Standard Domain One: Sport & Exercise Sciences Foundational Knowledge

	Modules that meet this element (codes and module title)	Description of how module enabled you to meet this standard	Continuing professional development undertaken to address this standard	Professional experience undertaken to address this standard
Human Anatomy & Physiology				
Anatomical descriptors for body position, movement, direction, regions, and planes.	SS122 – Anatomy & Functional Anatomy for Sport Sciences SS202 Anatomy & Functional Anatomy SS206 Sport & Exercise Biomechanics 1 SS303 Sport & Exercise Biomechanics 2 SS107 – Motor Control & Learning	These modules developed a comprehensive understanding of anatomical descriptors including body position, directional terms, planes of movement, and regional anatomy. This knowledge underpinned the analysis and description of human movement in both clinical and performance contexts, enabling accurate communication and application in exercise instruction, coaching, and biomechanical analysis.	Professional expertise has been maintained through ongoing delivery of undergraduate teaching in anatomy, biomechanics and exercise physiology, complemented by a Weightlifting Ireland Level 1 coaching qualification. Current knowledge is reinforced through peer review, editorial activities, engagement with contemporary anatomical literature and regular participation in scientific meetings focused on human movement and exercise science.	Applied extensively through undergraduate and postgraduate teaching at the University of Limerick, where anatomical terminology underpins practical instruction in biomechanics, exercise physiology and movement analysis. Previous experience at Dublin City University, together with athlete testing and coaching, has further strengthened the application of anatomical concepts within both research and applied sport settings.

The structure and function of anatomical systems.	SS202 – Anatomy & Functional Anatomy SS203 – Integrated Sport & Exercise Physiology SS301 – Clinical Exercise Physiology I SS401 – Clinical Exercise Physiology & Nutrition	Developed detailed knowledge of the structure and function of key anatomical systems (musculoskeletal, cardiovascular, respiratory, and nervous systems) and their role in supporting movement and exercise performance. This included understanding system interactions and their relevance to both health and athletic performance.	Knowledge of anatomical systems continues to develop through leadership of undergraduate modules in muscle physiology and exercise metabolism, MSc teaching in endurance sports, editorial responsibilities with the Journal of Physiology and the Biochemical Society, supervision of student research and continued scholarly engagement with advances in integrative physiology.	Applied across teaching, laboratory instruction and internationally recognised research programmes undertaken at the University of Limerick, Trinity College Dublin and AdventHealth. Extensive experience integrating musculoskeletal, cardiovascular, respiratory and nervous system physiology within exercise testing, skeletal muscle biopsy studies and clinical exercise interventions.
Joint type, structures, and functions in relation to posture and movement.	SS202 – Anatomy & Functional Anatomy SS206 Sport & Exercise Biomechanics 1 SS303 Sport & Exercise Biomechanics 2 SS305 – Coaching Studies	Developed understanding of joint classifications, structure, and function, and their role in posture and movement. This included analysing joint mechanics, range of motion, and stability, and applying this knowledge to movement efficiency, injury prevention, and exercise selection.	Professional knowledge is maintained through continued teaching in anatomy, biomechanics and exercise physiology together with regular appraisal of contemporary literature relating to joint mechanics, injury prevention and human movement. Ongoing engagement with coaching practice and scientific collaboration has further strengthened applied understanding.	Joint mechanics are routinely incorporated into movement assessment, exercise prescription and laboratory teaching. Experience spanning university teaching, athlete testing and applied exercise physiology has enabled the translation of anatomical knowledge into practical strategies that improve movement quality, physical performance and injury risk reduction.

The function, regulation, and interaction and adaptation of physiological systems at varying levels of exercise and physical activity.	SS124 – Sport & Exercise Physiology SS203 – Integrated Sport & Exercise Physiology SS301 – Clinical Exercise Physiology I SS401 – Clinical Exercise Physiology & Nutrition SS402 – Advanced Lab Techniques	Developed a comprehensive understanding of the function, regulation, and interaction of physiological systems (cardiovascular, respiratory, metabolic, neuromuscular) across varying intensities of exercise and physical activity. This included acute responses, chronic adaptations, and regulatory mechanisms supporting performance and health.	Continued scholarly development has been driven through a PhD in Exercise Physiology and Metabolism, leadership within NIH-funded collaborative research programmes, editorial responsibilities, peer review, research supervision and the development of undergraduate and postgraduate teaching in exercise physiology and metabolism.	Applied extensively through internationally funded studies including MoTrPAC, SOMMA, MIRAGE and REST, together with previous appointments at AdventHealth, Trinity College Dublin and the University of Limerick. Regularly utilise advanced physiological assessment techniques—including indirect calorimetry, maximal exercise testing, lactate threshold analysis, skeletal muscle biopsy procedures, DEXA, PET imaging and mitochondrial bioenergetics—to investigate human physiological responses and inform evidence-based exercise prescription.
Biomechanics				
Fundamental biomechanical principles of human movement, including kinematic and kinetic analyses, as well as both	SS206 – Sport & Exercise Biomechanics 1 SS303 – Sport & Exercise Biomechanics 2	These modules developed a strong understanding of fundamental biomechanical principles, including kinematics (motion analysis) and kinetics (forces), and their application to human	Professional expertise continues to evolve through undergraduate teaching in biomechanics and exercise physiology, scientific publication, peer review and collaborative research	Biomechanical principles are routinely integrated into physiological testing, laboratory teaching and exercise performance assessment. Experience includes combining force plate

quantitative and qualitative analyses.	SS203 – Integrated Sport & Exercise Physiology SS202 – Anatomy & Functional Anatomy	movement. This included both quantitative analysis (e.g. force, velocity, acceleration) and qualitative movement assessment, enabling evaluation of technique, efficiency, and performance across sporting tasks.	exploring human movement, muscle function and exercise performance. Contemporary knowledge is maintained through regular engagement with developments in sport and exercise science.	analysis, metabolic assessment and movement evaluation to optimise exercise technique, quantify performance and interpret physiological responses across research and applied practice.
Physical interaction between humans and their environment/equipment, including the physical and mechanical effects of movement.	SS206 – Sport & Exercise Biomechanics 1 SS303 – Sport & Exercise Biomechanics 2 SS125 – Technology in Sport Science & Health SS305 – Coaching Studies	Developed understanding of the interaction between humans and their environment and equipment, including the mechanical effects of movement (e.g. ground reaction forces, friction, resistance). This included analysing how environmental and equipment factors influence performance and movement efficiency.	Current practice is informed through continued use of performance technologies within teaching and research, together with ongoing collaboration with national and international researchers investigating exercise performance, biomechanics and physiological adaptation.	Extensive experience employing force platforms, metabolic carts, body composition assessment systems and performance monitoring technologies within laboratory and applied settings. These tools have been used to evaluate the interaction between individuals, exercise equipment and the surrounding environment to improve performance and testing accuracy.
Forms of motion, including projectiles, fluid mechanics, and movement modelling.	SS206 – Sport & Exercise Biomechanics 1 SS303 – Sport & Exercise Biomechanics 2 SS203 – Integrated Sport & Exercise Physiology	Developed knowledge of different forms of motion, including linear and angular motion, projectile motion, and basic fluid mechanics concepts relevant to sport. This included understanding how movement can be modelled	Knowledge of movement mechanics continues to be strengthened through teaching, applied coaching and ongoing evaluation of contemporary research examining locomotion, movement efficiency and performance modelling.	Applied principles of linear, angular and projectile motion during athlete assessment, coaching and laboratory-based performance testing. Regular experience evaluating sprinting, jumping and change-of-direction performance has

