



Strength & Conditioning

Basketball 5 Week Mesocycle Programme



Michael Carolan

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Strength & Conditioning for Sport Specialist Module

Module Code: SS311 & SS3121

Training Programme for Basketball

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Introduction

Course Context:

This is a Strength & Conditioning for Sport Specialist Module offered by the National Certificate in Exercise and Fitness as part of a progression route to achieve the Higher Certificate in Exercise Health Fitness. It's the second year of four-year course designed to provide enough knowledge to its participant to be better equipped to pursue careers in the Sports and Leisure Industry. Students that have attended this course find that they can secure employment with their new qualifications, but most continue and become tutors or specialist researchers in their respective fields. This case study is part of a collection of works needed to meet the overall assessment requirements.

Strength & Conditioning Programming for Basketball:

In this assignment, I will be outlining briefly my screening procedures, providing fitness test results of the individuals under my care. I will design and implement a programme to aid my team to achieve their collective and personal fitness related goals, exemplifying them as a case study. I will outline the macrocycle of the team consisting of a planned mesocycle composed of 5 micro cycles. The exercise programme will be aimed at developing five components of fitness along with improving some of the sports specific skill related components of fitness i.e. strength, strength endurance, aerobic endurance, speed, speed endurance, acceleration, agility and flexibility.

I will also be documenting the micro cycle sessions and occurrences during my teams mesocycle programme, each micro cycle will involve two on site (Basketball Court) conditioning sessions and two gym sessions. I will be focusing on progressions, adaptations, physical and visual differences, weight gain/loss and overall wellbeing of each of my athletes. I will be evaluating the effectiveness of the programme, retesting their fitness levels to compare to their initial baseline tests, looking for positive improvements and any negative effects that might have occurred, enabling me to make any necessary changes to better assist my athletes. on motivation level, moods, energy levels

The later part of the report will contain an evaluation of the exercise plan with the aim to making it more efficient and effective for the future. I will also take a moment to look at the impact the programme had on the team dynamics and the individual emotional state using a Profile of Mood State questionnaire. I will be documenting and describing the activities and specific outcomes achieved. Finally, I will end with my conclusion, summarising the programme and its effect on my client and explaining all I have learnt and wish to develop upon for good programming for future clients.

Team Profile

The Drogheda Bullets Basket Ball Team

St Mary's Diocesan

Beamore

Drogheda

Co. Louth

info@droghedabulletsbasketball.com

The club was re-established in 2005 and has grown from strength to strength over the past few years. We run the club so that is dedicated to its members, coaching staff and most importantly it players. Their mission statement is to not only to build great basketball players, but we also aim to help develop and encourage every child. We work hard to develop our young players and we strive to ensure that every child enjoys their time with us. We cater for boys from 7 years to retirement. I myself have been conditioning the starting five & three substitutes of the U17 team.

Training Schedule; Mondays U18 Men 6-8pm. Tuesdays U17 Men 6-8pm. Thursdays U16 Men 6-8pm

- Off-season phase – 2-3 months
- Pre-season phase – 3-4 months (Current)
- In-season phase – 6 months

Skills & Fitness: As a team they are disciplined and have an excellent work ethic and adapt extremely well to situational play, consistently working efficiently together and each player shows initiative on and off the court. These attributes have enabled me to design a programme that I'm sure the team will have no problem adhering to. There are various skill and fitness levels amongst the players, very capable all-round players. This level standard of aerobic fitness is quite high, so this will allow me to focus on, and implement a basic conditioning programme working to improve their anaerobic abilities in speed, agility, power, quickness, strength, explosiveness.

Goals: Their long-term goal is to win the local league in their age category and their short-term goals are to win each match they play. As a team we would like to increase are overall speed, agility, quickness and speed endurance to allay the onset of fatigue as it has affected our play toward the later quarter of the game, which has resulted in unnecessary losses. The most important goal is injury prevention of players.

Game Demands: Basketball is a game of four quarters of twelve minutes each, for a total of forty-eight minutes. It is a fast-paced game involving bouts of high intensity activity followed by a short recovery periods, putting demands on both the anaerobic and aerobic energy systems. Lower limb muscular strength and endurance are important factors to each player along with having good core stability, balance, upper body strength and range of movement. Basketball involves a lot of plyometric movement, jumping, bounding, pivoting, chopping and movements both linearly and laterally in direction. Speed, agility and quickness will be my focus as these skills are essential in the game. The following program takes all this into account and caters for the different elements used throughout the game.

Health Screening Form

Client Information, Medical Information Form & Next of Kin Form

Client Information			
Name:	John Smith		
Date of Birth:	31/07/2000		
Gender:	Male		
Height:	6ft 2" (cm)		
Current Weight:	12st 2lbs (71.1 kg)		
Body Type:	Athletic		
Address:	XXXXXXXXXX XXXXXX		
Phone Number:	087-XXXXXXXX		
E-mail:	XXXXXXXXXXXXX@gmail.com		
Occupation:	Student		
In Case of Emergency, Please Contact no.1			
Name:			
Relationship:	Spouse		
Gender:	Male		
Address:			
Phone Number:			
Work Phone:			
E-mail:			
Client Medical History			
Name of Doctor:	Doctor Smith		
Address:	9 High St, Mullaghmonaghan, Co. Monaghan		
Phone Number:	Phone: (047) 83449		
E-mail:	Dr.msmithmd@gmail.com		
Client Medical History			
Please answer the following questions truthfully	YES	NO	UNSURE
Are you on any medication at present?		X	
Do you smoke?		X	
Are you pregnant?		X	
Do you suffer from stress or anxiety?		X	
Do you suffer from allergies? If yes, please list:		X	
Have you ever suffered from faintness or dizziness? If yes, please elaborate:		X	
Do you have high blood pressure?		X	
Do you have diabetes?		X	
Do you have high cholesterol?		X	
Do you suffer from joint pain?		X	
Have you ever suffered from chest pain during or after physical activity?		X	
Have you ever suffered from unusual shortness of breath?		X	
Is there any history of heart defects in your immediate family?		X	
Do you have any back pain?		X	
Do any prior injuries affect you at present?		X	

Health Screening Form Lifestyle Information Form

Client Nutritional Information			
Please answer the following questions truthfully	YES	NO	UNSURE
Do you eat the daily recommend 5-6 portions of fruit and vegetables per day?	X		
Do you consume sugar on daily basis?	X		
Do you consume salt on daily basis?		X	
Do you often use condiments and dressings along with your food?	X		
Do you eat fast food during a 28-day cycle? If yes, please state what kind and how often:		X	
Do you drink alcohol more than twice a week?		X	
Are you aware of the EU guidelines on the RDA of certain food types?		X	
Are you allergic to any food substance? If yes, please list:		X	
Do you drink sodas or diet sodas? If yes, approx. how many per week:		X	
How many litres of water do consume in any 24-hour period? 2 litres	X		
Do you take any dietary supplements? If yes, please state what kind and how often: i.e. Vitamin C Daily	X		
Are you able to interpret food labels and their ingredients?	X		
Do you experience any large or frequent weight fluctuations?	X		
Do you consume any beverages that contain caffeine daily?		X	

Client Current Activity/Exercise Information			
Please answer the following questions truthfully	YES	NO	UNSURE
Do you exercise or play sport for at least thirty minutes or more three times a week?	X		
Does your occupation involve 30 mins or more of physical activity per day?	X		
Do you warm up and warm down before and after exercise?	X		
Do you stretch pre-and post-exercise?		X	
Are you the appropriate weight for your height and gender per your BMI?	X		
Do you prefer to drive or walk to the local shops?		X	
Would you be more inclined to use stairs rather than a lift or escalator where possible?	X		
In general, are you happy with your current appearance and body composition?	X		
Can you devote more than 10 hours a week to training?	X		
Are you satisfied with your current energy levels?		X	
Do you partake in any other sporting activities such as running, swimming etc.? If yes, please list:	X		

Sample Informed Consent Form

I _____ declare that I intend to take part in the fitness- testing and exercise and fitness programme offered by *Michael Carolan*. I am aware that as with all types of exercise, there is an inherent risk of heart attack, light-headedness, fainting, cramps, muscles or joint injury, stroke etc. I acknowledge that my choice to participate in this exercise programme brings with it the assumption by me of those risks, and I understand that I am free to withdraw from this programme or modify my activity levels at any time. I assume full responsibility during and after my participation to use or apply at my own risk any portion of the information or instruction I receive. I understand that *Michael Carolan* accepts no responsibility whatsoever for any injuries or death during or after participation in the fitness testing and exercise programme to follow.

I agree that I have read, understood, and agree to the contents in its entirety of this informed consent agreement.

