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 VISION OF THE DEPARTMENT OF PHYSIOTHERAPY

To be recognized as an outstanding educational program with high quality faculty members, staff and students

THE MISSION OF THE DEPARTMENT OF PHYSIOTHERAPY

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.

Course Syllabus

1	**Course title**	Kinesiology
2	**Course number**	1801262
3	**Credit hours**	2 (2,0)
	Contact hours (theory, practical)	2 (2,0)
4	**Prerequisites/corequisites**	Biomechanics (1801261)
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)**	2023/2024 – Second semester
12	**Other department (s) involved in teaching the course**	None
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**	2/2024

17 Course Coordinator:

Name: Sumayeh Abujaber, PhD	Contact hours: Mondays 11-1
Office number: 334	Phone number: (+962-6)5355000 Ext 23224
Email: s.abujaber@ju.edu.jo	

18 Other instructors:

None

19 Course Description:

This course covers kinesiology of the human musculoskeletal system. It focuses on the interaction between the joints and muscles through the application of the principles of physics and physiology to human movement. This course helps the student to mentally transform a static anatomic image into a dynamic, three-dimensional movement. The course will focus on movement analysis in both normal and pathological conditions.

20 Course aims and outcomes:

A- Aims:

- **To provide physical therapy students with essential knowledge of the structure and function of musculoskeletal system**
- **To provide physical therapy students with knowledge and understanding of the mechanical and physiological interactions between the muscles and joints that produce human body movements**
- **To provide physical therapy students with the principles of movements analysis and apply those for assessing both normal and pathological movement patterns**
- **To provide the physical therapy students with kinesiology foundations essential for understanding/developing rationale evaluation and effective treatment options for patients with musculoskeletal and neuromuscular dysfunctions.**

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. Recognize the common terms and concepts associated with kinesiology study including kinematics, kinetics, arthrokinematic, and osteokinematics		X									
2. Identify various types and shapes of body joints		X									
3. Understand the different actions and roles of body muscles including: agonist, stabilizer, neutralizer…etc		X									
4. Identify the structure and function of the major bones, joints, muscles and soft tissue structures of the lower limb, upper limb and axial skeleton.		X									
5. Understand the mechanical interplay between muscles and joints at different regions of the body		X									
6. Describe factors that contribute to mobility and stability for each joint.		X									
7. Understand the basics of movement analysis of human body activities		X									
8. Seek research papers and assigned topics by using online resources for purpose of in-class discussion			X								
9. Critically appraise the research results in kinesiology field related to movement pattern and treatment options for patients with musculoskeletal and neuromuscular disorders, through in-class discussion and through the required research article summary.					X						
10. Show clinical reasoning skills in linking the effects of a wide range of musculoskeletal and						X					

neurological conditions and aging on the kinetics and kinematics of the human joints											
11. Decide the essential components of movement for different human activities, and exercises						X					
12. Utilize the knowledge from this course in analyzing normal and abnormal human movements						X					
13. Have the knowledge regarding the mechanism and predisposing factors of injury that enables students to advise clients about injury prevention and encouraging a healthy lifestyle								X			
14. Demonstrate effective communication skills with instructor and classmates during the class discussions											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

21Topic Outline and Schedule:

