COURSE TITLE: WEIGHT TRAINING AND CONDITIONING

COURSE NUMBERS: 2784

DEPARTMENT: Physical Education

PRE-REQUISITE: None

CO-REQUISITE: 9th Grade must be co-enrolled in Core 9 PE

LENGTH OF COURSE: One Semester

SEMESTER PERIODS OF CREDIT: Five

GRADE LEVEL(S): 9-12

DATE ADOPTED: 1990

Meets EUHSD Elective Credit (May Satisfy EUHSD Physical Education Requirement According to EUHSD Board Policy)

COURSE DESCRIPTION: Weight Training and Conditioning is a course designed to offer students the opportunity to participate in strength and conditioning programs. The students will also have an opportunity to create and design their own programs. The instructor will guide the students to create their own sound, efficient weight training programs that will meet their specific goals and objectives.
COURSE UNITS/TOPICS

AND

SUGGESTED PACING GUIDE

WEIGHT TRAINING AND CONDITIONING

I. WEIGHT ROOM GUIDELINES
II. BASIC MUSCLE ANATOMY
III. FUNDAMENTALS OF WEIGHT TRAINING/TRAINING SYSTEMS
IV. EXECUTION OF EXERCISES/TECHNIQUE ANALYSIS
V. ACTIVITIES
VI. BENEFITS OF STRENGTH TRAINING AND CONDITIONING
VII. PROGRAM DEVELOPMENT
VIII. APPENDIX
I. WEIGHT ROOM GUIDELINES (Safety)

1.0 (Goal) To develop the students’ knowledge of safety procedures in the weight room.

1.1 (Objective) The students will be able to demonstrate the ability to incorporate proper safety procedures into weight training activities.

**Beginning:**

1.1.1 PI: The students will demonstrate the ability to perform weight training activities safely:

- proper use of weight lifting belt.
- proper use of wraps.
- proper use of spotters.
- proper breathing technique.
- follows class rules: **ESSENTIAL**

**Intermediate**

**Advanced**

1.1.2 PI: The students will demonstrate the ability to perform weight training activities safely:

- proper use of weight lifting belt.
- proper use of wraps.
- proper use of spotters.
- proper breathing technique.
- follows class rules: **ESSENTIAL**

**SAMPLE INSTRUCTIONAL ACTIVITY**

The students will learn the importance of proper spotting techniques through demonstration of proper and improper techniques. Once the proper techniques are learned the students will practice in groups of two’s.

II. BASIC MUSCLE ANATOMY

2.0 (Goal) To develop the students’ knowledge of the human body and how it relates to weight training.

2.1 (Objective) The students will know the major muscle groups of the human body.

**Beginning:**

2.1.1 PI: Identify the names of the major muscles from a chart given. **ESSENTIAL**

**Intermediate:**

2.1.2 PI: Fill in the proper names of the major muscles from a chart given and list two exercises that will work these muscle groups. Students will demonstrate this knowledge by applying the information to daily workouts. **EXPECTED**

**Advanced:**
2.1.3 PI: Fill in the proper names of the major muscles from a chart given and list three exercises that will work this muscle group. Know the four antagonistic muscle groups of the body. Quadriceps/Hamstrings, Biceps/Triceps, Erectors/Abdominal). EXTENDED

**SAMPLE INSTRUCTIONAL ACTIVITY**

Introduce all of the major muscles to the class. (Use a chart.)

### III. FUNDAMENTAL OF WEIGHT TRAINING/TRAINING SYSTEMS

3.0 (Goal) To develop the students understanding of weight training terms.

3.1 (Objective) The students will be able to:

   a. Know the correct meaning of sets, reps, intensity and duration.
   b. Know concepts related periodization.
   c. Know concepts related to resistance training systems.
   d. Know the difference between major and minor exercises.
   e. Know how to achieve a one rep maximum correctly.
   f. Know the different grips and when to utilize them.

**Beginning:**

3.1.1 PI: Identify the correct meaning of sets, reps, intensity and duration from a chart given. ESSENTIAL

3.1.2 PI: Identify correctly three resistance-training systems. ESSENTIAL

**Intermediate:**

3.1.3 PI: List the correct meaning of sets, reps, intensity, and duration. ESSENTIAL

3.1.4 PI: List and explain (in detail) five resistance training systems. EXPECTED

3.1.5 PI: Recognize proper examples of periodization models. EXPECTED

**Advanced:**

3.1.6 PI: List and explain (in detail) ten resistance training systems. EXTENDED

3.1.7 PI: Define periodization and describe how different phases correspond to particular times of the year. EXTENDED

**SAMPLE INSTRUCTIONAL ACTIVITY**

Give all of the students a workout (exercises only) and have them fill in the sets, reps, intensity and duration of each exercise. The instructor makes sure the students understand these concepts.

### IV. EXECUTION OF EXERCISES/TECHNIQUE ANALYSIS
4.0 (Goal) To develop the student’s ability to perform various weight training exercises with good form through practice and technique analysis.

4.1 (Objective) The student will be able to perform the weight training exercises listed below with good form and special consideration and thought given to safety procedures communicated by the teacher in charge.

