PHARMACOLOGY FOR ANESTHESIA
NUR 887; Section 001
3 Credits
Thursday and Friday, 11:00 am – 1:00 pm
A-107 Life Sciences Building
Fall 2015

Catalog Course Description: Pharmacology and its applications to clinical anesthesia practice.

Course Objectives: At the end of this course, students will:
1. Discuss general pharmacological principles.
2. Explain the mechanism of drug receptor sites binding and drug interactions.
3. Discuss the effects of drugs on the nervous system.
4. Integrate the principles of pharmacodynamics and pharmacokinetics to anesthesia practice.
5. Identify the general signs and stages of Anesthesia.

Additional Course Objectives:

GENERAL LEARNING OUTCOMES: This course is designed to provide the student with a thorough understanding of the basic science of pharmacology. The primary focus will be on those topics which are an integral part of modern anesthesia practice. These include pharmacodynamics, pharmacokinetics, pharmacotherapeutics, pharmacogenetics, pharmacy and toxicology.

SPECIFIC LEARNING OUTCOMES: In an effort to build a foundation for the use of sound pharmacologic principles in the practice of anesthesia a specific format has been developed. This format will be used throughout this course. The rationale for the use of this format is two-fold:

1. To facilitate the student's ability to learn the subject matter presented.
2. To provide a rational approach to pharmacology which the student can use throughout their career when evaluating new drugs and the current literature in pharmacology and anesthesia.

The student will be responsible for the following parameters for all classes of drugs presented:

1. classification
2. history
3. structure activity relationships
4. pharmacokinetics
5. preparations and dosages
6. pharmacology (to include)
   a. mechanism of action
   b. dose-effect relationships
7. The effects of the drug on the following physiologic
   a. Compartments:
      i. central and autonomic nervous system
ii. cardiovascular
iii. respiratory
iv. renal
v. gastro-intestinal
vi. endocrine, biochemistry and genetics

8. Obstetric and pediatric uses.
9. Toxicity (to include):
   a. acute side effects
   b. chronic side effects
   c. contraindications
   d. drug-drug interactions
10. Treatment of adverse reactions.
11. Clinical experience and current anesthetic uses

Prerequisites: Acceptance into the Nurse Anesthesia Program

Co-requisites: None.

Professional Standards & Guidelines: The curriculum is guided by the following documents:

Course Faculty: Henry Talley, PhD, CRNA, MSN, MS, BA

Contact Information:
Office: 1355 Bouge Street
   A119 Life Sciences Building
Office Phone: 517-355-8305
E-mail: henry.talley@hc.msu.edu
Office Hours: Wednesdays 1000 – 1400hrs
Note: Times will try to be arranged to accommodate student schedules.

Instruction:

Methodology:

Independent study, classroom activities, lectures, assignments, exams, internet assignments, self-evaluation, computer-aided instruction and student/faculty conferences.

Required Texts:


Optional Texts:


Evaluation:

Learning Assessments and Grading: Final grade will be determined from the following:

- 3 Exams 60%
- Final exam 40% (cumulative)

Course Grading Scale:

<table>
<thead>
<tr>
<th>Percentage</th>
<th>Grade</th>
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<tbody>
<tr>
<td>94-100%</td>
<td>4.0</td>
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<tr>
<td>93-89%</td>
<td>3.5</td>
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<tr>
<td>88-84%</td>
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<tr>
<td>83-79%</td>
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<tr>
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<tr>
<td>74-70%</td>
<td>1.5</td>
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<tr>
<td>69-65%</td>
<td>1.0</td>
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<tr>
<td>≤64%</td>
<td>0</td>
</tr>
</tbody>
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Turnitin Statement: Consistent with MSU’s efforts to enhance student learning, foster honesty, and maintain integrity in our academic processes, instructors may use a tool called Turnitin to compare a student’s work with multiple sources. The tool compares each student’s work with an extensive database of prior publications and papers, providing links to possible matches and a “similarity score.” The tool does not determine whether plagiarism has occurred or not. Instead, the instructor must make a complete assessment and judge the originality of the student’s work. All submissions to this course may be checked using this tool.

