Course Change Proposal
Form A

Academic Group (College): Health & Human Services

Academic Organization (Department): Physical Therapy

Type of Course Proposal: New ___ Change X ___ Deletion ___

Department Chair: Susan M. McGinty, PT, EdD

Submitted by: B. Stockert

Does this course fulfill a requirement for single-subject or multiple subject credential students? Yes ___ No X ___

For Catalog Copy: Yes X ___ No ___

CCE (Extension): Yes ___ No X ___

Semester Effective: Fall X ___ Spring ___, 2012

This course replaces experimental course Subject Area (prefix) and Catalog Nbr (course number):

Change from:
Subject Area (prefix) & Catalog Nbr (course no.): PT 246
Title: Special Topics in Physical Therapy I
Units: 2

Change to:
Subject Area (prefix) & Catalog Nbr (course no.): PT 646
Title: Acute Care and Cardiopulmonary Physical Therapy
Units: 2

JUSTIFICATION:
This course is being changed as part of the curriculum changes with the new DPT program required for continued accreditation for the program. The course has been upgraded to reflect the expectations in a doctoral program.

NEW COURSE DESCRIPTION: (Not to exceed 80 words, and language should conform to catalog copy. See http://www.csus.edu/acaf/univmanual/crpspl.htm - Guidelines for Catalog Course Description)

This course focuses on the presentation of selected topics in acute care and cardiopulmonary Physical Therapy. The course includes a discussion of common pathologies in the cardiopulmonary system and those associated with an acute care setting, as well as common medical tests, laboratory tests, surgical procedures and pharmacologic interventions used with this patient population. Open to Physical Therapy majors only.

Note:

Prerequisite:
BIO 633 Human Gross Anatomy for Physical Therapists
PT 600 Pathokinesiology
PT 608 PT/Patient/Professional Interactions
PT 630 Pathophysiology
PT 602 Evidence Informed Practice I
PT 604 Principles of Human Movement
PT 606 Therapeutic Measurements and Techniques
PT 614 Neuroscience for Physical Therapists
PT 618 Foundations for Patient Management
PT 620 Physical Therapy Interventions I
PT 622 Evidence Informed Practice II
PT 632 Pharmacology for Physical Therapists
PT 634 Diagnostic Imaging for Physical Therapists
PT 636 Geriatrics/Gerontology for Physical Therapists
PT 638 Health, Wellness and Ergonomics in Physical Therapy
<table>
<thead>
<tr>
<th>Corequisite:</th>
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</thead>
<tbody>
<tr>
<td>PT 624</td>
<td>Adult Neuromuscular Patient Management I</td>
</tr>
<tr>
<td>PT 625</td>
<td>Musculoskeletal Patient Management I</td>
</tr>
<tr>
<td>PT 626</td>
<td>Clinical Agents</td>
</tr>
<tr>
<td>PT 640</td>
<td>Physical Therapy Interventions II</td>
</tr>
</tbody>
</table>

| Enforced at Registration:   | Yes X No |

<table>
<thead>
<tr>
<th>CAN (California Articulation Number):</th>
<th></th>
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</thead>
</table>

| Graded: Letter __X__ Credit/No Credit | Instructor Approval Required? Yes __ No X |

<table>
<thead>
<tr>
<th>Course Classification (e.g., lecture, lab, seminar, discussion):</th>
<th>Title for CMS (not more than 30 characters)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lecture only C-02</td>
<td>Acute Care &amp; Cardiopulmonary PT</td>
</tr>
</tbody>
</table>

| Cross Listed? Yes ___ No X__ | If yes, do they meet together and fulfill the same requirement, and what is the other course. |

| How Many Times Can This Course be Taken for Credit? | once |

| Can the course be taken for Credit more than once during the same term? Yes ___ No X |

### Description of the Expected Learning Outcomes:

Describe outcomes using the following format: “Students will be able to: 1), 2), etc.”

