

**FACULTY OF HEALTH  
SCHOOL OF KINESIOLOGY AND HEALTH SCIENCES**

**Course:** PKIN 0285 Deep Water Aquafit

**Term:** Fall 2016

**Prerequisite / Co-requisite:** *Swimming 1*

**Course Instructor**

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**Time and Location**

Section A            Friday            10:00 – 11:30            Pool

**Expanded Course Description**

Aquatic fitness is an exercise modality that can accommodate all ages, fitness levels, and abilities through a variety of programming options. Water fitness is an almost perfect means to condition the body; however, there is a need to introduce a variety of programs and techniques not only to benefit the body, but also to stimulate the mind, wash away stress and rejuvenate the spirit.

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This is an introductory course which is open to those who have a comfort level in deep water and have Swimming 1 or equivalent. There is an option for students to become certified to teach WaterArt if they declare that they are interested at the beginning of the course and pass the final examinations (an additional fee applies).

The course, Deep Water Aquafit, is supported by lecture and practical experience in the water. The lectures encompass material referencing muscle groups, fitness methods, and teaching techniques. The students experience: isolation and movement of specific muscle groups, specific skills for moving effectively in the water, and methods of providing an aquafitness class for a wide variety of individuals.

***Course Learning Objectives***

***(1) Purpose:***

*The purpose of this course is to assist students in developing an understanding of the role aquafitness plays in fitness, rehabilitation, and cross-training. The students experience firsthand the sensation of isolating and working with muscle groups and*

relating this experience to biomechanical principles. The students have the opportunity to design an aquafit program which is related to a sport or activity of personal interest and to teach a part of it to their peers. Students may choose to become certified to teach WaterArt (an additional fee and examination applies). WaterArt is the International Certification Program which is currently contracted by Toronto Parks and Recreation. A WaterArt certification delivers the possibility of employment for students and familiarizes them with how water can be utilized for rehabilitation and training.

**(2) Specific learning objectives of the course:**

The specific objectives of the course are that students will be able to:

- understand basic fitness principles
- understand the powerful properties of water
- understand the difference between land and water exercise
- execute fundamental skills
- exhibit leadership skills
- design an aquafitness program
- understand exercise evaluation and progression

**Course Text / Readings**

Additional readings may be assigned or recommended during the course.

*WaterArt Instructor Certification Program: Fundamentals* – required reading for certification students only

**Evaluation**

**Practical:**

**Due:**

**Personal Assessment/Muscle testing**

Pre-test	10%	September 16
Post-test	10%	November 25

Teaching Part of a Class	30%	November 11, 18
Skills	10%	On-going

Attendance and Participation 10% No more than 2 classes can be missed. Lateness will be considered a partial absence.

**Written:**

Program Design	30%	November 4, 11
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Participation: This course requires from students a willingness to participate on land and in the water in a variety of activities.

WaterArt Certification - Certification, Manual, Program cards & DVD - \$160.00

### **IMPORTANT COURSE INFORMATION FOR STUDENTS**

All students are expected to familiarize themselves with the following information, available on the Senate Committee on Curriculum & Academic Standards webpage (see Reports, Initiatives, Documents) - [http://www.yorku.ca/secretariat/senate\\_cte\\_main\\_pages/ccas.htm](http://www.yorku.ca/secretariat/senate_cte_main_pages/ccas.htm)

- York's Academic Honesty Policy and Procedures/Academic Integrity Website
  - Ethics Review Process for research involving human participants
  - Course requirement accommodation for students with disabilities, including physical, medical, systemic, learning and psychiatric disabilities
  - Student Conduct Standards
  - Religious Observance Accommodation
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## CLASS DESIGN REQUIREMENTS

1. Length of program design: 45 minute class.
  2. Use the WaterArt template or a variation of the template as a foundation for your design.
  3. Choose a demographic group which interests you as your target group and select your exercises according to this group's interests. You can also target your exercises to your own individual specifications as a type of cross-training.
  4. Be specific about the major muscles that are being targeted in the exercises.
  5. Acknowledge any part of the WaterArt template or other exercises that you copy.
  6. Be creative with your exercises, but try them out in the water first.
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 **DEEP H2O TRAINING**

