University of Colorado, College of Nursing
Graduate Course Syllabus

Course Number	Course Name				
NURS 6286	**Foundations of Health Care Informatics**				
				Didactic:	Clinical
Term:	Fall 2024		**Course Credits:**	3	N/A
Course Website:	https://ucdenver.instructure.com/courses/546803				

Instructor:	John Hatem, MBA, MS	**Class Meeting:**	**Asynchronous**
Phone:	415-269-7170	**Class Location:**	Virtual
Email:	john.hatem@cuanschutz.edu (Use Canvas Inbox messaging through the course)	**Lab Location: Building/Room**	N/A
Office Hours:	Virtual / By Appointment Email or text me to setup an appt		

COURSE OVERVIEW

Welcome:

Welcome to Foundations of Health Care Informatics. I am pleased to guide you in your journey to learn about the importance of informatics as an essential part of your practice.

University Course Catalog Description:

This introductory course focuses on core concepts, skills, tools that define the informatics field and the examination of health information technologies to promote safety, improve quality, foster consumer-centered care, and efficiency.

Course Overview:

This course will prepare the student to use informatics tools to facilitate clinical decision-making using evidence, provide safe and quality care, actively engage patients/consumers in their care, to manage their practice and participate in a learning

health system effectively and efficiently. The first half of the course emphasizes the core concepts, skills and tools that define the informatics field and examines how informatics tools can help the student become meaningful users of the technologies for better health and better care at a lower cost. The second half focuses on consumer engagement and the informatics tools now a part of the Connected Age in health care and the roles and responsibilities of taking a leadership role in the promotion and utilization of informatics in a learning health system.

Content Outline

1) Core Concept

   a) Defining Informatics

      i) Medical

      ii) Nursing

      iii) Health Care

   b) The Tipping Point

      i) Informatics Promise

      ii) Vocabulary Dilemma

2) Core Skills & Tools

   a) Data-Information-Knowledge Continuum

      i) Knowledge-based care

      ii) Clinical information management

      iii) Capturing high quality clinical data

   b) Putting data, information & knowledge into action:

      i) Clinical decision support

      ii) Quality improvement

3) Beyond Traditional Settings

    a) Context

        i) Federal Initiatives

        ii) Sorting the Terms

    b) Applications

        i) Personal Health Records

        ii) Access to Health Information

        iii) E-Care management

        iv) Emerging Technologies

        v) Health 2.0

4) Professional Issues

    a) Legal, Ethical, Social and Public Policy Issues

        i) Unintended consequences

        ii) Privacy & security

        iii) Secondary use of clinical data

    b) Social, technical, political, organizational determinants of success

        i) Critical success factors for HIT systems

        ii) Nurses and nurse informatics specialists' roles

Course Outcomes:

Upon completion of the course, the learner will be able to:

- Examine the use of health information and communication technologies to improve the quality, safety and efficiency of patient care.
- Explicate the relationships among acquiring & manipulating data, applying information for clinical decision making and the generation of knowledge for evidence-based practice.

- Evaluate patient care technologies that enhance the health care delivery to diverse populations (under-represented minorities, ESL, incarcerated, elderly, homeless) and communities (inner city, rural, medically underserved).
- Communicate critical elements necessary for the selection and implementation of clinical systems.
- Provide leadership in the examination of ethical, legal, social and public policy issues associated with the use of current and emerging health information technologies.

Course Prerequisites:

None

Required Texts and Materials:

There is no textbook for this class. Readings provide you with up-to-date information as well as seminal articles. Required readings as well as recommended readings are posted within each module.

Module 1 Required Readings

Brennan, P. F., & Bakken, S. (2015). Nursing needs Big Data and Big Data needs nursing. *Journal of Nursing Scholarship, 47*(5), 477-484. doi:10.1111/jnu.12159

Brennan, P. F., Chiang, M. F., & Ohno-Machado, L. (2018) Biomedical informatics and data science: Evolving fields with significant overlap. *Journal of the American Medical Informatics Association, 25*(1), 2-3. doi:10.1093/jamia/ocx146

