Course Description
PTH 202 Physical Therapy Modalities
Lec. 3 Lab. 3 Cr. 4
Prerequisites: BIO 210, MAT 120, PSY 201, ENG 101, PTH 101.
Corequisites: BIO 211, ENG 102, PTH 205.

Course Focus
This course introduces patient care techniques, including patient preparation, therapeutic hot/cold modalities and electrical stimulation.

Text and References


COURSE OBJECTIVES
General
1. Write a review of a journal article relevant to the use of modalities in a physical therapy POC.

Unit 1: Pain, Inflammation, and Wound Care
1. Describe the physiologic and psychiatric components of pain
2. Relate the physiologic and psychiatric components of pain to patient care.
3. Describe the neurologic pathway of pain.
4. Describe the current theories of pain control on a neurological
5. Document a patient’s pain using the soap note format.
6. Relate signs and symptoms of pain to probable causes.
7. Compare and contrast treatment for chronic vs. acute pain.
8. Explain the cellular basis for each stage of the inflammatory process.
9. Recognize the stages of the inflammatory process.
10. Select appropriate treatments for each stage of inflammation.*
11. Explain how different types of ulcers develop.
12. Recognize integumentary changes that are indicative of early stage skin break down.
13. Recognize measures utilized to prevent ulcers.
14. Describe different types of altered sensation.
15. Identify stages of ulcers.
16. Identify appropriate dressings for different types of ulcers.
17. Describe correct protocol used when changing wound dressings.
18. Document wound care and appearance using the soap note format.
19. Describe the following treatment methods as they relate to wound care: ESTR, pulsatile levage, wound vac, debridement, and whirlpool.
20. Compare and contrast different subjective pain scales.

**Unit 2: Cryotherapy and thermal therapy**
1. Explain the five methods of thermal energy transfer.
2. Relate the five methods of energy transfer to clinical applications.
3. Explain how temperature in the body is regulated.
4. Compare and contrast the physiological effects of thermal and cryotherapy application.
5. Compare and contrast the physiological effects of superficial and deep heat.
6. Compare and contrast the indications for superficial and deep heat.
7. State the indications for thermal and cryotherapy.
8. State the contraindications for thermal and cryotherapy.*
9. State the precautions for thermal and cryotherapy.
10. Correctly administer treatment methods for the following: moist heat, paraffin, ice massage, ice pack, contrast bath, ice immersion, cold compression, and vapocoolant spray.*
11. Explain the treatment procedures for fluidotherapy.
12. Explain the treatment procedures for hydrotherapy.

**Unit 3: Ultrasound, phonophoresis, and diathermy**
1. Explain the method of energy transfer used in ultrasound, phonophoresis, and diathermy.
2. Define terms related to ultrasound and diathermy.
3. Select correct frequency, amplitude and duty cycle when administering ultrasound.
4. Apply ultrasound in a manner that prevents cavitation, standing wave, shearing effect and piezoelectric effect during the application of ultrasound.
5. State the indications for ultrasound, phonophoresis, and diathermy.
6. State the contraindications for ultrasound, phonophoresis and diathermy.*
7. State the precautions for ultrasound, phonophoresis and diathermy.
8. State the physiological changes produced by ultrasound, phonophoresis, and diathermy.
9. Demonstrate the correct application of ultrasound, phonophoresis, and diathermy.*
10. Relate the meaning of BNR and ERA to the application of ultrasound.
11. Relate position on the electromagnetic spectrum to wavelength and frequency.

**Unit 4: Ultraviolet, Infrared, and laser**
1. Relate UV and infrared to the electromagnetic spectrum.
2. Differentiate between UVA, UVB, and UVC in terms of wavelength, and physiological effects.
3. State the physiological effects of UV, infrared and laser.
4. State the indications for UV, infrared, and laser.
5. State the precautions for UV, infrared, and laser.*
6. State the contraindications for UV, infrared, and laser.*
7. Determine a patients MED and correctly administer UV.
8. Define the Inverse Square Law and apply it to the administration of UV and infrared.
9. Define the Cosine Law and apply it to the administration of UV and infrared.
10. Correctly administer infrared to a patient.
11. Compare and contrast the physiological effect of luminous vs. non luminous infrared lamps.
12. Explain the treatment method for laser.

