CUMMING SCHOOL OF MEDICINE
GRADUATE COURSE OUTLINE

COURSE TITLE:	**Implementation of Medical Education Research**		
Course	MDCH 631		
Pre/Co-Requisites	Student in Medical Education Specialization or Permission of Instructor		
Faculty	Cumming School of Medicine, Graduate Science Education		
Instructor Name(s)	Dr. Tanya Beran Dr. Rachel Ellaway	**Email**	tnaberan@ucalgary.ca rachel.ellaway@ucalgary.ca
Office Location	TRW – 3rd Floor	**Office Hours**	Appointments may be set up via email
Instructor Email Policy			
Telephone No.	403-220-5667 (Dr. Beran) and 403-220-6076 (Dr. Ellaway)		
TA Name, if applicable	N/A	**Email**	
Class Term, Days	September 11-December 4, 2019 - Wednesday		
Class Times	1:00-4:00pm		
Class Location	Bioinformatics Lab 1501 and other assigned rooms		

COURSE INFORMATION/DESCRIPTION OF THE COURSE

This course focuses on analyzing data in medical education research including: quantitative and qualitative data analysis.

LEARNING RESOURCES/REQUIRED READING

Required Reading/Resources:

Field, A. (2017). Discovering statistics using IBM SPSS statistics (5th ed.). London: Sage.

http://www.statsoft.com/textbook/stathome.html

Creswell, J. W. (2018). Qualitative inquiry and research design: Choosing among five approaches (4th ed.). London: Sage.

Suggested Resources

Gay, L. R., Mills, G. E., & Airasian, P. (2018). Educational research: Competencies for analysis and applications (12th ed.). NJ: Pearson.

Glass, G. V., & Hopkins, K. D. (1996). Statistical methods in education and psychology (3rd ed.). Boston: Allyn & Bacon. In library only

Patton, M. Q. (2014). Qualitative research & evaluation methods. Thousand Oaks CA: Sage.

Cleland, J., & Durning S. (2015). Researching medical education. Oxford, UK: Wiley.

Creswell, J. W. (2018). Research design: Qualitative, quantitative, and mixed methods approaches (5th ed.). London: Sage.

COURSE OBJECTIVES/LEARNING OUTCOMES

Students at the end of the course will be able to:

- Provide a rationale for the statistical tests commonly used in medical education research.
- Conduct statistical analyses using different tests and techniques.
- Provide rationale for the qualitative methods and analysis techniques commonly used in medical education research.
- Conduct qualitative analyses using different approaches.
- Present quantitative and qualitative research findings.

CUT POINTS FOR GRADES

This course adheres to the grading system outlined in the University of Calgary, Faculty of Graduate Studies Calendar. Grades of A+ and A are not distinguished in the calculation of GPAs. Percentage/letter grade conversion used for this course is as follows

Grade	Grade Point Value	Percentage Conversion	Graduate Description
A+	4.00	95-100	Outstanding
A	4.00	90-94	Excellent – superior performance showing comprehensive understanding of the subject matter
A-	3.70	85-89	Very Good Performance
B+	3.30	77-84	Good Performance
B	3.00	72-76	Satisfactory Performance
B-	2.70	68-71	Minimum Pass for Students in the Faculty of Graduate Studies

C+	2.30	63-67	All grades below 'B-" are indicative of failure at the graduate level and cannot be counted toward Faculty of Graduate Studies course requirements

Assessment Components: The University policy on grading related matters is outlined in the 2019-2020 Calendar.

Assessment Methods	Description	Weight %	Due Date and Time
Statistical Techniques: Labs	LABS (for classes 1-6) Due: at beginning of class in weeks 2-6 Length: couple of pages including results tables and interpretation Instructions: Students will be given a data set with a series of questions. Each question pertaining to a type of analysis must have output tables and relevant statistics reported along with their interpretation. Please note that it is not sufficient to indicate that a result is significant or not. Rather, students must provide three levels of interpretation: **Level 1:** present the statistical values (e.g., r(35) = 0.68, p < .05.) **Level 2:** state the relationship between the variables (e.g., There is a significant inverse relationship between sleep and OSCE performance.) **Level 3:** explain what the result means (e.g., Students who sleep fewer hours per night are likely to obtain lower scores on an OSCE.) Allocation of Marks: One point is awarded to each level of interpretation for each question for a maximum total of 3.	20	**Lab 1** -September 18, 2019 - 1:00pm **Lab 2** – September 25, 2019 – 1:00pm **Lab 3** – October 2, 2019 – 1:00pm **Lab 4** – October 9, 2019 – 1:00pm **Lab 5** – October 16, 2019 – 1:00pm **Lab 6** – October 30, 2019 – 1:00pm
Qualitative Techniques: Labs	LABS (for classes 7-12) Due: at beginning of class in weeks 8-11 Length: approximately 2 pages. Instructions and allocation of marks: Students will be given a written analytical task each week, specifics vary from one week to the next.	20	**Lab 7** – November 6, 2019 – 1:00pm **Lab 8** – November 20, 2019 – 1:00pm **Lab 9** – November 27, 2019 – 1:00pm

