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Diffusion of Precision Health Phenomenon into an Undergraduate Nursing Research Course

Mary Anne Schultz
mschultz@csusb.edu

Mary Anne Schultz

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SAMPLE LAYOUT NURS 422 Q2S

Course Prefix/Number: NURS 4222 Fall 2020

Course Title: Nursing Research and Evidence-Based Practice

Units: 3 semester

Course Description:

Introduction to the research process and research utilization in nursing. Emphasis on quantitative and qualitative research methods and designs commonly used in the discipline of nursing and in health care. Focus on standards for ethical research. Skill development in reading, analyzing and critiquing nursing research reports. Additional emphasis on the elements of evidence-based practice as a research application endeavor. Formerly offered as NURS 422 in the prelicensure BSN program track and as NURS 343 and as NURS 447 in the RN to BSN program track; students may not earn credit for NURS 4222 after completing NURS 422 or NURS 343 or NURS 447. Department consent required. Satisfies the UD Scientific Inquiry GE requirement (B) for nursing students

Course Learning Outcomes:

1. Describe the relationship of nursing theory, research, evidence-based practice, and quality improvement, and data analytics.
2. Compare and contrast the roles of baccalaureate-prepared, master’s-prepared, and doctorally-prepared nurses in research and evidence-based practice.
3. Describe the research process (traditional & data analytical approaches) from development of the research question through dissemination of findings.
4. Discuss common research designs, both quantitative and qualitative, sampling, measurement, data collection, and data analysis methods.
5. Discuss ethical principles and legal/regulatory requirements pertinent to research, especially with human subjects.
6. Demonstrate ability to critique individual qualitative and quantitative research reports.
7. Demonstrate information literacy skills for retrieval, organization, levelling and evaluation of evidence.
8. Describe the evidence-based practice process from development of the clinical question through appraisal of evidence and implications for practice change.
9. Demonstrate beginning competence in the EBP process from clinical question formation through judging implications of a body of evidence for practice change.

Assignments

Graded Item	Points
Sherpath Lessons (1pt each, 1 lesson/week)	15 pts
Sherpath Adaptive Quiz (1 pt for mastery, 1 quiz/week)	15 pts
Discussion Board (10 pts, 1 week)	10 pts

SAMPLE LAYOUT NURS 422 Q2S

Critique #1	10 pts
Critique #2	10 pts
Critique #3	10 pts
Final Exam (60 items, ½ point each)	30 pts
Total	100 pts

ASSIGNMENT POLICY

All assignments must be completed in full and submitted *as assigned* in order to pass all nursing courses.

Approved by FO 11.30.18.

Credit/ no credit

For those assignments that are credit/no credit, one point will be deducted per week for a max of 10 points if the assignments are not completed by due date

ASSIGNMENT DESCRIPTOR (brief)

Sherpath Lessons These “lessons” are found in each chapter and are assigned by faculty. You are expected to take each lesson after reading the chapters, using the “quiz me” feature throughout. Use each lesson assigned; upon completion one point is awarded for a lesson

Sherpath Adaptive Quizzing These quizzes, geared for the intermediate level of mastery, afford the unique opportunity to continue testing (successive chances/questions) till competency is demonstrated. See Calendar for details.

Virtual Discussion Board You will participate in Virtual Discussion during one week (Week 6). You will post your thoughts, ideas, and/or opinions about a given topic or issue. You will also respond to your colleagues' postings. Your active and timely participation in the Discussions are critical to the success of the entire class. Requirements and rubric is found in Blackboard.

Critique Each student will submit critiques of a research article of their choosing (published within last 5 years) to assess mastery of required readings, course lectures, and student learning outcomes. All articles must be submitted along with critique and grading rubric. Please refer to the Research Article Critique Rubric.

Final Exam: A final exam will be administered during Final Exam **week 11** to assess mastery of the required readings, course lectures, and student learning outcomes. It is a 60-question exam (0.5 points each) will cover all course learning activities.

