Aquatic Fitness Professional
Practical & Skill Applications Course Outline

Please bring this handout to the course for reference.

The Aquatic Fitness Professional (AFP) Practical & Skill Applications Course targets the practical aspects of aquatic fitness instruction through participation in an educational segment at the pool as well as classroom movement focusing on deck instruction skills. The course also includes a concise theoretical review. The AFP Practical & Skill Applications Course is not intended to replace advanced study and preparation on the part of the Examination Candidate; rather it is designed to supplement personal study. **The recommended study resource is the AEA *Aquatic Fitness Professional Manual, Sixth Edition.*** ALL topics discussed during the course are covered in detail in this manual.

This 8-hour program is designed to reinforce the knowledge learned in the online **AEA Certification Prep Course*** for candidates seeking Certification through AEA. The interactive course design combines theoretical and practical educational segments and involves activity both on land and in the pool. This course reviews the practical and skill related aspects of aquatic fitness leadership including deck instruction, applied anatomy, physical laws and muscle actions as related to aquatic fitness equipment.

The **AFP Practical & Skill Applications Course** is also recommended for AEA Certified Professionals to reinforce practical performance and to renew certification. The course offers CECs for AEA, ACE, AFAA, ATRIC and BOC. *AEA CECs are issued only to individuals who are currently AEA Certified.*

Although optional, AEA highly recommends that all candidates seeking certification participate in the AFP Practical & Skill Applications Course. There are no prerequisites for this course.

***AEA Certification Prep Course, Version 1.1**

The online Certification Prep Course is an interactive online educational course for candidates preparing to take the AEA Aquatic Fitness Professional Certification Examination. If you complete the online Certification Prep Course as part of your exam preparation (i.e. prior to becoming AEA Certified) you can earn 7.0 CECs toward your first AEA Certification Renewal. This online course is also recommended for AEA Certified Professionals looking to enhance core knowledge and renew certification and provides 11.0 AEA CECs.

The course includes a course pre-test, unit quizzes and a course test to confirm your understanding of the material and assist you with the Certification Examination. Course content includes exercise anatomy & physiology, applied anatomy, physical fitness, aquatic environment, physical laws, aquatic fitness equipment, aquatic fitness choreography, deep water exercise, exercise programming & leadership as well as other related topics pertaining to exercise instruction. **Although optional, AEA highly recommends that all candidates seeking certification participate in this course. There are no prerequisites for this online course.**

For detailed AEA Certification Prep Course information and registration, please go directly to the **Human Kinetics website at www.aquaticeducationcenter.com**

AFP PRACTICAL & SKILL APPLICATIONS
COURSE SCHEDULE

7:30 am – 8:00 am	**Registration, Welcome & Introduction**
8:00 am – 10:30 am	**Anatomy & Movement Analysis**
	Aquatic Equipment & Muscle Actions
	Physical Laws
10:30 am – 12:30 pm	**Pool Experience**
12:30 am – 1:30 pm	**Lunch Break & Return to Classroom**
1:30 pm – 3:30 pm	**Exercise Physiology**
	Programming & Leadership
	Deck Teaching Skills
	Questions & Answers

ANATOMY & MOVEMENT ANALYSIS

- Define the anatomical reference terms and use them in an example.
- Define and describe anatomical position and the anatomical movement terms.
- Review movements at primary joints.
- Understand the three planes around which the human body moves.
- Identify the major muscle(s) responsible for primary movements in exercise.

AQUATIC FITNESS EQUIPMENT & MUSCLE ACTION

- Describe how gravity affects the muscle action and muscle use for primary exercise movements performed on land.
- Explain how and why muscle action and use varies for submerged movement compared to land movement.
- Determine the resistance direction and muscle action/ use for buoyant equipment.
- Determine the resistance direction and muscle action/ use for weighted equipment.
- Determine the resistance direction and muscle action/ use for drag equipment.
- Determine the resistance direction and muscle action/ use for rubberized equipment.
- Describe the purpose and use of flotation equipment.

THE PHYSICAL LAWS

- Define Newton's laws of inertia, acceleration, and action/ reaction; explain how they apply to aquatic exercise and describe ways to increase and decrease intensity using the principles of these laws in aquatic movement.
- Describe and demonstrate how intensity is altered in aquatic exercise through frontal surface area/ frontal resistance.
- Explain and demonstrate how the limbs are used as levers in aquatic exercise and how the length of the lever affects the intensity of the movement.
- List the alternatives to using speed to increase intensity in aquatic exercise. Explain the advantages to using these alternative methods.
- Explain how physical laws alter the intensity of deep-water exercise.

