

## Level 2 Upper Quadrant

Online – maximum (asynchronous minimum 10, synchronous – minimum of 30)

In Person – minimum 28 hours

Total number of Hours – 68 hours

Total number of Hours (MCQ / Case Examination) – 2-hour MCQ / 3-hour Case Examination

### COURSE DESCRIPTION:

This course is designed to enhance student's knowledge and development of advanced clinical skills in the assessment and treatment of neuromusculoskeletal (NMS) dysfunctions of the upper quadrant (cervical spine, thoracic spine, shoulder girdle, and upper extremity peripheral joints). Students will expand on their understanding of the value and interpretation of the clinical history and build on their existing fundamentals of the physical examination of the upper quadrant. Clinical history and physical examination findings will be interpreted according to the principles of evidence informed practice utilizing a biopsychosocial approach to patient centred care. Concepts of advanced clinical reasoning, reflective practice, critical and analytical thinking will be integrated throughout the course. Students will gain a comprehensive understanding of a multimodal treatment approach to the management of acute and persistent/recurrent neuromusculoskeletal injuries of the upper quadrant including education, therapeutic exercise, manual therapy, prognosis, and prevention. These elements will be considered and critically evaluated to develop effective strategies for targeted assessment and treatment in each region of the upper quadrant.

The course will be a combination of online and in person practical skill labs. Online learning will include both synchronous and asynchronous activities with an emphasis on the understanding of the knowledge and theory behind the clinical skills and behaviours. A case-based teaching approach will be used to enhance the application and analysis of the theoretical knowledge base, advanced clinical reasoning, and practical skills.

**Asynchronous Online Learning** – means that the instructor and the students in the course engage with the course content at different times and from different locations. The instructor provides students with a sequence of modules and dates that the students work through as their schedules permit. Within the module, there may be assigned readings, online quizzes, self-assessment, uploaded media, learning team assignments, and discussion forums. The instructor acts as a facilitator and guides the students providing them with feedback and assessment.

**Synchronous Online Learning** – means that the instructor and the students in the course engage with the course content and each other at the same time, but from different locations. The instructor interacts with students via real time using tools such as Zoom to livestream audio, video, and presentations to hold live classes or meetings. The chat and breakout room features allow students to engage with both the instructor and their colleagues.

<https://uwaterloo.ca/keep-learning/strategies-remote-teaching/synchronous-vs-asynchronous-online-learning>

## COURSE LEARNING OUTCOMES

	IFOMPT Dimension	Learning Outcomes	Learning Strategies	Assessment of the Learning Outcomes
1	2.1	To integrate and critically apply knowledge of anatomy, physiology, and biomechanics to enable evaluation of normal and abnormal function of the upper quadrant.	Self-directed learning activities – asynchronous audio PowerPoints, pre-reading assignments	Online quizzes, summative online clinical reasoning, case history assignments, MCQ examination
2	2.2	To expand understanding of the pathology, pathogenesis and pain mechanisms underlying neuromusculoskeletal conditions affecting the peripheral and spinal joints of the upper quadrant.	Asynchronous online resources, lectures, clinical case vignettes, student seminar presentations	Group assignments, multiple choice questions, summative online clinical reasoning, case history assignments, MCQ examination
3	5.3 6.3 6.4 7.1	To integrate and display knowledge of clinical history taking in a thorough and timely manner as it relates to the evaluation of neuromusculoskeletal conditions of the upper quadrant and to interpret these findings using a clinical reasoning approach reflective of current best practice and evidence.	Online video presentations, subjective case histories with guiding questions, asynchronous audio PowerPoint presentation	Summative online clinical reasoning, discussion forums, case history assignments MCQ clinical vignettes
4	2.3	To integrate and display knowledge of the physical examination of peripheral and spinal joints as it relates to the presentation of acute and persistent/recurrent conditions of the upper quadrant in a timely manner. To include for example: observation, active/passive mobility, resisted testing, passive joint mobility, neural tissue integrity/sensitivity evaluation, passive and dynamic stability testing, muscle length/tension testing, ancillary tests, functional movement evaluation.	In person practical assessment skills labs Online videos Interactive clinical reasoning sessions	Practical assessment skills evaluation, summative online clinical reasoning, case history assignments, online quizzes