Course Weekly Plan

Weekly Objectives	Topical Outlines	Teacher & Self-Directed Learning & Preparation for Class	Classroom Activities	Class Assignment & Assessment
<p>Intro to Nursing Research, Evidence-Based Practice & Big Data in Healthcare</p> <p>Week 1</p> <ol style="list-style-type: none"> 1. Define research, nursing research, and evidence-based practice. 2. Discuss the past and present activities influencing research in nursing. 3. Examine ways of acquiring nursing knowledge—tradition, authority, borrowing, trial and error, personal experience, role modeling, intuition, and reasoning. 4. Describe the common types of research—quantitative, qualitative, mixed methods, and outcomes—conducted to generate evidence for nursing practice. 5. Describe the purposes of research in implementing an evidence-based nursing practice. 6. Discuss your role in research as a professional nurse. 7. Describe the following strategies for synthesizing healthcare research: systematic review, meta-analysis, meta-synthesis, and mixed-methods systematic review. 	<p>Course Intro</p> <p>Intro Nsg Research & EBP</p> <p>Intro Big Data in Health Care</p> <p>The Big Data Movement in Health Care</p> <p>All of US NIH Initiative</p> <p>Information Literacy & Searching (review)</p>	<p>GO TO BB Content Folder Week 1</p> <ul style="list-style-type: none"> • Healthy People 2020 • AACN Position Statement • Differentiating Research, EBP, QI • NINR Strategic Plan • Info Literacy Folder • Corona Folder • Ch 1 Intro Nsg Research ppt <p>GO TO BB Sherpath Folder</p> <p>→Ch 1 Intro Nsg Research & Importance in EBP Ebook</p> <p>→Conflicts Case Study</p> <p>→Scientific Research Process Lesson</p>	<p>Review NURS 4222 Syllabus</p> <p>Orientation to Course & Tools</p> <ul style="list-style-type: none"> • Review Syllabus, Expectations (ungraded quiz, practice DB grading, sources of help) (syllabus folder) <p>Lecture/Discussion</p>	<p>Lesson 1</p> <p>EAQ 1</p>

SAMPLE LAYOUT NURS 422 Q2S

<p>8. Examine the levels of research evidence available to nurses for practice.</p> <p>9. Describe the Big Data Movement in Health Care in its relationship to non-traditional research methods</p>				
<p>Building EBP with Theory & Frameworks, Questions & Hypotheses & Big Data</p> <p>Week 2</p> <p>1. Identify research topics, problems & purposes in published quantitative and qualitative studies.</p> <p>2. Critically appraise the research problems, purposes and feasibility in studies</p> <p>3. Differentiate among the types of hypotheses (associative vs. causal, simple vs. complex, nondirectional vs. directional, and statistical vs. research).</p> <p>4. Critically appraise the quality of objectives, questions, and hypotheses in studies.</p> <p>5. Differentiate the types of variables included in research reports.</p> <p>6. Define theory and the elements of theory (concepts, relational statements, and propositions).</p> <p>7. Distinguish among the levels of theoretical thinking.</p> <p>8. Describe the use of middle range theories as frameworks for studies.</p>	<p>AI, Big Data, the Research process & EBP</p> <p>Critical Thinking & EBP</p> <p>The Scientific Process, Hypothesis Testing</p>	<p>GO TO BB Content Folder Week 2</p> <ul style="list-style-type: none"> • Ch 5 ppt • Ch 7 ppt • Ch 13 ppt • EBP Digital Transformation ppt <p>GO TO BB Sherpath Folder</p> <p>→Ch 5 Examining Research Problems, Purposes, Hypotheses Ebook</p> <p>→Ch 7 Understanding Theory Ebook</p> <p>→Ch 13 Building an EBP Ebook</p> <p>→Frameworks for Research Case Study</p> <p>→Theoretical Basis Lesson</p> <p>→EBP Model Lesson</p>	<p>Lecture/Discussion</p>	<p>Lesson 2 EAQ 2</p>

SAMPLE LAYOUT NURS 422 Q2S

<p>9. Describe the purpose of a research framework.</p> <p>10. Identify and critically appraise research frameworks developed from nursing and other theories.</p> <p>11. Describe the benefits and challenges related to evidence-based practice in nursing.</p> <p>12. Use the PICO format to formulate clinical questions to identify evidence for use in practice.</p> <p>13. Implement research-based protocols, algorithms, guidelines, and policies in your practice.</p> <p>14. Critically appraise systematic reviews, meta-analyses, meta-syntheses, and mixed-methods systematic reviews of research evidence.</p> <p>15. Identify strengths & weaknesses in models used to promote evidence-based practice in nursing.</p> <p>16. Apply the Iowa Model of Evidence-Based Practice to make changes in healthcare agencies.</p> <p>17. Apply the Grove Model to implement national evidence-based guidelines in your practice.</p> <p>18. Describe the significance of evidence-based practice centers and translational research in developing evidence-based health care.</p>				
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SAMPLE LAYOUT NURS 422 Q2S