Unit 5: Electrical Stimulation
1. Differentiate between the different types of electrical stimulation and cite the indications for each.
2. Correctly administer: IF, NMES, biofeedback, iontophoresis, TENS, and Combo.*
3. State the contraindications for the different types of electrostimulation.*
4. State the precautions for the different types of electrostimulation.*
5. State the physiological effects for the different types of electrostimulation.
7. Explain the cellular basis for nerve/muscle activation.
8. Differentiate between DC, AC, and pulsed current in terms of characteristics and uses.
9. Adjust the attributes of pulse to match to goals of the POC.
10. Relate electrode size and placement to patient comfort and quality of a care.
11. Explain the treatment methods for HVPC, FES and EMS.

Clinical Outcomes. Upon successful completion of the course a student will be able to safely and appropriately perform the following interventions:

- Superficial thermal agents: MH, Parafin
- Ultrasound/Phonophoresis
- Iontophoresis
- Cryotherapy: CP, Contrast, Ice massage, Ice Immersion, Vapocoolant spray
- Infrared Light
- Diathermy (capacitive, inductive)
- Ultraviolet Light
- Electrical stimulation: IF, Combo, NMES, TENS
- Biofeedback (relax, motivate)

In addition the student will be able to perform the following assessments:

- Pain
- Skin integrity
- Skin sensation
- Wound classification

Student will be able to accurately document modality treatment using the SOAP note format.

Student Contributions
Laboratory Requirements
Each student is required to actively participate in laboratory sessions by practicing the application of palpation skills on fellow classmates. Appropriate and professional behavior is expected at all times in the laboratory setting. Shorts and a tank top are the required attire for all laboratory activities. A sweatshirt or sweatpants may be worn over these if such clothing does not interfere with the laboratory
activities. Clothing must allow access to various parts of the body during specified laboratory activities. Male students may be required to remove their shirt. Failure to comply with the dress code will result in dismissal from the lab, resulting in an absence. Students are expected to be prepared for class sessions.

Course Schedule
Lecture: Tuesday and Thursday from 8:30-10:00
Lab: Wednesday 9:00-12:00 or Thursday from 12:30-3:30

Course Evaluation
5 quizzes (100pts. Each) = 500
Competency skill checks = 100
Final practical = 100
Case study = 50
Article review = 50
Final = 200
Total = 1000

GRADING POLICY
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Grading Methodology. The final grade must be 75.00% or more in order to pass the course and progress in the program. Rounding will not be used to assess grades. In addition, each student must pass the final exam with a grade of 75.00% or above. If a student fails the final exam a second attempt will be given. The highest score a student can achieve on the second attempt is 75% and the final grade for the exam will be a C. Students absent from an examination or presentation will receive a “0” grade for the examination unless other arrangements are made with the individual instructor prior to the examination or presentation day or on the examination or presentation day before the test/presentation is scheduled to be given. It is the responsibility of the student to contact the appropriate instructor to arrange to make up the examination. Arrangements may be completed by telephone. If the instructor is not available, a message should be left on the instructor’s voice mail AND with another member of the faculty or administrative assistant. The instructor will decide the time and method of make-up examinations on an individual basis. Messages sent by other students are unacceptable. The student is responsible for notifying the instructor of the reason for the absence.

Each student must demonstrate safety and competence in required laboratory skills. Students are responsible for insuring that laboratory skills are checked off by the instructor. All laboratory skills must be passed with a minimum score of 75% in order to pass the course. Students will be given two opportunities to pass each skill check. In addition, the student must pass the practical exam (score 75% or greater) in order to pass the course. Should the student fail the practical exam, they will be given one opportunity to retake the exam. The highest possible score on retaking the exam is 75.00%. Non-compliance with a critical safety criterion will result in an automatic failure on skills checks as well as practical exams.

PTH 202 Reviewed: 12/10/14
Approved: MSapp 12-18-14
Test Review
Tests will be reviewed in class and discussion will be limited to the right answer. Students will not be allowed to take any written notes, use electronic devices to take notes or make an image of the tests. All items have to be removed from the desk/table top during the test review. For any discussion beyond the right answer, set up an appointment with the instructor to further discuss.

Prior to the final exam, test review will be done during the last class of the semester. All items have to be removed from desk/table top during the test review. No notes can be taken and no electronic devices can be used to take notes or make images of the tests. This is an opportunity to ask questions about concepts that you do not understand. If individualized time is need for test review, an appointment can be made with the instructor, but not during exam week and the time limit will be 10 minutes. All tests will be reviewed under the supervision of an instructor. Students cannot bring any class notes with them.

ADA STATEMENT
The Technical College of the Lowcountry provides access, equal opportunity and reasonable accommodation in its services, programs, activities, education and employment for individuals with disabilities. To request disability accommodation, contact the counselor for students with disabilities at (843) 525-8219 or (843) 525-8242 during the first ten business days of the academic term.

