



**UNIVERSITY OF CALGARY**  
**FACULTY OF ARTS**  
**SCHOOL OF CREATIVE AND PERFORMING ARTS**  
**DNCE 363 Dance Science**  
**Winter 2021**

Instructor Office Email Office Hours	Sarah Kenny PhD KNB 246; CHD 529 kennys@ucalgary.ca By appointment
Days/Times Location of class	Learning will occur in two ways: 1. Synchronous — in real-time on zoom <b>Wednesdays from 800 – 950am.</b> 2. Asynchronous — on own time during the week
Learning resources	<p><b>Required Texts</b> (available for purchase at Campus Bookstore; OR online with your UCalgary credentials via ProQuest <a href="#">here</a>)</p> <ol style="list-style-type: none"> <li>1. Simmel, L. (2014). Dance medicine in practice. London: Routledge.</li> </ol> <p><b>Recommended Texts</b></p> <ol style="list-style-type: none"> <li>1. Bean, A. (2014). Food for fitness: How to eat for maximum performance (4th ed). London: Bloomsbury Sport.</li> <li>2. Clippinger, K. (2015). Dance anatomy and kinesiology (2<sup>nd</sup> ed.). Champaign: Human Kinetics.</li> <li>3. Calais-Germain, B. (1993). Anatomy of movement. Seattle: Eastland Press.</li> <li>4. Farhi, D. (1996). The breathing book. New York: Henry Holt.</li> <li>5. Grossman, G. (2015). Dance science: Anatomy, movement analysis, conditioning. Hightstown: Princeton Book Company.</li> <li>6. Haas, J. (2010). Dance anatomy. Champaign: Human Kinetics.</li> <li>7. Howse, J., &amp; McCormack, M. (2009). Anatomy, dance technique and injury prevention (4th ed.). London: Bloomsbury Publishing PLC.</li> <li>8. Koutedakis, Y., &amp; Sharp, N. C. C. (1999). The fit and healthy dancer. Chichester: Wiley.</li> <li>9. Krasnow, D., &amp; Wilmerding, M. V. (2015). Motor learning and control for dancers. Champaign: Human Kinetics.</li> <li>10. Laws, K., &amp; Sugano, A. (2008). Physics and the art of dance: Understanding movement (2nd ed.). New York: Oxford University Press, Inc.</li> <li>11. Mastin, Z. (2009). Nutrition for the dancer. Alton: Dance Books.</li> <li>12. Olsen, A. (1998). Body stories: A guide to experiential anatomy. New York: Station Hill Openings.</li> <li>13. Quin, E., Rafferty, S., &amp; Tomlinson, C. (2015). Safe dance practice. Champaign: Human Kinetics.</li> <li>14. Solomon, R., Solomon, J., &amp; Micheli, L. J. (Eds.) (2017). Prevention of injuries in the young dancer. Cham: Springer.</li> <li>15. Taylor, J., &amp; Estanol, E. (2015). Dance psychology for artistic and performance excellence (2nd ed). Champaign: Human Kinetics.</li> <li>16. Thomas, J., Nelson, J., Silverman, S. (2015). Research methods in physical activity (7th ed). Champaign: Human Kinetics.</li> </ol>