<p>Evidence, Evidentiary Hierarchies, the Nature of Evidence & Artificial Intelligence in Healthcare</p> <p>Week 3</p> <ol style="list-style-type: none"> 1. Discuss the purposes of the literature review in quantitative and qualitative research. 2. Critically appraise the literature review section of a published study for current quality sources, relevant content, and synthesis of relevant content. 3. Conduct a computerized search of the literature. 4. Write a literature review from a synthesis of critically appraised literature to promote the use of evidence-based knowledge in nursing practice. 5. Describe the benefits and challenges related to evidence-based practice in nursing. 6. Use the PICO format to formulate clinical questions to identify evidence for use in practice. 7. Implement research-based protocols, algorithms, guidelines, and policies in your practice. 8. Critically appraise systematic reviews, meta-analyses, meta-syntheses, and mixed-methods systematic reviews of research evidence. 	<p>The Nature of Evidence</p> <p>Evidentiary Bases for Nursing Practice</p> <p>The foundational nature of literature reviews</p> <p>Implementation models for EBP</p> <p>Translational research, Big Data & EBP</p>	<p>GO TO BB Content Folder</p> <p><u>Week 3</u></p> <ul style="list-style-type: none"> • Ch 6 <u>ppt</u> • Ch 13 <u>ppt</u> • Evidence Hierarchy • Top AI Algorithms in Health Care (AI in healthcare_Big Data folder) • Top AI Algorithms: Figure 1 <u>ppt</u> (AI in healthcare_Big Data folder) <p>GO TO BB Sherpath Folder</p> <p>→ Ch 6 Understanding & Critically Appraising Literature-<u>Ebook</u></p> <p>→ Ch 13 Building an Evidence-Based Nsg Practice <u>Ebook</u></p> <p>→ Sources/Levels Evidence <u>Lesson</u></p> <p>→ Research Evidence & Implications <u>Lesson</u></p>	<p>Lecture/Discussion</p> <p>Share/Pair & Report Out: classifying a literature review, forming a research question from “gap” & experience, searching for AI algorithms, levels of evidence</p>	<p>Lesson 3</p> <p>EAQ 3</p>
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SAMPLE LAYOUT NURS 422 Q2S

<p>9. Identify strengths & weaknesses in models used to promote evidence-based practice in nursing.</p> <p>10. Apply the Iowa Model of Evidence-Based Practice to make changes in healthcare agencies.</p> <p>11. Apply the Grove Model to implement national evidence-based guidelines in your practice.</p> <p>12. Describe the significance of evidence-based practice centers, translational research and Big Data in developing evidence-based health care.</p>				
<p>The Research Process & the Electronic Health Record Data at Work</p> <p>Week 4</p> <p>1. Discuss the purposes of the literature review in quantitative and qualitative research.</p> <p>2. Critically appraise the literature review section of a published study for current quality sources, relevant content, and synthesis of relevant content.</p> <p>3. Conduct a computerized search of the literature.</p> <p>4. Write a literature review from a synthesis of critically appraised literature to promote the use of evidence-based knowledge in nursing practice.</p>	<p>The foundational nature of literature reviews</p> <p>Critiquing the literature</p> <p>The importance of sampling in drawing inferences from data</p> <p>Common uses of AI methods in predicting health care activities & outcomes</p>	<p>GO TO BB Content Folder <u>Week 4</u></p> <ul style="list-style-type: none"> • Data Sci Analytic Techniques <u>ppt</u> • Ch 6 <u>ppt</u> • Ch 9 <u>ppt</u> <p>GO TO BB Sherpath Folder</p> <p>→ Ch 6 Understanding & Appraising Literature <u>Ebook</u></p> <p>→ Ch 9 Populations & Samples</p> <p>→ Outcomes Research <u>Case Study</u></p> <p>→ Populations & Samples <u>Case Study</u></p> <p>→ Research Problems <u>Lesson</u></p>	<p>Lecture/Discussion</p> <p>Share/Pair & Report Out: classifying a literature review, Delimitations of a literature review, a priori study structure, description of everyday AI/ML applications</p>	<p>Lesson 4</p> <p>EAQ 4</p>

