Form: Study Plan- Bachelors	Form Number	EXC-01-03-02A
	Issue Number and Date	2963/2022/24/3/2 5/12/2022
	Number and Date of Revision or Modification	2/(10/12/2023)
	Deans Council Approval Decision Number	50/2023
	The Date of the Deans Council Approval Decision	26/12/2023
	Number of Pages	53

1.	School	**Rehabilitation sciences**
2.	Department	**Prosthetics and Orthotics**
3.	Program title (Arabic)	**بكالوريوس في الاطراف الاصطناعية والاجهزة المساعدة**
4.	Program title (English)	**BSc in prosthetics and orthotics**

5. Components of Curriculum:
The curriculum for the bachelor's degree in prosthetics and orthotics consists of (144) credit hours distributed as follows

Number	Type of requirement	Type of learning	credit hours
First	University requirements	Online and blended	**27**
Second	School requirements	Face-to-face, blended and online	28
Third	Specialty requirements	Face-to-face, blended and online	89
Fourth	-	-	
Total			**144**

6. Numbering System:

A- Department number

Department	**Number**
Physiotherapy	1
Occupational therapy	2
Prosthetics and Orthotics	**3**
Hearing and speech therapy	4

B- Course number

Domain title	**Domain number**	**Domain title**	**Domain number**
Functional anatomy	0	Orthopedic	5
Upper extremity	1	Clinical placement	6
Lower extremity	2	Projects and special topics	7
Spinal	3	Others	8
practicum	4		

C- Course number consists of 7 digits

Serial number		Level	Department		School	
0	**3**		**0**	**3**	**1**	**8**

First: University Requirements:

Preparation Program Requirements All students admitted to the university must apply for a degree examination in Arabic and English and the computer is prepared or approved by the university to determine their level. Based on the results of the examinations, either the student will study one or more of the requirements of the preparatory program					
(0 - 15 Credit Hours)					
No.	**Course Title**	**Course No.**	**Credit Hours**	**Prerequisites**	**Notes**
1	**Community service**	**0700150**	**0**		
2	**Computer skills placement test**	**1902098**	**0**		
3	**Basics of computing**	**309099**	**3**	**1902098**	
4	**Arabic Language (level 1)**	**3201001**	**3**	**3211098**	
5	**Arabic Language (level 2)**	**3201002**	**3**	**3201001**	
6	**English language (level 1)**	**3202001**	**3**	**3212098**	
7	**English language (level 2)**	**3202002**	**3**	**3202001**	
8	**Arabic placement test**	**3211098**	**0**		
9	**English placement test**	**3212098**	**0**		

Compulsory Requirements					
(18 Credit Hours)					
No.	**Course Title**	**Course No.**	**Credit Hours**	**Prerequisites**	**Notes**
1	**Military sciences**	**2220100**	**3**		
2	**English language (level 3)**	**3202003**	**3**	**3202002**	
3	**National culture**	**3400100**	**3**		
4	**Ethics and Social Responsibility**	**3420100**	**3**		
5	**Entrepreneurship, Innovation, and Leadership**	**3420101**	**3**		
6	**Communication and Soft Skills (in English language)**	**3420103**	**3**	**3202003 or 3202103**	

Electives (9 Credit Hours)					
Elective courses: (9) credit hours to be chosen from the first, second and third groups mentioned below. The student has to choose one course from each of the groups.					
(First Group)					
No.	**Course Title**	**Course No.**	**Credit Hours**	**Prerequisites**	**Notes**
1	**Environmental culture and development**	**0359102**	**3**		**blended**
2	**Islamic culture**	**0400102**	**3**		**blended**
3	**Legal culture**	**1000102**	**3**		**Face to face**
4	**Physical fitness culture**	**1100100**	**3**		**blended**
5	**Introduction to philosophy and critical thinking**	**3400103**	**3**		**online**
6	**Tourism culture**	**3400111**	**3**		**blended**
(Second Group) (3 credits hour)					
No.	**Course Title**	**Course No.**	**Credit Hours**	**Prerequisites**	**Notes**
1	**Islam and contemporary issues**	**0400101**	**3**		**blended**
2	**Social media**	**309101**	**3**		**blended**
3	**Appreciation of arts**	**2000100**	**3**		**blended**
4	**Foreign language**	**2200103**	**3**		**blended**
5	**Arab-Islamic civilization**	**2300101**	**3**		**blended**
6	**Jordan: history and civilization**	**2300102**	**3**		**blended**
7	**Special subject**	**3400106**	**3**		**blended**
8	**Great books**	**3400107**	**3**		**blended**
9	**Jerusalem**	**3400108**	**3**		**blended**
Electives (3) credits hour					
(Third Group)					
No.	**Course Title**	**Course No.**	**Credit Hours**	**Prerequisites**	**Notes**
1	**Specialized Topics in Digital Skills**	**309104**	**3**	**309103**	

Second: School courses: distributed as follows:

A. Obligatory school courses: (28) credit hours
B. Elective school courses: (0) credit hours

A. Obligatory school courses: (28) credit hours:

Course Number	Course Title	Type of learning	Contact Hours		Credit Hours	Pre-requisite
			Theoretical	Practical		
0304101	**General biology I**	Face to face	3	-	3	Concurrent with: 1. 0329103 / General Physics for Life Sciences 2.1803170 / Introduction to Prosthetics and Orthotics
1802131	**Psychology for Rehabilitation students**	Online	2		2	1803170 / Introduction to Prosthetics and Orthotics
0329103	**General physics for life sciences**	Face to face	3	-	3	Concurrent with: 1.0304101 / General Biology I 2.0319101 / Calculus I
0501107	**Physiology I**	Face to face	2	-	2	1 ./ 0304101 .General Biology I 2. 0339101 / General Chemistry I
0502107	**Anatomy of the head, neck and thorax**	Blended	2	2	3	1. 0532108 / Anatomy of Extremities and Trunk 2. 0501107 / Physiology I
1801381	**Biostatistics for rehabilitation students**	Face to face	2	-	2	1804340\ Research methods in rehabilitation sciences
1804340	**Research methods in rehabilitation sciences**	Online	3	-	3	1802131/ Psychology for Rehabilitation Students
1802447	**Management & Leadership in rehabilitation sciences**	Blended	3	-	3	1833472\ Assistive technology

309103	**Modern digital skills**	Blended	3	-	3	-
1801103	**Principles and ethics of rehabilitation**	Online	2	-	2	1803170 / Introduction to Prosthetics and Orthotics(1)
1833472	**Assistive technology**	Face to face	2	-	2	1801381 / Biostatistics for Rehabilitation Students

B. Elective school courses: (0) credit hours:

Course Number	**Course Title**	**Contact Hours**		**Credit Hours**	**Pre-requisite**
		Theoretical	**Practical**		

Third: Specialty courses: (89) credit hours distributed as follows:

A. Obligatory specialty courses: (74) credit hours
B. Elective specialty courses: (15) credit hours

A. Obligatory specialty courses: (74) credit hours:

Course Number	**Course Title**	**Type of learning**	**Contact Hours**		**Credit Hours**	**Pre-requisite**
			Theoretical	**Practical**		
0532108	**Anatomy of Extremities and Trunk**	Blended	2	2	3	1. 10304101 / General Biology "1" 2.0339101 / General Chemistry (1)
0319101	**Calculus I**	Face to face	3		3	Concurrent with: 1.0339101 / General Chemistry(1) 2.1803170 / Introduction to Prosthetics and Orthoses
0339101	**General chemistry 1**	Face to face	3		3	Concurrent with: 1.030110/ Calculus I

