

Syllabus for doctors on Postgraduate SEM Masters courses

1. Physical Activity and Human Health	
	Demonstrate an understanding of the role of physical activity in the prevention and treatment of common long-term health conditions
	Advise on and promote population health through physical activity
	Make use of physical activity guidelines and recommendations in practice
	Analyse current UK screening programmes to promote health
	Analyse key national and international physical activity resources available to patients and clinicians
	Discuss how to overcome the following barriers to physical activity: environmental, social, physical, cultural, religious and psychological
	Demonstrate the ability to prescribe physical activity in healthy individuals and also individuals with disease
	Critically apply physical activity guidelines in both the prevention and management of chronic disease
	Design a physical activity programme for a variety of special populations (e.g. older adults, pregnancy, disability, children)
	Analyse and overcome factors that may impact physical activity prescribing
	Recognise the importance of communicating the physical activity message beyond the individual
	Demonstrate an understanding of public health policy development and implementation in relation to physical activity and health
	Understand and promote integrated sport and physical activity opportunities for school aged children and adolescents in order to promote a lifelong relationship with physical activity
2. Medical Issues Related to Exercise	
	Discuss aspects of the following including aetiology, epidemiology, clinical features, investigation, management and prognosis in relation to physical activity: Neurological conditions
	Discuss aspects of the following including aetiology, epidemiology, clinical features, investigation, management and prognosis in relation to physical activity: Respiratory conditions including: Asthma - Chronic Obstructive Pulmonary Disease - Exercise Induced Laryngeal Obstruction - Exercise Induced Bronchospasm
	Discuss aspects of the following including aetiology, epidemiology, clinical features, investigation, management and prognosis in relation to physical activity: Common infectious diseases
	Discuss aspects of the following including aetiology, epidemiology, clinical features, investigation, management and prognosis in relation to physical activity: Cardiovascular conditions including: HOCM and other cardiomyopathies – Structural abnormalities – Arrhythmias – Valvular disease – Hypercholesterolaemia – Hypertension – Ischaemic heart disease - Heart failure - Inherited channelopathies - Congenital disease
	Discuss aspects of the following including aetiology, epidemiology, clinical features, investigation, management and prognosis in relation to physical activity: Common gastrointestinal conditions

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Discuss aspects of the following including aetiology, epidemiology, clinical features, investigation, management and prognosis in relation to physical activity: Common renal and urogenital conditions
Discuss aspects of the following including aetiology, epidemiology, clinical features, investigation, management and prognosis in relation to physical activity: Metabolic conditions including: Diabetes – Thyroid disease – Obesity
Discuss aspects of the following including aetiology, epidemiology, clinical features, investigation, management and prognosis in relation to physical activity: Common ENT conditions
Discuss aspects of the following including aetiology, epidemiology, clinical features, investigation, management and prognosis in relation to physical activity: Common immunological conditions
Discuss aspects of the following including aetiology, epidemiology, clinical features, investigation, management and prognosis in relation to physical activity: Common haematological conditions
Discuss aspects of the following including aetiology, epidemiology, clinical features, investigation, management and prognosis in relation to physical activity: Common dermatological conditions
Discuss aspects of the following including aetiology, epidemiology, clinical features, investigation, management and prognosis in relation to physical activity: Rheumatological conditions including: Inflammatory and seronegative arthritis, Osteoarthritis, Fibromyalgia and chronic pain, Connective tissue disorders, Hypermobility syndromes, Osteoporosis
Discuss aspects of the following including aetiology, epidemiology, clinical features, investigation, management and prognosis in relation to physical activity: Psychological and mental health conditions including: Eating and body perception disorders in the developing athlete - Anxiety - Depression – Stress - Trauma
Discuss aspects of the following including aetiology, epidemiology, clinical features, investigation, management and prognosis in relation to physical activity: Adult musculoskeletal conditions including: Acute pain - Acute musculoskeletal conditions - Chronic pain - Chronic musculoskeletal conditions
Discuss aspects of the following including aetiology, epidemiology, clinical features, investigation, management and prognosis in relation to physical activity: Paediatric musculoskeletal conditions including: Fractures - Ligamentous injuries and complications - Apophyseal injuries -

