AMERICAN COUNCIL ON EXERCISE

PERSONAL TRAINER UNIVERSITY CURRICULUM

LAB MANUAL

LAB ACTIVITY #1: PERSONALITY STYLES

Complete the Personality Styles worksheet on the following page to describe your own personality. A score of ***1*** is *"not descriptive of you"* while a score of ***7*** is *"very descriptive of you."* Sum the totals for each dimension and compare them with the scale at the bottom of the page, and then compare them with the General Personality Style Traits (Table 3-2) on page 43 of the *ACE Personal Trainer Manual*.

Then, have three classmates, friends, or colleagues complete the same survey describing you and compare the results. Do they see you in the same way you see yourself?

References:

1. *ACE Personal Trainer Manual,* 4th Edition, p. 42–45
2. *ACE Personal Trainer Master the Manual,* 4th Edition, p. 23 "Practice What You Know," exercise I

IDENTIFYING PERSONALITY STYLES

Dominance Scale							
Aggressive	1	2	3	4	5	6	7
Challenging and confronting	1	2	3	4	5	6	7
Forceful	1	2	3	4	5	6	7
Outspoken	1	2	3	4	5	6	7
Takes charge	1	2	3	4	5	6	7
Assertive	1	2	3	4	5	6	7
Competitive	1	2	3	4	5	6	7
Straightforward	1	2	3	4	5	6	7
Frank	1	2	3	4	5	6	7
Blunt	1	2	3	4	5	6	7
						Total Score:	

Sociability Scale							
Accepting and supporting	1	2	3	4	5	6	7
Easy to know	1	2	3	4	5	6	7
Friendly and outgoing	1	2	3	4	5	6	7
People-orientated	1	2	3	4	5	6	7
Sociable	1	2	3	4	5	6	7
Agreeable	1	2	3	4	5	6	7
Cares how others feel	1	2	3	4	5	6	7
Flexible	1	2	3	4	5	6	7
Warm	1	2	3	4	5	6	7
Fun-loving	1	2	3	4	5	6	7
						Total Score:	

4. Score the dimensions of dominance and sociability scale according to the table presented below.

DOMINANCE SCALE			SOCIABILITY SCALE	
51–70	High		53–70	High
10–50	Low		10–52	Low

LAB ACTIVITY #2: PROCESSES OF CHANGE

Read the section on "Examples of the Processes of Change in the TTM" in the *ACE Personal Trainer Manual* (p. 71–72). Initiate conversations with your classmates, friends, and family members at various points on the stages-of-change continuum. You can use the Readiness to Change Questionnaire on the following page to determine each person's readiness to change. Provide motivation to help them facilitate this behavior change. After each conversation, assess your performance with that "client" and work on ways to become more persuasive and effective.

References:

- *ACE Personal Trainer Manual,* 4th Edition, p. 71–72 and p. 103–104
- *ACE Personal Trainer Master the Manual,* 4th Edition, p. 31 "Practice What You Know"

Readiness to change questionnaire

	YES	NO
Are you looking to change a specific behavior?	❑	❑
Are you willing to make this behavioral change a top priority?	❑	❑
Have you tried to change this behavior before?	❑	❑
Do you believe there are inherent risks/dangers associated with not making this behavioral change?	❑	❑
Are you committed to making this change, even though it may prove challenging?	❑	❑
Do you have support for making this change from friends, family, and loved ones?	❑	❑
Besides health reasons, do you have other reasons for wanting to change this behavior?	❑	❑
Are you prepared to be patient with yourself if you encounter obstacles, barriers, and/or setbacks?	❑	❑

LAB ACTIVITY #3: THE INVESTIGATION STAGE

Complete the Sample Health History Form, Exercise History and Attitude Questionnaire, and Sample Medical Release Form (on the following pages) with classmates, friends, or family members. Use the information to determine if each individual is a suitable candidate for personal training, and if so, outline a plan for how you would proceed.

References:

- *ACE Personal Trainer Manual,* 4th Edition, p. 105–115
- *ACE Personal Trainer Master the Manual,* 4th Edition, p. 49 "Practice What You Know," exercise I

Sample Health History Form

Name _____ Date _____
Age _____ Sex ☐ M ☐ F
Physician's Name _____
Physician's Phone (_____) _____
Person to contact in case of emergency:
Name _____ Phone _____
Are you taking any medications, supplements, or drugs? If so, please list medication, dose, and reason.

_____

_____

_____

Does your physician know you are participating in this exercise program?