SAMPLE LAYOUT NURS 422 Q2S

<p>5. Describe sampling theory with its relevant concepts 6. Critically appraise the sampling criteria in published studies. 7. Identify the specific type(s) of probability and nonprobability sampling methods implemented in quantitative and qualitative studies. 8. Describe the aspects of power analysis used to determine sample size in selected studies. 9. Critically appraise the sample size of quantitative and qualitative studies. 10. Critically appraise the sampling processes implemented in quantitative and qualitative studies. 11. Critically appraise the settings used for quantitative and qualitative studies.</p>		<p>→ Elements Conducting Research <u>Lesson</u></p>		
<p>Quantitative Research, Populations, Measurement, Statistics, Part I</p> <p>Week 5 Tues The student will:</p> <ol style="list-style-type: none"> 1. Define terms relevant to the quantitative research process—basic research, applied research, rigor, and control. 2. Compare and contrast the problem-solving process, nursing process, and research process. 3. Identify the steps of the quantitative research process in descriptive, correlational, quasi- 	<p>Common quantitative designs: descriptive, correlational, quasi-experimental</p> <p>Research questions, problems, objectives, hypotheses</p> <p>Feasibility: Time & Money</p> <p>Study Significance: From concept to variable to findings</p>	<p>GO TO BB Content Folder <u>Week 5</u></p> <ul style="list-style-type: none"> • Ch 2 <u>ppt</u> • Ch 8 <u>ppt</u> • Ch 10 <u>ppt</u> <p>GO TO BB Sherpath Folder</p> <p>→ Ch 2 Intro Quan Design <u>Ebook</u></p> <p>→ Ch 8 Clarifying Quan Design <u>Ebook</u></p> <p>→ Ch 10 Clarifying Measurement <u>Ebook</u></p>	<p>Lecture/Discussion</p> <p>Share/Pair & Report Out: anatomy of a research article, abstract writing of a single independent study, What Are You Trying to Measure?</p>	<p>Lesson 5 EAQ 5</p>

SAMPLE LAYOUT NURS 422 Q2S

<p>experimental, and experimental published studies.</p> <p>4. Read quantitative research reports.</p> <p>5. Conduct initial critical appraisals of quantitative research reports.</p> <p>6. Identify the noninterventional or nonexperimental designs (descriptive & correlational) and intervention or experimental designs (quasi-experimental & experimental) commonly used in quantitative nursing studies.</p> <p>7. Describe the concepts relevant to quantitative research designs.</p> <p>8. Examine study designs for strengths and threats to design validity.</p> <p>9. Critically appraise descriptive and correlational designs in studies.</p> <p>10. Describe the elements of designs that examine causality.</p> <p>11. Critically appraise the interventions implemented in studies.</p> <p>12. Critically appraise the quasi-experimental and experimental designs in studies.</p> <p>13. Examine the quality of randomized controlled trials conducted in nursing.</p> <p>14. Describe measurement theory and its relevant concepts of directness of measurement, levels of measurement, measurement error, reliability, and validity.</p> <p>15. Determine the levels of measurement—nominal, ordinal,</p>		<p>→Intro to Quantitative Research <u>Case Study</u></p> <p>→Clarifying Quant Design <u>Case Study</u></p> <p>→Clarifying Measurement <u>Case Study</u></p> <p>→Terminology <u>Lesson</u></p>		
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SAMPLE LAYOUT NURS 422 Q2S