		and analysed to optimise performance.		strengthened the integration of biomechanical principles with physiological assessment.
Techniques for movement analysis, applying both theoretical and practical knowledge.	SS305 – Coaching Studies SS107 – Motor Control & Learning SS206 – Sport & Exercise Biomechanics 1 SS303 – Sport & Exercise Biomechanics 2 SS125 – Technology in Sport Science & Health	Developed practical techniques for movement analysis, combining theoretical biomechanical knowledge with applied coaching tools. This included both qualitative observation and quantitative analysis using performance technologies, as well as providing feedback to improve movement outcomes.	Professional development has been supported through continued delivery of practical biomechanics teaching, supervision of laboratory classes, scientific publication and the adoption of emerging movement analysis technologies within both teaching and research.	Movement analysis forms an integral component of undergraduate teaching, athlete assessment and physiological research. Extensive experience combining qualitative observation with quantitative technologies to evaluate exercise technique, monitor performance and provide evidence-based feedback to students, athletes and research participants.
Skill Acquisition				
Motor Control: Short-term focused mechanisms of perception and action in typical and atypical populations.	SS107 – Motor Control & Learning SS305 – Coaching Studies SS407 – Sport & Exercise for Special Populations 1 & 2	Built knowledge of perception–action coupling and constraints-based perspectives, and how these vary across ability and population needs; applied via coaching practice and adapted/special populations content.	Professional expertise in motor control continues to be developed through delivery of undergraduate teaching in motor control, coaching studies and exercise physiology, alongside continued engagement with contemporary research examining perception–action	Applied principles of motor control throughout undergraduate practical teaching, exercise prescription and laboratory-based movement assessment. Experience includes evaluating movement quality, adapting motor tasks to accommodate individual

			coupling, constraints-led approaches and neuromuscular control across healthy and clinical populations. Interdisciplinary collaborations with physiologists, biomechanists and clinicians have further strengthened the application of motor control principles within teaching and research.	capability and applying perception–action principles when instructing healthy adults, older adults and clinical populations participating in exercise interventions.
Motor Learning: Medium-term focused strategies of learning, practice design, and delivery.	SS107 – Motor Control & Learning SS305 – Coaching Studies	Developed competence in structuring practice, feedback schedules, progression/regression and technique change strategies aligned to learning stages and performance goals.	Current practice is informed through ongoing scholarship in coaching science, skill acquisition and exercise pedagogy together with continued refinement of practical teaching methodologies. Professional development has also been supported through supervision of practical classes, peer review activities and critical evaluation of contemporary motor learning research.	Designed and delivered practical teaching sessions that progressively develop movement competency through structured practice design, demonstration, feedback and task progression. Regularly modify learning activities according to participant needs, previous experience and learning stage to maximise skill acquisition and exercise competence.
Motor Development: Long-term focused theories of development, life course perspectives	SS107 – Motor Control & Learning SS305 – Coaching Studies	Developed understanding of life-course perspectives (youth development, maturation, special populations) and appropriate intervention	Professional knowledge continues to evolve through teaching across exercise physiology, coaching and health promotion modules,	Applied developmental principles while designing and delivering exercise interventions for individuals across the lifespan, including

(e.g., early childhood, adolescence, maturation, aging populations), and developmentally appropriate interventions for sport participation, talent development and elite sport.	SS306 – Principles of Health Promotion	design for participation, performance, and health.	supported by ongoing engagement with literature relating to growth, maturation, ageing and lifelong physical activity participation. Continued involvement in research investigating healthy ageing has strengthened understanding of developmental changes influencing movement and exercise capacity.	younger adults, older adults and clinical populations. Research within internationally funded studies such as SOMMA has provided extensive experience understanding age-related changes in physical function, muscle physiology and exercise adaptation, informing age-appropriate exercise prescription and participant management.
Applied Practice: Coaching practice engaging in practice scheduling, feedback methodologies, technique change & skill refinement, planning and periodisation.	SS102 – Health & Fitness 1: Theory & Practice: Theory & Practice SS105 – Health & Fitness 2: Theory & Practice SS305 – Coaching Studies	Developed practical coaching competencies: session planning, progression, feedback strategies, and aligning training structure with adaptation goals; supported by theory–practice modules and coaching studies.	Professional practice continues to be enhanced through university teaching, Weightlifting Ireland Level 1 coaching certification and continued evaluation of evidence-based coaching, feedback and instructional strategies. Ongoing engagement with educational research supports continual refinement of practical teaching and coaching approaches.	Extensive experience planning and delivering practical teaching sessions within undergraduate programmes, integrating demonstration, observation, verbal instruction and individualised feedback to improve movement competency and exercise technique. Exercise prescription and physiological assessment routinely require modification of technique, progression of exercise difficulty and structured feedback to facilitate long-term learning, safe participation and performance improvement.

Psychology				
Understanding individual differences that influence sport and exercise participation.	NS114 Introduction to Psychology SS204 – Sport Psychology SS208 – Physical Activity Psychology	Built understanding of psychological determinants of participation/performance and how individual differences and context shape behaviour, adherence, and wellbeing.	Professional understanding of individual differences continues to be strengthened through interdisciplinary research examining physical activity, healthy ageing, metabolism and exercise behaviour, together with undergraduate teaching and supervision. Ongoing scholarly engagement with behavioural science and exercise psychology ensures teaching and practice remain informed by contemporary evidence.	Applied psychological principles across teaching, exercise testing and internationally funded human intervention studies involving elite athletes, sedentary adults, older adults and individuals living with obesity and metabolic disease. Exercise prescription and participant support are routinely tailored to individual physiological, behavioural and psychosocial characteristics to optimise engagement and adherence.
Theories of motivation, group dynamics, psychology of physical activity, and behaviour change.	NS114 Introduction to Psychology SS204 – Sport Psychology SS208 – Physical Activity Psychology	Developed theoretical and applied understanding of intrinsic vs extrinsic motivation, team/group processes, and behaviour change frameworks relevant to health and performance contexts.	Current practice is informed through continued engagement with behaviour change theory, motivational psychology and health promotion literature, supported by undergraduate teaching, peer review and collaborative research	Applied evidence-based behaviour change strategies throughout participant education, exercise prescription and clinical research. Goal setting, self-monitoring, participant-centred communication and structured feedback have

			investigating long-term physical activity participation.	been incorporated into exercise interventions to enhance motivation, adherence and long-term lifestyle change.
The impact of stress, physiological arousal, anxiety, and effective coping mechanisms.	NS114 Introduction to Psychology SS204 – Sport Psychology SS208 – Physical Activity Psychology	Developed understanding of stress/arousal relationships with performance and health, and evidence-based coping/psychological approaches relevant to sport and exercise participation.	Knowledge continues to evolve through interdisciplinary scholarship spanning exercise physiology, clinical exercise and sport psychology. Contemporary evidence relating to stress, anxiety and performance is continually integrated into teaching, research supervision and practical instruction.	Extensive experience supervising maximal exercise testing and laboratory-based physiological assessments where anxiety, stress and arousal can influence both participant safety and test validity. Clear communication, reassurance and evidence-based preparation strategies are routinely employed to optimise participant confidence and testing outcomes.
Psychological skills training approaches, including strategies to enhance sporting performance and well-being.	NS114 Introduction to Psychology SS204 – Sport Psychology SS208 – Physical Activity Psychology	Developed applied knowledge of psychological skills strategies (goal setting, self-talk, imagery, routines) and how these integrate with coaching practice and wellbeing.	Professional expertise has been strengthened through continued evaluation of evidence-based coaching methodologies, psychological skills training and educational practice, supported by practical teaching and ongoing scholarship within sport and exercise science.	Applied psychological strategies including goal setting, structured feedback, confidence building and reflective learning throughout undergraduate teaching, athlete assessment and exercise interventions. These approaches are integrated with physiological assessment to enhance exercise adherence, technical