See the example at [http://www.csus.edu/scaf/example.htm](http://www.csus.edu/scaf/example.htm)

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#### At the completion of this course, the student is expected to be able to:

<table>
<thead>
<tr>
<th>Goal 1.0</th>
<th><strong>Demonstrate Professional Effectiveness</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1</td>
<td>Compare and contrast normal biological, physiological, and psychological mechanisms of the human body with pathophysiological factors that lead to impaired body functions and structure.</td>
</tr>
<tr>
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<td>Discuss the etiology and clinical features of major disorders.</td>
</tr>
<tr>
<td>1.1.1.1</td>
<td>Describe the relationship between normal anatomy/physiology and pathology in the cardiovascular and pulmonary systems</td>
</tr>
<tr>
<td>1.1.1.2</td>
<td>Describe the relationship between normal anatomy/physiology and pathology due to oncology</td>
</tr>
<tr>
<td>1.1.1.3</td>
<td>Describe the relationship between normal anatomy/physiology and pathology in common conditions found in acute care settings</td>
</tr>
<tr>
<td>1.1.2</td>
<td>Describe how pathological processes affect normal function.</td>
</tr>
<tr>
<td>1.1.2.1</td>
<td>Describe how pathological processes affect normal function in the cardiopulmonary system</td>
</tr>
<tr>
<td>1.1.2.2</td>
<td>Describe how cancer affects normal function in the physiological systems of the body</td>
</tr>
<tr>
<td>1.1.2.3</td>
<td>Describe how pathological processes affect normal function in the common conditions found in acute care settings</td>
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<td>1.1.3</td>
<td>Discuss common medical/surgical treatments for major disorders.</td>
</tr>
<tr>
<td>1.1.3.1</td>
<td>Discuss common medical/surgical treatments for the cardiopulmonary system</td>
</tr>
<tr>
<td>1.1.3.2</td>
<td>Discuss common medical/surgical treatments used in oncology.</td>
</tr>
<tr>
<td>1.1.3.3</td>
<td>Discuss common medical/surgical treatments for common conditions found in acute care settings</td>
</tr>
<tr>
<td>1.1.4</td>
<td>Analyze the effects of pharmacological agents on human function.</td>
</tr>
<tr>
<td>1.1.4.1</td>
<td>Analyze the effects on human function of pharmacological agents used to treat conditions within the cardiopulmonary system</td>
</tr>
<tr>
<td>1.1.4.2</td>
<td>Analyze the effects on human function of pharmacological agents used to treat oncology conditions.</td>
</tr>
<tr>
<td>1.1.4.3</td>
<td>Analyze the effects on human function of pharmacological agents used to treat common conditions in the acute care setting.</td>
</tr>
</tbody>
</table>

| 1.2      | Determine the physical therapy needs of any individual seeking services. |
| 1.2.1    | Perform an effective and efficient systems review screen. |
| 1.2.1.1  | Perform an effective and efficient systems review screen for a patient with a cardiopulmonary disorder |
| 1.2.1.2  | Perform an effective and efficient systems review screen for a patient with an oncology disorder |
| 1.2.1.3  | Perform an effective and efficient systems review screen for a patient in an acute care setting |
| 1.2.2    | Review pertinent medical records and conduct a comprehensive patient interview. |
| 1.2.2.1  | Review pertinent medical records and conduct a comprehensive patient interview for a patient with a cardiopulmonary condition |
| 1.2.2.2  | Review pertinent medical records and conduct a comprehensive patient interview for a patient with an oncology condition |
| 1.2.2.3  | Review pertinent medical records and conduct a comprehensive patient interview for a patient in an acute care setting |
| 1.2.3    | Carry out appropriate and comprehensive patient examinations including tests and measures |

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in a safe and client-centered manner.

1.2.3.1 Carry out appropriate and comprehensive patient examinations including tests and measures in a safe and client-centered manner for a patient with a cardiopulmonary condition.

1.2.3.2 Carry out appropriate and comprehensive patient examinations including tests and measures in a safe and client-centered manner for a patient with an oncology condition.

1.2.3.3 Carry out appropriate and comprehensive patient examinations including tests and measures in a safe and client-centered manner for a patient in an acute care setting.

1.2.4 Determine, with each patient encounter, the patient’s need for further examination or consultation.

1.2.5 Perform a physical therapy patient examination using evidenced-based tests and measures.

1.2.6 Utilize available evidence in interpreting examination findings to inform the patient evaluation.

1.2.7 Evaluate data from the patient examination (history, systems review, tests and measures) to make clinical judgments.

1.2.8 Synthesize available data on a patient using the concepts and terminology of the most recent disability/enableness theoretical construct (currently the International Classification of Functioning, Disability, and Health (ICF) Model of Functioning and Disability).