	<p>17. Wilmerding, M. V., &amp; Krasnow, D. (2017). <i>Dancer wellness</i>. Champaign: Human Kinetics.</p> <p><b>Dance Science Journals</b>  Journal of Dance Medicine and Science  Medical Problems of Performing Artists  IADMS Resource Papers, Bulletins for Teachers  IADMS Online Bibliography: <a href="https://iadms.knack.com/bibliography">https://iadms.knack.com/bibliography</a></p>
Learning technologies	<p>There is a D2L site for this course which contains required readings and other relevant class resources and materials (see d2L.ucalgary.ca).</p> <p>In order to successfully engage in your learning experiences, you are required to have reliable access to the following technology:</p> <ul style="list-style-type: none"> <li>• a computer with a supported operating system, as well as the latest security, and malware updates</li> <li>• a current and updated web browser</li> <li>• webcam (built-in or external)</li> <li>• microphone and speaker (built-in or external) or headset with microphone</li> <li>• current antivirus and/or firewall software enabled</li> <li>• broadband internet connection</li> </ul> <p>Most current laptops will have a built-in webcam, speaker and microphone.</p>
Prerequisites	Dance 235 and Kinesiology 259 or Dance 359 & two of Dance 205, 207, 209, 211, 221.
Course description	<p>The scientific study of dance and the practical application of scientific principles to dance practice.</p> <p>This course will develop knowledge, comprehension, application and evaluation of:</p> <ul style="list-style-type: none"> <li>• dance movement analysis (i.e., structure, function, role of gravity)</li> <li>• biomechanics (i.e., terminology, musculoskeletal system, postural assessment)</li> <li>• physiology (i.e., neuromuscular system, respiratory system, energy system)</li> <li>• nutrition (i.e., energy sources, hydration, somatotypes, female athlete triad)</li> <li>• psychology (i.e., motivation, confidence, psychological skills)</li> <li>• somatics (i.e., kinaesthetic awareness, movement efficiency, breath patterns)</li> <li>• safe dance practice (i.e., risk identification, injury prevention, injury management)</li> <li>• scientific research (i.e., design, methodology, quantitative, qualitative)</li> </ul>
Course learning outcomes	<p>By the completion of this course, successful students will be able to:</p> <ol style="list-style-type: none"> <li>1. explain the principles of kinesiology (i.e., anatomical and biomechanical organization) that underline the performance of human movement</li> <li>2. conduct a comprehensive movement analysis of a dance phrase</li> <li>3. reflect on the application of kinesiology to their own dance practice</li> <li>4. integrate issues of health and safety into their own dance practice</li> <li>5. describe biomechanical, physiological, nutritional, and psychological concepts relevant to dance</li> <li>6. compare different research designs and scientific methodologies</li> <li>7. present a dance science research proposal (literature review, objective, research plan, significance)</li> </ol>

	8. defend the importance of scientific research and its application to a dancer's training, performance enhancement, health and wellness, and injury prevention
Course schedule	See below. Note that our weekly outline may be subject to change.
Assessment components	<p><u>Assignment 1: Participation</u>  Value: 10% of final grade  Description: A participation grade will be awarded for attending each online class, being prepared to work, and being fully engaged in class (e.g., note taking, participating in discussions during lectures). The completion of various weekly tasks (e.g., keeping a food diary, sharing journal articles, contributing to forums on D2L) is also included.</p> <p><u>Assignment 2: Self Profile Essays</u>  Value: 60% of final grade; four essays worth 15% each (4 x 15% = 60%)  Due on D2L: <b>By 800am on specified dates</b>  Type: Written essay  Length: Three pages each  Description: The Self Profile Essays will address personal observations made throughout the semester that are specific to the following topics: physiology, nutrition, psychology, and somatics. Rather than try to change anything, you will simply observe and reflect upon the impact that your observations have had on your current dance training. Content will include: (1) an introduction to the topic as it relates to dance practice, (2) a description of what you have observed in yourself, (3) discussion of how this observation translates or applies to your dancing, and (4) specific recommendations for continued personal improvement in your dance practice, specific to your observation. Relevant literature (including research papers and textbooks) will be cited within your essay and a reference list will be included.</p> <p>Each essay will be handed in at the beginning of class (8:00am). Essay Due Dates:</p> <ol style="list-style-type: none"> <li>1. Physiology – Wed Feb 10 2021</li> <li>2. Nutrition – Wed Feb 24 2021</li> <li>3. Psychology – Wed Mar 10 2021</li> <li>4. Somatics – Wed Mar 24 2021</li> </ol> <p>Assessment Criteria  By the completion of this assessment, successful students will be able to:</p> <ul style="list-style-type: none"> <li>• describe and analyze a personal observation(s) using appropriate anatomical and scientific terminology</li> <li>• discuss the impact of this personal observation(s) on current/previous dance practice (e.g., training, performing, teaching)</li> <li>• formulate detailed and relevant recommendations for improved healthy dance practice in relation to personal observation(s)</li> <li>• support ALL discussion points with relevant, current dance science literature (i.e., minimum 4 references inclusive of 2 primary sources)</li> <li>• write a clear and coherent three-page essay with an introduction, body, and conclusion that is free from grammatical and spelling errors</li> </ul> <p><u>Assignment 3: Research Proposal</u>  Value: 30% of final grade  Due on D2L: <b>By 800am on Wed April 7 2021</b>  Type: Individual Structured Abstract (10%); Recorded Group Oral Presentation (20%)</p>

