|  |  |  |
| --- | --- | --- |
| **1** | **Course title** | Quantitative Research Methodology |
| **2** | **Course number** | 701902 |
| **3** | **Credit hours** | 3 credit hours (Theory) |
| **Contact hours (theory, practical)** | 48 hours theory |
| **4** | **Classroom #** | Graduate Classroom # 1 |
| **5** | **Level of course**  | PhD |
| **6** | **Prerequisites/corequisites** | None |
| **7** | **Program title** | Ph.D. Nursing Program |
| **8** | **Program code** | ----- |
| **9** | **Awarding institution**  | The University of Jordan |
| **10** | **School** | School of Nursing |
| **11** | **Department** | Graduate Studies |
| **12** | **Level of course**  | First Level |
| **13** | **Year of study and semester (s)** | 2020/2021- 1st Semester |
| **14** | **Final Qualification** | Ph.D. |
| **15** | **Other department (s) involved in teaching the course** | None |
| **16** | **Language of Instruction** | English |
| **17** | **Leaching methodology** | [ ] Blended [x] Online |
| **18** | **Electronic platform(s)** | [x] Moodle [ ] Microsoft Teams [x] Skype [ ] Zoom [ ] Others………… |
| **19** | **Date of production/revision** | 10/10/2020 |
|  |  |  |

**18 Course Coordinator:**

|  |
| --- |
| Name: Mahmoud Alhussami, PhD, DScOffice number: School of Nursing, First Floor.Phone number: 23110Office hours: Wednesday 10-12Email: Email: m.alhussami@ju.edu.joAcademic website: http://eacademic.ju.edu.jo/m.alhussami E-Learning website: https://elearning.ju.edu.jo/m.alhussami  |

**19 Other instructors:**

|  |
| --- |
| Name:Office number:Phone number:Office hours:Email:Name:Office number:Phone number:Office hours:Email: |

**20 Course Description:**

|  |
| --- |
| As stated in the approved study plan.**This course will assist PhD students to use organized review and critical thinking to analyze theoretical works, which are of importance to nursing as a discipline and as a profession. Students will utilize a theorist(s) upon whom to design a research study proposal in his/her area of specialization.**  |

**21 Course aims and intended learning outcomes:**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| A- Aims:This course introduces the student to the main concepts of scientific research and evidence based statistical results. In addition, students will experience actual writing of research proposals and utilize critical thinking and analytical skills in reading and criticizing research articles. More specifically, the main objectives of this course are:* 1. Define nursing research and identify potential research questions specific to nursing.
	2. Identify a research problem and develop it based on a conceptual framework.
	3. Determine the most correct method to test a hypothesis
	4. Identify Type I and Type II errors and how to prevent them.
	5. Review necessary sampling power.
	6. Identify major types of research methodology and the role of theory in each.
	7. Develop analytical and communication skills to interact with other healthcare professionals who are also using research to improve health care.
	8. Examine and critique published nursing research to identify its strengths and weaknesses.
	9. Critique nursing research relevant to health care promotion and health interventions.

B-Course Intended Learning Outcomes (CILOs): Upon successful completion of this course, students will be able to achieve the following Program and Course Intended Learning Outcomes

|  |
| --- |
| **Program Intended Learning Outcomes (PILO)** |
| **PILO 1: Generate and create nursing knowledge through different philosophical, theoretical, and methodological approaches.** |
| Specific Course ILOs | 1. Define concepts of research pyramid and evidence based research.
2. Compare between different research designs and methods.
3. Demonstrate knowledge of measurement issues and instrument development for nursing research.
 |
| Learning Methodology | Lectures, Group discussion, YouTube  |
| Evaluation Methods | MCQs, assignments |
| **PILO 2: Test nursing and health theories for improving the quality of nursing care and promoting and maintaining individuals, families and communities health** |
| Specific Course ILOs | 1. Discuss some topics related to nursing.
2. Develop critical skills and knowledge in nursing to be able to function as part of health team.
3. Communicate clearly an understanding of health problems based on scientific principles.
4. Discuss the primary health care, primary care, and school health.
 |
| Learning Methodology | Lectures, Group discussion, YouTube |
| Evaluation Methods | MCQs, assignments, Final team project  |
| **PILO 3: Adapt leadership and management concepts in advancing nursing discipline and health care delivery system at the national, regional and international levels.** |
| Specific Course ILOs | 1. Apply leadership skills and decision making in providing nursing care.
2. Develop competency in analyzing causes of health issues.
 |
| Learning Methodology | Lectures, Group discussion, YouTube |
| Evaluation Methods | MCQs, assignments, Final team project |
| **PILO 4: Evaluate the role of policy in health care delivery system and propose policy modification strategies.** |
| Specific Course ILOs | 1. Explain the role of nurse educator.
2. Describe setting & target groups for health promotion programs.
3. Identify health related problems facing population.
4. Recognize cultural issues.
5. Relate research concepts to all nursing fields.
 |
| Learning Methodology | Lectures, Group discussion, YouTube |
| Evaluation Methods | MCQs, assignments, Final team project |
| **PILO 5: Appraise the principles of ethics in research, education, and community service.** |
| Specific Course ILOs | * 1. Conduct the appropriate evidence in research process.
	2. Differentiate between different levels of evidence based in nursing practices.
	3. Analyze an evidence based practice models.
 |
| Learning Methodology | Lectures, group Discussion and home assignments |
| Evaluation Methods | MCQs, assignments, Final team project |
| **PILO 6: Justify, design and develop innovative strategies in nursing education** |
| Specific Course ILOs | 1. Characterize target populations exposed to hazardous agents.
2. Describe methods used to detect, manage, control, or remove health hazards.
3. Interpret concepts and issues unique to different research designs.
4. Construct scientific research proposals.
5. Distinguish different research methods strengthens and weaknesses.
 |
| Learning Methodology | Lectures, group Discussion and home assignments |
| Evaluation Methods | MCQs, assignments, Final team project |
| **PILO 7: Adapt evidence-based approach into practice, education, community service, and policy** |
| Specific Course ILOs | 1. Discuss the recent evidence based practice.
2. Conduct the appropriate evidence in research process.
3. Differentiate between different levels of evidence based in nursing practices.
4. Analyze an evidence based practice models.
 |
| Learning Methodology | Lectures, group Discussion and home assignments |
| Evaluation Methods | MCQs, assignments, Final team project |
| **PILO 8: Demonstrate competency in verbal and written communication skills.** |
| Specific Course ILOs | * 1. Demonstrate capacity of using information and communication technology in presenting medical data.
	2. Communicate clearly an understanding of nursing problems based on scientific principles.
	3. Search the websites for the relevant assignments.
	4. Describe issues related to planning, implementing & evaluating health projects
 |
| Learning Methodology | Lectures, group Discussion and home assignments |
| Evaluation Methods | MCQs, assignments, Final team project |
| **PILO 9: Write thesis and scientific reports to a professional standard that build up knowledge in nursing discipline and other related health sciences** |
| Specific Course ILOs | 1. Prepare and present oral presentation to a professional standard.
2. Prepare nursing research proposal
 |
| Learning Methodology | Lectures, group Discussion and home assignments |
| Evaluation Methods | MCQs, assignments, Final team project |
| **PILO 10: Publish research article in a scientific peer reviewed journal** |
| Specific Course ILOs | 1. Write an original research to a professional standard that builds up knowledge
2. Publish research article in scientific peer reviewed journal
 |
| Learning Methodology | Write a proposal |
| Evaluation Methods | Team project |
| **PILO 11: Supervise and support research proposal and papers to improve quality of education and practices in nursing and health sciences** |
| Specific Course ILOs | Write a research proposal to a professional standard |
| Learning Methodology | Write a proposal |
| Evaluation Methods | Team project |

