THE VISION OF THE UNIVERSITY OF JORDAN

A university excelling in pedagogy, research, and innovation and advancing in global standing

THE MISSION OF THE UNIVERSITY OF JORDAN

Providing students with fulfilling learning experiences, conducting knowledge-producing research, and building firm societal ties, within an environment conducive to creativity, innovation, and entrepreneurship: making efficient use of resources and forging fruitful partnerships.

THE VISION OF THE SCHOOL OF REHABILITATION SCIENCES

Leadership in the creation and development of knowledge, and in the preparation of human resources aspiring for excellence regionally and internationally

THE MISSION OF THE SCHOOL OF REHABILITATION SCIENCES

To excel in the preparation and training of model rehabilitation personnel, who participate in the health and community sector, and provide the local and regional community with appropriate rehabilitation services based on needs. Through educational curricula that facilitates the implementation of up to date rehabilitation services based on the best available evidence.

THE MISSION OF THE DEPARTMENT OF PHYSIOTHERAPY

The mission of the department of Physiotherapy is to graduate professionals in the field of physical therapy who are to contribute to the health needs of society through education, scholarly activities, research, service and professional practice.

THE VISION OF THE DEPARTMENT OF PHYSIOTHERAPY

The vision of the Department of Physical Therapy is to be recognized as an outstanding educational program with high quality faculty members, staff and students

Course Syllabus

1	**Course title**	Physical and electrical modalities
2	**Course number**	1801205
3	**Credit hours**	2 theory, 1 practical
	Contact hours (theory, practical)	2 theory, 4 practical
4	**Prerequisites/corequisites**	0342103 General Physics + 0303101 General Chemistry + 0501108 Physiology II
5	**Program title**	B.Sc. in Physiotherapy
6	**Program code**	1801
7	**Awarding institution**	The University of Jordan
8	**School**	Rehabilitation Sciences
9	**Department**	Department of Physiotherapy
10	**Course level**	Undergraduate/ second year
11	**Year of study and semester (s)**	2022/2023, second semester
12	**Other department (s) involved in teaching the course**	NA
13	**Main teaching language**	English
14	**Delivery method**	☐ Face to face learning ✓Blended ☐Fully online
15	**Online platforms(s)**	✓Moodle ✓Microsoft Teams ☐Skype ☐Zoom ☐Others……
16	**Issuing/Revision Date**	21.2.2024

17 Course Coordinator:

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18 Other instructors:

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19 Course Description:

This course covers the principles (physics, chemical and mechanical), tools, methods of application and clinical applications of a variety of electrical and physical modalities used in physiotherapy. The modalities covered are heat, cold, electrical current, shock wave, laser, hydrotherapy, magnetic therapy, spinal traction and pneumatic compression.

20 Course aims and outcomes:

A- Aims:

- To introduce the mechanisms of injury, pain and healing
- To explore the underlying theory and the physiological effects of various therapeutic modalities
- To explain the indications and contraindications for the use of a certain modality
- To review the research evidence behind the use of the modalities for certain conditions
- To introduce the student to the modalities in practical sessions and review the various settings used for different cases

B- Students Learning Outcomes (SLOs):
Upon successful completion of this course, students will be able to:

SLOs / SLOs of the course	SLO (1)	SLO (2)	SLO (3)	SLO (4)	SLO (5)	SLO (6)	SLO (7)	SLO (8)	SLO (9)	SLO (10)	SLO (11)
1.Use the ICF model in clinical case scenario analysis	X										
2. Demonstrate comprehension of pathological aspects of tissue healing, muscle tone, motion restriction and pain		X									
3. Demonstrate comprehension of physical and chemical interactions underlying the use of therapeutic modalities		X									
4. Display ethical practice when using modalities by understanding indications, contraindications, and precautions for the use of modalities				X							
5. Display critical thinking skills when critiquing research findings related to therapeutic modalities					X						
6. Implement decision making and clinical reasoning skills in solving case studies						X					
7. Plan physiotherapy interventions including therapeutic modalities based on the best available evidence							X				