				development and long-term performance.
Principles of Exercise and Training				
Understanding the principles of training: overload, specificity, reversibility, variation, and progression.	SS102 – Health & Fitness 1: Theory & Practice: Theory & Practice SS105 – Health & Fitness 2: Theory & Practice SS305 – Coaching Studies	Developed core training theory and practical application for programme design and adaptation; applied to health, fitness, and sport contexts and modified for special populations. This included applying progressive overload and specificity within structured S&C programmes and adapting training based on athlete response and seasonal demands.	Professional knowledge continues to develop through leadership of undergraduate and postgraduate teaching in exercise physiology, clinical exercise physiology and exercise metabolism, alongside internationally recognised research investigating skeletal muscle adaptation, ageing and metabolic health.	Applied core training principles extensively through university teaching, NIH-funded intervention studies and exercise physiology laboratories. Experience designing progressive aerobic, resistance and combined training programmes has enabled evidence-based prescription across healthy, athletic and clinical populations.
Understanding the manipulation of acute training variables; volume, intensity, and frequency.	SS102 – Health & Fitness 1: Theory & Practice: Theory & Practice SS105 – Health & Fitness 2: Theory & Practice SS305 – Coaching Studies	Developed competence selecting and manipulating acute variables to elicit targeted adaptations and manage training load and recovery.	Current expertise is maintained through continued investigation of acute and chronic exercise responses within laboratory and clinical research, together with delivery of teaching focused on evidence-based exercise prescription and sports performance.	Regularly manipulate exercise intensity, duration, frequency and recovery within human intervention studies and laboratory practicals. Physiological markers including VO_2max, lactate threshold, heart rate and metabolic responses are used to individualise training load and monitor adaptation.

Understanding of health and sport related components of fitness (i.e., aerobic capacity, muscular strength and power, endurance, flexibility and mobility, speed and agility, body composition) and how they are augmented through training.	SS102 – Health & Fitness 1: Theory & Practice: Theory & Practice SS105 – Health & Fitness 2: Theory & Practice SS305 – Coaching Studies	Built knowledge of aerobic/anaerobic fitness, strength/power, mobility, speed/agility, and body composition, and how to train and monitor these across contexts and populations. This included linking physiological testing outcomes to targeted interventions.	Knowledge is continually refined through research in exercise physiology and metabolism, supervision of student research and ongoing engagement with contemporary evidence relating to physical performance, health and exercise adaptation.	Extensive experience assessing aerobic fitness, muscular strength, power, endurance, flexibility, mobility and body composition using validated laboratory methodologies including indirect calorimetry, DEXA, Wingate testing, force platforms and lactate threshold assessment. These findings are routinely translated into evidence-based exercise prescription and performance optimisation.
Understanding of periodisation and long-term manipulation and management of exercise and training prescription.	SS102 – Health & Fitness 1: Theory & Practice: Theory & Practice SS105 – Health & Fitness 2: Theory & Practice SS305 – Coaching Studies	Developed understanding of long-term planning principles, sequencing and progression, and adapting plans based on goals, competition calendars, and athlete development. This included structuring macro-, meso- and microcycles aligned to performance and developmental needs.	Professional expertise continues to evolve through research examining long-term physiological adaptation to exercise, delivery of postgraduate teaching in endurance sports and collaboration within large-scale exercise intervention studies.	Designed and evaluated structured exercise interventions lasting from several weeks to months within research and educational settings. Exercise programmes are progressed using objective physiological assessment, participant feedback and current evidence to optimise adaptation while managing fatigue and recovery.

Understanding the adaptation of exercise and training prescription across the life course and populations.	SS102 – Health & Fitness 1: Theory & Practice: Theory & Practice SS105 – Health & Fitness 2: Theory & Practice SS305 – Coaching Studies	Developed competence adapting assessment and programming for clinical and special populations, considering safety, contraindications, and individual needs. This included modifying exercise selection, intensity, and progression based on developmental stage and health status.	Current knowledge is informed through teaching in clinical exercise physiology and special populations, continued involvement in healthy ageing research and service on the University of Limerick Research Ethics Committee. Ongoing engagement with contemporary evidence supports safe and effective exercise prescription across diverse populations.	Extensive experience adapting exercise assessment and prescription for elite athletes, sedentary adults, older adults and individuals living with obesity, insulin resistance and type 2 diabetes. Research conducted within internationally funded studies has strengthened expertise in tailoring interventions according to age, health status, physiological capacity and individual goals.
Physical Activity and Health, and Nutrition				
Critically evaluating public health and physical activity guidelines and their application across the life course.	SS201 – Health & Fitness 3 SS210 – Health & Fitness 4 SS301 – Clinical Exercise Physiology I SS401 – Clinical Exercise Physiology & Nutrition	Developed ability to interpret and critique guideline evidence, translate to interventions, and consider life-course and population contexts. This included applying evidence-based recommendations to both health and performance environments.	Professional expertise is maintained through leadership of undergraduate teaching in clinical exercise physiology, nutrition and health promotion, together with continued critical appraisal of international physical activity and exercise guidelines issued by organisations including the ACSM and WHO. Ongoing research examining healthy ageing, metabolic health and	Applied public health and physical activity recommendations throughout undergraduate teaching, exercise workshops, community engagement activities and internationally funded human intervention studies. Regularly translate evidence-based guidelines into practical exercise programmes tailored to healthy individuals, athletes and clinical populations while

			exercise adaptation ensures current evidence is continually integrated into teaching and professional practice.	considering age, health status and long-term adherence.
Understanding biological maturation and its impact on physical activity, health and sporting performance.	SS201 – Health & Fitness 3 SS210 – Health & Fitness 4 SS301 – Clinical Exercise Physiology I SS401 – Clinical Exercise Physiology & Nutrition	Built understanding of maturation-related considerations affecting training response, participation, and health; applied through coaching and health promotion frameworks. This included aligning training content with growth and development stages.	Current knowledge is informed through continued scholarship examining growth, maturation, healthy ageing and physiological adaptation across the lifespan, supported by university teaching and collaborative research investigating skeletal muscle function, physical capability and exercise responses in older adults.	Exercise prescription and participant management have been adapted across individuals of differing ages, physiological capacities and clinical presentations. Research undertaken within the NIH-funded SOMMA study has provided extensive experience investigating age-related changes in skeletal muscle physiology and physical function, informing evidence-based exercise prescription for ageing populations.
Assessing the impact of sedentary behaviour on health outcomes.	SS201 – Health & Fitness 3 SS210 – Health & Fitness 4 SS208 – Physical Activity Psychology SS301 – Clinical Exercise Physiology I	Developed understanding of sedentary behaviour epidemiology and mechanisms, and how to address behaviour change and intervention design. This included linking inactivity patterns with long-term health outcomes.	Professional understanding continues to develop through internationally recognised research investigating physical inactivity, skeletal muscle metabolism and healthy ageing. Scholarly activity, publication and collaboration with international research groups have strengthened expertise in the physiological	Extensive research experience investigating the effects of sedentary behaviour and physical inactivity through European Space Agency bed-rest studies and NIH-funded research programmes. Findings have informed undergraduate teaching, scientific publications and practical recommendations