<b>COMPONENT &amp; TIME</b>	<b>EXERCISE GOAL</b>	<b>EXERCISE DESIGN</b>
<b>Equipment Orientation &amp; Safety Skills</b>  (2 minutes)	get participants outfitted properly know non swimmers or "fearful" participants know environment & where safety equipment is	BELTS - various sizes and buoyancy SHOES (optional) MITTS for balance (neoprene, lycra) Optional Equipment: Bands Dumbbells, paddles
<b>Thermal Regulation &amp; Skill Orientation</b>  (1 minute)	Get people moving – Bicycle/jog Practice breathing, sculling, posture, find balance with the belt	Check belt – how it fits? Tight is key to balance proper posture, perform 4-6 deep diaphragmatic breaths gradually increase ROM =Long legs down Flat sculling, fwd, bwd, propeller Recover to a stand or balance position Opposition & stabilization
<b>Cardiovascular WARM UP</b>  (3-5 minutes)	shallow/deep combination (option to start either depth) give opportunity to feel buoyancy blood flow warm up learn moves and terms set atmosphere	Learn posture in seated Bicycle Upper body sweep Ankle touches front/back Check for warmth Jog
<b>STABILIZATION &amp; SCULLING</b>  (3-5 minutes)	Focus on posture & balance Abdominal stabilization Sculling: propeller, assist & resist travel	Body Check Posture Check Pelvic tilt Kneeling pendulum Diamond leg pendulum Teach posture & body positions Bicycling through positions
<b>CARDIOVASCULAR WARM UP TRAVEL SETS</b> (2-3 minutes) <b>BASIC MOVES</b>	Go to deep (if applicable) Learn body positions with leans (vertical, V, side, prone, inclines) Prepare to go harder Perform each move through full ROM	JOG - pumping arms Work muscles in each plane of the body JAX - arms opposite legs Front & back Frogs legs Easy twists
<b>CONDITIONING PHASE</b> (cardiovascular/muscular conditioning) (20-30 minutes)  <b>aerobic sets:</b>	Focus sets – Integrate C/V muscular conditioning, flexibility, ROM, agility, coordination, balance, reaction/speed sets  Do not fatigue musculature	<b>Cardio Moves:</b> X country ski Jax Jog Kick & Walk Bicycling

<p>Stationary</p> <p>Travel - assist and resist</p> <p>Interval</p> <p>Change Body Positions</p> <p>Add Power Pops</p> <p>Add Arm Overloads</p> <p>Go through the WaterART™ progressions.</p> <p><b>muscular sets:</b> Equipment Repetition overload * no arms * one sided</p>	<p>prior to breathing</p> <p>Relax shoulders &amp; breathe diaphragmatically</p> <p>CV sets - utilize legs, travel, increase surface area &amp; speed</p> <p>Muscular Conditioning - isolate and then overload 3-5 set of 8-25 reps feel muscular fatigue or work</p>	<p><b>Overloads:</b> Arms overhead Popping No belt Tether</p> <p><b>Fun Sets:</b> Macarena Water Ballet Travel Waves Sports Tethers Patterns Partners</p> <p><b>Muscular Sets:</b> Gluteals - skateboards Hamstrings - forward dolphins Latissimus Dorsi - clap behind the back Quadriceps - backward dolphins Triceps - extensions Abductors - power out scissors Rhomboids - upright breast stroke Adductors - power in scissors, breast stroke legs) Rotator Cuff - shoulder rotation internal &amp; external Shins - backward bicycles</p>
<p><b>WARM DOWN</b> (2-3 minutes) Active work Legs moving for upper body Lower body stretches alternate sides with active recovery set in between</p>	<p>Option of holding positions keep body thermoregulated fun choreography keep core temperature regulated Lessen intensity Perform ROM for all joints</p>	<p>Easy cycling Fun easy movements Gluteal stretch - Indian sit Quadriceps stretch - fourth position stretch Adductor stretch - splits Hip flexor - hurdler Rhomboids - figure eight with hands together Deltoid - bring arm across body Pectoral - extend one arm and circle</p>
<p><b>TRANSITION PHASE</b></p>	<p>Go to shallow (if able) Take off belt Feel gravity gradually</p>	<p>Walk &amp; talk Balances &amp; falls (holding belt) Posture check Swinging on belts Holding belt across body (straddle, hurdle, Gluteal sit Calf stretch - walk backwards Neck stretches - tilt/tum/tuck</p>
<p><b>POST CLASS</b></p>	<p>Get feedback</p>	<p>What did you like about class?</p>
<p>(5 minutes)</p>	<p>Help participants out of H<sub>2</sub>O (if necessary) Answer questions Clean up</p>	<p>What was your favorite music of day? Fit tip - weight management Drink water throughout program Replenish water</p>