<p>interval, and ratio—achieved by measurement methods in studies.</p> <p>16. Critically appraise the reliability and validity of measurement methods in studies.</p> <p>17. Critically appraise the accuracy, precision, and error of physiological measures used in studies.</p> <p>18. Critically appraise the sensitivity, specificity, negative predictive value, and likelihood ratios of diagnostic tests implemented in research and clinical practice.</p> <p>19. Critically appraise the measurement strategies—physiological measures, observations, interviews, questionnaires, & scales—used in quantitative studies.</p> <p>20. Critically appraise the quality of the data collection section in quantitative studies.</p>				
<p>Quantitative Research, Populations, Measurement, Statistics, Part II</p> <p>Week 6 Tues</p> <p>1. Describe probability theory and decision theory, which guide the statistical analysis of data.</p> <p>2. Describe the process of inferring from a sample to a population.</p> <p>3. Compare and contrast Type I and Type II errors that can occur in studies.</p> <p>4. Identify the steps of the data analysis process: (a) management of missing data; (b) description of the</p>	<p>Steps of the data analysis process</p> <p>Appropriateness of inferential statistics in studies</p> <p>Appropriateness of Machine Learning methods in studies</p> <p>Types of statistics & methods for actual prediction</p>	<p>GO TO BB Content Folder</p> <p><u>Week 6</u></p> <ul style="list-style-type: none"> • Ch 11 ppt • Ch 12 ppt • Data Sci Analytic Techniques • COVID 19 Evidence Strength • Critique Folder • Corona Virus: Exponential Spread? 	<p>Lecture/Discussion</p> <p>Share/Pair & Report Out: choosing statistical tests appropriate to level of data, prediction vs. explanatory power, clinical & statistical significance</p>	<p>Lesson 6</p> <p>EAQ 6</p> <p>Discussion Board Critique 1</p>

SAMPLE LAYOUT NURS 422 Q2S

<p>sample; (c) reliability of the measurement methods; (d) exploratory analysis of the data; and (e) use of inferential statistical analyses guided by study objectives, questions, or hypotheses.</p> <p>5. Identify descriptive analyses, such as frequency distributions, percentages, measures of central tendency & dispersion.</p> <p>6. Describe the results obtained from the inferential statistical analyses conducted to examine relationships (Pearson product-moment correlation and factor analysis) and make predictions (linear regression analysis and multiple regression analysis).</p> <p>7. Describe the results obtained from inferential statistical analyses conducted to examine differences, such as chi-square analysis, t-test, ANOVA & ANCOVA.</p> <p>8. Describe the five types of results obtained from quasi-experimental & experimental studies that are interpreted within a decision theory framework: (a) significant and predicted results; (b) nonsignificant results; (c) significant and unpredicted results; (d) mixed results; and (e) unexpected results.</p> <p>9. Compare and contrast statistical significance & clinical importance of results.</p>	<p>Interpretation of findings & application to care services</p> <p>Introductory appraisal</p>	<p>GO TO BB Sherpath Folder →Ch 11 Understanding Stats →Ch 12 Critical Appraisal →Quantitative Method Lesson</p>		
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SAMPLE LAYOUT NURS 422 Q2S

<p>10. Critically appraise statistical results, findings, limitations, conclusions, generalization of findings, nursing implications & suggestions for further research in a published study.</p> <p>12. Describe the purpose & the three steps for critically appraising a study: (a) identifying the steps or elements of the research process in the study; (b) determining study strengths and weaknesses; and (c) evaluating the credibility and meaning of the study findings.</p> <p>13. Conduct a critical appraisal of a quantitative research report and a qualitative research report.</p> <p>14. Identify non-traditional (AI/ML) techniques commonly applied to <i>structured</i> health care data: decision tree, neural network, K-means clustering, cluster analysis.</p>				
<p>Qualitative Research, Medical Social Media Data & Clinical Natural Language Processing</p> <p>Week 7</p> <p>1. Identify the steps of the qualitative research process.</p> <p>2. Describe four qualitative research designs—phenomenological research, grounded theory research, ethnography, and exploratory-descriptive qualitative research—and their intended outcomes.</p>	<p>Intro Traditional Qual Approach</p> <p>Sampling & Recruitment</p> <p>Data Collection, management & analysis incl NLP</p> <p>Rigor</p> <p>Social Media Data Use: semantic analysis & sentiment analysis</p>	<p>GO TO BB Content Folder <u>Week 7</u></p> <ul style="list-style-type: none"> • Ch 3 ppt • Simple Intro to NLP • Lingeman article Opiod Behavior • Udelsman article Needle in a Haystack NLP & Serious Illness • Rolls article Social Media Use by Professionals 	<p>Lecture/Discussion</p> <p>Share/Pair & Report Out: harvesting blog content of choice to postulate its use</p>	<p>Lesson 7 EAQ 7</p>