1.2.9 Cite the evidence (patient history, diagnostic test results, tests, measures, and scientific literature) to support clinical decisions.

1.2.9.1 Cite the evidence (patient history, diagnostic test results, tests, measures, and scientific literature) to support clinical decisions for patients with a cardiopulmonary condition.

1.2.9.2 Cite the evidence (patient history, diagnostic test results, tests, measures, and scientific literature) to support clinical decisions for patients with an oncology condition.

1.2.9.3 Cite the evidence (patient history, diagnostic test results, tests, measures, and scientific literature) to support clinical decisions for patients in acute care settings.

1.2.10 Evaluate and interpret the results of examination findings to classify the patient problem using the most recently adopted diagnostic taxonomy (currently the Guide to Physical Therapist Practice’s labels and practice patterns).

1.2.11 Integrate and evaluate data that are obtained during the examination to describe the patient condition in terms that will guide the prognosis, the plan of care and intervention strategies.

1.2.12 Identify and prioritize body function and structure impairments to determine specific activity limitations towards which interventions will be directed.

1.2.13 Make a referral to another physical therapist, other health care practitioner or agency when physical therapy is not indicated or the patient/client’s needs are beyond the skills, expertise and/or scope of practice of the physical therapist practitioner.

1.2.14 Determine the need for additional information and utilize technological search mechanisms to find that information.

1.2.15 Adapt delivery of physical therapy services with consideration for patients’ differences, values, preferences and needs.

1.2.16 Apply current knowledge, theory, clinical judgment, and the patient’s values and perspective in patient management.

1.3 Develop a plan of care based on the best available evidence and that considers the patient’s personal and environmental factors.

1.3.1 Prioritize patient/client problems taking into consideration the patient/client’s needs and goals, health condition, physiological and biological mechanisms within the constraints of the environment and resources.

1.3.3 Determine a patient prognosis by predicting the level of optimal improvement in function and the amount of time required to achieve that level.
1.3.4 Recognize barriers that may impact the achievement of optimal improvement within a predicted time frame.

1.3.7 Articulate a specific rationale for referrals made to other providers

**Goal 2.0 Demonstrate Professional Behaviors**

2.1 Recognize cultural, ethnic, age, economic, and psychosocial differences and apply a humanistic and holistic approach to the delivery of a clinical service.

2.1.1 Practice physical therapy demonstrating cultural competence with all individuals and groups.

2.1.2 Work effectively with challenging patients.

2.1.3 Respect personal space of patients/clients and others.

2.1.4 Demonstrate behaviors that are non-judgmental with regards to patients/clients’ lifestyles.

2.2 Communicate effectively for varied audiences and purposes.

2.2.1 Demonstrate effective interpersonal (verbal, nonverbal, electronic) communication skills considering the diversity of populations and environments.

2.2.2 Facilitate therapeutic communication and interpersonal skills.

2.2.3 Discuss difficult issues with sensitivity and objectivity.

2.2.4 Appropriately utilize communication technology efficiently, professionally, and effectively.

2.5 Demonstrate entry level generic abilities, including:

2.5.1 Professional accountability and commitment to learning.

2.5.2 Recognition of one’s own limitations.

2.5.3 Effective use of constructive feedback.

**Goal 3.0 Practice in an Ethical and Legal Manner**

3.1 Practice physical therapy in a manner consistent with established legal and professional standards.

3.1.1 Demonstrate awareness of and adherence to state licensure regulations.

3.1.2 Practice within all applicable regulatory and legal requirements.

3.2 Practice in a manner consistent with the professional code of ethics

3.2.1 Demonstrate knowledge and application of ethical decision-making.

3.2.2 Treat patients/clients within scope of practice, expertise and experience.

**Goal 4.0 Demonstrate Scholarship**

4.1 Apply basic principles of statistics and research methodologies within the practice of physical therapy.

4.1.1 Formulate and reevaluate positions based on the best available evidence.

4.1.2 Critically evaluate and interpret professional literature as it pertains to practice, research, and education.

4.1.4 Utilize contemporary technology consistently to access evidence.

**Assessment Strategies:** A description of the assessment strategies (e.g., portfolios, examinations, performances, pre-and post-tests, conferences with students, student papers) which will be used by the instructor to determine the extent to which students have achieved the learning outcomes noted above:

