IRISH SPORT AND EXERCISE SCIENCES ASSOCIATION

ISESA Accredited Sport and Exercise Scientist

Professional Standards and Scope of Practice

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Preface

The Irish Sport and Exercise Sciences Association (ISESA) Accredited Sport and Exercise Scientist (ASES) Professional Standards, set the minimum standards for a professional to be Accredited as a Sport and Exercise Scientist.

Professional standards broadly describe the minimum practice requirements of sport and exercise science graduates working in all areas of sport science and exercise science. These standards have been developed in consultation with the ISESA Accreditation Committee and an external review team consisting of ISESA Accredited members, academics and industry professionals.

Five standard domains covering core disciplines within the field of sport and exercise sciences are presented. Each standard includes an overarching focus followed by elements of knowledge and practice. The core values and expectations of an ISESA-ASES are described in the professional attributes that apply to all aspects of sport and exercise sciences practice.

Accreditation Committee Members

- Prof Kate Pumpa (University College Dublin)
- Dr Bróna Kehoe (South Eastern Technological University Waterford)
- Prof Tom Comyns (University of Limerick)
- Dr David Nolan (Dublin City University)
- Dr Denise Martin (Atlantic Technological University Galway)
- Dr Edward Coughlan (Munster Technological University Cork)
- Dr John Perry (University of Limerick)
- Dr Jack Hickey (Maynooth University)

IRISH SPORT AND EXERCISE SCIENCES ASSOCIATION

Overview

An ISESA Accredited Sport and Exercise Scientist (ASES) applies scientific principles to enhance sporting performance, general health, wellbeing, and fitness across a variety of settings and demographics and populations. An ISESA-ASES can play a significant role in preventive healthcare by addressing both emerging and well-established areas such as healthy ageing, mental health, disability support, and the management of early-stage risk factors for conditions like obesity and pre-diabetes among others. Where appropriate, an ISESA-ASES may collaborate with healthcare professionals to support clients with specific needs within the boundaries of their expertise.

Specifically, the ISESA-ASES is equipped to:

- Screen, assess and monitor movement, sporting performance and exercise capabilities of clients.
- Analyse and interpret data from various sources to ensure evidence-based practice across different settings.
- Enhance and optimise sporting development and performance through the design and delivery of interventions specific to the needs and goals of clients.
- Improve health and well-being through the design and delivery of physical activity and exercise interventions specific to the needs and goals of clients.
- Support injury prevention and rehabilitation by implementing evidence-based strategies to reduce injury risk and facilitate safe return to activity post-injury, in collaboration with healthcare professionals where required.
- Work collaboratively with other professionals as part of a multidisciplinary team.
- Promote participation in physical activity, sport and exercise, and utilise behaviour change strategies to encourage lifelong engagement in exercise
- Provide education and advice to support healthy lifestyle choices.

- Maintain ethical and professional standards in all aspects of practice, adhering to industry regulations and best practices.

Examples of Roles for an ISESA-ASES

An ISESA-ASES can work across various professional settings, applying their expertise to sporting performance enhancement, health promotion, and research. Potential roles include, but are not limited to:

- Sport and Exercise Scientist within sporting organisations or national governing bodies of sport.
- Sport and Exercise Scientist within professional sporting teams, providing sport science support, performance analysis, training interventions, and injury prevention strategies.
- Researcher roles within sport and exercise sciences.
- Physical Activity Promotion Specialist within local sport partnerships, public health initiatives, or community organisations, schools and/ or universities.
- Private Practitioner in sport and exercise sciences, offering consultancy, coaching, or performance assessment services.
- Corporate Wellness and Performance Specialist, integrating sport and exercise science principles to improve employee health, productivity, and well-being.

Professional Attributes

An ISESA-ASES is expected to uphold the highest standards of professionalism, ethics, and evidence-based practice. An ISESA-ASES member will:

- Demonstrate professional, ethical, and inclusive practice in alignment with the ISESA Code of Conduct which can be found here.
- Support inclusive practice by promoting equity, diversity, and inclusion across all areas, recognising and respecting differences in culture, gender, age, ability, identity, and background, and ensuring accessible, person-centred, and culturally responsive approaches to health and physical activity.
- Adhere to workplace policies, industry regulations, and legal requirements when working with clients.
- Operate strictly within their accredited scope of practice to ensure client safety and service quality, recognising the limits of their knowledge, skills and practice, referring clients to other professionals when necessary.
- Work, where appropriate, as part of a wider client support team in a collaborative and respectful manner.
- Utilise evidence-based practices to design and deliver safe, effective, and individualised interventions.
- Ensure that records relevant to the client are accurately and appropriately stored in compliance with the General Data Protection Regulation (GDPR) and other legislative requirements.
- Integrate and apply appropriate and applicable knowledge and skills from various disciplines of sport and exercise sciences when providing service to clients.
- Demonstrate logical, systematic, and innovative thinking in problem-solving and decision-making.
- Adopt a client-centred approach, tailoring services to individual needs and goals.

