



The City University of New York
Department of Allied Health, Mental Health and Human Services

PTA 400
Modalities and Procedures I

Course Syllabus: Fall 2024

Prerequisites: PTA 1, PTA 2, PTA 3, PTA 10, PTA 20, Bio 11

Co-requisites: PTA 5, BIO 12

Instructor: Dr. Steven B. Skinner, PT, MS EdD

Office: S128

Phone: 718-368-4818

e-mail: Steven.skinner@kbcc.cuny.edu

Credit Hours: 5

Contact Hours: 8

Lecture: Tues/Thurs 8:00 am- 9:00 am

Lab: Tues/Thu 9:10 am- 12:30 pm

CATALOGUE DESCRIPTION

This course is designed to introduce students to physical therapy thermal modalities including physiological principles, indications, precautions, and contraindications. The origins and management of pain are also discussed. This course also introduces the student to basic assessment techniques necessary to evaluate the efficacy of therapeutic interventions, and the maintenance of patient safety including length and girth assessments, height and weight measurements, as well as integument, basic balance, and sensation assessments. Emphasis is also placed on effective patient/family communication and education.



PROGRAM MISSION STATEMENTh

The mission of the Physical Therapist Assistant program at Kingsborough Community College of the City University of New York is to: develop well qualified entry level physical therapist assistants who reflect the ethnic and cultural diversity of the community which the college serves and who function under the supervision of the physical therapist in a variety of physical therapy settings, capable of providing physical therapy treatments as outlined by the physical therapist to the satisfaction of the physical therapist. Further, the program will develop graduates who meet standards for licensure or registration as a physical therapist assistant in a variety of states. Additionally, the program's mission includes meeting the accreditation standards of the Commission on Accreditation in Physical Therapy Education for Physical Therapist Assistant Programs.

CORE VALUES - C.O.R.E.

COMPASSION Celebrating a diverse campus, local and global community of people and displaying professionalism and compassion in all interactions.

OPPORTUNITY Presenting current trends and future possibilities for career, academic and personal enrichment.

RESPECT Building mutual respect, integrity and confidence for ourselves, for others and for the environment.

EXCELLENCE Continually striving to achieve the highest standards and exhibit excellence in our programs and relationships with all stakeholders.

PROFESSIONALISM

The concept of professionalism in health care is motivated by the primary goal of providing quality service to the health care consumer. It is also a concept that involves a commitment to the development and maintenance of a level of knowledge, which enables the provider to utilize standards of care in the daily delivery of health care to the consumer. The program's dedicated faculty members provide students with the knowledge and background necessary to develop a sense of professionalism, which will extend into their career.

OVERVIEW OF PROGRAM LEARNING OBJECTIVES

This course addresses the following PTA program learning outcomes:

1. Demonstrate PTA near entry-level skills that are applicable to a variety of patient care settings and meet the needs of the community the college generally serves.
2. Demonstrate competency in performing components of data collection skills essential for carrying out the plan of care.
3. Recognize when the direction to perform an intervention is beyond that which is appropriate for a physical therapist assistant and initiate clarification with the physical therapist.
4. Exhibit conduct that reflects practice standards that are legal, ethical and safe.
5. Demonstrate familiarity with NPTE-PTA requirements, format, and test taking strategies to maximize future success potential.

Student Learning Outcomes

As evidenced by successful performance and completion of written and practical examinations, assignments, research article reviews, lab presentations, and the role-playing analysis of clinical scenarios, the student will:

1.0. Implement basic assessment techniques consistent with the plan of care. Effectively perform these techniques in an effort to maintain patient safety and assess the efficacy of therapeutic activities. Such assessment techniques include sensation and skin integrity tests, goniometry, muscle length, girth, and anthropometric measures.

- 1.1. Identify basic assessment techniques.
- 1.2. State the rationale for the use or selection of specific assessment and measurement techniques
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- 1.3. Relate the significance of various assessments to the rehabilitation process.
- 1.4. Perform pain assessments using analog and other visual tools, as well as pain questionnaires.
- 1.5. Demonstrate the ability to recognize normal and abnormal assessment values and responses.
- 1.6. Demonstrate the ability to measure, recognize and appropriately document asymmetry related to muscle mass, edema, extremity length, muscle length, and sensation.
- 1.7. Perform and document muscle length assessments including Ober, Thomas, 90-90 and other tests.
- 1.8. Correlate changes in function with muscle tightness/shortening.
- 1.9. Perform and document basic sensation assessments including pin prick, light touch, kinesthesia, and proprioception.
- 1.10. Discuss the clinical and function significance of changes in sensation.
- 1.11. Discuss the benefits and limitations of circumferential measurements in assessing edema.
- 1.12. Perform and document extremity edema assessments using circumferential measurement techniques.
- 1.13. Discuss the importance of anthropometrical measurements of height and weight.
- 1.14. Collect, organize, and perform statistical analysis of peer anthropometric data.
- 1.15. List normal and abnormal integumentary changes including color, hair growth, vascularity, etc.
- 1.16. Describe and document changes including color, changes in hair growth, blanching, etc.