**Beginning:**


**Intermediate:**

4.1.2 PI: All of the above plus LEGS/BACK: Hip Sled Front Squats, Stiff-leg Dead Lift, Dead Lift, Squat Jumps, Split Jumps, 15 Degree Leg Extension. UPPER BODY: Decline Press, Concentration Curls. ABDOMINALS: Oblique ups, Medicine Ball Sit-ups. TOTAL BODY: Hang Cleans, Dumbbell Cleans, Power Cleans, Box Snatch Pulls. EXPECTED

**Advanced:**

4.1.3 PI: All of the above plus: TOTAL BODY: PUSH PRESS. Combos, Hand Snatches, Power Snatches. (Advanced ONLY) EXTENDED

**SAMPLE INSTRUCTIONAL ACTIVITY**

Organize the class into groups of four and test them on their ability to perform a Back Squat with good form. Grade the student on his/her ability to perform the exercise with excellent form and proper safety procedures.

**V. STRENGTH**

5.0 (Goal) To perform activities designed for and to improve total body strength.

5.1 (Objective) To improve total body strength through specific activities.

5.1.1 PI: To improve the deltoid, trapezius and latissi dorsi group strength by performing shoulder press lifts at maximum and sub-maximum weight. ESSENTIAL

5.1.2 PI: To improve the deltoid, trapezius and latissi dorsi group strength by performing shoulder press lifts at maximum and sub-maximum weight. EXPECTED
5.1.3 PI: To improve neck muscle strength by performing neck flexion activities with appropriate apparatus. **EXTENDED**

5.1.4 PI: To improve hamstring, quadriceps, calf, glutimus and knee strength by performing squat lifts at maximum and sub-maximum weights. **EXTENDED**

5.1.5 PI: To improve overall body explosive strength by performing power clean lifts at maximum and sub-maximum weights. **EXTENDED**

**SAMPLE INSTRUCTIONAL ACTIVITY**

The class will be organized in groups of four with each student lifting or spotting each other. After a period of time the students will rotate to the next station and perform the exercises with the proper form and technique.

**VI. BENEFITS OF STRENGTH TRAINING AND CONDITIONING**

6.0 (Goal) To develop the students’ ability to know and understand the benefits of a sound and effective strength and conditioning program.

6.1 (Objective) The students will be able to demonstrate the ability to express several benefits of a well rounded program.

**Beginning:**

6.1.1 PI: The students will be able to identify the benefits of well-rounded programs from a list given. **ESSENTIAL**

**Intermediate:**

6.1.2 PI: The students will be able to list and explain five benefits attained from sound program. **EXTENDED**

**Advanced:**

6.1.3 PI: The students will be able to list and explain five benefits attained from sound program. **EXTENDED**

**SAMPLE INSTRUCTIONAL ACTIVITY**

Have the students brainstorm on what they feel what might be some of the benefits from the hard work they have been doing. Write all of the replies on the chalkboard and explain each one.

**VII. PROGRAM DEVELOPMENT**

7.0 (Goal) To develop the students’ ability to create a balanced strength training program.

7.1 (Objective) The students will be able to: develop a balance weight training program that will meet the goals and objectives of the students.
Beginning:

7.1.1 PI: The students will: List the names of each exercise(s) to be performed. **ESSENTIAL**

7.1.2 PI: Name the resistance training system to be performed. **ESSENTIAL**

7.1.3 PI: List the sets, reps and intensity of each exercise. **ESSENTIAL**

7.1.4 PI: List goals and objectives for this program. **ESSENTIAL**

Intermediate:

7.1.5 PI: All of the above plus: List the primary muscle group utilized for each exercise. **EXPECTED**

Advanced:

7.1.6 PI: All of the above plus: Write a year round strength training program based on periodization concepts. **EXTENDED**

**SAMPLE INSTRUCTIONAL ACTIVITY**

Hand out information on muscle groups utilized to perform certain weight training activities. Have the students pick ten exercises they wish to incorporate into their program and list the primary mover for each exercise.

**VIII. APPENDIX**

**RESISTANCE TRAINING SYSTEMS**

Knowledge of the various systems is of value in manipulating training variables to bring about optimal gains in strength or hypertrophy. The indefinite use of one program leads to plateaus in progress and over training. Optimal gains in strength or muscular hypertrophy are achieved by mixing these various training programs and manipulating the training variables appropriately.

The following systems were reviewed in the book by Fleck and Kraemer, “Designing Resistance Training Programs.” (Taken from a manual written by Mike Burgener, “Strength and Conditioning Manual.”)

**SINGLE SET SYSTEM:**
The single set system, the performance of each exercise for one set, is one of the oldest resistance training programs. The single set system consists of using one set to failure which would be with enough resistance for 8 to 12 repetitions. The single set system is still quite popular and recommended by one of the leading manufacturers of resistance training equipment (Nautilus).

**MULTIPLE SET SYSTEM:**
The multiple set system for training consists of two to three warm-up sets of increasing resistance: This is followed by several sets at the same resistance, generally the 10 RM. The majority of training systems are some variations of a multiple set system.
BULK SYSTEM:
The bulk system refers specifically to a multiple set system of three sets of five to six repetitions per exercise. The bulk system has turned out to be one of the effective systems in bringing about increases in static strength of the back and legs.