_____

Describe any physical activity you do somewhat regularly.

_____

_____

Do you now, or have you had in the past:	Yes	No
1. History of heart problems, chest pain, or stroke	☐	☐
2. Elevated blood pressure	☐	☐
3. Any chronic illness or condition	☐	☐
4. Difficulty with physical exercise	☐	☐
5. Advice from physician not to exercise	☐	☐
6. Recent surgery (last 12 months)	☐	☐
7. Pregnancy (now or within last 3 months)	☐	☐
8. History of breathing or lung problems	☐	☐
9. Muscle, joint, or back disorder, or any previous injury still affecting you	☐	☐
10. Diabetes or thyroid condition	☐	☐
11. Cigarette smoking habit	☐	☐
12. Obesity (BMI $\geq$30 kg/m^2)	☐	☐
13. Elevated blood cholesterol	☐	☐
14. History of heart problems in immediate family	☐	☐
15. Hernia, or any condition that may be aggravated by lifting weights or other physical activity	☐	☐

Exercise History and Attitude Questionnaire

Name _____ Date _____

General Instructions: Please fill out this form as completely as possible. If you have any questions, DO NOT GUESS; ask your trainer for assistance.

1. Please rate your exercise level on a scale of 1 to 5 (5 indicating very strenuous) for each age range through your present age:
   15–20 _____ 21–30 _____ 31–40 _____ 41–50 _____ 51+_____

2. Were you a high school and/or college athlete?
   ☐ Yes ☐ No If yes, please specify _____

3. Do you have any negative feelings toward, or have you had any bad experience with, physical-activity programs?
   ☐ Yes ☐ No If yes, please explain _____

4. Do you have any negative feelings toward, or have you had any bad experience with, fitness testing and evaluation?
   ☐ Yes ☐ No If yes, please explain _____

5. Rate yourself on a scale of 1 to 5 (1 indicating the lowest value and 5 the highest). Circle the number that best applies.
   Characterize your present athletic ability.
   1 2 3 4 5

   When you exercise, how important is competition?
   1 2 3 4 5

   Characterize your present cardiovascular capacity.
   1 2 3 4 5

   Characterize your present muscular capacity.
   1 2 3 4 5

   Characterize your present flexibility capacity.
   1 2 3 4 5

6. Do you start exercise programs but then find yourself unable to stick with them?
   ☐ Yes ☐ No

7. How much time are you willing to devote to an exercise program?
   _____ minutes/day _____ days/week

8. Are you currently involved in regular endurance (cardiovascular) exercise?
   ☐ Yes ☐ No If yes, specify the type of exercise(s) _____
   _____ minutes/day _____ days/week

   Rate your perception of the exertion of your exercise program (circle the number):
   (1) Light (2) Fairly light (3) Somewhat hard (4) Hard

9. How long have you been exercising regularly?
_____ months _____ years

10. What other exercise, sport, or recreational activities have you participated in?
In the past 6 months? _____
In the past 5 years? _____

11. Can you exercise during your work day?
☐ Yes ☐ No

12. Would an exercise program interfere with your job?
☐ Yes ☐ No

13. Would an exercise program benefit your job?
☐ Yes ☐ No

14. What types of exercise interest you?

☐ Walking	☐ Jogging	☐ Strength training
☐ Cycling	☐ Traditional aerobics	☐ Racquet sports
☐ Stationary biking	☐ Elliptical striding	☐ Yoga/Pilates
☐ Stair climbing	☐ Swimming	☐ Other activities

15. Rank your goals in undertaking exercise:
What do you want exercise to do for you? _____
_____
_____

Use the following scale to rate each goal separately:

Not at all important				Somewhat important					Extremely important
1	2	3	4	5	6	7	8	9	10

a. Improve cardiovascular fitness _____
b. Lose weight/body fat _____
c. Reshape or tone my body _____
d. Improve performance for a specific sport _____
e. Improve moods and ability to cope with stress _____
f. Improve flexibility _____
g. Increase strength _____
h. Increase energy level _____
i. Feel better _____
j. Enjoyment _____
k. Social interaction _____
l. Other _____

16. By how much would you like to change your current weight?
(+) _____ lbs (-) _____ lbs

Sample Medical Release Form

Date _____

Dear Doctor:

Your patient, _____, wishes to start a personalized training program. The activity will involve the following:

(type, frequency, duration, and intensity of activities)

