

**Theoretical Basis of Critical Care**  
**NUR 426 Credits: 2**  
**Online ANGEL Elective Course**  
**Summer 2009**

**Course Description:** Nursing care of clients in critical care, requiring synthesis of pathophysiologic, pharmacologic and therapeutic concepts. Family theory, stress-adaptation, psychosocial concepts and legal and ethical issues.

**Course Objectives:**

At the completion of this course the students will:

1. Distinguish the legal and ethical issues that confront the nurse in the critical care setting.
2. Discuss the standards and competencies required of a critical care nurse.
3. Develop an evidence-based plan of care for the critically ill client and the family.
4. Integrate the pathophysiology of critical illness into nursing assessment and management of the client.
5. Evaluate the characteristics and functions of multidisciplinary teams in critical care delivery.

**Prerequisites:** NUR 304 and 360

**Standards Documents** The curriculum is guided by the following documents:

American Association of Colleges of Nursing (1998). *The essentials of baccalaureate education for professional nursing practice*. Washington, D.C.: Author.

American Nurses Association. (2004). *Nursing: Scope and Standards of Practice*. Washington, D.C.: nursesbooks.org ISBN 1-55810-215-9.

American Nurses Association. (2001). *Code of Ethics for Nurses with interpretive statements*. Washington, D.C.: nursebooks.org ISBN 1-55810-176-4

Alspach, J. (Ed.). (2005). *Core Curriculum for Critical Care Nursing*. Philadelphia: Saunders.

**Course Faculty:**

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Office Hours: Virtual TBA and by appointment

**Required Text:**

Sole, M., Klein, D. & Moseley, M. (2009). *Introduction to Critical Care Nursing*, 5<sup>th</sup> ed., St. Louis:

Saunders ISBN: 978-1-4160-5656-0

**Optional Text:**

Dubin, D. (2000). *Rapid interpretation of EKG's*. Tampa: Cover, Inc.

### Required Resources, References, and Supplies:

- a. A personal or laptop computer with Microsoft WORD, a printer and internet access is essential to the course. Internet and library research will be required for this class.

### Evaluation:

- a. Learning Assessments and Grading: The course grade will be based upon quizzes, participation in learning activities and discussion forums, a research study paper, a midterm examination and a comprehensive final examination.
- b. Course Grading Scale: The Standard College of Nursing grading scale will be utilized.

Percentage	Grade
100-94%	4.0
93-89%	3.5
88-84%	3.0
83-79%	2.5
78-75%	2.0
	(Minimum passing grade)
74-70%	1.5
69-65%	1.0
≤64%	0.0

Quizzes will be based on the module content and the reading assignment.

short  
on ANGEL.

Quizzes and examinations can be in multiple choice, fill-in-the-blank and answer format. Students will be held responsible for all material posted

Quizzes	20%
Participation	20%
Midterm Examination	20%
Research study evaluation	10%
Final Examination	30%

### 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 Student handbook <http://nursing.msu.edu/handbooks.asp>
- MSU Spartan Life Student Handbook and Resource Guide <http://www.vps.msu.edu/SpLife/index.htm>
- Information for Current Students—including Rights, Responsibilities and Regulations for Students <http://www.msu.edu/current/index.html>

## Theoretical Basis of Critical Care

NUR 426 Credits: 2

Online ANGEL Elective Course

Summer 2009

**Additional Course Description:** The course requires synthesis of illness and disease management, critical thinking and nursing therapeutics. Evidence-based practice, ethical practice, cultural competence and professional leadership concepts are incorporated throughout the course.

**Course Objectives:** At the completion of this course the students will:

5. Identify the ethical, legal and cultural issues that confront the nurse in the critical care setting
6. Summarize the impact of family presence on the critically ill patient
7. Distinguish the standards of care and competencies required of a critical care nurse
8. Develop an evidence-based plan of care for the critically ill client and the family
9. Analyze selected critical care nursing research and its relevance to nursing practice

**Additional Prerequisites:** 370, 380

### Instruction:

- a. Methodology: This is a totally online course built on a weekly format of modules.

Each module will include:

Objectives

Required reading

Web based content

Web links

Learning activities including:

- Interactive PowerPoint presentations
- Group collaboration
- One minute paper
- Case studies
- Care planning

A discussion forum

A graded quiz

- c. A Research analysis paper is required.

- d. Midterm and Final Examination are scheduled for summative evaluation

dWriting Requirements:

The research article review/analysis will entail a brief description of a current (within the last 2 years) **research** study in/or related to **critical care nursing** followed by a concise critique as to the significance of the study to critical care nursing. Reviews will be submitted via electronic drop box on the ANGEL site by the end of the 10<sup>th</sup> week of class. APA Style is required. Late submissions will have 10% of the total points subtracted for every day the paper is late.