LIGHT TO HEAVY SYSTEM:
As the name implies the light to heavy system entails progressing from light to heavy resistances. It consists of performing a set of three to five reps with a relatively light resistance. Five to ten pounds are then added to the bar and another set of three to five reps are performed. This is continued until only one repetition is performed. This is an excellent and effective way of increasing back and leg static strength.

HEAVY TO LIGHT:
The heavy to light system is a reversal of the light to heavy system. In this system, after a brief warm-up, the heaviest set is performed first and for each succeeding set the resistance is lowered. The research to date, through sparse, favors a heavy to light system over a light to heavy system in producing strength gains.
TRIANGLE PROGRAMS:
Triangle or pyramid programs are used by many lifters. A complete triangle starts with a set at a light resistance of ten to 12 reps. The resistance is then increased over several sets so that fewer and fewer repetitions can be performed until only a one repetition maximum is performed. Then, over several sets, the resistance is decreased in the reverse manner it was increased: The session finishes with a set of ten to twelve repetitions.

SUPER SET SYSTEM:
Super setting has evolved into two distinct but similar types of programs. One program uses several sets of two exercises for the same body part but two groups of antagonistic muscles. The second type of super setting uses one set of several exercises in rapid succession for the same muscle group or body part.

CIRCUIT PROGRAM:
Circuit programs consist of a series of resistance training exercises that are performed one after the other with minimal rest (15-30 seconds) between exercises.

PERIPHERAL HEART ACTION SYSTEM:
The peripheral heart action is a variation of circuit training. A training session using this system is divided into several sequences. A sequence is a group of five or six exercises, each for a different body part being trained. Eight-twelve reps are performed per exercise. Short rest periods are maintained. An example of PHA is:

<table>
<thead>
<tr>
<th>Body Part</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chest</td>
<td>Bench Press</td>
<td>Incline</td>
<td>Declines</td>
<td>Flies</td>
</tr>
<tr>
<td>Back</td>
<td>Lat pulldowns</td>
<td>Seated</td>
<td>bent over rows</td>
<td>T-bar rows</td>
</tr>
<tr>
<td>Shoulders</td>
<td>Press</td>
<td>Uprt row</td>
<td>Lat. Raise</td>
<td>Ftr. Rse</td>
</tr>
<tr>
<td>Legs</td>
<td>Squat</td>
<td>Leg ext.</td>
<td>Leg curt</td>
<td>Lunges</td>
</tr>
<tr>
<td>ABS</td>
<td>Sit-ups</td>
<td>Leg raise</td>
<td>Crunches</td>
<td>V-ups</td>
</tr>
</tbody>
</table>

Each number indicates a sequence. Each sequence is performed in circuit fashion three times before moving on to the next sequence.

TRI-SET SYSTEM:
The tri-set is similar to the peripheral heart action system in that it incorporates groups of exercises. Normally three sets of each exercise are performed. The workout consists of three exercises for each body part with little or no rest between sets.

MULTI-POUNDAGE SYSTEMS:
The trainee performs four or five reps at a four or five RM resistance. The spotters then remove twenty or forty pounds from the bar. Another four or five reps are performed. This procedure is continued for several sets.

CHEAT SYSTEM:
The cheat system involves breaking strict form of the exercise. The object of cheating is to allow the use of heavier weights which will cause the muscle to contract with force closer to maximal. Beware of this system as injury potential is quite high. Beginning trainees should not use the cheat system without first solidifying the base of your training program.

SPLIT ROUTINE SYSTEM:
Various body parts are trained on alternate days. A typical split routine entails training of arms, legs and abs on Monday, Wednesday, and Friday. Chest, shoulders, and back are trained on Tuesday, Thursday, and Saturday.

BLITZ PROGRAM:
The blitz program is a variation of the split routine system. Rather than training several body parts during each training session, only one body part is trained per training session. An example of a blitz training program would be: train arms, chest, legs, trunk, back and shoulder exercises on Monday, Tuesday, Wednesday, Thursday, Friday and Saturday, respectively.

ISOLATED EXERCISE SYSTEM:
The isolated exercise system devotes an entire training session to a single exercise. An example of exercises for four different training sessions would be bench press, squat, arm curls, and upright rows. On Monday only the bench press is performed, Tuesday – the squat, Wednesday - the arm curl, etc. etc.

EXHAUSTION SET SYSTEM:
Sets to exhaustion can be incorporated into any training system. An example of the exhaustion system would be as follows: Three sets of bench presses, the first set is a warm-up, the next two sets are to failure or exhaustion.

FORCED REPETITION SYSTEM:
After a set of exhaustion has been performed training partners assist the trainee by lifting the resistance just enough to allow the trainee to force out three to four additional repetitions.

SUPER PUMP SYSTEM:
Proponents of the super pump system believe that advanced body builders need to perform fifteen to eighteen sets for each body part per training session in order to achieve the muscular development desired. To achieve this high number of sets anywhere from one to three exercises are performed per muscle group per session.