

**Bodybuilding Biology, Fitness, and Figure  
Basic Science to Complete Contest Preparation  
Presented by Shepard Strength  
and DC Ranch Village Health Club & Spa  
CEU'S approved: NSCA 1.3, ISSA 13.5, and ACE 1.1**

**Syllabus Lecture Outline**

**Saturday December 6<sup>th</sup> 08' 8am – 5pm Basic Science**

**8:00 am - 9:30 am**

**Psychology of Competitive Exhibition (Bodybuilding: The Physique Athlete) 1.5 hr**

Following this presentation the trainer should have an understanding of the mental aspects of the physique athlete: bodybuilders, fitness, and figure. This includes a discussion of the impact of advanced restrictive dieting on one's mental state. Communication skills, psychology of body image, body image disorder issues, and eating disorders conclude this section.

Outline

1. Common Denominator of Success...Pre-contest mental training
2. Motivational Theory for the Physique Athlete
3. Psychology of Communication for Trainer
4. Body Image Disorder
5. Post Competition Blues and Depression

**9:45 am - 12:00 Noon**

**Summary and Review of Relevant Human Anatomy and Physiology 2hr 15 min**

This section lays the scientific foundation and use of terminology essential for a discussion of the principals specific to exercise physiology and successful program design.

Outline

1. Homeostasis – Disease - Exercise
2. Chemistry and Biochemistry
3. The Cell
4. The Eleven Organ Systems

**1:00 pm - 3:50 pm**

**Summary and review of relevant Exercise Physiology 2hr 50 min**

An examination of aerobic, anaerobic, and resistance exercise adaptations following 8-10 weeks of training. This includes a summary and introduction to, stress adaptation response, specific aerobic response, specific anaerobic response, and specific resistance training exercise response.

Outline

1. Energy for Movement and Basics of Metabolism
2. Cardiorespiratory Function and Performance
3. Principles of Skeletal Muscle Adaptations

**4:00 pm - 5:00 pm**

**Introduction to Basic Human Nutrition and Metabolism 1 hr**

This presentation will give the attendee an understanding of eating, digestion, and absorption of nutrients. Included is optimum nutrition for the human along with basic dietary recommendations. This lecture will be expanded on Sunday at 8am.

Outline

1. Overview of the Digestive System
  - a. The Digestive Process
  - b. Basic Functional Concepts

**Sunday December 7<sup>th</sup> 08' 8am - 5pm Competition Preparation**

**8:00 am – 9:15 am**

**Completion of Basic Human Nutrition and Competition Dieting (1 hr 15 min)**

Nutrition and diet are the most debated and disagreed upon aspect of bodybuilding training and preparation. This presentation includes both simple methods and advanced theories of diet manipulation for both adipose tissue reduction and muscle mass development.

Outline

1. Nutrition
2. Metabolism
3. Diet Program Design

**9:30 am - 10:45 am**

**Aerobic and Anaerobic Exercise Program Design (1hr 15 min)**

What are the best training programs to bring about specific adaptations for this sport? Individual objectives include: periodization of training cycles, resistance exercise program design, aerobic and anaerobic exercise program design.

Outline

1. Aerobic Cardio Exercise: Sprint and Endurance Training Methods and Effects
2. Weight Resistance Exercise Training Methods and Effects

**11:00 am- 12:00 Noon**

**Supplements, Anabolic Steroids, and Ergogenic Aids (1hr)**

Can basic human physiology be altered or modified with supplements? An understanding of the biochemical mechanisms, possible benefits, risks, and associated consequences with the use of certain aids purported to increase muscle mass and decrease fat mass are presented.

Outline

1. General Information
2. Mechanisms of Action
3. Muscle Metabolism and Energy Sources
4. Stimulants
5. Anabolic Steroids

**1:00 pm -2:15 pm**

**Written Criteria for Competition Judging (1hr 15min)**

This section features judging. What is the written criteria for competition judging of muscularity, symmetry, and presentation? What are the judges looking for? How does scoring take place and how does the scoring process work?

Outline

1. Presentation
2. General Assessment
3. Muscular Development
4. Symmetry
5. Bodybuilding Mandatory Poses
6. Fitness Rules
7. Figure Division

**2:30 pm - 3:45 pm**

**Final Contest Preparation for Presentation (laboratory experience) (1hr 15min)**

Posing, tanning, and suit selection are the final aspects of presentation. Sample suits are on hand for observation. Attendees apply color, posing oil, practice posing, and go through the pre-judging process.

Outline

1. Mock Prejudging
2. Contest Color
3. Posing Suit Selection
4. Shaving
5. Final Pump Up
6. Oiling Up
7. Music Selection
8. What to Expect

**4:00 pm - 5:00 pm**

**Round Table Discussion (1hr)**

Invited panel guests to include contest promoters, current and former athletes in all categories of competition and current judges for a simple Q & A and discussion of the sport.