**Evaluation of the research article review/analysis will be based on the following rubric:**

Criteria	Accomplished 4	Proficient 3	Developing 2	Novice 1	Total Points
Citation of Journal in APA format	No errors in format	1-2 errors in format	3-4 errors in format	More than 4 errors in format	4
Mechanics and Format	Sentences well formed and appropriately varied in length and style, few if any spelling, grammatical, APA errors	Most sentences are well formed, with occasional awkwardness; some spelling or grammatical errors, but paper understandable	Some sentences poorly constructed but generally understandable; Some spelling on grammatical errors, making paper difficult to understand in places	Many sentences poorly constructed, incomplete, and/or awkward; Many spelling or grammatical errors, which present significant barrier to understanding	4
Purpose of the Study	Thoroughly understands and concisely states the research question in own words	Provides major elements of study purpose	Some of the elements of study purpose interpreted incorrectly	Unable to identify study purpose or completely misinterprets study purpose	4
Subjects and Design of the Study	Clearly, concisely identifies the population studied, cultural differences identified	Minor population characteristics Omitted, no cultural characteristics addressed	Major population characteristics omitted	No population identified	4
Description of Research Findings	Clearly summarizes findings in students own words in one paragraph.	Findings summarized with some conclusions vague or with use of numerical data only in one paragraph	Lengthy repetition of data, findings not summarized clearly, more than one paragraph of information	Repeated statistics without summary, no understanding of results	8
Why is the study relevant to critical care?	Explains why findings are relevant in one paragraph with 1-2 examples	Explains why findings are relevant without examples.	Explanation does not demonstrate understanding of relevance	No relevance established	8
Should practice be changed based on this study?	Explains why practice should or should not be changed	Explains why finding should or should not practice	Explanation does not support writers position on	No recommendations for practice given	8

	based on study in one paragraph using 1-2 examples	without examples or more than one paragraph with examples.	practice change		
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**Discussion Forum Etiquette:** It is expected that class members will adhere to the following guidelines for discussion forum postings:

- Respect your fellow classmates-- No personal attacks. No insulting remarks or comments No foul, threatening or abusive language. This may be grounds for exclusion from the discussion boards.
- No advertising or advocacy
- Keep your messages relevant
- Keep messages short and to the point
- Always include a meaningful subject. It helps people to determine whether they need to read the message.
- Don't overuse capital letters. Capital letters and bold type are more difficult to read and are considered **SHOUTING** on the discussion forum
- Don't attach large files to a message, as this will slow down the functioning of the discussion forum
- Be careful when using humor and sarcasm, as they are easily misinterpreted in an online environment.
- Don't infringe on copyrights or use the work of others. University academic integrity guidelines also apply to the discussion forum

**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](#) and/or the MSU Web site: [www.msu.edu](http://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](http://www.allmsu.com) Web site to complete any course work in NUR 426. 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 <http://www.msu.edu/unit/ombud/honestylinks.html> ).

**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](http://MyProfile.rcpd.msu.edu).

**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. 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. Students are responsible for the information found in the CON BSN Handbook.

**Course Calendar:**

Week	Topics	Date Content is Open	Assessments Open/Close
1	<b>May 18- <u>Introduction</u></b> Defining critical care History of critical care Patient safety Ethical issues	5-18-2009 12:01 AM EDT	Quiz <b>opens</b> 6 AM EDT 5-18-2009  Quiz <b>closes</b> 5-24-2009 11:30 PM EDT  Week 1 Discussion forum <b>closes</b> 5-24-2009 11:30 PM EDT
2	<b>May 24-31, 2009</b> <b><u>Common Problems in Critical Care</u></b> Psychosocial Sleep Comfort/Sedation Family Centered Care	5-18-2009 12:01 AM EDT	Quiz <b>opens</b> 6 AM EDT 5-24-2009  Quiz <b>closes</b> 5-31-2009 11:30 PM EDT  Week 2 Discussion forum/learning activity <b>closes</b> 5-31-2009 11:30 PM EDT
3	<b>May 31-June 7, 2008</b> <b><u>Cardiovascular Alterations</u></b> Electrophysiology ECG Waves and Intervals	5-24-2009 12:01 AM EDT	Quiz <b>opens</b> 6 AM EDT 5-31-2009  Quiz <b>closes</b> 6-7-2009