Week	Lecture	Topic	Student Learning Outcome	Synchronous / Asynchronous Lecturing	Evaluation Methods	Resources
1	1.1	Introduction to the course	1	Sync	**Quizzes** **Exams** **assignments**	Neumann, Chapter 1
	1.2	Revision of biomechanical principles	1	Sync		
2	2.1	Joint classification and structure	2	Sync		Neumann, Chapter 2
	2.2	Joint classification and structure	2	Sync		Neumann, Chapter 2
3	3.1	Muscles: Functional roles	3	Sync		Neumann, Chapter 3
	3.2	Muscles: Functional roles	3	Async		Neumann, Chapter 3
4	4.1	The shoulder complex: osteology and arthrology, Sternoclavicular and acromioclavicular	4-14	Sync		Neumann, Chapter 5
	4.2	The shoulder complex: osteology and arthrology Scapulothoracic and glenohumeral joints	4-14	Async		Neumann, Chapter 5
5	5.1	The shoulder complex: arthrology glenohumeral joints	4-14	Sync		Neumann, Chapter 5
	5.2	The shoulder complex: muscle and joint interaction	4-14	Async		Neumann, Chapter 5
6	6.1	The shoulder complex: muscle and joint interaction	4-14	Sync		Neumann, Chapter 5
	6.2	Elbow: arthrology	4-14	Async		Neumann, Chapter 6
7	7.1	Elbow: muscle and joint interaction	4-14	Sync		Neumann, Chapter 6
	7.2	Forearm: arthrology, muscle and joint interaction عيد الفطر تقديرا	4-14	Async		Neumann, Chapter 6

8	8.1	Wrist: arthrology, muscle and joint interaction	4-14	Sync		Neumann, Chapter 7
	8.2	Wrist: arthrology, muscle and joint interaction	4-14	Async		Neumann, Chapter 7
9	9.1	Hip: osteology & arthrology	4-14	Sync		Neumann, Chapter 12
	9.2	Hip: osteokinematics and arthrokinematics	4-14	Async		Neumann, Chapter 12
10	10.1	Hip: muscle and joint interaction	4-14	Sync		Neumann, Chapter 12
	10.2	Hip: muscle and joint interaction 1/5عيدالعمال	4-14	Async		Neumann, Chapter 12
11	11.1	Knee: arthrology, muscle and joint interaction	4-14	Sync		Neumann, Chapter 13
	11.2	Knee: arthrology, muscle and joint interaction	4-14	Async		Neumann, Chapter 13
12	12.1	Knee: arthrology, muscle and joint interaction	4-14	Sync		Neumann, Chapter 13
	12.2	Ankle and foot: arthrology, muscle and joint interaction	4-14	Async		Neumann, Chapter 14
13	13.1	Ankle and foot: arthrology, muscle and joint interaction	4-14	Sync		Neumann, Chapter 14
	13.2	Ankle and foot: arthrology, muscle and joint interaction	4-14	Async		Neumann, Chapter 14
14	14.1	Axial skeleton: arthrology, muscle and joint interaction	4-14	Sync		Neumann, Chapter 9 & 10
	14.2	Axial skeleton: arthrology, muscle and joint interaction 29/5 اخر يوم تدريس	4-14	Async		Neumann, Chapter 9 & 10

*We will have asynchronous learning starts from week 3 to week 14 once a week on Wednesdays. This part includes: Assigned reading, videos, recorded lecture, and articles and others from of material. Materials will be provided for students by the instructor and uploaded on e-learning. Assignments, activities, and quizzes based on these materials will be part of asynchronous learning.

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
Theoretical exams (MCQ) Mid-exam	30	TBA		Week 9	On site
Assignments* and Quizzes**	15	TBA		Throughout the semester	Teams and Moodle
Project	15			Week 11 (9/5/2024)	
Final exam	40	All topics		TBA	On site

Theoretical exams (mid, short, and final) will be MCQ.

*Throughout the semester, as part of the assignments, students will be asked to search for scientific articles related to kinesiology topics including kinematics analysis, involved activated muscles during various functional tasks.

** Throughout the semester, students will have several quizzes, primarily scheduled during the asynchronous learning segments, to verify comprehension and facilitate learning improvement.

Project	
Project:	**15%**
Assignment description:	• This is a group project. Students will be divided into groups of 6 students. • The project is to record a video of walking gait and analyze it using Kinovea software. • Those tasks are: 1. walking gait with self-selected speed 2. walking gait with fast or slow speed for the same person You will use a free software called **Kinovea** used for kinemantic analysis f**or** a gait cycle **for each speed.**

- Download the 0.9.5 version using the following link: **https://www.kinovea.org/download.html**

- You need to videotape t**he task.**

- In Kinovea software, you will upload your recorded video then you will go through several steps to perform the kinematic analysis.
- An introduction for this software will be provided for you in the second week of semester.