- Develop and maintain strong professional relationships with clients, colleagues, and relevant groups.
- Engage in reflective practice and continuous professional development (CPD) to enhance expertise and service quality.
- Uphold and promote the credibility of the sport and exercise sciences profession, acting as an ambassador for high standards and ethical conduct.

Standard Domain One: Sport & Exercise Sciences

Foundational Knowledge

Overarching Focus

An ISESA-ASES demonstrates a comprehensive understanding of the scientific principles that underpin sporting performance, health, and well-being.

Elements of Sport and Exercise Sciences Foundational Knowledge

The ASES can demonstrate foundational knowledge regarding:

Human Anatomy and Physiology:

1. Anatomical descriptors for body position, movement, direction, regions, and planes.
2. The structure and function of anatomical systems.
3. Joint type, structures, and functions in relation to posture and movement.
4. The function, regulation, and interaction and adaptation of physiological systems at varying levels of exercise and physical activity.

Biomechanics:

1. Fundamental biomechanical principles of human movement, including kinematic and kinetic analyses, as well as both quantitative and qualitative analyses.
2. Physical interaction between humans and their environment/equipment, including the physical and mechanical effects of movement.

3. Forms of motion, including projectiles, fluid mechanics, and movement modelling.
4. Techniques for movement analysis, applying both theoretical and practical knowledge.

Skill Acquisition:

1. Motor Control: Short-term focused mechanisms of perception and action in typical and atypical populations.
2. Motor Learning: Medium-term focused strategies of learning, practice design, and delivery.
3. Motor Development: Long-term focused theories of development, life course perspectives (e.g., early childhood, adolescence, maturation, aging populations), and developmentally appropriate interventions for sport participation, talent development and elite sport.
4. Applied Practice: Coaching practice engaging in practice scheduling, feedback methodologies, technique change & skill refinement, planning and periodisation.

Psychology:

1. Understanding individual differences that influence sport and exercise participation.
2. Theories of motivation, group dynamics, psychology of physical activity, and behaviour change.
3. The impact of stress, physiological arousal, anxiety, and effective coping mechanisms.
4. Psychological skills training approaches, including strategies to enhance sporting performance and well-being.

Principles of Exercise and Training:

1. Understanding the principles of training: overload, specificity, reversibility, variation, and progression.
2. Understanding the manipulation of acute training variables; volume, intensity, and frequency.
3. 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.
4. Understanding of periodisation and long-term manipulation and management of exercise and training prescription.
5. Understanding the adaptation of exercise and training prescription across the life course and populations.

Physical Activity and Health and Nutrition:

1. Critically evaluating public health and physical activity guidelines and their application across the life course.
2. Understanding biological maturation and its impact on physical activity, health and sporting performance.
3. Assessing the impact of sedentary behaviour on health outcomes.
4. Recognising the role of physical activity, nutrition, and lifestyle factors in maintaining and enhancing health.
5. Understanding macronutrient and micronutrient functions, energy systems, metabolic pathways, and how these interact with physical activity, exercise

and sporting performance, and recovery.

6. Knowledge of healthy eating principles including the application of applying evidence-based dietary guidelines to support general health, weight management, and chronic disease prevention.

Standard Domain Two: Sport and Exercise Sciences Assessment and Prescription

Overarching Focus

An ISESA-ASES is expected to possess the knowledge, skills, and abilities necessary to conduct comprehensive assessments of health, fitness, sporting performance, and behavioural readiness. They must be capable of designing safe, effective, and evidence-based interventions to support the health and fitness or sporting performance goals of individuals or groups.

