ACKNOWLEDGEMENT

UBC’s Point Grey Campus is located on the traditional, ancestral, and unceded territory of the xʷməθkʷəy̓əm (Musqueam). The land it is situated on has always been a place of learning for the Musqueam people, who for millennia have passed on their culture, history, and traditions from one generation to the next on this site.

COURSE INFORMATION

<table>
<thead>
<tr>
<th>Course Title</th>
<th>Course Code Number</th>
<th>Credit Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Advanced Exercise Physiological Assessment</td>
<td>KIN 500H</td>
<td>3</td>
</tr>
</tbody>
</table>

PREREQUISITES

Students should have a strong background in exercise physiology and some experience performing exercise physiological assessments with general, clinical, and/or athletic populations.

KIN 562: Bioenergetics of Physical Activity is a prerequisite for this course. The course structure and assessments of learning will be similar. The content in this course (500H) is also a continuation from KIN 562.

CONTACTS

<table>
<thead>
<tr>
<th>Course Instructor(s)</th>
<th>Contact Details</th>
<th>Office Location</th>
<th>Office Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Josh Bovard, PhD(c), MSc, CSEP-CEP</td>
<td><a href="mailto:josh.bovard@ubc.ca">josh.bovard@ubc.ca</a></td>
<td>Zoom</td>
<td>-As specified in the schedule below</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>-By appointment</td>
</tr>
</tbody>
</table>

Please include “KIN 500H” in the subject line of all email communication.

General questions about course material should be posted as discussion topics on Canvas rather than sent via email. Attempting to teach or explain material over email can be difficult and ineffective. If you have detailed questions about course material or concepts, questions should be addressed in person (e.g., during or after synchronous sessions). Email should be used for a limited number of reasons, such as scheduling meeting times, in cases of emergency (e.g., that may cause you to miss an exam), or situations otherwise detailed in class. It may take up to 5 working days to respond to your email during the week and emails will not be checked on weekends. Please keep these in mind around important dates (e.g., assignment due dates).

COURSE DESCRIPTION AND STRUCTURE
Advanced Exercise Physiological Assessment (KIN 500H) Syllabus

This course will progress through the theory and methods for 5 different parts of an exercise physiology assessment. It will start with the preparticipation evaluation and consultation on movement behaviours. Then, asynchronous content on body composition and movement & muscular fitness testing will focus on indications and considerations for testing. Lastly, the majority of the course will detail the many aspects of aerobic exercise testing. The asynchronous content will be complemented by in-class discussions focusing on applying the theory and methods to case studies.

General schedule: The course will consist of asynchronous and synchronous.

There is ~1.5-3 hours of asynchronous learning content associated with each week of the course. This content will be posted as the course progresses.

Synchronous sessions (i.e., classes) will be typically ~2 hours (with breaks). They will take place on Zoom unless otherwise specified. A Zoom link will be provided at the start of the course (see the “Zoom” section on Canvas). These sessions will not be recorded.

You are required to attend all classes. You are responsible for all material covered in synchronous and asynchronous sessions and any information given whether in attendance or not. You are also responsible for getting your own notes, as well as information pertaining to changes in the course outline, readings, assignments, and information related to lectures. Please note that attendance will be recorded at the beginning of each class.

SCHEDULE OF TOPICS

<table>
<thead>
<tr>
<th>Week</th>
<th>Date</th>
<th>Synchronous content</th>
<th>Asynchronous content</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>January 6</td>
<td>NO CLASS – enjoy your winter holiday break!</td>
<td>Preparticipation evaluation</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>“General information and presentations” survey to be completed by January 13 (6:00pm). Presentation topics to be posted after.</td>
</tr>
<tr>
<td>2</td>
<td>January 13</td>
<td>Discussion: Syllabus review; Introductions; Indications for exercise physiological assessment</td>
<td>Movement behaviours</td>
</tr>
<tr>
<td>3</td>
<td>January 20</td>
<td>NO CLASS</td>
<td>Body composition</td>
</tr>
<tr>
<td>4</td>
<td>January 27</td>
<td>Case studies &amp; discussion: Preparticipation evaluation, movement behaviours</td>
<td>Movement &amp; muscular fitness testing</td>
</tr>
</tbody>
</table>

