines, choloramphenicol & aminoglycosides Sulfonamides (& trimethoprim) & macrolides Miscellaneous antibacterial drugs
Week12	**EXAM 3** Gastrointestinal therapeutics Antifungals & antivirals
Week 13	Antimicrobial review / summary Capstone cases
Week 14	Capstone cases
	EXAM 4 As scheduled by University