						2.1803170 / Introduction to Prosthetics and Orthoses
0501108	**Physiology II**	Face to face	2	-	2	1.0501107 / Physiology 1 2.1802131 / Psychology for Rehabilitation Students
1803259	**Orthopedics and pathology**	Blended	3	-	3	1.1801103 / Principles and Ethics of Rehabilitation 2.0501107 / Physiology 1
0904131	**Engineering Graphics**	Face to face	2	2 Hand Drawing 2 Compute r	3	1.1803170 / Introduction to Prosthetics and Orthoses 2.Concurrent with 1803171 / Introduction to Rehabilitation and Inter-Professional Learning
1833101	**Biomechanics**	Face to face	3		3	1.0904131 / Engineering Drawing 2.1801103 / Principles and Ethics of Rehabilitation
1833201	**Gait analysis**	Face to face	4		4	1.1833101 / Biomechanics 2.0502107 / Anatomy of the Head, Neck, and Chest
1833220	**Lower Extremity Prosthetics for below knee amputations**	Face to face	2		2	1.0502107 / Anatomy of the Head, Neck, and Chest 2.1833101 / Biomechanics
1833241	**Clinical Training in Lower Extremity Prosthetics for below knee amputations I**	Face to face		4	1	1.1833220 **/** Below-Knee Prosthetics or Concurrent 2.0501108 **/** Physiology **(2)**
1833221	**Below knee Orthoses**	Face to face	3		3	1.1803228 / Foot Orthoses 2.1833201 / Gait Analysis 3.1803259 / Orthopedics and Pathology
1833243	**Clinical Training in**	Blended		4	1	1.1833221 / Below-Knee Orthoses or Concurrent 2.1803228 / Foot Orthoses

	Below knee Orthoses					
1803284	**Diagnostics for prosthetics and Orthotics students**	Online	2		2	1.1803259 / Orthopedics and Pathology or Concurrent 2.0501108 / Physiology (2)
1833322	**Above knee Orthoses**	Blended	3		3	1.1833221 / Below-Knee Orthoses 2.1833323 / Above-Knee Prosthetics
1833347	**Clinical Training in above knee Orthoses**	Face to face		4	1	1.1833243 / Clinical Training in Below-Knee Orthoses 2.1833322 / Above-Knee Orthoses or Concurrent
1833323	**Lower Extremity Prosthetics for above knee amputations**	Face to face	3		3	1.1833220 / Below-Knee Prosthetics 2.1803284 / Diagnostic Examinations for Prosthetics and Orthotics Students
1833346	**Clinical Training in Lower Extremity Prosthetics for above knee amputations**	Face to face		4	1	1.1833241/ Clinical Training in Below-Knee Prosthetics 2.1833323 / Above-Knee Prosthetics or Concurrent
1803475	**Graduation Project I****	Blended	1		1	1.1833322 / Above-Knee Orthoses 2.1803379 / Prosthetic/Orthotic Management of Special Cases 3.Successfully completed 115 credit hours
1803476	Graduation Project II	Blended	2		2	1803475/ Graduation Project I**
1803338	Biomechanics of the spine	Blended	3		3	1.1803284 / Diagnostic Examinations for

	and spinal Orthoses					Prosthetics and Orthotics Students 2.1803217 / Upper Limb Prosthetics
1803337	Clinical Training in Spinal Orthoses	Blended		4	1	1.1803216 / Clinical Training in Upper Limb Prosthetics 2.1803338 / Spine Orthoses and Biomechanics or Concurrent
1803217	Upper extremity prostheses	Face to face	3		3	1.0501108 / Physiology (2) 2.1833101 / Biomechanics
1803216	Clinical Training in upper extremity prostheses	Face to face		4	1	1803217 / Upper Limb Prosthetics or Concurrent
1803170	Introduction to prosthetics and orthotics	Face to face	2		2	1.0319101/ Calculus(1) 2.0339101 / General Chemistry (1)
1803171	Introduction to rehabilitation and inter-professional learning	Face to face	2	4*	2	1.1803170 / Introduction to Prosthetics and Orthoses 2.Concurrent with 0904131 / Engineering Drawing
1803249	Fundamentals of prosthetics and orthotics practice, and inter-professional learning	Face to face		4	1	1.1802131 / Psychology for Rehabilitation Students 2.1803171 / Introduction to Rehabilitation and Inter-Professional Learning
1833243	Clinical Training in below knee orthoses	Blended		4	1	1.1833221 / Below-Knee Orthoses or Concurrent 2.1803228 / Foot Orthoses

1803228	Foot orthoses	Face to face	2		2	1.1803249 / Fundamentals of Prosthetics and Orthotics Practice and Inter-Professional Learning 2.1803259 / Orthopedics and Pathology
1803369	Clinical placement in prosthetics and orthotics 1	Face to face		16	4	1.1803338 / Orthoses and Biomechanics of the Spine 2.1803337 / Clinical Training in Spinal Orthotics
1803379	Prosthetic and orthotic management of special cases	Blended	2		2	1833323 / Above-Knee Prosthetics
1803378	Clinical Training in prosthetic and orthotic management of special cases	Face to face		4	1	1.1833346 / Clinical Training in Above-Knee Prosthetics
1803368	Clinical placement in prosthetics and orthotics 2	Face to face		16	4	1.1803378 / Clinical Training in Prosthetics and Orthotics for Special Cases 2.1803369 / Clinical Practice in Prosthetics and Orthotics (1) 3.1833347 / Clinical Training in Above-Knee Orthotics
1843464	Clinical placement and employment readiness in prosthetics and orthotics	Face to face		16	4	1803368\ Clinical placement in orthotics and prosthetics 2

1843473	Project - A Special Study on Clinical Cases in Prosthetics and orthotics	Blended	2		2	1803368\ Clinical placement in orthotics and prosthetics 2

*: The course consists of 2 theoretical hours. Additionally, it includes 4 practical hours without a credit load, supervised by laboratory instructors. This setup enables students to practice and train under supervision, ensuring they can complete the required lessons effectively and learn in an interactive flipped classroom environment.

**: The project spans two semesters, with the final grade being determined upon completion of the graduation project 2 (1803476).

B. Elective specialty courses: (15) credit hours:

Course Number	Course Title	Type of learning	Contact Hours		Credit Hours	Pre-requisite
			Theoretical	Practical		
1833470	Evidence based practice in prosthetics and orthotics	Blended	2		2	1833323\ Lower Extremity Prosthetics for above knee amputations or concurrent
1803471	Advanced Therapeutic Procedures in Clinical Practices for Prosthetics and orthotics	Blended	2		2	1833221 / Below-Knee Orthoses or Concurrent
1803289	Compression Therapy and Lymphatic System Management	Blended	2		2	1833221/ Below-Knee Orthoses or Concurrent
1833210	Upper limb orthoses	Online	1		1	1803249 / Fundamentals of Prosthetics and Orthotics Practice and Inter-

						Professional Learning
1803339	Spinal orthoses for scoliosis	Blended	2		2	1803338/ Biomechanics of the spine and spinal Orthoses or concurrent
1803288	Diabetic foot care	Blended	2		2	1803228/ Foot orthoses or concurrent
1803102	Functional anatomy	Blended	2		2	0502107\ Anatomy of the head, neck and thorax
1803388	Computer-Aided Design and Digital Fabrication in Prosthetics and Orthotics	Blended	2		2	Lower \1833323 Extremity Prosthetics for above knee amputations or concurrent
1803279	Wheelchairs and mobility aid	Blended	2		2	\ 1833201 or Gait analysis concurrent
1803387	Advanced Technologies in Prosthetics and Orthotics	Blended	2		2	Lower \1833323 Extremity Prosthetics for above knee amputations or concurrent
1803331	Applied Clinical Training in Above Knee Prosthetics	Face to face		4	1	/ 1833347 Clinical Training in Above-Knee Orthoses
1803319	Applied Clinical Training in Upper limb Prosthetics	Face to face		4	1	Clinical \1803216 Training in upper extremity

						prostheses or concurrent
1803188	Professional writing	Online	2		2	1803249/ Fundamentals of Prosthetics and Orthotics Practice and Inter-Professional Learning
1803229	Applied Clinical Training in Below Knee Prosthetics	Face to face		4	1	1833241 / Clinical Training in Lower Extremity Prosthetics for below knee amputations I
1833228	Applied Clinical Training in Below Knee Orthotics	Face to face		4	1	1833243/ Clinical Training in Below knee Orthoses
1803285	Non communicable diseases	Blended	2		2	1803259 / Orthopedics and Pathology or Concurrent
1833318	Myoelectric upper limb prostheses	Blended	2		2	1803217/ Upper 1 extremity prostheses or concurrent
1803460	Elective Prosthetics and Orthotics Off-Campus Training	Face to face		40	5	1803369/ Clinical placement in prosthetics and orthotics 1