If your patient is taking medications that will affect his or her exercise capacity or heart-rate response to exercise, please indicate the manner of the effect (raises, lowers, or has no effect on exercise capacity or heart-rate response):

Type of medication(s) _____
Effect(s) _____
Please identify any recommendations or restrictions that are appropriate for your patient in this exercise program:
_____
_____
_____

Thank you.
Sincerely,

Fred Fitness
Personalized Gym
Address
Phone

_____ has my approval to begin an exercise program with the recommendations or restrictions stated above.

Signed_____Date_____Phone_____

LAB ACTIVITY #4: HEART RATE AND BLOOD PRESSURE

Practice measuring heart rate and blood pressure with classmates, friends, and family members. Follow the procedures in the *ACE Personal Trainer Manual* for measuring heart rate (p. 126) and blood pressure (p. 127–128).

References:

- *ACE Personal Trainer Manual,* 4th Edition, p. 126–128
- *ACE Personal Trainer Master the Manual,* 4th Edition, p. 49 "Practice What You Know," exercise II

Resting Heart Rate	_____ bpm
Systolic BP	_____ mmHg
Diastolic BP	_____ mmHg

LAB #5: EXERCISE-INDUCED FEELING INVENTORY (EFI)

POSITIVE ENGAGEMENT AND PHYSICAL EXHAUSTION

Fill out the Exercise-induced Feeling Inventory (EFI) on the following page at school or work and then periodically after workouts. Chart any changes in your own feelings and think about how to use this type of information when training clients.

References:

- *ACE Personal Trainer Manual,* 4th Edition, p. 130–131
- *ACE Personal Trainer Master the Manual*, 4th Edition, p. 49 "Practice What You Know," exercise III

EXERCISE-INDUCED FEELING INVENTORY (EFI)

Instructions: Please use the following scale to indicate the extent to which each word describes how you feel at this moment in time. Record your responses by checking the appropriate box next to each word.

0 = Do not feel
1 = Feel slightly
2 = Feel moderately
3 = Feel strongly
4 = Feel very strongly

	0	1	2	3	4
1. Refreshed	❑	❑	❑	❑	❑
2. Calm	❑	❑	❑	❑	❑
3. Fatigued	❑	❑	❑	❑	❑
4. Enthusiastic	❑	❑	❑	❑	❑
5. Relaxed	❑	❑	❑	❑	❑
6. Energetic	❑	❑	❑	❑	❑
7. Happy	❑	❑	❑	❑	❑
8. Tired	❑	❑	❑	❑	❑
9. Revived	❑	❑	❑	❑	❑
10. Peaceful	❑	❑	❑	❑	❑
11. Worn out	❑	❑	❑	❑	❑
12. Upbeat	❑	❑	❑	❑	❑

Reprinted with permission from Gauvin, L. & Rejeski, W.J. (1993). The exercise-induced feeling inventory: Development and initial validation. *Journal of Sport & Exercise Psychology,* 15, 4, 409.

LAB ACTIVITY #6: STATIC POSTURAL ASSESSMENT

Set up a plumb line according to the instructions on page 138. Work with a classmate, observing him or her from the anterior, posterior, and sagittal views. Note any postural deviations using the Postural Assessment Checklist and the Anterior/Posterior and Sagittal Worksheets found on the following pages.

References:

- *ACE Personal Trainer Manual,* 4th Edition, p. 136–149
- *ACE Personal Trainer Master the Manual,* 4th Edition, p. 57 "Practice What You Know," exercise I