- **Using kinevea you need to**
  - Analyze the knee and hip angle of one side (i.e. right or left) throughout the movement.
  - Identify the 8 events by taking the corresponding image of each event, that include the knee and hip angle on the same image. Save these images in a folder.
  - Present the 8 events (i.e. images) together in a way that represents the gait sub-phases (i.e. IC, loading response, mid-stance...etc)
  - Measure the speed, and the step length for each side
  - Plot the analyzed kinematic data in curves
  - comparison between speeds is required by presenting reporting the difference in kinematics between different speeds.

- **Note:** As a part of your work, you are also asked to search and look up how to compute your kinematic variables using the software.

The submission must include the following:

1. The original video footage of the movement was analyzed.

2. Analyzed Video showing the movement analysis conducted using Kinovea software.
   a. Angles readings should be running visible on the video.

3. PPT Slides:
   a. Images representing the events and phases of the movement analysis.
   b. Angle curves/graphs representing the kinematic variables.
   c. Each slide should be properly labeled and organized for clarity.
   d. The PowerPoint presentation should be structured logically, with clear labeling and explanations provided for each component.

	Additionally, ensure that all elements are presented professionally and are easy to understand. 4. Report of Analysis summarizing the findings of the analysis including: a. Explanation of the analysis methodology. b. interpretation of the data, including differences in hip and knee angles between different speeds. c. Discussion of the observed events and phases, with reference to the images and angle curves. d. Conclusion summarizing key findings and insights from the analysis. 5. A record of the meetings a. This is a collaborative project, each member in the group should effectively participate to achieve the goals, therefore, you need to submit a record of the meetings held and the tasks performed by each member of the group. See the record of tasks and meetings/ see below.
Assignment objective:	Students will be able to: 1. Perform a simple kinematic analysis using motion analysis software. 2. Collaborate and effectively communicate within a Team work.
Assignment due date:	9/5/2024 Deduction of 2 marks on each late day No work will be accepted after 12/5/2024
Grade:	15%
Rubric:	Assessment criteria are in appendix along with the meeting record.

23 Course Requirements

Students should have a computer, internet connection, webcam, account on a Microsoft teams

Regularly check the e-learning portal for any announcements, tasks and learning materials.

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 face-to-face classes (which is equivalent to 3 classes) 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
- Late submission of assignment will result in deduction of 2 points for each day of delay
- Makeup for the final exam may be arranged according to the regulations of The University of Jordan.

C- Health and safety procedures:

- This course is offered using blended learning method.

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.

25 References:

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

1. Neumann D.A. 2017. Kinesiology of the musculoskeletal system: foundations for rehabilitation, 3rd ed. Missouri, Mosby Elsevier
2. Articles related to kinesiology topics will be assigned and discussed throughout the semester.

Recommended books, materials, and media:

1. Levangie PK, Norkin CC. Joint Structure and Function. FA Davis, Philadelphia, 6th Edition
2. Students will be assigned recommended articles to be discussed in class
3. Recommended videos and materials will be mentioned through the semester

26 Additional information:

Students with disabilities:

- If you are a student with disability, please contact the course coordinator at the beginning of the term to inform them of any needs or adjustments you might have.
- According to University regulations, some students with disabilities can be allowed additional time during exams. This extra time is granted by an official letter from the University administration. Please discuss with the course coordinator your need for such extra time at the start of the term.

- All information you provide to the course coordinator will be dealt with confidentially.

Course material and copy rights:

- All material prepared by the course coordinator for the purposes of this course are the intellectual property of the course coordinator. It is only intended for the personal use of students for their individual learning.
- Sharing of course content with other people or via different platforms other than those used by the course coordinator is prohibited. The permission of the course coordinator must be sought before sharing of content.

