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	We will respond to e-mails as soon as possible during weekdays.		
Telephone No.	403-220-5667 (Dr. Beran) and 403-220-6076 (Dr. Ellaway)		
TA Name	N/A		
Class Term, Days	Fall 2020, September 9 – December 2, 2020 - Wednesday		
Class Times	1:00 – 4:00pm		
Class Location	Online		

This course will take place **online** via Desire2Learn (D2L) and Zoom via synchronous instruction. To best succeed in the course, students are encouraged to participate in the synchronous Zoom sessions**.** When unable to participate live due to the time difference or unforeseen circumstances, inform the instructor in advance and propose an alternative participation activity.

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.

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.

Communication

Brightspace (By D2L) is located on the University of Calgary server and will be used extensively for communication with students. A link to the Zoom class will be provided on D2L. It is the student's responsibility to ensure that they receive all posted communications and documents and that they receive e-mails sent by instructors of fellow students through D2L. Only your @ucalgary.ca e-mail address maybe linked to D2L. Please ensure that you are regularly checking your @ucalgary.ca account.

Learning Technology Requirements

In order to successfully engage in learning experiences at the University of Calgary, students taking online, remote and blended courses are required to have reliable access to the following technology:

- A computer with a supported operating system, as well as the latest security and malware updates;
- A current and updated web browser;
- Webcam (built-in or external);

- Microphone and speaker (built-in or external), or headset with microphone;
- Current antivirus and/or firewall software enabled;
- Broadband internet connection

Most current laptops will have a built-in webcam, speaker and microphone.

Please see the following for a detailed explanation of the minimal required technology for online learning https://elearn.ucalgary.ca/technology-requirements-for-students/

A laptop, desktop, tablet or mobile device is required for D2L access. If you need help accessing or using D2L, please visit the Desire2Learn resource page for students: http://elearn.ucalgary.ca/d2l-student/.

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	85-94	Excellent – superior performance showing comprehensive understanding of the subject matter
A-	3.70	80-84	Very Good Performance
B+	3.30	75-79	Good Performance
B	3.00	70-74	Satisfactory Performance
B-	2.70	65-69	Minimum Pass for Students in the Faculty of Graduate Studies
C+	2.30	55-64	All grades below 'B-" are indicative of failure at the graduate level and cannot be counted toward Faculty of Graduate Studies course requirements
C	2.00	50-54	

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)	20	**Lab 1-**September 16 1:00pm

	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 stress and OSCE performance.) **Level 3:** explain what the result means (e.g., Students who experience more stress 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.		**Lab 2-**September 25 1:00pm **Lab 3-**October 2 1:00pm **Lab 4-**October 9 1:00pm **Lab 5-**October 16 1:00pm **Lab 6-**October 30 1:00pm
Qualitative Techniques: Labs	LABS (for classes 7-12) Due: at beginning of class in weeks 8-11 Length: approximately 2 pages. 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 1:00pm **Lab 8-**November 20 1:00pm **Lab 9-**November 27 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	25	Date of sign-up

	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).		
Quantitative, Qualitative, or Mixed Methods Research Proposal	Due: Wednesday after last class Length: 10 pages double-spaced not including references Instructions: This assignment is the design, analytic, and discussion sections of a research proposal. To situate these sections within a complete proposal, students must include a literature review and research questions to situate the study design. These sections will not be marked, however, as they can be based on assignments submitted to other courses such as MDCH 629. **1. Research Methodology/Methods (~4 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. **2. Analytic Method(s) (~3 pages)** **3. Discussion (~ 3 pages)** What personal, research, and clinical skills do you bring to this research and how do these benefit your research project? What procedures will you use to ensure the integrity of the research? Identify areas of bias (consider blind procedures). What are the timelines, limitations, and ethical concerns of this study? **4. References (~? pages)**	35	December 2 1:00pm

	Use APA format and be sure to adhere to it across all references. Allocation of Marks: Five points are awarded to each of the 4 sections above (except for references, which is 2 points). Full points are awarded when the specific criteria above are addressed.		

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 submitted to the instructor by their due dates, unless otherwise indicated.

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 9	**Statistical Techniques 1** Language and approach to science Scientific Method	Dr. Tanya Beran	
Sept 16	**Statistical Techniques 2** Research design Data preparation and data entry	Dr. Tanya Beran	**Lab 1 Due** **Sept 18 – 1:00pm**
Sept 23	**Statistical Techniques 3** 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**
Sept 30	**Statistical Techniques 4** Analyses of variance	Dr. Tanya Beran	**Lab 3 Due** **Oct 2- 1:00pm**
Oct 7	**Statistical Techniques 5** Correlation and simple regression	Dr. Tanya Beran	**Lab 4 Due** **Oct 9- 1:00pm**
Oct 14	**Statistical Techniques 6** Multiple regression	Dr. Tanya Beran	**Lab 5 Due** **Oct 16- 1:00pm**
Oct 21	**Qualitative Inquiry** 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 28	**Qualitative Data** 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 4	**Qualitative Analysis – Coding** 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.	Dr. Rachel Ellaway	**Lab 7 Due** **Nov 6- 1:00pm**
Nov 11	**NO CLASS**		
Nov 18	**Quality in Qualitative Analysis** 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 25	**Qualitative Analysis – Alternative Approaches** 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 2	**Presenting Qualitative Data** Reporting and writing qualitative results	Dr. Rachel Ellaway	**Quantitative, Qualitative, or Mixed Methods Research Proposal Due by noon**

Guidelines for Zoom Sessions

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.

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.

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 the Code of Conduct). When entering Zoom or other video conferencing sessions, 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. 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. 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: https://elearn.ucalgary.ca/guidelines-for-zoom/.

If you are unable to attend a Zoom session, please contact your instructor to arrange an alternative activity (where available). 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 (such as for group work, presentations, etc).

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.

Conduct During Lectures

The classroom should be respected as a safe place to share ideas without judgement - a community in which we can all learn from one another. Students are expected to frame their comments and questions to lecturers in respectful and appropriate language, always maintaining sensitivity towards the topic. Students, employees, and academic staff are also expected to demonstrate behaviour in class that promotes and maintains a positive and productive learning environment.

As members of the University community, students, employees and academic staff are expected to demonstrate conduct that is consistent with the University of Calgary Calendar, the Code of Conduct and Non-Academic Misconduct policy and procedures, which can be found at https://www.ucalgary.ca/policies/forms/title.

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.