PDP FT 115 Basic Conditioning

Instructor: Instructor will vary by semester
Email: groupex@bu.edu
Phone: 617-358-3760
Meets twice per week: 1.0 Credit

Course Description:
Exercise form and function will be reviewed in depth to allow participants to develop balanced total body fitness programs. Weekly workouts will include a warm-up, strength training, flexibility and cardiovascular components.

Course Goals:
As a result of successfully completing this course, the student will be able to:
- Identify the benefits of exercise and the principles of effective/safe exercise
- Explain the health benefits of aerobic exercise, flexibility training, and muscular strength training.
- Develop and engage in a personal fitness program.
- Administer pre and post fitness tests using specified protocol
- Define basic terminology related to fitness principles and assessment.
- Measure resting heart rate and determine target heart rate to achieve health benefits.
- Identify the theory behind behavior change and physical activity adherence.

Grading Policy:
This class will be graded Pass/Fail, based on attendance. Please visit the Registrar’s website often to view relevant deadlines! Below is a list of possible grades you may receive in this class:

P – Pass: Completed course requirements, 80% or more classes attended

W – Withdraw: If you drop this class after the specified deadline, you will receive a “W” grade.

MG - Missing Grade: If you decide you do not want to take this course, but forget to drop it, this grade will appear on your transcript. You will still be allowed to graduate and it will not affect your overall GPA, however you are strongly encouraged to drop this course within the allotted deadline to avoid this grade. Dropping before the deadline will remove this class from your transcript entirely.

I – Incomplete: If you fail to meet the attendance requirements of this course, you will receive an “I” until you have made up all missed classes. Please make arrangements with your instructor to do so within the following semester. Your grade will be changed to a “P” once you have made up all classes.

AU- Audit: If you intend to audit this class, please fill out and ask your instructor to sign a Class Adjustment/AU form and turn it in to the Registrar’s Office by the deadline.

F- Fail: It is very unlikely that you will receive a failing grade. Your instructor is happy to work with you to make up any missed classes. A grade of “F” will only be given in extenuating circumstances.
**Attendance Policy & Make-Up Classes:**
Because this class is graded solely on attendance and learning is cumulative, it is important that you attend each class. You will need an 80% attendance record to receive a passing grade. You are allowed 5 unexcused absences. Excused absences (such as illness or injury with a doctor’s note or death of a family member) will not count against your attendance record. If you have more than 5 unexcused absences, you will need to arrange to make up the classes you have missed. You can do this by attending any section of FT 112, FT 114, or FT 115.

Please contact the instructor of the make-up class that you would like to attend so that they can plan accordingly. It is your responsibility to keep track of your attendance record and make up any classes you have missed.

**Blackboard, FitRec Website & Course Evaluation:**
A Blackboard course site may be available for this class online at [http://www.learn.bu.edu](http://www.learn.bu.edu) and can be accessed by entering your BU username and password. All students enrolled in this class should have access to this site, even if your school does not use Blackboard. This site will give you access to the course syllabus, any additional content, and allow you to email other students in this class. Emergency cancelations as well as other announcements may also be posted here.

For a broader explanation of PDP credit class policies, information on registration, or schedules please visit the FitRec’s website: [http://www.bu.edu/fitrec/about/physical-education/](http://www.bu.edu/fitrec/about/physical-education/)

Course evaluations will be sent via email at midterm and at the end of the semester. Please take the time fill these out – your feedback is very important to us!

**Student Conduct:**
Boston University’s codes of conduct are enforced at the Fitness and Recreation Center at all times. Use of Boston University facilities is a privilege and participants are expected to be good citizens and respect the rights of others. Individuals who engage in unacceptable or irresponsible behavior may have their access to the Fitness and Recreation Center revoked or modified indefinitely as determined by the Executive Director of Physical Education, Recreation and Dance. Students may be subject to further university disciplinary action as outlined in the Boston University Code of Student Responsibilities ([www.bu.edu/dos/policies/student-responsibilities](http://www.bu.edu/dos/policies/student-responsibilities)).

