Graduate Curriculum Committee
Agenda
4:00 p.m., Wednesday, November 19, 2014
DH 312 – Gallegos Board Room

I. Welcome

II. Announcements
- A. Next meeting: February 25 – last day to consider curriculum proposals
Submission deadline for Library and course descriptions – January 29
Submission deadline to GCC Chair – February 5

- B. Last meeting for 2014-15: April 8

III. Old Business
- A. Report/Minutes from Subcommittee on Graduate Student Learning Objectives

IV. New Business
- A. New curriculum form – Program Deletion/Deactivation/Reactivation
Revised Intradepartmental Form is forthcoming – April?

- D. Proposals – Course Modification: NURS 625

V. Adjournment

Graduate Student Learning Outcome Sub-Committee
Colorado Mesa University

Members:

Steve Werman, Assistant Vice President of Academic Affairs

Bette Schans, Director of Assessment

Blake Bickham, Associate Professor of Teacher Education (Chair)

Donald Carpenter, Professor of Business/Computer Information Systems

Sandy Forrest, Professor of Nursing

Meeting Dates: 10/20/14, 10/27/14, 11/3/14, 11/10/14, 11/17/14

Minutes:

The above sub-committee members met to discuss, revise, and propose institutional student learning outcomes for graduate programs. The sub-committee began with the four graduate (masters'/doctoral degree) outcomes that were previously created by the CMU graduate advisory council. This sub-committee was charged with establishing graduate student outcomes that would align better with CMU's existing baccalaureate and associate level learning outcomes.

The sub-committee is proposing 6 master's level student learning outcomes and 6 doctoral level outcomes. The categories addressed in the outcomes are: Specialized Knowledge/Applied Learning; Quantitative Fluency; Communication Fluency; Critical Thinking; Information Literacy; and Ethical Reasoning.

The previous 4 outcomes were labeled as "graduate level" outcomes with no distinction between master's and doctoral levels. However, some accrediting bodies seek this distinction at the institutional level. The nursing program's accrediting body does seek that distinction. Therefore, we decided to establish a distinction between the 2 sets of outcomes. Outcomes 2-5 are the same at the master's and doctoral level, while outcomes 1 and 6 are where the sub-committee felt that the distinction between a master's and doctoral degree were clear.

The sub-committee has written these outcomes with Bloom's taxonomy in mind. In addition, the outcomes are written generally so that any current or future program may align to these outcomes.

The proposed outcomes are on the following page.

Prepared by Blake R. Bickham,
11/17/14

Colorado Mesa University Graduate Student Learning Outcomes

A student graduating with a Master's degree from CMU will:

1. Contribute to scholarly advancement in the chosen field by completing projects individually and collaboratively. (Specialized Knowledge/Applied Learning)

2. Employ discipline-specific logical, mathematical, or statistical methods to address a topic or issue. (Quantitative Fluency)

3. Create oral and written arguments or explanations, well-grounded in discipline-specific theories and methods, for specified audiences. (Communication Fluency)

4. Formulate and evaluate hypotheses as related to research problems, issues, concepts, and various perspectives. (Critical Thinking)

5. Synthesize, evaluate, or refine the information base of various scholarly sources. (Information Literacy)

6. Articulate moral, ethical, legal, or professional challenges within the discipline. (Ethical Reasoning)

A student graduating with a Doctoral Degree from CMU will:

1. Advance science, education, leadership, practice, or policy within a chosen discipline by completing an original research project approved by a faculty panel. (Specialized Knowledge/Applied Learning)

2. Employ discipline-specific logical, mathematical, or statistical methods to address a topic or issue. (Quantitative Fluency)

3. Create oral and written arguments or explanations, well-grounded in discipline-specific theories and methods, for specified audiences. (Communication Fluency)

4. Formulate and evaluate hypotheses as related to research problems, issues, concepts, and various perspectives. (Critical Thinking)

5. Synthesize, evaluate, or refine the information base of various scholarly sources. (Information Literacy)

6. Choose ethical and legal courses of action in research and professional practice. (Ethical Reasoning)

DEPARTMENT WORKSHEET FOR A COURSE MODIFICATION
Colorado Mesa University Curriculum Committees

NOTE: Each course modification must be submitted on a separate form.

