STRENGTH & CONDITIONING · COACH BRIEFING

MASTERING THE FUNDAMENTALS

of Strength & Conditioning for **Athletic Performance**

Consistent use of the fundamentals prepares athletes for the best years of their sport.

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MSCC, RSCC, Pn1, USAW, FRCms, ARC, NASE

Assessments • Logistics • Programming • LTAD

Presenter Background

WHO I AM

Husband

To my beautiful wife, Paige.

Father

Of two wonderful daughters, Peyton (9) and Taylor (6).

Coach

Master S&C — and “Dad” Always Coaching….

WHERE I HAVE GONE - CAREER PATH

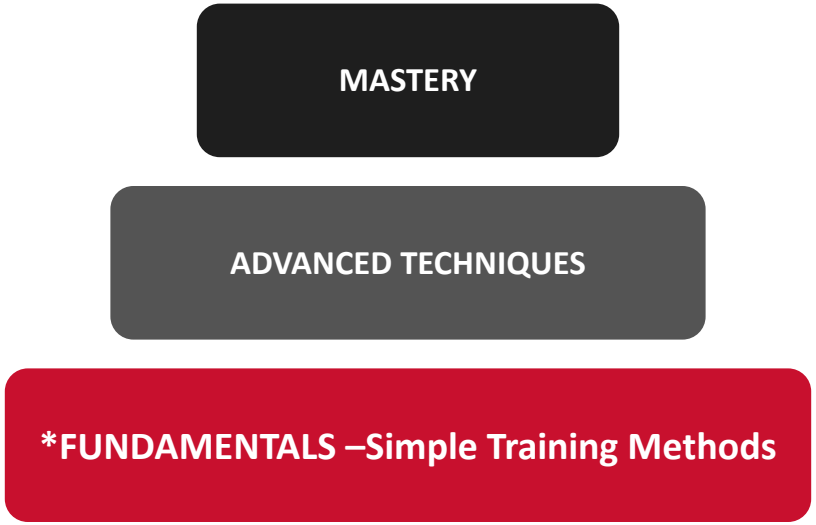
Institution	Role	Year(s)
Middle Tennessee State	Walk-On, Intern	2004, 2007-2008
Ohio State	Professional Intern S&C Coach	2009
Eastern Michigan	Graduate Assistant S&C Coach	2010-2011
D1 Sports	Facility Coordinator / Head S&C Coach	2011
Kent State	Assistant S&C Coach	2011-2013
Georgia	Assistant / Sr. Associate Director of S&C	2013-2023
Arkansas	Associate Director of S&C	2023-2025
Nebraska	Sr. Associate Director of S&C	2025-Present

What Do We Mean by “Fundamentals”?

“The core principles, basic rules, or primary data upon which a system or discipline is built.”

The fundamentals of strength and conditioning are the basic training assessments, management, and training methods for all levels of athletes.

Using simple modalities/methods to train athletes to be successful in their sport (basic movements, loading, and assessments) rather than using advanced training methods (e.g. accommodating resistance, VBT, profiling, high tech assessments/tools, elaborate training schemes, and/or extreme loading patterns)



The wider the base, the higher the ceiling.

Why this topic? – Based On Experience

Simplicity works! Based on what I have seen…..

- **Years of experience in the field of S&C.** This perspective comes from working with athletes across ages, sports, and levels of competition.
- **Many philosophies, one pattern.** Across countless training systems and disciplines, the simplest methods consistently hold up best.
- **Especially at scale.** When you're responsible for large groups of athletes — not just one — simple, repeatable methods outperform complexity.
- **Hence: the Fundamentals.** This session is built to help fellow professionals identify what moves the needle.

THE SPARK

"When it's all said and done, some of the simplest methods work best — especially when working with large quantities of athletes. The key is consistency, not complexity"

GOALS

What We're After Today

Improve Athletic Performance

A better process, method, and system for developing physical qualities that transfer to the field of play.

Mitigate Injury Risk

Fundamentals-first training builds resilient movement patterns before load and complexity are added.

Strengthen the Athlete's Journey

A positive, lasting impact on the athlete's career — from first rep to Long-Term Athletic Development.