POOL APPLICATIONS

- Perform base moves for aquatic choreography.
- Perform five basic ways to vary arm use and arm patterns in aquatic exercise.
- Perform examples of basic, intermediate and advanced transitions.
- Perform the common choreography styles used in aquatic exercise.
- Perform aquatic exercise intensity alterations based upon inertia, acceleration, action/reaction, frontal surface area and levers.
- Perform movements at various impact options (Levels I, II, and III, grounded/anchored, propelled and elevated) as well as water specific movements.
- Demonstrate a designated movement pattern leading from the deck.
- Perform safe and effective cardio training incorporating aquatic laws & principles
- Perform safe and effective toning exercises for major muscle groups.
- Perform safe and effective stretching exercises for major muscle groups.
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CHANGE, LUNCH & RETURN TO CLASSROOM

EXERCISE PHYSIOLOGY

- Define and apply the physiological principles of exercise.
- Understand basic energy metabolism and how the energy systems work together to supply the body's needs.
- Understand how skeletal muscle contracts and recognize the characteristics of fast twitch and slow twitch muscle fibers.
- Describe isometric, isokinetic and isotonic muscle actions.
- Understand the body's response to aerobic and anaerobic exercise.

PROGRAMMING & LEADERSHIP

- Demonstrate proper form and alignment when teaching from the deck.
- Demonstrate cueing techniques for safe and effective transitions.
- Give examples of basic, intermediate, and advanced transitions.
- Identify & differentiate between common choreography styles used in aquatic exercise.
- Demonstrate five basic ways to vary arm use and arm patterns in aquatic exercise.
- Differentiate the benefits and safety considerations of deep-water exercise equipment.

DECK TEACHING SKILLS

- Discuss safe & effective deck instruction techniques for aquatic exercise impact options (Levels I, II, and III, grounded/anchored, propelled and elevated) as well as water specific movements.
- Discuss confusing terminology & techniques – Impact, Intensity, Tempo.
- Describe appropriate use and demonstrate safe & effective deck execution of various movement tempos (land tempo, water tempo, and ½ water tempo).
- Demonstrate correct weight transfer when teaching from the deck.
- Discuss teaching skills specific to deep-water formats.

QUESTIONS & ANSWERS

WORKSHEET 1

Fill in the blanks below relating to Anatomical Reference Terms.

Terms that describe one thing in relationship to another:

- Superior means _____
- _____ means “below”
- _____ means “in front of ”
- Posterior means _____
- Medial means _____
- _____ means “away from the midline of the body”

Examples:

- The gluteus maximus is _____ to the hip flexors.
- The head is _____ to the chest.
- The biceps is _____ to the triceps.
- The outer thigh is _____ to the inner thigh.
- The shin is _____ to the thigh.
- The sternum is _____ to the vastus lateralis

Terms that describe a position in space:

- _____ refers to the body lying in a “face-up” position.
- _____ refers to the body lying in a “face-down” position.

Terms that describe a surface of the body:

- Ventral describes the _____ surface of the body.
- _____ describes the back surface of the body.
- _____ refers to the bottom surface or the sole of the foot.
- Dorsal also refers to the _____ part of the foot.

WORKSHEET 2

BUOYANT EQUIPMENT			
JOINT	***MOVEMENT***	***MUSCLES***	***CONTRACTION***
Shoulder	*Flexion* *Extension*		
Shoulder	*Abduction* *Adduction*		
Hip	*Flexion* *Extension*		
Hip	*Abduction* *Adduction*		

WORKSHEET 3

WEIGHTED EQUIPMENT			
JOINT	***MOVEMENT***	***MUSCLE***	***CONTRACTION***
Shoulder	*Flexion* *Extension*		
Shoulder	*Abduction* *Adduction*		
Hip	*Flexion* *Extension*		
Hip	*Abduction* *Adduction*		

WORKSHEET 4

DRAG EQUIPMENT			
JOINT	***MOVEMENT***	***MUSCLE***	***CONTRACTION***
Shoulder	*Flexion* *Extension*		
Shoulder	*Abduction* *Adduction*		
Hip	*Flexion* *Extension*		
Hip	*Abduction* *Adduction*		