Statistical Techniques: In-class Presentation	Due: Date of sign-up Length: 45 mins Instructions: *provide a brief review of the major concepts needed to effectively apply the analytic method. *provide one worked example that demonstrates application of the analytic method and include detailed steps *provide practice example for in-class assignment (include research question, different SPSS data set and 3 practice questions) Allocation of Marks: Concepts well explained (8 marks), examples clearly demonstrate the concepts (7 marks), presentation is well organized (5 marks).	25	Date of sign-up
Quantitative, Qualitative, or Mixed Methods Research Proposal	Due: Wednesday after last class Length: 10 pages double-spaced not including references Instructions: see below (points in bold are essential) **I. Introduction (~1 page)** *Introduction to literature review and discussion of the research approach, providing a clear and defensible rationale. **A. Overview** A crisp and concise summary of what the research is about. **B. Purpose and Significance of the Study** There are many reasons to conduct research. What are you intending to accomplish? **II. Literature Review (~2 pages)** *The literature review situates the research and fleshes out the domain of the topic	35	Wednesday after last class

	addressed in the introduction. **Pose a Maximum of 3 Research Questions.** *Once the rationale has been established, summarize the research questions (e.g., explore, confirm). These set the parameters (delimitations) on the study. **III. Research Methodology and Methods (~3 pages)** *This section should depict the overall research methodology to be applied, and provide an overview of the specific research design and methods to be employed. These decisions will have direct implications for the results. **IV. Analyses (~2 pages)** **V. Discussion (~ 2 pages)** **A. Other issues to consider:** 1. What personal, research, and clinical skills do you bring to this research? How do these benefit your research project? 2. What procedures will you use to ensure the integrity of the research? 3. Identify areas of bias (consider blind procedures). **B. Timelines** **C.** Ethical Concerns **VI. References** (~? pages) Use APA format and be sure to adhere to it across all references. Allocation of Marks: Five points are awarded to each of the 6 sections above (except for references, which is 2 points). Full points are awarded when the specific criteria above are correctly addressed.		

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ASSESSMENT AND EVALUATION INFORMATION

ATTENDANCE AND PARTICIPATION EXPECTATIONS:

Students are expected to attend class on a weekly basis prepared to present or critically analyze designated topics. This includes having read the assigned material, sharing thoughts, leading discussion or presenting, as appropriate, asking questions or leading critiques and being an active member of the classroom environment.

GUIDELINES FOR SUBMITTING ASSIGNMENTS:

- Assignments are due on the specified date by the beginning of class.

FINAL EXAMINATIONS: No

EXPECTATIONS FOR WRITING:

All assignments are to be printed and submitted to the instructor by their due dates, unless otherwise indicated in class.

LATE AND/OR MISSING ASSIGNMENTS:

- Assignments are due on the specified date by 9 AM. Students who hand in assignments late will be penalized 5% per day for handing in late. Assignments that are handed in 14 calendar days or more after the due date will be refused and the students assigned a score of zero for the assignment.
- Students may hand in assignments late without penalty under the following circumstances:
  - The student has discussed the timelines with course instructor in advance of the due date and the course instructor has granted an extension.
  - There is a valid health or family emergency such as is discussed under the University regulations for deferral of final examinations. Students may be required to provide the Course Coordinator with such documentation related to illness and/or emergency as is discussed and required in the University regulations pertaining to deferral of final examinations. This information can be found in the University Calendar.

