



UNIVERSITY OF CALGARY
FACULTY OF ARTS
SCHOOL OF CREATIVE AND PERFORMING ARTS
DNCE 363 Dance Science
Winter 2020

<p>Instructor Office Email Office Hours</p>	<p>Sarah Kenny PhD KNB 246; CHD 529 kennys@ucalgary.ca By appointment</p>
<p>Days Times Location of class</p>	<p>Wednesdays and Fridays 8:00 – 9:50am CHE 011 and CHE 012</p>
<p>Learning resources: required readings, textbooks and materials</p>	<p>DNCE 363 Course Blog https://library.ucalgary.ca/guides/dance/courseblog/dnce-363-dance-science Marc Stoeckle, Dance Librarian mstoeckle@ucalgary.ca</p> <p>Required Texts (available for purchase at Campus Bookstore)</p> <ol style="list-style-type: none"> 1. Simmel, L. (2014). Dance medicine in practice. London: Routledge. 2. Clippinger, K. (2015). Dance anatomy and kinesiology (2nd ed.). Champaign: Human Kinetics. <p>Recommended Texts</p> <ol style="list-style-type: none"> 1. Bean, A. (2014). Food for fitness: How to eat for maximum performance (4th ed). London: Bloomsbury Sport. 2. Mastin, Z. (2009). Nutrition for the dancer. Alton: Dance Books. 3. Calais-Germain, B. (1993). Anatomy of movement. Seattle: Eastland Press. 4. Farhi, D. (1996). The breathing book. New York: Henry Holt. 5. Grossman, G. (2015). Dance science: Anatomy, movement analysis, conditioning. Hightstown: Princeton Book Company. 6. Haas, J. (2010). Dance anatomy. Champaign: Human Kinetics. 7. Howse, J., & McCormack, M. (2009). Anatomy, dance technique and injury prevention (4th ed.). London: Bloomsbury Publishing PLC. 8. Koutedakis, Y., & Sharp, N. C. C. (1999). The fit and healthy dancer. Chichester: Wiley. 9. Krasnow, D., & Wilmerding, M. V. (2015). Motor learning and control for dancers. Champaign: Human Kinetics. 10. Laws, K., & Sugano, A. (2008). Physics and the art of dance: Understanding movement (2nd ed.). New York: Oxford University Press, Inc. 11. Olsen, A. (1998). Body stories: A guide to experiential anatomy. New York: Station Hill Openings. 12. Quin, E., Rafferty, S., & Tomlinson, C. (2015). Safe dance practice. Champaign: Human Kinetics. 13. Solomon, R., Solomon, J., & Micheli, L. J. (Eds.) (2017). Prevention of injuries in the young dancer. Cham: Springer. 14. Taylor, J., & Estanol, E. (2015). Dance psychology for artistic and performance excellence (2nd ed). Champaign: Human Kinetics.

	<p>15. Thomas, J., Nelson, J., Silverman, S. (2015). Research methods in physical activity (7th ed). Champaign: Human Kinetics.</p> <p>16. Wilmerding, M. V., & Krasnow, D. (2017). Dancer wellness. Champaign: Human Kinetics.</p> <p>Dance Science Journals Journal of Dance Medicine and Science Medical Problems of Performing Artists IADMS Resource Papers, Bulletins for Teachers IADMS Online Bibliography: https://iadms.knack.com/bibliography</p> <p>Dance Health Blogs http://www.iadms.org/blogpost/1177934/General http://www.4dancers.org/category/4dancers/dance-wellness/</p>
Prerequisites	Dance 235; and Kinesiology 259/Dance 359; and two of Dance 205, 207, 209, 211, 221.
Supplementary fees	None.
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"> • dance movement analysis (i.e., structure, function, role of gravity) • biomechanics (i.e., terminology, musculoskeletal system, postural assessment) • physiology (i.e., neuromuscular system, respiratory system, energy system) • nutrition (i.e., energy sources, hydration, somatotypes, female athlete triad) • psychology (i.e., motivation, confidence, psychological skills) • somatics (i.e., kinaesthetic awareness, movement efficiency, breath patterns) • safe dance practice (i.e., risk identification, injury prevention, injury management) • scientific research (i.e., design, methodology, quantitative, qualitative) <p>Classes will involve both lecture and studio-based activities. In each class, we will be moving, talking, and/or taking notes. Observation and hands on work will facilitate the exploration of ideas. Please take care of your own comfort and dress appropriately.</p>
Course learning outcomes	<p>By the completion of this course, successful students will be able to:</p> <ol style="list-style-type: none"> 1. explain the principles of kinesiology (i.e., anatomical and biomechanical organization) that underline the performance of human movement 2. conduct a comprehensive movement analysis of a dance phrase 3. reflect on the application of kinesiology to their own dance practice 4. integrate issues of health and safety into their own dance practice 5. describe biomechanical, physiological, nutritional, and psychological concepts relevant to dance 6. compare different research designs and scientific methodologies 7. present a dance science research proposal (literature review, objective, research plan, significance) 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.