- 1.17. Correlate changes in the integument with the effectiveness or ill-effects of therapeutic modalities.
- 1.18. Identify parameters of respiratory status including respiratory rate and the presence of cyanosis.
- 1.19. List activities or physiological events that may produce pain, precipitate respiratory compromise, cause edema, or produce other adverse signs and symptoms.
- 1.20. Perform therapeutic activities that relieve edema and respiratory compromise including positioning, extremity elevation, and postural activities.
- 1.21. State basic parameters of mental status including orientation to person place, time and event.
- 1.22. Demonstrate ability to recognize and monitor changes in mental status.
- 1.23. Recognize changes in states of arousal including confusion, stupor, and other changes.
- 1.24. Perform and integrate vital sign monitoring, manual muscle testing, and goniometry into assessment activities and clinical practice.
- 1.25. Analyze the results of basic assessment techniques.
- 1.26. Contrast results of basic assessment techniques with modality selection, intervention outcomes and responses to interventions.
- 1.27. Select and implement therapeutic techniques appropriately considering results of basic assessments and measurements and the plan of care.
- 1.28. Perform basic functional interventions/assessments such as TUG and Tinetti.

2.0. Demonstrate an understanding of the role of thermal modalities in rehabilitation.

- 2.1. State the historical perspective of thermal modalities.
- 2.2. Define and recognize the physiological responses to heat and cold.
- 2.3. State the adjunctive nature of physical agents in rehabilitation.
- 2.4. Discuss general indications and contraindications of thermal modalities.
- 2.5. Define the affective aspects of therapeutic modality administration.
- 2.6. Identify and describe pathologies treated with thermal modalities.
- 2.7. Describe the nature of acute and chronic pain conditions as they relate to the administration of thermal modalities.
- 2.8. Describe the therapeutic role of thermal modalities in physical therapy.
- 2.9. Describe inflammation and its physiological events.
- 2.10. Describe the physiological events associated with tissue repair.
- 2.11. Identify basic concepts and theories of pain, pain management, and tissue repair as they relate to the application of thermal modalities.
- 2.12. State the usage and application of thermal modalities and theories of pain, pain management and tissue repair.

3.0. Implement superficial thermal interventions including hot packs, cold packs, paraffin, whirlpool and Fluidotherapy.

- 3.1. Define superficial thermal modalities in regard to type, modes of transmission, application methods, indications and contraindications.
- 3.2. Define the physiological effects of heat and cold and their relationship to pathology.
- 3.3. Define and list the laws and properties of radiant heat and light.

- 3.4. State the adjunctive nature of superficial thermal modalities in rehabilitation.
- 3.5. State the rationale for selection of various forms of thermal modalities.
- 3.6. Administer superficial thermal modalities for the management of pain, relaxation, the promotion of healing, and range of motion.

4.0. Implement deep thermal interventions including ultrasound and diathermy.

- 4.1. Define deep thermal modalities in regard to type, modes of transmission, application methods, indications and contraindications.
- 4.2. Discuss the biophysics of ultrasound.
- 4.3. Describe the uses, indications and contraindications, and rationales of ultrasound.
- 4.4. Perform ultrasound and diathermy interventions considering anatomical factors, dosage, mode of delivery, and pathological condition.
- 4.5. Describe the biophysics of shortwave diathermy.
- 4.6. Describe the indications and contraindications of shortwave diathermy

5.0. Implement hydrotherapy interventions for the management of pain, muscle weakness, soft tissue pathologies and open wounds.

- 5.1. Discuss the history, usage, indications and contraindications of hydrotherapy.
- 5.2. Discuss and outline the physical characteristics of water including buoyancy, temperature, and viscosity.
- 5.3. Outline the phases of wound healing and tissue repair recognizing the presence of necrotic and viable tissue.
- 5.4. Apply the principles of hydrotherapy and the characteristics of water to wound healing, therapeutic exercise, soft tissue pathology, and pain management.
- 5.5. Identify precautions for dressing removal including the use of gloves, appropriate disposal of gloves, instruments and soiled dressings.
- 5.6. Perform sterile technique including the application and removal of dressings.
- 5.7. Perform hydrotherapy techniques utilizing universal precautions.
- 5.8. Perform aquatic therapy activities demonstrating knowledge of principles and characteristics of water.
- 5.9. Recognize situations that require isolation techniques and PPE.
- 5.10. Perform isolation techniques including donning and doffing gloves, gowns, masks, etc.
- 5.11. Perform mock pulsed lavage with suction (PLWS) interventions.