Elements of Sport and Exercise Sciences Assessment and Prescription

The ISESA-ASES will:

1. Conduct client consultations to assess relevant history, perform a client needs analysis, analyse activity or sports demands, and establish appropriate goals.
2. Administer informed consent procedures and conduct appropriate risk assessment screenings to ensure safe exercise participation and programming.
3. 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.
4. 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.
5. Collect, interpret and critically analyse assessment results using normative data, existing benchmarks, considering client characteristics, to inform

programming and the longitudinal monitoring of progress.

6. Report and effectively communicate assessment outcomes to clients, groups, and relevant groups.
7. 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.
8. Adapt and progress interventions based on individual or group needs, taking into account acute and chronic responses to training.

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

Overarching Focus

An ISESA-ASES is expected to integrate foundational knowledge in sport and exercise sciences and apply it across various contexts, including health, well-being, and sporting performance.

Elements of Integration/Application of Sport and Exercise Sciences

An ISESA-ASES will demonstrate the ability to integrate and apply knowledge in the following areas:

Exercise Physiology:

1. Combine foundational knowledge of physiology with principles of exercise assessment and prescription.
2. Apply this integrated knowledge to assess physiological responses to sport and exercise across different modes, intensities, and environments.
3. Interpret physiological measurements and exercise testing results to prescribe individualised and evidence-based exercise interventions and training programmes

Physical Activity and Health Behaviour Change:

1. Integrate foundational knowledge in physiology, nutrition, and psychology with principles of physical activity and health behaviour change.

2. Apply this integrated knowledge to facilitate lifestyle changes that promote exercise and physical activity to improve health and well-being.

Strength and Conditioning:

1. Integrate foundational knowledge in functional anatomy, coaching science, and growth and development with principles of exercise assessment and prescription.
2. 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 of sport and exercise injuries.

Human Movement Science:

1. Integrate foundational knowledge in biomechanics and motor control with human anatomy and physiology.
2. Apply this integrated knowledge to analyse and optimise human movement that can be addressed through coaching, skill acquisition, and exercise and sporting interventions to optimise human performance.

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

Overarching Focus

The ISESA-ASES is expected to have a strong understanding of research methodologies, data analysis techniques, and technology applications in sport and exercise sciences. They must be able to effectively conduct research, critically analyse data, and interpret findings, utilising various technologies in sport and exercise science settings.

Elements of Research, Data Analysis and Technology in Sport and Exercise Sciences

The ISESA-ASES will:

1. Critically examine relevant sport and exercise sciences research and apply evidence-based findings to real-world practice.
2. Engage in research activities and systematically reflect on existing literature to inform evidence-based decision-making in sport and exercise sciences.
3. Apply statistical and data analysis methods to explore and interpret data collected in sport and exercise science settings.
4. Interpret and evaluate data outputs to inform professional practice and enhance decision-making.
5. Use research and data analysis to provide feedback to and engagement with relevant groups.
6. Assess and critically appraise existing and emerging technologies used in

sport and exercise sciences.

7. Demonstrate proficiency in utilising technology used in sport and exercise assessment and testing.
8. Evaluate the validity, reliability, appropriateness, and limitations of sport and exercise technologies to inform evidence-based decision-making regarding their application.
9. Comply with data management and storage requirements, including GDPR regulations.

Standard Domain Five: Professional Skills for Sport and Exercise Sciences

Overarching Focus

The ISESA-ASES is expected to demonstrate knowledge, skills and professional behaviours required to practice in sport and exercise science settings. They must operate in an inclusive, equitable, ethical, cooperative and collaborative manner, adhering to the highest professional standards and the ISESA Code of Conduct.

Elements of Professional Skills for Sport and Exercise Sciences

The ISESA-ASES will:

1. Engage with clients and relevant groups in an ethical, inclusive, sensitive, equitable, and non-discriminatory manner, consistent with the ISESA Code of Conduct.
2. Apply effective communication skills to collaborate professionally within multi-disciplinary teams.
3. 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.
4. Employ innovative communication strategies to present relevant and meaningful information to sport and exercise science audiences and relevant groups.
5. Engage in problem-solving activities both independently and collaboratively, developing solutions that inform best practices in sport and exercise sciences.
6. Ensure the safety and well-being of clients by maintaining high standards of professional competence and practice.

7. Recognise the value of reflective practice and engage in self-reflection to support ongoing professional growth and development.
8. Commit to lifelong learning and continuous professional development (CPD) to enhance skills, knowledge, and effectiveness in the field.