

MIDDLE TENNESSEE SCHOOL OF ANESTHESIA
UCNAP 500: ADVANCED PHYSIOLOGIC FOUNDATIONS FOR NURSING PRACTICE
SPRING 2024

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CONTACT INFORMATION:

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COURSE PREREQUISITES:

Successful completion of an undergraduate course in human anatomy and physiology

Submission of all required documents to the student portal before the course start date

COURSE DESCRIPTION:

This course addresses advanced human physiologic concepts at the system, organ, cellular, and subcellular levels, with the overall goal to enhance the learner's foundation for nursing practice. Emphasis is on integration of concepts as a basis for understanding interrelationships among complex physiologic processes. This course may strengthen the learner's application for a nurse anesthesia program, but satisfactory completion of the course does not guarantee acceptance into a program as acceptance is based on a number of factors.

COURSE CREDIT: 3 credit hours

COURSE DATES: January 8th to April 19th, 2024

SUGGESTED COURSE MATERIALS:

Hall, J.E. (2020). *Guyton and Hall textbook of medical physiology* (14th ed.). Philadelphia: Saunders/Elsevier. ISBN: 9780323597128

Seeley, R., VanPutte, C., Regan, J., & Russo, A. (2020). *Seeley's anatomy and physiology* (12th ed.). Boston: McGraw-Hill. ISBN: 9781260172195

COURSE OBJECTIVES:

Students may be evaluated for ability to:

1. Describe complex physiologic processes at biochemical, cellular, organ, system, and human organism levels.
2. Integrate concepts as a basis for understanding interrelationships among complex physiologic processes.

3. Integrate physiologic concepts with clinical assessment, diagnostic reasoning, and therapeutic management of patients.

LECTURE TOPICS AND EXAMINATIONS:

Week 1 (January 8th)

Cell structures and functions

Cell metabolism

Cell membrane transport mechanisms

***Take quiz on Brightspace after watching lecture**

Week 2 (January 15th)

Membrane potentials and action potentials

Cell receptor mechanisms

***Take quiz on Brightspace after watching lecture**

***Online Synchronous Discussion #1 (Week of January 15th)**

Week 3

EXAMINATION #1 (January 22nd-26th)

Week 4 (January 29th)

Central and peripheral nervous systems

Neurotransmitters

Week 5 (February 5th)

Brain anatomy and physiology

***Take quiz on Brightspace after watching lecture**

Week 6 (February 12th)

Spinal cord and spinal nerves

Cranial nerves

***Online Synchronous Discussion #2 (Week of February 12th)**

Week 7

EXAMINATION # 2 (February 19th-23rd)

Week 8 (February 26th)

Autonomic nervous system

Skeletal and smooth muscle

Neuromuscular synapse

Week 9 (March 4th)

Cardiovascular physiology and hemodynamic regulation

***Take quiz on Brightspace after watching lecture**

Week 10 (March 11th)

Microcirculation

RBCs, hemoglobin, iron, oxygen and CO₂ transport**Week 11****EXAMINATION # 3 (March 18th-22nd)****Week 12 (March 25th)**

Hemostasis and coagulation

WBCs, Inflammation, Immunity

Week 13 (April 1st)

Renal system

Take quiz on Brightspace after watching lecture*Week 14 (April 8th)**

Acid-Base balance

Online Synchronous Discussion #3 (Week of April 8th)*Week 15****EXAMINATION #4 (April 15th-19th)****GRADING SYSTEM:**

- Four examinations will be given. The total number of questions answered correctly by each student will be divided by the total number of possible questions to obtain a percentage.
- Five post-lecture quizzes will be posted on Brightspace.
- We will meet online via Microsoft TEAMS three times throughout the course sequence.
- The final course grade will be determined by the following method:
 - The four examinations will count for 80% of the final grade.
 - The five post-lecture quizzes on Brightspace will be worth 1% each for a total of 5% of the final grade. **Grade will be based on participation**, not performance on the quizzes.
 - The three Microsoft Teams synchronous activities will be worth 5% each for a total of 15% of the final grade. **Grade will be based on participation in the various activities I have planned.**
- Per MTSA policy, there is no rounding of grades.
- No one student will be given opportunities to improve his or her grade unless the same opportunities also are available to every other student in the class.
- **DO NOT** request special opportunities to improve your grade on an individual basis.

COMMUNITY COURSE GRADING POLICY

Students can view their final grades for each semester anytime by visiting the transcript section of the CAMS Student Portal <https://student.mtsa.edu/>.