Fourth: Courses offered by other faculties/schools and departments

Course Number	Course Title	Contact Hours		Credit Hours	Pre-requisite
		Theoretical	Practical		
1801103	Principles and ethics of rehabilitation	2		2	1803170 / Introduction to Prosthetics and Orthotics
0339101	General chemistry 1	3		3	- Concurrent with: 0319101 / Differential and Integral Calculus(1) 1803170 / Introduction to Prosthetics and Orthoses
0532108	Anatomy of the extremities and torso	2		2	1.10304101 / General Biology "1" 2.0339101 / General Chemistry (1)
0319101	Calculus I	3		3	Concurrent with: 1. 0339101 / General Chemistry(1) 2. 1803170 / Introduction to Prosthetics and Orthoses
0501108	Physiology 2	2		2	1.0501107 / Physiology 1 2.1802131 / Psychology for Rehabilitation Students
0904131	Engineering drawing	2	2 hand drawings+ 2computer drawing	3	1.1803170 / Introduction to Prosthetics and Orthoses 2. Concurrent with 1803171 / Introduction to Rehabilitation and Inter-Professional Learning
0304101	General biology 1	3	-	3	Concurrent with: 1. 0329103 / General Physics for Life Sciences 2.1803170 / Introduction to Prosthetics and Orthotics
1802131	Psychology for rehabilitation students	2	-	2	1803170/ Introduction to Prosthetics and Orthotics

0329103	General physics for life sciences students	3	-	3	Concurrent with: 1. 0304101 / General Biology I 2. 0319101 / Calculus I
0501107	Physiology 1	2	-	2	1.0304101 / General Biology I 2. 0339101 / General Chemistry I
0502107	Anatomy of the head, neck and thorax	2	2	3	1.0532108 / Anatomy of Extremities and Trunk 2.0501107 / Physiology I
1801381	Biostatistics for rehabilitation students	2	-	2	\1804340 Research methods in rehabilitation sciences
1804340	Research methods	3	-	3	1802131\ Psychology for Rehabilitation students
1832447	Management and leadership in rehabilitation	3	-	3	1833472\ Assistive technology
309103	Modern digital skills	3	-	3	309099

Fifth: Advisory Study Plan

First Year

First Semester			Second Semester		
Course Number	**Course Title**	**Credit Hours**	**Course Number**	**Course Title**	**Credit Hours**
0329103	General physics for life sciences	3	0532108	Anatomy of the extremities and torso	3
0304101	General biology 1	3	0501107	Physiology 1	2
0319101	Calculus I	3	1802131	Psychology for rehabilitation students	2
0339101	General chemistry	3	1801103	Principles and ethics of rehabilitation	2
1803170	Introduction to prosthetics and orthotics	2	1803171	Introduction to rehabilitation and inter-professional learning	2
	University requirement	3	0904131	Engineering drawing	3
				University requirement	3
Total		**17**	**Total**		**17**

1st summer semester		
Course Number	**Course Title**	**Credit Hours**
309103	Modern digital skills	**3**
	University requirement	**3**
	University requirement	**3**
	University requirement	**3**
Total		**12**

Second Year

First Semester			Second Semester		
Course Number	**Course Title**	**Credit Hours**	**Course Number**	**Course Title**	**Credit Hours**
0502107	Anatomy of the head neck and thorax	3	1803217	Upper extremity prostheses	3
0501108	Physiology 2	2	1803216	Clinical Training in upper extremity prostheses	1
1803259	Orthopedic and pathology	3	1833220	Lower Extremity Prosthetics for below knee amputations	**2**
1833101	Biomechanics	3	1833241	Clinical Training in Lower Extremity Prosthetics for below knee amputations I	**1**
1803249	Fundamentals of prosthetics and orthotics practice, and inter-professional learning	1	1833201	Gait analysis	**4**
			1803284	Diagnostics for prosthetics and orthotics students	**2**
	University requirement	3	1803228	Foot orthoses	**2**
				University requirement	**3**
Total		**15**	**Total**		**18**

2nd summer semester		
Course Number	**Course Title**	**Credit Hours**
	University requirement	**3**
	University requirement	**3**
	Elective requirement	6
Total		**12**

Third year

First Semester			Second Semester		
Course Number	**Course Title**	**Credit Hours**	**Course Number**	**Course Title**	**Credit Hours**
1833323	Lower Extremity Prosthetics for above knee amputations	3	1803379	Prosthetic/orthotic management of special cases	2
1833346	Clinical Training in Lower Extremity Prosthetics for above knee amputations	1	1803378	Clinical Training in prosthetic and orthotic management of special cases	1
1804340	Research methods in rehabilitation sciences	3	1803369	Clinical placement in prosthetics and orthotics 1	2
1803338	Biomechanics of the spine and spinal Orthoses	3	1833322	Above knee Orthoses	3
1803337	Clinical Training in Spinal Orthoses	1	1833347	Clinical Training in above knee Orthoses	1
1833221	Below knee orthoses	3	1801381	Biostatistics for rehabilitation students	2
1833243	Clinical Training in below knee orthoses	1		Elective requirement	4
Total		**15**	**Total**		**15**

3rd summer semester (elective)		
Course Number	**Course Title**	**Credit Hours**
	Elective requirement	**5**
Total		**5**

Fourth Year

First Semester			Second Semester		
Course Number	**Course Title**	**Credit Hours**	**Course Number**	**Course Title**	**Credit Hours**
1803368	Clinical placement in prosthetics and orthotics 2	4	1843464	Clinical placement and employment readiness in prosthetics and orthotics	4
1803475	Graduation Project I*	1	1803476	Graduation Project II*	2
1833472	Assistive technology	2	1832447	Management and leadership in rehabilitation	3
	Elective requirement	5	1843473	Project - A Special Study on Clinical Cases in Prosthetics and orthotics	2
Total		**12**	**Total**		**11**

Advisory Study Plan for elective specialty courses

A. First tract

Second year		
Course Number	**Course Title**	**Credit Hours**
1803102	Functional anatomy	2
1803288	Diabetic foot care	2
1803285	Non communicable diseases	2
Total		**6**
Third year		
1803289	Compression Therapy and Lymphatic System Management	**2**
1803471	Advanced Therapeutic Procedures in Clinical Practices for Prosthetics and orthotics	**2**
Total		**4**
Fourth year		
1803388	**Computer-Aided Design and Digital Fabrication in Prosthetics and Orthotics**	**2**
1833228	**Applied Clinical Training in Below Knee Orthotics**	**1**
1803387	**Advanced Technologies in Prosthetics and Orthotics**	**2**
Total		**5**

B. **Second tract:**

Second year		
Course Number	**Course Title**	**Credit Hours**
1803229	Applied Clinical Training in Below Knee Prosthetics	1
1833228	Applied Clinical Training in Below Knee Orthotics	1
1803279	Wheelchairs and mobility aid	2
1803288	Diabetic foot care	2
Total		**6**
Third year		
1803331	Applied Clinical Training in Above Knee Prosthetics	**1**
1803319	Applied Clinical Training in Upper limb Prosthetics	**1**
1803339	Spinal orthoses for scoliosis	2
Total		**4**
Fourth year		
1803460	Elective Prosthetics and Orthotics Off-Campus Training	**5**
Total		**5**