Program SLOs:

1. Recognize, critically analyze and apply the conceptual frameworks and theoretical models underpinning physiotherapy practice
2. Demonstrate comprehension of background knowledge that informs sound physiotherapy practice
3. Demonstrate the ability to use online resources and technologies in professional development
4. Display a professional commitment to ethical practice by adhering to codes of conduct and moral frameworks that govern the practice of physiotherapy
5. Evaluate the importance of and critically appraise research findings to inform evidence-based practice such that these skills could be utilized in continuing self-development
6. Implement clinical reasoning, reflection, decision-making, and skillful application of physiotherapy techniques to deliver optimum physiotherapy management
7. Adhere to the professional standards of physiotherapy practice in terms of assessment, management, outcome measurement, and documentation
8. Display a willingness to promote healthy lifestyle and convey health messages to clients
9. Value the willingness to exercise autonomy while appreciating the challenges associated with delivering physiotherapy services
10. Display the ability to practice in a safe, effective, non-discriminatory, inter- and multi-disciplinary manner
11. Demonstrate effective oral and written communication with clients, carers, and health professionals

21. Topic Outline and Schedule:

Week	Lecture	Topic	Student Learning Outcome	Learning Methods (Face to Face/Blended/ Fully Online)	Platform	Synchronous / Asynchronous Lecturing	Evaluation Methods	Resources
1	1.1	Introduction patient-oriented problems	2	Online	MS teams	Synchronous	----------	Cameron 2023
	1.2	Thermotherapy: superficial cold	2-7	Online	MS teams	Asynchronous	Theory exam	Cameron 2023
	1.3	Introduction to practical sessions ICF revision and goal setting	1-7	Face to face	----------	Synchronous	Practical exam Project	Cameron 2023
2	2.1	Thermotherapy: superficial heat	2-7	Online	MS teams	Synchronous	----------	Cameron 2023
	2.2	Ultrasound 1	2-7	Online	MS teams	Asynchronous	----------	Cameron 2023
	2.3	Thermotherapy: superficial cold and heat practical	1-7	Face to face	----------	Synchronous	Practical exam	Cameron 2023
3	3.1	Ultrasound 2	2-7	Online	MS teams	Synchronous	----------	Cameron 2023
	3.2	Diathermy	2-7	Online	MS teams	Asynchronous	----------	Cameron 2023
	3.3	Ultrasound practical	1-7	Face to face	----------	Synchronous	Practical exam	Cameron 2023

4	4.1	Laser and light 1	2-7	Online	MS teams	Synchronous	----------	Cameron 2023
	4.2	Laser and light 2	2-7	Online	MS teams	Asynchronous	----------	Cameron 2023
	4.3	Diathermy practical	1-7	Face to face	----------	Synchronous	Practical exam	Cameron 2023
5	5.1	Ultraviolet	2-7	Online	MS teams	Synchronous	----------	Cameron 2023
	5.2	Shock wave	2-7	Online	MS teams	Asynchronous	----------	Cameron 2023
	5.3	Laser and light practical	1-7	Face to face	----------	Synchronous	Practical exam	Cameron 2023
6	6.1	Spinal traction 1	2-7	Online	MS teams	Synchronous	----------	Cameron 2023
	6.2	Spinal traction 2	2-7	Online	MS teams	Asynchronous	----------	Cameron 2023
	6.3	Shock wave therapy practical	1-7	Face to face	----------	Synchronous	Practical exam	Cameron 2023
7	7.1	Compression	2-7	Online	MS teams	Synchronous	----------	Cameron 2023
	7.2	Spinal traction practical	1-7	Face to face	----------	Synchronous	Practical exam	Cameron 2023
	Eid Al Fitr (10-12/4/2024)							
8	8.1	Introduction to electrical stimulation	2-7	Online	MS teams	Synchronous	----------	Cameron 2023
	8.2	Electrical current for pain management	2-7	Online	MS teams	Asynchronous	----------	Cameron 2023
	Practical exam 1							
9	**Theory exam week (no labs or lectures)**							
10	10.1	Electrical currents for muscle contraction	2-7	Online	MS teams	Synchronous	----------	Cameron 2023
	10.2	Electrical currents for tissue healing	2-7	Online	MS teams	Asynchronous	----------	Cameron 2023
	10.3	Compression practical	1-7	Face to face	----------	Synchronous	Practical exam	Cameron 2023
11	11.1	Electromyography	2-7	Online	MS teams	Synchronous	----------	Cameron 2023
	11.2	Hydrotherapy 1	2-7	Online	MS teams	Asynchronous	----------	Cameron 2023
	11.3	Electrical currents for pain control - practical	1-7	Face to face	----------	Synchronous	Practical exam	Cameron 2023
12	12.1	Hydrotherapy 2	2-7	Online	MS teams	Synchronous	----------	Cameron 2023
	12.2	Hydrotherapy application	2-7	Online	MS teams	Asynchronous	----------	Cameron 2023
	12.3	Electrical currents for muscle stimulation	1-7	Face to face	----------	Synchronous	Practical exam	Cameron 2023