 |

**22. Topic Outline and Schedule:**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Week** | **Lecture** | **Topic** | **Teaching Methods\*/platform** | **Evaluation Methods\*\*** | **References** |
| 1 | 1.1 | * Course Syllabus Orientation.
* Introductions to and Overview of Texts.
* Review of Course Assignments.
* Selection of chapter sections for analysis and presentation.
 | Lecture and group discussion |  Course Overview |  Canadian Nurses Association (2010) Estabrooks (2004) Kitson (2004) DiCenso (2003) Polit & Beck (2017) Ch. 1 & Ch. 2 |
| 2 | 2.1 |  Research purpose, objec- tives and hypoytheses | Lecture and group discussion | Written exams; discussion of evidence based studies; case discussion |  Polit and Beck, 2017 ch 4Burns & Grove (2015) ch 5Isaac &Michael, 1997 ch 3Creswell, 2003, ch 6 |
| 3 | 3.1 |  Critiquing the Empirical Literature & Literature Reviews including Cochrane Reviews |  Lecture and group discussion |  Written exams; discussion of evidence based studies; case discussion | Polit & Beck (2017). Ch. 5 pp 101-115, Ch. 9 pp 210-211Schick-Makaroff et al. (2016) Chang et al. (2013) Polit & Beck (2017) Ch. 29 pp 647-671 Stroup et al. (2000) Whittemore & Knafl (2005) |
| 4 | 4.1 |  Frameworks, Conceptual, & Theoretical Underpinnings of Quantitative Research |  Lecture and group discussion |  Written exams; discussion of evidence based studies; case discussion |  Thorne, S. & Sawatzky, R. (2014) Pahwa et al. (2012) Polit & Beck (2017) Ch. 6 pp 117-135, Ch. 11 pp 236-246 |
| 5 | 5.1 |  Quantiattive designs & Design Issues in Research |  Lecture and group discussion | Written exams; discussion of evidence based studies; case discussion  |  Bilinski, Duggleby, & Rennie (2010) Bilinski, Duggleby, & Rennie (2013) Giddings, L. S., & Grant, B. M. (2007) Harris et al. (2006) Polit & Beck (2017) Ch. 9 pp 197-203, Ch. 12 pp 249-263 , & Ch. 26 pp 577-599 |
| 6 | 6.1 |  Ethical Implications of Conducting Quantitative Research |  Lecture and group discussion |  Written exams; discussion of evidence based studies; case discussion  |  Tri-Council policy statement Dennison & El-Masri (2012). Polit & Beck (2017). Ch 7 pp 137-159 U of S Ethics policies and procedures U of S research integrity policy |
| 7 | 7.1 |  Sampling Design |  Lecture and group discussion |  Written exams; discussion of evidence based studies; case discussion  |  Polit & Beck (2017). Ch. 14 pp 297-330Shadish, and Campbell, (2002).Crosby, Salazar & DiClemente (2015). Chapter 6Rudolph, Crawford, Latkin, et al. (2011) |
| 8 | 8.1 |  Research Grant Writing |  Lecture and group discussion |  Written exams; discussion of evidence based studies; case discussion  |   Gray & Bliss (2005) Engberg & Bliss (2005) Bliss & Savik (2005) Colwell & Bliss (2005) Bliss (2005) Bliss (2010) Bliss (2012) Goodridge et al. (2008) Polit & Beck (2017) Ch. 3 pp 54-67, Ch. 4 pp 69-85, & Ch. 31 pp 700-715 |
| 9 | 9.1 |  Measurement and Data Collection |  Lecture and group discussion |  Written exams; discussion of evidence based studies; case discussion  |  Dennison & El-Masri (2012). Engberg & Berben (2012). Polit & Beck (2017). Ch. 14 pp 297-330 & Ch. 15 pp 331-355Polit and Beck, 2017Salazar, Crosby & DiClemente (2016). Chapter 13Kelley, Clark, Brown, Sitzia, 2003Sharma, Wilton, Senn, Fowler, Tan, 2014 |
| 10 | 10.1 |  Data Analysis |  Lecture and group discussion |  Written exams; discussion of evidence based studies; case discussion  |  Polit and Beck, 2017Munro, 2012Green & Salkind, 2005 |
| 11 | 11.1 | Dissemination of Research Findings and Research Utilization |  Lecture and group discussion |  Written exams; discussion of evidence based studies; case discussion  |  Estabrooks et al. (2006) Graham et al. (2006) Kitson, et al. (2008) Polit & Beck (2017). Ch 2 pp 22-45, Ch 3 pp 60-62, & Ch 30 pp 675-699 |
| 12 | 12.1 |  Proposal Presentations |  Lecture and group discussion |  Written exams; discussion of evidence based studies; case discussion  |  Polit & Beck (2017) |
| 13 | 13.1 |  Proposal Presentations |  Lecture and group discussion |  Written exams; discussion of evidence based studies; case discussion  | Polit & Beck (2017)  |
| 14 | 14.1 |  Proposal Presentations |  Lecture and group discussion |  Written exams; discussion of evidence based studies; case discussion  |  Polit & Beck (2017) |
| 15 | 15.1 |  Final Exam |   |   |   |

 |

* Teaching methods include: Synchronous lecturing/meeting; Asynchronous lecturing/meeting
* Evaluation methods include: Homework, Quiz, Exam, pre-lab quiz…etc

\*In addition to required readings for each week, I will supplement your course readings with articles from the current literature. Students are encouraged to read beyond the suggested readings for the course and to develop a personal library of resources on quantitative research methods.

CLASS OUTLINE (Revised for Fall, 2020/2021)

Class One:

Part 1: Course Objectives, Format, Requirements

Part 2: Evidence for Practice Decisions

Part 1: Course Objectives, Format, Requirements, and Academic Integrity

[Principle I: Learning and Growth](http://policies.usask.ca/documents/GuidelinesForAcademicConduct.php#learning)

[Student Development](http://policies.usask.ca/documents/GuidelinesForAcademicConduct.php#develop)
[Subject Matter Competence](http://policies.usask.ca/documents/GuidelinesForAcademicConduct.php#subject)
[Pedagogical Competence](http://policies.usask.ca/documents/GuidelinesForAcademicConduct.php#pedagogy)

[Principle II: Honesty and Integrity](http://policies.usask.ca/documents/GuidelinesForAcademicConduct.php#integrity)

[Academic Honesty](http://policies.usask.ca/documents/GuidelinesForAcademicConduct.php#honesty)
[Fair and Valid Assessment](http://policies.usask.ca/documents/GuidelinesForAcademicConduct.php#valid)
[Managing Interactions and Relationships](http://policies.usask.ca/documents/GuidelinesForAcademicConduct.php#manage)

[Principle III: Respect for the Dignity of Others](http://policies.usask.ca/documents/GuidelinesForAcademicConduct.php#dignity)

[Confidentiality](http://policies.usask.ca/documents/GuidelinesForAcademicConduct.php#confident)
[Dealing with Sensitive Topics](http://policies.usask.ca/documents/GuidelinesForAcademicConduct.php#sensitive)
[Respect for Others](http://policies.usask.ca/documents/GuidelinesForAcademicConduct.php#others)
[Respect for the Institution](http://policies.usask.ca/documents/GuidelinesForAcademicConduct.php#respect)

Reading:

University of Jordan. Adherence to Academic Standards.

University of Jordan. Regulations on Student Academic Misconduct.

Part 2: Evidence for Practice Decisions

1. CNA Position Statement (2010). Evidence-informed Decision-making and Nursing Practice.
2. CNA Position Statement (2006). Nursing information and Knowledge Management.
3. Evidence-based practice (definition, examples, hierarchy of evidence)

\*Please come prepared to discuss what constitutes “sufficient” evidence.

Reading:

1. Canadian Nurses Association. (2010). Position statement: Evidence-informed decision-making and nursing practice. Available at:

<http://cnaaiic.ca/sitecore%20modules/web/~/media/cna/pagecontent/pdffr/ps113_evidence_informed_2010_e.pdf>

1. Estabrooks, C.A. (2004). Thoughts on evidence based nursing and its science-A Canadian perspective. Worldviews on Evidenced Based Nursing, 1(2), 88-90.
2. Kitson, A. (2004). The state of the art and science of evidence-based nursing in UK and Europe. Worldviews on Evidenced Based Nursing, 1(1), 6-8.
3. Polit, D. G., & Beck, C. T. (2017). Chapter 1: Introduction to Nursing Research in and Evidence-Based Practice Environment. In Nursing research: Generating and assessing evidence for nursing practice (10th ed.). New York, NY: Wolters Kluwer/Lippincott Williams & Wilkins, 3-21.
4. Polit, D. G., & Beck, C. T. (2017). Chapter 2: Evidence-Based Nursing: Translating Research Evidence into Practice. In Nursing research: Generating and assessing evidence for nursing practice (10th ed.). New York, NY: Wolters Kluwer/Lippincott Williams & Wilkins, 22-45.
5. DiCenso, A. (2003). Evidence–based nursing practice: how to get there from here. Nursing Leadership, 16(4), 20-6.

Class 2

Research purpose, objectives and hypoytheses

* The best research demonstrates an awareness of the *current* conversation among scholars.
* While a 10 year old article may be very informative, it is also true that since that time the debate has taken new directions.
* The best procedure is to stay with articles no more than three to five years old.

Questions addressed in this seminar:

* How large or widespread is the problem?
* Who is being affected?
* How severe is the problem?
* Who perceives the problem to be important?

Reading:

1. Polit, D. G., & Beck, C. T. (2017). Chapter 4: Research purpose, objectives and hypoytheses: Generating and assessing evidence for nursing practice (10th ed.). New York, NY: Wolters Kluwer/Lippincott Williams & Wilkins, pp. 22-27.
2. Burns, N., & Grove, S. (2015). Chapter 5: The Practice of Nursing Research Conduct, Critique and Utilization (5th ed.). Philadelphia: W. B. Saunders.
3. Isaac, S. &Michael,W. (1997) Chapter 3: Handbook in Research and Evaluation (Third Edition). California, USA: Educational and Industrial Testing Services.
4. Creswell, J. (2003). Chapter 6: Research Design (Second Edition). Thousand Oaks, California: Sage Publications, Inc.

