*The VIU community acknowledges and thanks the Snuneymuxw, Quw’utsun, Tla’amin, Snaw‑naw‑as and Qualicum First Nation on whose traditional lands we teach, learn, research, live and share knowledge.*

# Course Outline

Exercise Physiology

KIN 302 S23N01 and N02

September 5, 2023 – December 8, 2023

|  |  |
| --- | --- |
| Instructor name: | Louis Mattar |
| Phone number: | 250-753-3245 x 2493 |
| Email address: | [Louis.Mattar@viu.ca](mailto:Louis.Mattar@viu.ca) |
| Office Hours: | *Eg: Thursday 1-4pm* |
| Office Location: | Building 356 Room 223 |

|  |  |
| --- | --- |
| Class Times: | Lecture: N01 and N02 – Friday 1:00pm – 3:00pm  Labs: N01 – Tuesday 1:00pm – 3:00pm  N02 –Thursday 1:00pm – 3:00pm |
| Class Location: | Lecture: Building 356 Room 240  Lab: Building 356 Room 242 |
| Delivery Mode: | Face to Face |

## Calendar Description

An investigation of the acute and chronic effects of exercise on body systems. Emphasis will be placed on the adaptations occurring in the metabolic, cardiovascular, respiratory, and muscular systems in responses to physical activity and exercise.

## Course Description

**Exercise saves lives**. You might be saying “DUH Louis, everyone knows that exercise is good for you!” You are probably thinking of the way that exercise can help maintain a healthy body weight, or how it improves cardiovascular or muscular fitness. These aspects of exercise are some of the ways that exercise is medicine, and this course will examine them.

Exercise physiology builds upon your KIN 220 – Human Physiology foundation and outlines the way that exercise and other forms of physical activity affect the cells, tissues and systems of the body. We are going to examine the effects that exercise has on the metabolic processes, the acute and chronic effects on the cardiorespiratory and muscular systems. Finally, we will examine the role that exercise training has on performance

**THE ATTENDANCE POLICY:**

Attendance in the lecture **will not be taken** beyond the second week of class. That said, your **attendance and participation are critical** for success in this course. You will be accountable to your teammates throughout the term, other teams during class discussions, and yourself. Missing class will severely affect your ability to do well in this course and will likely anger your teammates. If you miss any assessment by not attending, there is **no chance** to make them up unless you made arrangements with Louis ***beforehand***. These include class activities, lab data collection and reflections, iRATs, tRATs and exams.

Lab is a mandatory component of the course so attendance will be recorded every week. In accordance with Kinesiology policy, students who are absent from class for **four hours** without prior approval or instructor consent will not be able to write the final exam and will not be able to participate in the second midterm examination.

## Prerequisites and Corequisites

Third-year standing and one of the following pairs: KIN 201/220 or BIOL 156/157.

## Learning Outcomes

By the end of this course students will be able to:

* Calculate metabolic variables related to exercise and estimate the oxygen demand for various exercises and activities
* Explain the short-term (acute) physiological responses that occur with the initiation of exercise
* Describe the accumulated (chronic) physiological adaptations that occur with prolonged exposure to exercise
* Describe the principles of training and develop an understanding of how they impact the adaptations seen in response to both acute and chronic exercise
* Identify and explain sites of fatigue and how they impact performance

## Course Learning Materials

* Exercise Physiology handbook (custom courseware). I have chosen an e-text version and have some hard copied of previous versions available. Any changes from past to current versions have been supplemented with readings
* Any Anatomy and Physiology textbook used in KIN 201 – Human Anatomy or KIN 220 – Human Physiology
* Readings, Videos, Discussions and more will also be assigned and distributed throughout the term

## Evaluation and Assessment

1. RATs: Both your iRATs and tRATs will be part of this grade 15%
2. Assignments: Some minor assignments will be done in class and as homework 10%
3. Reflections: Reflections and visual abstracts on lab demonstrations 15%
4. Tests: Two tests will be administered throughout the term 40%
5. Team Performance: A portion of your grade will be determined by your teammates 10%
6. Professionalism: Assessed by Louis throughout the semester 10%

100%

**THE GRADING SCHEDULE:**

PERCENTAGE GRADE

90 & ABOVE A+

85 – 89.9 A

80 – 84.9 A-

PERCENTAGE GRADE

76 – 79.9 B+

72 – 75.9 B

68 – 71.9 B-

PERCENTAGE GRADE

64 – 67.9 C+

60 – 63.9 C

55 – 59.9 C-

50 – 54.9 D

49.9 and below F

Course not completed due to unofficial withdrawal. UW

An incomplete Grade form is required to support an "I" grade. I

## Schedule

Note: The syllabus and the following schedule are a work in progress and are subject to change. Changes will be announced in class. Students will be held responsible for all changes.