5	2.5	To identify red flags, yellow flags, indications, precautions and contraindications for the assessment and treatment of neuromuscular through a detailed clinical history examination.	Asynchronous online resources, podcasts/videos from international experts, interactive clinical reasoning sessions, IFOMPT serious spinal pathology framework	Online quizzes, group assignments, summative online clinical reasoning sessions, reflective analysis of patient history data, MCQ examination
6	2.5	To integrate and display effectiveness in clinical reasoning to enable effective, efficient, and safe assessment and management of the cervical spine with regards to cervical vascular pathologies.	Resources – International IFOMPT Cervical Framework, forums to discuss risk versus benefit, podcasts and you-tube videos of content experts, clinical case analysis	Online quizzes, group assignments and presentations, summative online clinical reasoning, MCQ examination
7	2.4	To acquire, integrate and display advanced clinical reasoning skills to differentiate dysfunction of the neuromusculoskeletal system from non-musculoskeletal dysfunction in other systems in the upper quadrant.	Asynchronous online resources, podcasts/webinars content experts, interactive clinical reasoning sessions, practical labs	Online quizzes, group assignments, summative online clinical reasoning, practical skills evaluation, MCQ examination – independent and case questions
8	2.4 6.2	To acquire, integrate and, display the ability to interpret clinical history and physical examination findings to arrive at a differential diagnosis in the assessment of neuromusculoskeletal dysfunction based on the principles of clinical reasoning and evidence informed practice.	Lectures, interactive clinical reasoning sessions, case histories with guiding questions, group assignments, asynchronous online resources, discussion forums	Online quizzes, group assignments, summative online clinical reasoning, case history examinations, MCQ clinical vignette questions
9	4.1 4.3	To integrate and critically apply an understanding of the skills and application of behavioural change principles and therapeutic alliance.	Online clinical reasoning Asynchronous online resources Guest lecturers/podcasts Patient advocates/narratives	Online quizzes, group assignments, summative online clinical reasoning, mentored clinical practice, submission of video of a client/therapist interaction
10	4.2 6.1	To integrate and display the ability to work effectively within a biopsychosocial framework to inform clinical case management.	Online clinical reasoning, reflective case analysis, student seminar presentations	Case history examinations/reflective activities/ mentored clinical practice – clinical examination and management of a client
11	5.2 4.2 4.4	To acquire, integrate and demonstrate the ability to determine the association between physical impairments, activity limitations and participation restrictions based on the outcomes of the clinical	Interactive clinical reasoning sessions, reflective case analysis, assessment / skills practical labs	In class and online quizzes, group assignments, case history examination, peer evaluation