Final grade will be based on three exams: (assessment strategies described in PT 246 syllabus)

1) **Pulmonary Exam** .................................................. 35%

2) **Cardiovascular Exam** ........................................... 35%

3) **ICU & Oncology Exam** .......................................... 30%

4) **demonstration of professional behavior** ......................... pass/fail
For whom is this course being developed?
Majors in the Dept. X  Majors of other Depts. ___  Minors in the Dept. ___  General Education ___  Other ___
If yes, identify program(s): DPT

Does the proposed change or addition cause a significant increase in the use of College or University resources (lab room, computer facilities, faculty, etc.)? Yes ___ No X ___
If yes, attach a description of resources needed and verify that resources are available.

Indicate which department or programs will be affected by the proposed course (if any).  Physical Therapy

*The Department Chair's signature below indicates that affected programs have been sent a copy of this proposal form.*

**Approvals:** If proposed change, new course or deletion is approved, sign and date below. If not approved, forward without signing to the next reviewing authority, and attach an explanatory memorandum to the original copy.

<table>
<thead>
<tr>
<th>Signatures:</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Department Chair:</td>
<td>2-16-11</td>
</tr>
<tr>
<td>College Dean or Associate Dean:</td>
<td>2-16-11</td>
</tr>
<tr>
<td>CPSP (for school personnel courses ONLY)</td>
<td></td>
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<tr>
<td>Associate Vice President and Dean for Academic Programs</td>
<td></td>
</tr>
</tbody>
</table>

Distribution: Academic Affairs (original), Department Chair and College Dean. Dean’s office to send original after approval to Academic Affairs, at mail zip 6016. An electronic copy must also be sent.
CALIFORNIA STATE UNIVERSITY, SACRAMENTO  
College of Health and Human Services  
Department of Physical Therapy

PT 646 - Acute Care and Cardiopulmonary Physical Therapy

Fall

COURSE CREDIT: 2 units (2 lecture hours/week)

INSTRUCTOR: TBA
Office hours:
Office phone:

LOCATION: TBA

TIME: TBA

COURSE DESCRIPTION:  
This course focuses on the presentation of selected topics in acute care and cardiopulmonary Physical Therapy. The course includes a discussion of common pathologies in the cardiopulmonary system and those associated with an acute care setting, as well as common medical tests, laboratory tests, surgical procedures and pharmacologic interventions used with this patient population. Open to Physical Therapy majors only.

PREREQUISITES:
BIO 233 Applied Musculoskeletal Anatomy for PTs
PT 200 Pathokinesiology
PT 225 Musculoskeletal Evaluation & Treatment I
PT 202 Research Methods in Physical Therapy I
PT 204 Principles of Human Movement
PT 206 Therapeutic Measurements & Techniques
PT 208 PT/Patient/Professional Interactions
PT 220 Therapeutic Exercise I
PT 222 Research Methods in Physical Therapy II
PT 224 Neurological Evaluation & Treatment I
PT 225 Musculoskeletal Evaluation & Treatment I
PT 226 Clinical Agents
PT 227 Physical Therapy Educator

CO-REQUISITES:
PT 240 Therapeutic Exercise II
PT 244 Neurological Evaluation & Treatment II
PT 245 Musculoskeletal Evaluation and Treatment II
PT 248 Health Care Delivery in Physical Therapy I
REQUIRED TEXTS: (none)
    Assigned readings in the reserve room in the library

RECOMMENDED TEXTS:
Hillegass, EA & Sadowsky, HS: Essentials of Cardiopulmonary Physical Therapy, 2nd Ed.
    Saunders, 2001. This book was required in previous years and is the main reference.


Brannon, FJ et al: Cardiopulmonary Rehabilitation: Basic Theory and Application. 3rd Ed. FA

Frownfelter D. & Dean E (Eds): Principles and Practice of Cardiopulmonary Physical
    Therapy. 3rd Ed. Mosby, 1996.

Goodman, C & Boissoinault, W: Pathology: Implications for the Physical Therapist, Saunders,
    1998.

Goodman, C & Snyder, T, Differential Diagnosis in Physical Therapy. 4th edition,
    W. B. Saunders, Co. 2007. Required text for PT 262 (spring semester)

Kisner and Colby: Therapeutic Exercise, Foundation and Techniques. 3rd edition.
    F.A. Davis, 1996.