Is a passing grade on a particular component essential to pass the course as a whole? No

	COURSE TIMETABLE		
Course Schedule Date	**Topic & Reading**	**Instructor**	**Assignments/Due Dates & Times**
Sept 11	**Statistical Techniques 1** Room 01501 Language and approach to science. Scientific Method	Dr. Tanya Beran	

Sept 18	**Statistical Techniques 2** Room 01501 Research design. Data preparation and data entry	Dr. Tanya Beran	**Lab 1 Due –Sept 18 – 1:00pm**
Sept 25	**Statistical Techniques 3** Room 01501 Descriptive analyses. Measures of central tendency. Point/interval estimates. Probability and effect sizes. Assumptions. Using tools such as SPSS. Inferential analyses. Comparing two means and non-parametric equivalents. Chi square. Non-parametric tests. T-tests.	Dr. Tanya Beran	**Lab 2 Due –Sept 25 – 1:00pm**
Oct 2	**Statistical Techniques 4** Room 01501 Analyses of variance	Dr. Tanya Beran	**Lab 3 Due –Oct 2- 1:00pm**
Oct 9	**Statistical Techniques 5** Room 01501 Correlation and simple regression.	Dr. Tanya Beran	**Lab 4 Due –Oct 9- 1:00pm**
Oct 16	**Statistical Techniques 6** Room 01501 Multiple regression	Dr. Tanya Beran	**Lab 5 Due –Oct 16- 1:00pm**
Oct 23	**Qualitative Inquiry** Room G646 Qualitative principles, qualitative study design, mixed methods study design. Formulating and answering qualitative research questions. Implications of different qualitative research paradigms. Qualitative study design.	Dr. Rachel Ellaway	
Oct 30	**Qualitative Data** Room G382 VC Different kinds of qualitative data. Gathering and handling qualitative data. Instruments for qualitative inquiry.	Dr. Rachel Ellaway	**Lab 6 Due –Oct 30- 1:00pm**
Nov 6	**Qualitative Analysis – Coding** Room G382 VC	Dr. Rachel Ellaway	**Lab 7 Due –Nov 6- 1:00pm**

	Analyzing texts using coding and memos. Approaches to coding – line-by-line, thematic, axial. Individual coding, pair coding, parallel coding. Analyzing other kinds of data – audio, video, images, performance. Using tools such as NVivo and Atlas.ti.		
Nov 13	**NO CLASS**		
Nov 20	**Quality in Qualitative Analysis** Room G646 Quality and rigour in qualitative analysis. Interpretation, meaning, trustworthiness, reflexivity. Checking, recursion, agreement, variation, significance, valence. Synthesis.	Dr. Rachel Ellaway	**Lab 8 Due –Nov 20- 1:00pm**
Nov 27	**Qualitative Analysis – Alternative Approaches** Room G646 Grounded theory, phenomenology, ethnography and auto ethnography, narrative, case study, realist inquiry, discourse analysis. Practical implications of different frames of inquiry.	Dr. Rachel Ellaway	**Lab 9 Due –Nov 27- 1:00pm**
Dec 4	**Presenting Qualitative Data** Room G382 VC Reporting and writing qualitative results.	Dr. Rachel Ellaway	**Quantitative, Qualitative, or Mixed Methods Research Proposal Due – Wednesday after last class.**

INTERNET AND ELECTRONIC COMMUNICATION DEVICE INFORMATION

Cell phones must be turned off in class unless otherwise arranged with the instructor.

The use of laptop and mobile devices is acceptable when used in a manner appropriate to the course and classroom activities. Students are to refrain from accessing websites that may be distracting for fellow learners (e.g. personal emails, Facebook, YouTube). Students are responsible for being aware of the University's Internet and email use policy, which can be found at https://www.ucalgary.ca/policies/files/policies/electronic-communicationspolicy.pdf.

MEDIA AND RECORDING IN LEARNING ENVIRONMENTS

Media recording for lesson capture

The instructor may use media recordings to capture the delivery of a lecture. These recordings are intended to be used for lecture capture only and will not be used for any other purpose. Although the recording device will be fixed on the Instructor, in the event that incidental student participation is recorded, the instructor will ensure that any identifiable content (video or audio) is masked, or will seek consent to include the identifiable student content to making the content available on University approved platforms.

Media recording for assessment of student learning

The instructor may use media recordings as part of the assessment of students. This may include but is not limited to classroom discussions, presentations, clinical practice, or skills testing that occur during the course. These recordings will be used for student assessment purposes only and will not be shared or used for any other purpose.

Media recording for self-assessment of teaching practices

The instructor may use media recordings as a tool for self-assessment of their teaching practices. Although the recording device will be fixed on the instructor, it is possible that student participation in the course may be inadvertently captured. These recordings will be used for instructor self-assessment only and will not be used for any other purpose.

