Queen's University
School of Kinesiology and Health Studies

Course Name: **KNPE 345/3.0** The Science and Methodology of Sport Training Conditioning Programs.	**Course Instructor:** Mr. Colin McAuslan Mr. Evan Karagiozov	**Contact Hours:** Lecture 2 x 1.5 hours/wk / 12 weeks Lab 1 x 1.5 hours/wk / 12 weeks
		Prerequisite: Level 3 or above in a KINE Plan and KNPE 227/3.0 **Corequisite:** KNPE 254/3.0
		Exclusion:

Course Description:

This course offers students the opportunity to apply their foundational knowledge of anatomy, exercise physiology and biomechanics to strength and conditioning principles and programming. Designed for students seeking to enhance their understanding of the role of exercise professionals in high-performance athlete development, students will explore foundational strength and conditioning methods during hands-on laboratory experiences. Students will develop their ability to conduct performance assessments and coach high performance athlete development training programs.

Course Texts:

Recommended but non-mandatory:
Essentials of Strength and Conditioning: 4th Edition. National Strength and Conditioning Association. G.G. Haff and N.T. Triplett. ISBN-13:9781492514152

Materials will be available through onQ.

Learning Outcomes:

To complete this course, students will demonstrate their ability to:

- Apply anatomy, exercise physiology and biomechanics knowledge to human movement, athletic development and strength and conditioning programs.
- Describe the different professional pathways for exercise professionals and define the scope of practice for personal trainers, strength and conditioning coaches and sports medicine professionals.
- Select, administer, and interpret appropriate tests and measurements to assess athletic performance and areas for improvement and/or training.
- Demonstrate the ability to safely and effectively coach resistance training exercises by providing appropriate cues, progressions and regressions to key movement patterns.
- Understand and integrate periodization training models into strength and conditioning programs.

Course Evaluation:

Readings and Quizzes	20%
Assignment #1	30%
Final Exam	30%
Practical Assessment	20%

• Use sports performance technologies to develop and monitor individualized training programs.	

Course Outline	
Introduction, Course Outline, Expectations, Group Assignments, Professional Pathways	Anaerobic Training: Acceleration and Sprinting
Applications of the Exercise Sciences	Anaerobic Training: Change of Direction and Agility
Warmups: RAMP Warmup	Periodization Models
Stretching and Mobilization	Building a Training Program
Client Pre-Screening, Assessments	Yearly Training Plans and Performance Planning
Testing Parameters	Mobility, Flexibility, and The RAMP Warmup System
Sport Specific Testing and Normative Data	The Functional Movement Screen / Sport Testing
Resistance Training Principles: Movement Patterns, Spotting, Exercise Selection	Knee Dominant Movement Patterns
Resistance Training: Putting It Into Practice	Push and Pull Movement Patterns
Power Development Principles, Plyometrics, and Non-traditional Power Development Modalities	Hip Dominant Movement Patterns
Olympic Lifting	Olympic Lifting, Power Development, and Velocity Based Training
Velocity Based Training: The Force Velocity Curve, Exercise Selection and Technology	Aerobic and Anaerobic Energy System Development
Energy System Development	Practical Assessments
Aerobic and Anaerobic Energy System Development	