	SS401 – Clinical Exercise Physiology & Nutrition		consequences of prolonged sedentary behaviour and strategies to mitigate associated health risks.	aimed at increasing physical activity and reducing sedentary behaviour across diverse populations.
Recognising the role of physical activity, nutrition, and lifestyle factors in maintaining and enhancing health.	SS213 – Sport and Exercise Nutrition SS401 – Clinical Exercise Physiology & Nutrition SS306 – Principles of Health Promotion PhD in Exercise Physiology & Metabolism (DCU)	Developed integrated knowledge across PA, nutrition, and behaviour to support health and performance, including lifestyle determinants and practical application. This included translating theory into real-world interventions.	Professional expertise continues to expand through delivery of undergraduate teaching in nutrition, exercise metabolism and health promotion, together with ongoing research investigating skeletal muscle metabolism, metabolic health and healthy ageing. Continuous engagement with contemporary evidence supports the integration of lifestyle medicine principles into teaching and professional practice.	Applied integrated lifestyle approaches within university teaching, clinical research and community engagement initiatives. Extensive experience translating evidence relating to physical activity, nutrition and metabolic health into practical recommendations that support exercise participation, healthy ageing and chronic disease prevention across healthy and clinical populations.
Understanding macronutrient and micronutrient functions, energy systems, metabolic pathways, and how these interact with physical activity, exercise and sporting performance, and recovery.	SS213 – Sport and Exercise Nutrition SS401 – Clinical Exercise Physiology & Nutrition PhD in Exercise Physiology & Metabolism (DCU)	Developed understanding of nutrient functions, energy systems, metabolic pathways and practical application to performance, training adaptation and recovery. This included linking fuelling strategies to training demands and physiological responses.	Expertise in exercise metabolism continues to develop through a PhD in Exercise Physiology and Metabolism, undergraduate teaching in sport and exercise nutrition, and internationally recognised research investigating skeletal muscle metabolism, mitochondrial bioenergetics and exercise	Extensive experience investigating substrate utilisation, mitochondrial energetics and metabolic regulation using human intervention studies, skeletal muscle biopsies and cellular models. This knowledge is routinely applied within undergraduate teaching, athlete education and

			adaptation. Ongoing scholarly activity includes publication, peer review and interdisciplinary collaboration.	internationally funded research examining nutritional interventions, exercise adaptation and metabolic disease.
Knowledge of healthy eating principles including the application of applying evidence-based dietary guidelines to support general health, weight management, and chronic disease prevention.	SS213 – Sport and Exercise Nutrition SS401 – Clinical Exercise Physiology & Nutrition PhD in Exercise Physiology & Metabolism (DCU)	Developed competence applying dietary guidelines and nutrition principles in health promotion and performance contexts, including chronic disease prevention and weight management. This included translating guidelines into practical, population-appropriate advice.	Current knowledge is maintained through continued teaching in sport and exercise nutrition, critical evaluation of international dietary recommendations and ongoing research investigating obesity, insulin resistance, healthy ageing and exercise metabolism. Professional development is further supported through scientific publication and collaboration with multidisciplinary research teams.	Applied evidence-based nutrition principles through undergraduate teaching, exercise physiology research and human intervention studies involving healthy individuals and clinical populations. Regularly translate complex nutritional science into practical, evidence-informed recommendations supporting weight management, metabolic health, exercise performance and chronic disease prevention.

Standard Domain Two: Sport and Exercise Sciences Assessment and Prescription

	Modules that meet this element (codes and module title)	Description of how module enabled you to meet this standard	Continuing professional development undertaken to address this standard	Professional experience undertaken to address this standard
Conduct client consultations to assess relevant history, perform a client needs analysis, analyse activity or sports demands, and establish appropriate goals.	SS201 – Health & Fitness 3 SS210 – Health & Fitness 4 SS305 – Coaching Studies	These modules developed competence in conducting structured client and athlete consultations, including systematic collection of relevant history (training, injury, lifestyle), needs analysis, and goal setting. This included analysing sport-specific and positional demands, and aligning these with individual capabilities to inform programme design. Practical components emphasised translating assessment findings into realistic, measurable goals within both health and performance contexts.	Professional expertise continues to develop through leadership of undergraduate teaching in clinical exercise physiology, coaching and exercise assessment, together with extensive involvement in human intervention studies requiring participant screening, clinical history review and evidence-based programme design. Continued scholarly activity and research governance responsibilities ensure consultation practices remain aligned with current best practice.	Extensive experience conducting participant consultations within university teaching and internationally funded clinical research programmes. Routinely obtain medical, physical activity and training histories, undertake structured needs analyses and establish realistic health- and performance-related goals based on physiological assessment, participant priorities and current evidence.
Administer informed consent procedures and conduct appropriate risk assessment screenings to ensure safe exercise	SS411 – Research Methods SS203 – Integrated Sport & Exercise Physiology	Developed a strong understanding of informed consent procedures, ethical considerations, and risk assessment screening within both research and applied	Professional knowledge has been strengthened through doctoral research, formal research ethics training, Good Clinical Practice principles and continued service on the	Responsible for obtaining informed consent and undertaking comprehensive pre-participation screening within European Space Agency and NIH-funded

participation and programming.	PhD in Exercise Physiology & Metabolism (DCU)	environments. This included identifying contraindications to exercise, ensuring participant safety, and implementing appropriate screening tools prior to testing or intervention. Emphasis was placed on adherence to ethical frameworks and safe practice in both clinical and performance settings.	University of Limerick Research Ethics Committee. Ongoing involvement in international collaborative research has reinforced best practice in participant safety, governance and ethical conduct.	clinical trials. Extensive experience identifying contraindications to exercise, assessing participant suitability and maintaining the highest standards of safety during maximal exercise testing, skeletal muscle biopsy procedures and exercise interventions.
Select appropriate assessments based on the clients, intended goals, setting, and available resources - considering the scientific rationale, reliability, validity, assumptions and limitations of common measures.	SS203 – Integrated Sport & Exercise Physiology SS402 – Advanced Lab Techniques SS411 – Research Methods PhD in Exercise Physiology & Metabolism (DCU)	Developed the ability to select appropriate assessment methods based on client needs, performance goals, and context, while considering scientific rationale, validity, reliability, and practical feasibility. This included understanding the assumptions and limitations of both laboratory and field-based measures and selecting appropriate tools accordingly	Current expertise is maintained through continued teaching in research methods, exercise physiology and advanced laboratory techniques, together with ongoing publication and critical appraisal of physiological assessment methodologies. Engagement with emerging technologies and collaborative research continues to strengthen assessment practice.	Extensive experience selecting laboratory and field-based assessment techniques according to participant characteristics, study objectives and available resources. Assessments routinely include indirect calorimetry, VO_2max testing, lactate threshold determination, DEXA, force platform analysis, skeletal muscle biopsy procedures and molecular analyses, with careful consideration of validity, reliability, feasibility and participant safety.