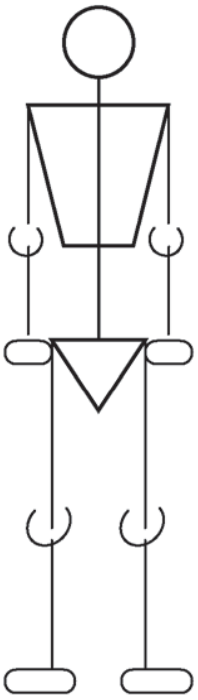
POSTURAL ASSESSMENT CHECKLIST

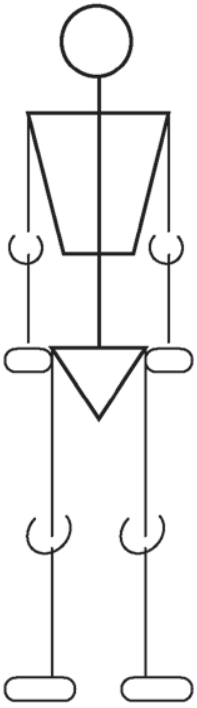
Frontal View	
☐	Overall body symmetry: symmetrical alignment of the left and right hemispheres
☐	Ankle position: observe for pronation and supination
☐	Foot position: observe for inversion and eversion
☐	Knees: rotation and height discrepancies
☐	Hip adduction and shifting: observe for shifting to a side as witnessed by the position of the pubis in relation to the plumb line
☐	Alignment of the iliac crests
☐	Alignment of the torso: position of the umbilicus and sternum in relation to the plumb line
☐	Alignment of the shoulders
☐	Arm spacing: observe the space to the sides of the torso
☐	Hand position: observe the position relative to the torso
☐	Head position: alignment of the ears, nose, eyes, and chin
Posterior View	
☐	Overall body symmetry: symmetrical alignment of the left and right hemispheres
☐	Alignment of the spine: vertical alignment of the spinous processes (may require forward bending)
☐	Alignment of the scapulae: inferior angle of scapulae and presence of winged scapulae
☐	Alignment of the shoulders
☐	Head: alignment of the ears
Sagittal View	
☐	Overall body symmetry: symmetrical alignment of load-bearing joint landmarks with the plumb line
☐	Knees: flexion or extension
☐	Pelvic alignment for tilting: relationship of ASIS to PSIS
☐	Spinal curves: observe for thoracic kyphosis, lumbar lordosis, or flat-back position
☐	Shoulder position: forward rounding (protraction) of the scapulae
☐	Head position: neutral cervical curvature (versus forward position) and level (position above the clavicle)

Note: ASIS = Anterior superior iliac spine; PSIS = Posterior superior iliac spine

ANTERIOR/POSTERIOR WORKSHEET

Anterior View:			Posterior View:		
L	R	Deviation	L	R	Deviation
☐	☐	1.	☐	☐	1.
☐	☐	2.	☐	☐	2.
☐	☐	3.	☐	☐	3.
☐	☐	4.	☐	☐	4.
☐	☐	5.	☐	☐	5.
☐	☐	6.	☐	☐	6.
☐	☐	7.	☐	☐	7.
Circle or mark observed deviations			Circle or mark observed deviations		





SAGITTAL WORKSHEET

Sagittal: Left Side	Sagittal: Right Side
L Deviation	R Deviation
☐ 1.	☐ 1.
☐ 2.	☐ 2.
☐ 3.	☐ 3.
☐ 4.	☐ 4.
☐ 5.	☐ 5.
☐ 6.	☐ 6.
☐ 7.	☐ 7.
Circle or mark observed deviations	Circle or mark observed deviations

LAB ACTIVITY #7: FUNCTIONAL ASSESSMENTS

Ask a classmate, friend, or family member to serve as a subject as you practice the following movement screens: Bend and Lift, Hurdle Step, Shoulder Push Stabilization, Shoulder Pull Stabilization, and Thoracic Spine Mobility. Use the corresponding assessment forms on the following pages to record each assessment.

References:

- *ACE Personal Trainer Manual,* 4th Edition, p. 146–158.
- *ACE Personal Trainer Master the Manual,* 4th Edition, p. 57 "Practice What You Know," exercise II

Bend and Lift Screen					
View		**Joint Location**	**Compensation**	**Key Suspected Compensations: Overactive (Tight)**	**Key Suspected Compensations: Underactive (Weak)**
☐	Anterior	Feet	Lack of foot stability: Ankles collapse inward/ feet turn outward	Soleus, lateral gastrocnemius, peroneals	Medial gastrocnemius, gracilis, sartorius, tibialis group
☐	Anterior	Knees	Move inward	Hip adductors, tensor fascia latae	Gluteus medius and maximus
☐	Anterior	Torso	Lateral shift to a side	Side dominance and muscle imbalance due to potential lack of stability in the lower extremity during joint loading	
☐	Sagittal	Feet	Unable to keep heels in contact with the floor	Plantarflexors	None
☐	Sagittal	Hip and knee	Initiation of movement	Movement initiated at knees may indicate quadriceps and hip flexor dominance, as well as insufficient activation of the gluteus group	
☐	Sagittal	Tibia and torso relationship Contact behind knee	Unable to achieve parallel between tibia and torso Hamstrings contact back of calves	Poor mechanics, lack of dorsiflexion due to tight plantarflexors (which normally allow the tibia to move forward) Muscle weakness and poor mechanics, resulting in an inability to stabilize and control the lowering phase	
☐	Sagittal	Lumbar and thoracic spine	Back excessively arches Back rounds forward	Hip flexors, back extensors, latissimus dorsi Latissimus dorsi, teres major, pectoralis major and minor	Core, rectus abdominis, gluteal group, hamstrings Upper back extensors
☐	Sagittal	Head	Downward Upward	Increased hip and trunk flexion Compression and tightness in the cervical extensor region	

