



Form: Course Syllabus	Form Number	EXC-01-02-02A
	Issue Number and Date	2/3/24/2022/2963 05/12/2022
	Number and Date of Revision or Modification	
	Deans Council Approval Decision Number	2/3/24/2023
	The Date of the Deans Council Approval Decision	23/01/2023
	Number of Pages	06

1.	Course Title	Above knee Orthoses
2.	Course Number	1833322
3.	Credit Hours (Theory, Practical)	3 (Theory)
	Contact Hours (Theory, Practical)	3 hours/week
4.	Prerequisites/Corequisites	1.1833221 / Below-Knee Orthoses 2.1833323 / Above-Knee Prosthetics
5.	Program Title	Bachelor's in Orthotics and Prosthetics
6.	Program Code	1803
7.	School/Center	School of Rehabilitation Sciences
8.	Academic Department	Orthotics and Prosthetics
9.	Course Level	Undergraduate
10.	Year of Study/Semester	3 rd year, Second semester
11.	Program Degree	BSc in Orthotics and Prosthetics
12.	Other Departments involved in Teaching the course	None
13.	Main Teaching Instruction language	English
14.	Learning Types	<input type="checkbox"/> Face to Face <input checked="" type="checkbox"/> Blended <input type="checkbox"/> Fully Online
15.	Online Platform(s)	<input checked="" type="checkbox"/> Moodle <input checked="" type="checkbox"/> Microsoft Teams
16.	Issuing Date	December 27, 2024
17.	Revision Date	January 5, 2025



18. Course Coordinator

Name: Dr. Amneh Alshawabka

Contact hours: Wednesdays (9:00am – 11:00am)

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19. Other Instructors

Name:

Office number:

20. Course Description

This course examines the various disorders that can be managed, either partially or fully, through above-knee orthoses (including KAFO, knee orthoses, hip orthoses, etc.). Students will learn how to assess patients with these conditions and select the most appropriate orthotic interventions. The course highlights the biomechanical principles involved in orthotic treatment and emphasizes their integration into clinical practice. Special focus will be placed on knee orthoses. Throughout the course, students will strengthen their critical thinking, evidence-based practice, and decision-making skills



21. Program Learning Outcomes

Program Learning Outcomes Descriptors (PLOD)

PLO	National Qualification Framework Descriptors*		
	Knowledge (A)	Skills (B)	Competency (C)
1. Develop and integrate knowledge from foundational courses; including basic sciences, medical sciences, and research methods to reflect on rehabilitation sciences practice.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Demonstrate comprehensive knowledge and practical application of orthotics and prosthetics principles, including biomechanics, material science, device design, clinical application, emerging technologies, and evidence-based practices to support patient care and innovation	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Apply orthotic and prosthetic skills and techniques in accordance with professional standards, integrating the effective use of equipment, materials, components, and emerging technologies to design and fabricate devices.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4. Perform comprehensive patient evaluations and develop individualized, evidence-based treatment plans, considering personal and environmental factors across diverse clinical settings.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
5. Compose effective oral and written communication for clinical and professional purposes including the use of information technology resources	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
6. Operate within interprofessional teams of healthcare providers, clients, communities, and organizations in traditional and emerging practices and illustrate the qualities of a lifelong learner	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
7. Apply leadership and management skills to advance Jordan and the global community scientifically, socially, and technologically in rehabilitation sciences.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
8. Generate scientific research that advances rehabilitation practices locally and globally.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
9. Employ critical thinking, clinical reasoning, and ethical principles to assess complex clinical situations, formulate informed decisions, and deliver patient-centered orthotic and prosthetic interventions.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
10. Exhibit autonomy in clinical decision-making while identifying and overcoming the challenges in delivering patient-centered orthotic and prosthetic interventions, including managing complex cases and addressing resource limitations.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

*Choose only one descriptor for each PLO: knowledge, skills, or competencies.



22. Course Learning Outcomes: By the end of this course, the student is expected to achieve the following Learning outcomes:

CLO 1. Explain the biomechanical principles, material properties, and design concepts underlying the fabrication and clinical application of above-knee orthoses, including knee-ankle-foot orthoses (KAFOs), knee orthoses (KOs), and hip orthoses (HOs). **(knowledge/ Understand)**

CLO 2. Interpret and apply theoretical knowledge to identify the key biomechanical and material considerations required for effective above-knee orthotic interventions. **(Skills/ analyze)**

CLO 3. Evaluate normal and pathological gait patterns to identify deviations that can be managed with above-knee orthoses and formulate appropriate orthotic prescriptions. **(Competencies)**

CLO 4. Integrate biomechanical force systems into the design process, ensuring optimal force application at the device-tissue interface to achieve clinical objectives. **(Competencies)**