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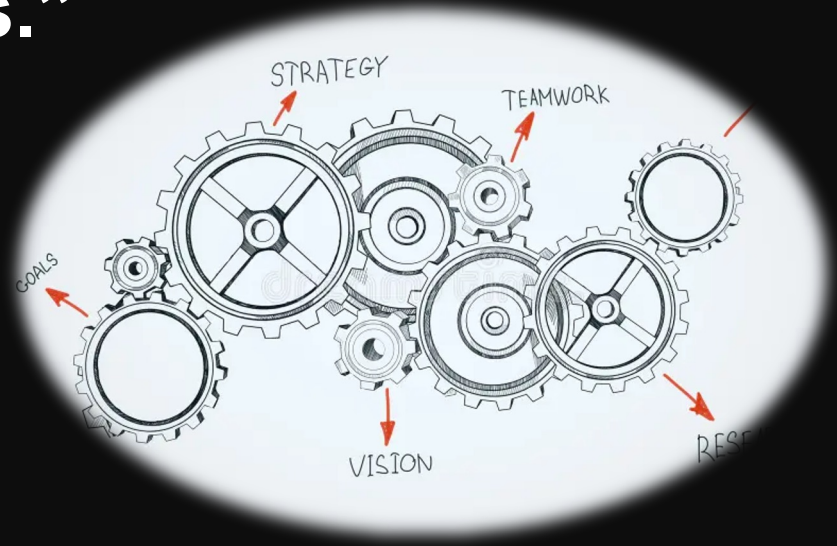
THE CORE ARGUMENT

“People do not rise to the level of their goals. They fall to the level of their systems.”

“A bad system will beat a good person every time.”

— James Clear, Atomic Habits



THE FRAMEWORK

One System. Four Pillars.

Every fundamental in strength & conditioning lives inside one of these four categories.

Assessments

What we measure — physical, mental, and anthropometric — before we prescribe anything.

Logistics

The people, place, and time constraints that shape what's actually possible.

Programming

How training is structured, sequenced, and progressed session to session.

LTAD

How training age, periodization, and the athlete's long-term arc guide every decision.

01

Assessments

Measure before you manage.

What, Why, and How To Assess

The starting point for every downstream decision in this system.

- **Track physical & mental readiness.**

  Assessments reveal how an athlete is adapting — not just how they performed on day one. (May reveal overtraining)

- **Establish baselines and benchmarks.**

  You can't coach improvement you haven't measured.

- **Replace guesswork with evidence.**

  Objective data drives programming decisions instead of habit or hunch.

- **Requires.**

  A strong sense of attention to detail and consistency.

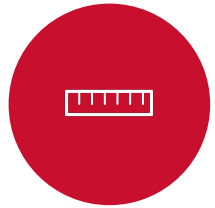
- **How will you administer?**

  Distinguish general population needs from *sport-specific and *position-specific demands.

  What is available? How often? Who will test? How will you use data?

  Subjective to Coaches Philosophy and/or Head Coaches Demands (NCAA/PROFESSIONAL)

Anthropometric Measurements



Objective physical data points, tracked consistently over time.

- **Height & weight.**

  Basic, low-cost markers tracked longitudinally across a training age.

- **Body composition.**

  Lean mass and body-fat trends relevant to sport demands and weight class.

- **Girth measurements.**

  Circumference tracking to monitor hypertrophy, symmetry, and recovery.

Physical Performance Testing

Tracked with tests that match the sport and the population.

- **Movement.**

  e.g., functional movement, movement efficiency/restrictions.

- **Strength.**

  e.g., 1RM or estimated 1RM back squat / trap-bar deadlift.

- **Power.**

  e.g., vertical jump, broad jump, medicine-ball throw.

- **Speed and Agility.**

  e.g., 10- and 40-yard sprint splits, COD drills

- **Conditioning.**

  e.g., repeat-sprint ability, aerobic capacity field tests.

- **Leaderboards.**

  Public tracking builds buy-in and healthy competition — used carefully, it drives engagement.

Mental Performance & Readiness

Physical output is only half the picture.