Brenner, S. K., Kaushal, R., Grinspan, Z., Joyce, C., Kim, I., Allard, R. J., Delgado, D.& Abramson, E. L. (2016). Effects of health information technology on patient outcomes: A systematic review. *Journal of the American Medical Informatics Association, 23*(5), 1016-1036. doi:10.1093/jamia/ocv138

Campanella, P., Lovato, E., Marone, C., Fallacara, L., Mancuso, A., Ricciardi, W., & Specchia, M. L. (2016). The impact of electronic health records on healthcare quality: A systematic review and meta-analysis. *The European Journal of Public Health, 26*(1), 60-64. doi:10.1093/eurpub/ckv122

Despins, L. A., & Wakefield, B. J. (2018). The role of the electronic medical record in the intensive care unit nurse's detection of patient deterioration. *CIN: Computers, Informatics, Nursing, 36*(6), 284-292. doi:10.1097/cin.0000000000000431

Dykes, P. C., & Collins, S. A. (2013). Building linkages between nursing care and improved patient outcomes: The role of health information technology. *Online Journal of Issues in Nursing, 18*(3),19*.* doi:10.3912/OJIN.Vol18No03Man04

Hardy, L. R. (2018). Using big data to accelerate evidence-based practice. *Worldviews on Evidence-Based Nursing, 15*(2), 85-87. doi:10.1111/wvn.12279

Kim, H. S., Kim, D. J. & Yoon, K. H. (2019). Medical big data Is not yet available: Why we need realism rather than exaggeration. *Endocrinology Metabolism (Seoul), 34*(4), 349-354. doi:10.3803/EnM.2019.34.4.349

Kruse, C. S., & Beane, A. (2018). Health information technology continues to show positive effect on medical outcomes: Systematic review. *Journal of Medical Internet Research*, 20(2), e41. https://doi.org/10.2196/jmir.8793

Lee, M. S., Ray, K. N., Mehrotra, A., Giboney, P., Yee, H. F., & Barnett, M. L. (2018). Primary care practitioners' perceptions of electronic consult systems. *JAMA Internal Medicine, 178*(6), 782. doi:10.1001/jamainternmed.2018.0738

Mehta, N., & Pandit, A. (2018). Concurrence of big data analytics and healthcare: A systematic review. *International Journal of Medical Informatics, 114*, 57-65. doi:10.1016/j.ijmedinf.2018.03.013

Nelson-Brantley, H. V., Jenkins, P. & Chipps E. (2019). Turning health systems data into actionable information. *Journal of Nursing Administration, 49*(4),176-178. doi:10.1097/NNA.0000000000000734

Ozkaynak, M., Reeder, B., Hoffecker, L., Makic, M. B., & Sousa, K. (2017). Use of electronic health records by nurses for symptom management in inpatient settings. *CIN: Computers, Informatics, Nursing, 35*(9), 465-472. doi:10.1097/cin.0000000000000329

Module 2 Required Readings

Bakken, S., Jia, H., Chen, E., Choi, J., John, R., Lee, N., et al. (2014). The effect of a mobile health decision support system on diagnosis and management of obesity, tobacco use, and depression in adults and children. *The Journal for Nurse Practitioners, 10*(10), 774-780. doi.org/10.1016/j.nurpra.2014.07.017

Borum, C. (2018). Barriers for hospital-based nurse practitioners utilizing clinical decision support systems: A systematic review. *Computers, informatics, Nursing, 36*(4), 208. doi:10.1097/CIN.0000000000000413

Hirschtick, R. E. (2006). Copy-and-paste. *Journal of the American Medical Association, 295*(20), 2335-2336.doi:10.1001/jama.295.20.2335

Jansen, K., Kim, T., Coenen, A., Saba, V. & Hardiker , N. (2016). Harmonising nursing terminologies using a conceptual framework. *Studies in Health Technology and Informatics, 225*, 471-5. doi:10.3233/978-1-61499-658-3-471

Price-Haywood EG, Robinson W, Harden-Barrios J, Burton J. & Burstain T. (2018). Intelligent clinical decision support to improves safe opioid management of chronic noncancer pain in primary care. *Ochsner Journal, 18*(1), 30-35. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5855418/pdf/i1524-5012-18-1-30.pdf

Strudwick, G. and Hardiker, N. (2016). Understanding the use of standardized nursing terminology and classification systems in published research: A case study using the International Classification for Nursing Practice(®). *International Journal of Medical Informatics, 94*, 215-21. doi: 10.1016/j.ijmedinf.2016.06.012.