## SHALLOW & DEEP WATER TRAINING

Shallow H2O Basic Moves	Deep H2O Moves
JOG	JOG
KICK	KICK
SKI	SKI
ROCK	PENDULUM –SUNTAN –SUPERMAN (ABDOMINALS)
WALK	WALK-SKI ??
JAX	JAX
JUMP	BICYCLE

*Learn levels of Beginner, intermediate, & advanced levels*

### Who is the Exercise for?

- Skilled, unskilled ( big difference if they have been there 10 minutes or 10 years)
- Health History – medical problems
- Swimmer or non-swimmer
- Equipment available
- Water temperature – environment
- Motivation (or not?)

Preparing to teach an aquatic fitness class for the first time can be a challenging process for all these people. Successful aquatic programming requires a basic understanding of the properties of water, how to use the water to its best advantage, why each movement is being used in a program and how to execute them in a safe and proper manner. The instructor needs to feel confident that he/she has made the appropriate choices for their clientele.

### Following a simple checklist of questions can help organize this task:

1. Who is the exercise program for?
2. What is the purpose of the exercise program?
3. What skills do the participants have or need to learn?
4. What properties of water are utilized and how do they affect program design?
5. What is the temperature of the pool? Is the body able to thermoregulate?
6. Are the planned movements biomechanically safe? Effective? Functional?
7. Are the movements appropriate for the skill and fitness level of the clientele?
8. What, if any, equipment is required to progress or adapt the program?
  - To progress, participants need to develop appropriate levels of muscular strength and endurance FIRST.
  - Large range of motion movements should be executed at one-half to one-third of land speed to take advantage of action/reaction.
  - Small, fast movements merely engaging isometric muscle contractions give a false sense of work because heart rates increase and muscles burn out. **THIS IS NOT FUNCTIONAL.**
  - Do not sacrifice ROM to SPEED.
  - Do not compromise posture and form to increased resistance.
  - Programs should include travel. Always cue arms to assist or resist or balance the movement.
  - Buoyancy can assist rest or increase work in water. It aids limb movements toward the surface, thereby requiring less work, and resists downward movements, thereby creating more work.
  - Buoyancy equipment amplifies these effects. For example, compare a standing biceps curl using a dumbbell on land with the same exercise using a foam dumbbell in water.
  - Balance loading and unloading the body

### PROGRESSIVE OVERLOAD = PROGRESSIONS OF EXERCISE !!!

Any program designed to improve cardiovascular endurance should apply the principle of progressive overload. Overload refers to the level of stress imposed on the physiological systems involved. For training adaptation to occur, the system must be systematically stressed slightly more than it is accustomed to. Applying the concept of progressive overload to cardiovascular endurance means increasing the exercise intensity, duration, or frequency. It is best to vary the methods of progressive overloads and change muscle groups prior to fatigue for maximum



benefit. Sets for muscular conditioning are exercises that focus on targeting specific muscular function as opposed to overloading the breathing. (cardiovascular focus). Train all the main muscle groups as isolated as possible for overload, especially: hamstrings, gluteals, latissimus dorsi, rhomboids, adductors, abductors, quadriceps, triceps, and abdominals.