	<p>ECG analysis</p> <ul style="list-style-type: none"> <li>○ Atrial dysrhythmias</li> <li>○ Junctional dysrhythmias</li> <li>○ AV Blocks</li> <li>○ Ventricular dysrhythmias</li> </ul>		<p>11:30 PM EDT</p> <p>Week 3 Discussion forum <b>closes</b> 6-7-2009 11:30 PM EDT</p>
4	<p><b>June 7-14, 2009</b>  <u><b>Cardiovascular Alterations</b></u>  Hemodynamics</p> <ul style="list-style-type: none"> <li>○ Central Venous Pressure</li> <li>○ Arterial Pressure</li> <li>○ Pulmonary Artery Pressure</li> <li>○ Cardiac Output Measurement</li> <li>○ Mixed Venous Saturation</li> </ul>	5-31-2008 12:01 AM EDT	<p>Quiz <b>opens</b> 6 AM EDT 6-7-2009</p> <p>Quiz <b>closes</b> 6-14-2009 11:30 PM EDT</p> <p>Week 4 Discussion forum/learning activity <b>closes</b> 6-14-2009 11:30 PM EDT</p>
5	<p><b>June 14-21, 2009</b>  <u><b>Cardiovascular Alterations</b></u>  Disorders</p> <ul style="list-style-type: none"> <li>○ Acute coronary syndromes</li> <li>○ Heart failure</li> <li>○ Pulmonary hypertension</li> <li>○ Endocarditis</li> <li>○ Valvular heart disease</li> <li>○ Vascular disease</li> <li>○ Hypertensive emergencies</li> </ul> <p>Therapeutic management</p> <ul style="list-style-type: none"> <li>○ Temporary pacemakers</li> <li>○ Fibrinolytic therapy</li> <li>○ Catheter interventions</li> <li>○ Cardiac surgery</li> <li>○ Mechanical circulatory assist devices</li> </ul>	6-7-2009 12:01 AM EDT	<p>Quiz <b>opens</b> 6 AM EDT 6-14-2009</p> <p>Quiz <b>closes</b> 6-21-2009 11:30 PM EDT</p> <p>Week 5 Discussion forum/learning activity <b>closes</b> 6-21-2009 11:30 PM EDT</p>
6	<p><b>June 21-28, 2009</b>  <u><b>Cardiovascular Alterations</b></u>  <u>Therapeutic management</u></p> <ul style="list-style-type: none"> <li>○ Code teams</li> <li>○ Rapid response teams</li> </ul> <p><u>Pharmacology</u></p> <ul style="list-style-type: none"> <li>○ Antiarrhythmics</li> <li>○ Sympathomimetic agents</li> <li>○ Vasodilators</li> </ul>	<p>6-14-2009 12:01 AM EDT</p> <p>Optional <b>live chat</b> in course chat room with faculty</p> <p>Tuesday, 6-23-2009 11AM to 12PM EDT</p> <p>Ask questions before midterm examination</p>	<p><b>Midterm Exam opens</b> 6 AM EDT Thursday, 6-25-2009</p> <p><b>Midterm Exam closes</b> 6-25-2009 11:30 PM EDT</p> <p><b>Midterm Examination</b> Cumulative</p> <p>Week 6 Discussion forum/learning activity <b>closes</b> 6-28-2009 11:30 PM EDT</p>

7	<p><b>June 28-July 5, 2009</b>  <b><u>Pulmonary Alterations</u></b>  Anatomy and Physiology  Clinical Assessment  <u>Pulmonary Disorders</u></p> <ul style="list-style-type: none"> <li>○ Acute Respiratory Failure</li> <li>○ Pneumonia</li> <li>○ Status Asthmaticus</li> <li>○ Thoracic Surgery</li> </ul>	6-21-2009 12:01 AM EDT	<p><b><u>Happy Fourth of July!</u></b></p> <p>Quiz <b>opens</b> 6 AM EDT 6-28-2009</p> <p>Quiz <b>closes</b> 7-5-2009 11:30 PM EDT</p> <p>Discussion forum/learning activity closes 7-5-2009 11:30 EDT</p>
8	<p><b>July 5-12, 2009</b>  <b><u>Pulmonary Alterations</u></b>  <u>Therapeutic Management</u></p> <ul style="list-style-type: none"> <li>○ Oxygen</li> <li>○ Artificial airways</li> <li>○ Invasive mechanical ventilation</li> <li>○ Noninvasive mechanical ventilation</li> <li>○ Position Therapy</li> <li>○ Pharmacology</li> </ul>	6-28-2009 12:01 AM EDT	<p>Quiz <b>opens</b> 6AM EDT 7-5-2009</p> <p>Quiz <b>closes</b> 7-12-2009 11:30PM EDT</p> <p>Discussion forum/learning activity <b>closes</b> 7-12-2009 11:30 PM EDT</p>
9	<p><b>July 12-19, 2009</b>  <b><u>Neurological Alterations</u></b>  Anatomy and Physiology  Clinical Assessment  Diagnostic Procedures  <u>Neurological Disorders</u></p> <ul style="list-style-type: none"> <li>○ Intracranial hypertension</li> <li>○ Coma</li> <li>○ Intracranial hematoma</li> <li>○ Skull fracture</li> <li>○ Craniotomy</li> <li>○ Status epilepticus</li> </ul> <p>Therapeutic Management</p>	7-5-2009 12:01 AM EDT	<p>Quiz opens 6 AM EDT 7-12-2009</p> <p>Quiz closes 7-19-2009 11:30 PM EDT</p> <p>Discussion forum/learning activity closes 7-19-2009 11:30 PM EDT</p>
10	<p><b>July 19-26, 2009</b>  <b><u>Renal Alterations</u></b>  Anatomy and Physiology  Clinical Assessment  Diagnostic Procedures  <u>Renal Disorders</u></p> <ul style="list-style-type: none"> <li>○ Acute renal failure</li> <li>○ Acute tubular necrosis</li> </ul> <p>Therapeutic management</p> <p><b><u>Endocrine Alterations</u></b>  Anatomy and Physiology  Clinical assessment</p>	<p>7-12-2009 12:01 AM EDT</p> <p>Optional <b>live chat</b> in course chat room with faculty</p> <p>Tuesday, 7-21-2009 12PM to 1PM EDT</p> <p>Ask questions about the research study paper or</p>	<p>Quiz opens 6 AM EDT 7-19-2009</p> <p>Quiz closes 7-26-2009 11:30 PM EDT</p> <p>Discussion forum/learning activity closes 7-26-2009 11:30 PM EDT</p> <p><b>Research Study</b></p>

