



Ministry of Higher Education and Scientific Research -  
Iraq  
Al-Mustaqbal University  
College of Engineering  
Department of Prosthetics and Orthotics Engineering



## MODULE DESCRIPTOR FORM

### نموذج وصف المادة الدراسية

Module Information			
معلومات المادة الدراسية			
Module Title	الأطراف الصناعية		Module Delivery
Module Type	CORE		<input checked="" type="checkbox"/> Theory <input type="checkbox"/> Lecture <input type="checkbox"/> Lab <input type="checkbox"/> Tutorial <input checked="" type="checkbox"/> Practical <input type="checkbox"/> Seminar
Module Code	UOMU0103041		
ECTS Credits	5		
SWL (hr/sem)	125		
Module Level	2	Semester of Delivery	
Administering Department	UOMU0103	College	UOMU01
Module Leader	Muntadher Saleh Mahdi	e-mail	Muntadher.saleh.mahdi@uomus.edu.iq
Module Leader's Acad. Title	Asst. Lect.	Module Leader's Qualification	MSc.
Module Tutor			
Peer Reviewer Name		e-mail	
Review Committee Approval	01/06/2023	Version Number	1.0

## Relation With Other Modules

العلاقة مع المواد الدراسية الأخرى

<b>Prerequisite module</b>	Biomechanics and rehabilitation	<b>Semester</b>	4,5, 6
<b>Co-requisites module</b>		<b>Semester</b>	

## Module Aims, Learning Outcomes and Indicative Contents

أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية

<p><b>Module Aims</b> أهداف المادة الدراسية</p>	<ol style="list-style-type: none"> <li>1. Describe the interaction among alignment stability, mechanical stability, and muscular stability on the control and function of the prosthetic knee in standing, during gait, and on uneven surfaces.</li> <li>2. Describe the key influences that bench, static, and dynamic alignment have on fit and function of a transfemoral prosthesis. 5. Identify the nine items that will cause variations in socket fit and the quality of transfemoral gait.</li> <li>3. Recognize and describe the intraindividual and extra individual causes of the most common transfemoral gait deviations, and suggest appropriate corrective action.</li> <li>4. Discuss the incidence and prevalence of high-level and bilateral lower-limb amputations.</li> <li>5. Describe the etiology of high-level and bilateral lower limb amputations.</li> <li>6. Identify the two primary biomechanical limitations of hip disarticulation and higher-level prostheses.</li> <li>7. Estimate the relative energy cost of ambulation with high level or bilateral limb loss. Describe the prosthetic and rehabilitation needs for persons with high-level and bilateral lower-limb amputation.</li> </ol>
<p><b>Module Learning Outcomes</b> مخرجات التعلم للمادة الدراسية</p>	<ol style="list-style-type: none"> <li>1. Discuss the prosthetic options available for individuals with upper-extremity amputation.</li> <li>2. Explain the importance of considering the length of the residual limb in upper-extremity prosthetic fitting.</li> <li>3. Identify and describe the components involved in upper-extremity prosthetics.</li> <li>4. Understand the common causes and etiology of upper-extremity amputation.</li> <li>5. Evaluate and compare different prosthetic options for individuals with upper-extremity amputation.</li> <li>6. Describe the types and functions of terminal devices used in conventional prostheses.</li> <li>7. Understand the principles and features of externally powered systems for upper-extremity prosthetics.</li> <li>8. Identify and analyze the characteristics and applications of electric terminal devices.</li> </ol>

	<ol style="list-style-type: none"> <li>9. Explain the concept and benefits of hybrid prostheses for upper-extremity amputees.</li> <li>10. Discuss considerations and prosthetic options specific to knee disarticulation amputations.</li> <li>11. Compare and select appropriate prosthetic knee units for individuals with different types of lower-limb amputation.</li> <li>12. Evaluate and choose a suitable prosthetic foot based on individual needs and gait characteristics in transfemoral prosthetics.</li> <li>13. Understand the importance of prosthetic alignment and its impact on the quality of transfemoral prosthetic gait.</li> <li>14. Identify and analyze prosthetic options for individuals with high-level and bilateral lower-limb amputations.</li> <li>15. Describe the etiology, biomechanics, and component selection considerations for high-level lower-limb loss.</li> </ol>
<p><b>Indicative Contents</b> المحتويات الإرشادية</p>	
<p><b>Learning and Teaching Strategies</b> استراتيجيات التعلم والتعليم</p>	
<p><b>Strategies</b></p>	<p>By providing a supportive and interactive learning environment, students will have the opportunity to apply theoretical concepts to real-world scenarios, enhancing their comprehension and practical skills. The module will encourage students to analyze and evaluate information, participate in discussions, and collaborate with peers to deepen their understanding of prosthetics and orthotics.</p> <p>The teaching methods employed will include lectures, group discussions, case studies, and practical demonstrations. Additionally, technological tools and resources may be utilized to enhance the learning experience, such as multimedia presentations, virtual simulations, and online resources.</p> <p>Formative assessments and feedback will be integral components of the module, allowing students to continuously monitor their progress and identify areas for improvement. This approach will empower students to take an active role in their learning, fostering a sense of ownership and motivation.</p>