7.0. Perform basic Grade I and Grade II joint mobilization techniques on selected extremity joints.

- 7.1. Define joint mobilization.
- 7.2. Explain the convex concave rule.
- 7.3. Correlate glide directions with anatomical features.
- 7.4. Discuss differences in mobilization grades and their clinical significance.
- 7.5. Perform basic mobilization techniques (Grades I and II) for the shoulder, wrist, hand, knee, and ankle.

8.0. Given patient scenarios implement comprehensive physical therapy based upon a plan of care as directed by a physical therapist.

- 8.1. Perform therapeutic techniques demonstrating an understanding of the role of the physical therapist assistant in rehabilitation.
- 8.2. Perform therapeutic techniques appropriately, employing universal precautions and sound body mechanics.
- 8.3. Perform therapeutic techniques demonstrating an understanding of organizational structure, levels of authority, and fiscal considerations of the health care delivery.
- 8.4. Practice teaching patients, families, and other health workers, the uses, applications and responses of modalities and procedures with emphasis on safety and rationale as directed by the physical therapist.
- 8.5. Demonstrate the adjunctive nature of modalities and procedures by integrating their use in complete intervention applications utilizing knowledge and skills attained in previous and concurrent courses.
- 8.6. Implement therapeutic interventions within the plan of care considering knowledge of assessment and measurement, functional activity, thermal modality, pathology, kinesiology, and therapeutic exercise.
- 8.7. Demonstrate appropriate documentation of modality and procedure use considering patient response, intervention parameters, long/short term goals, and effectiveness.
- 8.8. Perform physical therapy interventions and interact with mock patients and families considering influencing factors (psychosocial, JEDI, cultural, economic, patient satisfaction, legal, ethical, etc.).
- 8.9. Assist in mock discharge planning and alternative levels of care decision making with supervising physical therapist.
- 8.10. Identify clinical responses and situations that require the attention of the supervising physical therapist or immediate interventions such as basic first aid or cardiopulmonary resuscitation and take appropriate action.
- 8.11. Practice communicating patient status and response to supervising physical therapist.
- 8.12. Analyze the effectiveness of modalities and procedures in specific clinical situations.
- 8.13. Assess mock patient status and response to treatment and appropriately alter or progress therapeutic interventions within the plan of care.
- 8.14. Delineate beneficial and untoward effects of thermal modalities.
- 8.15. Analyze relationships of thermal modalities with other therapeutic procedures. (Therapeutic exercise, range of motion, functional activities) as they relate to the achievement of rehabilitation goals.
- 8.16. Verify effectiveness of teaching behavior by analyzing mock patient performance
- 8.17. Recognize aspects of the plan of care that may be outside the PTA's scope of practice and act accordingly.

9.0. Demonstrate appropriate professional behavior

- 9.1. Attend and be on time for class, lab, and scheduled appointments.
- 9.2. Be prepared for lab activities; attend to assigned tasks.
- 9.3. Accept constructive criticism and respond and or follow through appropriately.
- 9.4. Express self in a clear and easily understood manner.
- 9.5. Maintain appropriate personal hygiene.
- 9.6. Treat others with positive regard, dignity, and respect.

9.7. Analyze and examine professional literature considering; specific scientific methods, interpretation of results, and clinical significance, in order to foster further personal investigation and clinical effectiveness.

9.8. Explain the importance of lifelong learning.

9.9. Describe how professional development can occur.

Assessment of Outcomes

As indicated in the student handbook; to receive a passing grade in this course the student must successfully complete all comprehensive examinations, assignments, and practical examination with a grade of “C” or better. Additionally, the instructor assesses student competencies in skills critical to this course using the standardized skills checklists, located in the laboratory, requiring a passing score of at least 90%. Critical skills in this course include:

1. Performance and application of basic assessment skills including: pain, muscle length, limb girth and length, sensation, and anthropometric assessments.

2. Application of the following modalities: hot/cold packs, paraffin, SWD fluidotherapy, whirlpool, and ultrasound.

3. Administration of hydrotherapy for wound healing and thermal effects.

4. Application of sterile techniques and use of universal precautions.

5. Instruction of the effects and uses of thermal modalities and other rehabilitation procedures.

6. Performance of physical therapy interventions using thermal modalities and therapeutic exercise.

7. Joint Mobilization Techniques (Grades I & II)

8. Orthopedic Special Testing/Assessment

9. Reporting to supervising physical therapist and the interdisciplinary health care team.

Textbook Requirements:

Michlovitz, S. L., Bellew J.W., Nolan, T.P. (2022). Modalities for therapeutic intervention 7th edition. Philadelphia, PA: F.A. Davis.

Skinner, S. McVey, C. (2011). Clinical decision making for the physical therapist assistant. Sudbury, MA: Jones and Bartlett Publishers.

Recommended:

Mosby (2021) *Mosby's Dictionary*. 11th ed. St. Louis, MO: Elsevier.