**Schedule:**

<table>
<thead>
<tr>
<th>Topic</th>
<th>Syllabus and Policies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Topic 2</td>
<td>Benefits/Barriers to Exercise</td>
</tr>
<tr>
<td>Topic 3</td>
<td>Cardiovascular Exercise and Personal Training</td>
</tr>
<tr>
<td>Topic 4</td>
<td>Flexibility/Static Stretching</td>
</tr>
<tr>
<td>Topic 5</td>
<td>Dynamic Stretching</td>
</tr>
<tr>
<td>Topic 6</td>
<td>Body Weight Exercises</td>
</tr>
<tr>
<td>Topic 7</td>
<td>Nutrition</td>
</tr>
<tr>
<td>Topic 8</td>
<td>Sleep</td>
</tr>
<tr>
<td>Topic 9</td>
<td>Plyometrics</td>
</tr>
<tr>
<td>Topic 10</td>
<td>High Risk Moves</td>
</tr>
<tr>
<td>Topic 11</td>
<td>Fitness Fallacies</td>
</tr>
<tr>
<td>Topic 12</td>
<td>Stress</td>
</tr>
</tbody>
</table>
Curriculum:

**Topic 1: Pre-Test/Benefits and Barriers to Exercise**

We will be using this week to test students on strength, endurance, and flexibility within the domain of the class. Specific tests will be your instructor.

**Benefits of Exercise**
- Improved cardiovascular endurance
- Decreased risk of developing chronic disease
- Increased muscular strength
- Increased energy level
- Improved sleep
- Increased bone mass
- Decreased Stress level

**Barriers to Exercise**
- Difference between physical activity and exercise
  - **Physical activity** - unplanned
    - Examples: Parking further away and walking, taking stairs instead of elevator, walking instead of taking the bus, T, or car
  - **Exercise** - planned
    - Examples: Running, lifting weights, group exercise class
- Common Barriers to exercise
  - Lack of time
    - Solution: Cut out some TV
  - Lack of motivation
    - Solution: Go with a friend who has similar goals
  - Too Tired
    - Solution: Working out gives you more energy!
  - Not knowing how to exercise properly
    - Solution: Ask us for help!

**5 Components of Physical Activity**
1. Cardiovascular
2. Strength
3. Endurance
4. Flexibility
5. Body Composition

**Mythbusting Your Workout:**

**MYTH:** Working out is really time consuming.
- Your workout can be as simple as 20 minutes of cardio + 20 minutes of weights + 5 minutes of stretching. If you are efficient about your exercises and rest periods it doesn’t have to take much time at all!

**MYTH:** I don’t need to do strength training, cardio is enough.
Strength training helps preserve muscle mass and burn calories while your body is at rest.
A combination of cardio and strength training is the most effective workout.
MYTH: I have to work out every single day to stay healthy.
Your body needs to rest and recuperate in between workouts!

**Topic 2: Training Goals and Volume**
Training volume is the amount of sets and repetitions (reps) per workout, and is directly related to an individual’s training goal.

**Strength** - Use maximum weight for 2-6 sets with 6 or fewer reps per exercise.
**Power** - Perform 1-2 explosive reps for 3-5 sets per exercise. Power programs use a lower training volume in order to maximize the explosiveness and quality of each repetition.
**Hypertrophy** - Hypertrophy is increased muscular size. Use a moderate weight for 3-6 sets of 6-12 reps per exercise.
**Muscular Endurance** - Muscular endurance is a muscle’s ability to clear lactic acid. Programs should use a lighter weight for 2-3 sets of 12+ reps per exercise.

<table>
<thead>
<tr>
<th>Training Goal</th>
<th>Goal Repetitions</th>
<th>Sets</th>
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<tbody>
<tr>
<td>Strength</td>
<td>≤6</td>
<td>2-6</td>
</tr>
<tr>
<td>Power</td>
<td>1-2</td>
<td>3-5</td>
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<tr>
<td>Hypertrophy</td>
<td>6-12</td>
<td>3-6</td>
</tr>
<tr>
<td>Muscular Endurance</td>
<td>≥12</td>
<td>2-3</td>
</tr>
</tbody>
</table>

For more information about our personal training services visit our website ([www.bu.edu/fitrec](http://www.bu.edu/fitrec)) or call - (617) 358-3760. Follow us on Twitter @Fitrec

