**KINE 4600-001 Strength Development**

**Course Syllabus**

**Fall 2018**

**Instructors:** Christopher G. Vann, M.S. CSCS

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**Office hours:** By appointment

**Class schedule:** M, W, F 8:00am-8:50am

**Classroom:** Student Activities Ctr 241

 **Course description**: The primary intention of this course is for students to learn the scientific principles underpinning human strength development to better prepare athletes, clients, or patients for requisite force production tasks. Briefly, a general biomechanical and physiological basis of human force production will be presented. This introductory series of lectures will lead to an advanced discussion of the physiology of human adaptation to resistance exercise and eventual presentation of advanced methodology of resistance training programming to enhance human force production. Students are expected to possess a basic understanding of human anatomy and physiology. Further, previous courses in biology and chemistry are sure to enhance learning in this course but are not prerequisites. Some key outcomes of this course are described below.

1. To properly define strength and understand the general mechanisms by which humans produce force.
2. To possess a sufficient understanding of appropriate resistance exercises for specific situations and defend why those exercises should be employed.
3. To describe the scientific principles of the strength training process and be able to define and objectively apply them to training programming.
4. To understand the meaning of training periodization and integrate the scientific principles appropriately into a periodized model of resistance training.
5. To understand basic nutritional and supplemental strategies for enhancing the effects of resistance training in humans.

**Below, you will find a link to the recommended textbook for this course. This text is not required but is highly encouraged for those who desire to possess a more comprehensive understanding of the training process.**

***Scientific Principles of Strength Training, Israetel et al. , 2015***

 <http://store.jtsstrength.com/products/scientific-principles-of-strength-training>



**Additional recommended readings:**

* *Exercise Physiology: Theory and Application to Fitness and Performance.*Powers, S.; Howley, E. (2017, 10th Edition)*.*B & B Physical Education.
* *Essentials of Strength Training and Conditioning*. National Strength and Conditioning Association; Haff, G.; Triplett, T.; editors. (2016, 4th Edition). Champaign, IL; Human Kinetics.
* *Principles and practice of resistance training*. Stone, M. H.; Stone, M. E.;  Sands, W. A. (2007). Champaign, IL; Human Kinetics.
* *Periodization: Theory and Methodology of Training*(5th ed.). Bompa, T. O.; Haff, G. G. (2009). Champaign, IL; Human Kinetics.
* *The Art of Lifting & The Science of Lifting.* Nuckols, 2015. (can be purchased at: https://www.strongerbyscience.com/art-and-science/)
* *Science and Development of Muscle Hypertrophy.*Schoenfeld, B. (2016). Champaign, IL; Human Kinetics.
* *The Renaissance Diet.*Israetel, M. (2014). (can be purchased at: <https://renaissanceperiodization.com/shop/the-renaissance-diet/>)

**Advice from the Instructor**

* **This course assumes that you have had the foundational kinesiology courses of Exercise Physiology, Motor Learning and Performance, and Biomechanics of human movement. If you have not, you should make arrangements to increase study time to understand the concepts that will be presented over the coming semester.**
* **Although attendance is not required, it is highly recommended that you attend every class. Each week, a quiz will be given over discussed material at random. Exams will require most of the class when given, and you will be expected to know the material well to make an A in this course.**
* **I strongly desire for you to be a qualified professional and will expect you to possess the knowledge required to do so when you finish this course. My top priority is that you learn.**
* **It is not possible to do very well in this course without studying. Always feel free to ask questions during class and clarify any areas of confusion. Every 20 minutes, I provide a 5 minute break for you to use the restroom, stretch, or use your cellphone or laptop briefly (please don't take calls in the classroom). Thus, it is expected for you to pay attention for the 20 minute lecture intervals.**

**Specific recommendations**

**1.) Attend class.**

**2.) Review the previous class's lecture.**

**3.)** **Complete the recommended readings when mentioned in class and read each chapter in the recommended text, based on the course schedule.**

**4.) If assigned, actually read any posted articles for review assignments before completing any written review. That is, don't complete the written review without actually reading the material.**

**5.) Avoid cellphone and laptop use during class (except for using this technology for class purposes). Again, quizzes will be given at random.**

**Semester Grading Rubric**

**The grading model for this course will be determined by a class vote on the first day of class. If a tie occurs, I will be the deciding vote.**

 **OPTION 1:**

|  |  |  |
| --- | --- | --- |
| **Assignments** | **Description** | **Points** |
| **Quizzes** | **15 random quizzes** | **1 points each****(15 total)** |
| **Exams** | **3 exams** | **20 points each****(60 total)** |
| **Final Project** | **Microsoft Excel Training Programming Assignment** | **20 points** |
| **Participation** | **Class Participation** | **5 points** |
|   | **Total** | **100 points** |

**OR**

**OPTION 2:**

|  |  |  |
| --- | --- | --- |
| **Assignments** | **Description** | **Points** |
| **Quizzes** | **15 random quizzes** | **1 point each****(15 total)** |
| **Exams** | **4 exams** | **20 points each****(80 total)** |
| **Participation** | **Class Participation** | **5 points** |
|  | **Total** | **100 points** |

**Grading Scale**

|  |  |  |
| --- | --- | --- |
| **Letter Grade** | **Point Range** | **Percent Scale** |
| **A** | **90 - 100** | **90-100** |
| **B** | **80 - 89** | **80-89** |
| **C** | **70 - 79** | **70-79** |
| **D** | **60 - 69** | **60-69** |
| **F** | **< 60** | **<60** |

**Attendance and late-work policies**

Attendance is not required but is highly encouraged given that ~25% of his/her grade is obtained through random, in-class quizzes. If he or she were to miss a class due to a foreseen circumstance (e.g., wedding, funeral, etc.), then make-up quizzes or exams can be re-scheduled, **per communication with the instructor**. However, these must be scheduled within **one week** of the absence or these cannot be made up. A legitimate, written excuse must be provided.

