



**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
Clinical Exercise Physiology	CRS 732	II, III	2	-	1	2	5
<b>Prerequisites</b>	None						
<b>Course language</b>	English						
<b>Course type</b>	Elective						
<b>Mode of delivery</b> (face to face, distance learning, blended)	<ul style="list-style-type: none"> <li>• Face to face</li> </ul>						
<b>Learning and teaching strategies</b>	<ul style="list-style-type: none"> <li>• Lecture</li> <li>• Demonstration</li> <li>• Discussion</li> <li>• Team/group work</li> <li>• Self-directed learning</li> </ul>						
<b>Instructor (s)</b>							
<b>Course description</b>	This course includes exercise assessment, prescription and program management in rehabilitation for populations in various disease states						
<b>Course objective</b>	The module aims to introduce practitioners to the knowledge-based, clinical and practical skills necessary for planned and strategic management of safe effective exercise prescription for clinical groups. The aim of this course includes exercise assessment, prescription and program management in rehabilitation for populations in various disease states						
<b>Learning outcomes</b>	<p>Upon completion of this course student will be able to:</p> <ol style="list-style-type: none"> <li>1. Evaluate exercise capacity and limitations for physical activity in clinical populations, taking into consideration disease processes and methods to assess functional capacity.</li> <li>2. Identify commonly used medications for specific clinical conditions and their effects on exercise capacity.</li> <li>3. Apply concepts of exercise physiology to develop training programs for individuals with chronic conditions.</li> <li>4. Develop and modify programs to coincide with limitations and capacities of individuals with chronic conditions.</li> <li>5. Identify and explain the effects of muscle fatigue, overtraining, environmental factors, and nutrition on exercise programming for individuals with chronic conditions.</li> </ol>						
<b>Course Content</b>	Physiological systems, risk stratification; conditions and exercise considerations, fitness principles, co-morbidities and medications, lifestyle and behavior change, prescription, programming,						



References	
	<ul style="list-style-type: none"> <li>• McArdle WD, Katch FI, Katch VL. Exercise Physiology: Nutrition, Energy, and Human Performance. 8th Edition. Philadelphia: Wolters Kluwer, 2015.</li> <li>• Ehrman JK, y Gordon PM, Visich PS. Clinical exercise Physiology. 3rd ed. Champaign: Human Kinetics, 2013</li> <li>• Heyward V, Gibson A. Advanced Fitness Assessment and Exercise Prescription. 7<sup>th</sup> Edition. Champaign: Human Kinetics, 2014.</li> <li>• American College of Sports Medicine, Moore G, Durstine L, Painter P. ASCM’s Exercise management for persons with chronic diseases and disabilities. 4 edition. Champaign: Human Kinetics, 2016.</li> <li>• American College of Sports Medicine. ACSM’s Guidelines for Exercise Testing and Prescription. 10 edition. Philadelphia, PA: Wolters Kluwer Health, 2017</li> </ul>

### COURSE OUTLINE-WEEKLY

Week	Topics (Theoretical, Practice – Lab & hands on skills [P])
1.	Effect of illness on exercise capacity Fitness and functional capacity testing in normal adults [P]
2.	Evaluate the safety of testing and exercise Monitoring of testing protocols [P]
3.	Practical application of exercise testing Interpreting routine test results [P]
4.	Interaction of exercise with selected medications Interpreting blood tests results [P]
5.	Acute response to exercise in chronic diseases or special conditions Assessing fitness and functional capacities in patients with cardiovascular disorders [P]
6.	Evaluation of physical activity in chronic diseases or special conditions Assessing fitness and functional capacities in patients with metabolic disorders and cancer [P]
7.	Acute response to exercise in chronic heart disease, metabolic disorders and cancer Assessing fitness and functional capacities in patients with lung disorders. Why only lung disorders? [P]
8.	Acute response to exercise in chronic lung disease and neuromuscular conditions Assessing fitness and functional capacities in patients with other neuromuscular conditions [P]
9.	Midterm exam
10.	Exercise training and chronic adaptations in chronic heart disease, metabolic disorders, cancer, chronic lung disease Principles of fitness training and improving performance in patients with metabolic disorders, cancer, chronic lung disease [P]
11.	Exercise training and chronic adaptations in neuromuscular conditions Principles of fitness training and improving performance in patients with other neuromuscular conditions [P]
12.	Exercise training and women health and special groups Principles of fitness training and improving performance in women health and special groups [P]
13.	Physical activity promotion Principles of fitness training and improving performance in community [P]
14.	Final exam



*\*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	2	20
Application		
Field activities		
Specific practical training		
Assignments	2	10
Presentation	1	10
Discussion		
Project		
Seminar		
Portfolio		
Online environment*		
Midterms (theoretical and practical)	1	20
Final exam	1	40
Total		100
<b>Percentage of semester activities contributing grade success</b>		60
<b>Percentage of final exam contributing grade success</b>		40
<b>Total</b>		100

## WORKLOAD AND ECTS CALCULATION

Activities	Number	Duration (hour)	Total Work Load
Course Duration (x14)	14	2	28
Laboratory	14	1	14
Application			
Specific practical training			
Field activities			
Study Hours outside the classroom context (Preliminary work, reinforcement, self-directed learning etc.)	4	12	48
Presentation / Seminar Preparation	1	10	10
Project			
Homework assignment	2	10	20
Portfolio			
Midterms ( Study duration )	1	15	15
Final Exam (Study duration)	1	15	15
<b>Total Workload</b>			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	x				
3. Provide and disseminate new evidence in accordance with research ethics using updated and integrated knowledge of research methods	x				
4. Develop, manage and organize strategic planning and decision making within the scope of the quality assurance, ethical rules, team development and cooperation	x				
5. Integrate health advocacy at an individual, community and policy levels to promote citizenship and inclusive development of communities					x
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.					x

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