**Personal Training Packages**
- 1 Personal Training Session:: $65
- 5 Personal Training Session:: $285
- 10 Personal Training Session: $425

**Semi-Private Personal Training (Groups of 2)**
- 1 Personal Training Session:: $50
- 5 Personal Training Session:: $180
- 10 Personal Training Session: $290

**Personal Training Services**
- Fitness Evaluation: $60
  - A comprehensive evaluation session that includes assessments for cardiovascular fitness, muscular strength and endurance, body composition, flexibility and posture. Your results will be sent to you via email.
- Fitness Evaluation + 1 Personal Training Session: $130
Includes the comprehensive fitness evaluation plus a second session with the Personal Trainer. The second session includes a 30-minute consultation/feedback and a 30-minute program design training session.

- Program Design: $65
  - This one-session personal training option is ideal for the college student or adult looking for more direction with their workout. It includes a program design that will be prepared by the personal trainer with specific exercises and recommendations based on your goals. Your session will go over the workout leaving you with an individualized program to follow on your own.

- Body Composition Analysis: $20
  - Skinfold calipers are used to measure percentage of body fat. Participants should come dressed in t-shirts and shorts.

**Topic 3: Cardiovascular Exercise**

**Calculating Maximum Heart Rate:**
- Maximum Heart Rate (BPM) = 220-age
- BPM = beats per minute
- (This method does not take into account your fitness level or inherited genes, which can make your true maximum heart rate 10 to 20 beats per minute higher or lower.)
- Depending on your exercise training, your heart rate will range between 40-85% of your maximum heart rate.

**Aerobic Exercise**
- Any type of exercise performed at moderate levels of intensity for extended periods of time. (ex. Long distance running, swimming, tennis)
- Aerobic training zone is between 50-70% Max HR

**Anaerobic Exercise**
- Any type of exercise performed at high levels of intensity for shorter periods of time. (ex. sprinting, lifting, fast bicycling)
- Anaerobic threshold is at 70-85% Max HR.
- The American Heart Association recommends at least 30 minutes of aerobic exercise 5 times a week or 25 minutes of anaerobic exercise 3 days a week; or a combination of the two, along with 2 or more days of strength training

**Cooper 12-minute Run Test**
The Cooper 12 minute run is a popular maximal running test of aerobic fitness, in which participants try and cover as much distance as they can in 12 minutes.

**Procedure:** Place markers at set intervals around the track to aid in measuring the completed distance. Participants run for 12 minutes, and the total distance covered is recorded. Walking is allowed, though the participants must be encouraged to push themselves as hard as they can to maximize the distance covered.

**Cooper Test Results for Males (in yards)**

<table>
<thead>
<tr>
<th>Age</th>
<th>Excellent</th>
<th>Above Ave</th>
<th>Average</th>
<th>Below Ave</th>
<th>Poor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male 20-29</td>
<td>&gt; 3060</td>
<td>2620-3060</td>
<td>2410-2620</td>
<td>1750-2410</td>
<td>&lt; 1750</td>
</tr>
</tbody>
</table>
Cooper Test Results for Males (in yards)

<table>
<thead>
<tr>
<th>Age</th>
<th>Excellent</th>
<th>Above Ave</th>
<th>Average</th>
<th>Below Ave</th>
<th>Poor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Males 30-39</td>
<td>&gt; 2950</td>
<td>2510 - 2950</td>
<td>2080 - 2510</td>
<td>1640 - 2080</td>
<td>&lt; 1640</td>
</tr>
<tr>
<td>Males 40-49</td>
<td>&gt; 2730</td>
<td>2300 - 2730</td>
<td>1860 - 2300</td>
<td>1530 - 1860</td>
<td>&lt; 1530</td>
</tr>
<tr>
<td>Males 50+</td>
<td>&gt; 2620</td>
<td>2190 - 2620</td>
<td>1750 - 2190</td>
<td>1420 - 1750</td>
<td>&lt; 1420</td>
</tr>
</tbody>
</table>

Cooper Test Results for Females (in yards)