Students should submit papers to Turnitin Dropboxes without identifying information included in the paper (e.g. name or student number), the system will automatically show this info to faculty in your course when viewing the submission, but the information will not be retained by Turnitin.

Specific directions for a use of the Turnitin product in the course are provided in assignment directions.

HIPAA and Federal Compliance Guidelines are to be followed at all times.

- All patient identifying information must be blocked out in black prior to copying or distributing to faculty or classmates
- All information copied from the clinical site must be shredded by the student after use and prior to completion of the program
- Instead of copying patient information from the chart, it is expected that the student will transcribe pertinent information from the medical records and include it in the management plan documentation
- No information about patients should be shared outside of the educational experience
Professionalism:

All graduate students at Michigan State University should be fully familiar with the Graduate Student Rights and Responsibilities Articles (published by the Graduate School; available at http://www.vps.msu.edu/SpLife/gradrights.htm); University guidelines for ethical research - published by the University Committee on Research Involving Human Subjects [UCRIHS]; available at http://www.msu.edu/user/ucrihs/); The MSU Guidelines for Integrity in Research and Creative Activities, http://grad.msu.edu/all/ris04activities.pdf and specific principles for informal conflict management, in the Graduate Student Resource Guide (published by the Graduate School; available at http://grad.msu.edu/conflict.htm).

The Graduate Student Rights and Responsibilities (GSRR) Articles address professional standards for graduate students as follows: “Each department/school and college shall communicate to graduate students, at the time of their enrollment in a degree program or course in the unit, any specific codes of professional and academic standards covering the conduct expected of them.” (Article 2.4.7). “The graduate student shares with the faculty the responsibility for maintaining the integrity of scholarship, grades, and professional standards” (Article 2.3.8).

In addition to meeting academic standards included in the Academic Progression Guidelines, students and faculty in the PhD Nursing Programs have shared responsibility for adherence to the professional standards presented in the CON Doctoral Student Handbook.

Professional expectations are rooted in the maintenance of high quality working relationships with faculty, peers, research participants, staff, and all others with whom the graduate student interacts. Aspects of high quality working relationships that are addressed in the GSSR as shared faculty-student responsibilities include: mutual respect, understanding, and dedication to the education process (2.1.2); maintenance of a collegial atmosphere (2.3.7); and mutual trust and civility (2.3.1.2).

University & College Policies:

The College of Nursing expects that students will demonstrate professional behavior in all situations. Specific expectations for clinical and other professional venues can be found in the appropriate handbook. You are responsible for reviewing and acting in accordance with the policies and procedures found in the following sources, including the following topics: Professionalism, Academic Integrity, Accommodations for Students with Disabilities, Disruptive Behavior, Attendance, Compliance, and Progression.

- CON MSN Student Handbook
  http://nursing.msu.edu/MSN%20Programs/Handbooks/default.htm
- Information for MSU Students: http://www.msu.edu/current/index.html
University Policies:

Academic integrity: Article 2.3.3 of the Academic Freedom Report states that "The student shares with the faculty the responsibility for maintaining the integrity of scholarship, grades, and professional standards." In addition, the College adheres to the policies on academic honesty as specified in General Student Regulations 1.0, Protection of Scholarship and Grades; the all-University Policy on Integrity of Scholarship and Grades; and Ordinance 17.00, Examinations (See Spartan Life: Student Handbook and Resource Guide http://splife.studentlife.msu.edu/ and/or the MSU Web site: www.msu.edu). Therefore, unless authorized by your instructor, you are expected to complete all course assignments, including homework, lab work, quizzes, tests and exams, without assistance from any source. You are expected to develop original work for this course; therefore, you may not submit course work you completed for another course to satisfy the requirements for this course. Also, you are not authorized to use the www.allmsu.com Web site to complete any course work. Students who violate MSU rules may receive a penalty grade, including--but not limited to--a failing grade on the assignment or in the course. Contact your instructor if you are unsure about the appropriateness of your course work. (See also https://www.msu.edu/unit/ombud/academic-integrity/index.html#regulations

Accommodations for students with disabilities: Students with disabilities should contact the Resource Center for Persons with Disabilities to establish reasonable accommodations. For an appointment with a disability specialist, call 353-9642 (voice), 355-1293 (TTY), or visit MyProfile.rcpd.msu.edu.

