

COURSE SYLLABUS
Southeast Missouri State University

Department of: Health, Human Performance, and Recreation **Course No.** HL 345

Course Title: Resistance Training Principles and Practices **New:** Spring 2003

Department Approved: September 12, 2002
College Council Approved: November 7, 2002

I. Catalog Description and Credit Hours of Course: The scientific principles of resistance training and strength/power with emphasis on applications for improving health and performance. (3)

II. Prerequisites:

HL 331 or consent of instructor

III. Course Objectives: Upon completion of the course the student will be able to:

- A. Apply the four principles of training as they apply to resistance training.
- B. Demonstrate appropriate resistance training exercises and techniques for supervision of those exercises.
- C. Design appropriate resistance training programs for the improvement of general fitness in apparently healthy populations.
- D. Design appropriate resistance training programs for year-round conditioning of athletes participating in a variety of sports.
- E. Design appropriate skill related exercises for development of balance, power, and speed for athletes participating in a variety of sports.
- F. Explain the procedures and precautions for application of resistance training programs in frail and elderly populations, osteoarthritic individuals, individuals with osteoporosis, obesity, hypertension, and other high risk populations.
- G. Understand the effects that supplements/ergogenic aids have on performance.

IV. Expectations of the Student:

- A. Each student will complete all examinations and assignments.
- B. Each student will complete all laboratory exercises.
- C. Each student will complete all out of class reading and research assignments.

V. Course Content:	Hours
A. The Principles of Training	1
1. Progression	
2. Specificity	
3. Overload	
4. Reversibility	
B. Physiological Adaptations to Anaerobic Training	4
1. Muscular	
a. Hypertrophy and Force Production	
b. Energy Production Capacity of the Muscle	
c. Specific Fiber Type Adaptations	
C. Resistance Training and Spotting Techniques	6
1. Equipment	
a. Body Weight Exercises	
b. Free Weights	
c. Variable Resistance Machines	
d. Isokinetic Equipment	
2. Exercise and Spotting Technique	
a. Upper Body Exercises	
b. Lower Body Exercises	
c. Explosive Lifts	
D. Resistance Training Programming for General Fitness	10
1. Exercise Selection	
2. Training Intensity and Frequency	
3. Special Populations	
E. Resistance Training Programming for Performance Enhancement	12
1. Training Protocol	
2. Exercise Selection	
3. Training Intensity and Frequency	
4. Periodization	
F. Training for Power, Speed, and Agility	6
1. Plyometric Training	
2. Speed Training	
3. Agility Training	
G. Supplement/Ergogenic Aid Use for Performance Enhancement	6
1. Creatine Monohydrate	
2. Anabolic Steroids	
3. Chromium Piccolonate	
4. Protein/Amino Acid Supplementation	

5. High Protein Diets
6. Sodium Bicarbonate
7. Current Trends in Supplement Use

Total Hours: 45

VI. Textbook:

Baechle, T.R. and Earle, R.W. (Eds.) (2001). *Essentials of Strength Training and Conditioning* (2nd edition). Champaign, IL: Human Kinetics.

Additional Resources:

American Association of Cardiovascular and Pulmonary Rehabilitation. (1999). *Guidelines for Cardiac Rehabilitation and Secondary Prevention Programs* (3rd ed.). Champaign IL: Human Kinetics.

American College of Sports Medicine (1987). Position Stand: The use of anabolic-androgenic steroids in sports. *Medicine and Science in Sports and Exercise*, 19, 534-539.

American College of Sports Medicine (1995). Position Stand: Osteoporosis and exercise. *Medicine and Science in Sports and Exercise*, 27, i-vii.

American College of Sports Medicine (1998). Position Stand: Exercise and physical activity for older adults. *Medicine and Science in Sports and Exercise*, 30, 992-1008.

American College of Sports Medicine (1998). Position Stand: The recommended quantity and quality of exercise for developing and maintaining cardiorespiratory and muscular fitness, and flexibility in adults. *Medicine and Science in Sports and Exercise*, 30, 975-991.

American College of Sports Medicine. (2001). *ACSM's Resource Manual for Guidelines for Exercise Testing and Prescription* (4th ed.). Baltimore: Lippincott Williams & Wilkins.

American College of Sports Medicine (2002). Position Stand: Progression models in resistance training for healthy adults. *Medicine and Science in Sports and Exercise*, 34, 364-380.

Conley, M.S. & Rozenek, R. (2001). Health aspects of resistance exercise and training. *Strength and Conditioning Journal*, 23, 9-23.

Faigenbaum, A.D., W.J. Kraemer, B.Cahill, J. Chandler, J. Dziados, L.D. Elfrink, E. Forman, M. Gaudiose, L. Micheli, M. Nitka, & S. Roberts (1996). Position Statement: Youth resistance training. *Strength and Conditioning*, 18, 62-76.

National Strength and Conditioning Association (1985). Position Statement: Use and abuse of anabolic steroids. *National Strength & Conditioning Association Journal*, 7, 44–59.

National Strength and Conditioning Association (1993). POSITION STATEMENT: Explosive/Plyometric Exercises. *National Strength & Conditioning Association Journal*, 15, 16–19.

National Strength and Conditioning Association (1993). POSITION STATEMENT: Explosive Exercise and Training. *National Strength & Conditioning Association Journal*, 15, 6–15.

National Strength and Conditioning Association (2001). Strength and conditioning professional standards and guidelines. A supplement to *Strength and Conditioning Journal*.

National Strength and Conditioning Association (2002). *Code of Ethics*.
<http://www.nasca.com/publications/PosStatements.shtml>

VII. Basis for Student Evaluation:

Examinations	70%
Research Assignments	15%
Laboratory Assignments	15%