Class 3:

**Critiquing the Empirical Literature & Literature Reviews including Cochrane Reviews**

Questions addressed in this seminar:

• What are the important criteria for evaluating a research article?

• What is causality? What are the criteria for assessing causality?

• What are levels of evidence?

• What is the difference between causation, correlation and confounds?

• What is the difference between a cause and an effect?

\*Please read the article by Kalisch et al. (2015) and be prepared to discuss the key strengths and limitations of this research using the guidelines outlined by Polit & Beck (2017). (See Box 5.2, Polit and Beck, 2017.)

Reading:

1. Kalisch, B.J., Aebersold, M., McLaughlin, M., Tschannen, D., Lane S. (2015). An intervention to improve nursing teamwork using virtual simulation. Western Journal of Nursing Research, 37(2), 164-179.
2. Cronin, P., Ryan, F. & Coughlan, M. (2007). Step-by-step guide to critiquing research. Part 1: quantitative research. British Journal of Nursing, 16(11), 658-663.
3. Myers, G. & Levin, R. F (2012). Can you touch your toes? Using tables of evidence (TOES) to organize your evidence review. Research and Theory for Nursing Practice, 26(4), 238-40.
4. Polit, D. G., & Beck, C. T. (2017). Chapter 5: Literature Reviews: Finding and Critiquing Evidence. In Nursing research: Generating and assessing evidence for nursing practice (10th ed.). New York, NY: Wolters Kluwer/Lippincott Williams & Wilkins, pp. 87-115.
5. Polit, D. G., & Beck, C. T. (2017). Chapter 9: Quantitative Research Design. In Nursing research: Generating and assessing evidence for nursing practice (10th ed.). New York, NY: Wolters Kluwer/Lippincott Williams & Wilkins, pp. 183-184.

1. Activity: Review John Hopkins Nursing Evidence Based Practice-Assessment-Strength of Evidence and Quality Rating <http://www.hopkinsmedicine.org/evidencebasedpractice/_docs/appendix_e_research_evidence_appraisal_tool.pdf>.
2. You might find this reading helpful: Daggett, L. M., Harbaugh, B. L., Collum, L. A. (2005). A worksheet for critiquing quantitative nursing research. Nurse Educator, 30(6), 255-258.

Critique of Peer-Reviewed Empirical Article

 Collaborative Research with Professionals, Scientists in Other Disciplines, and Other Stakeholders.

 Be prepared to discuss the following:

• Methodological triangulation

• Interprofessional collaborations: Synergy, opportunities, challenges

• Expectations [rights and responsibilities of principal investigator(s), co- investigators, collaborators, team members, and other stakeholders; team building; funding]

• How do we handle intellectual property?

Reading:

1. Aboelela, S. W., Larson, E., Bakken, S., Carrasquillo, O., Formicola, A., Glied, S. A., Haas, J., & Gebbie, K. M. (2006). Defining interdisciplinary research: Conclusions from a critical review of the literature. Health Services Research, 42(1), Part 1, 329-346.
2. Corbett, C. F., Costa, L. L.. Balas, M. C., Burke, W. J., Feroli, R. E., Daratha, K. B. (2013). Facilitators and Challenges to conducting interdisciplinary research. Medical Care, 51(4) Suppl 2, S23-31.
3. Hall, J. G., Bainbridge, L., Buchan, A., Cribb, A., Drummond, J., Gyles, C., Hicks, T. P., McWilliam, C., Paterson, B., Ratner, P. A., Skarakis-Doyle, E., & Solomon, P. (2006). A meeting of minds: Interdisciplinary research in the health sciences in Canada. CMAJ, 175(7), 763-771.
4. McBride, A. B. (2010). Toward a roadmap for interdisciplinary academic career success. Research and Theory for Nursing Practice: An International Journal, 24 (1), 74- 86.

**\*\*\*Critique of Peer-Reviewed Article is due by Midnight, November 6th, 2020\*\*\***

Literature Reviews including Cochrane Reviews

 Be prepared to discuss the following:

• Systematic reviews (Cochrane reviews) – overview, strengths, limitations

• Integrative reviews

• Scoping reviews

• Narrative reviews

Questions addressed in this seminar:

• What are the methodologies used for review of quantitative research?

• What are the strength and limitations of different review methodologies?

• What does a nursing PhD student need to know about review articles?

• Why are review articles needed?

• How can I be sure they are valid?

• How do I interpret the various summary tools used in review articles?

Reading:

1. Schick-Makaroff, K., MacDonald, M., Plummer, M., Burgess, J., & Neander, W. (2016). What Synthesis Methodology Should I Use? A Review and Analysis of Approaches to Research Synthesis. AIMS Public Health, 3(1), 172-215. doi: http://dx.doi.org/10.3934/publichealth.2016.1.172

Reviews: Examine the methodology used in the following articles. Please use the accompanying methodology papers to review readings.

1. Chang, C.W., Mu P.F., Jou, S.T., Wong T.T., & Chen Y.C. (2013). Systematic review and meta-analysis of non-pharmacological interventions for fatigue in children and adolescents with cancer, Worldwide Views on Evidence-Based Nursing, 10(4), 208-17.
2. Jansen, S. L., Forbes, D., Duncan, V., Morgan, D. G., & Malouf, R. (2011). Melatonin for the treatment of dementia (Review). The Cochrane Database of Systematic Reviews, 2011, Issue 7. Art. No.: CD003802. doi: 10.1002/14651858.CD003802.pub3.
3. Jones, K.R., Lekhak, N., & Kaewluang, N. (2014). Using mobile phones and short message service to deliver self-management interventions for chronic conditions: A Meta- review. Worldviews on Evidence-Based Nursing, 11(2), 81-88
4. Kryworuchko, J., Hill, E., Murray, M. A., Stacey, D., Fergusson, D. A. (2013). Interventions for shared decision-making about life support in the intensive care unit: a systematic review. Worldwide Views on Evidence-Based Nursing, 10(1), 3-18.
5. Yost, J., Thompson, D., Ganann, R., Aloweni F., Newman, K., McKibbon, A., Dobbins, M. Ciliska, D. (2014). Knowledge translation strategies for enhancing nurses’ evidence-informed decision-making: A scoping review. Worldviews on EvidenceBased Nursing, 11(3), 156-67.
6. Methodology Papers: Arskey, H. & O'Malley, L. (2005). Scoping studies: towards a methodological framework. International Journal of Social Research Methodology, 8(1), 19-32.
7. Hutton, B., Salanti, G., Caldwell, D.M., Chaimani, A., Schmid, C.H., Cameron, C., Ioannidis, J.P., Straus, S., Thorlund, K., Jansen, J.P., Mulrow, C., Catalá-López, F., Gøtzsche, P.C., Dickersin, K., Boutron, I., Altman, D.G., Moher, D. (2015). The PRISMA Extension Statement for Reporting of Systematic Reviews Incorporating Network Meta- analyses of Health Care Interventions: Checklist and Explanations. Annals of Internal Medicine, 162(11), 777-784.
8. Polit, D. G., & Beck, C. T. (2017). Chapter 29: Systematic Reviews of Research Evidence: Meta-Analysis, Metasynthesis, and Mixed Studies Review. In Nursing research: Generating and assessing evidence for nursing practice (10th ed.). New York, NY: Wolters Kluwer/Lippincott, Williams & Wilkins, pp 647-674.
9. Stroup, D.F., Berlin, J.A., Morton, S.C., Olkin, I., Williamson, G.D., Rennie, D., et al. (2000). Meta-analysis of observational studies in epidemiology: a proposal for reporting. Meta-analysis Of Observational Studies in Epidemiology (MOOSE) group. Journal of American Medical Association, 283, 2008–12.
10. Whittemore, R. & Knafl, K. (2005). The integrative review: updated methodology. Journal of Advanced Nursing, 52,546-553.

 Further Reading:

1. Forscher, B. K. (1963). Chaos in the brickyard. Science, 142(3590), 339.
2. The Cochrane Library.

See: <http://www.thecochranelibrary.com/view/0/index.html>.

Class 4: Theoretical Underpinnings of Quantitative Research Designs

Topics for discussion:

• Underlying philosophical paradigms of the research and the researcher

• Conceptual and theoretical contexts for nursing research problems- what fits and what does not fit

• Threats to internal and external validity

\*Using the article by Pahwa et al. (2012) come prepared to discuss the strengths and limitations of this study with particular focus on the philosophical and theoretical underpinnings of the research. Include a critique of the study validity (See Box 10.1, Polit and Beck, 2017.) In addition, come prepared to discuss your own philosophy of research.