For unforeseen circumstances (flat tire, car accident, overslept, etc.), it is his or her responsibility to contact the instructor as soon as possible and explain why class was missed. Make-up quizzes or exams for these absences will only be provided for medical-related issues or legitimate automobile issues. That is, make-up quizzes will not be provided for oversleeping or other illegitimate reasons. **If you are more than 10 minutes late for class and a quiz was given at the beginning of class, you will not be able to make up the quiz, excluding the extenuating circumstances mentioned above**. Again, these make-up quizzes can be scheduled within one week only. For any absences due to medical visits, a legitimate, written note from the medical institution is required for excuse.

**Disability Accommodations**

If you have not established learning accommodations through the Program for Students with Disabilities (PSD) office (1228 Haley Center, 844-2096), please contact me **as soon as possible** if accommodations need to be made due to learning and/or other disabilities. This should be taken care of the first week of class.

Also, please contact me for any accommodations necessary for class projects using Microsoft Office.

Finally, let me know if you have pertinent medical information that you need to share with me (e.g., cannot participate in weight-lifting laboratories due to prior injury, etc.).

**Academic Integrity Policy**

Students must adhere to the student academic honesty code Title XII found on the University Policies Page (<http://www.business.auburn.edu/~yostkev/teaching/finc3610/images/SGAHonorCode.pdf>). Cheating will not be tolerated.

**Additional Notes**

While unlikely, note that the instructor reserves the right to modify this course syllabus at any time.  However, students will receive verbal notification of such modification.

Breaks will be given every 20-25 minutes, therefore:

1.) Please do not sleep in class.

2.) Please do not text in class.

 The flow of the lectures, due to questions and quizzes, will determine exam dates. You will be given *at least*a one week notice to prepare for exams.

|  |  |  |  |
| --- | --- | --- | --- |
| Date | Topic | Location | Style |
| 8/20 | Intro and syllabus | STACT 241 | PPT |
| ***Intro to Strength Training: The Foundations*** |
| 8/22 | Thoughts and perspectives on Strength | STACT 241 | PPT |
| 8/24 |  | STACT 241 | PPT |
| 8/27 | Weight Room: Squatting | STACT WR | Tutorial |
| 8/29 | Weight Room: Pressing | STACT WR | Tutorial |
| 8/31 | Weight Room: Pulling | STACT WR | Tutorial |
| 9/3 | Labor Day | STACT 241 |  |
| 9/5 | NO CLASS (conference) | STACT 241 | Reading |
| 9/7 | Exam 1 (ONLINE) | STACT 241 | Reading |
| ***Training Principles*** |
| 9/10 | Specificity | STACT 241 | PPT |
| 9/12 |  | STACT 241 |  |
| 9/14 |  | STACT 241 |  |
| 9/17 |  | STACT 241 |  |
| 9/19 | Overload | STACT 241 | PPT |
| 9/21 |  | STACT 241 |  |
| 9/24 |  | STACT 241 |  |
| 9/26 |  | STACT 241 |  |
| 9/28 | Fatigue Management/SRA | STACT 241 | PPT |
| 10/1 |  | STACT 241 |  |
| 10/3 |  | STACT 241 |  |
| 10/5 | Variation | STACT 241 | PPT |
| 10/8 | Phase Potentiation | STACT 241 | PPT |
| 10/10 | Individual Differences | STACT 241 | PPT |
| 10/12 | Exam 2 | STACT 241 |  |
|  |  |  |  |
| ***Performance Based Nutritional Recommendations*** |
| 10/15 | Protein | STACT 241 | PPT |
| 10/17 | Carbohydrates and Fats | STACT 241 | PPT |
| 10/19 | Timing | STACT 241 | PPT |
| ***Programming Concepts*** |
| 10/22 | Periodization Fundamentals | STACT 241 | PPT |
| 10/24 |  | STACT 241 |  |
| 10/26 | Hypertrophy | STACT 241 | PPT |
| 10/29 |  | STACT 241 |  |
| 10/31 |  | STACT 241 |  |
| 11/2 |  | STACT 241 |  |
| 11/5 |  | STACT 241 |  |
| 11/7 | Strength | STACT 241 | PPT |
| 11/9 |  | STACT 241 |  |
| 11/12 | NO CLASS (FALL BREAK) | STACT 241 |  |
| 11/14 |  | STACT 241 |  |
| 11/16 |  | STACT 241 |  |
| 11/19 | NO CLASS (Thanksgiving Break) | STACT 241 |  |
| 11/21 | NO CLASS (Thanksgiving Break) | STACT 241 |  |
| 11/23 | NO CLASS (Thanksgiving Break) | STACT 241 |  |
| 11/26 | Putting it all together | STACT 241 | PPT |
| 11/28 |  | STACT 241 |  |
| 11/30 |  | STACT 241 |  |
| 12/3 |  | STACT 241 |  |
| 12/5 | EXAM 4 | STACT 241 |  |
| 12/7 | Final Questions and thoughts | STACT 241 |  |