Attendance: Students whose names do not appear on the official class list for this course may not attend this class. Students who fail to attend the first four class sessions or class by the fifth day of the semester, whichever occurs first, may be dropped from the course. See the Ombudsman’s web site for a discussion of student observance of major religious holidays, student-athlete participation in athletic competition, student participation in university-approved field trips, medical excuses and a dean's drop for students who fail to attend class sessions at the beginning of the semester.

College of Nursing Policies: Professional Development Guidelines found in CON Student Handbooks at CON website http://nursing.msu.edu/MSN%20Programs/Handbooks/default.htm. Students are responsible for the information found in the CON (BSN, MSN, DNP, or PhD - choose one) Student Handbook.
Appeal of Test Question

All inquiries/appeals concerning a disputed answer on an examination must be made on this form. No appeal will be accepted unless received within five (5) days of the examination. All appeals will be evaluated individually.

Student Name: _______________________________________________________

Exam Number: _________ Date of Exam: _________ Date Submitted: _________

Submitted to: _________________________________________________________

1. Write the test number and question as it was written on the exam.

_____________________________________________________________________

2. What was the correct answer according to the test key? __________________

3. What answer did you select? __________________

4. What concern do you have regarding the question and answer?

_________________________________________________________________________________
_________________________________________________________________________________
_________________________________________________________________________________

5. Cite Three References that support your rationale for the answer you selected over the answer on the answer key. References cannot be cited from the internet.

   a. ______________________________________________________________

   b. ______________________________________________________________

   c. ______________________________________________________________

Additional comments may be attached to this form.

Faculty Response to Appeal: Accept ________ Reject ________

Rationale:

_____________________________________________________________________________________
_____________________________________________________________________________________
_____________________________________________________________________________________

Faculty Signature: _______________________________ Date: __________________
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**Disruptive Behavior:** Article 2.3.5 of the Academic Freedom Report (AFR) for students at Michigan State University states: "The student's behavior in the classroom shall be conducive to the teaching and learning process for all concerned." Article 2.3.10 of the AFR states that "The student has a right to scholarly relationships with faculty based on mutual trust and civility." General Student Regulation 5.02 states: "No student shall . . . interfere with the functions and services of the University (for example, but not limited to, classes . . .) such that the function or service is obstructed or disrupted. Students whose conduct adversely affects the learning environment in this classroom may be subject to disciplinary action through the Student Faculty Judiciary process.

**Attendance:** Students whose names do not appear on the official class list for this course may not attend this class. Students who fail to attend the first four class sessions or class by the fifth day of the semester, whichever occurs first, may be dropped from the course.
<table>
<thead>
<tr>
<th>Date</th>
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<tr>
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<tr>
<td>Fr 9/04</td>
<td>Introduction to Anesthetic Pharmacology</td>
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<tr>
<td>Th 9/10</td>
<td>Signs and Stages of Anesthesia</td>
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<td>Fr 9/11</td>
<td>Uptake and Distribution of Inhalation Agents</td>
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<tr>
<td>Th 9/17</td>
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<td>Th 9/24</td>
<td>Review</td>
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<td>Fr 9/25</td>
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<td>Inhalation Anesthetics</td>
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<td>Inhalation Anesthetics</td>
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<td>Th 10/8</td>
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<td>Fr 10/9</td>
<td>Introduction to Induction drugs</td>
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<td>Th 10/15</td>
<td>Anesthesia Induction Drugs- Propofol/Barbiturates</td>
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<td>Fr 10/16</td>
<td>Etomidate/Ketamine/Benzodiazepines/Dexmedetomidine</td>
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<td>Th 10/22</td>
<td>Anesthesia Induction Drugs</td>
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<td>Fr 10/23</td>
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<td>Th 10/29</td>
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<td>Exam III (No Videoconference)</td>
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<td>Final Exam (to be arranged)</td>
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