Tsou A.Y., Lehmann C.U., Michel J., Solomon R., Possanza L., & Gandhi T. (2017) Safe practices for copy and paste in the EHR. Systematic review, recommendations, and novel model for health IT collaboration. *Applied Clinical Informatics, 8*(1), 12-34. doi:10.4338/ACI-2016-09-R-0150

Vesta, J., Garnnis, S.J., Haut, D.P., Halverson, P.K. & Manachemia, N. (2017) Using structured and unstructured data to identify patients' need for services that address the social determinants of health. *International Journal of Medical Informatics, 107,* 101–106. doi.org/10.1016/j.ijmedinf.2017.09.008

Welton, J.M., Harper, E.M. (2016). Measuring nursing care value. *Nursing Economics*, *34*(1), 7-14.

Welton, JM, Kleiner, C. & Adrian, B. (2017). Time-referenced data. *Nursing Economics, 35*(3), 150-151.

Module 3 Required Readings

Ancker, J.S. (2018). Delivering patient data to patients themselves. *eGEMs,6*(1), 16. http://doi.org/10.5334/egems.267

Arcia, A., Woollen, J., Bakken, S. (2018). A systematic method for exploring data attributes in preparation for designing tailored infographics of patient reported outcomes. *eGEMS, 6*(1), 2: http://doi.org/10.5334/egems.190

Cohen, A. B., Mathews, S. C., Dorsey, E. R, Bates, D. W. & Safavi, K. (2020). Direct-to-consumer digital health. *The Lancet*, 2(4), E-163-165. https://doi.org/10.1016/S2589-7500(20)30057-1

Coughlin, S.S., Stewart, J.L., Young, L., Heboyan, V. & De Leo, H. (2018). Health literacy and patient web portals. *International Journal of Medical Informatics*, *113*, 43-48. doi:10.1016/j.ijmedinf.2018.02.009

Dalal, A.K., Bates, D.W. & Collins, S. (2017). Opportunities and challenges for improving the patient experience in the acute and postacute care setting using patient portals: The patient's perspective. *Journal of Hospital Medicine, 12*(12), 1012-1016. https://doi.org/10.12788/jhm.2860

Delbanco S,& Delbanco T. (April 2018).Technology and transparency: Empowering patients and clinicians to improve health care value. *Annals of Internal Medicine, 168*(8). 585–586. doi: 10.7326/M17-3269

Demiris, G., Iribarren, S.J., Sward, K., Lee, S., & Yang, R. (2019). Patient generated health data use in clinical practice: A systematic review. *Nursing Outlook*, 67(4), 311-330. https://doi.org/10.1016/j.outlook.2019.04.005

Esch T, Mejilla R, Anselmo M, Podtschaska, B., Delbanco, T. & Walker, J. (2016). Engaging patients through open notes: An evaluation using mixed methods. *BMJ Open, 6*, e010034. doi:10.1136/ bmjopen-2015-010034

Gerard, M., Chimowitz, H., Fossa, A., Bourgeois, F., Fernandez, L., & Bell, S. K. (2018).The importance of visit notes on patient portals for engaging less educated or nonwhite patients: Survey study. *Journal of Medical Internet Research*, 20(5), e191. http://doi.org/10.2196/jmir.9196

Giardina, T.D., Baldwin, J., Nystrom, D.T., Sittig, D.F., & Singh, H. (2018). Patient perceptions of receiving test results via online portals: A mixed-methods study. *Journal of the American Medical Informatics Association, 25*(4), 440-446. https://doi.org/10.1093/jamia/ocx140

Herrmann, M., Boehme, P., Mondritzki, T., Ehlers, J. P., Kavadias, S., & Truebel, H. (2018). *Journal of Medical Internet Research*, *20*(3), e104. http://doi.org/10.2196/jmir.9498

Jones, M., DeRuyter, F. & Morris, J. (2020). The digital health revolution and people with disabilities: Perspective from the United States. *International Journal of Environmental Research and Public Health,17*(2), 381. doi:10.3390/ijerph17020381