Grades will be calculated according to college and departmental policy as follows:

This is the grading schematic for PTA program:

A+ 95-100 A 90-94 A- 88-89 B+ 85-87 B 80-84 B- 78-79 C+ 75-77 C 70-74
 F <70 and below W Withdrew without penalty WU Unofficial Withdrawal

Research Article with Presentation	5%	Students are subdivided into working groups. Each group performs an assigned research project. The project includes mock IRB/ consent procedures, development of a hypothesis, literature review, experimental design, data collection, statistical analysis, report of results, and the drawing of conclusions. Each group is responsible for the development of a research article that conforms to APTA publication standards. Potential research projects are appended to this syllabus.
Computer Assessment Project	5%	Students are provided with clinical data. Using a spreadsheet program, students must devise an assessment form that transforms the provided data into useful information. Additional information about this assignment is provided by the instructor.
Patient Education Electronic Presentation	5%	Students are subdivided into pairs. Using Microsoft PowerPoint, each student pair is required to produce a 15 to 20-minute standalone patient education module on an assigned topic. The presentation must reflect appropriate use of graphic and audio media, research, and analysis. Potential presentation projects are appended to this syllabus.
Participation	10%	Students earn participation credit by accumulating up to ten (10) participation tokens. Tokens are earned through the submission of study guide activities, enhanced participation in laboratory and lecture sessions, and demonstration of critical thinking reflective of the synthesis and analysis of all coursework to date.
Practical Examination	20%	All students are required to take and pass a practical examination. This examination tests students' proficiency in thermal modality application, basic assessment, documentation and other aspects of the course. The laboratory examination is scheduled during or just before finals week.
Multiple Choice Quizzes	10%	Students complete 3-5 cumulative multiple-choice quizzes covering current course content but also integrating previous and concurrent course content (PTA 1,2,3, 5, 10, 20).
Short Answer Quizzes	15%	Students complete 3-5 short answer quizzes covering current course content but also integrating previous and concurrent course content (PTA 1,2,3, 5, 10, 20).
Mid-term Examination	10%	Students complete a cumulative multiple-choice examination covering the first five to six weeks of the course. The examination includes multiple-choice type questions.
Final Examination	20%	The final exam is a cumulative short answer examination covering the entire semester's work.

Attendance, Participation, and Universal Learning

Attendance and participation are mandatory in all PTA courses. If the student must be absent because of an emergency or illness, please make every effort to speak with professor about it beforehand, if possible, or after the next class. The professor will excuse such absences with a doctor's note or other form of official documentation. Although the student is excused from attending class, the student is not excused from completing the work for that day. The faculty is committed to the principle of universal learning. This means that our classroom, our virtual spaces, our practices, and our interactions be as inclusive as possible. Mutual respect, civility, and the ability to listen and observe others carefully are crucial to universal learning. Active, thoughtful, and respectful participation in all aspects of the course will make our time together as productive and engaging as possible. The professor will give the student feedback on their performance and participation.

Policies and Procedures

The Department of Allied Health, Mental Health and Human Services adheres to the Policies and Procedures on Academic Integrity as set forth by CUNY. Academic dishonesty is prohibited in The City University of New York and is punishable by penalties, including failing grades, suspension, and expulsion. Additional information can be found in the College catalog <http://www.kingsborough.edu/sub-registration/Pages/catalog.aspx>. Plagiarism is a violation of academic integrity. Plagiarism is the intentional theft(s) of someone else's intellectual property without attribution (proper credit). Determination and penalty – ranging from grade reduction to course failure, and or referral to the College Disciplinary Committee will be determined by the instructor.

Students will require a laptop/tablet and internet access to log in to the CUNY Blackboard/Brightspace system. A student who requires assistance with hardware/computer needs, connectivity issues, email problems or gaining access to their Blackboard/Brightspace account please reach out to: HelpDesk@Students.kbcc.cuny.edu

Students are expected to take all tests when scheduled. Students who are absent on the of an exam/quiz will be expected to take the exam/quiz on their return to class. Students who fail to take the scheduled exam/quiz or makeup will receive a grade of zero for that exam/quiz.

All written assignments must comply with college standards for written work. Specific assignment directions and requirements are provided for each assignment. A late submission may meet the requirements of the course but may not receive full credit.

If any assignments are not submitted by the end of the course, the student will receive a grade of "0" for each incomplete assignment.

Refer to the PTA Student Handbook for complete program policies and procedures.

STUDENT SUPPORT SERVICES

Students who need an accommodation for a disability, during their time at Kingsborough Community College should make an appointment with the **Access-Ability Office** in Room D205 at 368-5175. Access- Ability Services (AAS) serves as a liaison and resource to the KCC community regarding disability issues, promotes equal access to all KCC programs and activities, and makes every effort to provide appropriate accommodations and assistance to students with disabilities. The professor will be glad to work with the student to provide necessary guidance and accommodations as needed.