Student Recording of Lectures

Audio or video recording of lectures is prohibited except where explicit permission has been received from the instructor.

UNIVERSITY OF CALGARY POLICIES AND SUPPORTS

ACADEMIC ACCOMMODATIONS

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

IMPORTANT INFORMATION

Any research in which students are invited to participate will be explained in class and approved by the appropriate University Research Ethics Board

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 LEGISLATION

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.

ACADEMIC INTEGRITY

The Cumming School of Medicine expects intellectual honesty from its students. Course participants should be aware of University policies relating to Principles of Conduct, Plagiarism and Academic Integrity. These are found in the printed Faculty of Graduate Studies Calendar, or online under Academic Regulations in the Faculty of Graduate Studies Calendar, available at **Faculty of Graduate Studies Academic Regulations**

ACADEMIC MISCONDUCT

For information on academic misconduct and its consequences, please see the University of Calgary Calendar at http://www.ucalgary.ca/pubs/calendar/current/k.html

EMERGENCY EVACUATION AND ASSEMBLY POINTS

Assembly points for emergencies have been identified across campus. The primary assembly points for South Campus (Health Science Centre (HSC); Health & Research Innovation Centre (HRIC); Heritage Medical Research Building (HMRB) and Teaching, Research and Wellness (TRW)) are:

- HSC and HMRB: HRIC Atrium (alternate assembly point is Parking Lot 6)
- HRIC: HMRB Atrium (alternate assembly point is Parking Lot 6)
- TRW: McCaig Tower (alternate assembly point is HMRB – Atrium)

APPEALS

If there is a concern with the course, academic matter or a grade, first communicate with the instructor. If these concerns cannot be resolved, students can proceed with an academic appeal, as per Section N of the Faculty of Graduate Studies Calendar. Students must follow the official process and should contact the Student Ombuds Office (http://www.ucalgary.ca/provost/students/ombuds) for assistance with this and with any other academic concerns, including academic and non-academic misconduct

THE FREEDOM OF INFORMATION AND PROTECTION OF PRIVACY (FOIP) ACT

This course is conducted in accordance with the Freedom of Information and Protection of Privacy Act (FOIP) and students should identify themselves on written assignments (exams and term work.) by their name and ID number on the front page and ID on each subsequent page. Assignments given by you to your course instructor will remain confidential unless otherwise stated before submission. The assignment cannot be returned to anyone else without your expressed permission to the instructor. Grades will be made available on an individual basis and students will not have access to other students' grades without expressed consent.

Similarly, any information about yourself that you share with your course instructor will not be given to anyone else without your permission

WELLNESS AND MENTAL HEALTH RESOURCES

The University of Calgary recognizes the pivotal role that student mental health plays in physical health, social connectedness and academic success, and aspires to create a caring and supportive campus community where individuals can freely talk about mental health and receive supports when needed. We encourage you to explore the excellent mental health resources available throughout the university community, such as counselling, self-help resources, peer support or skills-building available through the SU Wellness Centre (Room 370, MacEwan Student Centre), https://www.ucalgary.ca/wellnesscentre/services/mental-health-services and the Campus Mental Health Strategy website https://www.ucalgary.ca/mentalhealth/"

SUPPORTS FOR STUDENT LEARNING, SUCCESS, AND SAFETY

Student Ombudsman: The Student Ombuds' Office supports and provides a safe, neutral space for students. For more information, please visit www.ucalgary.ca/ombuds/ or email ombuds@ucalgary.ca

Student Union: The SU Vice-President Academic can be reached at (403) 220-3911 or suvpaca@ucalgary.ca; Information about the SU, including elected Faculty Representatives can be found here: https://www.su.ucalgary.ca

Graduate Student's Association: The GSA Vice-President Academic can be reached at (403) 220- 5997 or gsa.vpa@ucalgary.ca; Information about the GSA can be found here: https://gsa.ucalgary.ca

SAFEWALK

Campus security will escort individuals, day or night, anywhere on campus (including McMahon Stadium, Health Sciences Centre, Student Family Housing, the Alberta Children's Hospital and the University LRT station). Call 403-220-5333 or visit http://www.ucalgary.ca/security/safewalk. Use any campus phone, emergency phone or the yellow phone located at most parking lot pay booths. Please ensure your personal safety by taking advantage of this service.