Sources: Abelbeck, K.G. (2002). Biomechanical model and evaluation of a linear motion squat type exercise. *Journal of Strength and Conditioning Research*, 16, 516–524; Cook, G. (2003). *Athletic Body in Balance.* Champaign, Ill.: Human Kinetics; Donnelly, D.V. et al. (2006). The effect of directional gaze on kinematics during the squat exercise. *Journal of Strength and Conditioning Research,* 20, 145–150; Fry, A.C., Smith J.C., & Schilling, B.K. (2003). Effect of knee position on hip and knees torques during the barbell squat.*Journal of Strength and Conditioning Research,* 17, 629–633; Kendall, F.P. et al. (2005). *Muscles Testing and Function with Posture and Pain* (5th ed.). Baltimore, Md.: Lippincott Williams & Wilkins; Sahrmann, S.A. (2002). *Diagnosis and Treatment of Movement Impairment Syndromes.* St. Louis, Mo.: Mosby.

Hurdle Step Screen					
View		**Joint Location**	**Compensation**	**Key Suspected Compensations: Overactive (Tight)**	**Key Suspected Compensations: Underactive (Weak)**
☐	Anterior	Feet	Lack of foot stability: Ankles collapse inward/ feet turn outward	Soleus, lateral gastrocnemius, peroneals	Medial gastrocnemius, gracilis, sartorius, tibialis group, gluteus medius and maximus—inability to control internal rotation
☐	Anterior	Knees	Move inward	Hip adductors, tensor fascia latae	Gluteus medius and maximus
☐	Anterior	Hips	Hip adduction >2 inches (5.1 cm) Stance-leg hip rotation (inward)	Hip adductors, tensor fascia latae Stance-leg or raised-leg internal rotators	Gluteus medius and maximus Stance-leg or raised-leg external rotators
☐	Anterior	Torso	Lateral tilt, forward lean, rotation	Lack of core stability	
☐	Anterior	Raised-leg	Lack of ankle dorsiflexion Limb deviates from sagittal plane Hiking the raised hip	Ankle plantarflexors Raised-leg hip extensors Stance-leg hip flexors—limiting posterior hip rotation during raise	Ankle dorsiflexors Raised-leg hip flexors
☐	Sagittal	Pelvis and low back	Anterior tilt with forward torso lean Posterior tilt with hunched-over torso	Stance-leg hip flexors Rectus abdominis and hip extensors	Rectus abdominis and hip extensors Stance-leg hip flexors

Sources: Cook, G. (2003). *Athletic Body in Balance.* Champaign, Ill.: Human Kinetics; Kendall, F.P. et al. (2005). *Muscles Testing and Function with Posture and Pain* (5th ed.). Baltimore, Md.: Lippincott Williams & Wilkins; Sahrmann, S.A. (2002). *Diagnosis and Treatment of Movement Impairment Syndromes.* St. Louis, Mo.: Mosby.

Shoulder Push Stabilization Screen				
View		**Joint Location**	**Compensation**	**Key Suspected Compensations**
☐	Sagittal	Scapulothoracic	Exhibits "winging" during the push-up movement	Inability of the parascapular muscles (i.e., serratus anterior, trapezius, levator scapula, rhomboids) to stabilize the scapulae against the ribcage. Can also be due to a flat thoracic spine.
☐	Sagittal	Trunk	Hyperextension or "collapsing" of the low back	Lack of core, abdominal, and low-back strength, resulting in instability

Sources: Sahrmann, S.A. (2002). *Diagnosis and Treatment of Movement Impairment Syndromes.* St. Louis, Mo.: Mosby; Kendall, F.P. et al. (2005). *Muscles Testing and Function with Posture and Pain* (5th ed.). Baltimore, Md.: Lippincott Williams & Wilkins.