Access Resource Center (Room E-115)

Your one-stop place to get connected to government benefits and resources. Whether it's childcare, SNAP, clothing, or transportation, you can get a referral for what's available to you – where you live and when you need it.

FREE services include, Benefits Screening, Legal Consultation, Financial Consultation and Tax Preparation, lists of jobs, housing, pantries, Distribution of FREE vegetables grown on campus at the KCC Urban Farm

Distribution of FREE food staples at the KCC Food Pantry, Clothing donations, Assistance with recertification of benefits, Fair Hearing Assistance and Assistance obtaining other government resources.

All services are FREE. Walk-ins are always welcome.

Kingsborough Learning Center (KLC)

Formerly known as the Center for Academic Writing Success (CAWS), The KLC serves as a resource for all students requiring assistance with a writing assignment. The primary goal is to help students develop their own academic skills in essay writing, rethinking and revising papers, or identifying and correcting their own mistakes in writing. The Center offers a variety of free services such as walk-in tutoring, one-on-one tutoring contracted with an individual tutor for an entire semester, and group tutoring.

Counseling Services

Room D-102

All Kingsborough students are eligible to receive free and confidential personal counseling through the Counseling Services Center, where they will find a staff of trained and caring mental health practitioners who are committed to providing high-quality services, in a safe, supportive, and judgment-free environment, while always respecting students as individuals and as members of a diverse school community.

NETIQUETTE/ETIQUETTE

Each student is encouraged to take an active part in class discussions and activities. Honest and respectful dialogue is expected. Disagreement and challenging of ideas in a supportive and sensitive manner is encouraged. Hostility and disrespectful behavior are not acceptable. Just as we expect others to listen attentively to our own views, we must reciprocate and listen to others when they speak, especially when we disagree with them.

1. Be mindful that electronic communication does not convey facial expression or tone of voice. It is important to consider what is written could be misinterpreted.
2. Typing messages all in caps is regarded by most internet users as shouting; so, unless you mean to yell at someone, type your message in standard format.
3. It is appropriate to share your point of view as well as indicate disagreements with another's posts, however, it is not okay to make negative personal statements about another's posts.
4. Clearly indicate the nature of your email/text messages.
5. If you send an email from a personal email account, sign the message. Often the names of personal email accounts are different from a person's given name. Use the KCC email whenever possible.

EQUITY, CIVILITY, RESPECT for DIVERSITY and INCLUSION

Respect for the opinions of others is very important in an academic environment. Courteous behavior and responses are expected. Therefore, any acts of harassment and/or discrimination based on matters of race, gender, sexual orientation, religion, and/or ability are not acceptable. Students, faculty, and staff have a right to be in a safe environment, free of disturbances in all aspects of human relations. Incivility will not be tolerated. The PTA program strives to create a learning environment for its students that supports a diversity of thoughts, perspectives and experiences, and honors student identities (including race, gender, class, LGBTQAI+, religion, ability, etc.) To help accomplish this, if a student has a name and/or set of pronouns that differ from those that are traditionally used, please communicate this to the professor. The PTA program faculty are dedicated to our students and as such if any student experiences any issues regarding diversity, equity and inclusion, the student is encouraged to reach out to the professor and/or department. All student concerns are treated with the utmost confidentiality.

Religious/Cultural Observance

Persons who have religious or cultural observances that coincide with this class should let the professor know in writing by e-mail one week in advance of your respective observance. Students may be excused from the class, but students are not excused from course requirements. The timely submission of assignments or the make-up of exams should be discussed with the professor.