<table>
<thead>
<tr>
<th>Age</th>
<th>Excellent</th>
<th>Above Ave</th>
<th>Average</th>
<th>Below Ave</th>
<th>Poor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Females 30-39</td>
<td>&gt; 2730</td>
<td>2190 - 2730</td>
<td>1860 - 2190</td>
<td>1530 - 1860</td>
<td>&lt; 1530</td>
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<tr>
<td>Females 40-49</td>
<td>&gt; 2520</td>
<td>2080 - 2520</td>
<td>1640 - 2080</td>
<td>1310 - 1640</td>
<td>&lt; 1310</td>
</tr>
<tr>
<td>Females 50+</td>
<td>&gt; 2410</td>
<td>1860 - 2410</td>
<td>1530 - 1860</td>
<td>1200 - 1530</td>
<td>&lt; 1200</td>
</tr>
</tbody>
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**Topic 4: Benefits of Flexibility/Static Stretching**

**Flexibility:** is the range of motion (ROM) in a joint or series of joints that reflects the ability of the musculo-tendon structures to elongate within the physical limitations of the joint. The two basic types are dynamic and static. Flexibility decreases “overuse” injuries.

<table>
<thead>
<tr>
<th>Benefits of Flexibility Training</th>
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<tbody>
<tr>
<td>Increases joint range of motion</td>
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<tr>
<td>Relieves joint stress</td>
</tr>
<tr>
<td>Improves elasticity of muscles and connective tissue</td>
</tr>
<tr>
<td>Improves elasticity of muscles and connective tissue</td>
</tr>
<tr>
<td>Improves neuromuscular efficiency</td>
</tr>
<tr>
<td>Improves overall function required during daily chores and recreational activities.</td>
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**Static stretching:** A form of stretching in which the muscle to be stretched is slowly put into a position of controlled maximal or near-maximal stretch by contraction of the opposing muscle group and held for 30-60 seconds. Static stretching involves stretching muscles while the body is at rest. Stretching helps keep you flexible. When performed correctly, static stretches help lengthen tight muscles, preventing injury, and improve balance and overall fitness. Stretching can also help relieve stress.
Topic 5: Dynamic Stretching
Dynamic stretching comprises controlled movements, such as leg and arm swings, that slowly bring the muscles close to their range of motion limit without exceeding it. This type of stretching is ideal before sporting events, weight-bearing exercise sessions that involve the whole body, or training involving quick changes of direction. Dynamic stretching is meant to prepare the muscles for the activity at hand. Examples include torso twists, arm circles, knee-high jogs, stretching lunge walks and standing leg lifts or circles.
Include: Lunges with lean, side lunge with heel touch, lung twists, straight leg kicks, knee into chest, arms swings and circles, side bends, forward/sideways leg swings, hacky-sacks, high knees, butt kicks, hip circles, running carioca.

**Topic 6: Bodyweight Exercises**

**Mountain Climbers**
Start out in pushup position with one knee bent. Keep your hands on the ground and push off with your feet so you alternate foot placement (run in place). Be sure to keep your back straight, not arched. Resist side-to-side and up-and-down hip movement by contracting abdominal muscles.

Start out with slow controlled strides and work toward increasing speed without hip movement. Perform 2 sets of 10 second controlled strides - over time work up to 30, 45, or 60 seconds. Progression can also be made by increasing the number of reps over the time.
**Body Weight Squat**

Begin with feet about shoulder width apart and toes pointing forward or slightly out.

Start squat by flexing knees and pushing hips backward toward chair. Continue down until you touch the chair. Be sure to look slightly upward and keep arms parallel to the ground to ensure an elevated chest and tight torso position.

Keeping feet flat on the ground, elevate back to a standing position.

Perform 2 sets of 15 reps.

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**Plank Row**

Start in a pushup position with one hand on a dumbbell.

Keep your hands directly beneath your shoulders. Balance on your hands and toes with your feet spread wide for stability.

Keep your body in a straight line from head to toe without sagging in the middle or arching your back. Raise one dumbbell while stabilizing your body with the other arm. Return the dumbbell gently to the ground and repeat.