Shoulder Pull Stabilization Screen				
View		**Joint Location**	**Compensation**	**Key Suspected Compensations**
☐	Sagittal	Scapulothoracic	Scapula moves into protraction during the pull	Inability of the parascapular muscles (i.e., serratus anterior, trapezius, levator scapula, rhomboids) to stabilize the scapulae against the ribcage
☐	Transverse	Trunk	Rotation during the pull	Lack of core stability

Source: Cook, G. (2003). *Athletic Body in Balance.* Champaign, Ill.: Human Kinetics.

Thoracic Spine Mobility Screen				
View		**Joint Location**	**Compensation**	**Possible Biomechanical Problems**
☐	Transverse	Trunk	None if trunk rotation achieves 45 degrees in each direction	
☐	Transverse	Trunk	Bilateral discrepancy (Assuming no existing congenital issues in the spine)	Side-dominance Differences in paraspinal development Torso rotation, perhaps associated with some hip rotation *Note:* Lack of thoracic mobility will negatively impact glenohumeral mobility

Source: Sahrmann, S.A. (2002). *Diagnosis and Treatment of Movement Impairment Syndromes.* St. Louis, Mo.: Mosby.

LAB ACTIVITY #8: FLEXIBILITY ASSESSMENTS

Ask a classmate, friend, or family member to serve as a subject as you practice the following flexibility assessments: Thomas Test, Passive Straight-leg Raise, Shoulder Flexion, Shoulder Extension, Internal Rotation, External Rotation, Apley's Scratch Test. Use the Flexibility Assessments form on the following page to record each assessment.

References:

- *ACE Personal Trainer Manual,* 4th Edition, p. 158–166
- *ACE Personal Trainer Master the Manual,* 4th Edition, p. 57 "Practice What You Know," exercise II (continued)

Worksheet for conducting flexibility assessments

Thomas Test

Left hip: Normal ❑ Tight ❑

Additional notes:_____

Right hip: Normal ❑ Tight ❑

Additional notes:_____

Passive Straight-leg Raise

Left Hamstrings: Normal ❑ Tight ❑

Additional notes:_____

Right Hamstrings: Normal ❑ Tight ❑

Additional notes:_____

Shoulder Flexion

Left shoulder: Normal ❑ Tight ❑

Additional notes:_____

Right shoulder: Normal ❑ Tight ❑

Additional notes:_____

Shoulder Extension

Left shoulder: Normal ❑ Tight ❑

Additional notes:_____

Right shoulder: Normal ❑ Tight ❑

Additional notes:_____

Internal Rotation

Left shoulder: Normal ❑ Tight ❑

Additional notes:_____

Right shoulder: Normal ❑ Tight ❑

Additional notes:_____

External Rotation

Left shoulder: Normal ❑ Tight ❑

Additional notes:_____

Right shoulder: Normal ❑ Tight ❑

Additional notes:_____

Apley's Scratch Test

Left reach-under: Normal ❑ Tight ❑

Additional notes:_____

Left reach-over: Normal ❑ Tight ❑

Additional notes:_____

Right reach-under: Normal ❑ Tight ❑

Additional notes:_____

Right reach-over: Normal ❑ Tight ❑

Additional notes:_____

LAB ACTIVITY #9: BALANCE AND THE CORE

Ask a classmate, friend, or family member to serve as a subject as you practice the following balance and core function assessments: Sharpened Romberg Test, Stork-stand Balance Test, and Blood Pressure Cuff Test. Use the Balance and Core Worksheet on the following page to record each assessment.

References:

- *ACE Personal Trainer Manual,* 4th Edition, p. 166–169
- *ACE Personal Trainer Master the Manual,* 4th Edition, p. 57 "Practice What You Know," exercise II (continued)

Balance and Core Worksheet			
Balance	**Right Leg**	**Left Leg**	**Difference**
Sharpened Romberg test	_____ seconds	_____ seconds	_____ seconds
Stork-stand balance test	_____ seconds	_____ seconds	_____ seconds
Core Function	**Change in Pressure**	**Score**	**Analysis**
Blood pressure cuff test	Increase No change Decrease	+/– _____ mmHg	Need work Maintain

LAB ACTIVITY #10: ANTHROPOMETRIC MEASUREMENTS

Ask classmates, friends, or family members to act as subjects for anthropometric measurements following the protocols for skinfolds, circumferences, and BMI in the *ACE Personal Trainer Manual*. Work with a classmate, instructor, or experienced personal trainer who can observe your measurement techniques and provide feedback. Practice using the skinfold calipers until you are able to get consistent measurement results. Practice with the flexible tape until you are able to get consistent measurement results. Record all information on the Anthropometric Data Form on the following page.

