

ALTIS Foundation Course V2 - February 2020 Course Updates

Note - Throughout the course you will find updated further learning. In addition to selected new resources, this includes the provision of all further learning reading material in full where available, rather than abstract format.

<u>Biomechanical Concepts</u>	1.1	<u>Introduction to Biomechanics</u>	<ul style="list-style-type: none"> • Guest View: Movement Efficiency with Coach McMillan. • New Video: Coach Pfaff provides additional thoughts on the difference between <i>correct</i>, <i>efficient</i>, and <i>optimal</i> with respect to biomechanics and movement. • New Video: As coaches, we often try to maximize the benefit derived from one parameter of mechanics without examining the cost to other parameters or systems. In reality, a trade-off exists, and efficiencies should be gauged on how well these compensations result in progress of measurable results. <i>In the brief further learning video below, Coach Pfaff expands on this important point.</i>
	1.2	<u>Branches of Biomechanics</u>	<ul style="list-style-type: none"> • Updated Video: Coach Pfaff - "A word of warning – the two fields of motor learning and kinesiology are not one and the same! Interdependent, yes, but not the same; beware of ‘experts’ muddying the water in these disciplines."
	1.3	<u>Newton's Laws of Motion</u>	
	1.4	<u>Biomechanical Terms and Concepts</u>	<ul style="list-style-type: none"> • Updated video: Coach Pfaff - Mass, stability, balance, and the inverted pendulum concept. • New video - Coach Pfaff: The coaching implications of impulse and momentum.

	1.5	Motion	<ul style="list-style-type: none"> • Updated video - Coach Pfaff: 'The interplay of linear and angular motion in sport.' • New video: Coach Pfaff provides an extended exploration into the application of biomechanics in sprinting.
	1.6	Descriptors of Movement	
	1.7	Flight & Angular Motion	<ul style="list-style-type: none"> • New video: Coach Pfaff - Further clarification on how changes in body position can change the position of the center of mass within the body system in the air.
	1.8	Torque, Coupled Forces, & Angular Momentum	<ul style="list-style-type: none"> • New video: Loren Landow provides an extended learning presentation on the topic of 'unlocking rotational power.'
	1.9	Summation of Force	<ul style="list-style-type: none"> • New video: Coach Pfaff discusses how he considers an ergonomic analysis of training loads in sprinting.
	1.10.	Observation and Feedback	<ul style="list-style-type: none"> • Coach McMillan: The use of teaching models to aid observation and analysis. • New video: Coach Pfaff - Further discussion on identifying the source of kinetic and kinematic idiosyncrasies. • New video: Coach Pfaff discusses methods used in observation to determine the driver of aberrant movements. • New video: Dr Rhandawa discusses the living movement screen.
Applied Physiology	2.1	Introduction to Physiology	

	2.2	Introduction to the structure of the muscular system	
	2.3	Factors impacting the generation of muscular force	<ul style="list-style-type: none"> • New video: Coach Pfaff - Further comment on the importance of “coaching the athlete” rather than just “coaching the event” with respect to muscle fiber type classification. • New video: Athletigen founder Jeremy Koenig speaks on the topic of Sports Genetics and how Athletigen is impacting the sports industry.
	2.4	Muscular Adaptations to Resistance training	
	2.5	The Nervous System	<ul style="list-style-type: none"> • New video: Coach Pfaff shares what his personal study of neurophysiology has taught him over the years.
	2.6	Biochemistry and Sport Performance	<ul style="list-style-type: none"> • New video: Metrics for Adaptation & Recovery, presented by Rob Wilson & Brian MacKenzie of 'Power Speed Endurance.'
	2.7	Neuroplasticity and Neuropsychology	
	2.8	Energy Systems and their interaction	<ul style="list-style-type: none"> • New video: Coach Pfaff - Further discussion on the blended nature of energy system interaction. • New video: Rob Wilson & Brian MacKenzie on energy system optimization.
	2.9	The Endocrine and Integumentary Systems	

	2.10.	Fatigue, Stress, Rest & Recovery	
	2.11	The Effect of Travel on Athlete Physiology	
	2.12	Special Considerations for Female Athletes	<ul style="list-style-type: none"> • New video: Molly Galbraith explores concepts relevant to coaching and training female athletes.
	2.13	Anecdotal Thoughts on Physiology in Action	<ul style="list-style-type: none"> • New video: Coach Pfaff - Further discussion on the importance of developing effective pathways for <i>chemical supply, pollution elimination and informational flow</i> from a physiology perspective, and the meaning of these terms.
Functional Anatomy & Kinesiology	3.1	Introduction to Anatomy & Kinesiology	
	3.2	Anatomical Terminology	
	3.3	Systems of the Human Body	<ul style="list-style-type: none"> • New video: Coach Pfaff - How knowledge of the body's systems has informed my coaching practice.
	3.4	The Skeletal System	
	3.5	Skeletal Development	<ul style="list-style-type: none"> • New video: Coach Pfaff - Further discussion on what coaches can practically do to ensure activities do not place undue risk on skeletal development during PHV phases. • New video: Coach Pfaff - Practical guidance on what bigger versus smaller angles look like in training activities.