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	Overuse injuries - Growth plate stress - Osteochondritis dissecans - Snapping hip - Shoulder instability - Patella instability - SUFE - Perthes - Scoliosis - Talipes - Flexible pes planus - Chest wall deformities - Timings of growth plate closure
	Demonstrate the ability to deliver age appropriate injury rehabilitation programmes illustrating understanding of the biomechanical principles underpinning the individuals' chosen activity
3. Injuries Related to SEM	
	Apply the principles of prevention, diagnosis, and treatment of injuries related to sports and physical activity
	Analyse management plans for optimal treatment of patients across the spectrum of musculoskeletal problems in accordance with latest guidelines and best practice, and involving other allied health professionals where appropriate
	Apply knowledge of the pathophysiology of tissue injury and subsequent clinical symptoms and presentations of musculoskeletal disease to the management and rehabilitations of a range of common presentations
	Analyse the evidence-based management of common head and neck injuries
	Analyse the evidence-based management of common upper limb injuries
	Analyse the evidence-based management of common trunk, abdominal and thoracic spinal injuries
	Analyse the evidence-based management of common lumbar spine and pelvic injuries
	Analyse the evidence-based management of common lower limb injuries including: Tendinopathies - Ligament injuries - Avulsion injuries - Dislocation - Fracture management Other common soft tissue injuries
	Recognise red flags which may indicate malignancy or infection
	Interpret the findings of radiological and other relevant investigations to determine differential diagnoses
	Apply the principles of biomechanics to different sporting and physical activities and in the context of injury
	Recognise the role of physical activity in rehabilitation
	Devise a rehabilitation programme in relation to common sports injuries
	Analyse the role of surgery in the management of common sports injuries
	Analyse rehabilitation progression and return to activity factors when managing common musculoskeletal conditions
	Be able to interpret human movement analysis - basic kinematics and kinetics
	Explain the role of biomechanical analysis of sport specific techniques in the management of sports related injuries
	Analyse the effects of variations in biomechanics and the influence of posture on common musculoskeletal presentations
	Analyse the role of orthotics in the management of common sports injuries
	Recognise the role of splinting, bracing and taping techniques
	Apply an understanding of level 3 safeguarding knowledge to a range of hypothetical or retrospective cases
	Discuss the relevance of common radiological investigations including the suitability of each modality for a range of contexts
4. Basic Science in SEM	
	Analyse the principles of exercise physiology including: types of physical activity, effects of physical activity and maximising adaptations to sport and physical activity

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	Discuss the principles of body morphology in the context of sport and physical activity
	Apply the key principles of sports psychology to sport and physical activity
	Analyse the impact of common diseases and medications on normal exercise physiology
	Describe clinically relevant regional anatomy including normal variations
	Describe the anatomy of joints and musculo-tendinous units
	Describe the characteristics of bone, tendon, ligament, articular cartilage and muscle
	Apply anatomical knowledge to history taking, physical examination and imaging
	Describe cellular metabolism and biomechanical pathways of energy production
	Apply the principles of strength and conditioning to formulate a basic plan
	Undertake appropriate assessments of fitness
	Discuss energy release from various sources including fats, carbohydrates, proteins
	Discuss physiological responses and adaptations to exercise
	Discuss the role of genetics in sport and physical activity
	Discuss the role of macro and micronutrients
	Discuss the key principles of hydration in sport and physical activity
	Discuss the benefits and risks of nutritional supplements in sport and physical activity
	Discuss the effects of alcohol on performance
5. Clinical Pharmacology	
	Discuss the issues of medication abuse in elite athletes
	Discuss the influence of medications used in the treatment of disease on physical activity capacity
	Discuss medication and exercise interactions which may cause or worsen disease
	Prescribe safely by considering, contraindications, side effects, drug interactions and dosage of commonly used drugs in sport and physical activity
	Discuss the regulations regarding travelling with medicines
	Discuss the governance of medicine storage and management systems
6. Antidoping	
	Apply knowledge of the WADA prohibited list in both practice and hypothetical scenarios
	Understand the WADA therapeutic use exemption process
	Detail the consequences of doping: health risks, sanctions and responsibilities
	Recognise suitable resources and tools to support athletes and clinicians regarding medications and anti-doping
7. Sports Team and Event Management	
	Describe the roles of the SEM physician in the team environment
	Describe the features of good team dynamics
	Describe the role of the main organisations of sport, sports medicine and health promotion at a national and international level
	Discuss the relevant medical codes on the ethical treatment of athletes (e.g. Olympic code, FSEM code)
	Analyse the components and processes of pre-participation screening for athletes and event participants
	Discuss the key components of pre-season and pre event medical organisation
	Analyse the recognition and management of disordered eating and RED-S