Signed: _____ (Participant)

Date: _____

Signed: _____ (Witness)

Date: _____

Pre-Exercise Programme Statistics

Recording Results – Fitness Test/Assessment

To gauge the individual strengths, weaknesses and monitor their progress I have fitness tested each player at the beginning of the programme to establish a benchmark/baseline, and to be retested at the end of the mesocycle. This will help my athletes stay focused and motivated to achieve their goals and help me to monitor their progress and the effectiveness of the programming, adapting it accordingly if needed. I will include another periodic fitness assessment for comparison. Before testing I conducted a functional movement screen (FMS) on each player to make sure there were no underlying mobility or stability issues. Athletes 2,4,5,7 & 8 each scored 20 and athletes 1,3 & 6 each scored 18 which means they all possess a good performance pyramid rating. i.e. good sports specific skills, functional performance quantity and functional movement quality.

Recording Results – Athlete - Fitness Test/Assessment Number 1

Name of Fitness Test	Specific Component Tested	Result	Comparison to Normative Data (for age and gender)
20 metre MSFT (Beep Test)	Cardiovascular Endurance		
Vertical Jump (Wall & Chalk)	Leg Strength & Power	inches	
Sprint Fatigue Test	Anaerobic Capacity	%	
T-Test	Agility	secs	
Hand Eye Coordination Test	Coordination	catches	
Sit and Reach	Flexibility (Lower body)	cm	
Standing Stork Test	Balance	secs	
One Minute Squat Test	Muscular Endurance (Lower Body)		
Body Composition-Skin Folds (Sum of 7 sites)	Body Composition	mm	
Weight	Body Composition	kg	

Sample Result Table

Important: The choice of testing was sport specific to Basketball and its demands. The fitness test and measuring of physicality were carried out over a two-day period, the 1st & 2nd of October at 14:00pm in an enclosed area. The follow up tests will be repeated at the same time of day and under the same conditions 35-40 days from the initial test. All protocols must be identical. (Vertical Jump Test was a no step jump.)

The seven skinfold sites tested: triceps, bicep, subscapular, supra-spinal, abdominal, thigh and calf. To be tested at the same locations during the next assessment.

Normative Data (for age and gender) Table can be found at:

www.topendsports.com/testing/norms/

Pre-Exercise Programme Statistics

Recording Results – Fitness Test/Assessment

Recording Results – Athlete 1- Fitness Test/Assessment Number 1

Name of Fitness Test	Specific Component Tested	Result	Comparison to Normative Data (for age and gender)
20 metre MSFT (Beep Test)	Cardiovascular Endurance	11	V. Good
Vertical Jump (Wall & Chalk)	Leg Strength & Power	21.5 inches	Above Average
Sprint Fatigue Test	Anaerobic Capacity	80 %	Average
T-Test	Agility	11.82 secs	Poor
Hand Eye Coordination Test	Coordination	41 catches	Excellent
Sit and Reach	Flexibility (Lower body)	15 cm	Good
Standing Stork Test	Balance	45secs	Good
One Minute Squat Test	Muscular Endurance (Lower Body)	51	Excellent
Body Composition-Skin Folds (Sum of 7 sites)	Body Composition	86 mm	Average
Weight	Body Composition	74.6 kg	N/A

Recording Results – Athlete 2 - Fitness Test/Assessment Number 1

Name of Fitness Test	Specific Component Tested	Result	Comparison to Normative Data (for age and gender)
20 metre MSFT (Beep Test)	Cardiovascular Endurance	12	V. Good
Vertical Jump (Wall & Chalk)	Leg Strength & Power	23.9 inches	Above Average
Sprint Fatigue Test	Anaerobic Capacity	76 %	Poor
T-Test	Agility	9.98 secs	Good
Hand Eye Coordination Test	Coordination	33 catches	Good
Sit and Reach	Flexibility (Lower body)	21 cm	Excellent
Standing Stork Test	Balance	57secs	Excellent
One Minute Squat Test	Muscular Endurance (Lower Body)	46	Good
Body Composition-Skin Folds (Sum of 7 sites)	Body Composition	76 mm	Good
Weight	Body Composition	68.7 kg	N/A

Pre-Exercise Programme Statistics

Recording Results – Fitness Test/Assessment

Recording Results – Athlete 3- Fitness Test/Assessment Number 1			
Name of Fitness Test	Specific Component Tested	Result	Comparison to Normative Data (for age and gender)
20 metre MSFT (Beep Test)	Cardiovascular Endurance	10	Good
Vertical Jump (Wall & Chalk)	Leg Strength & Power	24.2 inches	V. Good
Sprint Fatigue Test	Anaerobic Capacity	85 %	Good
T-Test	Agility	10.97 secs	Average
Hand Eye Coordination Test	Coordination	22 catches	Average
Sit and Reach	Flexibility (Lower body)	19 cm	Excellent
Standing Stork Test	Balance	37 secs	Average
One Minute Squat Test	Muscular Endurance (Lower Body)	39	Above Average
Body Composition-Skin Folds (Sum of 7 sites)	Body Composition	80 mm	Good
Weight	Body Composition	79.5kg	N/A

Recording Results – Athlete 4- Fitness Test/Assessment Number 1			
Name of Fitness Test	Specific Component Tested	Result	Comparison to Normative Data (for age and gender)
20 metre MSFT (Beep Test)	Cardiovascular Endurance	13	Excellent
Vertical Jump (Wall & Chalk)	Leg Strength & Power	26.3 inches	V. Good
Sprint Fatigue Test	Anaerobic Capacity	81 %	Average
T-Test	Agility	10.55secs	Good
Hand Eye Coordination Test	Coordination	27 catches	Average
Sit and Reach	Flexibility (Lower body)	16 cm	Good
Standing Stork Test	Balance	43 secs	Good
One Minute Squat Test	Muscular Endurance (Lower Body)	52	Excellent
Body Composition-Skin Folds (Sum of 7 sites)	Body Composition	69 mm	Good
Weight	Body Composition	70.4 kg	N/A

Pre-Exercise Programme Statistics

Recording Results – Fitness Test/Assessment

Recording Results – Athlete 5- Fitness Test/Assessment Number 1			
Name of Fitness Test	Specific Component Tested	Result	Comparison to Normative Data (for age and gender)
20 metre MSFT (Beep Test)	Cardiovascular Endurance	9	Good
Vertical Jump (Wall & Chalk)	Leg Strength & Power	19.8 inches	Average
Sprint Fatigue Test	Anaerobic Capacity	83 %	Average
T-Test	Agility	10.96 secs	Average
Hand Eye Coordination Test	Coordination	36 catches	Excellent
Sit and Reach	Flexibility (Lower body)	9 cm	Good
Standing Stork Test	Balance	19 secs	Fair
One Minute Squat Test	Muscular Endurance (Lower Body)	44	Good
Body Composition-Skin Folds (Sum of 7 sites)	Body Composition	74 mm	Good
Weight	Body Composition	80.4kg	N/A

Recording Results – Athlete 6- Fitness Test/Assessment Number 1			
Name of Fitness Test	Specific Component Tested	Result	Comparison to Normative Data (for age and gender)
20 metre MSFT (Beep Test)	Cardiovascular Endurance	8	Average
Vertical Jump (Wall & Chalk)	Leg Strength & Power	26.5 inches	V. Good
Sprint Fatigue Test	Anaerobic Capacity	77%	Poor
T-Test	Agility	11.54 secs	Poor
Hand Eye Coordination Test	Coordination	32 catches	Good
Sit and Reach	Flexibility (Lower body)	12 cm	Good
Standing Stork Test	Balance	38 secs	Average
One Minute Squat Test	Muscular Endurance (Lower Body)	39	Above Average
Body Composition-Skin Folds (Sum of 7 sites)	Body Composition	63 mm	Good
Weight	Body Composition	72.5kg	N/A

Pre-Exercise Programme Statistics

Recording Results – Fitness Test/Assessment

Recording Results – Athlete 7- Fitness Test/Assessment Number 1			
Name of Fitness Test	Specific Component Tested	Result	Comparison to Normative Data (for age and gender)
20 metre MSFT (Beep Test)	Cardiovascular Endurance	14	Excellent
Vertical Jump (Wall & Chalk)	Leg Strength & Power	27.6 inches	V. Good
Sprint Fatigue Test	Anaerobic Capacity	83 %	Average
T-Test	Agility	10.23secs	Good
Hand Eye Coordination Test	Coordination	38 catches	Excellent
Sit and Reach	Flexibility (Lower body)	23 cm	Excellent
Standing Stork Test	Balance	25 secs	Average
One Minute Squat Test	Muscular Endurance (Lower Body)	41	Above Average
Body Composition-Skin Folds (Sum of 7 sites)	Body Composition	73 mm	Good
Weight	Body Composition	77.2kg	N/A