Reading:

1. Thorne, S. & Sawatzky, R. (2014). Particularizing the general: Sustaining theoretical integrity in the context of evidence-based practice agenda. Advances in Nursing Science, 37(1), 5-18.
2. Pahwa, P., Karunanyake, C.P., Hagel, L., Janzen, B., Pickett, W., Rennie, D., Senthilselvan, A., Lawson, J., Kirychuk, S., Dosman, J. (2012). The Saskatchewan rural health study: an application of a population health framework to understand respiratory health outcomes. BMC Research Notes 5:400 1-13.
3. Polit, D. G., & Beck, C. T. (2017). Chapter 6: Specific Types of Quantitative Research. In Nursing research: Generating and assessing evidence for nursing practice (10th ed.). New York, NY: Wolters Kluwer/Lippincott Williams & Wilkins, pp 117-136.
4. Polit, D. G., & Beck, C. T. (2017). Chapter 10: Rigor and Validity in Quantitative Research. In Nursing research: Generating and assessing evidence for nursing practice (10th ed.). New York, NY: Wolters Kluwer/Lippincott Williams & Wilkins, pp 216-235.
5. Estabrooks, C.A., Morgan, D. G., Squires, J.E., Bostrom, A.-E., Slaughter, S., Cummings, G.C., Norton, P.G., (2011). The care unit in nursing home research: Evidence in support of a definition, BMC Medical Research Methodology, 11:46. (Online) Available at: <http://www.biomedcentral.com/1471-2288/11/46>

Further Reading: S

1. hadish, W. R., Cook, T. D., & Campbell, D. T. (2002). Experimental and quasi- experimental designs for generalized causal inference. New York: Houghton Mifflin Company. pp 26-32.

Class 5: Design Issues in Research

• Quasi-experimental and experimental research designs

• Using mixed method designs – advantages and challenges

• Power analysis and sample size

• Value of non-significant findings (power)

\*Please read the article by Bilinski, Duggleby, and Rennie (2010) and come prepared to discuss the strengths and limitations of this mixed methods study with particular focus on study design, sample size, and power. (See Box 5.2, Box 9.1, Box 10.1, Box 11.1, Box 12.1, Box 25.1 in Polit & Beck, 2017)

Reading:

1. Bilinski, H. N., Duggleby, W., & Rennie, D. C (2010). The meaning of health in rural children: A mixed methods approach. Western Journal of Nursing Research, 32(7), 949-966.
2. Bilinski, H., Duggleby, W., & Rennie, D. (2013). Lessons learned in designing and conducting a mixed methods study to explore the health of rural children. International Journal of Health Promotion and Education, 51(1), 1-10
3. Giddings, L. S., & Grant, B. M. (2007). A Trojan horse for positivism? A critique of mixed methods research. Advances in Nursing Science, 30(1), 52-60.
4. Harris, A.D., McGregor, J.C., Perencevich, E.N., Furuno, J.P., Zhi, J., Peterson, D.E., Finkelstein, J. (2006). The use and interpretation of quasi-experimental studies in medical informatics. Journal of the American Medical Informatics Association, 13, 1623.
5. Polit, D. G., & Beck, C. T. (2017). Chapter 9: Quantitative Research Design. In Nursing research: Generating and assessing evidence for nursing practice (10th ed.). New York, NY: Wolters Kluwer/Lippincott Williams & Wilkins, pp 183-215.
6. Polit, D. G., & Beck, C. T. (2017). Chapter 10: Rigor and Validity in Quantitative Research. In Nursing research: Generating and assessing evidence for nursing practice (10th ed.). New York, NY: Wolters Kluwer/Lippincott Williams & Wilkins, pp 221-223.
7. Polit, D. G., & Beck, C. T. (2017). Chapter 12: Sampling in Quantitative Research. In Nursing research: Generating and assessing evidence for nursing practice (10th ed.). New York, NY: Wolters Kluwer/Lippincott Williams & Wilkins, pp 394-398.
8. Polit, D. G., & Beck, C. T. (2017). Chapter 25: Trustworthiness and Integrity in Qualitative Research. In Nursing research: Generating and assessing evidence for nursing practice (10th ed.). New York, NY: Wolters Kluwer/Lippincott Williams & Wilkins, pp 557-575.

Recommended Additional Reading:

1. Creswell, J., & Plano Clark V. L. (2011). Chapter 4: Choosing a mixed method design In Designing and conducting mixed methods research. (2nd ed.). Thousand Oaks, California: SAGE Publications. Lipscomb, M. (2008). Mixed method nursing studies: a critical realist critique. Nursing Philosophy, 9, 32-45. doi: 10.1111/j.1466-769X.2007.00325.x
2. Morse, J. M. (2003). Principles of mixed methods and multimethod research design. In Tashakkori, & C. Teddlie, (Eds.), Handbook of mixed methods in social and behavioral research (pp. 189-208). Thousand Oaks, CA: Sage Publications, Inc.
3. Shadish, W. R., Cook, T. D., & Campbell, D. T. (2002). Experimental and quasi- experimental designs for generalized causal inference. New York: Houghton Mifflin Company, 1-32, 103-134, 135-170.
4. Teddlie, C., & Tashakkori, A. (2003). Major issues and controversies in the use of mixed methods in the social and behavioural sciences in Tashakkori, & Teddlie, (Eds.), Handbook of mixed methods in social and behavioural research (pp. 3-50). Thousand Oaks, CA: Sage Publications, Inc.

Class 6: Ethical Implications of Conducting Quantitative Research

 Ethical principles:

1. Respect, beneficence, justice, self-determination
2. Tri-council Policy Statement: Ethical Conduct for Research Involving Humans (Including research involving First Nations, Inuit, and Métis Peoples of Canada)
3. Issues of accountability to the participants, funding agencies, participating agencies, society
4. Independent Study: Read the article by Dennison and El-Masri (2012). What steps did the researchers take to address ethical aspects of the study prior to starting the study? During the study? After the study? What suggestions do you have to further strengthen the ethical aspects of this study? (See Box 5.2 and Box 7.3., Polit and Beck, 2012.).

Reading:

1. Canadian Institutes of Health Research, Natural Sciences and Engineering Research Council of Canada, Social Sciences and Humanities Research Council. (2010).
2. Tri-Council policy statement: Ethical Conduct for research involving humans (TCPS2). Available at: [www.pre.ethics.gc.ca/pdf/eng/tcps2/TCPS\_2\_FINAL\_Web.pdf](http://www.pre.ethics.gc.ca/pdf/eng/tcps2/TCPS_2_FINAL_Web.pdf).
3. Dennison, S., & El-Masri, M. M. (2012). Development and psychometric assessment of the Undergraduate Nursing Student Academic Satisfaction Scale (UNSASS). Journal of Nursing Measurement, 20(2), 75-89.
4. Polit, D. G., & Beck, C. T. (2017). Chapter 7: Ethics in Nursing Research. In Nursing research: Generating and assessing evidence for nursing practice (10th ed.). New York, NY: Wolters Kluwer/Lippincott Williams & Wilkins, 137-159.
5. University of Jordan policies and procedures for ethics in human research. Available at:

 Further Reading:

1. Burns, N. & Grove, S. K. (2009). The practice of nursing research: Appraisal, synthesis, and generation of evidence (6th ed.). St. Louis, Missouri: Saunders Elsevier, 184-217.

1. Canadian Institutes of Health Research. (CIHR). (2012). Publications in Ethics & Resources. Available at: <http://www.cihr-irsc.gc.ca/e/29371.html>

**Class 7: Sampling techniques and approaches**

Sampling is the selection of a number of study units/subjects from a defined population

**Readings and assignments:**

1. Polit, D. G., & Beck, C. T. (2017). Chapter 14: Specific Types of Quantitative Research. In Nursing research: Generating and assessing evidence for nursing practice (10th ed.). New York, NY: Wolters Kluwer/Lippincott Williams & Wilkins, pp 297-330
2. Shadish, W.R., Cook, T.D., and Campbell, D.T. (2002). The received view of generalized causal inferences: Formal sampling pp. 342-348.
3. Crosby, Salazar & DiClemente (2015). Chapter 6: Principles of sampling. In Research Methods for Health Promotion, 2nd ed. San Francisco, CA: Jossey-Bass.
4. Rudolph AE, Crawford ND, Latkin C, et al. Subpopulations of Illicit Drug Users Reached by Targeted Street Outreach and Respondent-Driven Sampling Strategies: Implications for Research and Public Health Practice. Annals of Epidemiology. 2011;21(4):280-89.
5. Luman ET, Worku A, Berhane Y, Martin R, Cairns L. Comparison of two survey methodologies to assess vaccination coverage. Int J Epidemiol. Jun 2007;36(3):633-41.

Class 8: Research Grant Writing

• Identifying researchable questions

• Responding to priorities for research requests for applications (RFAs): Priority Announcements, Seed Grants, New Investigator Strategic Initiatives

• Preparing a grant application (application forms, common CV)

\*Please come prepared to discuss one written quantitative research question related to the topic of your PhD dissertation research. Discussion will focus on narrowing the research topic and questions to be potentially “researchable” for your dissertation research. In addition, in the class, you will be provided with an opportunity to create a lay summary for a research project based on a research proposal summary.