CLO 5. Assess and compare orthotic components and materials, critically considering their impact on patient safety, comfort, and functional performance. **(Competencies)**

Matrix of Course Learning Outcomes according to National Qualification Framework Descriptors

CLO Number	Knowledge		Skills				Competencies
	Remember	Understand	Apply	Analyze	Evaluate	Create	
1		X					
2				X			
3							X
4							X
5							X

23. Matrix linking Course Learning Outcomes (CLOs) with Program Learning Outcomes (PLOs)

CLO \ PLO*	1	2	3	4	5	6	7	8	9	10	**Descriptors		
											A	B	C
1.		X									X		
2.			X									X	
3.				X									X
4.								X					X
5.									X				X

*Map each Course Learning Outcome to ONLY one Program Learning Outcome based on the Courses Matrix

** Descriptors are assigned based on (PLO) that was chosen and specified in the program learning outcomes matrix in item (21)



24. Topic Outline and Schedule:

Week	Lecture	Topic	ILO/s Linked to the Topic	Learning Types (Face to Face/ Blended/ Fully Online)	Platform Used	Synchronous / Asynchronous Lecturing	Evaluation Methods	Learning Resources
1	1.1	Syllabus and General introduction	-	Face to face	Moodle	Sync	-	-
	1.2	Introduction, History of “conventional” Splinting & course syllabus	1	Face to face	Moodle	Sync	Exams	Refs.
	1.3	Knee , Ankle & foot complex gait deviations (revision)	1	Face to face	Moodle	Async	Assignment	
2	2.1	KAFO types: Conventional KAFO design & components	1,2	Face to face	Moodle	Sync	Exams	
	2.2	Single upright KAFO Applications	1,2	Face to face	Moodle	Sync	Exams	
	2.3	Kinesiology of the knee joint	1-5	Face to face	Moodle	Async	Assignment	
3	3.1	KAFO types: Conventional KAFO design & components: thigh & knee components	1-5	Face to face	Moodle	Sync	Exams	
	3.2	Hybrid & plastic KAFO design	1-5	Face to face	Moodle	Sync	Exams	
	3.3	Prescription Exercise: linking assessment to prescription	1	Face to face	Moodle	Async	Assignment	
4	4.1	KAFO design: Biomechanics, Orthotic Design and Prescription Choices	1-3	Face to face	Moodle	Sync	Exams	
	4.2	Orthotic Knee Joint types part 1	1-5	Face to face	Moodle	Sync	Exams	
	4.3	Normal alignment of knee joint & orthotic knee joint	1-5	Face to face	Moodle	Async	Assignment	
5	5.1	Orthotic Knee Joint types part 2	1-5	Face to face	Moodle	Sync	Exams	
	5.2	Orthotic Knee Joint types part 3	1-5	Face to face	Moodle	Sync	Exams	
	5.3	Technical notes: Casting KAFO	1-5	Face to face	Moodle	Async	Assignment	
6	6.1	Fitting, delivery & wearing schedule for KAFO	1-5	Face to face	Moodle	Sync	Exams	
	6.2	Stance control KAFO	1-5	Face to face	Moodle	Sync	Exams	
	6.3	SCKAFO types	1-5	Face to face	Moodle	Async	Assignment	



7	7.1	Integration of AKO with Assistive Technology: C-Brace and Microprocessor-Controlled Joints	1-5	Face to face	Moodle	Sync	Exams	
	7.2	Midterm Exam	1-5	Face to face	-	Sync	-	
	7.3	Design Considerations for Pediatric vs. Adult AKO	1-5	Face to face	Moodle	Async	Assignment	
8	8.1	Knee orthoses	1-5	Face to face	Moodle	Sync	Exams	
	8.2	Technical notes: knee joint congruency	1-5	Face to face	Moodle	Sync	Exams	
	8.3	Hip orthoses	1-5	Face to face	Moodle	Async	Assignment	
9	9.1	HKAFO	1-5	Face to face	Moodle	Sync	Exams	
	9.2	Standing frames	1-5	Face to face	Moodle	Sync	Exams	
	9.3	Gait Analysis with different types of KAFO	1-5	Face to face	Moodle	Async	Assignment	
10	10.1	RGO	1-5	Face to face	Moodle	Sync	Exams	
	10.2	Advanced Orthotic Designs for Complex Cases	1-5	Face to face	Moodle	Sync	Exams	
	10.3	Managing Gait Deviation Patterns with AKO	1-5	Face to face	Moodle	Async	Assignment	
11	11.1	Orthotic management of common pathology: poliomyelitis	1-5	Face to face	Moodle	Sync	Exams	
	11.2	Orthotic management of common pathology: SCI part1	1-5	Face to face	Moodle	Sync	Exams	
	11.3	Clinical Decision-Making in Above Knee Orthotics/ Problem based learning 1	1-5	Face to face	Moodle	Async	Assignment	
12	12.1	Orthotic management of common pathology: SCI part2	1-5	Face to face	Moodle	Sync	Exams	
	12.2	Orthotic management of common pathology: DDH	1-5	Face to face	Moodle	Sync	Exams	
	12.3	Clinical Decision-Making in Above Knee Orthotics/ Problem based learning 2	1-5	Face to face	Moodle	Async	Assignment	
13	13.1	Orthotic management of common pathology: Legg-Perthes' disease	1-5	Face to face	Moodle	Sync	Supervisor evaluation/ Rubric	
	13.2	Orthotic management of common pathology: Knee OA	1-5	Face to face	Moodle	Sync	Supervisor evaluation/ Rubric	
	13.3	Clinical Decision-Making in Above Knee Orthotics/ Problem based learning 3	1-5	Face to face	Moodle	Async	Assignment	
14	14.1	Maintenance and Repairs of Above-Knee Orthoses	1-5	Face to face	Moodle	Sync	Supervisor evaluation/ Rubric	
	14.2	Complications Associated with Long-Term AKO Use & Evaluation of AKO Fit and Comfort: Subjective and Objective Metrics	1-5	Face to face	Moodle	Sync	Supervisor evaluation/ Rubric	