ATTENDANCE
1. The College’s statement of policy indicates that students must attend ninety percent of total class hours or they will be in violation of the attendance policy.
2. Students not physically attending class during the first ten calendar days from the start of the semester must be dropped from the class for NOT ATTENDING.
3. Students taking an online/internet class must sign in and communicate with the instructor within the first ten calendar days from the start of the semester to indicate attendance in the class. Students not attending class during the first ten calendar days from the start of the semester must be dropped from the class for NOT ATTENDING.
4. Reinstatement requires the signature of the division dean.
   a. In the event it becomes necessary for a student to withdraw from the course OR if a student stops attending class, it is the student’s responsibility to initiate and complete the necessary paperwork. Withdrawing from class may have consequences associated with financial aid and time to completion.
   b. When a student exceeds the allowed absences, the student is in violation of the attendance policy. The instructor MUST withdrawal the student with a grade of “W”, “WP”, or “WF” depending on the date the student exceeded the allowed absences and the student’s progress up to the last date of attendance or
   c. under extenuating circumstances and at the discretion of the faculty member teaching the class, allow the student to continue in the class and make-up the work. This exception must be documented at the time the allowed absences are exceeded.

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d. Absences are counted from the first day of class. There are no "excused" absences. All absences are counted, regardless of the reason for the absence.

5. A student must take the final exam or be excused from the final exam in order to earn a non-withdrawal grade.

6. Students are expected to be in class on time. Arrival to class after the scheduled start time or leaving class prior to dismissal counts as a tardy. Three tardies and/or early departures are considered as one absence unless stated otherwise. Instructor must be notified prior to start of class by telephone, text or email if the student is going to be late. Failure to do so will result in a learning contract.

7. It is the student's responsibility to sign the roll/verify attendance with instructor upon entering the classroom. Failure to sign the roll/verify attendance results in a recorded absence. In the event of tardiness, it is the student's responsibility to insure that attendance is marked. The student is responsible for all material/announcements presented, whether present or absent.

8. Continuity of classroom and laboratory is essential to the student's progress in providing safe and competent patient care. Students are expected to use appropriate judgment for participating in clinical activities. If absence does the instructor must be notified by telephone, email or text no later than 30 minutes prior to the start of the class or lab. Failure to do so will result in a learning contract.

A copy of TCL’s STATEMENT OF POLICY NUMBER: 3-1-307 CLASS ATTENDANCE (WITHDRAWAL) is on file in the Division Office and in the Learning Resources Center.

HAZARDOUS WEATHER
In case weather conditions are so severe that operation of the College may clearly pose a hardship on students and staff traveling to the College, notification of closing will be made through the following radio and television stations: WYKZ 98.7, WGCO 98.3, WGOZ 103.1, WFXH 106.1, WWVV 106.9, WLOW 107.9, WGZR 104.9, WFXH 1130 AM, WLH 101.1, WSO 1230 AM, WAEV 97.3, WTCV TV, WTGS TV, WJWJ TV, and WSAV TV. Students, faculty and staff are highly encouraged to opt in to the Emergency Text Message Alert System. www.tcl.edu/textalert.asp

ACADEMIC MISCONDUCT
There is no tolerance at TCL for academic dishonesty and misconduct. The College expects all students to conduct themselves with dignity and to maintain high standards of responsible citizenship.

It is the student’s responsibility to address any questions regarding what might constitute academic misconduct to the course instructor for further clarification.

The College adheres to the Student Code for the South Carolina Technical College System. Copies of the Student Code and Grievance Procedure are provided in the TCL Student Handbook, the Division Office, and the Learning Resources Center.

Health care professionals hold the public trust. Academic misconduct by health science students calls that trust into question and academic integrity is expected.

It is a fundamental requirement that any work presented by students will be their own. Examples of academic misconduct include (but are not limited to):

1. copying the work of another student or allowing another student to copy working papers, printed output, electronic files, quizzes, tests, or assignments.
2. completing the work of another student or allowing another student to complete or contribute to working papers, printed output, electronic files, quizzes, tests, or assignments.
3. viewing another student’s computer screen during a quiz or examinations.
4. talking or communicating with another student during a test.
5. violating procedures prescribed by the instructor to protect the integrity of a quiz, test, or assignment.
6. plagiarism in any form, including, but not limited to: copying/pasting from a website, textbook, previously submitted student work, or any instructor-prepared class material; obvious violation of any copyright-protected materials.
7. knowingly aiding a person involved in academic misconduct.
8. providing false information to staff and/or faculty.
9. entering an office unaccompanied by faculty or staff.
10. misuse of electronic devices.

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