<p>Assessment components</p>	<p><u>Assignment 1: Participation</u> Value: 10% of final grade Description: A participation grade will be awarded for arriving to class on time, being prepared to work, and being fully engaged in class (e.g., involvement in experiential work, note taking, and engaging 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. Marks will be deducted if you miss more than one week of class (i.e., 2 classes) – see Assessment Expectations below.</p> <p><u>Assignment 2: Movement Analysis Exam</u> Value: 20% of final grade Date: Wednesday February 5, 2020 at 8:00am Type: Written exam Description: Short-answer questions will assess your knowledge of material covered in class and weekly readings from weeks 1 – 3. You will conduct a series of kinesiological analyses (e.g., movement planes, major joints, primary muscles) of simple dance movements.</p> <p><u>Assignment 3: Self Profile Essays</u> Value: 40% of final grade; four essays worth 10% each (4 x 10% = 40%) Due Dates: See below Type: Written essay Length: Two pages each Description: The Self Profile Essays will address personal observations made throughout the semester that are specific to the following topics: biomechanics, somatics, nutrition, and psychology. 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"> 1. Biomechanics – Fri Jan 31 2020 2. Somatics – Wed Feb 26 2020 3. Nutrition – Wed Mar 11 2020 4. Psychology – Wed Mar 18 2020 <p>Assessment Criteria By the completion of this assessment, successful students will be able to:</p> <ul style="list-style-type: none"> • describe and analyze a personal observation(s) using appropriate scientific terminology • discuss the impact of this personal observation(s) on current dance training • formulate detailed and relevant recommendations for improved healthy dance practice in relation to personal observation(s) • support ALL discussion points with relevant, current dance science literature (i.e., minimum 4 references inclusive of 2 primary sources) • write a clear and coherent two-page essay with an introduction, body, and conclusion that is free from grammatical and spelling errors
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	<p><u>Assignment 4: Research Proposal</u> Value: 30% of final grade Due Date: Wednesday April 8, 2020 at 8:00am Type: Individual Structured Abstract (10%); Group Oral Presentation (20%) Length: Abstract – 350 words; Presentation – 10min 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: 1. Individually, each student will write and submit a 350-word structured abstract of the proposal. 2. Together, the group will deliver an oral presentation of the research proposal.</p> <p>Assessment Criteria By the completion of this assessment, successful students will be able to:</p> <ul style="list-style-type: none"> • provide rationale for a proposed research project • clearly state a research objective(s) • design a feasible and appropriate research plan to execute the proposed project • explain the overall significance of the proposed research • follow standard scientific framework <p>Specific to individual structured abstract:</p> <ul style="list-style-type: none"> • write a clear, well-formatted 350-word structured abstract that is free from grammatical and spelling errors <p>Specific to group oral presentation:</p> <ul style="list-style-type: none"> • present effectively (i.e., coherent PowerPoint slides (or equivalent), clear speaking, eye contact, easeful transitions between group members) • answer questions and expand ideas as required
<p>Assessment expectations</p>	<p><u>Guidelines for Submitting Assignments</u> Movement Analysis Exam: The exam will take place during class time (8:00 – 9:50am).</p> <p>Self Profile Essays: A hard copy of each of the four essays will be handed in at the beginning of class (8:00am). Electronic versions via email will not be accepted.</p> <p>Research Proposal: A hard copy of the Structured Abstract will be handed in at the beginning of class (8:00am). Electronic versions of the Structured Abstract will not be accepted via email. PowerPoint slides (or equivalent) for the oral presentation will be handed in at the beginning of class (8:00am). If any group member is absent on the day of presentation, the group will be expected to continue without that person.</p> <p><u>Criteria That Must Be Met to Pass</u> See Assessment Criteria for each Assignment above. In order to achieve a passing grade in the course, the minimum requirement is D.</p>

Expectations for Writing

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.

Guidelines for Formatting Assignments

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 two pages, single sided, 1.5 spaced, 12-point 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).

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.

Group Oral Presentation – Your 10-minute 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 for 5 minutes of questions.

Late Assignments

No assignment will be accepted beyond the date/time that it is due. Under 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.

Expectations for Attendance and Participation:

Please refer to the Undergraduate Calendar E.3 Attendance for details.