Recording Results – Athlete 8- Fitness Test/Assessment Number 1			
Name of Fitness Test	Specific Component Tested	Result	Comparison to Normative Data (for age and gender)
20 metre MSFT (Beep Test)	Cardiovascular Endurance	11.5	V. Good
Vertical Jump (Wall & Chalk)	Leg Strength & Power	25.8 inches	V. Good
Sprint Fatigue Test	Anaerobic Capacity	80 %	Average
T-Test	Agility	12 secs	Poor
Hand Eye Coordination Test	Coordination	31 catches	Good
Sit and Reach	Flexibility (Lower body)	11 cm	Good
Standing Stork Test	Balance	11 secs	Fair
One Minute Squat Test	Muscular Endurance (Lower Body)	48	Good
Body Composition-Skin Folds (Sum of 7 sites)	Body Composition	89 mm	Average
Weight	Body Composition	80.5kg	N/A

Designing & Implementing Periodized Programme (5 Mesocycle)

Now that I have accumulated and analysed all the relevant data, I can now begin work on designing and implementing a Meso cycle workout programme for the athletes. I will devise a 5-week (1 week is a microcycle) programme using the FITT principle incorporating the seven principles of training and concentrate on improving the following health related components of fitness: strength, muscle endurance, flexibility, body composition and maintaining their levels of cardio vascular fitness. I will also add a session of sports specific exercises to aid in the development of their skill related components power, coordination but with special attention on improving their overall speed acceleration & endurance, agility and quickness.

I have designed my programme to be used in the gym setting but I have encouraged the players to develop some body weight, resistance bands & flexibility routines to compliment the programme for the days that they can't make it to the gym along with some CV exercises such as skipping or swimming. As time can be an issue, I have added a flexibility routine to follow the main phase of our routines and this will be integrated as part of a cool down as post stretch. I will dedicate one day of the athlete's recovery days to accommodate for a full session of flexibly training, as it is recommended that a flexibility routine should be performed at least three – five times per week.

In the design of my cycles, I have considered the conditioning principles of training:) 1 Body Reaction to Stress 2) Predictable Rate of Improvement 3) Limits to Improvement 4) Diminishing Returns 5) Accelerating Setbacks 6) Specificity of Training and 7) Ease of Maintenance. I have also used the S.M.A.R.T.E.R. (Specific, Measurable, Agreed, Realistic, Time-Phased, Exciting & Recorded) principles of goal setting. acronym whilst preparing the meso and micro cycles, allowing better adherence and enjoyment in the weeks to follow.

Basketball 12 Month Mono Macrocycle

My Mesocycle

Months	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
Macro-Mono-Cycle	Early Pre-Season	Mid Pre-Season		Late Pre-Season	In Season						Off Season	
Training Phases	Preparation				Competitive						Transition (Prep)	
Sub Phases	General Preparation	Specific Preparation			Pre-Comp	Competitive				Play Off	Transition (Prep)	
Strength	Functional Machine & Free-weights		Maximum Strength	Power & Muscular Endurance	Maintenance of Power & Strength						Compensation	
Endurance	Aerobic Endurance			Maintain Aerobic (or bring in) Specific Endurance	Specific Endurance					Aerobic Endurance		
Speed, Agility & Quickness	A-lactic & Lactic Speed Endurance (FARTLEK)		Specific Speed (Lateral, Acceleration & Deceleration) Anaerobic Endurance (Tempo Running) Agility & Reaction Time			Agility Reaction Time Specific Speed				Rest, Relaxation & Games		
Flexibility	Maintain Throughout the Mono Macro Cycle.											

Designing & Implementing Periodized Programme(Micro-cyclesx5)

Now that the mesocycle period of training has been established I will break it down further into five weekly micro-cycles, each containing 2 gym sessions and 2 on court sessions both focusing on the different skill and health related components of fitness that need to be enhanced.

Beginning October 2 nd , 2017							Micro Cycle						
Late Pre-Season to Early in Season Training Schedule													
Sun	Mon	Tues	Wed	Thurs	Fri	Sat	Sun	Mon	Tues	Wed	Thurs	Fri	Sat
Recovery	Resistance Training Mixed Up & Low Body	Speed & Agility Drills	Practise Game with Coach & Own Workout of Choice	Resistance Training Mixed Upper & Lower	Speed & Agility Drills	Recovery	Recovery	Resistance Training Mixed Up & Low Body	Speed & Agility Drills	Practise Game with Coach & Own Workout of Choice	Resistance Training Mixed Upper & Lower	Speed & Agility Drills	Recovery
	Jumping Plyometrics	Reaction Drills		Conditioning	Reaction Drills								
	Conditioning	Mixed Plyometrics		Quick Feet Plyometrics	Medicine Ball Workout								
	Skill Development	Skill Development		Skill Development	Skill Development								
	Flexibility	Flexibility		Flexibility	Flexibility								

It is an active time during this phase, as the players have built up their other attributes i.e. strength, CV endurance, etc. I will be attempting to maintain the team's physical fitness for them to peak close to the post season trying to avoid burnout, also working on their speed and agility. The resistance elements focus on maintaining strength, muscular endurance and power (Olympic lifts & Kettlebell training). The subsequent routines will be based on the following table using the FITT principle guidelines below.

	Muscular Endurance	Strength	Flexibility	Cardiovascular Endurance
Frequency	3 – 5 Times per week Daily for some muscle groups	3 – 4 Times per week	Daily Warm-up (Dynamic Stretching) Cool-down (Floor Based Static)	3-5 Times per week
Intensity	60%- 70% of 1RM for novice to intermediate clients and 40% - 50% of 1RM for sedentary or older clients	60%- 85% of MHR 60%-70% of 1RM for novice 80% and above for experienced strength trainers.	To the point of tension Short Hold 5-6 secs Long Hold 15-30 secs Total Body 1-3 reps	60% - 85% of MHR
Time	As Long as It Takes to do 10-15 Reps Rest between sets 30-60 secs	As long as it takes to complete 2-12 Reps	10-15 minutes	30-60 mins of moderate or 10-60 mins of vigorous exercise
Type	Resistance training Body weight Circuit Training Kettle-Bells	Resistance training: mainly compound exercises.	Static stretch Controlled dynamic stretch PNF (<i>proprioceptive neuromuscular facilitation</i>) stretching	Aerobic: Running, swimming, rowing, cycling etc.

Designing & Implementing Periodized Programme (Micro-cycles x5)

Equipment:

Dumbbells x2, weights ranging from 4kg, 6kg, 8kg & 10Kg.

Gym Facilities and Machine equipment, weights ranging from 10kg – 200kg

Kettlebells weights from 6kg – 20kg

Medicine balls 5kg – 10kg

Floor mats

Tennis Balls

Agility Ball

Adjustable Step

Plyometric Box

Speed Ladders x4

Hurdles 6,9 & 12 inches

Coloured Cones

Mini resistance bands

Water

Towels

Stopwatch/ Tabata Timer

Bench

Teams Targets and Goals (using SMART):

Workout 4-5 times per week

Increase overall flexibility and to gain at least 5cm each on sit and reach test

Improve BMI by 5% - 10%

Improve muscular strength

Increase muscle endurance

Complete every session for the whole mesocycle

Avoid injury

Maintain CV Fitness

Improve speed and agility

Injury prevention

Average Maximum Heart Rate(MHR) of Team:

$220 - 17 (\text{age}) = 203 \text{ BPM}$

From this, I can work out Training Zones or Intensity Percentages

Implementing Periodized Programme (Micro-cycles x5)

The Sun Salutation to be completed at the beginning and end of each main phase as part of the warm up and cool down cycle. The Plank Variations, Tabata style at the beginning of each session both gym and court sessions. They are so placed to maximise my athlete's potential to increase their overall flexibility. At the same time strengthening their core, which is essential for executing proper exercise technique, leading to better posture and reducing the likely-hood of injury.



Exercises	Primary Muscles Worked	Time On (secs)	Time off (secs)	Reps
Normal Plank	Lower Abdominals	30	15	1
Raised Plank	Pectorals & Abdominals	30	15	1
Side Plank Right	Right Oblique's	30	15	1
Side Plank Left	Left Oblique's	30	15	1
Shoulder Bridge	Erector Spinae	30	15	1

In weeks 3-4, I will add 10 secs to time on and add 1 extra cycle with a rest of 1min between sets.