# WaterART = self paced & enjoyable exercise

System so that everyone may individualize their workout or pace

## WORKING POSITIONS

Key to varying Impact & Intensity ⇒

IN SHALLOW Extended, Neutral, Rebound, Suspended

IN DEEP H2O BODY POSITIONS in deep (side-lying, vertical, incline, prone, L, chair)

## MOVEMENT

Begin moving and choose a speed to work at your personal best – ALL MUSIC TEMPO's may work- Does this enhance your program? Remember not to just use momentum – use muscles!

## TRAVEL

Forward, backward, diagonal, circles,

Assisted or Resisted travel ( cue the arms to balance & assist posture & balance of the body)

partners, patterns, around the body

## STRENGTHENING & STRETCHING

Strengthen muscles that are weak and loose,

Stretch muscles that are strong and tight.

This is key for posture and muscle balancing.

Do twice as much stretching of tight muscles & twice as much strengthening of weak muscles ( as compared to muscle partner)

## RANGE OF MOTION RESISTANCE

Adjust or adapt, progress or modify. Help your clients choose their personal best in terms of ROM or flexibility and strength or resistance level for their musculature.

## WATER

BUOYANCY, WATER'S RESISTANCE, INERTIA, HYDROSTATIC PRESSURE, thermal-regulation, viscosity, and water depths.

RE-EVALUATE INTENSITY LEVEL - Resistance & range of motion, progressions and modifications as designed for W.A.T.E.R. Adapt and progress.

TARGET Objective & component of program blueprint: warm-up, cardio, (circuits and intervals), muscular strength & endurance, flexibility, warm down, sports, equipment overload, thermal regulation, water depths, education and enjoyment.

Who are your participants? Senior, teen, pre/post natal, unconditioned, special populations, injured, athlete (skier, racquet player, swimmer, runner, tri-athlete)

WORKING POSITIONS DEEP WATER DEPTH = you can use noodle for both depths – and

- > **SEATED:** Hips and shoulders aligned, hips slightly higher than knees  
Sit in a chair  
Avoid bending forward  
Utilize abdominals to keep position
- > **VERTICAL:** Standing tall in the water  
Utilize all of the resistance by having long legs  
Lean – do not bend to initiate travel
- > **SIDE LYING:** Laying on the side  
Use abdominals to maintain posture  
Avoid pike or fetal positions
- > **"V" SITTING:** Keep the shoulders in line with the knees  
Engage abdominals to hold the feet (or foot) out of water  
Challenging abdominal stabilization work  
Should be avoided by participants with low-back problems

- Heel clicks
- 4. *Triceps – kickbacks or noodle dips*
  - Assisted/ resisted travel
- One arm at a time
- 5. *Abdominals*
  - Fall and recovery , forward, backward, sideways OR suntan & superman in deep
  - Form a circle, number off 1 and 2. #1's walk in circle and #2's sit in chair, then form a 'L'

#### Partner/ Fun Social

1. Jog forward and backward with partner facing each other
2. Do-si-do
3. Body Check
4. one partner walk forward & other walk backwards
5. one partner walks side – other mirrors them

#### Flexibility

1. **Re-stretch tight muscles especially erector spinae, gastrocnemius/soleus, hamstrings, iliopsoas, pectorals, anterior deltoid, sternocleidomastoid,**
2. **You can bring everyone to shallow – lots of walking ( low impact) Brings them back to land or working with gravity. Trains good functional movement & walking patterns are the #1 functional activity.**
3. **Add more relaxation & closure to programs**

### POST YOURSELF AS AN INSTRUCTOR

In order to be an effective coach and a successful instructor, you should POST yourself as an instructor that motivates and educates. Think of the POST acronym to successful teach and progress the movement.

#### **P = POSTURE: CUE FOR BODY ALIGNMENT – CHECK TECHNIQUE**

Always check posture and technique. Quality is more important than quantity of movements. If you do 10 moves correct it is more effective than 100 movements incorrectly performed.