This course strongly builds on previous courses including: anatomy, physiology, and biomechanics. Please make sure to refresh your mind with the positional terms, planed and axes as well as extremities and axial muscles, their origin, insertions and innervation.

This course forms the basis of other physiotherapy core courses, like musculoskeletal physiotherapy I & II. Students will use knowledge and experience obtained through this course to inform their patient management process.

The course material will be uploaded on the e-learning website so make sure you have access to the website. Independent study is essential part of this course. You are required to read the selected chapters from the reference textbook and prepare some materials prior to the lecture.

Name of Course Coordinator: **Dr.Sumayeh Abujaber** Signature: S.A Date: ---24/2/2024--
Head of Curriculum Committee/Department Dr. Ibrahim AlTobassi Signature: Ibrahim AlTobassi
Head of Department**:** Dr. Ibrahim AlTobassi **.** Signature: Ibrahim AlTobassi
Head of Curriculum Committee/Faculty: **……**Signature:
Dean: **……**Signature:

مركز الاعتماد وضمان الجودة
ACCREDITATION & QUALITY ASSURANCE CENTER

School of Rehabilitation Sciences

Department of Physiotherapy

Kinesiology

Record of tasks and meetings

Group number						
Meeting number						
Date of Meeting						
Location/Platform						
Duration						
Group members						
Attended (Yes/No)						
Tasks Assigned						
Accomplished tasks (Yes/no)						

مركز الاعتماد وضمان الجودة
ACCREDITATION & QUALITY ASSURANCE CENTER

School of Rehabilitation Sciences

Department of Physiotherapy

Kinesiology

Project Rubric

Rubric: Assessment criteria for the kinesiology project					
Criteria	**Excellent (4)**	**Good (3)**	**Fair (2)**	**Needs Improvement (1)**	**Poor (0)**
Video Clarity and Lighting	Video is clear with appropriate lighting throughout	Video is mostly clear with adequate lighting	Video is somewhat unclear with inconsistent lighting	Video is unclear with poor lighting	Video is very unclear with inappropriate lighting
Measurement of Kinematic Variables	All required kinematic variables are accurately measured	Most required kinematic variables are accurately measured	Some required kinematic variables are inaccurately measured	Few required kinematic variables are inaccurately measured	Kinematic variables are not measured correctly
Angle Reading Visibility and accuracy	Angles reading is clearly visible and accurate on the analyzed video	Angles reading is somewhat visible and accurate on the analyzed video	Angles reading is unclear or partially visible on the analyzed video	Angles reading is partially visible but not accurate on the analyzed video	Angles reading is not present on the analyzed video
Data Representation	Data is represented in appropriate graphs		Data is not well represented		Data graphs are missing
Report on Differences in Hip and Knee Angles	Clear and thorough report on differences in hip and knee angles between different speeds	Report on differences in hip and knee angles between different speeds is adequate	Report on differences in hip and knee angles between different speeds lacks detail	Report on differences in hip and knee angles between different speeds is incomplete	Report on differences in hip and knee angles between different speeds is missing
PPT Presentation: Analyzed Events	Analyzed events are correctly selected and presented as images	Analyzed events are somewhat correctly selected and		Analyzed events are incorrectly selected and presented as images	Analyzed events are not presented as images

		presented as images			
PPT Presentation: Definition of Sub-Phases	Sub-phases are clearly defined and labeled accurately	Sub-phases are defined but may lack clarity or accuracy	Sub-phases are mentioned but not clearly defined or labeled	Sub-phases are missing or incorrectly defined	Sub-phases are completely missing
PPT Presentation: Organization and Structure	Information and images are logically organized with a clear flow	Information and images are mostly organized but may lack a cohesive structure	Information and images are somewhat organized but may be difficult to follow	Information and images are disorganized and lacks coherence	Information and images are completely disorganized and chaotic