Gym Warmup - Dynamic Stretching Routine Gym	Courtside Warmup Routine (10 Mins)
<p>Sun Salutation x2 cycles</p> <p>Neck Rolls (x5 Each Way, Left to Right & R to L)</p> <p>Shoulder Rolls & Wring out The Towels (x5)</p> <p>Arm Swings (Multidirectional)</p> <p>Bicep Curls (x10 Each Side)</p> <p>Side to Side Lean (x4 Keep Back Neutral)</p> <p>Inchworm Walkout (x4 Keeping Legs Straight)</p> <p>Slow Mountain Climb (x6 Each Side Knee to Elbow)</p> <p>World's Greatest Stretch (x5 Each Side)</p> <p>Knee Hug to Quad Stretch (x5 Each Side)</p> <p>Calf to Hamstring Stretch (x5 Each Side)</p> <p>Air Squat into Calf Raise (x10)</p> <p>Forward Lunge (x5 Each Side)</p> <p>Lateral Lunge & Rotate (x5 Each Side)</p> <p>2 Min Pulse Raiser: 40 Secs each of Jump Jacks, Jog with High Knees & Butt-Kickers.</p>	<p>Sun Salutation x2 cycles</p> <p>Shoulder Rolls & Wring out The Towels (x5)</p> <p>Arm Swings (Multidirectional)</p> <p>Bicep Curls (x10 Each Side)</p> <p>Inchworm Walkout (x3 Keeping Legs Straight)</p> <p>Slow Mountain Climb (x3)</p> <p><u>World's Greatest Stretch (x3 Each Side)</u></p> <p>Quad Stretch, Hamstring Stretch back, Calf Raise</p> <p>Stretch up and Ankle Pull Stretch back(Glutes) x2</p> <p>Jog to Half Court & Backpedal to Baseline x2</p> <p>Crossover & Trunk Rotation to Half Court & Back</p> <p>High Hurdles Outward Rotation(L&R) to Half Court,</p> <p>High Hurdles Inward Rotation Back to Baseline</p> <p>Butt kickers To Half Court, Jog Back to baseline x1</p> <p>Skip to Half Court, Skip Back to baseline x1</p> <p>40 Secs Pulse Raiser: Jump Jacks</p>

Implementing Periodized Programme (Micro-cycles x5)

Flexibility/Stretching

Type Flexibility/Full Body Stretch	Frequency Once a Week Recovery Day	Time 40 mins		Intensity Point of Tension	
Exercises/Movements	No. of reps	Hold Pose (secs)	Exercises/Movements	No. of Reps	Hold Pose (secs)
Rotating neck stretch*	2 (L&R)	15-30	Standing toe-raise calf stretch	2 (L&R)	15-30
Parallel arm shoulder stretches	2 (L&R)	15-30	Sitting toe pull calf stretch*	2 (L&R)	15-30
Cross over shoulder stretch*	2 (L&R)	15-30	Sitting knee-up rotation stretch	2 (L&R)	15-30
Reverse shoulder stretches	2	15-30	Reaching lateral side stretch*	2 (L&R)	15-30
Triceps stretch*	2 (L&R)	15-30	Kneeling quad stretch	2 (L&R)	15-30
Parallel arm chest stretch*	2	15-30	Lying quad stretch*	2 (L&R)	15-30
Rising stomach stretch	2	15-30	Double lean back quad stretch	2	15-30
Standing side stomach stretch	2	15-30	Standing pointed toe hamstring stretch	2 (L&R)	15-30
Lying whole body stretch*	2	15-30	Sitting reach forward hamstring stretch	2 (L&R)	15-30
Sitting side reach stretch	2 (L&R)	15-30	Lying reach down hamstring stretch*	2	15-30
Lying knee stretch*	2 (L&R)	15-30	Sitting feet together adductor stretch	2	15-30
Kneeling reach forward stretch	2	15-30	Sitting wide leg adductor stretch*	2	15-30
Kneeling back rotation stretch	2 (L&R)	15-30	Lying abductor stretch*	2 (L&R)	15-30
Lying leg cross-over stretch	2 (L&R)	15-30	Leaning heel back Achilles stretch	2 (L&R)	15-30
Sitting feet together reach forward stretch*	2	15-30	Double kneeling shin stretch	2	15-30
Rationale	This session is designed to be used by the athletes whilst at home or if travelling as there is no equipment needed it is extremely versatile. It covers all the major muscle groups. Stretches highlighted in bold make up the 5 -10-minute cool down routine to be used after every gym and court session.				

Implementing Periodized Programme: Mondays Gym Sessions 1 & 5

Warm Up		8- 10 mins The Gym Dynamic Warm Up				
Type	Resistance Training Mixed		Frequency	Time	Intensity	
Exercises	Muscles/Body Parts	No. of Sets	No. of Reps	Rest	70% of 1RM	
Leg Press	Quadriceps, Gluteus Maximus, Gastrocnemius & Erector spinae	3	12	60 Secs	70% of 1RM	
Lat Pulldown	Biceps, Latissimus Dorsi & Teres major	3	12	60 Secs		
Calve-Raise/Leg Press	Gastrocnemius	3	12	60 Secs		
Shoulder Press	Deltoid & Triceps	3	12	60 Secs		
Hamstring Curl	Hamstring	3	12	60 Secs		
Chest Press	Pectorals Major, Triceps & Anterior Deltoids	3	12	60 Secs		
Machine Row	Trapezius & Forearm	3	12	60 Secs		
Power Development						Intensity
Barbell Olympic Clean & Jerk	Quadriceps, Gluteus Maximus, Gastrocnemius, Hamstring Erector spinae.	3	3	3-5mins		70% of 1RM
Jumping Plyometrics					Intensity	
Double Leg Box Jumps	Quadriceps, Gluteus Maximus, Gastrocnemius, Hamstring Erector spinae	2	6	90Secs	Anaerobic 90% MHR	
Conditioning					Intensity	
Treadmill	Full Body	1	5 x 200m	60 Secs Active Recovery	Aerobic 60% MHR	
Cool Down	10 -15 mins of stretching. <i>(Using the stretches listed in bold *)</i>					

The first session was a great success, we had a full turnout by the team, and great work rate by all. They are frequently using machines as a form of training, so I will introduce a kettle bell routine on Thursdays as their other form of resistance training to help keep them motivated. I split the exercises into lower then upper purposefully, to be used as an active recovery if the guys wanted to combine two exercises instead of waiting, doing nothing to recover. I also made sure that both agonistic and agonistic muscles where being equally utilised, the tempo count was: 1 up (Positive) & 3 down (Negative). As we are training for power, I brought in the Olympic Clean & Jerk to help achieve explosiveness, utilising triple extension phases of the legs which should translate to a more powerful jump, this complements the double leg box jumps giving the lower legs an almost superset like workout. It was difficult to keep an eye on everybody and check their technique and to make sure they were doing the correct rep ranges will have to manage the group better for the next live session. I didn't attend Session 5, but we had a full turnout again and no incidents. Any future adaptations to the routines will be highlighted in bold. Organising the players will take a bit more practice.

Implementing Periodized Programme: Mondays Sessions 9 & 13

Warm Up		8 mins The Gym Dynamic Warm Up			
Type		Frequency		Time	Intensity
Resistance Training Mixed		Once per Week		60 mins +	
Exercises	Muscles/Body Parts	No. of Sets	No. of Reps	Rest	70% of 1RM
Leg Press	Quadriceps, Gluteus Maximus, Gastrocnemius & Erector spinae	3	12	60 Secs	
Lat Pulldown	Biceps, Latissimus Dorsi & Teres major	3	12	60 Secs	
Calve-Raise/Leg Press	Gastrocnemius	3	12	60 Secs	
Shoulder Press	Deltoid & Triceps	3	12	60 Secs	
Hamstring Curl	Hamstring	3	12	60 Secs	
Chest Press	Pectorals Major, Triceps & Anterior Deltoids	3	12	60 Secs	
Machine Row	Trapezius & Forearm	3	12	60 Secs	
Power Development					Intensity
Barbell Olympic Clean & Jerk	Quadriceps, Gluteus Maximus, Gastrocnemius, Hamstring Erector spinae.	3	3	3-5mins	75% of 1RM
Jumping Plyometrics					Intensity
Double Leg Box Jumps	Quadriceps, Gluteus Maximus, Gastrocnemius, Hamstring Erector spinae	3	6	90Secs	Anaerobic 90% MHR
Conditioning					Intensity
Treadmill	Full Body	2	5 x 200m	60 Secs Active Recovery	Aerobic 60% MHR
Cool Down	10 -15 mins of stretching. <i>(Using the stretches listed in bold *)</i>				

Sessions 9 & 13 are progressed in the form of raising the 1RM percentile by the recommended 5% for both the Olympic Clean & Jerk and the resistance session exercises. This should be enough to create a new phase of shock, beginning the process of General Adaption Syndrome (GAS). I also reduced the warmup time and increased the sets to be performed by 1. No issues at training today and only one absenteeism.