- **Fatigue & workload.**

  Subjective wellness questionnaires and workload tracking flag overreaching early. (Old School- Coaches eyes/ears)

- **Focus.**

  Attention and engagement during training directly affects transfer and injury risk.

- **Education.**

  Athletes who understand the 'why' comply better and self-advocate more effectively.

- **Achievement.**

  Recognizing progress builds the confidence that carries into competition.

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01 · ASSESSMENTS — IN PRACTICE

“Validity and reliability aren't academic ideas. They're the difference between data you can trust and data you can't.”

Case in point: incoming freshman classes and transfer-portal athletes have repeatedly exposed how inconsistent testing standards are across programs — the same label doesn't mean the same test.

Validity = you're testing the right thing. Reliability = you get the same result every time you test it.

02

Logistics

Possibly the most important part of the system.

People

The single biggest constraint most programs operate under.

- **Athlete-to-coach ratio.**

  Drives how much individualized attention and coaching cueing is realistically possible.

- **Population served.**

  General population training looks different from competitive-athlete training.

- **Level of experience.**

  Both the athletes' training age and the coaching staff's experience shape what's safe to run.

- **Communication.**

  Clear lines between coaches, medical staff, and athletes prevent costly gaps.

Place

Design the program for the room you have — not the room you wish you had.

- **Location.**

  Travel time and access shape attendance and consistency more than most programs admit.

- **Equipment availability.**

  Programming must reflect what's actually on the floor, not what's on Instagram.

- **Facility size.**

  Determines group size, station rotations, and safety spacing.

Time

The one resource nobody can manufacture more of.

- **Pre- and post-practice windows.**

  Often the only training windows available around a practice or game schedule.

- **Class credit / curricular time.**

  School-based settings must work within bell schedules and academic requirements.

- **Personal time.**

  Individual athletes' outside commitments and recovery windows.

- **Duration and frequency.**

  Session length and weekly frequency set the ceiling on total training volume.

Same Principles, Different Constraints

	Private Setting	High School	Collegiate	Professional
Athlete : Coach	1 : 1 – 1 : 4	1 : 20 – 1 : 40	1 : 8 – 1 : 15	1 : 3 – 1 : 8
Facility & Equipment	Boutique, limited	Variable, often shared	Dedicated, well-equipped	Elite, extensive
Primary Time Window	Client-scheduled	Pre/post-practice, class	Structured team blocks	Year-round, staff-driven
Documentation Need	Light	Moderate	High	Very high

Illustrative ranges — actual ratios and resources vary widely by budget, sport, and institution.

03

Programming

It's not what we do. It's how we do it.

Begin With the End in Mind

Why starting with a goal is the most important step in programming.

- **Start with the goal — programming works backward from there.**

  It starts at the end. Goal = (Objective) How long do you have to get there? Plan accordingly

- **Managed General Adaptation Syndrome (GAS).**

  Alarm → Resistance → Adaptation — stress must be dosed, not maximized.

- **Neuromuscular coordination.**

  Train the nervous system's ability to recruit and sequence muscle action, not just the muscle.

- **Movement efficiency.**

  Clean, repeatable technique before intensity or complexity is added. Teaching Intensive (Goblet Squat vs. Heavy BSQT)

- **Progressive overload.**

  The one non-negotiable across every method, era, and philosophy.

- **Keep It Simple Strategically (KISS).**

  Complexity is added only once simplicity has been mastered.

Three Things Every Athlete Needs Addressed

You can program for any sport if you have these three pieces of information.

- **1. Energy systems.**

  ATP-PCr, glycolytic, and aerobic — conditioning has to match the demands of the sport.