Reading:

1. Bietz, J. M., & Bliss, D. Z. (2005). Preparing a successful grant proposal – Part 1. Developing research aims and the significance of the project. Journal of Wound, Ostomy and Continence Nursing, 32(1), 16-18.
2. Gray, M., & Bliss, D. Z. (2005). Preparing a grant proposal – Part 2. Reviewing the literature. Journal of Wound, Ostomy and Continence Nursing, 32(2), 83-86.
3. Engberg, S., & Bliss, D. Z. (2005). Writing a grant proposal – Part 1. Research methods. Journal of Wound, Ostomy and Continence Nursing, 32(3), 157-162.
4. Bliss, D. Z., & Savik, K. (2005). Writing a grant proposal – Part 2. Research methods – Part 2. Journal of Wound, Ostomy and Continence Nursing, 32(4), 226-229.
5. Colwell, J. C., & Bliss, D. Z. (2005). Preparing a grant proposal – Part 5. Organization and revision. Journal of Wound, Ostomy and Continence Nursing, 32(5),291-293.
6. Bliss, D. Z. (2005). Writing a grant proposal – Part 6. The budget, budget justification, and resource environment. Journal of Wound, Ostomy and Continence Nursing, 32(6), 365-367
7. Bliss, D. Z. (2010). Letters of support for a research grant proposal. Journal of Wound, Ostomy and Continence Nursing, 37(4), 358-359.
8. Bliss, D. Z. (2012). Writing a successful research abstract. Journal of Wound, Ostomy and Continence Nursing, 39(3), 244-247.
9. Canadian Institutes of Health Research (CIHR). (2012). All funding opportunities. Available at: http://www.researchnetrecherchenet.ca/rnr16/srch.do?all=1&search=true&org=CIHR&sort=program&m asterList=true&view=currentOpps&fodAgency=CIHR&fodLanguage=E.
10. Canadian Institutes of Health Research (CIHR). (2013). Guidebook for New Principal Investigators. Available at: <http://www.cihr-irsc.gc.ca/e/27491.html>
11. Canadian Institutes of Health Research. (CIHR). (2014). The art of writing a CIHR application. Available at: <http://www.cihr-irsc.gc.ca/e/45281.html>.
12. Goodridge, D., Marciniuk, D., Rennie, D., Bailey, P. (2008). Care transition outcomes for people with advanced COPD: Health status, resource utilization and caregiver burden. Grant Application to The Lung Association – National Research Programs, Canadian Respiratory Health Professionals (CRHP) – Summary of Research Proposal (Abstract), 9.
13. Polit, D. G., & Beck, C. T. (2017). Chapter 3: Key Concepts and Steps in Qualitative and Quantitative Research. In Nursing research: Generating and assessing evidence for nursing practice (10th ed.). New York, NY: Wolters Kluwer/Lippincott Williams & Wilkins, pp. 54-67.
14. Polit, D. G., & Beck, C. T. (2017). Chapter 4: Research Problems, Research Questions , and Hypotheses. In Nursing research: Generating and assessing evidence for nursing practice (10th ed.). New York, NY: Wolters Kluwer/Lippincott Williams & Wilkins, pp. 69-85.
15. Polit, D. G., & Beck, C. T. (2017). Chapter 31: Writing Proposals to Generate Evidence. In Nursing research: Generating and assessing evidence for nursing practice (10th ed.). New York, NY: Wolters Kluwer/Lippincott Williams & Wilkins, pp. 701-715.
16. Sample funded grant proposals from NIAID:

<http://www.niaid.nih.gov/researchfunding/grant/pages/appsamples.aspx>

1. Sample funded behavioural science grant proposals from NCI:

<http://cancercontrol.cancer.gov/brp/funding-sample-application.html>

1. Singleton, R.A., & Straits, B.C (2010). Chapter 17: Writing research reports. In Approaches to Social Research, 5th ed. (pp. 568-581). New York: Oxford University Press.

Recommended Additional Reading:

1. Alley, M. (1996). The craft of scientific writing (3rd ed.). New York: Prentice-Hall, 84-135.
2. Haller, K. B. (1989). Preparing the research proposal: Half science, half art. American Journal of Maternal Child Nursing. 14(3), 230.
3. Kraicer, J. (1997). The art of grantsmanship. Available at: http://www.hfsp.org/sites/www.hfsp.org/files/webfm/Communications/The%20A rt%20of%20Grantsmanship.pdf.

Further Reading:

1. Burns, N. & Grove, S. K. (2009). The practice of nursing research: Appraisal, synthesis, and generation of evidence (6th ed.). St. Louis, Missouri: Saunders Elsevier, 666- 676.
2. Porter, R. (2005). What do grant reviewers really want, anyway? Journal of Research Administration, 36(2), 1539-1590.
3. Porter, R. (2007). Why academics have a hard time writing good grant proposals. Journal of Research Administration, 38(2), 37-43.
4. Stone, D. A. (2009). How your grant proposal compares. The Chronicle. Available at: <http://chronicle.com/article/How-Your-Grant-Proposal-Com/47471>
5. Stone, D. A. (2010). Becoming a successful principal investigator. The Chronicle. <http://chronicle.com/article/Becoming-a-Successful/66133/>
6. Walsh, M. M. (2009). Lessons learned from grant writing: Establishing a track record of funding involving community providers in implementation. The Journal of Dental Hygiene, 83(4), 212-213.

Assessing Research Grant Proposals

• Criteria for critical review of a research grant

• See the Canadian Institute of Health Research (2102) CIHR Peer Review Manual for Grant Applications, Evaluation Criteria available at

http://www.cihrirsc.gc.ca/e/4656.html and the CIHR Revised Grants Evaluation Criteria

Interpretation Guidelines available at <http://www.cihr-irsc.gc.ca/e/39913.html>)

Reading:

1. Burns, N. & Grove, S. K. (2009). The practice of nursing research: Appraisal, synthesis, and generation of evidence (6th ed.). St. Louis, Missouri: Saunders Elsevier, 598- 615.
2. Canadian Institutes of Health Research (CIHR). (2012). CIHR Peer review manual for grant applications. Available at: <http://www.cihrirsc.gc.ca/e/documents/peer_review_manual_grant_en.pdf3>.
3. Canadian Institutes of Health Research (CIHR). (2011). Revised grants evaluation criteria: Interpretation guidelines. Available at: <http://www.cihr-irsc.gc.ca/e/39913.html>
4. Goodridge, D., Marciniuk, D., Rennie, D., Bailey, P. (2008). Care transition outcomes for people with advanced COPD: Health status, resource utilization and caregiver burden. Grant Application to The Lung Association – National Research Programs, Canadian Respiratory Health Professionals (CRHP) – 2. Budget, 5-7.

 Class 10 : Measurement Issues & Instrument Development (Parts 1 and 2)

• Levels of measurement

• Constructing scales

• Reliability and validity (precision and accuracy)

• Sensitivity and specificity • Questionnaire development

\*Please read the article by Dennison & Masri (2012) and come prepared to discuss the validity and reliability of the measurement tool assessed in this study. (See Box 5.2 and Box 14.1, Polit & Beck, 2017). Comment on the strengths and limitations of this instrument validation report. (See Box 15.1, Polit & Beck, 2017).

Reading:

1. Dennison, S. & El-Masri, M.M. (2012). Development and psychometric assessment of the Undergraduate Nursing Student Academic Satisfaction Scale (UNSASS). Journal of Nursing Measurement, 20(2), 75-89.
2. Engberg, S. & Berben, L. (2012). Selecting instruments: Reliability and validity considerations. Journal of Wound, Ostomy and Continence Nursing, 39(1), 18-20.
3. Polit, D.G. & Beck, C.T. (2006). The content validity index: Are you sure you know what’s being reported? Critique and recommendations. Research in Nursing & Health, 29, 489-97.
4. Polit, D.G. & Beck, C.T. (2017). Chapter 14: Measurement and Data Quality. In Nursing research: Generating and assessing evidence for nursing practice (10th ed.). New York, NY: Wolters Kluwer/Lippincott Williams & Wilkins, pp. 297-330.
5. Polit, D.G. & Beck, C.T. (2017). Chapter 15: Developing and Testing Self-Report Scales. In Nursing research: Generating and assessing evidence for nursing practice (10th ed.). New York, NY: Wolters Kluwer/Lippincott Williams & Wilkins, pp. 331-355.

Further Reading:

1. Dillman, D.A., Smyth, J.D., Christian, L.M. (2014). Internet, phone, mail and mixed mode surveys: The tailored design method: New York, NY:John Wiley and Sons Chapter 4 (pp. 94-126). The fundamentals of writing questions
2. Polit, D.G., & Beck, C.T. (2017). Chapter 13: Data Collection in Quantitative Research. In Nursing research: Generating and assessing evidence for nursing practice (10th ed.). New York, NY: Wolters Kluwer/Lippincott Williams & Wilkins, 266-296.