		examination and to formulate an appropriate intervention strategy in collaboration with the goals and expectations of the patient.		
12	4.4 1.2 5.2	To acquire, integrate and display the ability to select appropriate outcome measures for upper quadrant conditions (self-report and physical impairment) to evaluate impairments, activity limitations and participation restrictions appropriate to the needs of the patient and to demonstrate the ability to interpret the results.	Asynchronous online resources, Guest expert lecturers, reflective case history analysis, group assignments, online forum discussions	Group Assignment – researching psychometric properties of a specific outcome measure Clinical application to a case history
13	5.1 5.2 5.3	To retrieve, integrate and critically apply current knowledge of the theoretical and evidence base of neuromusculoskeletal physiotherapy to inform assessment and management of neuromusculoskeletal dysfunctions in the upper quadrant.	Online clinical reasoning, online discussion forums / debates, group assignments	Clinical reflective case history assignments, online quizzes, MCQ examination
14	8.1	To acquire, integrate and demonstrate the ability to select appropriate practical skills and outcome measures to enable collection of high-quality clinical data to inform the clinical reasoning process during the patient.	Clinical skill labs, mentored clinical practice, clinical reasoning sessions	Practical skills evaluation, clinical examination, and treatment of a client with reflective analysis
15	8.2 5.4	To acquire, integrate and demonstrate the ability to select and utilize a multimodal approach including client education, exercise prescription and manual therapy techniques including mobilizations and manipulations of the cervical and thoracic spine and peripheral joints of the upper quadrant with consideration of dosage parameters and progression.	Clinical skill labs Mentored clinical practice Clinical reasoning sessions Videos of practical techniques	Practical skills evaluation, clinical examination, and treatment of a client with reflective analysis
16	5.3 3.3 2.5 7.2	Maintain patient's safety with consideration of the contraindications and precautions for the neuromusculoskeletal assessment and treatment techniques, identification of conditions outside the scope of the orthopaedic musculoskeletal physiotherapist and the need for referral to another health-care professional for further evaluation.	Reading assignments. Online resources, podcasts and webinars, clinical reasoning scenarios, online discussion forums	Online quizzes, MCQ examinations, case history examinations and reflective analysis
17	7.3 7.4	To integrate and demonstrate the ability to effectively communicate the outcomes of the clinical evaluation, prognosis, treatment plan and patient education to the patient and other members of the health care team as appropriate.	Interactive clinical reasoning sessions, role playing, videos of clinical interactions with reflective analysis	Summative online clinical reasoning, submission of video with a client for evaluation

18	6.1 1.3 3.1 3.2,	To acquire and demonstrate an advanced level of clinical reasoning skills, integrating current research evidence and the data from the clinical history and physical examination with consideration of the biopsychosocial framework.	Interactive clinical reasoning sessions, case history analysis, online discussion forums with clinical cases, group assignments and presentations	Written case history examinations, mentored clinical practice – case reflection analysis, group assignment – integration of evidence into a clinical case
19	6.2	To critically apply various clinical reasoning processes - hypothetico-deductive, pattern recognition, diagnostic reasoning, narrative reasoning, collaborative and interactive reasoning in the effective assessment and management of upper quadrant dysfunctions.	Interactive clinical reasoning sessions, case history analysis, online discussion forums with clinical cases, group assignments and presentations, lectures	Reflective journal assignment, case history reflective analysis, mentored clinical practice – clinical examination of a patient
20	6.3	To demonstrate the ability to critically evaluate and effectively prioritise clinical data collection to ensure reliability and validity of data and quality of clinical reasoning processes.	Interactive clinical reasoning sessions, case history analysis, online discussion forums with clinical cases, group assignments and presentations, lectures	Reflective journal assignment, case history reflective analysis, mentored clinical practice – clinical examination of a patient
21	6.4	To acquire and integrate evidence informed practice, reflective practice, and metacognition into a collaborative reasoning/ clinical decision-making process with the patient, care givers and other health professionals to determine the goals, expectations, management strategies and measurable outcomes.	Interactive clinical reasoning sessions, case history analysis, searching databases for relevant evidence	Case History Examination, clinical scenarios, mentored clinical practice
22	8.2 8.3	To acquire, integrate and display an understanding of the principles of the prescription and application of passive physiological and articular techniques including spinal and peripheral manipulation for the management of mobility dysfunction secondary to neuromusculoskeletal conditions of the upper quadrant ensuring precision for safe and effective practice.	Clinical skills lab, mentored clinical practice, small group practical sessions with clinical reasoning scenarios, video analysis of student practical skill performance	Practical skill examination, observation/assessment during mentored clinical practice with a patient
23	5.4 8.2	To acquire, integrate and display an understanding of the principles of the prescription and application of exercise in the management of neuromusculoskeletal conditions of the upper quadrant from acute stages towards achievement of patient directed goals.	Interactive clinical reasoning sessions, exercise skills lab, case history scenarios, mentored clinical practice, student seminar presentations, reflective case analysis	Case History Examination online quizzes, MCQ examination, critical analysis of a case history, mentored clinical practice