McArdle et.al.; Essentials of Exercise Physiology. Lea & Febiger, (any edition, year)

    Medical, 1997.

COURSE OBJECTIVES: All course objectives reference the overall educational goals and
    outcomes of the Department of Physical Therapy.

At the completion of this course, the student is expected to be able to:

Goal 1.0 Demonstrate Professional Effectiveness

1.1 Compare and contrast normal biological, physiological, and psychological
    mechanisms of the human body with pathophysiological factors that lead to
    impaired body functions and structure.

    1.1.1 Discuss the etiology and clinical features of major disorders.
        1.1.1.1 Describe the relationship between normal anatomy/physiology and
            pathology in the cardiovascular and pulmonary systems
        1.1.1.2 Describe the relationship between normal anatomy/physiology and
            pathology due to oncology
1.1.1.3 Describe the relationship between normal anatomy/physiology and pathology in common conditions found in acute care settings

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1.2.15 Adapt delivery of physical therapy services with consideration for patients’ differences, values, preferences and needs.
1.2.16 Apply current knowledge, theory, clinical judgment, and the patient’s values and perspective in patient management.

1.3 Develop a plan of care based on the best available evidence and that considers the patient’s personal and environmental factors

1.3.1 Prioritize patient/client problems taking into consideration the patient/client’s needs and goals, health condition, physiological and biological mechanisms within the constraints of the environment and resources.
1.3.3 Determine a patient prognosis by predicting the level of optimal improvement in function and the amount of time required to achieve that level.
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Goal 2.0 Demonstrate Professional Behaviors

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2.2.4 Appropriately utilize communication technology efficiently, professionally, and effectively.

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Goal 3.0 Practice in an Ethical and Legal Manner

3.1 Practice physical therapy in a manner consistent with established legal and professional standards.
3.1.1 Demonstrate awareness of and adherence to state licensure regulations.
3.1.2 Practice within all applicable regulatory and legal requirements.

3.2 Practice in a manner consistent with the professional code of ethics
3.2.1 Demonstrate knowledge and application of ethical decision-making.
3.2.2 Treat patients/clients within scope of practice, expertise and experience.

**Goal 4.0 Demonstrate Scholarship**

4.1 Apply basic principles of statistics and research methodologies within the practice of physical therapy.
4.1.1 Formulate and reevaluate positions based on the best available evidence.
4.1.2 Critically evaluate and interpret professional literature as it pertains to practice, research, and education.
4.1.4 Utilize contemporary technology consistently to access evidence.

**TEACHING STRATEGIES AND LEARNING ACTIVITIES:**

Course objectives will be met by employing some or all of the following methods:
1. Combination of classroom lectures and discussions
2. Case studies
3. Assigned readings
4. Computer and video presentations
5. Problem solving & group discussions

**GRADING SCALE:**

<table>
<thead>
<tr>
<th>Grade</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>≥9.2.0 = A</td>
<td>100%</td>
</tr>
<tr>
<td>≥9.0 and &lt;9.2.0 = A-</td>
<td>90%</td>
</tr>
<tr>
<td>≥8.80 and &lt;9.0 = B+</td>
<td>80%</td>
</tr>
<tr>
<td>≥8.20 and &lt;8.80 = B</td>
<td>70%</td>
</tr>
<tr>
<td>≥8.0 and &lt;8.20 = B-</td>
<td>60%</td>
</tr>
<tr>
<td>≥7.80 and &lt;8.0 = C+</td>
<td>50%</td>
</tr>
<tr>
<td>≥7.20 and &lt;7.80 = C</td>
<td>40%</td>
</tr>
<tr>
<td>≥7.0 and &lt;7.20 = C-</td>
<td>30%</td>
</tr>
<tr>
<td>≥6.00 and &lt;7.0 = D</td>
<td>20%</td>
</tr>
<tr>
<td>&lt;6.0 = F</td>
<td>0%</td>
</tr>
</tbody>
</table>

Final grade will be based on:

1) **Pulmonary Exam** ............................................................35%
2) **Cardiac Exam** ...............................................................35%
3) **ICU & Oncology Exam** ....................................................30%
4) **demonstration of professional behavior** ..................................pass/fail

**PROFESSIONAL BEHAVIOR:**

*Professional behavior, as described in the PT Student Handbook (generic abilities) is required in order to receive a passing grade in this course.* Attendance at lecture is preferred. If you are going to be absent from class this might affect other members in a group activity. If you are unable to make class you must call and notify the instructor in advance of your absence. Students are responsible for any missed work and may be required to complete a make-up assignment. If a student misses an examination a make-up examination will not be given unless the student has made arrangements prior to the absence, i.e. a score of “0” will be recorded. Professional behavior includes students arriving to all activities on time and not eating during class activities.
Cell phones and beepers should be off or silent during the class. No text messaging is permitted in class.