Class 11; **Survey research and different data collection modes**

Criteria for Selection of a Data-Collection Instrument

* 1. Practicality of instrument: cost and appropriateness for the study population.
	2. Reliability: consistency and stability, measured by the use of corelational procedures: correlation coefficient (-1.0 and +1.0) between two sets of scores or between the ratings of two judges.
	3. Validity. The degree to which an instrument measures what it is supposed to measure.

**Readings and assignments**:

1. Polit, D.G., & Beck, C.T. (2017). Key Concepts and Steps in Qualitative and Quantitative Research. In Nursing research: Generating and assessing evidence for nursing practice (10th ed.). New York, NY: Wolters Kluwer/Lippincott Williams & Wilkins.
2. Salazar, Crosby & DiClemente(2016). Chapter 13: Survey research. In Research Methods for Health Promotion, 2nd ed. San Francisco, CA: Jossey-Bass.
3. Kelley K, Clark B, Brown V, Sitzia J. Good practice in the conduct and reporting of survey research. Int J Qual Health Care. 2003 Jun;15(3):261-6.
4. Sharma M, Wilton J, Senn H, Fowler S, Tan DH. Preparing for PrEP: Perceptions and Readiness of Canadian Physicians for the Implementation of HIV Pre-Exposure Prophylaxis. PLOS one. 2014;9(8):e105283.
5. Kelly CA, Hewett PC, Mensch BS, Rankin JC, Nsobya SL, Kalibala S, et al. Using biomarkers to assess the validity of sexual behavior reporting across interview modes among young women in Kampala, Uganda. Stud Fam Plann. 2014 Mar;45(1):43-58.

Week 12: December, 2017; Purposes of data analysis

* To describe and summarize information thereby reducing it to smaller, more meaningful sets of data.
* To make predictions or to generalize about occurrences based on observations.
* To identify associations, relationships or differences between the sets of observations.
1. Munro, B. (2012). *Statistical methods for health care research* (6th ed.). Philadelphia: Lippincott.
2. Kremelberg, D. (2011). Practical Statistics: A quick and easy guide. California: SAGE Publications, Inc.
3. *Publication manual of the American Psychological Association.* (6th ed.). (2010). Washington, DC: American Psychological Association.
4. *EndNote 6* (2002). Berkley, CA: ISI Research Soft.
5. Winner, L. (2004). Introduction to Biostatistics. Florida: Department of Statistics; University of Florida.
6. [Daniel](http://www.amazon.com/exec/obidos/search-handle-url/104-0550622-3635947?%5Fencoding=UTF8&search-type=ss&index=books&field-author=Wayne%20W%20Daniel), W. (2005). Biostatistics: A foundation for analysis in the health sciences. New Jersey: John Wiley & Sons Inc.
7. Dunn, O., & Clark, V. (2001). Basic statistics: A primer for the biomedical sciences (3rd ed.). New York: John Wiley & Sons, Inc. Described in detail at the publisher’s Web site: <http://www.wiley.com/WileyCDA/WileyTitle/productCd-0471354228.html>.
8. Green, S., & Salkind, N. (2005). Using SPSS for Windows and Macintosh: Analyzing and understanding data (4th ed.). Upper Saddle River, NJ: Pearson – Prentice Hall. Described in detail at the publisher’s Web site: [http://vig.prenhall.com/catalog/academic/product/0,1144,013146597X,00.html](http://vig.prenhall.com/catalog/academic/product/0%2C1144%2C013146597X%2C00.html)
9. SPSS® Graduate Pack. Chicago, IL: SPSS, Inc. This software program (SPSS® Graduate Pack) is described in detail at the publisher’s Web site: <http://www.spss.com/gradpack/>.

Class 13: Dissemination of Research Findings and Research Utilization

• Presentation and publication of findings

• Research utilization and knowledge transfer (definitions, applications, barriers, strategies to facilitate, the PARISH framework, Rogers' Diffusion of Innovation Theory, Knowledge to Action Model)

 • Course review and evaluation \*Come prepared to share your thoughts regarding the potential opportunities and challenges for knowledge transfer in your planned PhD dissertation research.

Reading:

1. Estabrooks, C.A., Thompson, D.S., Lovely, J.J., & Hofmeyer, A. (2006). A guide to knowledge translation theory. The Journal of Continuing Education in the Health Professions, 26(1), 25-36.
2. Graham, I.D., Logan J., Harrison, M.B., Straus, S.E.., Tetroe, J., Caswell, W., Robinson, N. (2006). Lost in Knowledge translation: Time for a map? The Journal of Continuing Education for the Health Professions, 26, 13-24.
3. Kitson, A.L., Rycroft-Malone, J., Harvey, G., McCormack, B., Seers, K., & Titchen, A. (2008). Evaluating the successful implementation of evidence into practice using the PARIHS framework: Theoretical and practical challenges. Implementation Science, 3(1), 1-12. doi: 10.1186/1748-5908-3-1
4. Polit, D.G., & Beck, C.T. (2017). Chapter 2: Evidence-Based Nursing: Translating Research Evidence into Practice. In Nursing research: Generating and assessing evidence for nursing practice (10th ed.). New York, NY: Wolters Kluwer/Lippincott Williams & Wilkins, 22-45.
5. Polit, D.G., & Beck, C.T. (2017). Chapter 3: Key Concepts and Steps in Qualitative and Quantitative Research. In Nursing research: Generating and assessing evidence for nursing practice (10th ed.). New York, NY: Wolters Kluwer/Lippincott Williams & Wilkins, 60-62.
6. Polit, D.G., & Beck, C.T. (2017). Chapter 30: Disseminating Evidence: Reporting Research Findings. In Nursing research: Generating and assessing evidence for nursing practice (10th ed.). New York, NY: Wolters Kluwer/Lippincott Williams & Wilkins, 675699.

Further Reading:

1. Aita, M., Richer, M., & Héon, M. (2007). Illuminating the processes of knowledge transfer in nursing. Worldviews on Evidence-Based Nursing, 4(3), 146-155.
2. Burns, N. & Grove, S. K. (2009). The practice of nursing research: Appraisal, synthesis, and generation of evidence (6thed.). St. Louis, Missouri: Saunders Elsevier, 616- 640.
3. Canadian Institutes of Health Research. (CIHR). (2012). Guide to knowledge translation planning at CIHR: Integrated and end-of-grant approaches. Available at:

<http://www.cihr-irsc.gc.ca/e/documents/kt_lm_ktplan-en.pdf>.

1. Dogherty, E.J., Harrison, M. B., Graham, I. D., Vandyk, A .D., Keeping-Burke, L. (2013). Turning Knowledge into action at the point of care: The collective experience of nurses facilitating the implementation of evidenced-based practice. Worldviews on Evidence-Based Nursing, 2013, 10(3), 129-39.
2. Harrison, M.B., Graham, I. D., Roadmap for a participatory research-practice partnership to implement evidence. Worldviews on Evidence-Based Nursing, 2012, 9(3), 210- 220.
3. Squires, J. E., Reay, T., Moralejo, D., LeFort, S., Hutchinson, A. M., & Estabrooks, C. A. (2012). Designing strategies to implement research-based policies and procedures. Journal of Nursing Administration, 42(5), 293-297.

**23 Evaluation Methods:**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Opportunities to demonstrate achievement of the ILOs are provided through the following assessment methods and requirements:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Evaluation Activity/Purpose** | **Covered PILO** **& CILO(s)** | **Mark** | **Topic(s)** | **Period** **(Week)** |  |
| Written Critique Paper  | 1, 2, 6, 8, 10, 11 |  10% |  Will be arranged with students |  Week 13 |   |
| Student topic presentation  | 4, 5, 8 |  10% |  Will be arranged with students |  All through the Course |   |
| Class participation  | 1, 3, 5, 7, 9 |  5% |  Will be arranged with students |  All through the Course |   |
| Grant proposal | 9 | 15% | Will be arranged with students | Week 13 | W |
|  Midterm Exam | 1, 2, 3, 4, 5 |  20% |  Will be arranged with students |  15/11/2020 |   |
| Final Exam  | 6, 7, 8, 9, 10, 11 |  40% |  Will be arranged with students |  5/1/2021 |   |
|   |  |   |   |   |   |
| Percentage or points earned in class | ≥86 | 80-85 | 75-79 | 70-74 | 65-69 | 60-64 | ≤ 59 |
| Letter Grade equivalent | **A**  | **A-** | **B+** | **B** | **B-** | **C+** | **C** |
| Grade Points | **4** | **3.75** | **3.5** | **3** | **2.75** | **2.5** | **F** |