	<p>Length: Abstract – 350 words; Presentation – 10min</p> <p>Description: You will be required to work together in partners to propose a specific dance science research project. The proposal will be referred to in future tense (i.e., will, will be). With reference to material covered in class, current dance science literature and an understanding of scientific methodology, you will discuss why you think this particular research project is necessary (background, objective) and how it could be implemented (research plan – participants, procedures, analysis). The conclusion (significance) will explain the impact that your project will have on future dance practice and dance science research as a whole.</p> <p>Your research proposal will be assessed in the following ways:</p> <ol style="list-style-type: none"> <li>1. Individually, each student will write and submit a 350-word structured abstract of the proposal</li> <li>2. Together, the group will pre-record a video (via Yuja or Zoom) of an oral presentation of the research proposal</li> <li>3. Participation in a Question and Answer Discussion Board on D2L</li> <li>4. Self-evaluation of overall presentation</li> </ol> <p>Assessment Criteria</p> <p>By the completion of this assessment, successful students will be able to:</p> <ul style="list-style-type: none"> <li>• provide rationale for a proposed research project</li> <li>• clearly state a research objective(s)</li> <li>• design a feasible and appropriate research plan to execute the proposed project</li> <li>• explain the overall significance of the proposed research</li> <li>• follow standard scientific framework</li> </ul> <p>Specific to individual structured abstract:</p> <ul style="list-style-type: none"> <li>• write a clear, well-formatted 350-word structured abstract that is free from grammatical and spelling errors</li> </ul> <p>Specific to group oral presentation:</p> <ul style="list-style-type: none"> <li>• present effectively (i.e., coherent PowerPoint slides (or equivalent), clear speaking, eye contact, easeful transitions between group members)</li> <li>• answer questions and expand ideas as required</li> </ul>
<p>Assessment expectations</p>	<p><u>Expectations for Attendance and Participation:</u> Please refer to the Undergraduate Calendar E.3 Attendance for details.</p> <p><u>Expectations for Writing</u> Writing skills are important to academic study across all disciplines. Consequently, instructors may use their assessment of writing quality as a factor in the evaluation of student work. Please refer to the Undergraduate Calendar E.2 Writing Across the Curriculum policy for details.</p> <p><u>Guidelines for Submitting Assignments</u> All required assignments (i.e., self profile essays, research proposal) will be due on D2L by the specified dates and times.</p> <p><u>Guidelines for Formatting Assignments</u> Self Profile Essays: You will put a title, your name and UCID on a cover sheet. The body of the essay will be at maximum three pages, single sided, 1.5 spaced, 12-point</p>

	<p>font, with default margins. A separate reference page will complete the essay with a minimum of 4 references that follow the formatting structure of the Journal of Dance Medicine and Science (on D2L). These references will include at least 2 primary resources (i.e., original research studies).</p> <p>Research Proposal:  Individual Structured Abstract – You will put a title, your name and UCID on a cover sheet. The structured abstract will follow standard scientific framework (i.e., background, rationale, objective, research plan – participants, procedures, analysis – and significance). It will be at maximum 350 words, 1.5 spacing, 12-point font, with default margins.</p> <p>Group Oral Presentation – Your 10-minute video will consist of an oral presentation of a potential dance science research project will follow standard scientific framework (i.e., background, objective, research plan – participants, procedures, analysis – and significance). You will be prepared to answer questions from your peers that will be posted on our D2L Discussion Board.</p> <p><u>Missed or Late Assignments</u>  Late assignments will not be accepted beyond the day that it is due. If submitted after deadline, then your grade will be affected by as much as 10%. Pending extenuating circumstances, late submissions will be accepted via email under the pretenses that up to 2% will be deducted each day beyond the due date. Late submissions beyond 5 days will not be accepted.</p>
Grading scale	<p>For the course as a whole, letter grades should be understood as follows, as outlined in the section F.1.1 Grading System and Transcripts of the Calendar:  <a href="https://www.ucalgary.ca/pubs/calendar/current/f-1.html">https://www.ucalgary.ca/pubs/calendar/current/f-1.html</a></p> <p>A grade of "C-" or below may not be sufficient for promotion or graduation, see specific faculty regulations.  The number of "D" and "D+" grades acceptable for credit is subject to specific undergraduate faculty promotional policy.</p> <p>For DNCE 363, the following numerical rubric will be applied:  A+ 96-100    A 91-95    A- 86-90  B+ 81-85    B 76-80    B- 71-75  C+ 66-70    C 61-65    C- 56-60  D+ 51-55    D 46-50    F 0-45</p>
Guidelines for Zoom Sessions	<p>Zoom is a video conferencing program that will allow us to meet at specific times for a “live” video conference, so that we can have the opportunity to meet each other virtually and discuss relevant course topics as a learning community.</p> <p>To help ensure Zoom sessions are private, do not share the Zoom link or password with others, or on any social media platforms. Zoom links and passwords are only intended for students registered in the course. Zoom recordings and materials presented in Zoom, including any teaching materials, must not be shared, distributed or published without the instructor’s permission.</p> <p>The use of video conferencing programs relies on participants to act ethically, honestly and with integrity; and in accordance with the principles of fairness, good faith, and respect (as per the <a href="#">Code of Conduct</a>). When entering Zoom or other video conferencing sessions (such as MS Teams), you play a role in helping create an effective, safe and respectful learning environment. Please be mindful of how your behaviour in these sessions may affect others.</p>