Administer assessments in accordance with test and equipment standard operating procedures, demonstrating the ability to adapt where necessary, while understanding the impact on results interpretation.	SS203 – Integrated Sport & Exercise Physiology SS402 – Advanced Lab Techniques SS125 – Technology in Sport Science & Health PhD in Exercise Physiology & Metabolism (DCU)	Developed practical competence in administering physiological and performance assessments in line with standard operating procedures, with an understanding of how deviations (e.g. environmental conditions, protocol modifications) influence data quality and interpretation. Emphasis was placed on accuracy, repeatability, and methodological rigour.	Professional expertise has been developed through advanced laboratory training across several international research institutions, continued supervision of undergraduate practical teaching and ongoing implementation of validated physiological assessment protocols within research and higher education.	Extensive experience conducting physiological and metabolic assessments in accordance with established laboratory standard operating procedures across university and international research settings. Regularly perform maximal and submaximal exercise testing, indirect calorimetry, DEXA, blood sampling, skeletal muscle biopsy processing and mitochondrial bioenergetic assessment while recognising how protocol deviations influence data quality and interpretation.
Collect, interpret and critically analyse assessment results using normative data, existing benchmarks, considering client characteristics, to inform programming and the longitudinal monitoring of progress.	SS203 – Integrated Sport & Exercise Physiology SS301 – Clinical Exercise Physiology SS401 – Clinical Exercise Physiology & Nutrition SS408 – Research Project PhD in Exercise Physiology & Metabolism (DCU)	Developed the ability to collect, interpret, and critically analyse assessment data using normative values and benchmarks, while considering individual characteristics such as training status, age, and sport demands. This included linking assessment outcomes to evidence-based programme design and longitudinal monitoring of adaptation.	Professional knowledge continues to develop through advanced statistical analysis, supervision of undergraduate and postgraduate research, peer review and publication of exercise physiology research. Ongoing engagement with contemporary assessment methodologies supports evidence-informed interpretation of physiological outcomes.	Extensive experience analysing physiological, biochemical and molecular datasets generated through exercise intervention studies and large-scale clinical trials. Assessment findings are interpreted alongside normative data, participant characteristics and published evidence to monitor adaptation, evaluate intervention effectiveness and

				guide individualised exercise prescription.
Report and effectively communicate assessment outcomes to clients, groups, and relevant groups.	SS239 – Journal Club SS411 – Research Methods SS408 – Research Project SS305 – Coaching Studies UM404 – Uaneen Module	Developed the ability to effectively communicate assessment outcomes and scientific information to a range of audiences, including clients, athletes, and stakeholders. This included translating complex data into clear, actionable recommendations and delivering feedback in both written and verbal formats.	Communication skills continue to be refined through undergraduate and postgraduate teaching, supervision of research students, invited presentations, scientific publication, editorial responsibilities and peer review. These activities have strengthened the ability to communicate complex scientific concepts to both specialist and non-specialist audiences.	Regularly communicate assessment outcomes to students, clinicians, researchers, collaborators and research participants through written reports, lectures, scientific publications and practical teaching. Complex physiological findings are translated into clear, meaningful recommendations that support evidence-based exercise prescription and informed decision-making.
Design tailored and effective interventions in accordance with the components of fitness and principles of training, relative to the needs of the individual or group.	SS102 – Health & Fitness 1 SS105 – Health & Fitness 2 SS201 – Health & Fitness 3 SS210 – Health & Fitness 4 SS305 – Coaching Studies	Developed competence in designing tailored exercise interventions aligned to training principles and components of fitness. This included integrating assessment findings with evidence-based programming approaches and adapting interventions to suit individual	Professional expertise continues to evolve through leadership of undergraduate teaching in exercise physiology, nutrition and clinical exercise physiology together with internationally recognised research investigating skeletal muscle physiology, metabolic health and exercise adaptation.	Designed and implemented individualised aerobic, resistance and combined exercise interventions within educational, laboratory and clinical settings. Physiological assessment findings are routinely integrated with current scientific evidence to optimise performance, health outcomes and participant

	SS301 – Clinical Exercise Physiology SS407 – Special Populations	and group needs across health and performance contexts.		adherence across diverse populations.
Adapt and progress interventions based on individual or group needs, taking into account acute and chronic responses to training.	SS203 – Integrated Sport & Exercise Physiology SS201/SS210 – Health & Fitness SS305 – Coaching Studies SS301 – Clinical Exercise Physiology SS407 – Special Populations SS401 – Clinical Exercise Physiology & Nutrition	Developed the ability to adapt and progress interventions based on individual and group responses, incorporating both acute responses and long-term adaptations. This included understanding load management, fatigue, recovery, and progression strategies.	Current practice is informed through continued research investigating exercise adaptation, fatigue, recovery, healthy ageing and skeletal muscle plasticity, together with ongoing refinement of undergraduate and postgraduate teaching in exercise prescription and sports performance.	Extensive experience modifying exercise interventions according to participant progress, physiological responses and clinical outcomes within longitudinal human intervention studies. Exercise intensity, duration, frequency and progression are routinely adjusted using objective physiological assessment, participant feedback and current evidence to maximise adaptation while ensuring safe and effective programme delivery.

Standard Domain Three: Integration/Application of Sport and Exercise Sciences

	Modules that meet this element (codes and module title)	Description of how module enabled you to meet this standard	Continuing professional development undertaken to address this standard	Professional experience undertaken to address this standard
Exercise Physiology				
Combine foundational knowledge of physiology with principles of exercise assessment and prescription.	SS203 – Integrated Sport & Exercise Physiology SS301 – Clinical Exercise Physiology I SS401 – Clinical Exercise Physiology & Nutrition SS402 – Advanced Lab Techniques SS124 – Sport & Exercise Physiology	These modules developed the ability to integrate foundational physiological knowledge (cardiovascular, respiratory, metabolic, and neuromuscular systems) with principles of exercise assessment and prescription. Emphasis was placed on understanding how physiological systems respond and adapt to exercise, and how these responses inform the design of evidence-based training programmes across health and performance contexts.	Professional expertise has continued to develop through a PhD in Exercise Physiology and Metabolism, leadership of undergraduate and postgraduate teaching in exercise physiology and metabolism, editorial responsibilities with the Journal of Physiology and the Biochemical Society, supervision of student research and ongoing collaboration within internationally funded research programmes. These activities ensure current evidence is continually translated into teaching and professional practice.	Integrated physiological knowledge with exercise assessment and prescription throughout internationally funded research programmes including MoTrPAC, SOMMA, MIRAGE, REST and European Space Agency bed-rest studies. Regularly apply cardiovascular, respiratory, metabolic and neuromuscular physiology to design, implement and evaluate evidence-based exercise interventions across healthy, athletic and clinical populations.

Apply this integrated knowledge to assess physiological responses to sport and exercise across different modes, intensities, and environments.	SS124 – Sport & Exercise Physiology SS203 – Integrated Sport & Exercise Physiology SS402 – Advanced Lab Techniques SS301 – Clinical Exercise Physiology I	Developed the ability to apply integrated physiological knowledge to assess responses to exercise across a range of modes (e.g. endurance, strength), intensities (submaximal to maximal), and environments (laboratory and field settings). This included understanding acute responses and chronic adaptations to training stimuli.	Current knowledge is maintained through continued leadership of practical exercise physiology teaching, scholarly activity investigating skeletal muscle metabolism and mitochondrial function, and ongoing publication within the fields of exercise physiology, ageing and metabolic health.	Extensive experience assessing physiological responses to aerobic, resistance and combined exercise across laboratory, clinical and applied settings. Routinely undertake maximal and submaximal exercise testing, indirect calorimetry, lactate threshold assessment, resting metabolic rate analysis, DEXA, skeletal muscle biopsy procedures and blood sampling to evaluate acute and chronic exercise responses.
Interpret physiological measurements and exercise testing results to prescribe individualised and evidence-based exercise interventions and training programmes	SS203 – Integrated Sport & Exercise Physiology SS301 – Clinical Exercise Physiology SS401 – Clinical Exercise Physiology & Nutrition SS408 – Research Project PhD in Exercise Physiology & Metabolism (DCU)	Developed competence in interpreting physiological measurements and exercise testing data to inform individualised, evidence-based exercise prescription. This included integrating multiple data sources (e.g. aerobic capacity, metabolic thresholds, strength outputs) to guide programme design and progression.	Professional expertise continues to expand through advanced research in exercise physiology, skeletal muscle biology and metabolism, together with peer review, supervision of undergraduate and postgraduate research and continued publication in internationally recognised journals.	Extensive experience interpreting physiological, biochemical and molecular datasets generated through exercise intervention studies and human clinical trials. Integrate measures including VO_2max, lactate threshold, body composition, metabolic assessments and mitochondrial function to develop evidence-based exercise programmes that optimise health, physical function and sporting performance.