13	13.1	Alternative modalities	2-7	Online	MS teams	Synchronous	----------	Cameron 2023
	13.2	Alternative modalities	2-7	Online	MS teams	Asynchronous	----------	Cameron 2023
	13.3	Revision	1-7	Face to face	----------	Synchronous	Practical exam	Cameron 2023
14	**Practical exam 2**							

22 Evaluation Methods:

Opportunities to demonstrate achievement of the SLOs are provided through the following assessment methods and requirements:

Evaluation Activity	Mark	Topic(s)	SLOs	Period (Week)	Platform
Midterm theory	30	Weeks 1-8	1-7	Week 9	Face to face
Practical exam 1 (Appendix 1)	10	Weeks 1-7	2-7	Week 8	Face to face
Practical exam 2 (Appendix 3)	20	All topics	1-7	Week 14	Face to face
Final theory	40	All topics	1-7	To be announced by registration	Face to face

23 Course Requirements

Students should have an internet connection, a computer and access to Microsoft Teams and the e-learning system. All theory lectures will be provided online via teams. All practical sessions are face to face.

Dress code for practical sessions:
The dress code is light loose clothing that allows for free movement such as training suits or scrubs. Males and females will be separated during practical application so make sure that you are dressed in a way that allows access to different body parts (shorts and vests).

24 Course Policies:

A- Attendance policies:

- Students are expected to be on time.
- Repeated tardiness or leaving early will not be accepted.
- Students who miss class (or any portion of class) are responsible for the content. All classes will be recorded and uploaded on Microsoft Stream. It is the student's responsibility to review the material of classes they missed.
- Attendance will be taken on every class throughout the semester.
- Absence of more than 15% of all the number of classes (which is equivalent to 3 lectures and 3 labs) requires that the student provides an official excuse to the instructor and the dean.
- If the excuse was accepted the student is required to withdraw from the module.
- If the excuse was rejected the student will fail the module and mark of zero will be assigned according to the regulations of The University of Jordan.

B- Absences from exams and submitting assignments on time:

- The instructor will not do any make-up exams.

- Exceptions for make-up exams and late submission of class assignments will be made on a case-by-case basis for true personal emergencies that are described as accepted by the regulations of UJ (e.g., documented medical, personal, or family emergency).
- It is the student's responsibility to contact the instructor within 24 hours of the original exam time to schedule a make-up exam
- Makeup for the final exam may be arranged according to the regulations of The University of Jordan.

