**HPW 455: Scientific Principles of Strength, Conditioning & Exercise Technique**

**Instructor**: Kevin Kirschbaum MS, CSCS

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**Required Text and Material:**

**NSCA, Essentials of Strength and Conditioning 4th Edition**

NSCA The Basics of Strength & Conditioning Manual (PDF)

**Lecture: Monday, Wednesday & Friday 1pm Room: MCCH 146**

**Credits: 3**

**Course Description:** Students will begin in the classroom. A review of anatomy and physiology (muscular, neuromuscular, bone and connective tissue, cardiopulmonary); biomechanics; bioenergetics and metabolism, neuroendocrine physiology; physiological adaptations; anatomical, physiological and biomechanical differences of athletes; psychological techniques. Bi-weekly the class will be conducted in the Champions Hall Fitness Center, providing a coaching and teaching model for foundational exercises used in strength and conditioning. The utility and application of exercise progression from novice to complex movements, basic biomechanical concepts and teaching methods. Students will coach their classmates through movements identifying correct technique and progressions through coaching cues and constructive feedback. Students will research certifications through National Strength and Conditioning Association (NSCA), National Academy of Sports Medicine (NASM), and/or American College of Sport Medicine (ACSM). The course will prepare you to sit for Certified Strength and Conditioning Specialist, CSCS, Examination.

**Schedule**: Follow Canvas Weekly Schedule

**Practical/Applied:** Basics of Strength Training and Foundations of Coaching Lifts

Marshfield Clinic Champions Hall Fitness Center and Multi Activity Center

**Wednesday Movement Labs**

1. Bench Press/RDL
2. Front/Back Squat
3. High Pull from Hang Position/BB Bent over Row
4. Shoulder Press/Push Press/ Push Jerk
5. Deadlift/Pulls
6. Clean Progressions/Variations
7. Snatch Progressions/Variations
8. Rotation/Anti Rotation/Core Movements/Carries

**Demo Drills Assignment – Coach Us**

1. Identify Muscles Used in Movement  
2. Teach/Coach us how to do the Movement

a. Take in consideration:

i. Starting Position  
ii. Eccentric, Isometric and Concentric Phases  
iii. Ending Position

3. Regressions/Progressions

a. Using different implements, bodyweight, etc

Practical/Applied Competencies:

* Understand the anatomical, physiological, and safety concepts and terms related to the squat, bench press, push press, deadlift, power clean, power snatch, accessory lifts and movements in the Basics of Strength and Conditioning Manual and Foundations of Coaching Lifts
* Plyometric, Speed and Agility Drills
* Understand the utility and application of these movements
* Instruct lifters in proper exercise technique and use of progressions
* Identify technique errors in the performance of the movements
* Use and learn coaching cues to improve lifters’ performance of the movements

**Letter Grade Assignment:**

**Attendance and Participation**: For optimal learning to occur in this course you will need to attend required classes and participate. Therefore, please be prepared to engage in weekly class sessions, ask questions, share experiences, contribute to discussion, participate with an open mind, and challenge yourself. For every class missed after one, you will lose 10 points.

**Attendance/In Class Assignments 120 Points**

**Study Questions 120 Points**

**Application Questions 120 Points**

**Demo Drills 60 Points**

**Personal Periodization Plan 60 Points**

**Chapter Tests 240 Points**

**Mid Term Exam 80 Points**

**Final Exam 100 Points**

**Total 900 Points**

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|  |  | **A** | ≥93% | **A-** | 92.9-90% |
| **B+** | 89.9-87% | **B** | 86.9-83% | **B-** | 82.9-80% |
| **C+** | 79.9-77% | **C** | 76.9-73% | **C-** | 72.9-70% |
| **D+** | 69.9-67% | **D** | 66.9-60% | **F** | <60% |