- **2. Most common injuries.**

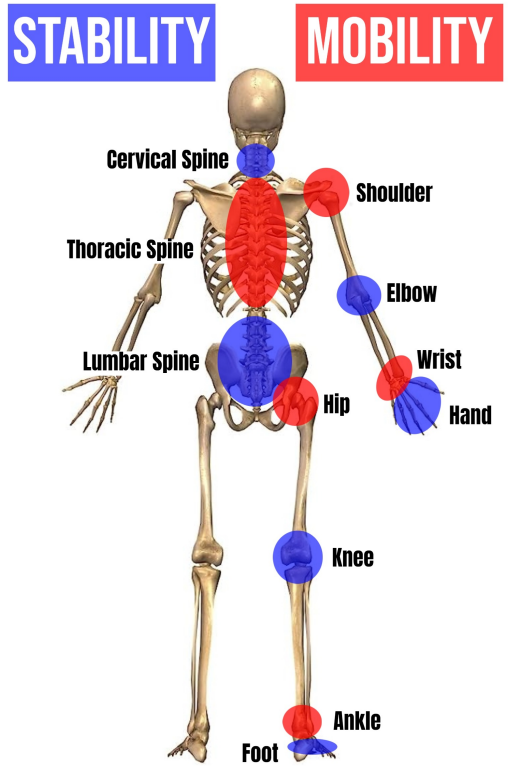
  Soft-tissue injuries and the cognitive demand of decision-making under fatigue.

- **3. Key performance indicators.**

  Sport-specific benchmarks that tell you whether the plan is working.

Training the Whole Athlete: The Kinetic Chain

Foot → Ankle → Knee → Hip → Spine → Shoulder — one continuous system.



- **The body works as one integrated chain, not isolated parts.**

  A limitation anywhere in the chain shows up everywhere downstream. (Movement efficiency)

  **Athletes are MASTER COMPENSATORS*

- **The "3D Athlete."**

  Trained through all three planes of motion — not just the one that's easiest to load.

Foot — Ankle — Knee — Hip — Spine — Shoulder

Movement Patterns & Planes

Most athletes are overloaded in one plane and undertrained in the other two.

- **Master the pattern before adding load.**

  Squat, hinge, push, pull, carry, and rotate — in order of priority.

- **Train all three planes of motion.**

  Sagittal (forward/back), frontal (side-to-side), and transverse (rotational).

- **Progress deliberately.**

  Basic movements → stability challenges → sport-specific application.

- **Perfect efficiency early.**

  Clean movement at low load is what allows advanced training to be added safely later.

Example of Training Template

Example Template of Programming

Notes: Off Season is about restoring good movement patterns, increasing mass, and strength. Technique and ROM are PRIORITY! | Week 4 Deload

Day 1: Upper Body - Strength

Movement Description	Exercise	Equipment	Special Instructions	Progressions: Sets Reps
Heart rate	bike, jump rope	Bike or Jump Rope		3-5 min
Hip	90/90 Seated Hip Rotations		Flip Hips + Reach	x5 each
Ankle	Half Kneeling Knee Over Toe		Keep Heel on Ground	x5 each
T-Spine	Side Lying T-Spine Rotations		Eyes Follow Hands	x5 each
Shoulder	Prone Swimmers		Keep Hands Off Ground	x10
Glute	Single Leg Hip Lifts		Last Rep Hold for 10 sec	x10 each
Hamstring	Single Leg Balance + Reach		Stand 1 Leg - Hinge to RDL	x5 each
Shoulder	Plate Y's / T's / A's	Plates <5lbs		2x10 each
Shoulder	YOGA Push Ups		Press Head to Knees	2x5

Movement Description	Exercise	Equipment	Special Instructions	Week 1	Week 2	Week 3	Week 4
Core-Anti Extension	Front Bridge		Hips in Line with Knees	2x :30	2x :45	2x :60	2x :60
Press Variation	NG Bench Press	Neutral Grip Bar	Keep Scaps Retracted	3x5+	3x3+	5-3-1+	3x5
Posterior Shoulder	Band Pull Aparts	Band (Red or Green)	Keep Band Below Nipple Line	3x20	3x20	2x25	2x25
Pull Variation	NG Pull Downs	Cable Machine	Full ROM	3x8	3x10	3x12	2x10
Press Variation	Landmine Press	Barbell / Landmine	Half Kneeling Position	3x4 ea	3x5 ea	3x6 ea	2x5 ea
Core-Anti Lateral Flexion	Side Bridge	Add Plate Weeks 3 & 4 (10-25lb)	Keep Hips In Line with Shoulders	2x :20 ea	2x :25 ea	2x :30 ea	2x :40 ea
Pull Variation	1 Arm DB Row	DB >40lb	Hand Supported	2x10 ea	3x12 ea	3x8 ea	2x8 ea
Tricep	Close Grip MB Push Ups	Med Ball	Hands on MB	2xFail	2xFail	3xFail	2xFail
Bicep	DB Zotman Curls	DB >20lbs	Pronate + Supinate	2x12	2x12	2x15	2x15