Liu, N., Yin, J., Tan, S. S., Ngiam, K. Y. & Teo, H. H. (2021). Mobile health applications for older adults: A systematic review of interface and persuasive feature design. *Journal of the American Medical Informatics Association*, *28*(11), 2483-2501. doi:10.1093/jamia/ocab151

Lupton, D. (2017). Digital health now and in the future: Findings from a participatory design stakeholders workshop. *Digital Health, 3,*1-17. https://doi.org/10.1177/2055207617740018

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Nazi, K. M., Turvey, C. L., Klein, D. M., Hogan, T. P. (2018). A decade of veteran voices: Examining patient portal enhancements through the lens of user-centered design. *Journal of Medical Internet Research*, 20(7), e10413. https://doi.org/10.2196/10413

Skiba, D. (2018a). Consumer electronic show 2018: A focus on digital health tools. *Nursing Education Perspectives, 39*(3), 194-195. doi:10.1097/01.Nep.0000000000000332

Skiba, D. (2018b). The invisible health care professional: Exploring the intersection of data, devices, and artificial intelligence. *Nursing Education Perspectives, 39*(4), 264-265. doi:10.1097/01.NEP.0000000000000371

van Veen, T., Binz, S., Muminovic, M., Chaudhry, K., Rose, K., Calo, S., Rammal, J. A., France, J. & Miller, J. B. (2019). Potential of mobile health technology to reduce health disparities in underserved communities. *Western Journal of Emergency Medicine, 20*(5), 799-802. doi:10.5811/westjem.2019.6.41911

Wickersham, K. E., Powell, K., Guterman, I., O'Malley, C., & Nahm, E. S. (2019). Innovative use of patient portals during cancer survivorship: A first step. *Journal of Oncology Navigation & Survivorship*, *10*(3). http://jons-online.com/component/mams/?view=article&artid=2325:innovative-use-of-patient-portals-during-cancer-survivorship-a-first-step&Itemid=0

Readings to help with Evaluating Digital Tools assignment

Kington, R. S., Arnesen, S., Chou, W. S., Curry, S. J., Lazer, D. Y Villarruel A. M. (2021). *Identifying credible sources of health information in Social Media: Principles and attributes*. National Academy of Medicine Perspectives. doi:10.31478/202107a

Skiba, D. (2017). Evaluation tools to appraise social media and mobile applications. *Informatics*, *4*(3), 32. https://doi.org/10.3390/informatics4030032

Centers for Disease Control.(2021, August 20). *Social media tools, guidelines & best practices*. Social Media at CDC. http://www.cdc.gov/socialmedia/tools/guidelines/index.html

Hensher, M, Cooper, P., Dona, S. W. A., Angeles, M. R., Nguyen, D., Heynsbergh, N. Chatterton, M. L., & Peeters, A. (2021). Scoping review: Development and assessment of evaluation frameworks of mobile health apps for recommendations to consumers. *Journal of the American Medical Informatics Association, 28*(6), 1318–1329. https://doi.org/10.1093/jamia/ocab041

mHIMSS App Usability Work Group. (2012). *Selecting a mobile app: Evaluating the usability of medical applications*.[Slide share].1Library. https://1library.net/document/q5pl363y-selecting-mobile-app-evaluating-usability-medical-applications.html

National Institute of Health. (2023, January 12). *How to find reliable health information online*. National Institute on Aging. https://www.nia.nih.gov/health/healthy-aging/how-find-reliable-health-information-online

U.S. National Library of Medicine. (2020, March 6). *Evaluating internet health information: A tutorial from the National Library of Medicine*. MedlinePlus. https://medlineplus.gov/webeval/webeval.html

U.S. National Library of Medicine. (2020, December 4). *Evaluating health information* [multiple resources]. MedlinePlus. https://medlineplus.gov/evaluatinghealthinformation.html

Module 4 Required Readings

Blizinsky, K., & Bonham, V. (2018). Leveraging the learning health care model to improve equity in the age of genomic medicine. *Learning Health System*, *2*(1), e10046. https://doi.org/10.1002/lrh2.10046