The MTSA Grading Scale is based on the following 4.0 grading system:

A =	90-100%	(4.0 Quality Points)
B =	80-89%	(3.0 Quality Points)
C =	70-79%	(2.0 Quality Points)
F =	Below 70%	(0.0 – Failing)
W =	Withdrew	<i>See Grade of Withdrew below</i>
WF =	Withdrew Failing	<i>See Grade of Withdrew Failing below</i>
T =	Terminated	<i>See Terminated below</i>

(There is no grade of “D” in the program)

Withdrawing from a Course

Students may drop a course within the first 5 days of the semester with no grade.

Grade of Withdrew (W)

Students wishing to withdraw from the course after the first 5 days will either receive a grade of “W” or “WF.” To receive a W grade, a student must drop the course within the first 60% of the semester. A “W” grade does not impact a student’s GPA.

Grade of Withdrew Failing (WF)

Students wishing to withdraw from the course after the deadline to withdraw with a “W” grade (see above) will receive a grade of “WF.” A WF grade is calculated into a student’s GPA as a failing grade (F).

Terminated (T)

An administratively terminated student is issued a final grade of "T" for all courses in which he/she is currently enrolled, and the termination is noted on the student's transcript.

5.6.101 Community Course Refund Policy

Any student who wishes to withdraw from a community course must notify the instructor in writing of this action.

Refund Policy

MTSA will permit any student to cancel their enrollment agreement in a community course within five MTSA business days of the enrollment day. Should a cancellation occur, MTSA will refund 100% of the tuition payment that was made by the student, minus the non-refundable portion (30%) submitted to hold the student's position in the class. Students who have been given a medical withdrawal are assessed and adjusted no differently than other withdrawals.

Pro-Rata Refund

If a student withdraws or is terminated from the program after the period allowed for cancellation of the enrollment agreement and has completed 60% or less of the period of attendance (semester), the student is entitled to a partial prorated refund. MTSA will calculate whether a tuition refund is due and if so, remit a refund within 45 days following the student’s withdrawal or termination. The pro-rata percentage is based on

days of attendance within the period of attendance. Please contact the Business Office (615-732-7852) for more information.

Determination of the Withdrawal Date

The student's withdrawal date is the date the student Submits the signed withdrawal form to the Registrar's Office.

MTSA Internal Withdrawal Procedures:

1. Notify in writing the instructor who will in turn notify the Program Director and Registrar of your intent to withdraw.
2. Schedule an appointment with the Executive Vice President if requested.
3. The Registrar sends the student the withdrawal form to complete and sign electronically.
4. After the student signs, the completed form is sent to the instructor for signature.
5. The withdrawal process will be initiated upon receipt of the completed withdrawal form.

BRIGHTSPACE POSTINGS AND LAPTOP COMPUTERS:

Course materials will be posted on Brightspace related to each week's lecture content. These will include lecture recordings, PowerPoint presentations, and Word documents. Due to the nature of the online component, students must make sure their home computer has an internet speed of 2MBPS (upload/download) or greater for a successful Microsoft TEAMS connection. Computers must have an internal or external web camera and microphone. Students can test their internet speed at www.speedtest.net.

ATTENDANCE:

Students are encouraged to engage in all online activities and take all examinations when scheduled. Alternate test times should be requested before 24 hours of the scheduled test time. Accommodations will be made as necessary and only for appropriate reasons (work schedule, illness, family death, etc.).

OTHER INFORMATION:

Plagiarism, cheating or lying involving any clinical, academic, or School endeavor

Plagiarism, which is defined as "The act of using another person's words or ideas without giving credit to that person", is a form of cheating, and is subject to disciplinary action.

Plagiarism: The act of using another person's words or ideas without giving credit to that person.

<http://www.merriam-webster.com/dictionary/plagiarism>

Honor Code: On my honor, I pledge to abide by MTSA policies described in the Student Handbook. I understand that students are to be honest in words and actions, in particular, to not lie, cheat, plagiarize, or steal. I pledge to conduct myself in a manner based on Christian values and to require the same of fellow students. I understand that a violation of this Honor Code may result in my dismissal from the class.

Americans with Disabilities statement:

Students with disabilities, who are protected by the Americans with Disabilities Act of 1990 and require special accommodations, should contact their instructor prior to course start date. The School will make reasonable accommodation whenever necessary for all applicants with disabilities, provided that the individual is otherwise qualified to safely perform the duties and assignments connected with the academic and clinical requirements of the curriculum. (*See handbook for more detailed requirements for completion of*

clinical/coursework). Reasonable accommodation will be made to assure student success and completion of coursework only with notification of need prior to course start date.