Implementing Periodized Programme: Mondays Gym Session 17

Warm Up		8 mins The Gym Dynamic Warm Up			
Type Resistance Training Mixed		Frequency Once per Week		Time 60 mins +	Intensity
Exercises	Muscles/Body Parts	No. of Sets	No. of Reps	Rest	75% of 1RM
Leg Press	Quadriceps, Gluteus Maximus, Gastrocnemius & Erector spinae	2	12	60 Secs	
Lat Pulldown	Biceps, Latissimus Dorsi & Teres major	2	12	60 Secs	
Calve-Raise/Leg Press	Gastrocnemius	2	12	60 Secs	
Shoulder Press	Deltoid & Triceps	2	12	60 Secs	
Hamstring Curl	Hamstring	2	12	60 Secs	
Chest Press	Pectorals Major, Triceps & Anterior Deltoids	2	12	60 Secs	
Machine Row	Trapezius & Forearm	2	12	60 Secs	
Power Development					
Barbell Olympic Clean & Jerk	Quadriceps, Gluteus Maximus, Gastrocnemius, Hamstring Erector spinae.	2	3	3-5mins	75% of 1RM
Jumping Plyometrics					Intensity
Double Leg, Box Jumps	Quadriceps, Gluteus Maximus, Gastrocnemius, Hamstring Erector spinae	2	6	90Secs	Anaerobic 90% MHR
Conditioning					Intensity
Treadmill	Full Body	1	5 x 200m	60 Secs Active Recovery	Aerobic 60% MHR
Cool Down	10 -15 mins of stretching. <i>(Using the stretches listed in bold *)</i>				

This week sees a reduction in the intensity and number of each exercise, a strategy employed to allow the muscles to compensate for the previous weeks efforts, also known as tapering. I found the best way to reduce the workload was to reduce the number of sets to be executed, this will allow for better recovery during the compensation phase of adaptation. Another two members absent tonight, it justifies having the mixed routine as they won't miss too much work until the next session. Will have to speak to the guys to stop anyone else from missing sessions.

Implementing Periodized Programme: Thursdays Sessions 3 & 7

Part 1	KB Exercise	KB weight	Sets & Reps	Recovery
Mixed	Kettlebell Lunges	8kg x2	12 Reps x 3 Sets	60 secs
	Kettlebell Swing	12kg	12 Reps x 3 Sets	60 secs
	Goblet Squat	12kg	12 Reps x 3 Sets	60 secs
	Rear Lunges	8kg x2	12 Reps x 3 Sets	60 secs
	The Pistol Variation / Squat Box	6kg	12 Reps x2 (Left & Right side) 3 Sets	60 secs
Part 2	KB Exercise	KB weight	Sets & Reps	Recovery
Ladders	Snatch	6kg, 8kg,10kg,	3 Sets: 1 Set = 6kg x 12 reps, 8kg x10 reps, 10kg x 8 reps, 6kg x 12 reps, 8kg x 10 reps, 10kg x 8 reps. Total Reps: 80	60 Secs
	Military Press	4kg,6kg,8kg	3 Sets: 1 Set = 4kg x 12 reps, 6kg x10 reps, 8kg x 8 reps, 4kg x 12 reps, 6kg x 10 reps, 8kg x 8 reps. Total Reps: 80	60 Secs
	Pull over	4kg,6kg, 8kg	3 Sets: 1 Set = 4kg x 12 reps, 6kg x10 reps, 8kg x 8 reps, 4kg x 12 reps, 6kg x 10 reps, 8kg x 8 reps. Total Reps: 80	60 Secs
	Bulgarian Get Up Variation (Standing Position)	6kg	12 Reps x 2 (Left & Right side) x 3 Sets Technical Recovery between Sets	60 Secs

Quick Feet Plyometrics

Speed Ladder Drill	No. of Sets	No. of Reps	Rest	Intensity	
1 Foot In 1 Foot Out	2	6	60Secs	Anaerobic 90% MHR	
Conditioning				Intensity	
Cross-Trainer	Full Body	1	Level 18 5mins x 3	60 Secs Active Recovery	Aerobic 60% MHR

The first part of the routine uses the foundation moves in KB training and is very basic, using the typical system in Local Muscular Endurance (LME) training, of high reps and low weights for each exercise. The second part comprises of Ladder training, in the form of 3 separate weights lifted lightest first with the higher amount of reps and climbing up the weight to the heaviest, reducing the amount of reps, thus incorporating Strength Training as well as LME. There is a focus on lower limb exercises, as these are the muscles predominately used in basketball, but I have incorporated upper body exercise to maintain balance in the workout. I have also added a technical exercise which will be gradually improved upon over the course of the cycling period. This should be a guide to help my team measure their progression, subsequently acting as a motivational tool. Good response by the team, something different!

Implementing Periodized Programme: Thursdays Sessions 11 & 15

Part 1	KB Exercise	KB weight	Sets & Reps	Recovery
Mixed	Kettlebell Lunges	8kg x2	16 Reps 3 Sets	60 secs
	Kettlebell Swing	16kg	12 Reps 3 Sets	60 secs
	Goblet Squat	16kg	12 Reps 3 Sets	60 secs
	Rear Lunges	8kg x2	16 Reps 3 Sets	60 secs
	The Pistol Full Assisted/TRX Strap	Assisted/Body Weight Only	15 Reps x2 (Left & Right side) 3 Sets	60 secs
Part 2	KB Exercise	KB weight	Sets & Reps	Recovery
Ladders	Snatch	8kg,10kg,12kg	3 Sets: 1 Set = 8kg x 12 reps, 10kg x10 reps, 12kg x 8 reps, 8kg x 12 reps, 10kg x 10 reps, 12kg x 8 reps. Total Reps: 80	90 Secs
	Bottom Up Press (More Advanced than the Military Press)	6kg,8kg,10kg	3 Sets: 1 Set = 6kg x 12 reps, 8kg x 10 reps, 10kg x 8 reps, 4kg x 12 reps, 6kg x 10 reps, 8kg x 8 reps. Total Reps: 80	90 Secs
	Pull over	6kg,8kg,10kg	3 Sets: 1 Set = 6kg x 12 reps, 8kg x10 reps, 10kg x 8 reps, 6kg x 12 reps, 8kg x 10 reps, 10kg x 8 reps. Total Reps: 80	90 Secs
	Bulgarian Get Up (Full Move)	6kg	12 Reps x 2 (Left & Right side) x 3 Sets/Technical Recovery	60 Secs
Quick Feet Plyometrics				
Speed Ladder Drill	No. of Sets	No. of Reps	Rest	Intensity
1 Foot In 1 Foot Out	3	6	60Secs	Anaerobic 90% MHR
Conditioning				Intensity
Cross-Trainer	Full Body	2	Level 18 5mins x 3	60 Secs Active Recovery Aerobic 60% MHR

These two sessions see an increase in weight of the KBs used throughout the daily routine to prevent my athletes from plateauing. The exceptions to this weight change were the Kettlebell Lunges and Rear Lunges, I have kept them at 8kg x2(L&R) but increased the number of reps to 16 to prevent over training. I have progressed the Bulgarian Get Up and the Pistol to their full versions, the later without weigh and with the aid of the TRX Strap, to perfect the technique before attempting the weighted full version. To create a slight variation and get my client to think about adaptations, I have introduced the Bottom Up Press, more advanced than the Military Press but using a lot of the same muscles.

Implementing Periodized Programme: Thursdays Gym Session 19

Part 1	KB Exercise	KB weight	Sets & Reps	Recovery	
Mixed	Kettlebell Lunges	8kg x2	12 Reps Set 1, 8 Reps Set 2.	60 secs	
	Kettlebell Swing	16kg	12 Reps Set 1, 8 Reps Set 2.	60 secs	
	Goblet Squat	16kg	12 Reps Set 1, 10 Reps Set 2.	60 secs	
	Rear Lunges	8kg x2	12 Reps Set 1, 8 Reps Set 1.	60 secs	
	The Full Pistol	6kg	6 Reps Set 1, 4 Reps Set 2. (Left & Right side)	60 secs	
Part 2	KB Exercise	KB weight	Sets & Reps	Recovery	
Ladders	Snatch	10kg,12kg	3 Sets: 1 Set = 10kg x 12 reps, 12kg x10 reps, 10kg x 12 reps, 12kg x 10reps. Total Reps: 40	60 Secs	
	Bottom Up Press	8kg,10kg	3 Sets: 1 Set = 8kg x 12 reps, 10kg x10 reps, 8kg x 12 reps, 10kg x 10 reps. Total Reps: 40	60 Secs	
	Pull over	8kg,10kg	3 Sets: 1 Set = 8kg x 12 reps, 10kg x10 reps, 8kg x 12 reps, 10kg x 10 reps. Total Reps: 40	60 Secs	
	Full Bulgarian Get Up	8kg	8 Reps x 2 (Left & Right side) x 3 Sets/Technical Recovery	60 Secs	
Quick Feet Plyometrics					
Speed Ladder Drill	No. of Sets	No. of Reps	Rest	Intensity	
2 Feet In 2 Feet Out	2	6	60Secs	Anaerobic 90% MHR	
Conditioning				Intensity	
Cross-Trainer	Full Body	1	Level 18 10 Mins x1	60 Secs Active Recovery	Aerobic 60% MHR
<p>This last session sees a reduction in the intensity and number of each exercise, a strategy employed to allow the muscles to compensate for the previous weeks efforts, also known as tapering. I have reduced the Sets from 3 to 2 and increased the rep range but they descend as each set is completed. (Reverse Pyramid). Part 2 sees a reduction the amount of KB used thus reducing the overall amount of reps per set. I have incorporated the Full Pistol as a way of showing the guys that they have progressed and adapted well to the program. The KB routine was to be a small part of a larger program and to compliment the team's other activities, to reach their end goals. The ballistic nature of KB training will translate to more explosive movements and power on the basketball court.</p>					