C- Health and safety procedures:

- Students will not be in direct contact with patients during this course.
- Modalities will be used in accordance with safety protocols

D- Honesty policy regarding cheating, plagiarism, misbehavior:

- Students are expected to observe all University guidelines pertaining to academic misconduct.
- Any work submitted by a student for academic credit must be the student's own work. Submission of work taken directly from another source (e.g., book, journal, internet, or another student work) will be considered plagiarism and the student/group will get a zero grade on that homework. In addition, if copying occurred, both the student who copied the work and the student who gave material to be copied (if applicable) will receive a zero for the assignment.
- Students are expected to do work required for homework on their own. Asking other instructors at JU, staff, or other students to assist in or do any part of the assignment for them will negatively affect their grade on that assignment. The course instructor is the person the student needs to talk to if s/he has any difficulties pertaining to an assignment or project and is strongly encouraged to schedule an appointment with the instructor if such difficulties arise during the semester.
- Course materials prepared by the instructor, together with the content of all lectures and review sessions presented by the instructor are the property of the instructor. Video and audio recording of lectures and review sessions without the consent of the instructor is prohibited.
- Any forms of academic misconduct will be handled according to the University of Jordan guidelines.

E- Grading policy:

- Grading for this course will be determined based upon the accumulation of points for variety of assignments and exams.
- All work will be evaluated on completeness, organization, clarity of information, and the integration and application of the material.

F- Available university services that support achievement in the course:

- The University of Jordan provides many services to support social, health, and mental well-being of students in general and students with disabilities in specific. Students are advised to visit the Deanship of Students Affairs to learn more about those services.
- If you are a student with a disability for which you may request accommodations, please notify the instructor as soon as possible (email is acceptable) so the appropriate accommodations for this course can be made. Also, notify the staff of Services for Student with Disabilities (Deanship of Students Affairs) as soon as possible.
- The University of Jordan provides internet access for students who request such services. Please contact the Assistant Dean for Student Affairs for such requests.

Practical session procedures

In each practical section, students are expected to watch videos and interactive PowerPoint presentations for modalities prior to their attendance of the practical lab. Moreover, a practical session plan with tasks

and case studies will be provided as preparation material. All material will be uploaded on the E-learning and MS teams platforms in addition to YouTube for the videos.

25 References:

Required book (s), assigned reading and audio-visuals:

- Cameron, 2023. Physical agents in Rehabilitation: an evidence-based approach to practice, 6th edition. Elsevier
- Articles and teaching materials provided by lecturer through the e-learning website.
- Videos of practical content uploaded on Microsoft Stream, E-learning and YouTube.

Recommended books, materials, and media:

- Knight, K.L. & Draper, D.O., 2013. Therapeutic modalities: The art and sciences. 2nd ed. Baltimore: Lippincott Williams & Wilkins.
- Watson T. (2008). Electrotherapy Evidence-based practice, 12th edition. Churchill Livingstone: Elsevier

26 Additional information:

- This course is highly dependent on the e-learning website and Microsoft Teams so make sure you have access to these platforms and can download the materials and access the online lectures.
- This course builds on the knowledge that you have obtained in the Physics, Chemistry and physiology courses, so make sure that you prepare and revise the necessary information.
- If you require any further information, make sure to e-mail the instructor and arrange for a meeting during the announced office hours.

Name of Course Coordinator: Jennifer Muhaidat Signature: Jennifer Muhaidat Date: 21.2.2024
Head of Curriculum Committee/Department: -Dr. Ibrahim AlTobasi - Signature: Ibrahim AlTobasi ----------
Head of Department: Dr. Ibrahim AlTobasi Signature: Ibrahim AlTobasi
Head of Curriculum Committee/Faculty: ---------- Signature: ----------
Dean: ---------- Signature ----------

Appendix 1 – Practical exam 1

This practical exam will be conducted during week 8 of the course. The aim of this exam is to evaluate the student's ability to apply modalities safely and appropriately. The total grade for this exam is 10% (16 converted to 10%)and the rubric below will be used to for grading.