University of British Columbia Updated May 31, 2024
<table>
<thead>
<tr>
<th></th>
<th>Date</th>
<th>Topic</th>
<th>Lecture Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>February 3</td>
<td>NO CLASS</td>
<td>Aerobic exercise testing: non-exercise estimation, submaximal test</td>
</tr>
<tr>
<td>6</td>
<td>February 10</td>
<td><em>Case studies &amp; discussion:</em> movement &amp; muscular fitness testing</td>
<td>Aerobic exercise testing: maximal exercise test (preparation and administration)</td>
</tr>
<tr>
<td>7</td>
<td>February 17</td>
<td>NO CLASS – BC Family Day &amp; MIDTERM BREAK Feb 17-21</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>February 24</td>
<td><em>Case studies &amp; discussion:</em> body composition</td>
<td>Aerobic exercise testing: exercise ECG</td>
</tr>
<tr>
<td>9</td>
<td>March 3</td>
<td>NO CLASS</td>
<td>Aerobic exercise testing: maximal exercise test (interpretation)</td>
</tr>
<tr>
<td>10</td>
<td>March 10</td>
<td><em>Case studies &amp; discussion:</em> aerobic exercise testing</td>
<td>Aerobic exercise testing: cardiopulmonary exercise test (CPET) – VO\textsubscript{2\text{MAX}}, thresholds, and efficiency/economy</td>
</tr>
<tr>
<td>11</td>
<td>March 17</td>
<td>NO CLASS</td>
<td>Aerobic exercise testing: cardiopulmonary exercise test (CPET) – clinical</td>
</tr>
<tr>
<td>12</td>
<td>March 24</td>
<td><em>Case studies &amp; discussion:</em> aerobic exercise testing</td>
<td>Aerobic exercise testing: from bench to beside</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td><em>Population-specific assessment presentations due Friday, March 28 at 11:59pm</em></td>
</tr>
<tr>
<td>13</td>
<td>March 30</td>
<td><em>Case studies &amp; discussion:</em> aerobic exercise testing</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>OR</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td><em>(to be confirmed) Guest lecture:</em> CPET experiences from the field</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>April 7</td>
<td><em>Discussion:</em> Population-specific assessment presentation Q&amp;A; course wrap-up, final thoughts, and main takeaways</td>
<td><em>Knowledge translation assignment</em> due Friday, April 11 at 11:59pm.</td>
</tr>
</tbody>
</table>
LEARNING OUTCOMES

**General aims and outcomes:** The primary learning objective is for students to gain a greater understanding of the theoretical and methodological considerations for performing exercise physiological assessments in research, clinical, and/or athletic settings. The point of the course is *not* to become proficient with hands-on assessment skills. Instead, the intended outcome is to appreciate (1) how each assessment aspect can be applied to various settings, (2) when it may be appropriate to perform each assessment aspect, and (3) why the outcome assessed depends on the method used.

**“Big picture” questions:**

1. Based on what you have learned in this course, how would you approach performing a preparticipation evaluation in your setting/practice?
2. Based on what you have learned in this course, how would you approach assessing movement behaviours in your setting/practice?
3. Based on what you have learned in this course, how would you approach assessing and interpreting body composition in your setting/practice?
4. Based on what you have learned in this course, how would you approach assessing and interpreting movement & muscular fitness in your setting/practice?
5. Based on what you have learned in this course, how would you approach assessing and interpreting aerobic fitness in your setting/practice?

LEARNING MATERIALS

**Course text:** No specific textbook is mandatory; however, students may benefit from having access to clinical exercise physiology textbooks for reference, such as:

Advanced Exercise Physiological Assessment (KIN 500H) Syllabus

Brukner & Khan’s Clinical Sports Medicine. McGraw-Hill Education. 2017 (5th edition, although recent previous editions may suffice; while both volumes may be beneficial, volume 2 will likely be more beneficial than volume 1)


Canvas: Information about this course, asynchronous content, presentation slides, important reminders, and other reading and course notes will be posted on Canvas. Please check the site regularly, as you are responsible for the information posted to Canvas. Course notes will provide an overview of learning material but may not include all details and examples covered in asynchronous and synchronous sessions.

ASSESSMENTS OF LEARNING

| Applications & prescription project | 40% |
| Knowledge translation assignment | 10% |
| Performance | 10% |
| Final exam | 40% |

**the assessment of learning is subject to change**

Specific breakdown:

Population-specific assessment project  Each student will present on a population that may be encountered in a clinical, athletic, or research setting (e.g., a heart failure patient or an elite hockey player). A list of populations will be provided on Canvas; however, if you want to present on a population not listed, please contact the course instructor. Similar to KIN 562, students will select preferences through the “General information and presentations” survey, with topics announced shortly thereafter. Initial resources may be provided in the list of populations, but you are not confined to these resources. You can include visual aids from these resources, presentation slides shown in class, or other sources including your own creation if you wish. It will be helpful for other students if you reference the original source of the content, as appropriate.

