



**CLINICAL MASTER PROGRAM IN
REHABILITATION SCIENCES AT JUST
(JUST – CRS)**

**COURSE INFORMATION PACKAGE
(COURSE CATALOGUE)**

COURSE INFORMATION

Course title	Code	Semester	Theory (hours/week)	Application (hours/week)	Laboratory (hours/week)	National Credit	ECTS
Advanced theories and application in motor learning and motor control	CRS 722	II, III	2	1	-	2	5
Prerequisites	None						
Course language	English						
Course type	Elective						
Mode of delivery (face to face, distance learning, blended)	<ul style="list-style-type: none"> • Blended • Face to face 						
Learning and teaching strategies	<ul style="list-style-type: none"> • Lectures • Discussion • Preparing and Presenting an assignment • Online environment 						
Instructor (s)							
Course description	The course is designed to present the advance theories, principles, and concepts that deepen the student knowledge and laboratory experiences in motor learning, control, and their application.						
Course objective	To deepen the student's knowledge and experience in the physical, physiological, and psychological factors that affect motor skill acquisition, performance, retention, and transfer. With a focus on voluntary movement, topics include nervous system control of movement, sensory and perceptual contributions to motor learning, information processing, optimal conditions for learning motor skills, preferred modes of feedback delivery during learning, and individual variability in motor skill acquisition.						
Learning outcomes	<p>On completion of this course, students will be able to:</p> <ol style="list-style-type: none"> 1- Understand various theoretical concepts of how humans control movement and how new movements are learned and retained. 2- Understand factors that can affect the quality of movement performance and learning. 3- Understand the neurological and mechanical processes out of which complex movement behaviors are created. 4- Application of these concepts to coaching, fitness, and therapeutic purposes in rehabilitation settings. 						



	5- Analyze motor learning settings and determine adjustments to be made in those settings to foster motor skill acquisition for a variety of populations.
Course Content	<ul style="list-style-type: none"> • Motor control & learning
References	<ul style="list-style-type: none"> • Shamway Cook and Woollacott. Motor learning and motor control: translating research into clinical practice. 5th edition.

COURSE OUTLINE-WEEKLY

Weeks	Topics (Theoretical and Practice – Lab & hands on skills)
1.	Neuro plasticity Application: Neuro plasticity and learning
2.	Theories of motor control
3.	Physiology of motor control
4.	Postural control Application: Postural control
5.	Postural control abnormalities Application: Postural control abnormalities
6.	Control of upper extremity movement: reach, grasp and manipulation Application of upper extremity movement: reach, grasp and manipulation
7.	Midterm exam
8.	Control of Walking Application: Control of walking
9.	Control of walking Application: Control of walking
10.	Application: Demonstration & Instruction
11.	Theories of motor learning
12.	Stages of motor learning Application: Mass versus Distributive Practice
13.	Clinical implications of motor learning and motor control in rehabilitation Application: Clinical implications of motor learning and motor control in rehabilitation
14.	Clinical implications of motor learning and motor control in rehabilitation Application: Clinical implications of motor learning and motor control in rehabilitation
15.	Final exam week

**In accordance with the structure of the course, activities such as presentations, projects, seminars, and portfolios can be used in the evaluation system as a midterm exam.*



ASSESSMENT METHODS

Course activities	Number	Percentage**
Attendance		
Laboratory		
Application		
Field activities		
Specific practical training		
Assignments	1	30
Presentation		
Discussion		
Project		
Seminar		
Portfolio		
Online environment*		
Midterms	1	30
Final exam**	1	40
Total		100
Percentage of semester activities contributing grade success		100
Percentage of final exam contributing grade success		
Total		100

WORKLOAD AND ECTS CALCULATION

Activities	Number	Duration (hour)	Total Work Load
Course Duration (x14)	14	2	28
Laboratory			
Application	14	1	14
Specific practical training			
Field activities			
Study Hours outside the classroom context (Preliminary work, reinforcement, self-directed learning etc.)	14	3	42
Presentation / Seminar Preparation	1	12	12
Project			
Online environment	1	12	12
Homework assignment	1	12	12
Portfolio			
Midterms (Study duration)	1	12	12
Final Exam (Study duration)	1	18	18
Total Workload			150



MATRIX OF THE COURSE LEARNING OUTCOMES VERSUS PROGRAM OUTCOMES

Program Outcomes	Contribution level*				
	1	2	3	4	5
1. Design and implement autonomously a professional approach based on analysis of complex rehabilitation science knowledge					x
2. Design, deliver and evaluate educational process adapted or customize to different inter-professional contexts (academic/professional/community) using an effective pedagogical approach					
3. Provide and disseminate new evidence in accordance with research ethics using updated and integrated knowledge of research methods					
4. Develop, manage and organize strategic planning and decision making within the scope of the quality assurance, ethical rules, team development and cooperation					
5. Integrate health advocacy at an individual, community and policy levels to promote citizenship and inclusive development of communities					
6. Communicates effectively within multidisciplinary clinical or scientific contexts, based on collaborative approach.		x			
7. Plan, implement and advocate interdisciplinary healthcare services within deep understanding of health care systems to promote better networking, and comprehensive patient care.					

***1 Lowest, 2 Low, 3 Average, 4 High, 5 Highest**