C. Third tract:

Second year		
Course Number	**Course Title**	**Credit Hours**
1803188	**Professional writing**	2
1833210	Upper limb orthoses	1
1803319	Applied Clinical Training in Upper limb Prosthetics	1
1803102	Functional anatomy	**2**
Total		**6**
Third year		
1833318	Myoelectric upper limb prostheses	**2**
1803388	**Computer-Aided Design and Digital Fabrication in Prosthetics and Orthotics**	2
Total		**4**
Fourth year		
1833470	Evidence based practice in prosthetics and orthotics	**2**
1803471	Advanced Therapeutic Procedures in Clinical Practices for Prosthetics and orthotics	2
1803319	Applied Clinical Training in Upper limb Prosthetics	1
Total		**5**

Course Description

1833220	Lower Extremity Prosthetics for below knee amputations	Credit Hours
Prerequisite: 1. 0502107 / Anatomy of the Head, Neck, and Chest 2.1833101 / Biomechanics		**2**
Through this course, students will comprehensively explore lower-extremity prosthetics for below-knee amputations. They will gain knowledge of amputation indications, types, complications, surgical considerations, and postoperative management. The course covers socket design and modification, prosthetic suspension systems, and various prosthetic foot options. It also includes a detailed study of the biomechanics of below-knee sockets and prosthetic feet. Finally, students will learn how to adjust prosthetic sockets, align a prosthesis, and manage gait deviations and asymmetries.		

1833241	Clinical Training in Lower Extremity Prosthetics for below knee amputations I	Credit Hours
Prerequisite: 1. 1833220 / Below-Knee Prosthetics or Concurrent 2. 0501108 / Physiology (2)		**1**
Through this course, students will be trained to accurately assess patients with below-knee amputations. They will learn to perform precise geometric measurements, residuum casting, cast modification, and socket design. Students will then be trained to assemble the prosthesis and align it correctly to meet each patient's needs. Finally, students will fit below-knee prostheses to patients and make the necessary adjustments and alignments.		

1803369	Clinical placement in prosthetics and orthotics 1	Credit Hours
Prerequisite: 1.1803338 / Orthoses and Biomechanics of the Spine 2.1803337 / Clinical Training in Spinal Orthotics		**4**
Through this course, students will gain hands-on experience in the clinical management of patients and develop the skills needed to deliver effective above-knee prostheses and below-knee orthoses in a clinical environment. The course will enhance students' expertise in clinical service delivery for patients undergoing prosthetic and orthotic treatment. Additionally, students will develop essential skills in communication, professionalism, teamwork, evidence-based practice, critical thinking, and the ability to perform under pressure.		

1803368	Clinical placement in prosthetics and orthotics 2	Credit Hours
Prerequisite: 1. 1803378 /Clinical Training in Prosthetics and Orthotics for Special Cases 2.1803369 / Clinical Practice in Prosthetics and Orthotics (1) 3.1833347 / Clinical Training in Above-Knee Orthotics		**4**
Through this course, students will gain hands-on experience in the clinical management of patients and develop the skills needed to deliver effective below-knee prostheses and above-knee orthoses in a clinical environment. The course will enhance students' expertise in clinical service delivery for patients undergoing prosthetic and orthotic treatment. Additionally, students will develop essential skills in communication, professionalism, teamwork, evidence-based practice, critical thinking, and the ability to perform under pressure.		

1843464	Clinical placement and employment readiness in prosthetics and orthotics	Credit Hours
Prerequisite: 1803368\ Clinical placement in orthotics and prosthetics 2		**4**
This course aims to develop students' clinical skills by providing the necessary experiences to prepare them for employment in alignment with market demands. The focus will be on enhancing students' ability to prescribe and fabricate various types of prosthetics and orthotics at available training centers, such as hospitals and specialized centers, as a form of engagement with the job market. The course also emphasizes equipping students with skills to interact with patients and develop a comprehensive approach to patient evaluation, with a focus on the fundamentals of prescribing prosthetics and orthotics tailored to patients' needs, based on scientific evidence. Through this course, students will be exposed to real-life scenarios that enhance their ability to address patients' diverse needs in prosthetics and orthotics. This includes ensuring that students acquire essential skills in core areas of the discipline, such as prosthetic and orthotics at the below-knee level, within an intensive program during the first, second, or third trimester of the course, accounting no less than 160 contact hours.		

1843473	Project - A Special Study on Clinical Cases in Prosthetics and orthotics	Credit Hours
Prerequisite: 1803368 /Clinical placement in orthotics and prosthetics 2		**2**
This course aims to enable students to apply theoretical knowledge and clinical skills in studying advanced clinical cases in the field of prosthetics and orthotics from both developing and developed countries. Students will focus on analyzing and evaluating individual cases while designing appropriate treatment solutions using an evidence-based approach. The course also includes the development of job readiness skills, training students on the practical skills required in specialized work environments, and emphasizing a collaborative approach within the rehabilitation team. This includes professional communication, teamwork, and familiarity with advanced technologies in the fabrication and delivery of prosthetic limbs and orthotics, preparing students to adapt to the demands of the job market.		

1803388	Computer-Aided Design and Digital Fabrication in Prosthetics and Orthotics	Credit Hours
Prerequisite: 1833323\ Lower Extremity Prosthetics for above knee amputations or concurrent		**2**
Through this course, students will explore the integration of computer technology in the design, fabrication, and management of prosthetic and orthotic devices. They will learn to use various software tools, including computer-aided design (CAD), 3D modeling, and digital fabrication techniques such as 3D printing. The course will also cover the data management systems for patient records. By the end of the course, students will understand how to effectively utilize computer applications to enhance clinical outcomes and streamline workflows in prosthetic and orthotic practice.		

1803387	Advanced Technologies in Prosthetics and Orthotics	Credit Hours
Prerequisite: 1833323\ Lower Extremity Prosthetics for above knee amputations or concurrent		**2**
Through this course, students will gain an in-depth understanding of the latest technological developments in the fields of prosthetics and orthotics. They will explore advanced upper and lower limb prostheses, including myoelectric hands and microprocessor-controlled knee and ankle joints. Additionally, students will study innovative orthotic devices, such as microprocessor-controlled orthotic knee joints. The course will analyze the impact of these technologies on patient care, rehabilitation outcomes, and industry practices. By the end of the course, students will be equipped to apply their knowledge of how emerging technologies are transforming the landscape of prosthetics and orthotics in clinical settings.		

1803229	Applied Clinical Training in Below Knee Prosthetics	Credit Hours
Prerequisite: 1833241\Clinical Training in Lower Extremity Prosthetics for below knee amputations I		**1**
Through this course, students will be trained to accurately identify patients with below-knee amputations who require a total-surface socket design. They will learn to perform precise geometric measurements of the residual limb and select the appropriate size of the silicone liner. Students will then be instructed to take accurate measurements and casting of the residual limb. They will also learn how to perform cast modifications and socket design. Furthermore, students will be trained to assemble the prosthesis, including the shuttle lock, and align it correctly to meet each patient's needs. Finally, students will fit below-knee prostheses for patients and make the necessary adjustments and alignments.		

1803331	Applied Clinical Training in Above Knee Prosthetics	Credit Hours
Prerequisite: 1833347 / Clinical Training in Above-Knee Orthoses		**1**
Through this course, students will be trained to accurately identify patients with above-knee amputations who require a total-surface socket design. They will learn to perform precise geometric measurements of the residual limb and select the appropriate size of the silicone liner. Students will then be instructed to take accurate measurements and casting of the residual limb, including the liner. They will also learn how to perform cast modifications and socket design. Furthermore, students will be trained to assemble the prosthesis, including the shuttle lock, and align it correctly to meet each patient's needs. Finally, students will fit above-knee prostheses for patients and make the necessary adjustments and alignments.		