Week to Week Course Agenda

12-week semester	Topic and Objectives of the week Lecture	Reading Assignments	Lab	Assignments and Due Dates
Week 1	<p>Intro to Therapeutic Modalities, Procedures and Clinical Decision Making</p> <p>This initial week students are introduced to therapeutic modalities and procedures. Historical perspectives and usage indications are studied. Emphasis is placed upon the need for critical thinking, identifying impairments, and functional limitations. Students are introduced to modalities. Historical perspectives and usage indications are studied. The basics of effective clinical decision making are presented and discussed. Origins and theories of pain are discussed.</p>	<p>Chapter 1 Michlovitz</p> <p>Skinner, McVey (2011) Chapters 1 & 2</p>	<p>Students review and analyze complex patient care scenarios and discuss the parameters of clinical decision making associated with each. Hot and cold pack application is demonstrated. Students practice applying hot and cold to the body. Students identify physical responses to hot and cold.</p> <p><i>Treatment Application Activity</i></p> <p>Students exhibit critical thinking and sound technical skills in the application of heat/cold. A mock patient is presented by the instructor. Students implement a prescribed plan of care. Following this treatment application activity, students discuss patient management and therapeutic techniques.</p>	<p>Read: Justice, Equity, Diversity, and Inclusion (JEDI) Innovative Health Care Leadership Innovative Leadership Institute</p>
Week 2	<p>Tissue Healing and Repair</p> <p>Tissue repair is reviewed. Specifically, tissue response to trauma (including burns), phases of repair, and influencing factors are addressed. Effective modalities used for tissue repair are discussed.</p>	<p>Read Michlovitz pp. 361-62</p>	<p><i>Treatment Application Activity</i></p> <p>Given patient scenarios, graphic and video presentations, students practice identifying phases and influencing factors of tissue repair. Basic assessment techniques including pain ratings, analog scales, mobility/function, integumentary changes, are demonstrated and practiced. Respiratory and cardiac danger signs are reviewed. Students perform and practice basic assessment techniques including vital signs and goniometry.</p>	<p>Review, highlight and be prepared to discuss:</p> <p>Tendon Repair Article</p>
Week 3	<p>Introduction to Assessment Techniques</p> <p>Students are provided the definition of and application of various assessment techniques; including muscle length testing,</p>		<p>Students perform circumferential measurement, volumetric displacement and sensation testing, and goniometric assessments.</p> <p>Students perform and practice reporting results of basic assessments to supervising physical therapist.</p>	<p>Upper extremity volume measurements in women with lymphedema : a comparison of measurements obtained via water displacement with</p>

	<p>sensory testing, and anthropometric measures. Goals, indications and contraindications will be discussed. Concepts of the inclusion of the findings of these assessments in the PT Plan of Care is examined.</p>		<p>Treatment Application Activity Students exhibit critical thinking and sound technical skills in the management of a total knee replacement case as presented by the instructor and implement the prescribed plan of care. Students perform pain assessments, circumferential measurements, manual muscle testing, goniometry and functional training activities appropriate to the scenario. While performing interventions, students consider additional factors influencing patient care and the contemporary practice of physical therapy including, psycho-social issues and other issues that impact the health care delivery system. Students demonstrate appropriate documentation of their activities. Following this treatment application activity, students discuss patient management and therapeutic techniques.</p>	<p>geometrically determined volume. (Research Report). Antoinette P. Sander, Nicole M. Hajer, Kristie Hemenway, Amy C. Miller. Physical Therapy Dec 2002 v82 i12 p1201(12)</p> <p>Patient Education Projects assigned</p>
Week 4	<p>Assessment Techniques con't Assessment of the musculo-skeletal system is presented, including a presentation of selected special tests, muscle-length tests. Special attention is paid to the functional and anatomical considerations.</p>		<p>Students practice selected musculo-skeletal assessments including Thomas, Ober, and 90-90 hamstring tests. Assessments for ligamentous and cartilaginous integrity are also reviewed.</p> <p>Treatment Application Activity Students exhibit critical thinking and sound technical skills in the management of a extremity lymphedema case as presented by the instructor and implement the prescribed plan of care. Students perform pain assessments, circumferential measurements, manual muscle testing, goniometry and functional training activities appropriate to the scenario. While performing interventions, students consider additional factors influencing patient care and the contemporary practice of physical therapy including, psycho-social issues and other issues that impact the health care delivery system. Students demonstrate appropriate documentation of their activities. Following this treatment application activity, students discuss patient management and therapeutic techniques.</p>	<p>Group Research Projects assigned</p>
Week 5	<p>Introduction to Superficial Heat Superficial heat in regard to heat exchange, physiological effects,</p>	<p>Read Michlovitz Chapter 3 Skinner, McVey</p>	<p><i>Students practice applying hot packs to the upper quarter while considering positioning and draping techniques. Students also practice paraffin application. Given patient scenarios, students perform patient education activities related to physiological</i></p>	<p>Computer Assessment Project Due</p>

	<p>indications and contraindications and methods of application are presented</p>	<p>Chapter 5</p>	<p><i>responses to heat, and indications/contraindications. Additionally, students practice application techniques including, patient preparation, proper placement, safety techniques, etc. Students also practice reporting patient response and intervention to supervising physical therapist.</i></p> <p><i>Treatment Application Activity</i> <i>Students exhibit critical thinking and sound technical skills in the management of a rheumatoid arthritis case as presented by the instructor and implement the prescribed plan of care. Students perform pain assessments, goniometry, range of motion activities and thermal modality interventions appropriate to the scenario. While performing interventions, students consider additional factors influencing patient care and the contemporary practice of physical therapy, including, psycho-social issues and other issues that impact the health care delivery system. Students practice reporting and documenting consequences of treatment to supervising physical therapist. Following this treatment application activity, students discuss patient management and therapeutic techniques.</i></p>	
<p>Week 6</p>	<p>Superficial Heat con't Superficial heat discussion continues with emphasis on the intervention's objective. Superficial heat in the reduction of pain, diminution muscle spasms and enhancement of soft tissue extensibility are studied</p>		<p>Students practice hot pack application to the lower quarter while considering positioning and draping techniques. Students also practice paraffin application for the lower extremity. Given patient scenarios, students perform patient education activities related to physiological responses to heat, and indications and contraindications. Additionally students practice application techniques including, patient preparation, proper placement, safety techniques, etc. Fluidotherapy is also introduced and practiced.</p> <p>Treatment Application Activity Students exhibit critical thinking and sound technical skills in the management of a low back strain case as presented by the instructor and implement the prescribed plan of care. Students perform pain assessments, range of motion activities, functional training, and thermal modality interventions appropriate to the scenario. While performing interventions, students consider</p>	