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Discuss the equipment, medical supplies and facilities required for team and event care
Perform risk assessments of training and competition venues
Discuss common match and event day medical issues
Demonstrate the on-field assessment and management of sports injuries and medical conditions
Discuss the psychological aspects of motivation, arousal and performance
Discuss a range of common ethical issues in a team sport environment
Recognise the key medicolegal requirements and considerations in team medicine
Discuss aspects including aetiology, epidemiology, clinical features, investigation, management and prognosis of the following in relation to sport and physical activity:
Cardiorespiratory arrest
Discuss aspects including aetiology, epidemiology, clinical features, investigation, management and prognosis of the following in relation to sport and physical activity:
Sudden death in sport, both cardiac and traumatic causes
Discuss aspects including aetiology, epidemiology, clinical features, investigation, management and prognosis of the following in relation to sport and physical activity:
Concussion and head injury
Discuss aspects including aetiology, epidemiology, clinical features, investigation, management and prognosis of the following in relation to sport and physical activity:
Acute musculoskeletal and soft tissue injuries
Discuss aspects including aetiology, epidemiology, clinical features, investigation, management and prognosis of the following in relation to sport and physical activity:
Basic management of fracture and dislocations
Discuss aspects including aetiology, epidemiology, clinical features, investigation, management and prognosis of the following in relation to sport and physical activity:
The acutely unwell patient
Discuss aspects including aetiology, epidemiology, clinical features, investigation, management and prognosis of the following in relation to sport and physical activity:
Eye and ENT emergencies
Apply the principles of pre-hospital care to a range of common sport and physical activity emergencies
Demonstrate simple skin closure and suturing and have an awareness of the indications for each
Demonstrate basic airway management and deliver effective resuscitation
Demonstrate defibrillation and cardiorespiratory resuscitation
Advise on screening programmes to detect those at risk of sudden death in sport

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	Discuss the findings of any abnormalities raised during screening with athletes, family members and carers
	Demonstrate prompt assessment of the acutely deteriorating patient, including those who are shocked or unconscious, and deliver appropriate, evidence-based care
8. Physical Activity in Challenging Environments	
	Be able to manage common issues in SEM relating to physical activity in extreme environments including: cold environments, hot environments and altitude (
9. Specific Groups in SEM	
	Be able to manage issues in SEM relating to specific groups of athletes in sport including: paediatric, female, ageing, adventure sports and athletes with a disability
	Apply the effects of the ageing process when providing physical activity advice
	Apply knowledge of the physiological changes during and after pregnancy when providing physical activity advice to pregnant and post-partum individuals
	Demonstrate the ability to advise women on undertaking safe exercise throughout the lifespan including advising on energy balance, bone health and hormonal influences
	Discuss the management of common issues affecting disabled athletes and exercisers in relation to sports and physical activity
	Discuss physical problems experienced by amputees and wheelchair users with everyday living and with respect to sport
	Discuss contraception options in athletes
	Demonstrates an awareness of the unique needs of patients with disabilities, the barriers faced in participating in physical exercise and the ability to advise those with disabilities how to undertake safe exercise
	Understanding the social, psychological religious and cultural factors that influence physical activity participation and demonstrate initiatives to overcome these
	Demonstrates knowledge of the anatomical, physiological, psychosocial, sexual and educational development of children and adolescents in the management of musculoskeletal conditions
	Demonstrates knowledge of the aspects that enhance care during the transition and transfer between paediatric and adult services across healthcare
10. Intrinsic Skills of a SEM Clinician	
	Demonstrate the following skills commonly used in practice by SEM physicians: Communication - Collaboration - Leadership and management - Health advocacy - Safety - Research - Teaching - Learning - Professionalism -Consideration of ethics, cultural religious and LGBTQ awareness
	Demonstrate the ability to work within a multidisciplinary team
	Demonstrate the need to coordinate care across multiple agencies to address physical, psychological and social needs in community, secondary care, recreational and elite sporting environments
11. Extrinsic Skills of a SEM Clinician	
	Perform a comprehensive examination of the musculoskeletal and neurological systems and interpret the findings sufficiently to develop a clinically reasoned diagnosis and management plan
	Perform a sport-specific medical and musculoskeletal screening examination

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Provide safe and effective immediate medical care for on-field injuries and medical events
Perform concussion screening examinations, baseline and postinjury, and interpret the results
Recognise the indications of a range of radiological and other investigations relating to sport and physical activity
Analyse ECG findings in an athlete and recognise the indications for onward referral
Discuss the indications, benefits and risks of a variety of common joint and soft tissue injections
Have an understanding of the role of a range of commonly used protective braces
Recognise the indications for taping joints, tendons and muscles and its role in injury prevention and treatment
Interpret simple video analysis of a variety of sporting skills including running gait
Analyse the indications for and findings of resting and exercise lung function tests