Department Name: **Health Sciences**

Earliest term course can be offered: **Fall**   Earliest academic year: **2015-16**

Intended semesters for offering this course: Fall ☒   J-Term ☐   Spring ☐   Summer ☐

If there is no change to the course, but is specifically required (or no longer required) for a degree, certificate, or minor, this form is **NOT** to be completed. A **Program** Modification form needs to be completed instead.		
	PRESENTLY OFFERED AS: (Fill in this column completely**)**	**PROPOSED TO BE OFFERED AS:** (Fill in ONLY if item is to be revised)
Course Prefix	NURS	
Course Number This can NOT be modified.	625	Please submit a course add and a course delete form if a course number is to be changed.
Course Title	Statistics for Health Sciences	
Short title for schedule (max 24 char.)	Stats for Health Sci	
Credit Hours	3	
Contact Hours **(per week per semester)** There is a CDHE required minimum. Check with Academic Affairs if unsure.	Lecture: **3** Lab: Field: Studio: Other:	Lecture: Lab: Field: Studio: Other:
Type of Instructional Activity (from Table III.2 of Policies Manual)	Lecture	Lecture
Academic engagement minutes for a term	2250	
Student preparation minutes for a term	9000	
Prerequisites	Course Cr Hr 1. BSN in Nursing 2. 3. 4. 5. 6. 7. 8. 9. 10. If none, check here: ☐	Course Cr Hr 1. BSN in Nursing 2. Undergrad statistics 3. 4. 5. 6. 7. 8. 9. 10. If none, check here: ☐

	Course Cr Hr	Course Cr Hr
Co-requisites	1. 2. 3. 4. 5. 6. 7. 8. 9. 10. If none, check here: ☒	1. 2. 3. 4. 5. 6. 7. 8. 9. 10. If none, check here: ☐
General Education/ Essential Learning	If in General Education/Essential Learning, specify category. Otherwise, select "None".	If proposing to add to General Education/Essential Learning, specify category. If proposing to drop from Gen Ed, specify "Drop"
Catalog Description	Basic knowledge and skills to effectively use biostatistics in different research design and data analysis, and to understand articles in related professional journals. Includes choosing correct statistical methods and study designs in nursing research and practice; descriptive statistics; probability and probability distributions; estimation and hypothesis testing, simple linear regression, introduction to analysis of variance and an introduction to statistical software packages.	Advances knowledge and skills to effectively use biostatistics in research design and data analysis. Includes choosing correct statistical methods and study designs in nursing research and practice; descriptive statistics; common measures of disease frequency, probability and probability distributions; estimation and hypothesis testing, correlation, t-tests, analysis of variance, ANCOVA, and regression. Emphasis on analysis section of research publications and use of SPSS statistical software for data analysis.

List all programs of study for which this course will be a <u>requirement</u> or a <u>listed choice</u>, including all degrees, majors, minors, certificates, concentrations, cognates, emphases, and options. If none, indicate by checking here: ☐

	Degree Type	Program
1.	**DNP**	**Family Nurse Practitioner**
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		

(Submit a program modification request and a revised program sheet for each program listed above. All prerequisites to this course <u>must </u>be included in each program of study listed above.)

Justification for the proposed course modification: (enter below)

This course has been taught twice and needs revision to student learning outcomes, course outline, and course description to allow for more organized approach to statistical analysis. The proposed changes will allow content to build from simpler to more complex concepts in statistical analysis over the course of the semester. Students need more than an introduction to statistical software; in the proposed changes, students will use SPSS on a weekly basis to perform analyses and interpret findings. The original course description indicated that this course would cover "basic knowledge and skills." This is a 600 level course and covers more advanced knowledge and skills in statistical analysis with specific applications to advanced nursing practice. In preparation for the DNP Capstone, the proposed course change will culminate in submission of an IRB proposal with appropriate choice of statistical analysis to answer research questions.

Student Learning Outcomes, current:
Upon completion of this course, a student should be able to:

1. Identify different types and scales of measurement for health-related variables (i.e., nominal, ordinal, ranked, discrete, and continuous data).

2. Summarize health data using standard descriptive statistical methods including measures of central tendency and variation (dispersion), and grouped data procedures by using selected software.

3. Apply descriptive statistical methods in nursing research.

4. Apply the measures of disease frequency, commonly used in medicine and nursing, including counts, ratios, proportions, and rates.

5. Apply basic concepts of probability and conditional probability used in hypothesis testing, evaluation of screening and diagnostic procedures, and measures of association used in nursing, medicine, and other health sciences.

6. Relate the concepts of Type I and Type II errors to the application of clinical research.

7. Calculate the confidence intervals for measures of disease frequency and association.

8. Apply the statistical tests needed to assess the significance of mean differences when two or more means are compared for paired and independent samples by using selected software.

9. Apply the statistical test needed to assess the significance of the difference of two proportions for paired and independent samples by using selected software.

10. Apply the statistical procedures of simple linear regression and correlation to analyze the relationship of two continuous variables by using selected software.

11. Calculate contingency tables and chi-square statistics to determine differences in proportions of responses.

Student Learning Outcomes, proposed:
Upon completion of this course, a student should be able to:

1. Identify different types and scales of measurement for health-related variables.

2. Summarize health data using standard descriptive statistical methods including measures of central tendency and variation (dispersion), data displays, and grouped data procedures.