1833101	Biomechanics	Credit Hours
Prerequisite: 1.0904131 / Engineering Drawing 2.1801103 / Principles and Ethics of Rehabilitation		**3**
Through this course, students will learn the principles of biomechanics and how they can be applied to the human body, especially in relation to movement and vital functions. They will be able to analyze different movements and assess motor performance, helping them understand the intricate relationship between form and function in the human body. Students will learn to solve questions related to balance and stability, deepening their understanding of the concept of stability. Gait terminology will be introduced, along with methods to evaluate and enhance movement efficiency in patients. This foundation will prepare students for practical application in clinical settings.		

1833323	Lower Extremity Prosthetics for above knee amputations	Credit Hours
Prerequisite: 1.1833220 /Below-Knee Prosthetics 2. 1803284/ Diagnostic Examinations for Prosthetics and Orthotics Students		**3**
This course aims to provide students with a comprehensive understanding of the design, fabrication, and fitting of above-knee prostheses. Students will learn about the various components of above-knee prostheses, including sockets, joints, and feet. The course will also cover the importance of proper alignment and load distribution on the residual limb. Additionally, students will learn to assess patient needs and select appropriate prostheses for each individual case, with a focus on improving function and comfort for the patient		

1833346	Clinical Training in Lower Extremity Prosthetics for above knee amputations	Credit Hours
Prerequisite: 1.1833241 / Clinical Training in Below-Knee Prosthetics 2.1833323 / Above-Knee Prosthetics or Concurrent		1
Through this course the student will practice the above knee prosthetic manufacturing. This course offers comprehensive experience in the fabrication and fitting of above-knee prostheses. Students will apply theoretical knowledge to real-world clinical scenarios, interacting directly with individuals who have undergone above-knee amputations. They will develop skills in assessing individual patient needs and customizing prosthetic designs to align with patients' lifestyles and goals. The curriculum includes training in taking precise measurements, fabricating prostheses, and making adjustments to optimize comfort and functionality.		

1803217	Upper extremity prostheses	Credit Hours
Prerequisite: 1. 0501108/Physiology(2) 2. 1833101/ Biomechanics		3
Through this course student will gain a comprehensive understanding of upper limb prosthetics. This course focuses on the design, fabrication, and fitting of upper limb prosthetics, with a particular emphasis on cosmetic and body-powered prostheses. Students will learn about a variety of sockets, control systems, and how to select the most suitable system for each patient. The course will also cover the latest advancements in the field of upper limb prosthetics.		

1803216	Clinical Training in upper extremity prostheses	Credit Hours
Prerequisite: 1803217 / Upper Limb Prosthetics or Concurrent		1
Through this course, students will gain intensive practical experience in the manufacturing and fitting of upper limb prostheses. They will have the opportunity to apply theoretical knowledge of upper limb prosthetics in real clinical scenarios. Students will learn to assess upper limb patients and fill in standardized assessment sheets. They will also learn to select appropriate prostheses and provide patient training in their use. The course will emphasize hands-on skills and adaptability, enabling students to meet the unique challenges of upper limb prosthetics in diverse patient cases.		

1803379	Prosthetic/orthotic management of special cases	Credit Hours
Prerequisite: 1833323 / Above-Knee Prosthetics		2
Through this course student will be provided with the opportunity to explore complex cases in prosthetics and orthotics, including multiple amputations, neurological injuries, and pediatric conditions. By emphasizing critical thinking and problem-solving, the course will equip students to develop innovative and customized solutions for each patient. The course will also enhance collaboration skills for interdisciplinary case management, enhancing adaptability in diverse clinical scenarios. Students will be encouraged to research and apply the latest technologies and techniques, ensuring high-quality and personalized patient care.		

1803378	Clinical Training in prosthetic and orthotic management of special cases	Credit Hours
Prerequisite: 1833346 / Clinical Training in Above-Knee Prosthetics		**1**
Through this course, students will learn to apply theoretical knowledge to complex clinical cases, developing the practical skills necessary to address real-world challenges in prosthetics and orthotics. Students will also learn how to assess patients and design innovative solutions tailored to individual patient needs. This training will foster confidence in clinical decision-making, preparing students to work effectively with diverse patient populations. Emphasis will also be placed on the ethical and empathetic aspects of patient care, ensuring comprehensive support for each patient's unique journey.		

1833318	Myoelectric upper limb prostheses	Credit Hours
Prerequisite: 1803216\ Clinical Training in upper extremity prostheses or concurrent		**2**
Through this course student will learn about electrically powered upper limb prosthetics, including their components, control systems, and programming techniques. They will have practical opportunities to design, build, and evaluate these prostheses, and they will learn how to apply this knowledge to assess patients and select appropriate prostheses. They will also explore the latest advancements in this field, such as neural-controlled prostheses.		

1803170	Introduction to prosthetics and orthotics	Credit Hours
Prerequisite: 1. 0319101/ Calculus(1) 2.0339101 / General Chemistry (1)		**2**
Through this course, students will gain a comprehensive understanding of the field of prosthetics and orthotics, with a focus on the fundamentals of prosthetics and orthotics sciences as a key component of medical rehabilitation sciences. The course covers the theoretical and historical background of the prosthetics and orthotics field, emphasizing scientific principles, modern technologies, and their role in improving patients' lives. Additionally, the course aims to provide in-depth knowledge on general safety procedures, an overview of prosthetic and assistive device design, their mechanisms of action, and the materials used in their manufacturing.		

1803171	Introduction to rehabilitation and inter-professional learning	**Credit Hours**
Prerequisite: 1803170 / Introduction to Prosthetics and Orthoses Concurrent with 0904131 / Engineering Drawing		**2***
Through this course, students will be introduced to the field of rehabilitation science and the importance of inter-professional learning in improving healthcare and rehabilitation. The course aims to familiarize students with the fundamental principles of rehabilitation, concepts of multidisciplinary teams, and the role of collaboration among different professionals to achieve the best outcomes for patients. The material highlights the importance of effective communication, respect for various disciplines, and the contribution of each to improving the quality of life for individuals with disabilities or special needs. Additionally, students will receive training on basic and specialized examinations, such as muscle strength testing and range of motion, through interactive activities and required lessons, allowing them to practice and apply these assessments. Furthermore, students will be introduced to essential skills in medical history taking, ethical practice, and the code of practice. *: The course consists of 2 theoretical hours. Additionally, it includes 4 practical hours without a credit load, supervised by laboratory instructors. This setup enables students to practice and train under supervision, ensuring they can complete the required lessons effectively.		

1803259	**Orthopedic and pathology**	**Credit Hours**
Prerequisite: 1.1801103 / Principles and Ethics of Rehabilitation 2.0501107 / Physiology 1		**3**
This course introduces the principles of orthopaedics and the pathology of musculoskeletal disorders. Topics include the anatomy and physiology of the musculoskeletal system, pathophysiology of common conditions (e.g., fractures, arthritis, and congenital deformities), and diagnostic methods like clinical assessments and imaging. Students will explore treatment approaches, including orthotic management, physical therapy, and surgical options. The course bridges foundational knowledge with practical applications for orthopaedic care		

1803284	**Diagnostics for prosthetics and Orthotics students**	**Credit Hours**
Prerequisite: 1.1803259 / Orthopedics and Pathology or Concurrent 2.0501108 / Physiology (2)		**2**
Through this course, students will learn the basic principles of diagnostic assessments and the practical skills required to understand diagnostic tests related to the field of prosthetics and orthotics. The course also aims to introduce students to the tools and techniques used in evaluating clinical cases, such as various imaging techniques and laboratory tests. Additionally, students will learn how to apply these assessments to support accurate diagnosis and appropriate design of prosthetics and orthotic devices. The course also covers the importance of these assessments in improving the effectiveness of rehabilitation plans.		