SAMPLE LAYOUT NURS 422 Q2S

<p>3. Identify differences in sampling, recruitment, data collection, and data analysis for quantitative and qualitative research.</p> <p>4. Describe strategies used by qualitative researchers to increase the credibility and transferability of their findings.</p> <p>5. Critically appraise qualitative studies for application to practice.</p> <p>6. Describe the contribution of Natural Language Processing to clinical decision-making.</p> <p>7. Describe the contribution of social media use by professionals to the development of evidence-informed practice.</p>		<p>GO TO BB Sherpath Folder →Ch 3 Intro to Qualitative Research <u>Ebook</u> →Qualitative Research <u>Case Study</u> →Qualitative Approaches <u>Lesson</u> →Qualitative Research <u>Lesson</u></p>		
<p>Utilization & Appraisal of Available Data, Part I</p> <p>Week 8</p> <p>1. Describe the purpose of intellectual critical appraisals of studies in nursing.</p> <p>2. Describe the three steps for critically appraising a study: elements/components, strengths & weaknesses & credibility and meaning of findings.</p> <p>3. Conduct a critical appraisal of a quantitative research report & a qualitative research report.</p> <p>4. Describe the benefits and challenges related to evidence-based practice in nursing.</p>	<p>Appraisal: Critique of Quant & Qual Studies</p> <p>EBP & Big Data</p>	<p>GO TO BB Content Folder <u>Week 8</u></p> <ul style="list-style-type: none"> • Ch 12 <u>ppt</u> • Critique Folder • Where is All That Data? folder <p>GO TO BB Sherpath Folder →Ch 12 Critical Appraisal of Quantitative & Qualitative Research →Appraisal <u>Case Study</u> →Analysis of Research Findings <u>Lesson</u></p>	<p>Lecture/Discussion</p>	<p>Lesson 8 EAQ 8 Critique 2</p>

SAMPLE LAYOUT NURS 422 Q2S

<p>5. Use the PICO format to formulate clinical questions to identify evidence for use in practice.</p> <p>6. Implement research-based protocols, algorithms, guidelines, and policies in your practice.</p> <p>7. Critically appraise systematic reviews, meta-analyses, meta-syntheses & mixed-methods systematic reviews of research evidence.</p> <p>8. Describe the models used to promote evidence-based practice in nursing.</p> <p>9. Apply the Iowa Model of Evidence-Based Practice to make changes in healthcare agencies.</p> <p>10. Apply the Grove Model to implement national evidence-based guidelines in your practice.</p> <p>11. Describe the significance of evidence-based practice centers & translational research in developing evidence-based health care.</p>				
<p>Utilization & Appraisal of Data Part II</p> <p>Week 9</p> <p>1. Describe the benefits and challenges related to evidence-based practice in nursing.</p> <p>2. Use the PICO format to formulate clinical questions to identify evidence for use in practice.</p>	<p>Appraisal: Critique of Quant & Qual Studies</p> <p>EBP & Big Data</p>	<p>GO TO BB Content Folder <u>Week 9</u></p> <ul style="list-style-type: none"> • Ch 13 <u>ppt</u> <p>GO TO BB Sherpath Folder</p> <p>→Ch 13 Building an EBP</p> <p>→Dissemination of Research Findings <u>Lesson</u></p>	<p>Lecture/Discussion</p> <p>Share/Pair & Report Out: Search for an implementation Study (EBP), How is Big Data used (national or global initiative)?, How is Big Data used (one institution or locale)?</p>	<p>Lesson 9</p> <p>EAQ 9</p>