	<p>Diagnostic procedures</p> <p><u>Endocrine disorders</u></p> <ul style="list-style-type: none"> <li>○ Diabetes mellitus</li> <li>○ Diabetic ketoacidosis</li> <li>○ Hyperglycemic hyperosmolar nonketonic coma</li> <li>○ Sudden inappropriate ADH</li> <li>○ Diabetes insipidus</li> <li>○ Thyroid storm</li> <li>○ Myxedema coma</li> </ul> <p>Therapeutic management</p>	class content	<b>Evaluation Paper due 7-26-2009 11:00 PM in drop box in Week 10 folder</b>
11	<p><b>July 26-August 2, 2009</b></p> <p><b><u>Gastrointestinal Alterations</u></b></p> <p>Anatomy and Physiology</p> <p>Clinical assessment</p> <p>Diagnostic procedures</p> <p><u>Gastrointestinal disorders</u></p> <ul style="list-style-type: none"> <li>○ Acute gastrointestinal hemorrhage</li> <li>○ Acute pancreatitis</li> <li>○ Fulminant hepatic failure</li> <li>○ Intra-abdominal hypertension</li> </ul> <p>Therapeutic management</p> <p><b><u>Nutritional Alterations</u></b></p>	7-19-2009 12:01 AM EDT	<p>Quiz <b>opens</b> 6 AM EDT 7-26-2009</p> <p>Quiz <b>closes</b> 8-2-2009 11:30 PM EDT</p> <p>Discussion forum/learning activity <b>closes</b> 8-2-2009 11:30 PM EDT</p>
12	<p><b>August 2-9, 2009</b></p> <p><b><u>Multisystem Alterations</u></b></p> <p><u>Trauma</u></p> <ul style="list-style-type: none"> <li>○ Mechanism of injury</li> <li>○ Phases of trauma care</li> <li>○ Specific trauma injuries</li> <li>○ Complications</li> </ul> <p><u>Shock</u></p> <ul style="list-style-type: none"> <li>○ Shock syndrome</li> <li>○ Cardiogenic shock</li> <li>○ Hypovolemic shock</li> <li>○ Septic shock</li> <li>○ Anaphylactic shock</li> <li>○ Neurogenic shock</li> </ul> <p><u>Systemic inflammatory response</u></p> <ul style="list-style-type: none"> <li>○ Multiple organ dysfunction syndrome</li> <li>○ Disseminated intravascular coagulation</li> </ul>	7-26-2009 12:01 AM EDT	<p>Quiz opens 6 AM EDT 8-2-2009</p> <p>Quiz closes 8-9-2009 11:30 PM EDT</p> <p>Discussion forum/learning activity closes 8-9-2009 11:30 PM EDT</p>
13	<p><b>August 9-16, 2009</b></p> <p><b><u>Special Populations</u></b></p> <ul style="list-style-type: none"> <li>○ Pediatric</li> <li>○ Obstetric</li> </ul>	8-2-2009 12:01 AM EDT	<p>Discussion Forum Available to ask</p> <p><b>Final Exam Opens at 6 AM EDT 8-13-2009</b></p> <p><b>Final Exam Closes</b></p>

	<ul style="list-style-type: none"><li>○ Bariatric</li><li>○ Geriatric</li></ul> <p>Complementary therapies</p>	questions before the Final Examination	<b>8-13-2009 11:30 PM EDT</b>  Discussion forum closes 8-16-2009 11:30 PM EDT
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