Dudding, K. M., Gephart, S. M., & Carrington, J. M.(2018). Neonatal nurses experience unintended consequences and risks to patient safety with electronic health records.*Computers, Informatics, Nursing, 36*(4),167-76. https://doi.org/10.1097/CIN.0000000000000406

Goldstein, B., Navar, A., Pencina, M. J., & Ioannidis, J. (2017). Opportunities and challenges in developing risk prediction models with electronic health records data: A systematic review. *Journal of the American Medical Informatics Association*, *24*(1), 198-208. doi:10.1093/jamia/ocw042

The Office of the National Coordinator for Health Information Technology (ONC)*. (n.d.). *The ONC Cures Act Final Rule*. HealthIT.gov. https://www.healthit.gov/sites/default/files/page2/2020-03/TheONCCuresActFinalRule.pdf

The Office of the National Coordinator for Health Information Technology (ONC) (2022, October 31). *Information Blocking*. HealthIT.gov. https://www.healthit.gov/topic/information-blocking

Howe, J. L., Adams, K. T., Hettinger, A. Z., & Ratwani, R. M. (2018). Electronic health record usability issues and potential contribution to patient harm. *Journal of the American Medical Association, 319(*12), 1276-1278. https://jamanetwork.com/journals/jama/fullarticle/2676098

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Kisekka, V., & Giboney, J. S. (2018) The effectiveness of health care information
 technologies: Evaluation of trust, security beliefs, and privacy as determinants of
 health care outcomes. *Journal of Medical Internet Research, 20*(4), e107.
 http://doi.org/10.2196/jmir.9014

Ostherr, K., Borodina, S., Bracken, R.C., Lotternman, C. Storer, E. & Williams, B.
 (2017). Trust and privacy in the context of user-generated health data. *Big Data
 and Society, 4*(1). https://doi.org/10.1177/2053951717704673

Patterson, E.S. (2018). Workarounds to intended use of health information technology:
 A narrative review of the human factors engineering literature. *Human Factors,
 60*(3), 281–292. https://doi.org/10.1177/0018720818762546

Smith, M., Saunders, R., Stuckhardt, L., & McGinnis, J. (2012, September). Best care at
 lower costs: The path to continuously learning health care in America. *Institute of
 Medicine.* https://www.nap.edu/resource/13444/BestCareReportBrief.pdf

Smith, M., Saunders, R., Stuckhardt, L. & McGinnis, J. M. (2012, September). Best
 care at lower costs: The path to continuously learning health care in America.
 Recommendations. *Institute of Medicine.*
 https://www.nap.edu/resource/13444/Best-Care-at-Lower-Cost_Recs.pdf

Sulmasy, L., Lopex, A. M., & Horwitch, C. (2017). Ethical implications of the
 electronic health record: In the service of the patient. *General Internal
 Medicine, 32*(8), 935-939. https://doi.org/10.1007/s11606-017-4030-1

Tang, T. Lim, M., Mansfield, E. McLachlan, A. & Quan, S. (2018). Clinician user
 involvement in the real world: Designing an electronic tool to improve
 interprofessional communication and collaboration in a hospital setting .
 International Journal of Medical Informatics, 110, 90-97.
 https://doi.org/10.1016/j.ijmedinf.2017.11.011.

Supplementary (optional) Texts and Materials:

Module 1 Supplemental Readings

Field, M., Fong, K., & Shade, C. (2018). Use of electronic visibility boards to improve
 patient care quality, safety, and flow on inpatient pediatric acute care units.
 Journal of Pediatric Nursing, 41, 69-76. doi:10.1016/j.pedn.2018.01.015

 Schenk, E., Schleyer, R., Jones, C. R., Fincham, S., Daratha, K. B., & Monsen, K. A.
 (2018*). Impact of adoption of a comprehensive electronic health record on
 nursing work and caring efficacy*. (2018). *Computers, Informatics, Nursing, 36*(7),
 366. doi:10.1097/01.ncn.0000542471.35832.7e

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Nelson, E. C., Dixon-Woods, M., Batalden, P. B., Homa, K., Citters, A. D., Morgan, T. S., Eftimovska, E., Fisher, E. S., Overetveit, J., Harrison, W., Lind, C. & Lindblad, S. (2016). Patient focused registries can improve health, care, and science. *BMJ, 354*, i3319. doi:https://doi.org/10.1136/bmj.i3319