1803338	Biomechanics of the spine and spinal Orthoses	Credit Hours
Prerequisite: 1803284 / Diagnostic Examinations for Prosthetics and Orthotics Students 2.1803217 / Upper Limb Prosthetics		**3**
Through this course, students will conduct an in-depth study of the biomechanics of the spine and its functions in both normal and pathological conditions, while exploring the role of orthotic and orthotics in supporting and treating spinal disorders. The course covers both theoretical and practical aspects to develop a comprehensive understanding of the design, manufacturing, and fitting of devices used to treat various conditions. The course aims to enhance students' knowledge of spinal mechanisms and teach them how to use orthotic devices to alleviate pain, improve mobility, and restore spinal function. Additionally, the course will strengthen students' ability to analyze clinical problems and design practical solutions based on principles of biomechanics and modern technologies.		

1803337	Clinical Training in Spinal Orthoses	Credit Hours
Prerequisite: 1803216 / Clinical Training in Upper Limb Prosthetics 1803338 / Spine Orthoses and Biomechanics or Concurrent		**1**
Through this course, students will develop clinical and practical skills in assessing patients, designing spinal orthotic devices, and fitting them. This is achieved through hands-on training in specialized workshops and/or hospitals, providing students with real-world experience in handling various clinical cases related to the spine. The course focuses on applying the theoretical concepts previously studied in Biomechanics of the spine and spinal Orthoses, with an emphasis on direct patient interaction, collaboration with the healthcare team, and the implementation of orthotic devices that meet the patients' needs.		

1803475	Graduation Project I*	Credit Hours
Prerequisite: 1.1833322 / Above-Knee Orthoses 2.1803379 / Prosthetic/Orthotic Management of Special Cases 3.Successfully completed 115 credit hours		**1**
Through this course, in the first part, students will be assigned projects (individually or in groups), which may be theoretical, experimental, or a combination of both. In all cases, the projects will include research elements related to the design of prosthetics and orthotics used in treating medical conditions. Students will study the given problem and its theoretical background, review previous works published in the field of the project, define the approach and stages of the work, analyze the problem, and create an initial design. Students will submit periodic reports throughout the semester, along with a timeline for the completion of the project in the following semester and an estimated cost for the project, including any components or devices, if applicable.		

*:The project spans two semesters, with the final grade being determined upon completion of the graduation project course 2 (1803476).

1803476	**Graduation Project II***	**Credit Hours**
Prerequisite: 1803475\ Graduation Project I**		**2**
Through this course, in the second part, students will continue working on their project and submit a comprehensive report that also includes statistical analysis and clinical medical evaluation (according to the guidelines and instructions published on the department's website). This will be followed by a presentation to the examination committee, which will evaluate the project.		

1833470	**Evidence based practice in prosthetics and orthotics**	**Credit Hours**
Prerequisite: 1833323\ Lower Extremity Prosthetics for above knee amputations or concurrent		**2**
Through this course (seminar), students will apply the theoretical concepts studied in the field of prosthetics and orthotics in a scientific environment. The course includes the application of scientific practice models in treating medical conditions using prosthetics and orthotics. Students will analyze clinical cases, propose designs, and predict outcomes for patients. It also focuses on developing a deeper understanding of the challenges faced by professionals in this field and enhancing scientific and technical skills. This course emphasizes linking theoretical knowledge with practical application, improving students' ability to think critically, solve problems related to device design, material selection, and ensuring the highest quality standards in implementing custom devices. Topics will be assigned for students to apply the principles of scientific practice and self-directed learning (under supervision). Students will work on approximately three smaller, more focused topics and one broader topic, with each group handling different related subjects. Students will be evaluated based on tests and seminars on the chosen topics. The course will diversify seminar presentation methods based on scientific practice to help students acquire skills related to public speaking and communication.		

1803471	**Advanced Therapeutic Procedures in Clinical Practices for Prosthetics and orthotics**	**Credit Hours**
Prerequisite: 1833221 / Below-Knee Orthoses or Concurrent		**2**
Through this course (seminar), students will apply the concepts of comprehensive patient-centered treatment. The focus will be on enhancing students' understanding of the relationship between various elements involved in providing care with prosthetics and orthotics, as well as the integration of these devices with other healthcare interventions and the specific needs of the patient. Students will develop comprehensive treatment plans, using real-life case studies to explore challenges in effective care, problem-solving, anticipating issues, and creating effective treatment strategies. Students will integrate the knowledge gained from previous studies in a patient-centered approach, and will be required to present relevant information to diverse audiences, such as multidisciplinary teams, patients, and healthcare professionals.		

1803289	Compression Therapy and Lymphatic System Management	Credit Hours
Prerequisite: 1833221 / Below-Knee Orthoses or Concurrent		**2**
Through this course, the focus will be on studying the basic principles of managing lymphatic system disorders using compression therapy techniques and assistive compression devices. Students will be trained to assess lymphatic system conditions, such as lymphedema, and apply comprehensive treatment strategies that include exercises, manual therapy, and the proper use of compression devices. The course aims to enhance students' understanding of the lymphatic system and its vital role in the body, as well as how to utilize compression techniques and devices to improve lymphatic fluid drainage and reduce acute/chronic swelling.		

1803339	Spinal orthoses for scoliosis	Credit Hours
Prerequisite: 1803284\ Diagnostics for prosthetics and Orthotics students or concurrent		**2**
Through this course, students will learn the basic mechanical principles of designing, manufacturing, and using orthotic devices to treat scoliosis and improve spinal function. The course covers the types of scoliosis, its causes, biomechanics, classification, and the role of orthotic devices in reducing curvature and supporting the patient during growth periods. Students will be trained to assess scoliosis cases, determine appropriate treatments, and design customized orthotic devices, including commonly used braces such as the Boston Brace, Chêneau Brace, and other braces.		

1803288	Diabetic foot care	Credit Hours
Prerequisite: 1833221 or concurrent		**2**
Through this course, students will be introduced to diabetic foot, its health significance, causes, and complications (such as poor blood circulation, neuropathy, and infection). The course also covers the pathophysiology of peripheral neuropathy and methods for assessing the diabetic foot in terms of sensation, blood supply, and foot mechanics. Students will be familiarized with prevention techniques, wound and ulcer management, the use of orthotics, and patient education methods. Additionally, the course emphasizes the importance of interdisciplinary teamwork between prosthetists and orthotists, physicians, nurses, and physical therapists in managing diabetic foot care.		

1803279	Wheelchairs and mobility aid	Credit Hours
Prerequisite: 1833201\Gait analysis or concurrent		**2**
Through this course, students will be prepared to understand and apply knowledge related to wheelchairs and mobility aid for mobility, aimed at improving the independence and quality of life for individuals with mobility impairments or limited mobility. The course combines both theoretical and practical aspects to understand the fundamental principles of design, evaluation,		

and selection of appropriate devices, with a focus on the biomechanical, psychological, and social aspects of using to wheelchairs and mobility aid. The course also covers advanced topics such as device adjustment, maintenance, and the development of appropriate support strategies for patients in various environments

1803188	**Professional writing**	**Credit Hours**
Prerequisite: 1803249 / Fundamentals of Prosthetics and Orthotics Practice and Inter-Professional Learning		**2**
Through this course, the focus will be on developing the writing skills necessary for effective communication in professional environments, with an emphasis on fields related to medical rehabilitation, healthcare, and biomedical engineering. The course provides practical guidelines on preparing professional reports, official correspondence, and writing simplified scientific articles, while considering professional ethics and accuracy in expression. It also aims to enhance students' ability to use language clearly, coherently, and appropriately for their specialized field.		

1833221	**Below knee Orthoses**	**Credit Hours**
Prerequisite: 1.1803228 / Foot Orthoses 2.1833201 / Gait Analysis 3.1803259 / Orthopedics and Pathology		**3**
This course focuses on conditions affecting the foot and ankle complex that require orthotic intervention. Students will learn to assess patients, select appropriate orthoses, and apply biomechanical principles in treatment. They will also explore material selection and be introduced to various ankle-foot orthotic designs. The course further enhances skills in critical thinking, evidence-based decision-making, and patient-centered care.		