***Instructions for Assignments:*** **Written Critique.** Students will provide a written critique of the research method and results of one journal article. **Assignment:** ***Critique An Article*.** Each student will prepare a 3 page analysis/discussion of his/her designated articles. The following format will guide your critique of the assigned quantitative research articles. **Article Citation: Critique the problem statement, purpose/aims, background and significance, theoretical framework, the research questions or hypotheses, and the design of the study.**1. **Problem statement, Purpose/aims:**  Is the problem to be studied clearly stated? Are the purpose and aims of the study clearly stated? Restate the purpose. Compare your version with the authors.
2. **Background and significance:** Is the review of previous research appropriate and sufficient? Have the reported studies been critically reviewed? Have relevant studies been cited and discussed? What is the gap in knowledge? Is the significance of the problem being addressed and of the study clearly supported by a logical and scientifically sound explanation?
3. **Theoretical framework:** Identify the conceptual or theoretical framework for the study. Is it clear that the study is guided by a theory or theories? Are the variables being measured congruent with the theoretical framework? Diagram the theoretical framework used in the study. Can you suggest another theory or a theory that would support this study?
4. **Research question(s) or hypotheses**. Are the research questions or hypotheses clear and appropriate in terms of current knowledge and the chosen design? Why or why not? How would you change them? Critique the author=s choice of variables studied. Is the choice of variables logical and innovative? Are there other variables that you would add for the proposed theory?
5. **Design:** Identify the general classification of the design: descriptive, survey, observational, quasi-experimental or experimental, etc. Name the design precisely. What are the strengths and weaknesses of the design from a classical perspective? Has the design fully supported the collection of data? Has the design supported the analysis of data to answer the research questions or hypotheses? Examine how the elements of purpose/aims, research questions/hypotheses, theoretical framework/variables/measures interface; explain congruence or lack of congruence. If you are critiquing a quasi-experimental or experimental study, address each of the elements of internal validity (testing, history, instrumentation, etc); has the researcher controlled for these threats to internal validity? How would you redesign the study to better control for threats to internal validity? Describe an alternate design. Compare the strengths and weakness of the alternative design to the one used by the authors.
6. Critique the research methods used.
	1. **Sample:** Is the population from which the sample is drawn appropriate to answer the research questions? Identify the sampling method used. Does sample selection introduce bias? What are the sources of error introduced by the selection of subjects? Is the size of the sample consistent with the type of research questions asked? Consistent with the degree of precision necessary? Consistent with sampling procedures and the demands of statistical analysis? How was attrition prevented? Are threats to internal and external validity identified and controlled? Was IRB/obtaining informed consent addressed?
	2. **Instrumentation:** Identify the measures used. Discuss their reliability and validity. What is the basis for reliability and validity in the chosen population? Name at least two other measures that could have been used. Considering design and sample, are the instruments that you have suggested or cited more or less useful?
	3. **Data Collection Protocol:** Was the method clearly described? How were data collected? Was the setting well defined? Are environmental influences taken into consideration? Is enough information available to replicate the study? How were the data recorded? Were procedures standardized? How was the ordering of scales or subject error or investigator bias accounted for? Does the data collection protocol minimize error? Does it uphold confidentiality? How were data managed (e.g., coded, entered)
	4. **Data Analysis:** Is the analysis appropriate for the design, sample, hypotheses, questions, level of data? Why or why not? Was alpha set a priori? Suggest at least one other method of analysis.
7. **Critique the results and discussion sections of the paper:**
	1. **Results:** Are the results clearly described in the abstract, body of the paper, and tables/figures? What would you change? Are the results congruent with the stated theoretical frame? Are the research questions or hypotheses answered/confirmed or rejected. If any results are statistically significant but weak, is this clearly articulated? Are the tables well organized and easy to read/understand?
	2. **Discussion**: Are the results accurately applied to the discussion? Are the conclusions based on the results? Does the author relate the findings to the purpose, research questions/hypotheses, theoretical framework, and current state of knowledge of the phenomena being studied? Are the conclusions appropriate for the reported findings? How does the author treat issues of external validity or generalizability, i.e. are the limitations of sample, setting or time at which the research occurred accounted for? Explain your answer. How could the study have been designed to increase external validity? Are the limitations of the study clearly defined? Are specific implications discussed? Are these reasonable or logical in light of the limitations of the findings? Consider what implications may not be stated.
8. **Overall Presentation:** Is the report logically consistent? Are there leaps in logic? Is the writing style clear and concise? Does the abstract accurately represent the study?

**Evaluation: Points** Introduction 2 Method 2Results 2Discussion 2 APA Format & Overall Writing 2 TOTAL 10  **Student-lecture and discussion.** Each student will be required to prepare a lecture about a topic during the semester. Students will need to choose the topic from the course outline that would like to lead prepare the lecture and then lead the class discussion of the topic/article. This is intended to provide students with an opportunity to serve in the role of instructor and independently identify key issues for discussion. Presentation days will be selected during the first class meeting.**Student Presentation Evaluation Form (5 points)****Presenter Name: Topic:**

|  |  |  |  |
| --- | --- | --- | --- |
| Area to be Evaluated: | 0 | 1 | 2 |
| 1. Demonstrates breadth of reading and depth of understanding of the topic
 |  |  |  |
| 1. Clarity of stated objectives
 |  |  |  |
| 1. Presents background information for ideas
 |  |  |  |
| 1. Critiques and analyses, not just summarizes, ideas and arguments
 |  |  |  |
| 1. Presentation was well organized and given in a sequential, logical manner, well-prepared for the presentation.
 |  |  |  |
| 1. Utilizes appropriate teaching strategies and audiovisual materials to meet individualize learning needs and stimulate audience
 |  |  |  |
| 1. Paces presentation appropriately, speeds presentation was appropriate for complexity of the material.
 |  |  |  |
| 1. Encourages and involves class members’ thought and participation Solicits and responds constructively to class members opinions
 |  |  |  |
| 1. Answered questions effectively
 |  |  |  |
| 1. Speech is clear and is heard throughout the room.
 |  |  |  |
| 1. Summarizes main points at end of presentation/discussion
 |  |  |  |
| 1. Utilized time effectively
 |  |  |  |
| 1. Overall impression of the presentation
 |  |  |  |
| Total: |  |  |  |
|  |  |  |  |

**Class participation.** Students are expected to contribute actively to class. This includes coming prepared to discuss the assigned readings. It also requires the students' additional reading(s) that relate(s) to the topic and their field of interest. Details will be discussed in class.Each student must recognize that he/she bears the primary responsibility for his/her education. Classroom participation provides an opportunity to both refine your thinking and to practice expressing your ideas. Students are expected to prepare for lectures by reading the assigned materials and reviewing relevant materials. It is assumed that students will have read and thought about assigned materials before class. That is, you should at least have skimmed through them even if you don't understand them. Having documents for the session will be very helpful in following along with the material that is taught in the course. An internet access is highly encouraged.The discussions will be utilized in this course extensively. A constructive contribution helps to move the discussion forward. NONE will be penalized for floating an idea that others debunk. I encourage you to think critically, to challenge your classmates without showing disrespect, and to put forward your own ideas for consideration by others. **Bonuses will be given as per faculty for outstanding participants.**Students are encouraged to seek faculty assistance when they are having difficulty with content or with a specific skill. Seek help early. Don’t wait until you are too deeply in trouble to bail yourself out. Office hours are listed above and I am also available only in appointments. Just because you can doesn’t mean you should, invest your braining. Students are encouraged to talk with faculty on an individual basis if they want to explore specific content in more depth than is possible in class.**Grant proposal.** Students will prepare one research proposal that uses the Guidelines and Application Form for The Eastern Mediterranean Regional Office grant proposal format addresses a Healthy People 2030 priority topic area or Special Grant for Research in Priority Areas of Nursing or Public Health. This 12-page double spaced proposal is to describe the significance of the research problem, synthesis of the literature supporting what is known and not known and a detailed description of the methods to be used. Sections include: aims and specific research objectives/ questions, background and significance (literature review), and methods. The methods section must include design, description of sample, description of, experimental intervention (if any) and data collection procedures. A description of data analysis for the research questions should be included. APA format is to be used. All tables or figures MUST fit within the 12 pages limitation. References are NOT included in the page limitations (**1-point deduction for each page over 12**). The face page must include a title for the proposal, your full name, the course name and date submitted. This proposal needs to be approved by the instructor. Usually, the proposal consists of the first three chapters or sections of the report, includes references and appendices, and has the following elements:* ***Introduction.*** The purpose of the research and statement of the problem are introduced, with background information substantiating the need for the study. It is essential to state why the problem is important to nursing. Terms are defined conceptually and operationally.
* ***Review of the Literature.*** The literature review is related to the problem area. Relevant literatures from nursing and related fields are reviewed to show awareness of knowledge in the area, and to demonstrate that the researcher has considered a range of possibilities for investigating the problem. A theoretical framework is identified and integrated into the study. The description of the study should show clearly how the study would extend previous findings. The theoretical rational for the hypotheses or research questions is made explicit.
* ***Methods:***
	+ **Sample.** Describe the study population, sample selection procedure, size and rationale, as well as any limitations. Adequate scientific reasons for choosing the sample are stated.
	+ **Setting.** Describe where the study will be conducted.
	+ **Design.** Describe the research design and rationale for selection. Identify the variables in your study including steps taken to control for extraneous variables. Present the nature of any treatment to be administered, if any.
	+ **Instruments.** Describe the research instruments for collecting data with a view to their appropriateness to the research being conducted. Present information regarding their validity and reliability.
	+ **Procedure.** Describe in detail how you will conduct the study, protect the rights of participants, and obtain informed consent. Suggest a tentative schedule for the main steps of the investigation.
	+ **Plan for Data Analysis.** Describe the means by which the data will be analyzed and/or interpreted.
	+ **Limitations**: At this point, you don’t have any results to discuss, so just include a discussion of the study limitations (both methodological and theoretical), the plan for communications of the findings your implications for nursing for now.
	+ **References.** List references cited in the text in APA format.
	+ **Appendices.** Copies of questionnaires, interview guides, scoring instructions, letters of request to agencies for participation, consent form, instructions to be provided to subjects are included.