	3.6	Spinal Abnormalities & Skeletal Injury	<ul style="list-style-type: none"> • New video: Presented by Matt Ferrari & Mathew Pell, this lecture explores the systems used for return to play in the Australian Football League (AFL).
	3.7	Joints	<ul style="list-style-type: none"> • New video: Coach Pfaff - An in depth exploration into sport injury patterns, causes, effects, and programming considerations.
	3.8	Microstructure of the Muscular System - Recap	
	3.9	The Muscular System Explored	<ul style="list-style-type: none"> • New video: Further discussion on concepts surrounding origins and insertions, with particular reference to the implications for the transduction of forces around the body.
	3.10.	Muscles of the Human Body - Upper Body	<ul style="list-style-type: none"> • New video: Coach Pfaff - How I consider muscle group interaction when programming and prescribing exercises.
	3.11	Muscles of the Human Body - Hip, Pelvis & Lower body	
	3.12	Muscles of the Human Body - The 'Core'	
	3.13	The Fascial Matrix and Sling Systems	
	3.14	Muscular Injury	<ul style="list-style-type: none"> • New video: Coach Andreas Behm provides a brief synopsis of holistic loading and adaptation schemes. • New video: Dr Jas Rhandawa provides assorted thoughts on the use of Performance Therapy.

<u>Training Methodology - Concepts Essential to Good Programming</u>	4.1	<u>Methodology Defined</u>	<ul style="list-style-type: none"> • New video: Coach Pfaff touches upon the evolution of his methodologies over time. • New video: This video highlights some of the guiding principles that ALTIS coaches Ricky Soos, Jason Hettler, Stuart McMillan and Andreas Behm use within their program design.
	4.2	<u>Adaptation</u>	<ul style="list-style-type: none"> • New video: Serving as a great primer for our next section – which provides a review of periodization methods – this video features an in-depth exploration into past and present trends in periodization.
	4.3	<u>A review of periodization methods</u>	<ul style="list-style-type: none"> • New video: Coach Pfaff discusses the classification of his periodization methods.
	4.4	<u>An introduction to loading</u>	<ul style="list-style-type: none"> • New video: Coach Pfaff answers the question: <i>“How do you define optimal loading within your own programming parameters?”</i>
	4.5	<u>Exercise classification</u>	
	4.6	<u>Loading Methods</u>	
	4.7	<u>Specificity</u>	
	4.8	<u>Variation</u>	<ul style="list-style-type: none"> • New video: Coach Pfaff explains how he implements variation within his programming.
	4.9	<u>Individualization</u>	<ul style="list-style-type: none"> • New video: Individualization of Training and Data Collection – an extended learning seminar presented by Derek Evely.
<u>Planning & Organization</u>	5.0.	<u>Introduction to Planning</u>	

	5.1	General Plans for Specific Populations	<ul style="list-style-type: none"> New video: Coach Pfaff discusses his experiences with respect to common beginner mistakes in planning.
	5.2	Planning a Club Document	
	5.3	Planning for Specific Event & Player Groups	
	5.4	The Annual Plan	<ul style="list-style-type: none"> New video: Coach Dan Pfaff presents an extended learning seminar on <i>Planning, Peaking and Periodization for Power/Speed Sports</i>.
	5.5	Medium-term Planning for Reaction-Based Programming	
	5.6	Microcycle Planning	<ul style="list-style-type: none"> New video: Coach Pfaff discusses an example of an early season sprints / jumps microcycle.
	5.7	Session Planning	
Progressions	6.1	Introduction	
	6.2	The Need for Progressions	<ul style="list-style-type: none"> New video: This extended learning video, hosted by Nelio Moura shares the Brazilian approach to LTAD and the road to High Performance.
	6.3	Long Term Progressions into High Performance Sport	

	6.4	Bulletproofing - Creating a Healthy Athlete	
	6.5	Long Term Progression of Biomotor Abilities	
	6.6	Long Term Endurance Progressions	<ul style="list-style-type: none"> • New video: Jason Hettler delivers an extended learning seminar on strength training for endurance athletes.
	6.7	Long Term Speed Progressions	
	6.8	Long Term Strength Progressions	
	6.9	Long Term Special Strength Progressions	<ul style="list-style-type: none"> • New video: Coach Pfaff delivers a practical session exploring special strength for jumping and sprinting events.
Cueing	7.1	An Introduction to Cueing	<ul style="list-style-type: none"> • New video: Coach Pfaff provides a practical example of a cue that he has used to good effect in a competition scenario. • New video: Coach Pfaff engages in further discussion on the effective use of feedback. • New video: Further discussion with Coach Pfaff on the use of questioning to positively influence coaching efficacy.
	7.2	An Overview: Learning, Technique, and Technical Models	