1833243	**Clinical Training in Below knee Orthoses**	**Credit Hours**
Prerequisite: 1.1833221 / Below-Knee Orthoses or Concurrent 2.1803228 / Foot Orthoses		**1**
This course provides hands-on experience in assessing, designing, and fitting ankle-foot orthoses (AFOs) and foot orthoses. Students will learn to evaluate patients and select appropriate orthotic interventions based on biomechanical principles. Emphasis is placed on customizing, adjusting, and aligning orthoses to meet individual patient needs. Through supervised practice, students will		

strengthen clinical reasoning and problem-solving skills. The course prepares students to deliver effective, patient-centered care. Students will gain the competence to provide high-quality orthotic interventions for AFOs and foot orthoses.

1833201	**Gait analysis**	**Credit Hours**
Prerequisite: 1833101 / Biomechanics 0502107/ Anatomy of the Head, Neck, and Chest		**4**
This course explores the kinematics and kinetics of the gait cycle, focusing on lower limb joint dynamics and muscular control. Students will develop the ability to differentiate normal from pathological gait patterns and classify various abnormalities. Emphasis is placed on diagnosing gait disorders and integrating analysis into clinical practice. The course bridges the gap between gait analysis, patient diagnosis, and orthotic or prosthetic treatment. students will be equipped with the skills to apply gait analysis in advanced clinical settings.		

1803228	**Foot orthoses**	**Credit Hours**
Prerequisite: 1803249 / Fundamentals of Prosthetics and Orthotics Practice and Inter-Professional Learning 1803259 / Orthopedics and Pathology		**2**
This course provides an in-depth theoretical exploration of the principles and practices involved in the design and application of foot orthoses for managing foot and lower limb conditions. The course focuses on developing an advanced understanding of biomechanical assessment, material selection, and the theoretical aspects of orthotic fabrication to enhance patient outcomes. Evidence-based methodologies are emphasized to prepare students to address complex clinical challenges in fields such as sports medicine, rehabilitation, and diabetic foot care.		

1833322	**Above knee Orthoses**	Credit Hours
Prerequisite: 1.1833221 / Below-Knee Orthoses 2.1833323 / Above-Knee Prosthetics		**3**
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

1833347	Clinical Training in above knee Orthoses	Credit Hours
Prerequisite: 1. 1833243 / Clinical Training in Below-Knee Orthoses 2.1833322 / Above-Knee Orthoses or Concurrent		**1**
This course provides students with clinical training in the design and fabrication of various above-knee orthoses, with a particular focus on knee-ankle-foot orthoses (KAFO) for the management of neuromuscular and joint conditions. Students will gain hands-on experience in customizing and adjusting these devices to meet the individual functional needs of patients. The course is also aimed at strengthening students' decision-making skills and promoting the application of evidence-based practices in the clinical setting.		

1833210	Upper limb orthoses	Credit Hours
Prerequisite: 1803249 / Fundamentals of Prosthetics and Orthotics Practice and Inter-Professional Learning		**1**
This course provides students with essential knowledge on the design, fabrication, and clinical application of upper limb orthoses for managing conditions such as traumatic injuries, neurological disorders, and joint deformities. It emphasizes biomechanical principles and evidence-based practices while teaching students how to assess patients, select appropriate devices, and customize them to meet functional needs. Additionally, the course develops students' skills in designing and manufacturing orthoses, enabling them to apply effective solutions that support improved patient functionality and overall well-being.		

1803102	Functional anatomy	Credit Hours
Prerequisite: 0502107\ Anatomy of the head, neck and thorax		**2**
This course provides an in-depth exploration of the human musculoskeletal system, focusing on its relevance to prosthetics and orthotics. It examines the structure and biomechanics of bones, muscles, joints, and connective tissues, highlighting their roles in movement, stability, and load		

distribution. Students will analyze how these systems interact and influence the design and application of orthotic and prosthetic devices.

1833228	**Applied Clinical Training in Below Knee Orthotics**	**Credit Hours**
Prerequisite: 1833243\ Clinical Training in Below knee Orthoses		**1**
This course provides students with practical experience in the clinical management and delivery of below-knee orthoses. Students will have the opportunity to apply their theoretical knowledge to real-world cases, developing their skills in patient assessment, orthotic design, and device fitting. The placement focuses on refining students' clinical competencies while also enhancing their communication, teamwork, professionalism, and ability to work under pressure. Through evidence-based practice and critical thinking, students will learn to deliver high-quality care in a dynamic clinical setting.		

1803285	**Non communicable diseases**	**Credit Hours**
Prerequisite: 1803259\ Orthopedics and pathology		**2**
This course provides a comprehensive study of non-communicable diseases (NCDs) such as heart disease, diabetes, stroke, and injuries, focusing on their etiology, pathogenesis, signs, symptoms, and risk factors. It explores the role of lifestyle choices in the development of NCDs and offers strategies for prevention. Students will also examine the different levels of healthcare and the efforts of both governmental and nongovernmental organizations to address the growing impact of NCDs. The course highlights the injury mechanisms associated with these diseases and emphasizes the importance of orthotic interventions in managing them, equipping students with the knowledge to improve patient care.		

1803249	**Fundamentals of prosthetics and orthotics practice, and inter-professional learning**	**Credit Hours**
Prerequisite: 1802131 / Psychology for Rehabilitation Students 1803171/ Introduction to Rehabilitation and Inter-Professional Learning		**1**
This course focuses on enhancing students' understanding of the fundamental principles of prosthetics and orthotics practice from both theoretical and practical perspectives, incorporating		

interprofessional learning concepts to develop their teamwork and effective communication skills with multidisciplinary healthcare teams. The course provides an opportunity for students to acquire foundational knowledge, technical skills, and ethical awareness essential for delivering comprehensive care to patients requiring prosthetic and orthotic devices. It also aims to introduce students to workshop safety procedures, develop their skills in measurements, plaster casting and modification, and designing and fabricating orthotics for the upper limb

0304101	**General biology I**	**Credit Hours**
Prerequisite: Concurrent with: 1. 0329103 / General Physics for Life Sciences 2. 1803170 / Introduction to Prosthetics and Orthotics		**3**
Cell structure, cell chemistry, cellular respiration, photosynthesis, cell communication, cell division, Mendelian genetics, principles of molecular genetics, genetic code, replication and cloning of genetic material, protein construction, inheritance of bacteria and viruses, generational technology, hormonal regulation in plants and animals. Principles of biological classification and the basics of ecosystems for living organisms.		

1802131	**Psychology for Rehabilitation students**	**Credit Hours**
Prerequisite: 1803170 / Introduction to Prosthetics and Orthotics		**2**
This course covers the basics of psychology. Some of the topics covered include the development of psychological science, learning, behaviour, memory, emotions, and the intersection of stress and health. This course introduces students to the psychological sciences related to humans and how human mental health is affected by chronic diseases and disabilities that are most common in the specialties and workplaces of rehabilitation therapists.		

0329103	**General physics for life sciences**	**Credit Hours**
Prerequisite: Concurrent with: 1. 0304101 / General Biology I 2. 0319101 / Calculus I		**3**
This subject studied motion in a straight line, motion in two dimensions, Newton's laws of motion, statics, work, energy, and power, linear momentum, temperature and behavior of gases, thermodynamics, thermal properties of materials, forces, fields, electrical potentials, and continuous currents.		

0501107	**Physiology I**	**Credit Hours**
Prerequisite:1. 0304101 / General Biology I 2. 0339101 / General Chemistry I		**2**

This course examines how the human body works at the molecular, cellular, tissue and systemic levels by introducing basic physiological concepts such as homeostasis and cellular transport. This material covers the cardiovascular system, respiratory system and central nervous system. This course provides a comprehensive understanding of human physiology with an emphasis on its relationship with rehabilitation. This material also provides in-depth knowledge about the basic senses.