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**Backward Lunge with Side Raise**

Stand with feet together. Stride backward with one leg into a lunge position. During the step back up, raise the arms to shoulder level. Lower the arms to your side as you repeat with the other leg.
**Side Plank with Leg Abduction**

This is an advanced variation of the side plank. Take the same side plank position and add leg lifts towards the ceiling. Be sure to lead with your heel toward the sky, not your toes. Repeat the leg lift 10 times slowly and return to the start position.

**Plank to Push Up**

Start in a plank position on your elbows as described above. Hold your body in a straight position and straighten your right arm then your left so that you are resting on your hands and toes with elbows locked out in pushup position. Keep your back straight and avoid lifting your hips.

Tighten the abdominal muscles to avoid your hips from moving side to side during the movement. Lower back into a plank position and repeat starting with your left arm.

Perform 2 sets 6 reps per arm

**Chair dips**

Start sitting on the chair so that your buttocks are on the edge of the chair. Place your arms on the edge of the chair down by your sides and grip the edge of the chair. Lift your bottom off of the chair and walk your feet forward a little, keeping your knees bent but not so that they pass your toes. Slowly lower your body.
**Overhead lunge with twist**

Place the right foot in front of the left in a lunge position and hold a broomstick or light bar over head with a wide grip and elbows fully extended.

Slowly lower the left knee toward the floor, making sure the right knee stays over the right ankle and the stick stays directly overhead. At the bottom of the movement, the left knee should be under or slightly behind the left hip. In the bottom position, rotate your upper body to the right being sure to keep your body in line.

Prevent any side-to-side swaying or forward or backward bar movement, and be sure that your right knee stays stable during rotation.

With your feet planted, repeat 12 times. Do 2 sets of 12 per leg.

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**Topic 7: Nutrition**

**Nutrient** – Specific substance found in food that performs one or more physiological or biochemical function in the body.

**6 Major Classes of Nutrients**

- **Protein** - Builds and repairs body tissue
- **Carbohydrates** - Provide energy for the body
- **Fat** - Necessary part of every cell; protects internal organs; carries fat soluble vitamins
- **Vitamins + Minerals** - Regulate body processes
- **Water** - Important for numerals chemical reactions in body
  - Most predominant nutrient
  - 60% of the human body is made up of water

Body fluids = water - bring exact ingredients to each system and carry away by-products
- Active in chemical reactions in body
- Acts as lubricant around joints
- Protects sensitive tissues and organs from shock

The next in abundance (after water) are the **3 energy nutrients:**

1. Carbohydrates, fats, protein (less for energy)
2. Energy nutrients: all contain calories to be used for energy
3. Energy for heat: build its structures to move its parts or stores as body fat

Please use Choose My Plate to calculate individual nutrition recommendations:


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**Topic 8: Sleep Health**

**Effects of Sleep Deprivation:**

- Increase in body mass index – a greater likelihood of obesity due to an increased appetite caused by sleep deprivation
- Increased risk of diabetes and heart problems
Increased risk for psychiatric conditions including depression and substance abuse

Benefits Getting a Good Night’s Sleep:
Sleep is one of our basic physiological needs. Regular, sufficient sleep is required for your brain to function, grow, and repair itself. Sleep has many benefits for both your mental and physical health:

- **Boost your mood** - Sleep restores the body and helps manage stress, irritability, and feelings of depression and anxiety
- **Fight off Sickness** – Sleep improves the body’s ability to fight off colds, flu, and other illnesses
- **Maintain Healthy Eating Habits** - Sleep deprivation increases the production of hormones that stimulate appetites, while decreasing the production of hormones that affect fullness and satisfaction after a meal. This leads to overeating and possible weight gain.
- **Keep your Grades Up** - Sleep sharpens concentration, solidifies memory, and improves brain performance. Students who regularly get the recommended 7 to 9 hours of sleep each night tend to do better academically.
- **Help your workout** - Sleep is when your body recovers and gets back to its full physical potential!