Presentations will be 20 minutes, recorded virtually and submitted on Canvas by the due date specified in the schedule of topics. It should include background information about the population. It should then largely focus on evidence-based assessment, clearly applying the content presented in the course. For example, if your population is heart failure, it may be pertinent to focus on a clinical CPET. Alternatively, if your population is elite hockey players, it may be pertinent to focus on movement and muscular fitness testing. Evidence-based considerations, interpretation, and (if applicable) intervention should be included.
In association with the presentation slides, each student will create a knowledge translation resource as well as 5 multiple choice questions related to the topic. The knowledge translation resource should be included in the 20-minute presentation (i.e., at the end, after the summary/key takeaways slide). As applicable, please save your presentation slides and knowledge translation resource as separate PDFs and email these to the course instructor to be posted on Canvas for the benefit of your classmates and fair assessment. The multiple choice questions will be uploaded as separate documents for the (1) questions and (2) answers on the “Population-specific assessment review questions” discussion.

Each presentation will be made available on Canvas for the benefit of your classmates and fair assessment. The project will be worth 40 marks, as follows:

- **Quality of slides presented** (10 marks) – the slides are clear, concise, and provide reference to appropriate source materials (including references on slides, which is essential for tables and figures and used as appropriate for text). Please include slide numbers on each slide. Any abbreviations are introduced during their initial use. When images and tables are presented, they are thoroughly explained (e.g., introduce the axes and legends for images, rows and columns for tables, abbreviations, etc.). As appropriate, text and information is introduced sequentially to effectively guide the observer through the information (e.g., using animations or an effective alternative). Content on slides is discussed, and presenters speak to the audience and content (instead of reading notes ad verbatim). Try to avoid slides with lots of text that are “static”; i.e., text takes a long time to go through without animations, text/figures, or interaction with the content (further to this, keep in mind that slides with lots of text can make it difficult for the audience to align what they are reading with what you are saying). If you aren’t able to take the time to appropriately describe the table, figure, or text, then it should not be included. **If generative AI is used, an appendix should detail what tool(s) were used, how they were used, and how the results from the AI were incorporated into the submitted work. This includes detailing content produced by an artificial intelligence tool, and the prompt used to generate the content. The appendix should be in the slide deck (it could consist of many slides), but it does not need to be presented.**
- **Organization of presentation** (10 marks) – the presentation follows a logical structure, with a clear flow from background to assessment to interpretation and intervention. There should be an “Overview” (or “Learning outcomes” or similar) slide at the beginning of the presentation that is referred to throughout the remainder of the presentation to guide the observer through the main sections of your presentation. Where
helpful, sections can be numbered or colour-coded (e.g., Section 1 – xxx, Section 2 – yyy, etc.). Additionally, include 1-2 summary slides at the end of the presentation that appropriately captures the key takeaways from the presentations (note, summary slides summarize information; this is not the time to introduce new information) – i.e., if you could only share one slide (or two), what key background and application takeaways would you put on it? Lastly, an appropriate number of slides should be used (e.g., “1-minute, 1-slide” for each slide with content). Marks may be deducted if the presentation is too short (e.g., <15 minutes) or long (e.g., >25 minutes). So, practice, practice, practice!

- **Description of appropriate physiological mechanisms** (10 marks) – relevant theoretical and methodological considerations are discussed in detail and clearly explained, demonstrating an integration of course content (as appropriate). As necessary, operational definitions are provided.

- **Knowledge translation resource** (7 marks) – to enhance your ability to work with these populations, you will create a knowledge translation resource such as an infographic (e.g., using Canva or slidesgo). You are not limited to infographics, and can use other creative ways to translate knowledge such as a short digital whiteboard video (e.g., using VideoScribe) or a 1-page “cheat sheet”. As stated above, you should present your knowledge translation resource within the 20 minutes, following your summary slide. Please ensure all parts are reviewed effectively in the allotted time.

- **Quality of multiple choice questions** (3 marks) – clearly-worded multiple choice questions integrate material throughout the presentation. All options should appear plausible, but only one is correct. While not required, combining multiple questions into a case study can be beneficial.

During the last synchronous session, there will be a panel-style question and answer period. Panels will be ~10-15 minutes and consist of ~4-5 students per panel. This will provide the opportunity to ask questions about each presentation.

**Knowledge translation assignment**

This course will cover many detailed and complex assessments. However, as future researchers, clinicians, and sports scientists, effectively understanding how to apply these assessments in practice is essential. Thus, for this assignment you will provide a 1-3 paragraph answer to each of the "big picture" questions presented in the **Learning Outcomes** above. The answers may be point form or paragraph style. Each question is worth 5 points.

The assignment will be completed on Canvas and due at the end of the semester (due date indicated in the **Schedule of Topics**). After the submission date, de-identified answers can be posted (if desired) for the benefit of your classmates.
Advanced Exercise Physiological Assessment (KIN 500H) Syllabus

Performance

Attendance, Professionalism, and Participation, will be assessed on an ongoing basis throughout the term, as below. Near the end of the term, students will submit a self-assessment (with justification) of their performance through Canvas. These self-assessments will be reviewed and a final performance mark provided.