Implementing Periodized Programme: Tuesdays Session 2 & 6

Onsite Court Training

Warm Up		10 mins The Courtside Dynamic Warm Up		
Type	Frequency	Time	Intensity	
Basketball Court Training	Twice per Micro-cycle	60 mins	Med-High	
Exercises	No. of Sets	No. of Reps	Rest	80% MHR
Speed Drill				Intensity
High Knee & Attack the Ground (Wall Assisted)	2	30 secs	120 Secs	Anaerobic
90° Quick Arms	2	on	120 Secs	90%
20 Metre Dash	3	30 secs	120 Secs	MHR
		on		
		A.l.a.i.t		
Mixed Plyometrics				Intensity
Single Leg, Box Jumps	2	6x2	120 Secs	Anaerobic
Hurdles Double Leg Bounding	2	9 Hurdles	120 Secs	90%
				MHR
Reaction Drill				Intensity
Tennis Ball Drop	2	10 x 2	60 Secs	Aerobic
Two Ball Dance Drop	2	10 x 2	(Sets)	60%
				MHR
Agility Drill				
Diamond Cone Drill	2	3	180 Secs	Anaerobic
Four cone Coloured Drill	2	3	180 Secs	90%
				MHR
Cool Down	10 -15 mins of stretching. <i>(Using the stretches listed in bold *)</i>			

Tuesdays see the introduction to the onsite or basketball court training sessions. As basketball is fast paced and predominantly uses the anaerobic, ATP and CP energy systems I will be encouraging my players to build up their speed endurance levels to help them stay in the game longer. Each drill has an element of audio, visual, and cognitive conditioning to encourage stimulation of the neuromuscular pathways of the autonomic nervous system, the sympathetic, the parasympathetic nervous and the central nervous system, allowing skills to become almost autonomous in nature.

I will be working on the players ability to accelerate and decelerated quickly along with changing direction laterally and diagonally. This will involve short sprints working on a 5:1 ratio, i.e. sprint for 6 secs rest for 30+secs. They plyometric exercises are there to boost the strength of the lower limbs and improve the overall explosiveness of the muscle fibers' have brought in reaction drills at this time because we are close to competition and I feel it is necessary to break up the monotony of resistance training and all the anaerobic routines. We had a full turn out at today's session and I struggled to get through all the components in the allotted timeframe. I must now review how I explain the exercises just sticking to the essential teaching and safety points. Full attendance today, coach was happy.

A.l.a.i.t =As long as it takes

Implementing Periodized Programme: Tuesdays Sessions 10 & 14

Onsite Court Training

Warm Up		10 mins The Courtside Dynamic Warm Up		
Type	Frequency Twice per Micro-cycle		Time 60 mins	Intensity Med-High
Exercises	No. of Sets	No. of Reps	Rest	80% MHR
Speed Drill				Intensity
High Knee & Attack the Ground (Wall Assisted)	2	45 secs on	180secs	Anaerobic
90° Quick Arms	2	45 secs on	1800secs	80% MHR
20m Dash	3	45 secs on A.l.a.i.t	180 secs	
Mixed Plyometrics				Intensity
Single Leg, Box Jumps	3	6x2	120 Secs	Anaerobic
Hurdles Double Leg Bounding	3	9 Hurdles	120 Secs	80% MHR
Reaction Drill				Intensity
Tennis Ball Drop	3	10 x 2	60 Secs	Aerobic
Two Ball Dance Drop	3	10 x 2	60Secs	60% MHR
Agility Drill				
Diamond Cone Drill	2	3	180 Secs	Anaerobic
Four cone Coloured Drill	2	3	180 Secs	80% MHR
Cool Down	10 -15 mins of stretching. (<i>Using the stretches listed in bold *</i>)			

Training today was good, but the guys looked a bit tired, so I decided to give them an early night and asked them to fill out a Profile of Mood State questionnaire, to have completed for next session. I'll be able to get an idea from the results on how the guys are coping with the regime and adjust it, if needed. These two sessions were progressed by changing the set amounts and time on for the speed drill exercises. All these are small increments, but they have a massive effect on the athlete, I don't want to overload them too much as technique begins to suffer and then injuries increase. So far there have been no significant injuries to any of the players which is an indicator that I have found a good balance of work intensity and recovery.

Implementing Periodized Programme: Tuesdays Session 18

Onsite Court Training

Warm Up		10 mins The Courtside Dynamic Warm Up		
Type	Frequency	Time	Intensity	
Basketball Court Training	Once per Micro-cycle	60 mins	Med-High	
Exercises	No. of Sets	No. of Reps	Rest	85% MHR
Speed Drills				Intensity
High Knee & Attack the Ground (Wall Assisted)	1	45 secs	180secs	Anaerobic
90° Quick Arms	1	on	180 Secs	85%
20m Dash	2	45 secs	180 secs	MHR
		on		
		A.l.a.i.t		
Mixed Plyometrics				Intensity
Single Leg, Box Jumps	2	6x2	120 Secs	Anaerobic
Hurdles Double Leg Bounding	2	9 Hurdles	120 Secs	85%
				MHR
Reaction Drill				Intensity
Tennis Ball Drop	2	10 x 2	60 Secs	Aerobic
Two Ball Dance Drop	2	10 x 2	60Secs	60%
				MHR
Agility Drill				
Diamond Cone Drill	1	3	180 Secs	Anaerobic
Four cone Coloured Drill	1	3	180 Secs	85%
				MHR
Cool Down	10 -15 mins of stretching. <i>(Using the stretches listed in bold *)</i>			

This week sees a reduction in the intensity and number of each exercise, a strategy employed to allow the muscles to compensate for the previous weeks efforts, also known as tapering. It is worth noting that I have deliberately mixed the drills in all the on-site sessions to combine cognitive, visual and auditory signals or commands to encourage the athlete's development in these areas and build better neuromuscular pathways. No issues at training full attendance, results of the POMS questionnaire reveal that the guys are in good spirits and coping well with the mesocycles demands.

Implementing Periodized Programme: Fridays Sessions 4 & 8

Onsite Court Training

Warm Up	10 mins The Courtside Dynamic Warm Up			
Type Basketball Court Training	Frequency Twice per Micro-cycle	Time 60 mins	Intensity Med-High	
Exercises	No. of Sets	No. of Reps	Rest	85% MHR
Speed Drills				Intensity
30m Dash from Athletic Stance	2	1	180secs	Anaerobic
Speed Ladders: One Step Drill to Lateral Two Step Drill	1	4	120secs	90% MHR
Speed Ladders: 5 Hops & Run	1	4	120 secs	MHR
Mixed Plyometrics				Intensity
Skater Hop & Lateral Run	2	6 x 2	120 Secs	Anaerobic
Hurdles Single Leg Bounding (R&L)	2	6 Hurdles x2	120 Secs	90% MHR
Lateral Single Leg Bounding	2	6 Hurdles x2	120 Secs	MHR
Reaction Drills				Intensity
Agility Single Ball Drop	2	10 x 2	60 Secs	Aerobic
Closeout & Chop Agility Single Ball Drop (5m)	2	10 x 2	60Secs	60% MHR
Agility Drills				
Change of Direction Cone Drill	1	2	180 Secs	Anaerobic
Low Box 4 Cone Drill	1	4		90% MHR
Medicine Ball				
Push Press 7kg	2	12	60 Secs	LME
5kg Lob	2	5	60 secs	
Deep Squat Overhead Pass	1	10	60 Secs	
Cool Down	10 -15 mins of stretching. (<i>Using the stretches listed in bold *</i>)			

Fridays session sees the introduction of medicine ball training as it closely represents the basketball and I can mimic some movement patterns using weight. Bearing in mind not to make it too heavy as that would likely pull the player out of proper alignment whilst motion. I have changed the type of drills to be worked to keep the athletes interested and motivated although they will achieve the same results as the Tuesday sessions. The overall attendance record of the team is incredibly good which is reflected in the manner in which they play too. The guys found this routine a little more enjoyable than the other court sessions. There was a bit more of a competitive nature in the group today. These sessions are still geared towards improving speed and agility, every time we do a drill it makes the neuromuscular pathway stronger so there is less time needed for the athlete to react to game situations. I deliberately made it a bit more technical.