FOR GRADED DANCE STUDIO COURSES

- A significant part of your grade is based on participation. Participation means not only showing up for class, but also attending to the material at hand with effort and engagement.
- With regard to participation, classes are considered equivalent to assignments. Thus, more than 2 absences per term will have an adverse effect on your final grade.
- If you miss more than one week of classes (i.e., 2 classes), your final grade will begin to drop by as much as 10% per missed class.
- If you miss more than two weeks of classes (i.e., 4 classes), you have the potential to fail the course.
- If you show up late for or leave early from class, this will be counted as half an absence.
- If for some reason you are feeling unwell during class time, a substitute form of participation may be arranged; however, *you may not obtain this privilege more than once* and you will receive half an absence.

	<ul style="list-style-type: none"> • For studio courses, if you opt out of full participation and choose to sit for a portion of the class, this will be counted as non-participation and will be marked as half an absence. • Students are responsible for any and all material missed during an absence. • If you sustain a significant injury during the term that will impact your participation for longer than a week's worth of classes and if this injury is verified by a medical practitioner's note, your case will be submitted to the Dance Division Committee to address your situation. 																																																									
Grading scale	<p>For the course as a whole, letter grades should be understood as follows, as outlined in the section F.1.1 Undergraduate Grading System of the Undergraduate Calendar for 2019-2020 OR as outlined in the section H.1 Distribution of Grades of the Graduate Calendar for 2019-2020:</p> <table border="1"> <thead> <tr> <th>Grade</th> <th>Grade Point Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>A+</td> <td>4.00</td> <td>Outstanding performance</td> </tr> <tr> <td>A</td> <td>4.00</td> <td>Excellent performance</td> </tr> <tr> <td>A-</td> <td>3.70</td> <td>Approaching excellent performance</td> </tr> <tr> <td>B+</td> <td>3.30</td> <td>Exceeding good performance</td> </tr> <tr> <td>B</td> <td>3.00</td> <td>Good performance</td> </tr> <tr> <td>B-</td> <td>2.70</td> <td>Approaching good performance</td> </tr> <tr> <td>C+</td> <td>2.30</td> <td>Exceeding satisfactory performance</td> </tr> <tr> <td>C</td> <td>2.00</td> <td>Satisfactory performance</td> </tr> <tr> <td>C-</td> <td>1.70</td> <td>Approaching satisfactory performance.</td> </tr> <tr> <td>*D+</td> <td>1.30</td> <td>Marginal pass. Insufficient preparation for subsequent courses in the same subject</td> </tr> <tr> <td>*D</td> <td>1.00</td> <td>Minimal Pass. Insufficient preparation for subsequent courses in the same subject.</td> </tr> <tr> <td>F</td> <td>0.00</td> <td>Failure. Did not meet course requirements. Several Faculties utilize an F grade that does not carry weight in calculating the grade point average. This will be noted in the calendar description as "Not Included in GPA" where applicable.</td> </tr> <tr> <td>**I</td> <td>0.00</td> <td>Incomplete. Sufficient work has not been submitted for evaluation, unable to adequately assess. May also be used when a final exam is not submitted.</td> </tr> <tr> <td>CR</td> <td></td> <td>Completed Requirements. Carries no weight in calculating the grade point average. This will be noted in the calendar description as "Not Included in GPA" where applicable</td> </tr> </tbody> </table> <p>Notes:</p> <ul style="list-style-type: none"> • 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>For DANCE, the following numerical rubric will be applied:</p> <table> <tr> <td>A+ 96-100</td> <td>A 91-95</td> <td>A- 86-90</td> </tr> <tr> <td>B+ 81-85</td> <td>B 76-80</td> <td>B- 71-75</td> </tr> <tr> <td>C+ 66-70</td> <td>C 61-65</td> <td>C- 56-60</td> </tr> <tr> <td>D+ 51-55</td> <td>D 46-50</td> <td>F 0-45</td> </tr> </table>	Grade	Grade Point Value	Description	A+	4.00	Outstanding performance	A	4.00	Excellent performance	A-	3.70	Approaching excellent performance	B+	3.30	Exceeding good performance	B	3.00	Good performance	B-	2.70	Approaching good performance	C+	2.30	Exceeding satisfactory performance	C	2.00	Satisfactory performance	C-	1.70	Approaching satisfactory performance.	*D+	1.30	Marginal pass. Insufficient preparation for subsequent courses in the same subject	*D	1.00	Minimal Pass. Insufficient preparation for subsequent courses in the same subject.	F	0.00	Failure. Did not meet course requirements. Several Faculties utilize an F grade that does not carry weight in calculating the grade point average. This will be noted in the calendar description as "Not Included in GPA" where applicable.	**I	0.00	Incomplete. Sufficient work has not been submitted for evaluation, unable to adequately assess. May also be used when a final exam is not submitted.	CR		Completed Requirements. Carries no weight in calculating the grade point average. This will be noted in the calendar description as "Not Included in GPA" where applicable	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
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Student Support	<p>Please visit this link for a concise list of UCalgary's student support services: https://www.ucalgary.ca/registrar/registration/course-outlines</p>																																																									