Record height and weight, preferably measured, though self-reported is adequate for this lab activity, and then calculate body mass index (BMI) and compare this to the value obtained using Table 8-7 (pg. 185) and the BMI Reference Chart on page 186. Measure waist and hip circumference and calculate waist-to-hip ratio. Compare waist circumference and waist-to-hip ratio to the reference tables on page 188. Measure the appropriate skinfolds for males (chest, thigh, and abdominal) and females (triceps, thigh, and suprailium) and calculate percent fat following the protocols for the Jackson and Pollock three-site formula (1985). Compare your calculation to the values found using Table 8-3 (men) or 8-4 (women) (pg. 181–182) and compare to the reference tables (8-5 and 8-6) on page 184.

References:

- *ACE Personal Trainer Manual,* 4th Edition, p. 175–189
- *ACE Personal Trainer Master the Manual*, 4th Edition, p. 67 "Practice What You Know," exercises I & II

ANTHROPOMETRIC DATA FORM

BMI				
Height (m): **BMI:**	_____ _____		Weight (kg): Rating:	_____ _____

Waist-to-Hip Ratio				
Waist (cm):	_____		Hip (cm):	_____
HWR:	_____		Risk Level:	_____

Skinfold Measurements				
	Trial 1	**Trial 2**	**Trial 3**	**Average of two measurements (within 2 mm)**
Gender (circle): **Male Female** **Site 1:** _____	_____	_____	_____	_____
Site 2: _____	_____	_____	_____	_____
Site 3: _____	_____	_____	_____	+ _____
				Total = _____
Percent Fat:	_____**%**			

LAB ACTIVITY #11: ASSESSING HEART RATE AT VT1 AND VT2

Read the "Submaximal Talk Test for VT1" section in the *ACE Personal Trainer Manual* (pg. 202–204). Conduct this assessment with a classmate, friend, or family member and record heart rate at VT1.

Read the "VT2 Threshold Test" section in the *ACE Personal Trainer Manual* (pg. 204–205). Conduct this assessment with a classmate, friend, or family member, record heart rate at the end of each of the last five minutes of the assessment, and calculate the VT2 heart rate estimate. ***Note: Be sure that the individual performing this assessment has the appropriate health and fitness to safely complete the VT2 Threshold Test.***

Reference:

- *ACE Personal Trainer Manual,* 4th Edition, p. 202–205

HEART RATE AT VT1 AND VT2

VT1			
Heart Rate: _____			
VT2			
Heart Rate 1: _____		**Sum of 5 Heart rates:**	_____
Heart Rate 2: _____		**Average Heart Rate (Sum / 5)**	_____
Heart Rate 3: _____			
Heart Rate 4: _____			
Heart Rate 5: _____		**Multiply average heart rate x 0.95**	_____

LAB ACTIVITY #12: FUNCTIONAL PROGRAMMING FOR STABILITY-MOBILITY AND MOVEMENT

Using the list on the following pages, practice performing the exercises and stretches illustrated throughout Chapter 9 in your *ACE Personal Trainer Manual*. Enlist the help of a classmate, friend, or family member and practice cueing him or her through the various movements. As you practice these exercises, focus on the objectives listed for each exercise progression to help you effectively incorporate them into client programs. ***Note: Be sure that the individual performing each exercise has the appropriate fitness and skill levels to do so safely and with proper form.***

References:

- *ACE Personal Trainer Manual,* 4th Edition, p. 251–307
- *ACE Personal Trainer Master the Manual,* 4th Edition, p. 76 "Practice What You Know," exercise I