Physical Activity and Health Behaviour Change				
Integrate foundational knowledge in physiology, nutrition, and psychology with principles of physical activity and health behaviour change.	SS208 – Physical Activity Psychology SS306 – Principles of Health Promotion SS213 – Sport & Exercise Nutrition SS401 – Clinical Exercise Physiology & Nutrition	Developed the ability to integrate knowledge from physiology, nutrition, and psychology to inform behaviour change strategies aimed at increasing physical activity and improving health outcomes. This included understanding behavioural determinants, adherence, and the interaction between lifestyle factors and physiological health.	Professional understanding continues to evolve through teaching in exercise physiology, nutrition and health promotion, together with interdisciplinary research investigating physical inactivity, healthy ageing and chronic disease. Collaboration with clinicians, nutrition scientists and behavioural researchers has strengthened the application of integrated lifestyle approaches within both teaching and research.	Applied integrated physiological, nutritional and behavioural principles throughout human intervention studies, undergraduate teaching and community engagement activities. Regularly translate scientific evidence into practical strategies that encourage sustained physical activity, improve metabolic health and promote long-term behaviour change across diverse populations.
Apply this integrated knowledge to facilitate lifestyle changes that promote exercise and physical activity to improve health and well-being.	SS306 – Principles of Health Promotion SS208 – Physical Activity Psychology SS201/SS210 – Health & Fitness SS407 – Special Populations	Developed competence in applying integrated knowledge to facilitate lifestyle changes that promote physical activity and improve health and wellbeing. This included designing interventions that consider individual motivation, barriers, and environmental factors.	Current practice is informed through continued evaluation of evidence relating to physical activity promotion, lifestyle medicine and chronic disease prevention. Ongoing scholarly activity, publication and collaborative research ensure exercise interventions reflect contemporary evidence and public health priorities.	Extensive experience delivering lifestyle interventions within NIH-funded clinical trials, university teaching and exercise physiology laboratories. Support individuals in adopting sustainable exercise behaviours through participant education, physiological assessment,

				personalised exercise prescription and ongoing monitoring of behavioural and physiological outcomes.
Strength and Conditioning				
Integrate foundational knowledge in functional anatomy, coaching science, and growth and development with principles of exercise assessment and prescription.	SS202 – Anatomy & Functional Anatomy SS305 – Coaching Studies SS201/SS210 – Health & Fitness SS407 – Special Populations SS308 – Injury & Rehabilitation	Developed the ability to integrate knowledge of functional anatomy, coaching science, and growth and development with principles of exercise assessment and prescription. This supported the design of structured strength and conditioning programmes aligned to individual and sport-specific needs.	Professional expertise has been strengthened through continued teaching in anatomy, biomechanics, exercise physiology and coaching, supported by Weightlifting Ireland Level 1 coaching certification and ongoing evaluation of contemporary strength and conditioning research.	Applied integrated anatomical, physiological and coaching principles to the design of evidence-based exercise programmes across healthy, athletic and clinical populations. Exercise prescription routinely incorporates movement assessment, physiological testing and individual participant characteristics to optimise performance while reducing injury risk.
Apply this integrated knowledge to test, prescribe and modify exercise programmes aimed at improving health and well-being, sporting performance, and at reducing the risk	SS301 – Clinical Exercise Physiology SS308 – Injury & Rehabilitation SS203 – Integrated Sport & Exercise Physiology	Developed competence in applying integrated knowledge to test, prescribe, and modify exercise programmes aimed at improving performance, health, and reducing injury risk. This included understanding screening, load	Current knowledge is maintained through research investigating skeletal muscle physiology, exercise adaptation and healthy ageing, together with continued delivery of undergraduate and postgraduate teaching in	Designed, implemented and progressed aerobic, resistance and combined exercise interventions using objective physiological assessment and contemporary evidence. Programmes are routinely modified according to participant progress, clinical

of sport and exercise injuries.	SS201/SS210 – Health & Fitness SS407 – Special Populations	management, and progression strategies.	exercise physiology and clinical exercise practice.	presentation and performance outcomes to maximise adaptation while promoting safe participation.
Human movement science				
Integrate foundational knowledge in biomechanics and motor control with human anatomy and physiology.	SS206 – Sport & Exercise Biomechanics 1 SS303 – Sport & Exercise Biomechanics 2 SS107 – Motor Control & Learning SS202 – Anatomy & Functional Anatomy SS203 – Integrated Sport & Exercise Physiology	Developed the ability to integrate biomechanics and motor control principles with anatomical and physiological knowledge to understand the determinants of human movement. This included analysing movement efficiency, coordination, and mechanical loading.	Professional knowledge continues to develop through leadership of biomechanics and exercise physiology teaching, interdisciplinary collaboration and continued engagement with emerging evidence relating to movement analysis, neuromuscular function and human performance.	Applied biomechanical, anatomical and physiological principles during athlete assessment, laboratory practical teaching and exercise physiology research. Regularly integrate movement analysis with physiological assessment to understand determinants of human movement and exercise performance across healthy and clinical populations.
Apply this integrated knowledge to analyse and optimise human movement that can be addressed through coaching, skill acquisition, and exercise and sporting interventions to	SS305 – Coaching Studies SS107 – Motor Control & Learning SS206/SS303 – Biomechanics SS308 – Injury & Rehabilitation	Developed competence in applying integrated movement science knowledge to analyse and optimise human movement through coaching, skill acquisition, and targeted exercise interventions. This included the use of feedback,	Current expertise is informed through continued practical teaching, scholarly publication and collaboration with researchers investigating exercise performance, healthy ageing and skeletal muscle adaptation. Ongoing professional development supports the integration of	Extensive experience analysing movement quality during physiological testing, undergraduate practical instruction and human intervention studies. Combine biomechanical assessment with physiological evaluation to optimise exercise technique, improve functional

optimise human performance.		constraints, and task design to improve performance.	movement science principles into teaching and applied practice.	performance and support evidence-based coaching and exercise prescription.

Standard Domain Four: Research, Data Analysis and Technology in Sport and Exercise Sciences

	Modules that meet this element (codes and module title)	Description of how module enabled you to meet this standard	Continuing professional development undertaken to address this standard	Professional experience undertaken to address this standard
Critically examine relevant sport and exercise sciences research and apply evidence-based findings to real-world practice.	SS239 – Journal Club SS411 – Research Methods SS408 – Research Project SS402 – Advanced Lab Techniques PhD in Exercise Physiology & Metabolism (DCU)	These modules developed the ability to critically evaluate sport and exercise science literature, including assessing study design, methodology, statistical analysis, and practical relevance. This enabled the application of evidence-based findings to real-world practice, ensuring that training, nutrition, and intervention strategies were grounded in current scientific evidence.	Professional expertise has continued to develop through completion of a PhD in Exercise Physiology and Metabolism, publication in leading international journals including Cell Metabolism, The Journal of Physiology and Trends in Endocrinology & Metabolism, editorial responsibilities with the Journal of Physiology and the Biochemical Society, supervision of undergraduate and postgraduate research, peer review and continued collaboration within international research programmes. These activities ensure that teaching, research	Extensive experience critically evaluating contemporary research and translating scientific evidence into university teaching, exercise prescription and human intervention studies. Findings generated through internationally funded programmes including MoTrPAC, SOMMA, MIRAGE and European Space Agency research have informed teaching, collaborative research and evidence-based exercise practice.