MUSCLE ACTION SUMMARY CHART

	BICEP CURL Elbow Flexion & Extension	**LEG CURL** Knee Flexion & Extension	**LATERAL ARM RAISE** Shoulder Abduction & Adduction	**LATERAL LEG RAISE** Hip Abduction & Adduction
Pure Movement	Biceps Triceps	Hamstrings Quadriceps	Deltoids Latissimus	Hip ABductors Hip ADductors
Land Movement	Con Biceps Ecc Biceps	Con Hamstrings Ecc Hamstrings	Con Deltoid Ecc Deltoid	Con ABductors Ecc ABductors
Submerged – No Equipment	Con Biceps Con Triceps	Con Hamstrings Con Quadriceps	Con Deltoid Con Latissimus	Con ABductors Con ADductors
Submerged – Drag Equipment	Con Biceps Con Triceps	Con Hamstrings Con Quadriceps	Con Deltoid Con Latissimus	Con ABductors Con ADductors
Submerged – Buoyant Equipment	Ecc Triceps Con Triceps	Ecc Quadriceps Con Quadriceps	Ecc Latissimus Con Latissimus	Ecc ADductors Con ADductors
Submerged – Weighted Equipment	Con Biceps Ecc Biceps	Con Hamstrings Ecc Hamstrings	Con Deltoid Ecc Deltoid	Con ABductors Ecc ABductors
Submerged – Rubberized Equipment	*Anchor LOW* Con Biceps Ecc Biceps	*Anchor FRONT* Con Hamstrings Ecc Hamstrings	*Anchor LOW* Con Deltoid Ecc Deltoid	*Anchor MEDIAL* Con ABductors Ecc ABductors
Submerged – Rubberized Equipment	*Anchor HIGH* Ecc Triceps Con Triceps	*Anchor BACK* Ecc Quadriceps Con Quadriceps	*Anchor HIGH* *Ecc Latissimus* *Con Latissimus*	*Anchor LATERAL* Ecc ADductors Con ADductors

Con = Concentric
Ecc = Eccentric

Pool Practical Notes: Movements, Transitions & Choreography Styles
Abbreviated notes on key topics covered at the pool.
Information ALSO available on DVD – AFP Practical Applications

MOVEMENT EXAMPLES

Twist from hip, unload knees by jumping off bottom
Tuck Jump, Level I and Level II
Frog Jump, Level I and Level II
Jacks in Three (Single, Single, Double)
Knees in 3's (Knee, Knee, Knee, Bounce Center)
Knees in 3's with Kick (Knee, Knee, Knee & Kick)
Jazz Kick or Football Punt
Moguls, Level I and Level II
Side Steps
Combining JJ with a ½ W Kick Front
Combining JJ with a ½ W Ski Bounce Center
Combining 4 WT Front Kicks with 4 WT Side Kicks
Combining Kicks Front in 3's (Center Bounce) with 2 WT Jumping Jacks

TRANSITIONS

Example 1	
Basic Transition: pass through neutral position	½ WT Knee, Bounce Center To ½ WT CC Ski, Bounce Center
Intermediate Transition: requires more core strength and coordination	WT Knee Lift To WT CC Ski
Advanced Transition: body may twist or bend	WT Knee Lift To WT Level III CC Ski

Example 2	
Basic Transition: pass through neutral position	Rocking Horse 3x & Bounce Center To WT Jumping Jack
Intermediate Transition: requires more core strength and coordination	Rocking Horse 4x ending with right leg up To WT Jumping Jack
Advanced Transition: body may twist or bend	Rocking Horse ending with right leg up To WT Level II Jumping Jack

CHOREOGRAPHY STYLES

PYRAMID Gradually decrease or increase number of repetitions.
Initial Pattern: • **16 Kicks Front, Karate** • **16 Kicks Side, Karate** • **16 Kicks Back, Karate** • **8 sets Bounce Front & Back**
Cut in half the number of reps: • **8 Kicks Front, Karate** • **8 Kicks Side, Karate** • **8 Kicks Back, Karate** • **4 sets Bounce Front & Back**
Cut in half again, repeat at least twice: • **4 Kicks Front, Karate** • **4 Kicks Side, Karate** • **4Kicks Back, Karate** • **2 sets Bounce Front & Back**
Final Pattern, repeat at least 4 times: • **2 Kicks Front, Karate** • **2 Kicks Side, Karate** • **2 Kicks Back, Karate** • **1 set Bounce Front & Back**

