

**MIDDLE TENNESSEE SCHOOL OF ANESTHESIA  
UCNAP 500: ADVANCED PHYSIOLOGIC FOUNDATIONS FOR NURSING PRACTICE  
SUMMER 2023**

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**CONTACT INFORMATION:**

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**COURSE PREREQUISITES:**

Successful completion of an undergraduate course in human anatomy and physiology

**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:** May 8<sup>th</sup> to August 18<sup>th</sup>, 2023

**SUGGESTED COURSE MATERIALS:**

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

Seeley, R., VanPutte, C., Regan, J., & Russo, A. (2020). *Seeley's anatomy and physiology* (12<sup>th</sup> 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 (May 8<sup>th</sup>):**

Cell structures and functions

Cell metabolism

Cell membrane transport mechanisms

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

### **Week 2 (May 15<sup>th</sup>):**

Membrane potentials and action potentials

Cell receptor mechanisms

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

**\*Online Synchronous Discussion #1 (Week of May 15<sup>th</sup>)**

### **Week 3**

### **EXAMINATION #1 (May 22<sup>nd</sup>-26<sup>th</sup>)**

### **Week 4 (May 29<sup>th</sup>)**

Central and peripheral nervous systems

Neurotransmitters

### **Week 5 (June 5<sup>th</sup>):**

Brain anatomy and physiology

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

### **Week 6 (June 12<sup>th</sup>):**

Spinal cord and spinal nerves

Cranial nerves

**\*Online Synchronous Discussion #2 (Week of June 12<sup>th</sup>)**

### **Week 7**

### **EXAMINATION # 2 (June 19<sup>th</sup>-23<sup>rd</sup>)**

### **Week 8 (June 26<sup>th</sup>):**

Autonomic nervous system

Skeletal and smooth muscle

Neuromuscular synapse

### **Week 9 (July 3<sup>rd</sup>):**

Cardiovascular physiology and hemodynamic regulation

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

**Week 10 (July 10<sup>th</sup>):**

Microcirculation

RBCs, hemoglobin, iron, oxygen and CO<sub>2</sub> transport**Week 11****EXAMINATION # 3 (July 17<sup>th</sup>-21<sup>st</sup>)****Week 12 (July 24<sup>th</sup>):**

Hemostasis and coagulation

WBCs, Inflammation, Immunity

**Week 13 (July 31<sup>st</sup>):**

Renal system

**\*Take quiz on Brightspace after watching lecture****Week 14 (August 7<sup>th</sup>):**

Acid-Base balance

**\*Online Synchronous Discussion #3 (Week of August 7<sup>th</sup>)****Week 15****EXAMINATION #4 (August 14<sup>th</sup>-18<sup>th</sup>)****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.**
- 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:**

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

**Refund Policy**

MTSA will permit any student to cancel their enrollment agreement in a community course within five 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 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 sends written notification of intent to withdrawal to the instructor.

**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 Vice President of Academics if requested.

**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](http://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.