Rouleau, G., Gagnon, M., & Côté, J. (2015). Impacts of information and communication technologies on nursing care: An overview of systematic reviews (protocol). *Systematic Reviews, 4*(1). doi:10.1186/s13643-015-0062-y

Schick-Makaroff, K., & Molzahn, A. E. (2017). Evaluation of real-time use of electronic patient-reported outcome data by nurses with patients in home dialysis clinics. *BMC Health Services Research, 17*(1), 439-411. doi:10.1186/s12913-017-2377-y

Module 2 Supplemental Readings

Bellinger, G., Castro, D., & Mills, A. (2004). Data, information, knowledge, and wisdom. *Systems Thinking.* http://www.systems-thinking.org/dikw/dikw.htm

Capurro, D., Yetisgen, M., van Eaton, E., Black, R., & Tarczy-Hornoch, P. (2014). Availability of structured and unstructured clinical data for comparative effectiveness research and quality improvement: A multisite assessment. *eGEMs, 2*(1). https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4371483/

Holden, R.J., Srinivas, P., Campbell, N. L., Clark, D. O., Bodke, K. S., Hong, Y., Boustani, M. A., Ferguson, D., & Callahan, C. M. (2019). Understanding older adults' medication decision making and behavior: A study on over-the-counter (OTC) anticholinergic medications. *Research in Social & Administrative Pharmacy, 15*(1), 53-60. https://doi.org/10.1016/j.sapharm.2018.03.002

Hripcsak, G., Forrest, C., Brennan. P., & Stead, W. (2015). Informatics to support the IOM social and behavioral domains and measures. *Journal of the American Medical Informatics Association, 22*(4), 9214. doi:10.1093/jamia/ocv035

Dunn Lopez, K., Gephart, S., Raszewski, R., Sousa, V., Shehorn, L., & Abraham, J. (2016). Integrative review of clinical decision support for registered nurses in acute care settings. *Journal of American Medical Informatics Association, 24*(2), 441–450. https://doi.org/10.1093/jamia/ocw084

McIlvennan, C. K., Thompson, J. S., Matlock, D. D., Cleveland, J. C. J., Dunlay, S. M., LaRue, S. J., Lewis, E. F., Patel, C. B., Walsh, M. N., & Allen, L. A. (2016). A multicenter trial of a shared decision support intervention for patients and their caregivers offered destination therapy for advanced heart failure: DECIDE-IVAD: Rationale, design, and pilot data. *Journal of Cardiovascular Nursing, 31*(6), E8-e20. https://doi.org/10.1097/jcn.0000000000000343

Rutherford, M. (2008). Standardized nursing language: What does it mean for nursing practice? *OJIN: The Online Journal of Issues in Nursing*, 13(1). https://web-p-ebscohost-com.proxy.hsl.ucdenver.edu/ehost/detail/detail?vid=0&sid=3ec13509-d3ad-4681-90c1-592e85461d7b%40redis&bdata=JnNpdGU9ZWhvc3QtbGl2ZQ%3d%3d#AN=127819340&db=aph [MUST be logged into Strauss Library]

Whalen, K., Bavuso, K., Bouyer-Ferullo, S., Goldsmith, D., Fairbanks. A., Gesner, E., Lagor. C., & Collins, S. (2016). Analysis of nursing clinical decision support requests and strategic plan in a large academic health system. *Applied Clinical Informatics, 7*(2), 22737. doi:10.4338/ACI201510RA0128

Module 3 Supplemental Readings

Blandford, A., Gibbs, J., Newhouse, N., Perski, O., Singh, A., & Murray, E. (2018). Seven lessons for interdisciplinary research on interactive digital health interventions. *Digital Health, 4.* doi.org/10.1177/2055207618770325

Gordon, A. S., Adamson, W. C., & DeVries, A. R. (2017). Virtual visits for acute, nonurgent care: A claims analysis of episode-level utilization. *Journal of Medical Internet Research, 19(*2), e35. doi:http://www.jmir.org/2017/2/e35