	<p>Participants are required to use names officially associated with their UCID (legal or preferred names listed in the Student Centre) when engaging in these activities. Instructors/moderators can remove those whose names do not appear on class rosters. Non-compliance may be investigated under relevant University of Calgary conduct policies (e.g. <a href="#">Student Non-Academic Misconduct Policy</a>). If participants have difficulties complying with this requirement, they should email the instructor of the class explaining why, so the instructor may consider whether to grant an exception, and on what terms. For more information on how to get the most out of your zoom sessions visit: <a href="https://elearn.ucalgary.ca/guidelines-for-zoom/">https://elearn.ucalgary.ca/guidelines-for-zoom/</a>.</p> <p>If you are unable to attend a Zoom session, please contact your instructor to arrange an alternative activity for the missed session (e.g., to review a recorded session). Please be prepared, as best as you are able, to join class in a quiet space that will allow you to be fully present and engaged in Zoom sessions. Students will be advised by their instructor when they are expected to turn on their webcam (for group work, presentations, etc.).</p> <p>The instructor may record online Zoom class sessions for the purposes of supporting student learning in this class – such as making the recording available for review of the session or for students who miss a session. Students will be advised before the instructor initiates a recording of a Zoom session. These recordings will be used to support student learning only and will not be shared or used for any other purpose.</p>
Academic Accommodation	<p>It is the student’s responsibility to request academic accommodations according to the University policies and procedures listed below. The Student Accommodations policy is available at <a href="https://ucalgary.ca/student-services/access/prospective-students/academic-accommodations">https://ucalgary.ca/student-services/access/prospective-students/academic-accommodations</a>.</p> <p>Students needing an accommodation based on disability or medical concerns should contact Student Accessibility Services (SAS) in accordance with the Procedure for Accommodations for Students with Disabilities (<a href="https://www.ucalgary.ca/policies/files/policies/procedure-for-accommodations-for-students-with-disabilities.pdf">https://www.ucalgary.ca/policies/files/policies/procedure-for-accommodations-for-students-with-disabilities.pdf</a>). Students who require an accommodation in relation to their coursework based on a protected ground other than Disability should communicate this need in writing to their Instructor.</p> <p>SAS will process the request and issue letters of accommodation to instructors. For additional information on support services and accommodations for students with disabilities, visit <a href="http://www.ucalgary.ca/access/">www.ucalgary.ca/access/</a>.</p>
Academic integrity, plagiarism	<p>Academic Misconduct refers to student behavior which compromises proper assessment of a student’s academic activities and includes: cheating; fabrication; falsification; plagiarism; unauthorized assistance; failure to comply with an instructor’s expectations regarding conduct required of students completing academic assessments in their courses; and failure to comply with exam regulations applied by the Registrar.</p> <p>For information on the Student Academic Misconduct Policy and Procedure please visit: <a href="https://ucalgary.ca/policies/files/policies/student-academic-misconduct-policy.pdf">https://ucalgary.ca/policies/files/policies/student-academic-misconduct-policy.pdf</a> and <a href="https://ucalgary.ca/policies/files/policies/student-academic-misconduct-procedure.pdf">https://ucalgary.ca/policies/files/policies/student-academic-misconduct-procedure.pdf</a>. Additional information is available on the Academic Integrity Website at <a href="https://ucalgary.ca/student-services/student-success/learning/academic-integrity">https://ucalgary.ca/student-services/student-success/learning/academic-integrity</a>.</p>
Internet and electronic communication device	<p>The use of laptop and mobile devices is acceptable when used in a manner appropriate to the course and classroom activities. Please refrain from accessing websites and resources that may be distracting to you or for other learners during class time. Students are responsible for being aware of the University’s Internet and email use policy, which can be found at <a href="https://www.ucalgary.ca/policies/files/policies/electronic-communications-policy.pdf">https://www.ucalgary.ca/policies/files/policies/electronic-communications-policy.pdf</a></p>
Intellectual Property	<p>Course materials created by instructors (including presentations and posted notes, labs, case studies, assignments and exams) remain the intellectual property of the instructor. These materials may NOT be reproduced, redistributed or copied without the explicit consent of the instructor. The posting of course materials to third party websites such as note-sharing sites without permission is prohibited. Sharing of extracts of these course materials with other students enrolled in the course at the same time may be allowed under fair dealing.</p>