			<p>additional factors influencing patient care and the contemporary practice of physical therapy including, psycho-social issues and other issues that impact the health care delivery system. Students practice reporting and documenting consequences of treatment to supervising physical therapist. Following this treatment application activity, students discuss patient management and therapeutic techniques.</p>	
Week 7	<p>Ultrasound and SWD The student is introduced to ultrasound and shortwave diathermy as deep tissue modalities. The biophysics of these modalities are discussed. Indications, contraindications and precautions are discussed.</p>	Read Chapter 4 Michlovitz	<p>Given patient scenarios, students apply ultrasound and short wave diathermy interventions considering, anatomical factors, treatment goals, positioning, dosage, mode of delivery, and pathological condition. In preparation for their roles as physical therapy care educators, students explain the physiological effects and physical perceptions of the intervention.</p> <p>Treatment Application Activity Students exhibit critical thinking and sound technical skills in the management of a rotator cuff strain as presented by the instructor and implement the prescribed plan of care. Students perform pain and sensation assessments, range of motion activities, goniometry, manual muscle testing, therapeutic exercise and ultrasound therapy appropriate to the scenario. While performing interventions, students consider additional factors influencing patient care and the contemporary practice of physical therapy including, psycho-social issues and other issues that impact the health care delivery system. Students practice reporting and documenting consequences of treatment to supervising physical therapist. Following this treatment application activity, students discuss patient management and therapeutic techniques.</p>	Mid-term Examination
Week 8	<p>Introduction to Phototherapy The physical properties and laws of light are presented. Thermal and athermal therapeutic uses of light are presented. Additionally, the therapeutic use of cold or low level laser is presented.</p>	Read Chapter 7 Michlovitz	<p>Students practice applying low-level laser. Given patient scenarios, students administer phototherapy to various parts of the body while explaining its effects and precautions. Students continue to practice in the use and application of all superficial heat modalities. Students practice reporting patient response, intervention, and assessment of goals to the supervising physical therapist</p> <p>Treatment application activity</p>	Patient Education Assignments Due

			<p>Students exhibit critical thinking and sound technical skills in the management of a degenerative lumbar disc disease case as presented by the instructor and implement the prescribed plan of care. Students perform pain assessments, range of motion activities, functional training, and thermal modality interventions appropriate to the scenario. While performing interventions, students consider additional factors influencing patient care and the contemporary practice of physical therapy including, psycho-social issues and other issues that impact the health care delivery system. Students practice reporting and documenting consequences of treatment to supervising physical therapist. Following this treatment application activity, students discuss patient management and therapeutic techniques.</p>	
Week 9	<p>Introduction to Cryotherapy The student is introduced to cryotherapy. The physiological effects, methods and guideline, indications and contraindications of cryotherapy are studied.</p>	<p>Michlovitz Chapter 2</p>	<p>Using patient scenarios, students practice applying cold packs, ice massages and cold/ ice baths while considering precautions, indications and contraindications, and positioning and draping techniques. Students practice reporting consequences of intervention to the supervising physical therapist. In preparation for their roles as physical therapy care educators, students practice relating physiological effects of cryotherapy on each other.</p> <p>Treatment Application Activity Students exhibit critical thinking and sound technical skills in the management of an acute ankle sprain as presented by the instructor and implement the prescribed plan of care. Students perform pain and sensation assessments, range of motion activities, functional and gait training activities, and thermal modality interventions appropriate to the scenario. While performing interventions, students consider additional factors influencing patient care and the contemporary practice of physical therapy including, psycho-social issues and other issues that impact the health care delivery system. Students practice reporting and documenting consequences of treatment to supervising physical therapist. Following this treatment application activity, students discuss patient management and therapeutic techniques</p>	<p>Group Research Assignment Due Presentations begin</p>