			and professional practice remain grounded in the highest quality scientific evidence.	
Engage in research activities and systematically reflect on existing literature to inform evidence-based decision-making in sport and exercise sciences.	SS411 – Research Methods SS239 – Journal Club SS408 – Research Project PhD in Exercise Physiology & Metabolism (DCU)	Developed competence in engaging with the full research process, including literature review, hypothesis development, study design, and critical reflection on findings. This fostered the ability to systematically evaluate evidence and integrate it into decision-making processes within sport and exercise science.	Current research practice is informed through continuous appraisal of emerging literature, competitive grant development, scientific publication, peer review and interdisciplinary collaboration with researchers across Europe and North America. Ongoing supervision of undergraduate and postgraduate research further strengthens critical evaluation and evidence synthesis skills.	Principal investigator and collaborator on nationally and internationally funded research projects investigating exercise physiology, skeletal muscle metabolism and healthy ageing. Extensive experience undertaking systematic literature review, study design, protocol development, ethical approval, participant recruitment, data collection, statistical analysis and dissemination of research findings to inform professional practice.
Apply statistical and data analysis methods to explore and interpret data collected in sport and exercise science settings.	SS411 – Research Methods SS408 – Research Project SS402 – Advanced Lab Techniques	Developed the ability to apply statistical and data analysis methods to explore and interpret sport and exercise science data. This included selecting appropriate statistical tests, understanding assumptions, and interpreting	Professional expertise continues to develop through advanced statistical training undertaken during doctoral and postdoctoral research together with continued application of multivariate statistics, bioinformatics, transcriptomics, DNA	Extensive experience analysing large physiological, molecular and clinical datasets using advanced statistical software and bioinformatics workflows. Routinely analyse human intervention studies, exercise physiology experiments and

		outputs within the context of applied research and practice.	methylation analyses and integrative physiological data analysis within collaborative research programmes.	multi-omics datasets to identify biologically meaningful findings suitable for publication within high-impact peer-reviewed journals.
Interpret and evaluate data outputs to inform professional practice and enhance decision-making.	SS203 – Integrated Sport & Exercise Physiology SS301 – Clinical Exercise Physiology SS401 – Clinical Exercise Physiology & Nutrition SS411 – Research Methods SS408 – Research Project	Developed the ability to interpret and evaluate data outputs in the context of sport and exercise science, considering methodological limitations, uncertainty, and practical relevance. This supported evidence-informed decision-making in both research and applied environments.	Current knowledge is maintained through continued scientific publication, editorial responsibilities, peer review and collaboration with multidisciplinary teams spanning physiology, molecular biology, nutrition, medicine and biostatistics. These activities continually refine interpretation of complex physiological and molecular datasets.	Interpret physiological, biochemical, molecular and behavioural data to inform exercise prescription, participant management and research decision-making. Regularly translate complex laboratory findings into practical recommendations for clinicians, researchers, students and exercise professionals while recognising methodological limitations and clinical relevance.
Use research and data analysis to provide feedback to and engagement with relevant groups.	SS305 – Coaching Studies SS239 – Journal Club SS408 – Research Project UM404 – Uaneen Module	Developed competence in communicating research findings and data-driven insights to a range of audiences, including athletes, coaches, and academic stakeholders. This included translating complex data into clear, actionable recommendations.	Professional communication skills continue to develop through undergraduate and postgraduate teaching, invited lectures, scientific publication, supervision of research students, editorial activities and collaborative engagement with national and	Extensive experience communicating research findings to students, clinicians, researchers, athletes, funding bodies and multidisciplinary collaborators. Scientific evidence is routinely disseminated through lectures, workshops, conference presentations,

			international research communities.	peer-reviewed publications and collaborative meetings, ensuring complex research findings are translated into meaningful and accessible recommendations.
Assess and critically appraise existing and emerging technologies used in sport and exercise sciences.	SS125 – Technology in Sport Science & Health SS402 – Advanced Lab Techniques SS203 – Integrated Sport & Exercise Physiology	Developed the ability to assess and critically appraise technologies used in sport and exercise science, including understanding their application, limitations, and appropriate use within different contexts.	Professional expertise is maintained through ongoing evaluation of emerging laboratory technologies, interdisciplinary collaboration and continued implementation of novel physiological and molecular methodologies within internationally funded research programmes. These activities support critical appraisal of technology selection and application.	Extensive experience evaluating a wide range of physiological and molecular technologies including indirect calorimetry, DEXA, force platforms, high-resolution respirometry, Seahorse extracellular flux analysis, PET imaging, RNA sequencing, DNA methylation platforms and mass spectrometry. Regularly assess the scientific utility, methodological limitations and practical application of these technologies within research and higher education.
Demonstrate proficiency in utilising technology used in sport and exercise assessment and testing.	SS402 – Advanced Lab Techniques SS203 – Integrated Sport & Exercise Physiology SS125 – Technology in Sport Science & Health	Developed practical proficiency in the use of sport and exercise science technologies for assessment and testing, including adherence to protocols and accurate data collection.	Professional competence has been strengthened through advanced laboratory training across multiple international institutions, continued supervision of undergraduate practical teaching and implementation of emerging	Extensive practical experience operating, validating and troubleshooting a broad range of physiological and laboratory technologies including metabolic carts, indirect calorimetry systems, ECG, DEXA, lactate analysers,

	SS301 – Clinical Exercise Physiology		technologies within human clinical research and exercise physiology laboratories.	force platforms, Oroboros Oxygraph-2k, Seahorse XF analysers, confocal microscopy, PCR platforms and high-throughput molecular biology instrumentation across internationally recognised research laboratories.
Evaluate the validity, reliability, appropriateness, and limitations of sport and exercise technologies to inform evidence-based decision-making regarding their application.	SS411 – Research Methods SS402 – Advanced Lab Techniques SS125 – Technology in Sport Science & Health SS239 – Journal Club	Developed the ability to evaluate the validity, reliability, appropriateness, and limitations of assessment technologies, and to make informed decisions regarding their use in research and applied practice.	Current expertise is informed through continued research methodology training, publication of methodological research, peer review and ongoing evaluation of emerging technologies within collaborative exercise physiology and molecular biology research programmes.	Regularly evaluate the validity, reliability and suitability of laboratory and field-based assessment technologies during the design and implementation of human intervention studies. Technology selection is guided by scientific rationale, methodological rigour, participant characteristics and practical feasibility to ensure robust and reproducible research outcomes.
Comply with data management and storage requirements, including GDPR regulations.	SS411 – Research Methods SS408 – Research Project SS402 – Advanced Lab Techniques	Developed understanding of data management, storage, and governance requirements, including ethical considerations and GDPR compliance. This included secure handling of participant data and adherence to	Professional knowledge continues to develop through institutional research governance training, Good Clinical Practice principles, research ethics committee membership and ongoing management of sensitive	Extensive experience managing confidential physiological, molecular and clinical datasets generated through large-scale human intervention studies. Responsible for secure data storage, anonymisation,

	PhD in Exercise Physiology & Metabolism (DCU)	institutional and regulatory standards.	participant data within national and international collaborative research programmes.	quality assurance and regulatory compliance in accordance with GDPR, institutional governance frameworks and international research standards.