ADD-ON or BUILDING BLOCK A + B + C….
Teach Pattern "A", repeat 4 times: • **8 Heel High Jogs, travel forward** • **8 Knee High Jogs, travel backward**
Teach Pattern "B", repeat 8 times: • **CC Ski in 3's (Center Bounce)**
Put Together "A" + "B", practice 4 times: • **8 Heel High Jogs, travel forward** • **8 Knee High Jogs, travel backward** • **4 sets CC Skis in 3's (Center Bounce)**
Teach Pattern "C", practice 8 times: • **Jazz Kicks or Football Punts**
Put Together "A" + "B" + "C", practice 4 times: • **8 Heel High Jogs, travel forward** • **8 Knee High Jogs, travel backward** • **4 sets CC Skis in 3's (Center Bounce)** • **8 Jazz Kicks or Football Punts**
Teach additional patterns as desired and continue to add on to the combination

LAYER TECHNIQUE Gradually replace moves of the initial pattern.
Teach Initial Pattern, use previous styles as needed: • **4 Wide Steps R / 4 Wide Steps L** • **4 sets Jumping Jacks in 3's** • **8 Ankle Reach Front** • **4 Kicks Front, Center Bounce (1/2 W)** Repeat four times.
Replace the 4th move and practice it several times: • **4 Wide Steps R / 4 Wide Steps L** • **4 sets Jumping Jacks in 3's** • **8 Ankle Reach Front** • **2 sets Knee Swing in 3's (Center Bounce)** *****CHANGE** Repeat the NEW pattern at least 2 times.
Replace the 3rd move: • **4 Wide Steps R / 4 Wide Steps L** • **4 sets Jumping Jacks in 3's** • **8 Leg Curls** *****CHANGE** • **2 sets Knee Swing in 3's (Center Bounce)** Repeat the NEW pattern at least 2 times.
Replace the 2nd move: • **4 Wide Steps R / 4 Wide Steps L** • **8 Jumping Jack with Ankle Cross** *****CHANGE** • **8 Leg Curls** • **2 sets Knee Swing in 3's (Center Bounce)**

LINEAR PROGRESSION or FREESTYLE No predictable pattern.
8 Rocking Horses R / 8 Rocking Horses L
16 Knee High Jogs
8 Leg Curls Bounce Center (1/2 W)
8 Cross Country Skis Bounce Center (1/2 W)
16 Jumping Jacks
16 Pendulums
Etc. You could continue to add moves as long as you desired, just remember that your transitions must be safe & effective.

PURE REPETITION or PATTERNED Set pattern taught in final form.
Final Pattern: • **4 Leaps R** • **Rocking Horse 7 & Turn (R lead)** • **8 Pendulum (L lead – weight on L)** • **8 Wide Jog (L lead)** • **4 Leaps L** • **Rocking Horse 7 & Turn (L lead)** • **8 Pendulum (R lead)** • **8 Wide Jog (R lead)** Repeat the pattern over and over.

WATER SPECIFIC MOVEMENTS

Double Leg Kick
Level II - Tuck knees, straighten knees out to front, bend knees in & touch both feet down. (4 WT counts)

Catch-Up Kick
Bounce 3x on the right foot with the left leg out in front (flexed at the hip - front kick position). On the 4th bounce, kick the right foot up to meet the left. Repeat total of 4 sets. Bounce Center for transition. Repeat Left for total of 4 sets.

Quick Kick
Jump and quickly kick the Right leg and then the Left leg before landing. *First try at Level II, then progress to Level I*

Tuck & Heel Jump
Jump and tuck the knees to the chest; then jump and lift both heels behind.

Jump & Turn
Add ¼, ½ or Full Turns to the movement – try with a Jumping Jack and/or a CC Ski

BASIC ARM MOVES AND ARM USE

Base Arm Movements
Abduction & Adduction
Transverse Abduction & Adduction
Elbow Flexion & Extension
Shoulder Flexion & Extension
Bent Arm Shoulder Rotation
Circumduction
Forearm Supination & Pronation

Arm Use	
Different Arms & Legs	Jumping Jack (JJ) with Transverse Abduction & Adduction
Arm Pattern	JJ with Abduction - Transverse Adduction - Transverse Abduction – Adduction (arms behind)
Overhead Arms	Clap overhead with JJ
Neutral Arms – Out of Water	JJ with arms crossed at chest or behind head (engage core!)
Floating Arms	Jumping Jack and float arms on surface for balance and stability