Factors Contributing to Sleep Deprivation

- Physical or mental stress
- Depression and anxiety
- Caffeine - Caffeine is an ingredient in many things, including coffee, tea, soda, and even pain relievers such as Excedrin. Avoid these and other sources of caffeine at least 4-6 hours before sleep.
- Alcohol – It takes a minimum of 3 days for the body to recover from a night of heavy drinking. Alcohol intoxication interferes with REM sleep – the deep sleep stage needed to feel rested and refreshed.
- Uncomfortable Environment – An environment that is too bright or noisy prevents you from getting the right amount and quality of sleep that you need
- Irregular Schedule – Ideally you want to go to sleep and wake up at about the same time every day

Myths about Sleep

**MYTH:** Insomnia is not a serious medical condition and has no consequences

- Insomnia is a serious condition. Chronic sleep deprivation can have very severe consequences, including: decreased concentration and productivity, increased risk of automotive crashes, and severe mood changes and depression.

**MYTH:** Men and women are affected the same way by insomnia

- Insomnia is nearly twice as common in women as in men, and women are more likely than men to report insomnia to their healthcare professional. A woman’s sleep is uniquely influenced by menstrual cycle, biological life stage, stress level, health, mood, parental status, work hours and other life responsibilities.

**MYTH:** Exercising before bed will make me tired, and help me sleep

- Exercise has an alerting effect, raises your body temperature, and increases your energy level. Sleep experts recommend avoiding strenuous exercise less than 3 hours before sleep.

**MYTH:** Sleep is not important. I can just get by on a few hours

- Adults typically need between 7 to 9 hours of sleep per night. It is difficult to make up for lost sleep because each time you don’t get enough sleep, you add to your sleep debt (the accumulated sleep that is lost)
**Tips and Tricks to Get More Sleep**

**Put your thoughts to bed:** Make a to-do list for the next day before going to bed. Doing this can quiet your thoughts and prepare you for a peaceful night's sleep. Try keeping a notepad by your bed to write down things you need to do or remember.

**Snack lightly:** A light snack before bedtime is OK, but avoid heavy meals since digestion prevents the body from relaxing. Pretzels, fruit, and yogurt are all good options. Warm milk, bananas, and other foods high in tryptophan stimulate serotonin in the brain and can help with sleep.

**Give Yourself Some Downtime:** At least 30 minutes before bed, take time away from studying or any other stressful activities. If you do the same activity before bed every night (listen to music, read, etc.) that can signal your body that it's sleep time.

**Stay active:** Daytime exercise helps you to sleep longer and sounder, and makes you more alert throughout the day. Get at least 30 minutes of exercise each day, but make sure that it ends at least 3 hours before bedtime.

**Don't Work in Bed:** Strengthen your body's association between bed and sleep by avoiding eating, going online, and doing homework in bed. Try to organize your room so that you can study and sleep in different areas. Also, don't stay in bed if you find yourself tossing and turning. If you can't fall asleep within 15-20 minutes, get out of bed and try a relaxing activity like yoga, deep breathing, or reading a book.

**Get Rid of Screens:** Arrange your room so that you can't see any lights from phones, TVs, or computer screens. The lights from these devices interfere with the hormone that tells you to sleep. Avoid these lights for at least 30 minutes before going to bed.

**Topic 9: Plyometrics**

**Plyometric:** From the Greek (Plio – more; Metric- measure)
- Refers to activities that enable a muscle to reach maximal force in the shortest possible time.
- Quick and Powerful Movements

Purpose of plyometric exercises:
- Utilize a pre stretch, or countermovement that involves the stretch shortening cycle (SSC)
- The elastic strength of a muscle is the ability of this muscle/tendon “system” to fire with the same power output repeatedly over time (i.e. immediate second jump of a basketball player for height)

Built for POWER:
- Function of all active muscles + Speed of these muscular force = POWER
- The rate of musculotendinous stretch is vital to plyometric exercises
- High rate of stretch = Greater muscle recruitment
- As rate of stretch increases, Absolute performance increases

**Involves:** Mode, Intensity, Frequency, Recovery, Volume, Progression
**Mode:** Targeted body region

**Intensity:** Amount of stress placed on muscles and joints
- Low intensity (i.e. skipping)
- High Intensity (i.e. Box Jumps)

**Frequency:** Number of plyometric training sessions per week
- In season: 1x/week
- Off season: 2-3x/week

**Recovery:** Sets are determined by work to rest ratio (1:5 to 1:10)
- High intensity plyometric (Depth Jumps)
- 5-10 secs of rest between reps and 2-3 minutes rest between sets
- Drills for a given body area should not be performed 2 days in succession.