Standard Domain Five: Professional Skills for Sport and Exercise Sciences

	Modules that meet this element (codes and module title)	Description of how module enabled you to meet this standard	Continuing professional development undertaken to address this standard	Professional experience undertaken to address this standard
Engage with clients and relevant groups in an ethical, inclusive, sensitive, equitable, and non-discriminatory manner, consistent with the ISESA Code of Conduct.	SS407 – Sport & Exercise for Special Populations SS112 – Adapted Physical Activity 1 SS309 Adapted Physical Activity 2 SS306 – Principles of Health Promotion SS411 – Research Methods	These modules developed an understanding of ethical practice, inclusivity, and working with diverse populations across sport and health contexts. This included recognising individual differences, adapting communication and interventions accordingly, and applying ethical principles such as respect, confidentiality, and duty of care in both research and applied settings.	Professional expertise continues to be strengthened through research ethics training, service on the University of Limerick Research Ethics Committee, Good Clinical Practice principles and ongoing responsibility for the ethical conduct of human participant research within national and international collaborative studies. Continued engagement with equality, diversity and inclusion	Extensive experience working with participants from diverse cultural, socioeconomic and clinical backgrounds across Ireland, Europe and the United States. Teaching, research and exercise interventions are conducted in accordance with institutional ethical approval, informed consent procedures, participant confidentiality and professional standards, ensuring inclusive,

			initiatives within higher education further supports inclusive professional practice.	respectful and equitable practice throughout.
Apply effective communication skills to collaborate professionally within multi-disciplinary teams.	SS305 – Coaching Studies SS411 – Research Methods SS239 – Journal Club UM404 – Uaneen Module	Developed effective communication and collaboration skills within multidisciplinary environments, including working alongside coaches, scientists, and other stakeholders. Emphasis was placed on teamwork, professional conduct, and the ability to contribute to shared goals within both academic and applied settings.	Professional communication skills continue to develop through interdisciplinary collaboration with clinicians, physiologists, molecular biologists, nutrition scientists, statisticians and exercise practitioners. Leadership of collaborative research projects, grant development and student supervision has further strengthened effective multidisciplinary working.	Extensive experience collaborating with multidisciplinary teams across the University of Limerick, Trinity College Dublin, AdventHealth, the University of Miami and multiple NIH-funded research programmes. Regularly work alongside clinicians, laboratory scientists, allied health professionals and academic colleagues to deliver research, teaching and exercise interventions.
Utilise verbal and non-verbal communication techniques to interact professionally, respectfully, and effectively with clients and/or relevant groups within sport and exercise science settings.	SS102 – Health & Fitness 1 SS105 – Health & Fitness 2 SS201 – Health & Fitness 3 SS210 – Health & Fitness 4 SS305 – Coaching Studies SS407 – Special Populations	Developed strong verbal and non-verbal communication skills through practical coaching, teaching, and assessment delivery. This included instruction, demonstration, feedback provision, and adapting communication style to suit different audiences and contexts.	Current practice is informed through continued undergraduate and postgraduate teaching, supervision of practical laboratories, invited presentations and ongoing evaluation of evidence-based educational approaches that enhance	Communicate regularly with undergraduate and postgraduate students, research participants, athletes, clinicians and academic colleagues across classroom, laboratory and clinical environments. Communication strategies are adapted to suit individual needs while

			communication and student engagement.	ensuring exercise instruction, feedback and scientific information remain clear, respectful and evidence-based.
Employ innovative communication strategies to present relevant and meaningful information to sport and exercise science audiences and relevant groups.	SS239 – Journal Club SS408 – Research Project UM404 – Uaneen Module SS411 – Research Methods	Developed the ability to communicate complex scientific concepts in a clear and accessible manner, using a variety of formats including presentations, reports, and discussions. This included tailoring communication to different audiences, from academic to applied sport contexts.	Professional expertise has been strengthened through publication in leading international journals, invited presentations, editorial responsibilities, peer review and continual refinement of innovative teaching resources and assessment methods within higher education.	Extensive experience disseminating scientific knowledge through lectures, workshops, conference presentations, peer-reviewed publications and community engagement activities. Routinely translate complex physiological and molecular science into accessible, evidence-informed recommendations appropriate for students, clinicians, athletes and the wider public.
Engage in problem-solving activities both independently and collaboratively, developing solutions that inform best practices in sport and exercise sciences.	SS408 – Research Project SS411 – Research Methods SS402 – Advanced Lab Techniques SS305 – Coaching Studies	Developed structured problem-solving skills through application of the scientific method, critical thinking, and practical decision-making in both research and coaching contexts. This included identifying issues, evaluating	Professional development continues through leadership of research projects, competitive grant applications, interdisciplinary collaboration and continued implementation of emerging research methodologies. Supervision of	Extensive experience identifying and resolving methodological, analytical and practical challenges across laboratory research, exercise intervention studies and university teaching. Evidence-based solutions have been developed to improve study design,

		solutions, and implementing evidence-based strategies.	undergraduate and postgraduate research further reinforces structured problem-solving and critical thinking.	participant management, laboratory procedures and exercise prescription within multidisciplinary research environments.
Ensure the safety and well-being of clients by maintaining high standards of professional competence and practice.	SS301 – Clinical Exercise Physiology SS401 – Clinical Exercise Physiology & Nutrition SS407 – Special Populations SS308 – Injury & Rehabilitation SS411 – Research Methods	Developed a strong understanding of professional responsibility, safety, and duty of care in both clinical and performance environments. This included identifying risks, applying appropriate safeguards, and maintaining high standards of competence in assessment and intervention delivery.	Professional competence is maintained through continued teaching in clinical exercise physiology, research governance, laboratory safety training, membership of the University of Limerick Research Ethics Committee and ongoing evaluation of contemporary exercise testing and clinical practice guidelines.	Extensive experience supervising maximal exercise testing, indirect calorimetry, skeletal muscle biopsy procedures, metabolic assessments and exercise interventions involving healthy, athletic and clinical populations. Participant safety, professional conduct and evidence-based practice remain central to all teaching, laboratory and research activities.
Recognise the value of reflective practice and engage in self-reflection to support ongoing professional growth and development.	IN305 – INTRA Work Placement SS408 – Research Project UM404 – Uaneen Module	Developed an appreciation for reflective practice through structured evaluation of personal performance, feedback integration, and continuous improvement. This included critically assessing strengths and areas for development within both academic and applied contexts.	Professional growth is supported through annual teaching reflection, peer observation, student feedback, mentorship, supervision of research students and editorial responsibilities. Continued engagement with contemporary scientific literature ensures teaching,	Reflective practice is embedded throughout academic and research appointments by incorporating participant feedback, student evaluations, peer review comments and collaborative discussion into continual improvement of teaching, laboratory practice,

			research and professional practice evolve in response to emerging evidence.	research methodology and exercise prescription.
Commit to lifelong learning and continuous professional development (CPD) to enhance skills, knowledge, and effectiveness in the field.	SS239 – Journal Club SS411 – Research Methods SS408 – Research Project	Developed a strong foundation for lifelong learning through engagement with research, critical evaluation of evidence, and independent learning. This fostered the ability to continuously update knowledge and apply emerging evidence to practice.	A sustained commitment to lifelong learning is demonstrated through completion of a PhD in Exercise Physiology and Metabolism, international postdoctoral appointments, appointment as Associate Professor (B) at the University of Limerick, ongoing scientific publication, editorial responsibilities, peer review, competitive grant development, supervision of research students and continued engagement with advances in exercise physiology and metabolism.	Career progression reflects a sustained commitment to professional development through successive academic, research and teaching appointments at Dublin City University, Trinity College Dublin, AdventHealth, the University of Miami and the University of Limerick. Continued development is demonstrated through leadership in teaching, internationally funded research, scientific publication, mentorship, student supervision and service to the wider sport and exercise science profession.