**Special accommodations:** During the course of the year, some students may utilize prearranged accommodations. If you are a student with a learning disability, physical disability, or other special needs, please let me know as soon as possible if you need special accommodation. These kinds of confidential discussions are best handled during my office hours or by special appointment. You can expect confidentiality and cooperation regarding any circumstances and needs that have been verified through the Office of Services to Students with Disabilities (SSWD).

**STUDENTS SHOULD READ AND BECOME FAMILIAR WITH THE UNIVERSITY'S ACADEMIC HONESTY, POLICY & PROCEDURES WHICH CAN BE FOUND AT:**
www.csus.edu/admbus/umanual/UMA00150.htm The following are direct quotes from the first sections of that document:

"The principles of truth and honesty are recognized as fundamental to a community of scholars and teachers. California State University, Sacramento (CSUS) expects that both faculty and students will honor these principles, and in so doing, will protect the integrity of academic work and student grades. CSUS is a publicly-assisted institution legislatively empowered to certify competence and accomplishment in general and discrete categories of knowledge. The President and faculty of CSUS are therefore obligated not only to the world at large but also to California to guarantee that substantive knowledge is actually acquired and the ability to acquire it is actually demonstrated by those to whom they assign grades and whom they recommend for degrees. Academic dishonesty defrauds all those who depend upon the integrity of the University, its courses and its degrees. This fraud is accomplished to the extent that faculty, students or campus employees knowingly or unwittingly allow academic dishonesty to work its deception."

"...Plagiarism is a form of cheating. At CSUS plagiarism is the use of distinctive ideas or works belonging to another person without providing adequate acknowledgement of that person's contribution. Regardless of the means of appropriation, incorporation of another's work into one's own requires adequate identification and acknowledgement. Plagiarism is doubly unethical because it deprives the author of rightful credit and gives credit to someone who has not earned it. Acknowledgement is not necessary when the material used is common knowledge."
<table>
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<th>Date/(week)</th>
<th>Topic &amp; Reading Assignments</th>
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<td>(1)</td>
<td>Examination of the respiratory system</td>
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<td>PT in Intensive Care Units (part 1) monitors &amp; lines</td>
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<td>(Finals week)</td>
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The honor code is an essential component of academic integrity. By signing below you agree to not give or receive any unauthorized assistance during this examination.

Name (print):

Signature:

Total _____________ /40
Match the “line” with the parameter(s) typically measured using that line.

1. _____ systemic arterial line  
a) mean systemic arterial pressure  
2. _____ central venous line  
b) right atrial pressure  
3. _____ pulmonary artery line (Swan Ganz)  
c) pulmonary systolic & diastolic pressure  
d) pulmonary artery wedge pressure  
e) two or three of the above

4. The presence of an arterial line (systemic or pulmonary) or a central venous line is always considered to be a contraindication to exercise. (True/False)

5. Pulmonary artery (or capillary) wedge pressure (PAWP aka PCWP) is used to estimate preload in the left ventricle. (True/False)

6. An abnormal increase in intracranial pressure (ICP) results in:
   a) a decreased level of consciousness  
b) disorientation or confusion  
c) dilated pupils with sluggish reaction to light  
d) a, b and c  
e) none of the above

7. Intracranial pressure (ICP) is generally lowest when the patient is in the supine position with the head of the bed flat. (True/False)

8. Which statement is true?
   a) The presence of mechanical ventilation precludes a patient from receiving Physical Therapy.  
b) When a patient is receiving mechanical ventilation, positive end expiratory pressure (PEEP) is increased when a patient has difficulty keeping distal airways open  
c) The presence of mechanical ventilation increases the risk of barotrauma to the lungs, but does not increase the risk of pulmonary infection  
d) When a patient is receiving mechanical ventilation they cannot simultaneously receive supplemental oxygen (increase the FI02) in the presence of hypoxemia.