3. Apply the measures of disease frequency commonly used in medicine and nursing.

4. Apply concepts of probability, Type I and II errors, and confidence intervals used in hypothesis testing to evaluation of screening and diagnostic procedures, and clinical research

5. Calculate contingency tables and chi-square statistics to determine differences in proportions of responses.

6. Demonstrate correct selection of correlation test and analysis of relationships between variables.

7. Apply the statistical tests needed to assess the significance of mean differences when two or more means are compared for paired and independent samples.

8. Apply the statistical test needed to assess the significance of the difference of three or more related or unrelated groups.

9. Appraise the need for analysis of covariance with appropriate interpretation of assumptions, analysis, and limitations.

10. Examine several independent variables in regression modeling.

11. Selected appropriate statistical tests for identified research questions in a formal IRB proposal.

Topical course outline, current: (List of topics only. Do not attach syllabus.)

1. Review of Statistical Concepts
2. Frequency Distributions, Measures of Central Tendency
3. Measures of Variation
4. The Normal Curve
5. Measurement Theory and Scales of Measurement
6. Hypothesis Testing, Type I and II Errors, and Major Types of Research Designs
7. Correlation: Pearson product-moment correlation coefficient
8. Linear Regression
9. Sampling and Estimation
10. T-tests (Independent and Paired Samples)
11. ANOVA
12. Chi Square and Contingency Tables

Topical course outline, proposed:

1. Review of research design, types of data and scales of measurement
2. Data collection and measurement methods to enhance reliability and validity for common health related variables
3. Descriptive statistics and methods of organizing and displaying data
4. Frequency distributions, measures of central tendency and variation
5. Common measures of disease frequency
6. Probability theory and the normal curve
7. Chi square analysis
8. Deriving sensitivity, specificity, predictive value and efficiency from cross tabulation
9. Hypothesis testing, type I and II errors, confidence intervals
10. Analyzing correlation
11. T-tests (Independent and Paired Samples)
12. ANOVA
13. MANOVA
14. Repeated measure ANOVA
15. ANCOVA
16. Multivariate, linear, and logistic regression

Discuss the proposal with all departments affected by the proposal.
List the departments and the date and outcome of the discussion below:

This change does not affect other departments.

In addition to providing all the above information, also accomplish the following:

1. If this proposal includes a catalog description change, submit the course catalog description to the Course Description Evaluator a week prior to the published proposal submission deadline.

2. If this proposal includes a new topical course outline, submit this completed form to the Library's Curriculum Committee representative a week prior to the published proposal submission deadline.

3. Obtain departmental approval according to department specific procedures.

PROPOSED AND PREPARED BY:
Name: **Kristine Reuss**   Date: **10/7/2014**
Email: **kreuss@coloradomesa.edu**   Phone: **9702083952**

REVIEWED BY DEPARTMENT'S CURRICULUM COMMITTEE REPRESENTATIVE:
Name: **Sandy Forrest**   Date: **10/8/2014**

APPROVED BY DEPARTMENT HEAD:
Name: **Debra Bailey**   Date: **10/13/14**

For Graduate Curriculum Committee: submit this form to the GCC Chair.

For Undergraduate Curriculum Committee: submit this form to Academic Affairs via email at UCC_Chair@coloradomesa.edu.

For WCCC CC Curriculum Committee: submit this form to the WCCC CC Chair.

The following form is a snapshot of the library's collection in support of new curriculum areas and/or course additions.

Date of assessment: November 2014

Collection under review: **NURS 625: Statistics for Health Sciences**

Program level: Certificate   Associates   Bachelors   Masters   **DNP**

Delivery mode: Lecture

Library Liaison: Barbara Borst

1. Current Collection Review

    a. Reference Sources:
        Cambridge Dictionary of Statistics. 1998
        Dictionary of Statistics & Methodology: A Non-technical Guide for the Social Sciences. 3rd ed. 2005
        Encyclopedia of Biometrics. 2009   (Online)
        Regression Methods for Medical Research. 2014   (Online)
        Dictionary of Nursing Theory & Research. 3rd ed. 2006
        Encyclopedia of Nursing Research. 2006

    b. Monographic Sources:
        The collection was evaluated by doing a combination of keyword, subject and call number searches. Subjects and keywords were chosen based on the course description, SLOs, and topic outline. Duplication may occur because a title may have appeared in more than one search. The charts below are a representative sampling of the materials available.

        There is a strong representation of e-books. E-books may be titles we purchase individually, as part of a subscription service such as SpringerLink or available through the demand driven acquisition program we participate in via our membership in the Alliance. E-books are accessible to students both on and off campus at all times.

There is a solid base collection established upon which to build. The collection is current with 35.6% of the titles profiled below having been published 2010 or later. Older materials need to be evaluated for continued relevancy.