Implementing Periodized Programme: Fridays Session 12 & 16

Onsite Court Training

Warm Up	10 mins The Courtside Dynamic Warm Up			
Type Basketball Court Training	Frequency Twice per Micro-cycle	Time 60 mins	Intensity Med-High	
Exercises	No. of Sets	No. of Reps	Rest	85% MHR
Speed Drills				Intensity
30m Dash from Athletic Stance	2	1	180secs	Anaerobic
Speed Ladders: One Step Drill to Lateral Two Step Drill	1	4	120secs	90% MHR
Speed Ladders: 5 Hops & Run	1	4	120secs	MHR
Mixed Plyometrics				Intensity
Skater Hop & Lateral Run	2	6 x 2	120 Secs	Anaerobic
Hurdles Single Leg Bounding (R&L)	2	6 Hurdles x2	120 Secs	90% MHR
Lateral Single Leg Bounding				MHR
Reaction Drills				Intensity
Agility Single Ball Drop	2	10 x 2	60 Secs	Aerobic
Closeout & Chop Agility Single Ball Drop (5m)	2	10 x 2	60Secs	60% MHR
Agility Drills				
Change of Direction Cone Drill	1	2	180 Secs	Anaerobic
Low Box 4 Cone Drill	1	4		90% MHR
Medicine Ball				
Push Press 7kg	1	12	60 Secs	LME
5kg Lob	1	5	60 Secs	
Deep Squat Overhead Pass	1	10	60 Secs	
Cool Down	10 -15 mins of stretching. <i>(Using the stretches listed in bold *)</i>			

This week I have decided to keep the intensity and number of each exercise the same as in the previous micro cycle as the guys are showing signs of fatigue. They were able to cope with the initial changes I was making to the other sessions because they were small increments but as they get closer to competition I want to make sure the athletes are well rested using this time to taper their overall workloads. The Closeout & Chop Agility Single Ball Drop (5m) drill has been a great way to teach the guys about deceleration and chopping their feet to stop quickly, something they all learned quickly.

Implementing Periodized Programme: Fridays Session 20

Onsite Court Training

Warm Up		10 mins The Courtside Dynamic Warm Up		
Type Basketball Court Training	Frequency Once per Micro-cycle	Time 60 mins	Intensity Med-High	
Exercises		No. of Reps	Rest	90% MHR
Mixed Circuit Involving All: Done for Time				
Speed Drills				Intensity
30m Dash from Athletic Stance	1	1	N/A	Anaerobic
Speed Ladders: One Step Drill to Lateral Two Step Drill	1	1		90% MHR
Speed Ladders: Hopscotch & Lateral Crossover	1	1		
Mixed Plyometrics				Intensity
Hurdles Single Leg Bounding	1	6 Hurdles	N/A	Anaerobic
Double Leg Bounding	1	6 Hurdles		90% MHR
Reaction Drills				Intensity
Agility Single Ball Drop	1	1	N/A	Aerobic
Closeout & Chop Agility Single Ball Drop (5m)	1	1		60% MHR
Agility Drills				
Diamond Cone Drill	1	1	N/A	Anaerobic
Wheel Cone Drill	1	1		90% MHR
Medicine Ball				
Push Press 7kg	1	10	N/A	Anaerobic
Vertical Lob 5kg	1	1		90% MHR
Cool Down	10 -15 mins of stretching. <i>(Using the stretches listed in bold *)</i>			

I thought as this was the last session in the Meso-cycle I would make it fun and got the guys to perform the exercise in a circuit fashion laid out over the court. It was a timed event and the winner would receive no prize just bragging rights! It was a good way to end the training sessions, with spirits high.

Implementing Periodized Programme

Footnotes

With all the above exercises, good technique and correct breathing are essential to provide maximum benefits and to protect you from injury. Some of the main safety points that I would like to employ: make sure you are using the correct weight for each exercise, always engage your core and maintain a neutral back i.e. straight body alignment from head to toe. Every movement should always be under full control and when it's not you should cease the exercise immediately. Always bend the knees when picking up any weight great or small. Each specific exercise carries its own risk and has individual teaching and safety points but if you follow the mentioned precautions you should avoid future problems or injury.

The team will concentrate on maintaining their Cardiovascular Endurance by using a treadmill or cross-trainer working at 60% of their MHR. The following workout routines are designed to be adaptable in numerous ways, i.e. time adjustments, weight increments, intensity etc. When it comes to the progression stage of the programme, I have various options at my disposal to increase the gain potential of the routines. Staying within the 5% ratio rule of progression will be essential to continued efforts from the team and their exercise adherence, as I don't want to overload them too much and cause burn out.

Skill development will come in the form of ballhandling, dribbling, shooting, passing and other skills used on the court. This is the concern of the coach my role is to provide the athletes with a sound base of strength and functional movement to perform to the best of their abilities.

I have used various Machine and Kettlebell (KB) resistance exercises, ranging in technical difficulty and intensities, to suit my team's abilities throughout the meso cycle. The program has been based on the principle that each workout must push the athletes, and create an overload effect. The main two variables have been the intensity and time/frequency, as the other is constant i.e. once per week and using kettlebells. Although the team members are individuals and have been tested for their respective 1 Rep Maximums (RM) they have similar ranges and I was able to work out an average weight range to suit everyone, I have based the subsequent weight variations on this.

As basketball is extremely explosive in nature I need my athletes to have a good aerobic capacity to be better equip them to deal with the repetitive anaerobic bouts of high intensity activity on the court. I have dedicated 2 sessions per micro cycle to train them in speed, agility, plyometrics, medicine ball drills and reaction drills with the intent of developing the players fast twitch muscle fibres and encouraging the intermediate muscle fibres to take on the same characteristics of the fast twitch muscle fibres. The idea is to improve each player first step explosiveness, to help them be better attackers and defenders.

I retested the athletes two days after their mesocycle ended and under the same conditions as the first test. This was done to measure any changes that might have occurred because of their efforts and the programming. The results speak for themselves. Every player showed improvements across the board without exception.

Post-Exercise Programme Statistics

Retest Comparative Results – Fitness Test/Assessment 2

Recording Results – Athlete 1- Fitness Test/Assessment Number 2			
Name of Fitness Test	Component Tested	Result	Post Programme Result
20 metre MSFT	CV Endurance	11	13
Vertical Jump	Leg Strength & Power	21.5 inches	24.5 inches
Sprint Fatigue Test	Anaerobic Capacity	80 %	82 %
T-Test	Agility	11.82 secs	09.78 secs
Hand Eye Coordination	Coordination	41 catches	51 catches
Sit and Reach	Flexibility (Lower body)	15 cm	21 cm
Standing Stork Test	Balance	45secs	64secs
One Minute Squat Test	Muscular Endurance (Lower Body)	51	76
Body Composition-Skin Folds (Sum of 7 sites)	Body Composition	86 mm	74 mm
Weight	Body Composition	74.6 kg	72.6 kg
Recording Results – Athlete 2 - Fitness Test/Assessment Number 2			
Name of Fitness Test	Component Tested	Result	Post Programme Result
20 metre MSFT	CV Endurance	12	14
Vertical Jump	Leg Strength & Power	23.9 inches	27 inches
Sprint Fatigue Test	Anaerobic Capacity	76 %	80 %
T-Test	Agility	9.98 secs	9.23 secs
Hand Eye Coordination	Coordination	33 catches	33 catches
Sit and Reach	Flexibility (Lower body)	21 cm	28 cm
Standing Stork Test	Balance	57secs	67secs
One Minute Squat Test	Muscular Endurance (Lower Body)	46	71
Body Composition-Skin Folds (Sum of 7 sites)	Body Composition	76 mm	70 mm
Weight	Body Composition	68.7 kg	67.2 kg
Recording Results – Athlete 3- Fitness Test/Assessment Number 2			
Name of Fitness Test	Component Tested	Result	Post Programme Result
20 metre Beep Test	CV Endurance	10	13
Vertical Jump	Leg Strength & Power	24.2 inches	28.3 inches
Sprint Fatigue Test	Anaerobic Capacity	85 %	88 %
T-Test	Agility	10.97 secs	9.67 secs
Hand Eye Coordination Test	Coordination	22 catches	45 catches
Sit and Reach	Flexibility (Lower body)	19 cm	24 cm
Standing Stork Test	Balance	37 secs	54 secs
One Minute Squat Test	Muscular Endurance (Lower Body)	39	62
Body Composition-Skin Folds (Sum of 7 sites)	Body Composition	80 mm	73 mm
Weight	Body Composition	79.5kg	76.5kg