Academic Accommodation	Students seeking an accommodation based on disability or medical concerns should contact Student Accessibility Services; 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 www.ucalgary.ca/access/ . 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. The full policy on Student Accommodations is available at http://www.ucalgary.ca/policies/files/policies/student-accommodation-policy.pdf .
Academic integrity, plagiarism	The University of Calgary is committed to the highest standards of academic integrity and honesty. Students are expected to be familiar with these standards regarding academic honesty and to uphold the policies of the University in this respect. Students are referred to the section on plagiarism in the University Calendar (ucalgary.ca/pubs/calendar/current/k-3.html ; ucalgary.ca/pubs/calendar/current/k-5.html) and are reminded that plagiarism—using any source whatsoever without clearly documenting it—is an extremely serious academic offence. Consequences include failure on the assignment, failure in the course and possibly suspension or expulsion from the university. You must document not only direct quotations but also paraphrases and ideas where they appear in your text. A reference list at the end is insufficient by itself. Readers must be able to tell exactly where your words and ideas end and other people’s words and ideas begin. This includes assignments submitted in non-traditional formats such as Web pages or visual media, and material taken from such sources. Please consult your instructor or the Student Success Centre (TFDL 3rd Floor) if you have any questions regarding how to document sources.
Internet and electronic communication device	elearn.ucalgary.ca/category/d21/ucalgary.ca/emergencyplan/emergency-instructions/uc-emergency-app The in-class use of computers may be approved by your Instructor. Cell phones and other electronic communication devices should be silenced or turned off upon entering the classroom. If you violate the Instructor’s policy regarding the use of electronic communication devices in the classroom, you may be asked to leave the classroom; repeated abuse may result in a charge of misconduct. No audio or video recording of any kind is allowed in class without explicit permission of the Instructor.
Intellectual Property	Course materials created by professor(s) (including course outlines, presentations and posted notes, labs, case studies, assignments and exams) remain the intellectual property of the professor(s). These materials may NOT be reproduced, redistributed or copied without the explicit consent of the professor. 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.
Copyright	All students are required to read the University of Calgary policy on Acceptable Use of Material Protected by Copyright (www.ucalgary.ca/policies/files/policies/acceptable-use-of-material-protected-by-copyright.pdf) and requirements of the copyright act (https://laws-lois.justice.gc.ca/eng/acts/C-42/index.html) 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.
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.

Course Schedule — DNCE 363: Dance Science

Week	Dates	Wednesday. 800 – 950	Friday. 800 – 950
1	Jan 15 + 17	Introduction: why is science important for dance?	Movement Analysis: muscular function, role of gravity, postural assessment Reading Clippinger Ch 8, Krasnow 2011
2	Jan 22 + 24	Lower Limbs: foot, ankle, knee Reading Simmel Ch 5-6, Clippinger Ch 5-6	Body Center: hip, spine Reading Simmel Ch 2-4, Clippinger Ch 3-4
3	Jan 29 + 31	Upper Limbs: shoulder, elbow Reading Simmel Ch 7, Clippinger Ch 7	Exam Review Due Biomechanics Self Profile Essay 1
4	Feb 5 + 7	Due Movement Analysis Exam	Research Methods: introduction; structured abstracts
5	Feb 12 + 14	Somatic Practice: breath patterns Reading Batson 2009	Somatic Practice: kinaesthetic awareness, mental imagery Reading Nordin 2006 Due Structured Abstract to D2L
6	Feb 19 + 21	READING WEEK	
7	Feb 26 + 28	Nutrition: energy sources, somatotypes Reading Simmel Ch 9, Challis 2016 p1-10 Due Somatics Self Profile Essay 2	Nutrition: specific needs of the dancer Guest Kim Wagner Jones, RD Due 3-day Food Diary
8	Mar 4 + 6	Psychology: performance effectiveness, motivation, self-confidence Reading Simmel Ch 8, Nordin-Bates 2014	Psychology: body image, burnout, self-care Guest Dr. Angela Grace
9	Mar 11 + 13	Field trip to Human Performance Lab (HPL) Demonstration of equipment Due Nutrition Self Profile Essay 3	No class: Mainstage opens
10	Mar 18 + 20	Field trip to Taylor Family Digital Library (TFDL) Research Methods: literature search and retrieval strategies Guest Marc Stoeckle Due Psychology Self Profile Essay 4	Research Methods: principles of critical appraisal Reading Ekegren 2014
11	Mar 25 + 27	Research Methods: qualitative and quantitative, study design	Research Methods: structure of a scientific study, oral presentation skills Due Critical appraisal to D2L
12	Apr 1 + 3	Group tutorials; Guided study time	Group tutorials; Guided study time
13	Apr 8 + 10	Due Research Proposal Presentations	Reflections/Evaluation
14	Apr 15	No class: Bermuda Shorts Day	