- **Attendance (2.5%)** – attendance will be recorded at the start of each class, and unexcused absences will be deducted
- **Professionalism (2.5%)** – punctuality, preparation, respectful language, responsibility for actions
- **Participation (5%)** – engagement in discussions, enthusiasm, initiative, proactive work ethic
- **Note that there is not one specific definition of “participation”. Instead, course participation varies by student. You have the opportunity to advocate for your performance, but you will need to provide evidence and examples to support your self-assessment.**

Final exam

The final exam will be 40 marks total, consisting of 40 multiple choice questions (1 mark each). Format and content will be similar to KIN 562, with questions grouped into “case studies” as possible. The exam will incorporate both asynchronous and synchronous content, as the synchronous sessions will provide context for applying and interpreting assessments in practice. The exam may include questions about the population-specific assessment topics presented. The exam will be completed on Canvas. The exam will be available for ~5 days. Once you start the exam, you will have 150 minutes to complete it.

GRADING SYSTEM – FACULTY OF GRADUATE AND POSTDOCTORAL STUDIES
A minimum mark of 68% must be obtained in all courses taken by a student enrolled in a doctoral program.

The minimum passing grade in any course taken by a student enrolled in a master's program is 60%. However, only 6 credits of courses with grades in the C to C+ range (60-67%) may be counted towards a master's program. For all other courses, a minimum of 68% must be obtained.

Academic progress and grading practices are outlined on G+PS policies and procedures website.

UBC POLICY ON PLAGIARISM

All students should be aware of and follow UBC’s Guidelines regarding Plagiarism. Please read and familiarize yourself with these guidelines. These policies are taken seriously by course instructors and program administrators.

POLICY ON LATE ASSIGNMENTS

Students are required to notify instructors at least 24 hours in advance if they are unable to meet deadlines for assignments. Students must then negotiate with the instructor a reasonable deadline for completion of course work.

ETHICAL AND PROFESSIONAL CONDUCT
Students are expected to adhere to standards of professional practice and ethics in their interactions with faculty, peers, and the public.

UNIVERSITY POLICIES

UBC provides resources to support student learning and to maintain healthy lifestyles but recognizes that sometimes crises arise and so there are additional resources to access including those for survivors of sexual violence. UBC values respect for the person and ideas of all members of the academic community. Harassment and discrimination are not tolerated nor is suppression of academic freedom. UBC provides appropriate accommodation for students with disabilities and for religious observances. UBC values academic honesty and students are expected to acknowledge the ideas generated by others and to uphold the highest academic standards in all of their actions. Details of the policies and how to access support are available on the UBC Senate website and Discrimination policy. For student accommodations, please see Access and Diversity.

ACADEMIC INTEGRITY

Students are expected to follow UBC policies for academic integrity and academic misconduct, which includes practices around plagiarism, referencing and citation, and copyright. For more see, UBC’s Learning Commons Academic Integrity resources and graduate student misconduct in Graduate and Postdoctoral Studies.

GENERATIVE AI

Students are permitted to use artificial intelligence tools, including Generative AI (GenAI), to gather information, review concepts, or help produce assignments. Before using tools like GenAI, review UBC’s guide on GenAI.

Students are ultimately accountable for the work they submit. Any content generated or supported by an artificial intelligence tool must be cited appropriately (see the UBC Library guide). Additionally, students must submit an appendix with their assignment detailing what tool(s) were used, how they were used, and how the results from the AI were incorporated into the submitted work. This includes detailing content produced by an artificial intelligence tool, and the prompt used to generate the content. Course instructors reserve the right to ask students to explain their process for creating their assignment.

Use of AI tools is not permitted during quizzes and exams in this course.

If students are unclear about the use of AI tools or applications for coursework, please speak with the instructor.

POLICY ON TEXT-MATCHING SOFTWARE
UBC subscribes to Turnitin, an online system that compares written material with the Web and with other material submitted to its database. Faculty, staff and students can upload submissions and check for duplication of material in other sources and possible plagiarism.

**ACCESSIBILITY**

If you have any challenges accessing materials that will impact your success in this course, UBC’s Centre for Accessibility can support your needs by providing appropriate accommodations to support you.

- Web: [UBC’s Centre for Accessibility website](#)
- Email: accessibility@ubc.ca

**RESOURCES**

Students requiring counselling services may contact [UBC counselling services](#)

**COPYRIGHT**

All materials of this course (course handouts, lecture slides, assessments, course readings, etc.) are the intellectual property of the Course Instructor or licensed to be used in this course by the copyright owner. Redistribution of these materials by any means (e.g., posting on Course Hero) without permission of the copyright holder(s) constitutes a breach of copyright and may lead to academic discipline. It is not permitted to record classes.