## Student Workload (SWL)

الحمل الدراسي للطالب

<b>Structured SWL (h/sem)</b> الحمل الدراسي المنتظم للطالب خلال الفصل	78	<b>Structured SWL (h/w)</b> الحمل الدراسي المنتظم للطالب أسبوعياً	5
<b>Unstructured SWL (h/sem)</b> الحمل الدراسي غير المنتظم للطالب خلال الفصل	47	<b>Unstructured SWL (h/w)</b> الحمل الدراسي غير المنتظم للطالب أسبوعياً	3
<b>Total SWL (h/sem)</b> الحمل الدراسي الكلي للطالب خلال الفصل	125		

## Module Evaluation

تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
<b>Formative assessment</b>	<b>Quizzes</b>	2	10% (10)	5, 10	LO #1, 2, 10 and 11
	<b>Assignments</b>	2	10% (10)	2, 12	LO # 3, 4, 6 and 7
	<b>Projects / Lab.</b>	1	10% (10)	13	LO # 5, 8 and 10
	<b>Report</b>	2hr.	10% (10)	7	LO # 1-7
<b>Summative assessment</b>	<b>Midterm Exam</b>	3hr	60% (60)	16	All
	<b>Final Exam</b>	2	10% (10)	5, 10	LO #1, 2, 10 and 11
<b>Total assessment</b>			100% (100 Marks)		

## Delivery Plan (Weekly Syllabus)

المنهاج الأسبوعي النظري

	Material Covered
<b>Week 1</b>	Prosthetic Options for Persons with Upper-Extremity Amputation
<b>Week 2</b>	Length Of the Residual Limb
<b>Week 3</b>	Upper-Extremity Prosthetic Component
<b>Week 4</b>	Etiology Of Upper-Extremity Amputation
<b>Week 5</b>	Prosthetic Options
<b>Week 6</b>	Terminal Devices for Conventional Prostheses
<b>Week 7</b>	Externally Powered Systems
<b>Week 8</b>	Electric Terminal Devices
<b>Week 9</b>	Hybrid Prostheses
<b>Week 10</b>	Knee Disarticulation Considerations, Prosthetic Systems, Prosthetic Knee Units

<b>Week 11</b>	Choosing A Prosthetic Foot, Gait Characteristics in Transfemoral Prosthetics
<b>Week 12</b>	Prosthetic Alignment, Quality of Transfemoral Prosthetic Gait, Prosthetic Options for Persons with High-Level and Bilateral Lower-Limb Amputation
<b>Week 13</b>	High-Level Lower-Limb Loss, Etiology, Biomechanics, Component Selection, Bilateral Lower-Limb Loss, Component Selection
<b>Week 14</b>	Bilateral Transtibial Amputations, Bilateral Transfemoral Amputation, Rehabilitation for Children with Limb Deficiencies
<b>Week 15</b>	Knee Disarticulation Considerations, Prosthetic Systems, Prosthetic Knee Units

### Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	Available in the Library?
<b>Required Texts</b>	Short Textbook of Prosthetics and Orthotics, R hinnathurai, 2010	No
<b>Recommended Texts</b>	essentials of Prosthetics and Orthotics with MCQs and Disability Assessment Guidelines	No
<b>Websites</b>		

## APPENDIX:

GRADING SCHEME				
مخطط الدرجات				
Group	Grade	التقدير	Marks (%)	Definition
<b>Success Group</b> (50 - 100)	A - Excellent	امتياز	90 – 100	Outstanding Performance
	B - Very Good	جيد جدا	80 – 89	Above average with some errors
	C –Good	جيد	70 – 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 – 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 – 59	Work meets minimum criteria
<b>Fail Group</b> (0 – 49)	FX – Fail	مقبول بقرار	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required
Note:				
<p><b>Note:</b> Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.</p>				



ملاحظة: هذا النموذج تم وضعه وتقديمه من قبل مديرية ضمان الجودة في وزارة التعليم العالي والبحث العلمي