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| --- | --- | --- | --- |
| **Week** | **Date** | **Session Information** | **Evaluation** |
| 1 | Sept 5/7 – Lab | **Sequence 0**: Intro to TBL, team formation; HR & BP | Sequence 0 RAT  **Friday, Sept 8th** |
| Sept 8 – Lecture | **Sequence 0 RAT**  Bloom’s Taxonomy & “class contract” |
| 2 | Sept 12/14 – Lab | **Sequence 1**: Metabolism Review and Metabolic Calculations | Sequence 1 RAT  **Friday, Sept 15th** |
| Sept 15 – Lecture | **Sequence 1 RAT**  **Sequence 1**: Exercise Metabolism |
| 3 | Sept 19/21 – Lab | **Sequence 1**: Exercise Metabolism | Metabolic Calculations  Due **Sunday, Sept 24th** |
| Sept 22 – Lecture | **Sequence 1**: Exercise Metabolism (Assign readings) |
| 4 | Sept 26/28 – Lab | **Sequence 1**: Exercise Metabolism and  Lab Demonstration Prep | Demonstration 1 Reflection  Due **Sunday, Oct 1st** |
| Sept 29 – Lecture | **Lab Demonstration 1**: Anaerobic Power – The Wingate Test |
| 5 | Oct 3/5 – Lab | **Sequence 2**: Background Review – **Q n’ A** | Sequence 2 RAT  **Friday, Oct 6th** |
| Oct 6 – Lecture | **Sequence 2 RAT**  **Sequence 2**: Acute Cardiorespiratory Adaptations |
| 6 | Oct 10/12 – Lab | **Sequence 2**: Acute Cardiorespiratory Adaptations |  |
| Oct 13 – Lecture | **Sequence 2**: Acute Cardiorespiratory Adaptations  (Assign readings) |
| 7 | Oct 17/19 – Lab | **Sequence 2**: Acute Cardiorespiratory Adaptations and  Lab Demonstration Prep??? | Demonstration 2 Reflection  Due **Sunday, Oct 22nd** |
| Oct 20 – Lecture | **Lab Demonstration 2**: Oxygen deficit, Steady State and EPOC |
| 8 | Oct 24/26 – Lab | **Midterm prep** – **Q n’ A** | Midterm 1  **Friday, Oct 27th** |
| Oct 27 – Lecture | **Midterm 1** |
| 9 | Oct 31/Nov 2 – Lab | **Sequence 3:** Background Review – **Q n’ A** | Sequence 3 RAT  **Friday, Nov 3rd** |
| Nov 3 – Lecture | **Sequence 3 RAT**  **Sequence 3**: Chronic Cardiorespiratory Adaptations  (Assign readings) |
| 10 | Nov 7/9 – Lab | **Sequence 3**: Chronic Cardiorespiratory Adaptations  Lab Demonstration Prep??? | Demonstration 3 Reflection  Due **Sunday, Nov 12th** |
| Nov 10 – Lecture | **Lab Demonstration 3**: VO2 Max and Blood Lactate |
| 11 | **Nov 13-17** | **Study Days – No Classes** |  |
| 12 | Nov 21/23 – Lab | **Sequence 4**: Background Review – **Q n’ A** | Sequence 4 RAT  **Friday Nov 24th** |
| Nov 24 – Lecture | **Sequence 4 RAT** |
| 13 | Nov 28/30 – Lab | **Sequence 4:** Muscular Adaptations and Factors Affecting Performance |  |
| Dec 1 – Lecture | **Sequence 4:** Muscular Adaptations and Factors Affecting Performance (Assign readings) |
| 14 | Dec 5/7 – Lab | **Sequence 4:** Muscular Adaptations and Factors Affecting Performance  Lab Demonstration Prep??? | Demonstration 4 Reflection  Due **Sunday, Dec 10th** |
| Dec 8 – Lecture | **Lab Demonstration 4**: Feedback and Fatigue |

## Accessibility

Vancouver Island University recognizes its legal duty to provide educational opportunities that

enable students with a documented disability to access courses, programs, facilities, and

services.

The Policy and Procedural Guidelines apply to all students who have identified themselves to

the institution as having a documented disability who are inquiring about, applying to, or

registered in credit or non-credit courses in both on and off-campus programs.

* [Policy 32.02 - Services Available to Students with a Documented Disability](https://isapp.viu.ca/PolicyProcedure/docshow.asp?doc_id=21112)

## Academic Integrity

Integrity in academic work is a central element of learning and is the basis of intellectual pursuits in any academic community. It is also your responsibility to abide by the Student Conduct Code and Student Academic Code of Conduct.

* [Academic Integrity](https://learningmatters.viu.ca/ready-set-go/academic-integrity)

## University Policies, Standards, and Guidelines

* [University Policies](https://gov.viu.ca/policies-and-procedures)
* [Freedom of Information and Protection of Privacy](https://gov.viu.ca/fippa/access-information-and-records#:~:text=The%20FIPPA%20requires%20VIU%20to,for%20access%20to%20personal%20information.)
* [Student Conduct and Care (SCC)](https://www.viu.ca/registration/general-regulations#codeofconduct)
* [Student Academic Code of Conduct](https://international.viu.ca/sites/default/files/academic_code_of_conduct.pdf)
* [Student Affairs](https://services.viu.ca/)
* [Academic Regulations](https://www.viu.ca/registration/general-regulations)
* [Equity, Diversity, and Inclusion (EDI)](https://ciel.viu.ca/pages/equity-diversity-and-inclusion)

## Resources

* [Kinesiology](https://education.viu.ca/kinesiology)
* [VIULearn](https://learn.viu.ca/d2l/loginh/)
* [Library](https://library.viu.ca/)
* [Academic Advising](https://services.viu.ca/advising)
* [Writing Centre](https://services.viu.ca/writing-centre)
* [Math Learning Centre](https://scitech.viu.ca/math-learning-centre)

* [Services for Aboriginal Students](https://indigenous.viu.ca/services-aboriginal-students)
* [Counseling Services](https://services.viu.ca/counselling)
* [Accessibility](https://services.viu.ca/accessibility-services)
* [Registration](https://www.viu.ca/registration)
* [VIU Students’ Union](https://www.viusu.ca/)