FUNCTIONAL PROGRAMMING FOR STABILITY-MOBILITY

EXERCISE	TABLE/FIGURE NUMBER	PAGE
Exercise Progression for Core Activation	Table 9-1	p. 257
Exercise Progression for Core Stabilization	Table 9-2	p. 259
Supine 90-90 neutral back	Figure 9-17	p. 260
Cat-camel	Figure 9-18	p. 261
Pelvic Tilts	Figure 9-19	p. 261
Pelvic tilts progressions: Supine bent-knee marches	Figure 9-20	p. 262
Pelvic tilts progressions: Modified dead bug with reverse bent-knee marches	Figure 9-21	p. 262–263
Hip flexor mobility: Lying hip flexor stretch	Figure 9-22	p. 263
Hip flexor mobility progression: Half-kneeling triplanar stretch	Figure 9-23	p. 264
Hamstrings mobility: Lying hamstrings stretch	Figure 9-24	p. 265
Hip mobilization with glute activation: shoulder bridge (glute bridge)	Figure 9-25	p. 266
Hip mobilization: Supine 90-90 hip rotator stretch	Figure 9-26	p. 267
Posterior compartment mobilization: Table-top kneeling lat stretch	Figure 9-27	p. 268
Thoracic spine (T-spine) mobilization exercises: Spinal extensions and spinal twists	Figure 9-28	p. 268–269
Thoracic spine (T-spine) mobilization: prisoner rotations	Figure 9-29	p. 270
Posterior mobilization: rocking quadrupeds	Figure 9-30	p. 271
Interior capsule stretch	Figure 9-32	p. 273
Posterior capsule stretches	Figure 9-33	p. 273
Anterior capsule (pectoralis) stretch	Figure 9-34	p. 273
Superior capsule stretch	Figure 9-35	p. 273

EXERCISE	TABLE/FIGURE NUMBER	PAGE
Shoulder packing	Figure 9-36	p. 274
Internal and external humeral rotation	Figure 9-37	p. 275
Diagonals	Figure 9-38	p. 276
Reverse flys with supine 90-90	Figure 9-39	p. 277
Prone arm lifts	Figure 9-40	p. 278
Closed kinetic chain weight shifts	Figure 9-41	p. 279
Arm roll	Figure 9-42	p. 280
Standing ankle mobilization	Figure 9-43	p. 281

FUNCTIONAL PROGRAMMING FOR MOVEMENT

EXERCISE	TABLE/FIGURE NUMBER	PAGE
Hip hinge	Figure 9-49	p. 288
Pelvic tilts and back alignment	Figure 9-50	p. 289
Lower-extremity alignment	Figure 9-51	p. 289
Figure-4 position	Figure 9-52	p. 290
Squat variations	Figure 9-53	p. 291
Single-leg stands	Figure 9-54	p. 292
Dynamic movement patterns over a stable base of support	Table 9-4/Figure 9-55	p. 293–294
Half-kneeling lunge rise	Figure 9-56	p. 295
Lunges	Figure 9-57	p. 296
Lunge matrix	Figures 9-58 and 9-59	p. 297–298
Bilateral and unilateral presses	Figure 9-61	p. 300
Thoracic matrix	Figure 9-62	p. 301
Overhead press	Figure 9-63	p. 302
Bilateral and unilateral rows	Figure 9-64	p. 303
Wood-chop spiral patterns	Figure 9-65	p.305
Full wood-chop and hay-bailer patterns	Figure 9-66	p. 306

LAB ACTIVITY #13: PERFORMANCE TRAINING PROGRAMMING AND PROGRESSIONS

Work with classmates, friends, or family members who can appropriately train in the performance-training phase, and slowly incorporate the various speed and agility drills presented in Chapter 10 of the *ACE Personal Trainer Manual*. Not only will this provide a great workout, but it will also give you an opportunity to practice the setup, cueing, and recording of results for each drill.

References:

- *ACE Personal Trainer Manual,* 4th Edition, p. 341–363
- *ACE Personal Trainer Master the Manual*, 4th Edition, p. 88 "Practice What You Know," exercise I

PERFORMANCE TRAINING

Exercise	Table/Figure Number	Page
Lower-body Plyometric Drills	Table 10-10	p. 347
Upper-body Plyometric Drills	Table 10-11, Figures 10-7 through 10-10	p. 348–349
Speed Drills	Table 10-13, Figures 10-11 through 10-15	p. 351–352
Agility—Ladder/Hurdle Drills	Table 10-14, Figure 10-16	p. 352–353
Agility—Cone/Marker Drills	Table 10-15	p. 353

LAB ACTIVITY #14: PERFORMANCE TRAINING

Spend some time carefully studying the six case studies presented in this chapter. Use them to fine-tune your understanding of how to apply the ACE IFT Model, and try to draw from your own experience and current clientele as you interpret the choices made by the trainer in each scenario. Mastering the theoretical knowledge presented in the preceding chapters is not enough to make you a successful personal trainer; you must know how to synthesize that information and create fitness programs that take into account all aspects of each client's wants and needs, both physically and psychologically.

Now, work with a classmate, friend, or family member and create an appropriate program for him or her using the ACE IFT Model.

References:

- *ACE Personal Trainer Manual,* 4th Edition, p. 411–446
- *ACE Personal Trainer Master the Manual*, 4th Edition, p. 106 "Practice What You Know," exercise I