**Evaluation: Points** Purpose & Specific Objectives 2 Significance and Background 2Literature Review 2 Methods 4Presentation in Class 3APA Format / Overall Writing 2  TOTAL 15**Midterm Exam.** In class multiple-choice exam based on class assignments/readings/discussion.**Final Exam.** In class multiple-choice exam based on class assignments/readings/discussion.  |
|  |

**24 Course Requirements (e.g: students should have a computer, internet connection, webcam, account on a specific software/platform…etc):**

|  |
| --- |
| * Audio-Visual Aids
* Faculty member’s Website
* E-Learning Website
 |

**25 Course Policies:**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| A- Attendance policies:1. Attendance is expected. Arrival on time is expected. Students who miss more than three class sessions with or without excuse will be dismissed from the course automatically. (See the university policies regarding absence).
2. Any student with absence of 15% of the classes of any course, will be illegible to sit for the final exam and will be given the university zero (F grade) in this course.
3. In the case (b) above, if a student submits an official sick report authenticated by university clinic or an accepted excuse by the Dean of his/her faculty, the student will be considered as withdrawn from the course, and a "W" will be shown in the transcript for this course.
4. Students are not allowed to come late to classes. Any student coming late will not be allowed to attend the class and he/she will be marked absent.

B- Absences from exams and handing in assignments on-time:1. Failure in attending a course exam other than the final exam will result in zero mark unless the student provides an official acceptable excuse to the instructor who approves a make up exam.
2. Failure in attending the final exam will result in zero mark unless the student presents an official acceptable excuse to the Dean of his/her faculty who approves an incomplete exam, normally scheduled to be conducted during the first two weeks of the successive semester.
3. Assignments and projects should be submitted to the instructor on the due date.

C- Health and safety procedures: see student's handbookD- Honesty policy regarding cheating, plagiarism, misbehavior:Work submitted to the course instructor is assumed to be an expression of original ideas by the student. All students in this course are expected to adhere to university standards of academic integrity. Appropriate citation of the intellectual property of other authors is expected. Cheating, plagiarism, and other forms of academic dishonesty will neither be accepted nor tolerated. This includes, but is not limited to, consulting with another person during an exam, turning in written work that was prepared by someone other than you, and making minor modifications to the work of someone else and turning it in as your own. Ignorance will not be permitted as an excuse. If you are not sure whether something you plan to submit would be considered either cheating or plagiarism, it is your responsibility to ask for clarification.Written work is expected to be your own synthesized thinking related to what you have learned from readings and classroom lecture and discussion. Written work should not be done collaboratively with other students or copied from the reading material (even if cited). Written work should be cited and referenced using APA 6th edition. Plagiarism can mean an F in the course.Cheating, plagiarism & misbehavior are attempts to gain marks dishonestly and includes; but not limited to:* Copying from another student’s work.
* Using materials not authorized by the institute.
* Collaborating with another student during a test, without permission.
* Knowingly using, buying, selling, or stealing the contents of a test.
* Plagiarism which means presenting another person’s work or ideas as one’s own, without attribution.
* Using any media (including mobiles) during the exam.

**The participation or the commitment of cheating will lead to applying penalties according to the University of Jordan Students’ Discipline rules and regulations No. (94, 49, 47,27, 29):** [**http://units.ju.edu.jo/ar/LegalAffairs/Regulations.aspx**](http://units.ju.edu.jo/ar/LegalAffairs/Regulations.aspx)E- Cell Phone Policy:Cell phones should be turned off during class time. Disruption of class by ringing cell phones and cell phone conversations is inconsiderate of fellow students and faculty.F-Grading policy:A grade of (C+) is the minimum passing grade for the course.

|  |  |
| --- | --- |
| **Grade Points** | **Grade** |
| 4 | A |
| 3.75 | A- |
| 3.5 | B+ |
| 3 | B |
| 2.75 | B- |
| 2.5 | C+ |
| 2 | C |
| 1.75 | C- |
| 1.5 | D+ |
| 1 | D |
| 0.75 | D- |
| zero | F |

G- Submitting Papers and Communications:Contact by an email is highly encouraged and preferred. Other than contacts by an email, contacts should take place during announced office hours and/or ONLY by appointment. Contact on phones, preferably office number, also is welcomed during working hours. Please be informed that I have personal and/or institutional commitments those sometime inconvenient to others to whom I usually explain that. Therefore, when needed and based on your situation, you may call on my cell; however, when so, send your name in a separate message before to make your call in order accept your calls.Any submitted paper should be edited for grammar, punctuation, clarity, and spelling. A percentage of the points for the papers will be allocated to format, spelling, and grammar. I will return written comments on papers submitted traditionally. For papers that received electronically, I will return them electronically with embedded comments. You may submit assignments in several ways:Traditional paper format. Please make sure the document is stapled or clipped. Via diskette. Document may be in Word, Word Perfect, Adobe, or Zip format. Please make sure you have made a backup of your diskette and label it. Please make sure all documents are free of viruses.Via e-mail attachment. Document may be in Word, Word Perfect, Adobe, or Zip format. Please make sure you have virus checked your file. Any papers sent in the body of an e-mail will be returned to you.To help assure good communications, when you send email messages or turn in papers electronically, please label the subject and attachments clearly and properly in this format: Course Name ("AT" is enough), Contact Issue, Your Last Name and First Initial. Being not adherent to this format will render your email out of consideration. You are solely responsible to do so.  |

**26 References:**

|  |
| --- |
| A- Required book(s), assigned reading and audio-visuals:1. Polit, D. F., & Beck, C. T. (2017). Nursing research: Generating and assessing evidence for nursing practice (10th ed.). New York: Wolters Kluwer.
2. Burns, N., & Grove, S. (2015). *The Practice of Nursing Research Conduct, Critique and Utilization* (5th ed.). Philadelphia: W. B. Saunders.
3. American Psychological Association. (2010). Publication Manual of the American Psychological Association (6th ed.). Washington: Author.

B- Recommended books, materials and media:1. Fink, A. (2010). Conducting research literature reviews (3rd ed.) Sage publications, Los Angeles.
2. Shadish W.R., Cook, T.D., Campbell, D.T. (2002). Experimental and quasi-experimental designs for generalized causal inference. Belmont, CA: Wadsworth Cengage Learning.
3. Plichta, S.B. & Kelvin E. (2013). Munro’s statistical methods for health care research. (6th ed.) New York: Wolters Kluwer/Lippincott, Williams, & Wilkins.
4. Creswell, J.W. & Plano Clark, V. (2011). Designing and conducting mixed methods research (2nd ed.). Thousand Oaks, CA: Sage Publications.
5. Dillman, D.A., Smyth, J.D., Christian, L.M. (2014). Internet, phone, mail and mixed mode surveys: The tailored design method (4th ed.). New York, NY: John Wiley and Sons.

Internet Resources: 1. Canadian Association for Nursing Research: www.canr.ca
2. Canadian Health Services Research Foundation: www.chsrf.ca
3. Clinical Evidence: clinicalevidence.bmj.com
4. Evidence-Based Nursing (Online Journal): ebn.bmj.com
5. Health Evidence: www.healthevidence.org
6. Health Quality Council: www.hqc.sk.ca
7. Nursing Knowledge International: www.nursingknowledge.org
8. Ontario Ministry of Health & Longterm Care--Effective Public Health Practice Project: <http://www.ephpp.ca/>
9. Registered Nurses Association of Ontario. Best practices guidelines: rnao.ca/bpg
10. Sigma Theta Tau International : www.nursingsociety.org
11. The Centre for Health Evidence: www.cche.net
12. The Cochrane Library: library2.usask.ca/dbs/cochrane.html#sub
13. Access nursing journals online within the Campus net: <http://e-library>

*\* In addition to the selected textbooks, you will be receiving weekly articles related to the topic of the week. You are expected to be prepared for discussing those articles.* |

**27 Additional information:**

|  |
| --- |
|  |

Name of Course Coordinator: Mahmoud Alhussami Signature: Mahmoud Alhussami Date: 10/10.2020

Head of Curriculum Committee/Department: ---------------------------- Signature: --------------------------

Head of Department: Mahmoud Alhussami Signature: Mahmoud Alhussami

Head of Curriculum Committee/Faculty: ---------------------------------------- Signature: -------------------

Dean: ---------------------------------------------------------- Signature: -------------------------------------------