- Age Analysis of Monographic Collection

SU: Medical Statistics	Print	E-Book
2010 -	1	13
2005-2009	4	5
2000-2004		5
1990-1999	5	
1980-1989	2	
Pre 1980	5	
TOTAL	17	23

SU: Biometry	Print	E-Book
2010 -	1	28
2005-2009	6	18
2000-2004	2	2
1990-1999	8	1
1980-1989	9	
Pre 1980	15	1
TOTAL	41	50

SU: Medicine – research – statistical methods	Print	E-Book
2010 -	1	5
2005-2009		6
2000-2004	1	2
1990-1999	1	1
1980-1989		
Pre 1980	1	
TOTAL	4	14

SU: Regression analysis	Print	E-Book
2010 -	2	29
2005-2009		10
2000-2004	2	2
1990-1999		2
1980-1989	3	
Pre 1980	6	
TOTAL	13	43

Nursing research methodology	Print	E-Book
2010 -	10	1
2005-2009		
2000-2004	5	1
1990-1999	3	
1980-1989	1	
TOTAL	19	2

Medicine research methodology	Print	E-Book
2010 -		3
2005-2009	2	3
2000-2004		3
1990-1999	1	
1980-1989		
TOTAL	3	9

SU: Biomedical research	Print	E-Book
2010 -	5	9
2005-2009	3	11
2000-2004		
1990-1999		
1980-1989		
Pre 1980		
TOTAL	8	20

Research design (all subject areas)	Print	E-Book
2010 -	14	10
2005-2009	9	11
2000-2004	8	3
1990-1999	19	7
1980-1989	18	
Pre 1980	6	
TOTAL	74	31

c. Periodicals (online and paper):
The best access to articles is found by doing keyword or subject searches in the indexes listed below in section d. Most of the journals are available online but some have publisher embargos of 12 and 18 months on the full text. Those not available online or in the Library print collection may be obtained through Interlibrary Loan. The average fill time for Interlibrary Loan articles is 12 hours.

 Keyword and subject searches for some of the topics to be covered in this course were done to see availability of resources. The journal literature is rich in articles on biometrics and medical statistics in general and also on the types of data, scales of measurement and various methods of data analysis.

A sampling of journal titles found in the above searches that are available to CMU students are listed below. Two full-text journal titles came up repeatedly – *Biostatistics* (12 month embargo) and *Statistics in Medicine*. All titles are available online unless otherwise indicated.

> *Biomed Research International*
> *BMC Medical Research Methodology*
> *Current Medical Research & Opinion*
> *Health Management Technology*
> *Health Services Research*
> *International Journal of Nursing Studies* (2 month embargo)
> *Journal of Advanced Nursing*
> *Journal of Biomedical Informatics*
> *Journal of Biomedical Materials Research – Parts A & B*
> *Journal of Biomedical Research*
> *Journal of Educational Evaluation for Health Professions*
> *Journal of Medical Science*
> *Journal of Medical Systems* (12 month embargo)
> *Journal of Nursing Education* (print)
> *Lifetime Data Analysis* (12 month embargo)
> *Nursing Research* (print)
> *Preventive Medicine*
> *Statistical Methods in Medical Research*
> *Western Journal of Nursing Research*

Additional articles were found in the specific medical discipline journals i.e. obgyn, sports medicine, physical therapy, specific diseases/conditions.

d. Electronic Resources:
<u>Indexes for journal articles:</u>
CINAHL Complete
Informa Healthcare
Medline/Pub Med
Science Direct
Wiley Online Library
Sage Journals Online

<u>Other Online Resources</u>
Cochrane Library Online (Systematic Reviews)
EBM Guidelines
Up-To-Date
Micromedex (includes Care Notes System for patient education)
Redbook Online

e. Media
The Library subscribes to *Films on Demand* – a streaming video service from Films Media Group. This service includes educational videos, documentaries, and PBS publications. An example of a title that might be appropriate for this class is: *Data Analysis & Probability*   (2011).

2. Recommendations for additions to the collection:
   a. New titles for this course will be purchased on the recommendations of the departmental faculty and from standard selection sources.
   b. E-books will be selected whenever possible to provide availability to the distant student.
   c. Update reference books.
   d. Review pre-2000 materials for continued relevance. Identify titles that should be kept – core, historical, and still current titles – and those that need to be updated or withdrawn. Updates may take the form of new editions or new titles covering the same content.
   e. New materials will be purchased from the existing budget line for graduate programs in Health Sciences

3. Analysis of library's collection:
    XX Materials for this course can be purchased with existing funds
    ☐ Extra funding is required to adequately meet the informational needs of the course.
        Estimated **one-time** resources needed $ _____
        Estimated **base building** resources needed $ _____
    ☐ No Library Assessment needed. No new content associated with this analysis.

Library Director: ____Sylvia L. Rael_____ Date: _Nov. 16, 2014