SAMPLE LAYOUT NURS 422 Q2S

<p>3. Implement research-based protocols, algorithms, guidelines, and policies in your practice.</p> <p>4. Critically appraise systematic reviews, meta-analyses, meta-syntheses & mixed-methods systematic reviews of research evidence.</p> <p>5. Describe the models used to promote evidence-based practice in nursing.</p> <p>6. Apply the Iowa Model of Evidence-Based Practice to make changes in healthcare agencies.</p> <p>7. Apply the Grove Model to implement national evidence-based guidelines in your practice.</p> <p>8. Describe the significance of evidence-based practice centers & translational research in developing evidence-based health care.</p>				
<p>Ethics, Compliance & Healthcare Data Privacy & Portability in the Digital Age</p> <p>Week 10</p> <p>1. Describe the role of the Bachelor of Science in nursing (BSN)-prepared nurse in ensuring ethical research.</p> <p>2. Identify the historical events influencing the development of ethical codes & regulations for nursing & biomedical research.</p>	<p>Historical Events in Research Shaping Laws, Regulations, Practices</p> <p>Role of BSN-prepared nurse</p> <p>Function & processes of IRBs</p> <p>Current issues: genomics, DTC testing, Interoperability, Sharing</p>	<p>GO TO BB Content Folder Week 10</p> <ul style="list-style-type: none"> • Ch 4 ppt • HIPPA Privacy Rule • Machine Learning & Data Ethics (Vayena article) <p>GO TO BB Sherpath Folder</p> <p>→ Ch 4 Examining Ethics in Nsg Research <u>Ebook</u></p> <p>→ Ethics <u>Case Study</u></p>	<p>Lecture/Discussion</p> <p>Share/Pair & Report Out: What is the role of a HIE?, What are the risks in sharing PGHD? What are Google & Apple up doing for COVID 19 contact tracing?</p>	<p>Lesson 10</p> <p>EAQ 10</p>

SAMPLE LAYOUT NURS 422 Q2S

<p>3. Describe the ethical principles & human rights that require protection in research.</p> <p>4. Identify the essential elements of the informed consent process in research.</p> <p>5. Describe the levels of review that an institutional review board (IRB) may use in reviewing a study.</p> <p>6. Describe the current issues in ethical research surrounding genomics research, use of animals in studies, and research misconduct.</p> <p>7. Critically appraise ethical sections in research reports, with emphasis on IRB and informed consent processes.</p> <p>8. Review HIPPA Privacy Rules relative to Protected Health Information (PHI)</p> <p>9. List some ethical challenges involved in the use of machine learning models for clinical decision making.</p>	<p>Scientific Misconduct</p> <p>PGHD Privacy & Data Breaches</p>	<p>→ Human Subject Research <u>Lesson</u></p> <p>→ Institutional Review <u>Lesson</u></p>		
<p>EBP Processes, Hierarchy & Strategy</p> <p>Week 11</p> <p>1. Elaborate the relationship of Big Data to EBP</p> <p>2. Identify the roles of members of the Data Science teams</p> <p>3. Identify aspects of algorithm development relevant to nursing care processes and outcomes</p> <p>4. Describe the extraction & analytic processes within CDDS</p>	<p>The EHR at Work: Review of Clinical Decision Support</p> <p>EBP guidelines: Development & Sources</p> <p>Nursing documentation, progress notes, NLP & risk assessment</p> <p>Data extraction & analytics</p>	<p>GO TO BB Content Folder Week 10</p> <ul style="list-style-type: none"> Curated Content <p>GO TO BB Sherpath Folder</p> <p>→ EBP Process <u>Lesson</u></p>	<p>Lecture/Discussion</p> <p>Share/Pair & Report Out: Prediction of Opioid Crisis Outcomes, COVID-19 resurgences, Patient Safety events</p>	<p>Lesson 11</p> <p>EAQ 11</p> <p>Critique 3</p>