	Excellent (4 points)	Good (3 points)	Fair (2 point)	Poor (0-1 points)
Questions to the patient • Verifies the absence of contraindications and checks for precautions. • Asks about previous treatment with modalities	Able to perform all the skill in a systemic way with logical rationale independently.	Able to perform most of the skill with 1 or 2 clues without guidance.	Able to perform some of the skill with some clues & guidance.	Not able to demonstrate the Skill
Patient and therapist position • Position patient in a well-supported, comfortable & relaxed position. • Expose the body part to be treated, have patient remove all jewelry from the area.	Able to perform all the skill in a systemic way with logical rationale independently.	Able to perform most of the skill with 1 or 2 clues without guidance.	Able to perform some of the skill with some clues & guidance.	Not able to demonstrate the Skill
Instructions to patient • Instruct the patient not to move the treatment part, not to touch the output cables or the power cord & the machine • Inform the patient about the expected and normal feeling during application	Able to perform all the skill in a systemic way with logical rationale independently.	Able to perform most of the skill with 1 or 2 clues without guidance.	Able to perform some of the skill with some clues & guidance.	Not able to demonstrate the Skill

and the abnormal feeling				
Application method • Select the appropriate parameters • Apply the modality correctly on the patient (adequate placement and spacing) • Periodically ask patient about sensation • Appropriately terminated treatment	Able to perform all the skill in a systemic way with logical rationale independently.	Able to perform most of the skill with 1 or 2 clues without guidance.	Able to perform some of the skill with some clues & guidance.	Not able to demonstrate the Skill

Appendix 2

This practical exam will be conducted during week 14 of the course. The aim of this exam is to evaluate the student's ability to apply modalities safely and appropriately, analyze cases using the ICF model, set functional goals and choose the appropriate modality for the case. Each student will be provided with a hypothetical case scenario. This is exam will be graded out of 20%.

Practical exam 2 grading criteria (20%)

Criteria	Excellent (4)	Good (3)	Fair (2)	Poor (0-1)
Professionalism	The student completely adheres to the dress code and professional look, shows excellent communication with the model and is attentive to the comfort of the model and right body mechanics	The student mostly adheres to the dress code and professional look, shows good communication with the model and is somewhat attentive to the comfort of the model and right body mechanics	The student somewhat adheres to the dress code and professional look, shows fair communication with the model and is barely attentive to the comfort of the model and right body mechanics	The student does not adhere to the dress code and professional look, shows poor communication with the model and is not attentive to the comfort of the model and right body mechanics
ICF analysis	The student analysis the case according to the elements of the ICF model, without mistakes, without missing out any crucial information from the case	The student analysis the case according to the elements of the ICF model with minor mistakes, without missing out any crucial information from the case	The student analysis the case according to the elements of the ICF model with major mistakes, and misses out some crucial information from the case	The student analysis the case according to the elements of the ICF model with major mistakes, and misses out a large amount of crucial information from the case
Functional goal setting and choice of modality	The student sets a functional goal for the case according to the guidelines on functional goal setting without missing out any elements and chooses the best modality for the case	The student sets a functional goal for the case according to the guidelines on functional goal setting missing out/wrongly assigning one element and chooses the best modality for the case	The student sets a functional goal for the case according to the guidelines on functional goal setting missing out/wrongly assigning two elements and chooses a modality that could be used for the case but is not the best	The student sets a functional goal for the case according to the guidelines on functional goal setting missing out/wrongly assigning more than two elements and chooses a modality that is not applicable to the case or contraindicated
Application of modality	The student applies the modality by adhering to best practice in terms of parameters, patient positioning, stabilization and application technique	The student applies the modality with minor mistakes in parameters, patient positioning, stabilization or application technique	The student applies the modality with major mistakes in parameters, patient positioning, stabilization or application technique	The student does not know how to apply the modality
Contraindications and precautions	The student demonstrates excellent understanding of the contraindications and precautions of the chosen modality by listing two of each	The student demonstrates good understanding of the contraindications and precautions of the chosen modality by listing one of each	The student demonstrates fair understanding of the contraindications and precautions of the chosen modality by listing one of either	The student demonstrates poor understanding of the contraindications and precautions of the chosen modality by listing none