5-3-1 Program: Bench / Squat / Deadlift

The Last Set of Movement is a PLUS SET

Complete as many reps as possible
Record Weekly
At the end of the cycle- Evaluate 85% weight reps
Adjust Training Max by 10-20lbs
Repeat

NG Bench Press Volume	Set 1	Set 2	Set 3	Rep Completed
Week 1	5x65%	5x70%	5+ 75%	
Week 2	3x70%	3x75%	3+ x80%	
Week 3	5x 65%	3 x 75%	1+ x85%	
Week 4	5x60%	5x65%	5x70%	

Day 2: LOWER BODY - Strength

Movement Prep	Exercise	Equipment	Special Instructions	Progressions: Daily
Heart rate	Bike / Jump Rope / Field Work	Bike / Jump Rope		3-5 min
Ankle	Single Leg Calf Raises	Box or Plates	Keep Heel Off Ground	1x20 ea
T-spine	Dowel T-Spine Rotations	Dowel or PVC	Keep Hips In Place	1x10 ea
Shoulder/Hip	Overhead Squat w/Heels Elevated	Dowel or PVC	Sit Back On Heels	2x5
Hip	Hurdles (Over / Under)	Track Hurdles	Good Posture	2x6
Shoulder	Yoga Push Up to Inch Worm		Walk Feet to Hands / Walk Out	1x5
Balance	Single Leg Squat to Bench	Bench	Knee Stability	1x5 ea
Glute	Band Lateral Walks	Mini Band	Keep Feet Hip Width	2x10 ea
Quad	Band TKE's	Orange / White Band	Squeeze Quad at Lockout	2x10 ea

Movement Description	EXERCISE	EQUIPMENT	Special Instructions	Week 1	Week 2	Week 3	Week 4
Total Body- RFD	Hang Clean or High Pull	Barbell	Focus on Technique	3x5@ 65%	3x4@ 70%	4x3@ 75%	3x3 @65%
RFD	Split Squat ISO Holds	Rack or Pins	Pull Against Rack/Pins with RPE	3x :10 RPE 7	3x :10 RPE 8	3x :10 RPE 9	3x :10 RPE 10
Squat Variation	Front Squat	Barbell	RPE + % Based	3x5+	3x3+	5-3-1+	3x5
Core-Anti-Rotation	Band Palloff Holds | Wk 3+4 Press	Band or Cable	Press Away From Body	2x :10	2x :15	2x10	2x12
Single Leg	DB Split Squats	DB's	3 Sec Eccentric Lowering	3x4 :03	3x5 :03	3x6 :03	2x6 :03
Core-Anti-Lateral Flexion	1 DB Farmers Carry	DB or KB >50lb	Keep DB Off Side	2x20 yds ea	2x25 yds ea	2x30 yds ea	2x20 yds ea
Posterior Chian	BB RDL	Barbell	5 Sec Eccentric Lowering	3x5 :05	3x5 :05	3x6 :03	2x5 :03
Hip Complex	Manual Hip Abduction	Partner	Keep Constant Tension	2x8	2x8	2x10	2x10
Grip	Wrist Curls (Flexion/Extension)	DB's	Seated / Elbows on Thighs	2x20 ea	2x20 ea	2x20 ea	2x20 ea

5-3-1 Program: Bench / Squat / Deadlift

The Last Set of Movement is a PLUS SET

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Front Squat Volume	Set 1	Set 2	Set 3	Rep Completed
Week 1	5x65%	5x70%	5+ 75%	
Week 2	3x70%	3x75%	3+ x80%	
Week 3	5x 65%	3 x 75%	1+ x85%	
Week 4	5x60%	5x65%	5x70%	

Understanding Safety and Base Principles

Must have a base knowledge of the following principles.