Week 10	<p>Introduction to Aquatic Therapy The properties of water, including cohesion, thermal stability, and adhesion are presented. The principles of frictional resistance and buoyancy are discussed. Therapeutic activities are presented and discussed.</p>	Michlovitz Chapter 5	<p>The student is introduced to the physical principles of water, aquatic therapy benefits and temperature regulation. Given patient scenarios, the students perform aquatic therapy activities and explain the rationale of treatment. This lab session is performed in the KBCC pool.</p> <p>Treatment Application Activity Students exhibit critical thinking and sound technical skills in the management of a below the knee amputee with an open wound as presented by the instructor and implement the prescribed plan of care. Students perform pain assessments, and functional and transfer training, appropriate to the scenario. While performing interventions, students consider additional factors influencing patient care and the contemporary practice of physical therapy including, psycho-social issues and other issues that impact the health care delivery system. Students practice reporting and documenting consequences of treatment to supervising physical therapist. Following this treatment application activity, students discuss patient management and therapeutic techniques.</p>	Exercise in 94 degrees F water for a patient with multiple sclerosis. Colleen Peterson. Physical Therapy, April 2001, v81, i4, p1049
Week 11	<p>Introduction of Hydrotherapy, Wound Management, sterile technique and PPE The principles and components of hydrotherapy are presented. Open wound management and sterile technique are presented. Appropriate use of PPE is explored.</p>	Michlovitz	<p>Students continue to study hydrotherapy. Students practice performing hydrotherapy using universal precautions and sterile technique in the dressing of wounds. Students practice transfers hydrotherapy chair. Students further practice the reporting of observations and consequences of the intervention to the supervising physical therapist.</p> <p>Treatment Application Activity Students exhibit critical thinking and sound technical skills in the management of a great toe amputee as presented by the instructor and implement the prescribed plan of care. Students perform pain and sensation assessments, functional and gait training, hydrotherapy and sterile technique appropriate to the scenario. While performing interventions, students consider additional factors influencing patient care and the contemporary practice of physical therapy including, psycho-social issues and other issues that impact the health care delivery system. Students practice reporting and documenting consequences of</p>	Pulsatile lavage bests whirlpool for irrigation and healing—The range of intensities available with PLWS helps make it the gold standard for hydrotherapy. Harriet Baugh Loehne. Biomechanics, June 1, 2004, p59

			treatment to supervising physical therapist. While performing interventions, students consider additional factors influencing patient care and the contemporary practice of physical therapy including, psycho-social issues and other issues that impact the health care delivery system. Students practice reporting and documenting consequences of treatment to supervising physical therapist. Following this treatment application activity, students discuss patient management and therapeutic techniques.	
Week 12	Introduction to Joint Mobilization Joint mobilization for extremities is introduced. Applied anatomy and kinesiology concepts related to arthrokinematics are reviewed. Mobilization grades are introduced. Clinical advantages of joint mobilization are presented	Skinner, McVey (2011) Chapter 12	Joint mobilization techniques are practiced	
Final Exams	Final Exam Week	Review all materials and submit study guide for extra credit.	Final Exam	Date of final exam will be announced in December.

Potential Research Project Topics

The instructor may assign the following topics to student groups for investigation and documentation:

1. Comparison of manual caliper, electronic caliper, and bio-impedance in determining body composition (likely statistical treatment: ANOVA)
2. Correlation of muscle bulk as measured by cross-section area (CSA) and ROM at the ankle (Likely statistical treatment: r coefficient)
3. Comparison of plantar and palmar light touch in male and female physical therapist assistant students (likely statistical treatments: r coefficients/t-tests)
4. Relationship between muscle cross-section area and peak torque generated by the plantar flexors (peak torque proportion as measured by the percent difference between of lowest torque and peak torque low: high ratio/likely statistical treatment: r coefficient)
5. The development of anthropometric and physical fitness profile of a group of physical therapist assistant students with analysis, predictions, and suggestions (descriptive statistics)
6. Comparison of the effectiveness of standard gel cold packs and insulated cryotherapy devices.

7. *Variability in gait patterns within a group of physical therapist assistant students*

Potential Patient Education Electronic Presentation Topics:

- 1. Your Physical Therapy Team**
- 2. The Therapeutic Use of Hot and Cold**
- 3. Your Isokinetic Strength Test**
- 4. Physical Therapy Management of Your Diabetes**
- 5. Management of Your Low Back Pain**
- 6. Your Physical Therapy Evaluation**
- 7. The Benefits of Aquatic Therapy**
- 8. Physical Therapy Management of Pain**
- 9. The Importance of Muscular Flexibility**
- 10. So, Your Loved One Has Had a Stroke**
- 11. Gait Training in Physical Therapy: What to Expect**
- 12. Physical Therapy Management of Multiple Sclerosis**
- 13. Welcome to our Rehabilitation Center**
- 14. As We Age: Helpful Hints to Keep Fit**
- 15. Physical Therapy Management of Osteoarthritis**
- 16. Introduction to Resistive Exercise**
- 17. Physical Therapy Management of Tendonitis**
- 18. Physical Therapy Management – Post Burn**