0502107	Anatomy of the head, neck and thorax	Credit Hours
Prerequisite:1. 0532108 / Anatomy of Extremities and Trunk 2. 0501107 / Physiology I		**3**
This course covers head, neck and thoracic anatomy for rehabilitation students. Hands-on laboratories provide hands-on experience with anatomical models and cadavers, allowing for the integration of knowledge and the connection of anatomical structures to their functions		

1801381	Biostatistics for rehabilitation students	Credit Hours
Prerequisite: \1804340 Research methods in rehabilitation sciences		**2**
This course provides students with fundamental principles of statistical analysis. It introduces concepts of various statistical methods used in health-related research, such as variable measures, descriptive statistics, hypothesis testing, z-tests, t-tests, analysis of variance (ANOVA), non-parametric tests, correlation analysis, and regression analysis. Students will learn how to apply many of these tests and will explore examples of how these methods are utilized in recent research articles.		

1804340	Research methods in rehabilitation sciences	Credit Hours
Prerequisite: 1802131/ Psychology for Rehabilitation Students		**3**
This course introduces students to the principles and methodologies of research in rehabilitation, with a focus on evidence-based practice. Students will learn about various research approaches and designs, how to locate, evaluate, and analyze scientific literature, and how to interpret research articles. The course also covers ethical considerations, research credibility, and participant selection, equipping students with the skills needed to critically appraise research for future academic and professional purposes in rehabilitation sciences. Guest experts may be invited to deliver lectures or conduct diverse interactive activities.		

1832447	Management and leadership in rehabilitation	Credit Hours
Prerequisite: \1833472 Assistive technology		**3**
This course is designed to facilitate students' transition into the job market after graduation. It covers a broad range of topics relevant to professional environments, including management and leadership concepts, types of healthcare organizations, organizational culture, and socialization within various institutions and organizations. The course places emphasis on essential job market entry skills such as résumé writing, succeeding in job interviews, and creating professional and social online profiles. Additionally, it addresses critical skills needed to excel in the workplace,		

including oral and written communication, ethics in providing feedback, conflict resolution, and problem-solving. The course concludes with an overview of the fundamental elements of effective marketing.

309103	Modern digital skills	Credit Hours
Prerequisite: -		**3**
This course enables healthcare students to acquire fundamental computer skills and digital techniques related to health information systems, with a focus on ethical aspects. It provides beginner-level knowledge on conducting medical research experiments using common software tools such as Excel, databases, and PowerPoint. The course also offers a comprehensive overview of electronic health records, health information exchange, privacy and security of healthcare information, including privacy regulations like HIPAA. Additionally, it covers topics such as telemedicine, consumer health, mobile health systems, and population health management. Practical applications are included through case studies on databases in health information systems and medical data analysis.		

0339101	General chemistry 1	Credit Hours
Concurrent with: 1. 0319101 / Differential and Integral Calculus(1) 2.1803170 / Introduction to Prosthetics and Orthoses		**3**
Measurement and significant numbers, chemical reactions, chemical calculations, gaseous state, thermochemistry, electronic structure and periodicity, chemical bonds, shapes of molecules, states of matter and forces of attraction between molecules, physical properties of solutions, principles of equilibrium.		

0501108	Physiology II	Credit Hours
Prerequisite: 1.0501107 / Physiology 1 2.1802131 / Psychology for Rehabilitation Students		**2**
This course builds on previous information from Physiology 1, and covers the physiology of biological systems not covered in Physiology 1. This course is essential for rehabilitation students because it covers nerve and muscle physiology, neuromuscular action potentials, and skeletal muscle contraction, with an emphasis on how these systems affect Movement and rehabilitation. This course also provides a broad understanding of the physiology of body fluids and blood, in addition to the following systems: digestive, urinary, endocrine, and reproductive glands.		

0532108	Anatomy of Extremities and Trunk	Credit Hours
Prerequisite: 1.10304101 / General Biology "1"		**3**

2. 0339101/ General Chemistry (1)	
This course covers the anatomy of the upper and lower extremities and trunk. Hands-on laboratories provide hands-on experience with anatomical models and cadavers, allowing for the integration of knowledge and the connection of anatomical structures to their functions.	

0319101	Calculus I	Credit Hours
Concurrent with : 1. 0339101 / General Chemistry(1) 2. 1803170 / Introduction to Prosthetics and Orthoses		**3**
This course addresses functions and limits: functions, domains, operations on functions, graphing functions, trigonometric functions, limits (definition and calculation methods), limits at infinity and infinite limits, continuity, and the limits and continuity of trigonometric functions. The course also covers derivatives and their calculation methods, derivatives of trigonometric functions, the chain rule, implicit differentiation, differentials, Rolle's Theorem, the Mean Value Theorem and its generalization, L'Hôpital's Rule, increasing and decreasing functions, concavity, and the extrema of functions. Additionally, students will study the graphing of rational functions (including horizontal and vertical asymptotes), the origin of derivatives, indefinite integrals, definite integrals, the fundamental theorem of calculus, the area under a curve, and the area between two curves. For non-algebraic functions, the course explores inverse functions, logarithmic and exponential functions (their derivatives and integrals), hyperbolic functions, inverse trigonometric functions, indeterminate forms, and inverse hyperbolic functions. Some advanced integration techniques are also included.		

0904131	Engineering Graphics	Credit Hours
Prerequisite: 1803170 / Introduction to Prosthetics and Orthoses **Concurrent with**: 1803171 / Introduction to Rehabilitation and Inter-Professional Learning\		**3**
Drawing equipment and use of tools. Engraving, geometric construction, drawing and shape description. Basic descriptive geometry, developments and intersections. Axonometric drawings, oblique and perspective sections, multi-view projection, master sections, conventional practice, and tomographic sections. Help clips. Dimensional techniques. In the practical part will be covered: introduction to computer drawing, drawing aids, geometric construction, appropriate commands for text and editing, sections and layers, pictorial views and dimensions.		

1803460	Elective Prosthetics and Orthotics Off-Campus Training	Credit Hours
Prerequisite: 1803369\ Clinical placement in prosthetics and orthotics 1		**5**

In this elective course, students are expected to select a training site within a reputable institution, either inside or outside Jordan, that provides orthotic and prosthetic services. The chosen placement must be approved by the department. During the training, students will apply the knowledge acquired from previous theoretical and practical courses and develop their clinical skills in patient care.

1803319	**Applied Clinical Training in Upper limb Prosthetics**	**Credit Hours**
Prerequisite:\1803216 Clinical Training in upper extremity prostheses or concurrent		**1**
Through this course; students will gain a comprehensive understanding of electrically powered upper limb prosthetics. The course focuses on the design, fabrication, and fitting of prostheses with an emphasis on advanced control systems for myoelectric hands and pincers. Students will explore the principles of myoelectric control, types of electrodes, and strategies for optimizing the functionality of these devices. The course also addresses the integration of power sources, system calibration, and patient-specific customisation. Additionally, students will learn about the latest innovations in the field of electrically powered upper limb prosthetics, preparing them to apply this knowledge in clinical practice		

1801103	**Principles and Ethics of Rehabilitation**	**Credit Hours**
Prerequisite: 1803170 / Introduction to Prosthetics and Orthotics (1)		**2**
This course offers foundational knowledge about rehabilitation, including its core principles, goals, and various team models. It covers the types of disabilities, the rights of individuals with disabilities and discusses various models of disability with an emphasis on the International Classification of Functioning, Disability, and Health (ICF) system. This course focuses on ethical principles and values in healthcare, and addresses common ethical dilemmas encountered in rehabilitation field. Additionally, it addresses elements of professionalism, emphasizing the effective communication and the provision of compassionate care. Topics such as infection prevention and control strategies, patient safety, and patient education are also covered in this course		

1833472	**Perspectives in Assistive Technology**	**Credit Hours**
Prerequisite: 1801381 / Biostatistics for Rehabilitation Students		**2**
The course explores the medical, social, ethical, and technical challenges surrounding the design, development, and use of technologies that improve the lives of people with disabilities and older adults. Through lectures, practical projects, and/or site visits, students gain a comprehensive understanding of assistive technologies and their impact on patient outcomes and quality of life.		