- **Conditioning Guidelines**

  Work: rest ratio: e.g., (W:R): 1:4 or greater in week 1, 1:3 or greater in week 2.

- **Overtraining.**

  Effects and symptoms of overtraining

- **Sickle Cell Trait .**

  Effects and symptoms for SCT athletes

- **Climate Acclimation.**

  Effects and symptoms of overheating / maximal exertion

- **Total Training Volume (*Accumulation)**

  Field/court practice, weightroom, plyometrics, conditioning, agility, sprinting, etc….. (TOTAL VOLUME WEEKLY)

  GAS – Progressive Overload Principles

Volume & Intensity: The Prilepin Chart

Utilize the proper volume and intensity based on the goal

THE FOUR ZONES

Zone	Intensity (%1RM)	Reps / Set	Optimal Volume
1 — Foundational / Technical	60–67.5%	4–6	24 reps
2 — Sub-Maximal (Base Strength)	70–77.5%	3–6	18 reps
3 — Sub-Maximal (Absolute Strength)	79–88%	2–4	15 reps
4 — Maximal Effort / Peaking	90–97.5%	1–2	7 reps

Adapted from A.S. Prilepin's research on elite weightlifters (popularized as the Kenn-Prilepin chart). As intensity rises, optimal total volume drops.

APPLIED: SAME 30 REPS, THREE STIMULI

Scheme	Sets × Reps	Primary Emphasis
3 × 10	Higher reps/set	Technical practice under mild fatigue; work-capacity bias
6 × 5	Balanced	Blend of technical practice and strength expression
10 × 3	Lower reps/set	Higher intensity tolerance; less fatigue accumulation per set

04

LTAD

Long-Term Athletic Development — playing the long game.

How Training Age Changes Everything

The same fundamentals, dosed differently across a career.

- **Training age, not just calendar age, drives programming decisions.**

  Two 16-year-olds with different training histories need different plans. Tiered based on training age and adaptation.

- **The NSCA/Balyi LTAD framework moves through progressive stages.**

  From Active Start and FUNdamentals through Learn to Train, Train to Train, Train to Compete, Train to Win, and Active for Life.

- **Specialization should follow, not precede, broad development.**

  Early over-specialization trades short-term results for long-term ceiling.

- **Sport and level of competition reshape the periodization calendar.**

  A high school athlete's year looks nothing like a professional's.

The Athlete Journey: High School → College → Pro

	High School Athlete	Collegiate Athlete	Professional Athlete
Training Age	Low – Moderate	Moderate – High	High
Sport Specialization	Often multi-sport	Single sport, high volume	Fully specialized
Periodization Complexity	Basic macrocycle	Structured macro/mesocycles	Fully layered, multi-year
Competition Density	Seasonal	Seasonal + off-season work	Near year-round

Directional comparison for planning purposes — individual programs vary by sport and institution.

Periodization: Planning Across Time

Cycle	Typical Duration	Primary Focus
Microcycle	1 – 7 days	Daily/weekly session sequencing and fatigue management
Mesocycle	2 – 6 weeks	A specific training block or emphasis (e.g., a strength phase)
Macrocycle	One season / year	The full competitive arc, in-season and off-season
Quadrennial	Multi-year athlete arc	Long-term development across an athlete's competitive lifespan