Copyright	All students are required to read the University of Calgary policy on Acceptable Use of Material Protected by Copyright ( <a href="http://www.ucalgary.ca/policies/files/policies/acceptable-use-of-material-protected-by-copyright.pdf">www.ucalgary.ca/policies/files/policies/acceptable-use-of-material-protected-by-copyright.pdf</a> ) and requirements of the copyright act ( <a href="https://laws-lois.justice.gc.ca/eng/acts/C-42/index.html">https://laws-lois.justice.gc.ca/eng/acts/C-42/index.html</a> ) to ensure they are aware of the consequences of unauthorised sharing of course materials (including instructor notes, electronic versions of textbooks etc.). Students who use material protected by copyright in violation of this policy may be disciplined under the Non-Academic Misconduct Policy <a href="https://www.ucalgary.ca/pubs/calendar/current/k.html">https://www.ucalgary.ca/pubs/calendar/current/k.html</a> .
Freedom of Information and Protection of Privacy	Student information will be collected in accordance with typical (or usual) classroom practice. Students' assignments will be accessible only by the authorized course faculty. Private information related to the individual student is treated with the utmost regard by the faculty at the University of Calgary.
Student Support	Please visit this link for important information on UCalgary's student wellness and safety resources: <a href="https://www.ucalgary.ca/registrar/registration/course-outlines">https://www.ucalgary.ca/registrar/registration/course-outlines</a>

**DNCE 363: Dance Science**  
**Online Course Schedule Winter 2021**

<b>Week</b>	<b>Dates</b>	<b>Wednesday. 800 – 950am</b>
<b>1</b>	Jan 13	Welcome to DNCE 363 online <b>Course Introduction:</b> Why is science important for dance?
<b>2</b>	Jan 20	<b>Research Methods:</b> Introduction; qualitative and quantitative, study design, structured abstracts
<b>3</b>	Jan 27	<b>Physiology:</b> Energy systems, components of fitness, fatigue <b>Reading</b> Simmel Ch 10, Ch 12; Bronner 2016 <b>Due</b> Structured Abstract to D2L
<b>4</b>	Feb 3	<b>Research Methods:</b> Literature search and retrieval strategies <b>Guest</b> Marc Stoeckle
<b>5</b>	FRIDAY Feb 12	<b>Nutrition:</b> Energy sources, specific needs of the dancer <b>Reading</b> Simmel Ch 9; Challis 2016 p1-10 <b>Guest</b> Kim Wagner Jones, RD <b>Due</b> Physiology Self Profile Essay 1; 3-day Food Diary
<b>6</b>	Feb 17	<b>TERM BREAK</b>
<b>7</b>	Feb 24	<b>Psychology:</b> Body image, burnout, self-care <b>Reading</b> Simmel Ch 8; Nordin-Bates 2014 <b>Guest</b> Dr. Angela Grace <b>Due</b> Nutrition Self Profile Essay 2
<b>8</b>	Mar 3	<b>Research Methods:</b> Principles of critical appraisal <b>Reading</b> Ekegren 2014
<b>9</b>	Mar 10	<b>Somatic Practice:</b> Kinaesthetic awareness, mental imagery, breath patterns <b>Reading</b> Nordin 2006; Batson 2009 <b>Due</b> Psychology Self Profile Essay 3; Critical appraisal to D2L
<b>10</b>	Mar 17	<b>Research Methods:</b> Graduate students to present research proposals
<b>11</b>	Mar 24	<b>Research Methods:</b> Structure of a scientific study, oral presentation skills <b>Due</b> Somatics Self Profile Essay 4
<b>12</b>	Mar 31	Group Tutorials; Guided study time
<b>13</b>	Apr 7	Reflection and Evaluation <b>Due</b> Wed Apr 7 by 8am: Research Proposal Presentations <b>Due</b> Thurs Apr 8 by 8am: Questions to peers' presentations <b>Due</b> Fri Apr 9 by 8am: Answers for peers' questions
<b>14</b>	Apr 14	Open Class