



**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
Innovation and emerging technologies in rehabilitation	CRS 755	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>• Blended</li> <li>• Face to face</li> </ul>						
<b>Learning and teaching strategies</b>	<ul style="list-style-type: none"> <li>• Lectures</li> <li>• Group work</li> <li>• Project Design</li> <li>• On line environment</li> </ul>						
<b>Instructor (s)</b>							
<b>Course objective</b>	Learn about the emerging technologies in rehabilitation. Who developed it, how can they be helpful and how can they be used. Learn about how to evaluate these techniques concerning usability, costs and consequences for the health care system and patient management. Applying your knowledge about the technologies and evaluation techniques to assess the effects and or impacts.						
<b>Learning outcomes</b>	<p>Upon completion of this course, student will be able to:</p> <ol style="list-style-type: none"> <li>1. Recognize the emerging technology and innovations relevant to patient care and professional context</li> <li>2. Critically appraise available technology based on benefits to the patient care/professional context</li> <li>3. Critically appraise technology concerning costs and consequences for the health care system and patient management</li> <li>4. Demonstrate the knowledge to design and construct a novel rehabilitative tool which assesses and translates the data into clinically relevant information</li> <li>5. Measure the effects of technology implementation in patient care/professional context</li> </ol>						



<b>Course Content</b>	<ul style="list-style-type: none"> <li>• Context of Health Informatics, eHEALTH, and future trends</li> <li>• Basic requirements regarding (cyber) security, regulatory approval, GCP &amp; ethical considerations</li> <li>• Technology implementation process (Needs analyses, selection, implementation, assessment of outcomes)</li> <li>• Technology applied to the patient management:             <ul style="list-style-type: none"> <li>a) Technology applied to the Assessment process (Mobile apps, accelerometers, quantified self)</li> <li>b) Technology to support clinical decision making (Mindmaps, information searching/reference tools)</li> <li>c) Technology to support intervention process (exergames, Exercise prescription tools, mobile apps, virtual reality, biofeedback)</li> <li>d) Technology used to record the process of intervention (EHR)</li> </ul> </li> <li>• Technology applied to promote activity and participation (Assistive technology)</li> <li>• Technology to support professional development and communication (Professional Portfolio, Social Networks, professional marketing)</li> </ul>
<b>References</b>	<ul style="list-style-type: none"> <li>• Nelson, R., Faan, A., Health Informatics: An Inter professional Approach. 2<sup>nd</sup> Edition, 2018</li> <li>• Hoyt RE, Yoshihashi AK. Health Informatics: Practical guide for healthcare and information technology professionals. Lulu. Com, 2014.</li> <li>• Additional reading will be in the form of papers and or text references that will be provided prior to or during each session</li> </ul>

### COURSE OUTLINE-WEEKLY

Weeks	Topics
1	Context of Health Informatics, e-HEALTH, and future trends Application: Group work
2	Security, regulatory, app-related GCP guidance & ethical considerations Application: Group work
3	Technology implementation process (Needs analyses, selection, implementation, assessment of outcomes) Application: Group work
4	Technology applied to the patient management: Technology applied to the Assessment process (Mobile apps, accelerometers, quantified self) – Part I Application: Group work
5	Technology applied to the patient management: Technology applied to the Assessment process (Mobile apps, accelerometers, quantified self) – Part II Application: Group work
6	Technology applied to the patient management: Technology to support clinical decision making (Mindmaps, information searching/reference tools) -Part I Application: Group work
7	Technology applied to the patient management: Technology to support clinical decision making (Mindmaps, information searching/reference tools) -Part II Application: Group work



8	Technology applied to the patient management: Technology to support intervention process (exergames, Exercise prescription tools, mobile apps) – Part I Application: Group work
9	Technology applied to the patient management: Technology to support intervention process (exergames, Exercise prescription tools, mobile apps) – Part II Application: Group work
10	Technology used to record the process of intervention (EHR) Application: Group work
11	Technology applied to promote activity and participation (Assistive technology) – Part I Application: Group work
12	Technology applied to promote activity and participation (Assistive technology) – Part II Application: Group work
13	Technology to support professional development and communication (Professional Portfolio, Social Networks, professional marketing) Application: Group work
14	Students project presentations
15	Students project presentations 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/group work		
Field activities		
Specific practical training		
Assignments		
Presentation	1	10
Discussion		
Project	1	20
Seminar		
Portfolio		
Online environment*/Application- group work	1	20
Midterms (theoretical and practical)	1	10
Final exam (project)	1	40
Total		100
<b>Percentage of semester activities contributing grade success</b>		
<b>Percentage of final exam contributing grade success</b>		
<b>Total</b>		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	2	28
Presentation / Seminar Preparation	1	10	10
Project	1	40	40
Online environment/group work	1	25	25
Homework assignment			
Portfolio			
Midterms/quiz	1	5	5
Final Exam			
<b>Total Workload</b>			<b>150</b>

## 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**