#### **O = OBJECTIVE: STATE THE OBJECTIVE – WHY ARE YOU DOING THE EXERCISE**

Always state what your workout goal is for the exercise. Your participant will be more successful if they understand what component of fitness you are training. Are you training cardio respiratory fitness, muscular strength, balance or simply moving for creative fun. Additionally by stating the exercise goal, you confirm as a professional, you are knowing what you are doing and have a the knowledge to help the participant to achieve the goals.

#### **S = SPEAK: ASK YOUR CLIENTS, –“HOW DO YOU FEEL?”**

Check in through the RPE SCALE. Would they like to go harder or easier? Would they like more variety or less. Can they hear you, see you and understand you. By checking in throughout you will be much more successful than waiting till the end of a program and asking . At the end of a program it is too late to make modifications for the day.

#### **T = TEACH: EMPOWER YOUR CLIENTS WITH SKILLS AND KNOWLEDGE**

Helping your students know where their bodies are in space is the key responsibility of your position. Not only is it important for you to develop the exercise program, it is important that you help the students perform the movements safely and correctly. Learning coordination and balance with good posture is not easy for most people. Take the time to provide positive feedback ( verbal and non-verbal) so that they understand what they are doing and how to the exercise correctly. Flopping, floating and flailing in the water is not going to help the patron to get anything out of exercise. Most often doing the exercise correctly with more controlled repetitions is a faster way to get results. An effective technique is to ask the patron "if they would rather get their results in a shorter duration – or be there for a longer duration and not get as many results? "Typically, they will say they would like to work less time with more results, so the instructor needs to indicate that "doing it right" will facilitate this.

There are four basic variables to consider when designing an exercise program to improve overall conditioning: (F.I.T.T.)

- **PRONE:** On stomach or front  
Crawling position  
Keep shoulders slightly above the knees  
Avoid hyper-extending neck – turn head to the side to see instructor
- **INCLINE:** Tilting or leaning with an extended body position  
Incline – forward, side, back  
Many degrees of tilting or inclining
- **"L" SITTING:** Seated so that shoulders are aligned over the hips  
Legs out stretched or in an "L" or pike position  
Use abdominals to maintain posture.  
More challenging than seated position
- **KNEELING:** keep abdominals tight to avoid hyper-extending back.

**Programmed for:** providing different angles or positions for training muscles and posture. To improve or optimize posture while preventing back discomfort, always cue to engage or anchor with the abdominals. Abdominal strength required for changing and maintaining working positions.

#### POPPING

- Exploding out of the water
- Use the legs and squeeze and push down to get up out of water
- Lots of leg = lots of cardiovascular work
- Moderate to high intensity and impact
- You may choose to work with a belt to lessen impact in shallow water

#### **SAMPLE CLASS Warm-up: May be all people in shallow – then they go deep?**

Jog – extended ( or march) . Then neutral position with shoulder rolls.

Walking ( bwd & Side step) for range of motion – start small then progress to larger steps

Easy Kicking around the body: pendulum in middle for a smooth transition

Rocking horse – left & right leg in front

Walking patterns – assisted and resisted, both forward and backwards with opposition arms

Jax – hands slice in front, behind and horizontally

**Skills in Shallow:** how to scull, how to get heels down, how to breath, how to recover from a fall, how to travel (assist & resist) , body check balance, how to change working positions for intensity & impact

**Skills in Deep :** how to wear belt – or put noodle properly , pushing down against buoyancy, getting arms down to scull or assist posture, breathing, how to assist & resist travel, how to change body positions

#### **INTERVAL : Cardiovascular Sets with muscle sets**

- Check RPE
- Travel for intensity
- Always show working positions : easy Extended or Neutral – advanced Suspended or Rebound
- Change Muscles prior to fatigue
- Cue breathing

#### **Muscular Conditioning – think about what the legs will have to do to assist balance and/or travel & thermalregulate or keep them warm**

1. *Latissimus dorsi*
  - Athletic stand and clap behind
  - Side step one arm push to back – assisted then resisted
2. *Pectorals*
  - Reverse breaststroke
  - Add assisted then resisted travel
3. *Quadriceps/ Hamstrings/ Adductors/ Abductors*
  - Skateboard
  - Reverse skateboard