	14. 3	Application of 3D Printing in AKO Fabrication	1-5	Face to face	Moodle	Async	Assignment	
15		Final Exam	1-5	Face to face	-	Sync	-	

25. Evaluation Methods:

Course Evaluation Plan							
Evaluation Activity	Mark*	Course Learning Outcomes					
		1	2	3	4	5	
First Exam (mid exam)	30	x	x	x	x	x	
Second Exam							
Final Exam	40	x	x	x	x	x	
Classwork							
Evaluation of Semester work	Projects\Reports	10	x	x	x	x	x
	Research\Worksheets						
	Fieldwork visits						
	Clinical and practical performance						
	Portfolio						
	Presentations						
	Simulation/Modeling						
	Discussion						
	Quizzes	10	x	x	x	x	x
	Exercises	10	x	x	x	x	x
	Interviews						
	Conferences						
Any other evaluation activities approved by the faculty committee							
Total Marks (100%)							

* According to the instructions for granting a bachelor's degree

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**According to the instructions of organizing semester work, tests, examinations, and grades for the bachelor's degree.



Mid-term exam descriptions table*

CLO no.	CLO Weight	Total no. of questions	Total exam mark	No. of questions per CLO	No. of questions/ cognitive level					
					Remember 30%	Understanding 20%	Applying 20%	Analyzing 10%	Evaluating 10%	Creating 10%
1		10	30							
2		10	30							
3		10	30							
4		0	30							
5		0	30							

* A table of descriptions is added in the case of courses that require a second exam.

Final exam descriptions table

CLO no.	CLO Weight	Total no. of questions	Total exam mark	No. of questions per CLO	No. of questions/ cognitive level					
					Remember 30%	Understanding 20%	Applying 20%	Analyzing 10%	Evaluating 10%	Creating 10%
1		10	50							
4		10	50							
3		10	50							
4		15	50							
5		5	50							

26. Course Requirements

Students should have internet connection, a computer and access to e-learning system. All lectures are face to face.

27. Course Policy

A- Attendance policies:

- Attendance will be taken periodically throughout the semester.
- Students are expected to attend and actively participate in all classes.
- Students are expected to be on time.
- When the student is unable to attend class, it is a courtesy to notify the instructor in advance using either e-mail.
- Repeated tardiness or leaving early will not be accepted.
- Students who miss class (or any portion of class) are responsible for the content. Any student who misses a class has the responsibility for obtaining copies of notes, handouts, assignments,



etc. from class members who were present. If additional assistance is still necessary, an appointment should be scheduled with the instructor. Class time is not to be used to go over material with students who missed class(es).

- An absence of more than 15% of all the number of classes, which is equivalent of 7 lectures, 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, and mark of zero will be assigned as suggested by the laws and regulations of the University of Jordan.