Recording Results – Athlete 4- Fitness Test/Assessment Number 2

Name of Fitness Test	Component Tested	Result	Post Programme Result
20 metre Beep Test	CV Endurance	13	14
Vertical Jump	Leg Strength & Power	26.3 inches	28.7 inches
Sprint Fatigue Test	Anaerobic Capacity	81 %	83 %
T-Test	Agility	10.55secs	09.85secs
Hand Eye Coordination	Coordination	27 catches	39 catches
Sit and Reach	Flexibility (Lower body)	16 cm	25 cm
Standing Stork Test	Balance	43 secs	57 secs
One Minute Squat Test	Muscular Endurance (Lower Body)	52	78
Body Composition-Skin Folds (Sum of 7 sites)	Body Composition	69 mm	68 mm
Weight	Body Composition	70.4 kg	71.6 kg

Recording Results – Athlete 5- Fitness Test/Assessment Number 1

Name of Fitness Test	Component Tested	Result	Post Programme Result
20 metre Beep Test	CV Endurance	9	11
Vertical Jump	Leg Strength & Power	19.8 inches	21.7 inches
Sprint Fatigue Test	Anaerobic Capacity	83 %	84 %
T-Test	Agility	10.96 secs	10.11 secs
Hand Eye Coordination	Coordination	36 catches	58 catches
Sit and Reach	Flexibility (Lower body)	9 cm	19 cm
Standing Stork Test	Balance	19 secs	33 secs
One Minute Squat Test	Muscular Endurance (Lower Body)	44	51
Body Composition-Skin Folds (Sum of 7 sites)	Body Composition	74 mm	68 mm
Weight	Body Composition	80.4kg	76.8kg

Recording Results – Athlete 6- Fitness Test/Assessment Number 2

Name of Fitness Test	Component Tested	Result	Post Programme Result
20 metre Beep Test	CV Endurance	8	10
Vertical Jump	Leg Strength & Power	26.5 inches	27.9 inches
Sprint Fatigue Test	Anaerobic Capacity	77%	79%
T-Test	Agility	11.54 secs	10.74 secs
Hand Eye Coordination	Coordination	32 catches	49 catches
Sit and Reach	Flexibility (Lower body)	12 cm	18 cm
Standing Stork Test	Balance	38 secs	43 secs
One Minute Squat Test	Muscular Endurance (Lower Body)	39	55
Body Composition-Skin Folds (Sum of 7 sites)	Body Composition	63 mm	60 mm
Weight	Body Composition	72.5kg	73.4kg

Recording Results – Athlete 7- Fitness Test/Assessment Number 2

Name of Fitness Test	Component Tested	Result	
20 metre Beep Test	CV Endurance	14	15
Vertical Jump	Leg Strength & Power	27.6 inches	30 inches
Sprint Fatigue Test	Anaerobic Capacity	83 %	86 %
T-Test	Agility	10.23secs	09.47secs
Hand Eye Coordination	Coordination	38 catches	54 catches
Sit and Reach	Flexibility (Lower body)	23 cm	29 cm
Standing Stork Test	Balance	25 secs	61secs
One Minute Squat Test	Muscular Endurance (Lower Body)	41	67
Body Composition-Skin Folds (Sum of 7 sites)	Body Composition	73 mm	69mm
Weight	Body Composition	77.2kg	77.5kg

Recording Results – Athlete 8- Fitness Test/Assessment Number 2

Name of Fitness Test	Component Tested	Result	Post Programme Result
20 metre Beep Test	CV Endurance	11.5	12
Vertical Jump	Leg Strength & Power	25.8 inches	27.3 inches
Sprint Fatigue Test	Anaerobic Capacity	80 %	83 %
T-Test	Agility	12 secs	10.89 secs
Hand Eye Coordination	Coordination	31 catches	49 catches
Sit and Reach	Flexibility (Lower body)	11 cm	18.5 cm
Standing Stork Test	Balance	11 secs	42 secs
One Minute Squat Test	Muscular Endurance (Lower Body)	48	61
Body Composition-Skin Folds (Sum of 7 sites)	Body Composition	89 mm	83 mm
Weight	Body Composition	80.5kg	76.3kg

The overall improvements made by all, has been as result of their hard work and dedication to the programme. They have exceeded my expectations and improved significantly in all areas especially their ratio of body fat to lean tissue and balance, which I didn't actively work on. The guys have all adhered to the programme well and have hit their training goals to increasing their speed, agility and speed endurance. Every one of them has increased their anaerobic endurance by at least 3% which is incredible given the time frame. The team has collectively improved their overall fitness but specifically their lower limb muscular endurance and strength, which is exactly what all good basketball players need. Each one has increased their scores on the Sit and Reach test already showing me that they have responded well to the flexibility training. Overall, I feel the programme was a huge success.

Evaluation & Conclusion

After the initial screening and procurement of the consent forms I found implementing this programme to be an enjoyable experience and one that the team had also enjoyed and had no trouble to adhering to. The only difficulty I had faced was in the preconception phases where I had to design and select specific exercises and exercise routines to best suit their needs, considering their individual fitness levels and personal and team goals. As we had limited time, I had way to amalgamate a lot of the components of fitness into one all-round workout, which also proved beneficial as they turned out to be quite versatile and effective. I learned that it was possible to use the warmup and cool down phases to integrate my flexibility programme which saved time.

As you have seen I have documented any of the progressions made at weeks 2 and 3 and rationale them, as to why I had chosen certain routines. Initially, I found that my main job was to guide and teach the guys correct technique, but after the first two weeks, they had excelled without much intervention. There were days that we all struggled with motivation, but I was always available to talk to the guys and I encouraged them regularly. As the guys persevered they said they felt stronger, calmer, clearer of mind and had more focus on the tasks at hand during the programme.

I also tried to educate the team on the many positive benefits that exercise, and good nutrition could have on you, not just in the sporting context but in a general one, from the reduced risk of heart disease to aiding in the regression of other degenerative diseases. Ultimately the programme was designed because of their fitness assessments results, the nature of the sport and its demands and the timing in the macrocycle. It was made up of sports specific exercises focusing on the major muscle groups of the legs to develop their overall playing abilities.

Throughout this programme I have learnt of the importance of progression and adaptations, using progressions in the form of increasing sets and rep numbers, decreasing recovery times between exercises and increasing the duration of stretch pose holds and their cycles. I have kept the weight of the Kettlebells and machinery to an average of 65% of the teams/individuals 1RM range. I have asked the guys to use equipment such as resistance bands as part of their own training routines as they are extremely cheap and versatile. By wave loading the programme on a weekly basis i.e. alternating the days of training and daily placement I maximised their results and delayed plateauing by keeping their body guessing to what's coming next. I asked the team to dedicate a full session of long hold (15-30 secs) stretching to develop their flexibility, especially their lower limbs, which paid off as all the guys increased their sit and reach scores by over 6cm.

Overall, doing this programme with the Bullets was a very positive and educating experience for all of us. I learned how to help people reach their goals and that it's not just about giving orders but listening to and working with them. It was brilliant to see the physical and psychological changes in each player over the five weeks, their confidence growing every day they trained and got closer to reaching their goals. The research and learning I have completed has been eye opening and I will build upon it. This is all the encouragement I need to fulfil my own long-term goals. I work as a fitness instructor and this course has thought me valuable lessons on how better to design and time manage my own group classes.

Coach Evaluation



DROGHEDA BULLETS BASKETBALL

To whom it may concern,

We at the Bullets found Michael to be an excellent coach with some fantastic qualities. He was always very polite and courteous to both ourselves and our players, and has won our respect. Michael was well organised throughout his time with us and planned his sessions like a professional. Regarding his abilities as a Strength and Conditioning Coach, I doubt that he will have trouble coaching any team at any level in any sport, if he puts his mind to it.

I have asked some of my team for their opinion on Michael's teaching style and they have all agreed that he was very effective but could do with being more direct, vocal and to the point when explaining the various aspects of his routines and drills. Overall, they agreed that he was a good instructor and showed plenty of promise. The only other negative that appeared in Michael, was that that he lacked self-belief and as a result his confidence wavered a little, he struggled at times to take control of the group, but he has improved over the duration he has spent with us.

Michael has shown himself to be an open, honest, conscientious, and hardworking individual. He also has great work ethic, adapting very well to new situations and consistently worked efficiently as part of a team. He is a forward focused thinker and can deal with issues before they arise, we also noted that he has a keen eye for detail with a strong awareness of end results which are vital traits to have if he wishes to continue as a Strength and Conditioning Coach. We would be happy to have Michael back at any stage to coach some of our other age groups if he wishes. He was a pleasure to work with and we wish him the best for his future endeavours.

Kind Regards: Michael P. P. (Head Coach)



DROGHEDA BULLETS BASKETBALL

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