**Volume:**
- Lower body plyometrics - # of foot contacts
- Upper body plyometrics - # of throws or catches

**Progression:** As intensity increases, volume decreases
- Examples Include:
  - Jump/Clap push-ups, Side throws (med ball), chest throws (med ball), med ball slams, Burpees, Squat/Box Jumps, jump split squats, squat throws (med ball)

**Topic 10: Controversial/High Risk Moves**
- Ballistic stretching
- Bouncing stretches
- Hurdler’s stretch
• Full straight-leg sit-ups
• Forced high kicks
• Deep knee bends
• Plough

• Full cobra

• V-sits
• Dead lifts
• Behind-the-neck lat pull-down
• Unsupported flexion of the lumbar spine

• Unsupported flexion with rotation
• Unsupported lateral flexion of the lumbar spine

• Hyperextension of the cervical spine/ Percussive lumbar hyperextension
• Arching back/spine while standing

**Topic 11: Fitness Fallacies**

“*If It’s Fat Free It’s Good for You*” and Other Fitness Fallacies Debunked
By Corinne Keer, 12/9/13

A good dose of fitness information is vital, especially for a body that may feel personally attacked by finals. Yet as FitRec Managers Michael Lagomarsine and Rick DiScipio stressed in their latest Fall Fitness Workshop, the quality of your fitness information is just as important as the quantity. Throughout their free, hour-long session, Lagomarsine and DiScipio explained why so many fallacies pervade the fitness industry and dispelled three major ones.
The US has an odd and paradoxical relationship with weight-loss and fitness. While DiScipio noted that its citizens, as a whole, spend over $40 billion on weight-loss programs and products, it still has one of the highest obesity rates in the world.

This contradiction arises in part from a watered down fitness industry. Rather than learning facts from health experts or reputable journals, most people get their fitness news from *Cosmopolitan, GQ, Men’s Health, Self*, or equally superficial magazine publications. These articles may guarantee flat abs, offer a fool-proof list of acne-busting food, or tout the life changing benefits of acai berries, but they are probably written by an author with no legitimate credentials. The information of celebrity “experts” such as Jillian Michaels or Insanity’s Shaun T, may not be credible either; they may have few credentials or ulterior motives.

In reality, the intent of much of the health information out there is capitalistic, not altruistic. Many articles and products claiming to help an individual make the best health choices possible, really want to sell products. Fad diets, all-in-one workout machines, and TV infomercials, DiScipio and Lagomarsine creatively termed “marketing scams,” rarely lead to effective fitness or health.

As a general rule of thumb, DiScipio and Lagomarsine stressed the importance of taking initiative and checking your fitness sources.

They then talked about three fitness fallacies that often derail the best of workout intentions:

**Fitness Fallacy #1: Fat Free Foods Rule!**
While fat free foods can be useful, especially when trying to lose weight, they are not immediately better than their “real food” counterparts. Fat free and low fat do no mean calorie free. Furthermore, once fat is eliminated from a food, refined sugar or salt is typically added to enhance flavor.

DiSCipio and Lagomarsine gave the example of Bellissimo Italian salad dressing. In its regular form, the dressing packs 150 calories per 2 tablespoons, 140 of those calories are from fat. It has 1 gram of sugar and 200 mg of sodium. The fat-free version has 15 calories and 0 of them are from fat. Yet it has 2 grams of sugar and a whopping 490 mg of sodium.

The fat-free version is not better, per say. There are positive and negatives to both dressings.

**Fitness Fallacy #2: Cardio + Starvation = Weight Loss and Improved Fitness**
This common misconception leads to lots of time spent at the gym with few results. Simply eating less and exercising more is not enough to help most people remove excess body fat and keep it off.