SAMPLE LAYOUT NURS 422 Q2S

<p>Big Data & EBP, Part I</p> <p>Week 12</p> <ol style="list-style-type: none"> 1. Describe the status of PGHD relative to the EHR 2. Critique the clinical usefulness of selected health apps 3. Articulate an understanding of algorithms, nursing care processes & robots 4. Describe the “five Vs” of healthcare data which contribute to outcomes 5. Describe the plethora of data derived from “The Hospital of the Future” 	<p>Symptom Science</p> <p>Precision Health</p> <p>The flawed assumption of homogeneity in traditional science</p> <p>Deployment of Highly-individualized consumer health data</p> <p>The Gartner Hype Cycle</p> <p>PGHD development, use, testing & sharing</p>	<p>GO TO BB Content Folder Week 10</p> <ul style="list-style-type: none"> • Curated Content <p>GO TO BB Sherpath Folder</p> <p>→Research Evidence & Implications Lesson</p>	<p>Lecture/Discussion</p> <p>Share/Pair & Report Out: Critique of app for seniors or population of choice e.g. Nimble, PGHD data distribution, the Social Experiment of Social Distancing</p>	<p>Lesson 12 EAQ 12</p>
<p>Big Data & EBP, Part II</p> <p>Week 13</p> <ol style="list-style-type: none"> 1. Describe the relationship between AI/ML data & EBP 2. Imagine “The Hospital of the Future” from the patient point of view 3. Describe the hope, the hype, the promise & the peril of AI in healthcare 4. List findings of major governmental & quasigovernmental reports (NAS report on AI) 	<p>Knowledge & skills transfer across disciplines to manage chronicity, “compress morbidity” & promote health</p> <p>Data granularity: from individual data to health of populations vs. population health</p> <p>Interactive dashboards, heat maps & Data Viz</p>	<p>GO TO BB Content Folder Week 10</p> <ul style="list-style-type: none"> • Curated Content <p>GO TO BB Sherpath Folder</p> <p>→Evolution of Research Process Lesson</p>	<p>Lecture/Discussion</p> <p>Share/Pair & Report Out: COVID 19 spatial reasoning, ArcGIS, research briefs on Precision Prescription</p>	<p>Lesson 13 EAQ 13</p>
<p>Additional Designs & Future Research</p> <p>Week 14</p> <ol style="list-style-type: none"> 1. Identify quantitative and qualitative methods in mixed methods studies. 	<p>Prominent Innovations with NLP</p> <p>Redefinitions safety & adversity</p>	<p>GO TO BB Content Folder Week 10</p> <ul style="list-style-type: none"> • Ch 14 ppt • McGraw Article 	<p>Lecture/Discussion</p> <p>Share/Pair & Report Out: Predictive Models for Heterogeneous Treatment</p>	<p>Lesson 14 EAQ 14</p>

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<p>2. Describe mixed methods designs, e.g. concurrent convergent, exploratory sequential, & explanatory sequential.</p> <p>3. Describe the unique challenges of conducting mixed methods studies.</p> <p>4. Critically appraise a mixed methods study.</p> <p>5. Explain the theoretical basis of outcomes research.</p> <p>6. Discuss the history of outcomes research in nursing.</p> <p>7. Describe the role of outcomes research in determining the effect of nursing on health outcomes.</p> <p>8. Differentiate outcomes research from other types of research conducted by nurses</p> <p>9. Identify the methodologies used in published outcomes studies.</p> <p>10. Critically appraise an outcomes study.</p>		<ul style="list-style-type: none"> Kirkland COVID 19 Case Study & Clinician Well-Being <p>GO TO BB Sherpath Folder</p> <p>→Ch 14 Intro to Additional Research Methodologies Ebook</p> <p>→Interprofessional Collab Lesson</p>	<p>Effects, Institutional Resource Supply (ICU beds & PPE) during pandemic, PTSD. Patient outcomes via Nursing Narrative</p>	
<p>Additional Designs & Future Research</p> <p>Week 15</p> <p>1. Relate nursing care processes to outcomes in quantitative and qualitative research</p> <p>2. Discuss role of Registered Nurse as Subject Matter Expert on the Data Science Team</p> <p>3. Describe the relationship between traditional science and AI/ML</p>	<p>Big Data Initiative: All of Us</p> <p>Grand Challenge Initiative: Healthy Nurse, Healthy Nation</p> <p>Overview of AI/ML scientific methods & tools for clinical questions: neural networks, ArcGIS, neurocomputing, pattern</p>	<p>GO TO BB Content Folder Week 10</p> <ul style="list-style-type: none"> Curated Content <p>GO TO BB Sherpath Folder</p> <p>→Quantitative Approach Lesson</p>	<p>Lecture/Discussion</p> <p>Practice Questions</p> <p>Review</p>	<p>Lesson 15</p> <p>EAQ 15</p>

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4. Discuss the trajectory of data transformation to information, knowledge & wisdom	recognition, data mining, NLP and Data Viz			
FINAL EXAM				