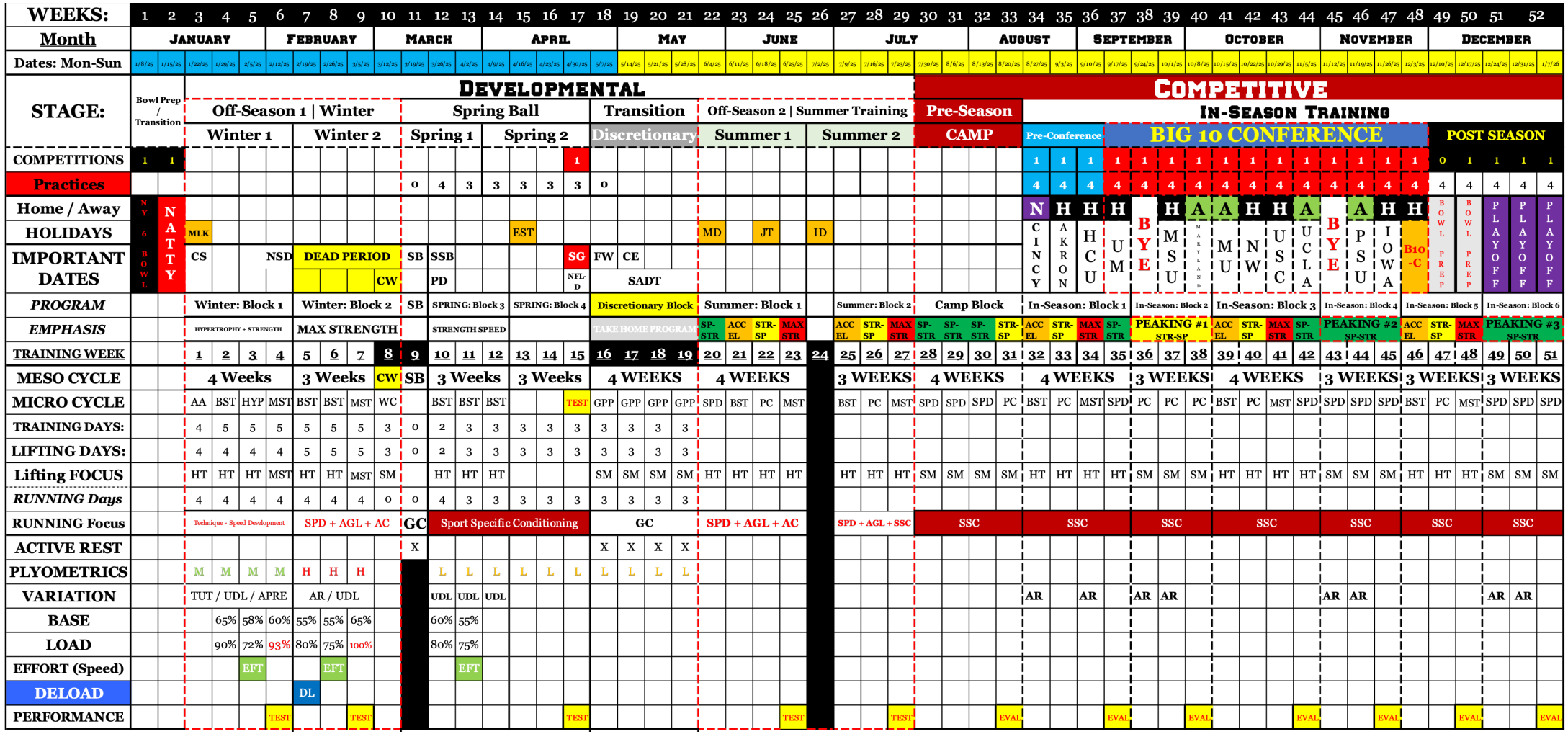
Cycles nest inside one another — the microcycle serves the mesocycle, which serves the macrocycle, and so on.

We mostly think and live in the MESOCYCLE

The transfer portal has changed the trajectory of periodization for many S&C coaches. The Macrocycle has become the primary focus now vs. the Quadrennial

Periodization: Planning Across Time

**The transfer portal has changed the trajectory of periodization for many S&C coaches. The Macrocycle has become the primary focus now vs. the Quadrennial*



BRINGING IT TOGETHER

Four Pillars, One System

Assessments

Measure before you manage

Logistics

Design for the room you have

Programming

It's how, not what

LTAD

Dose fundamentals across a career

Mastering these four pillars — not chasing the next advanced technique — is what separates programs that hold up under pressure from programs that don't.

WHAT TO DO ON MONDAY

- **Audit your assessments** for validity and reliability before you trust the data.
- **Design programming around your real logistics** — not the ones you wish you had.
- Program the goal first, the exercise second.
- Match every decision to training age.

THANK YOU

Questions & Discussion

Mastering the Fundamentals of Strength & Conditioning for Athletic Performance