In a study from *Strength and Conditioning Journal*, 97% of subjects who performed resistance training achieved weight loss, as compared to 78% who focused on endurance training and 70% who made only dietary changes. A comprehensive program that involves weight training and cardio, as well as changes to diet, will lead to the most effective weight loss, which leads to…

**Fitness Fallacy #3: Muscle Weighs More Than Fat**
Actually, DiScipio said, both way 1 lb, but they process calories differently. Muscle cells burn 10 calories per pound whereas fat cells burn 2 calories per pound. This is why it is important to keep both in mind during a workout.

As finals begin, working out is an awesome way to sweat out stress and improve brain function. Just make sure, as DiScipio and Lagomarsine taught, to research thoroughly before adding a crazy weight lifting move to your workout or picking up the paleo-diet. Ask for the background of your personal trainer. Take most “revolutionary” workout moves and diets with a grain of salt.

And, in perhaps the most important lesson DiScipio and Lagomarsine shared, remember that fitness is an individual journey and you are your own best data point.

**Topic 12: Stress Management**

**Definition:** Stress is the body’s reaction to a change that requires a physical, mental or emotional adjustment or response.

- **Acute Stress:** “Fight or flight response,” immediate reaction to a perceived threat or scare, quick and intense. This is usually brought on by a single event and doesn’t typically have any lasting effects on your body.
  - Who can give an example of acute stress?

- **Chronic Stress:** Stressors that build up over time. Your body’s response won’t be as intense as when you experience acute stress. Chronic stress will affect your body over time if you do not relieve it.
  - Examples of chronic stress?

**Effects of Stress**

- **On your body**
  - Headache
  - Muscle tension
  - Stomach upset
  - Fatigue
  - Sleep problems

- **On your mood:**
  - Sadness or depression
  - Anger/irritability
  - Lack of motivation
  - Anxiety
  - Restlessness

- **On your behavior:**
  - Social withdrawal
  - Overeating/under eating
  - Angry outbursts
  - Drug and alcohol abuse

**Stress and Weight Gain:**

- Cortisol: important hormone in your body, released in response to stress
  - Regulates metabolism
  - Regulates blood pressure
  - Immune system function

- If stress is not relieved, cortisol levels will rise causing:
  - Loss of muscle mass => lowered metabolism
  - Increased blood sugar levels => increased appetite
Increased body fat => especially in stomach area

**Tips to Prevent/Manage Stress:**
- Make a weekly schedule (use a planner)
- Make a to-do list
  - Estimate how long each task will take before you begin
  - Do your hardest task first
- Find time for yourself to relax
- Eat right and stay hydrated
- Get enough sleep
- Exercise!

**Stress Relieving Stretches**
These can be done standing or sitting down

1. **Breathe:** take a minute or two, close your eyes and focus on your breath. Inhale through your nose and exhale through your mouth. Repeat 10 times, for a set. Do three sets.
2. **Shoulder and Neck Stretch:** Sit up straight in your chair with both feet on the floor about shoulder-width apart. Place both hands behind your head at the base of your neck and interlock your fingers. Tilt your head toward the floor and press your shoulder blades together. Hold for 10 seconds, release and repeat 3 times.
3. **Arm Stretches:** Sit up straight in your chair with both feet on the floor about shoulder-width apart. Interlock your fingers and stretch your arms straight out in front of you. Rotate your wrists so your palms face away from your body. Hold this stretch for 10 seconds, then raise your arms over your head, hold for 10 seconds. Repeat three times.
4. **Leg Stretches:** Sit up straight in your chair with your feet flat on the floor. Raise one leg and straighten it in front of you. Hold for 10 seconds and rotate your ankle to the left and then to the right. Repeat with the other leg. Do 5 repetitions with each leg.
5. **Lower Back Stretches:** Sit up straight in your chair with your feet flat on the floor. Lean forward and try to grab your ankles with both hands. Feel the stretch in your lower back! Hold for 10 seconds and repeat three times.

**Take Away Message/Closing:** We encounter stressful situations every day, and everyone deals with stress differently. Since stress cannot be completely prevented, it is important to recognize the different types of stress, and know how to manage them properly.

**Topic 13: Fitness Assessment**

**Post-test**
We will be using this week to test students on strength, endurance, and flexibility within the domain of the class. Specific tests will be your instructor.