B- Absences from exams and handing in 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).
- Make-up exams will be arranged if justifications for missing the exam satisfy the above. It is the student's responsibility to contact the instructor within 24 hours of the original exam to schedule a make-up session. A make-up exam should be taken within a week from the original exam date, unless the student can provide documentation that makes meeting that deadline impossible; otherwise, the recorded score for that exam for the student will be a zero.
- Late assignments will not be accepted and submission of assignments (due to unjustified absence from class) by other students

C- Health and safety procedures:

- Students will not be in direct contact with patients during this course.
- Students are not expected to use any heavy tools or equipment that might impose health and safety issues during this course.
- Students should work safely, including being able to select appropriate hazard control and risk management, reduction or elimination techniques in a safe manner in accordance with health and safety legislation.
- Students should understand the importance of and be able to maintain confidentiality.
- Students should understand the importance of and be able to obtain informed consent.
- Students should know the limits of their practice and when to seek advice or refer to another professional

D- Honesty policy regarding cheating, plagiarism, and 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, clinic forms, or another student work) will be considered plagiarism and the student/group will get a zero grade for that work if part of an assignment. 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 assignments on their own. Asking other instructors at the JU clinic or the 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 Faculty 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 staff of Services for Student with Disabilities (Faculty of Students Affairs) as soon as possible. Please also contact the instructor as soon as possible (email is acceptable) so the appropriate accommodations for this course can be made.



28. References

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

1. AAOS Atlas of Orthoses and Assistive Devices. Bertram Goldberg, John D. Hsu. 4th edition.
2. Lower Limb Orthotics; Orthotist supplement. New York University.
3. Lower Limb Orthotics; New York University.
4. Clinical anatomy for medical students, (7th Ed.), Snell Richard S.
5. Biomechanics: Principles and Application, Furey, Michael J. "Joint lubrication." (2000).
6. Biomechanics in Clinic and Research. Jim Richards.
7. Orthotics: A comprehensive Clinical Approach. Joan E. Edelstein, 1st edition, SLACK 2002.
8. Gait analysis: normal and pathological function. New Jersey: SLACK. Jacquelin Perry, M., 2010.
9. Orthotics and Prosthetics in Rehabilitation, Michelle M. Lusardi, Caroline C. Nielsen, and Blaine N. Pelland
10. Prosthetics and Orthotics: Lower Limb and Spine, Ron Seymour.

- Recommended books, materials, and media:

- Students should have internet connection, a computer and access to Microsoft Teams and the Moodle (e-learning system). All theory lectures will be given face to face and will be provided at the dashboard of the e-learning system.
- Articles and teaching materials provided by lecturer through the e-learning website
- Videos of practical content uploaded on Microsoft Stream, E-learning and YouTube

29. Additional Information

- This course builds on the knowledge that you have obtained in the Physics, anatomy, Orthopedics, Gait analysis and biomechanics so make sure that you prepare and revise the necessary information.
- This course is highly dependent on the e-learning website so make sure you have access to this platform and you can download the materials and access the lectures.
- 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 the Instructor or the Course Coordinator: Dr. Amneh Alshawabka	Signature: <i>Amneh Alshawabka</i>	Date: October 5, 2025
Name of the Head of Quality Assurance Committee/ Department Dr. Mahmoud Fataftah	Signature: <i>MF</i>	Date:
Name of the Head of Department Dr. Mahmoud Fataftah	Signature: <i>MF</i>	Date:
Name of the Head of Quality Assurance Committee/ School or Center Dr. Lara Khliafat	Signature:LK.....	Date: 2/11/2025
Name of the Dean or the Director Dr. Lara Khliafat	Signature:LK.....	Date: 2/11/2025



Rubric for Evaluating a Report

Category	Criteria	Excellent (4)	Good (3)	Fair (2)	Poor (1)
Content and Analysis	Depth of content, relevance, and critical analysis of the topic	Comprehensive, insightful, and highly relevant; excellent critical analysis	Relevant and mostly well-analyzed	Some relevance, with limited depth	Irrelevant or superficial analysis
Structure and Organization	Logical flow, coherence, and adherence to the required format	Exceptionally well-organized, follows format perfectly	Generally well-organized, minor formatting issues	Adequately structured, but lacks coherence	Poor organization, confusing or missing structure
Research and Evidence	Use of credible sources, integration of evidence, and citation accuracy	Excellent use of credible sources, seamlessly integrated, perfect citations	Good use of sources, minor citation issues	Limited sources, inconsistently cited	Minimal or no use of credible sources, citations missing
Clarity and Presentation	Writing style, grammar, and clarity	Clear, concise, and error-free writing	Mostly clear, with minor errors	Some clarity, but frequent errors	Unclear or poorly written, significant errors
Originality and Creativity	Innovation and originality in ideas or approach	Highly original and creative; fresh perspective	Some originality or creativity	Limited originality, derivative ideas	No originality, completely derivative
Conclusions and Recommendations	Quality and practicality of conclusions and recommendations	Conclusions are well-supported and insightful; actionable recommendations	Logical conclusions, with some practicality	Vague conclusions, limited recommendations	Weak or unsupported conclusions
Engagement with Objectives	Alignment with the report's purpose or objectives	Fully addresses all objectives or requirements	Addresses most objectives well	Partially addresses objectives	Fails to address objectives