Questions 9-11 are in relation to the diagram to the right

9. A low level of ______ is consistent with leukopenia
10. A low level ______ is consistent with a clotting disorder
11. Hematocrit is found in ______

C  A  B  D
Which condition(s) is a normal response to infection (A) and which poses an increased risk of infection (B)?

12. _____ leukocytosis
13. _____ leukopenia

14. Which of the statements is true?
   a) A hematocrit of 22% is not a contraindication to exercise with resistance
   b) Normal platelet count is >150,000. A platelet count of <10,000 places the client at such a severe risk of bleeding they should not get out of bed.
   c) Unless the platelet count is >50,000 a therapist should not add resistance to exercise.
   d) two of the above are true
   e) a, b and c

15. Which of the statements is true?
   a) An isozyme is an enzyme that comes in more than one form and each form is usually unique to a particular tissue type.
   b) Creatine kinase (CK), lactate dehydrogenase (LDH) and troponin are normally contained within the cells and only leak into the blood after the cell is infarcted.
   c) After a myocardial infarction there is typically a rise in LDH and troponin but not CK.
   d) two of the above
   e) a, b and c

16. When a patient is receiving anti-coagulant therapy the prothrombin time (PT) and/or the partial thromboplastin time (PTT) are decreased reflecting a decrease in the clotting capacity of the blood. (True/False)

Match the cancer root word with the tissue from which the cancer is derived

17. _____ Carcinomas
    a) hematologic tissues: bone marrow
18. _____ Sarcomas
    b) lymphoid tissues: nodes, spleen, intestinal lining
19. _____ Lymphomas
    c) epithelial tissues: breast, colon, pancreas, skin
20. _____ Leukemias
    d) connective tissues: fat, muscle, bone

Questions 21-24 refer to the diagram below.

```
   A  CL  BUN  B
   C  HCO3  D
```

21. An abnormally high or low level of _____ (A-D in the diagram above) is most closely associated with a change in brain function.
   a) A
   b) B
   c) C
22. An abnormal level of _____ (A-D in the diagram above) is most closely associated with changes in the ECG and/or muscle weakness.
   a) A  
b) B  
c) C  
d) D  
e) none of the above

23. An abnormally high level Blood Urea Nitrogen (BUN) and _____ (A-D in the diagram above) is most closely associated with a decrease in renal function.
   a) A  
b) B  
c) C  
d) D  
e) none of the above

24. An abnormally low level of _____ (A-D in the diagram above) indicates hypoglycemia?
   a) A  
b) B  
c) C  
d) D  
e) none of the above

25. Bacteremia means there is a pathogenic organism or their toxin in the blood. (True/False)

26. As Bacteremia progresses into a Systemic Inflammatory Response Syndrome the patient will develop:
   a) thermal instability  
b) tachypnea  
c) bradycardia  
d) two of the above  
e) a, b and c

27. Septic shock is defined as the presence of sepsis with a simultaneous increase in the resting systolic blood pressure of 40 mm Hg or more. (True/False)

Questions 28-31: Regarding Acute Respiratory Distress Syndrome (ARDS): (True/False)

28. _____ Inflammatory mediators disrupt the alveolar-capillary membrane.
29. _____ There is an increase in alveolar capillary permeability to interstitial fluid.
30. _____ Pulmonary edema develops.
31. _____ The mortality rate for ARDS is low (<10%).

32. Patients placed on cardiopulmonary bypass or who use high amounts of supplemental oxygen
have an increased risk of developing ARDS relative to the general population (T/F)

Questions 33-35: Regarding Multiple Organ Dysfunction Syndrome (MODS): (True/False)
33._____ MODS is defined as the progressive failure of 2 or more organ systems.
34._____ The most common cause of MODS is sepsis
35._____ The mortality rate for MODS is greater when the patient is over 65 years old.

36. Which organ system is most likely to fail first when MODS develops secondary to sepsis?
   a) gastrointestinal tract
   b) liver
   c) renal
   d) cardiac
   e) pulmonary

37-40. Which characteristics are associated with a benign tumor (true/false)? The tumor
37. _____ is encapsulated
38. _____ is invasive
39. _____ causes compressive damage to adjacent tissues
40. _____ is composed on differentiated cells typical of tissue of origin.