**Lead Instructor with Athletes to Assist**

Kevin Shepard MS, C.S.C.S., CPT, National NPC Judge Candidate, Adjunct Faculty Biology Department Phoenix College, Glendale College Fitness and Wellness Staff, and Personal Trainer.

## References

### Psychology

1. Brehm, B. *Understanding Social Physique Anxiety*. Fitness Management
2. Gavin, J. and Gavin, N. Psychology for Health Fitness Professionals. 1995 Human Kinetics, Champaign, IL.
3. Roberts, G. Motivation in Sport and Exercise. 1992 Human Kinetics, Champaign, IL.
4. Rosen, L, McKeag, D, Hough, D, and Curely, V. *Pathogenic weight control behavior in female athletes*. 14 (1): 79-86 1986.
5. Willis, F. *Body Dysmorphic Disorder*. Modern Drug Discovery (4) 2005
6. Willis, J. and Campbell, L. Exercise Psychology. 1992. Human Kinetics, Champaign, IL.

### Anatomy and Physiology

7. Marieb, E. Human Anatomy & Physiology 6<sup>th</sup> 2004 Person Benjamin Cummings.
8. Sherwood, L. Human Physiology from Cells to Systems 3<sup>rd</sup> 1997. Wadsworth Publishing Company. Belmont, CA.

### Exercise Physiology

9. Brooks, G., Fahey, T., and White, T. Exercise Physiology 2<sup>nd</sup> Human Bioenergetics and Its Applications 1996. Mayfield Publishing, Mountain View, CA.
10. Wilmore, J. and Costill, D. Physiology of Sport and Exercise. 1994 Human Kinetics Champaign, IL.

### Nutrition, Digestion, Absorption, and Fat Loss

11. Aceto, C. Instruction Book for Championship Bodybuilding 2<sup>nd</sup> Morris Publishing. Kearney, NE.
12. Berning, J. and Steen, S. Sports Nutrition for the 90s The Health Professionals Handbook. 1991. Aspen Publishers Inc, Gaithersburg, MA.
13. Marieb, E. Human Anatomy & Physiology 6<sup>th</sup> 2004 Person Benjamin Cummings. San Francisco, CA.
14. Whitney, E. and Hamilton, E. Understanding Nutrition 1984. West Publishing Company St. Paul MN.

### Supplements, Ergogenic Aids

15. Eichner, R., Knig, D., Myhal, M., Prentice, B., and Ziegenfuss, T. Muscle Builder Supplements. Sports Sciences Exchange Round Table 37. Gatorade Sports Science Institute vol (10) #3, 1999.
16. Embleton, P. and Thorne, G. Anabolic Primer. 1998. Muscle Mag International Mississauga, ON. Canada L4V 1E4
17. Di Pasquale, M. Drug Use & Detection in Amateur Sports 1984 M.G.D. Press, Warkworth, Ontario.
18. Llewellyn, W. Anabolics 6<sup>th</sup> Edition 2007. Body of Science. Juniper, FL.

19. Phillips, B. Sports Supplements Review 3<sup>rd</sup>.
20. Taylor, W. Anabolic Steroids and the Athlete. 1982. McFarland & Company Inc. Jefferson, N.C.

### **Exercise Program Design**

21. Alter, M. Flexibility: Sport Stretch 1990. Leisure Press Champaign, IL. Cosgrove, A. and Schuler, L. New Rules of Lifting 2006. Penguin Group. New York, NY.
22. Baechle, T and Earle, R Essentials of Strength Training and Conditioning. 2<sup>nd</sup> 2000. Human Kinetics, Champaign, IL.
23. Bompa, T. and Cornacchia, L. Serious Strength Training 1998 Human Kinetics Champaign, IL.
24. Fleck, S. and Kraemer, W. Designing Resistance Training Programs 1987. Human Kinetics Champaign, IL.
25. Hatfield, F Hardcore Bodybuilding A Scientific Approach. 1993. Contemporary Books. Chicago, IL.
26. Pearl, B. Key's to the Inner Universe Encyclopedia on Weight Training Vol. 1 1982 Bill Pearl Enterprise, Phoenix, OR.
27. Schwarzenegger, A. Encyclopedia of Modern Bodybuilding 1987. Simon & Schuster New York, NY.
28. Sisco, P and Ironman Magazine. Ironman's Ultimate Bodybuilding Encyclopedia. 1999. Contemporary Books. Chicago, IL.

### **Judging Criteria**

29. National Physique Committee Inc. (NPC) Code of Regulations. Pittsburgh PA.
30. National Physique Committee, National Judges Seminar. 2005 Jr. National Bodybuilding Championships. Chicago, IL.

### **Recommended Reading and Other Resources for Books and Information**

31. Human Kinetics Publishers (800) 747-4457
32. Magazines: Musclemag, Oxygen, Flex
33. Posing: Perfect Posing. [www.perfectmuscle.com](http://www.perfectmuscle.com)

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