			<ul style="list-style-type: none"> • New video: Coach Pfaff on how to ascertain the level of perceptual, motor, and psychomotor abilities of an athlete when first starting to work with them, and the priorities within these divisions.
	7.3	Delving Deeper: Motor and Skill Learning	<ul style="list-style-type: none"> • New video: Coach Pfaff on how to approach technical change over time – further discussion.
	7.4	Motor Learning Theories	
	7.5	Practice to Actualization	<ul style="list-style-type: none"> • New video: Coach Pfaff shares mistakes made as a younger coach when addressing skill learning.
	7.6	Understanding the Teaching Process	<ul style="list-style-type: none"> • New video: Coach Pfaff on teaching rhythm.
	7.7	Feedback	<ul style="list-style-type: none"> • New video: Coach Pfaff - Real world discussion on what constitutes constructive versus unconstructive coaching feedback. • New video: Coach Pfaff - Further discussion on what constitutes the 'right' dose when it comes to feedback.
	7.8	Cue Formats	<ul style="list-style-type: none"> • New video: Further discussion and thoughts on the internal versus external cue debate with Coach Pfaff.
	7.9	Practical Cueing Strategies	
Athlete Management	8	Introduction to Athlete Management	

	8.1	Personality & Behavior	<ul style="list-style-type: none"> New video: Coach Pfaff discusses the different personality types / behavior he has encountered over his 40 plus years of work with athletes across many sports, plus implications for coaching and communication strategies.
	8.2	Environment & Group Management	<ul style="list-style-type: none"> New video: Discussion with Coach Pfaff on how to manage external influences in order to get the best out of an athlete.
	8.3	Coach-Athlete Communication & Reporting	<ul style="list-style-type: none"> New video: Coach Pfaff further explains his take on the importance and value of debriefs.
	8.4	Key Performance Indicators, Accountability, Goals	<ul style="list-style-type: none"> New video: Coach Pfaff discusses balancing process versus outcome goal setting.
	8.5	Balance & Transition	
	8.6	Millennials & Resilience	<ul style="list-style-type: none"> New video: Coach Pfaff discusses practical strategies for minimizing catastrophic thinking in real time during competition.
	8.7	Managing Relationships	<ul style="list-style-type: none"> New video: Coach Pfaff shares experiences on some of his most effective coach-athlete relationships.
	8.8	Maximizing Competitive Performance	<ul style="list-style-type: none"> New video: Coach Pfaff shares experiences of the realities of coaching at a major championship.
	8.9	Coach Health	
Strength Development Fundamentals	9.1	First Principles in Muscular Strength	
	9.2	Loading Parameters	<ul style="list-style-type: none"> New video: Coach Pfaff - How strong is strong enough?

	9.3	Eccentric Training	<ul style="list-style-type: none"> New video: Coach Pfaff - Experiences with the use of eccentric training and training yielding/deceleration abilities in the weight room.
	9.4	Writing the Program	
	9.5	Monitoring & Data Collection	<ul style="list-style-type: none"> New video: Coach Pfaff shares his view on the discussion of art v science in coaching.
	9.6	Strength & Power Assessment	
Strength Exercise Inventory	10.1	Warm Ups for Strength Training	
	10.2	Zone 1 Exercises	
	10.3	Zone 2 Exercises	
	10.4	Zone 3 Exercises	
	10.5	Structural Integrity / Tolerance	
	10.6	Rotational Exercises	
	10.7	Bodyweight Exercises	

<u>Speed Development Fundamentals</u>	11.1	An Introduction to Speed	<ul style="list-style-type: none"> • New Extended Learning Video: Dr Sophia Nimbus conducts an extended examination of agility training methods and associated factors.
	11.2	Speed: Models, Systems, & Theories	
	11.3	Fundamentals of Sprinting	<ul style="list-style-type: none"> • New updated case study video: Coach McMillan discusses lower leg swing, process variability, and outcome variability.
	11.4	Speed: The ALTIS Philosophy	
	11.5	Speed: The Start Point	<ul style="list-style-type: none"> • New video: Coach Pfaff on the issues surrounding extreme attack angles off the start. • New video: Coach Pfaff on why the cue stay low / lean is wrong. • New video: Coach Pfaff on the low heel recovery debate off the start.
	11.6	Speed: Acceleration Concepts	<ul style="list-style-type: none"> • New video: Coach Pfaff discusses attack angles and acceleration off the floor in contact games - what should we coach / see? • New video: Coach Pfaff on programming concepts for acceleration in team games / other sports. • New video: Coach McMillan Concepts in Acceleration.
	11.7	Speed: Maximum Velocity	<ul style="list-style-type: none"> • New text additions: The ALTIS Kinogram Method, plus pelvic posture graphics.
	11.8	Speed: Error Detection & Correction	

Speed Exercise Inventory	12.1	Preparing for Speed	<ul style="list-style-type: none"> • New video: Alternate warm up scheme example included in further learning.
	12.2	Developing Starting Abilities	<ul style="list-style-type: none"> • New video: Specific motion start dynamics video.
	12.3	Acceleration Development	<ul style="list-style-type: none"> • New video: Acceleration landmarks - with Coach Pfaff voiceover.
	12.4	Maximum Speed Development	
	12.5	Developing Speed Endurance	
	12.6	Plan B for Speed	
	12.7	Programming Considerations for Speed Development	<ul style="list-style-type: none"> • Additional discussion and exploration surrounding Coach McMillan's programming, including further programming examples.
	12.8	Foundation Course Graduation	