Kooij, L., Groen, W. G., & van Harten, W. H. (2017). The effectiveness of information technology-supported shared care for patients with chronic disease: A systematic review. *Journal of Medical Internet Research, 19*(6), e221. http://doi.org/10.2196/jmir.7405

McGrail, K. M., Ahuija. M. A., & Leaverm C. A. (2017). Virtual visits and patient-centered care: Results of a patient survey and observational study. *Journal of Medical Internet Research,19*(5), e177. http://www.jmir.org/2017/5/e177

Morawski, K., Ghazinouri, R, Krumme A., Luaffenburger, J., Lu, Z., Durfee, E. et al.(2018). Association of a smartphone application with medication adherence and blood pressure control: The Medisafe-BP randomized clinical trial. *Journal of American Medical Association. Internal Medicine, 178*(6), 802-809. doi:10.1001/jamainternmed.2018.0447

Pflugeisen, B.M., McCarren, C., Poore, S., Carlile, M., & Schroeder, R. (2016). Virtual visits: Managing prenatal care with modern technology. *MCN, The American Journal of Maternal Child Nursing, 41*(1), 24-30. doi:10.1097/NMC.0000000000000199.

Sarasohn¬Kahn, J. (2016, February). *Digitizing the safety net: Health tech opportunities for the underserved.* California Health Care Foundation. https://www.chcf.org/wp-content/uploads/2017/12/PDF-DigitizingSafetyNet.pdf

Spooner, K. K., Jason, L., Salemi, J. L., Hamisu, M., Salihu, H. M., & Zoorob, R. J. (2017). eHealth patient-provider communication in the United States: Interest, inequalities, and predictors. *Journal of the American Medical Informatics Association, 24* (e1) e18–e27. https://doi.org/10.1093/jamia/ocw087

Wang, J., Coleman, D. C., Kanter, J., Ummer, B., Siminerio, L. (2018). Connecting smartphone and wearable fitness tracker data with a nationally used electronic health record system for diabetes education to facilitate behavioral goal monitoring in diabetes care: Protocol for a pragmatic multi-site randomized trial. *Journal of Medical Internet Research. Research Protocols,7*(4), e10009. http://www.researchprotocols.org/2018/4/e10009

Module 4 Supplemental Readings

Blumenthal, FD., & Squires, D. (2015). Giving patients control of their EHR data. *Journal of General Internal Medicine, 30*(Suppl), 542-543. https://doi.org/10.1007/s11606-014-3071-y

Botkin, J. (2018). Transparency and choice in learning healthcare systems*. Learning Health Systems*, *2*(1) e10049. https://onlinelibrary.wiley.com/doi/abs/10.1002/lrh2.10049

Crotty, D.H., & Mostaghimi, A. (2014). Confidentiality in the digital age. *BMJ, 348*, g2943. doi:https://doi.org/10.1136/bmj.g2943

Crotty, B., Mostaghimi, A., O'Brien, J., Bajracharya, A., Safran, C., & B. E. Landon, B. (2015). Prevalence and risk profile of unread messages to patients in a patient web portal. *Applied Clinical Informatics, 6*(2), 375-382 https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4493337/

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University of Colorado, College of Nursing
Graduate Course Syllabus

Course Schedule:

Date:	Topic:	Required Reading:	Assignment(s):
08/26/2024	Core Informatics Concepts & HIT Promise	Module 1 Required Readings	• **Research Articles** Sept. 8th @11:59 PM MT • **Individual Position Statement** Sept. 22nd @11:59 PM MT
September 2nd	*Labor Day (Classes Not in Session)*		
09/23/2024	Core Skills & Tools	Module 2 Required Readings	• **Group Discussion #**1 Oct. 6th @11:59 PM MT • **Team Paper** Oct. 20th @11:59 PM MT • **Team Evaluation** Oct. 20th @11:59 PM MT
10/21/2024	Consumer Engagement	Module 3 Required Readings	• **eHealth Evaluation** Nov.3rd @11:59 PM MT • **Clinical Note**: Nov. 17th @11:59 PM MT
11/18/2024	Professional Issues	Module 4 Required Readings	• **Group Discussion**: Dec. 1st @11:59 PM MT
November 28-29	Thanksgiving Break (Classes Not in Session)		
12/2/2024	Professional Issues	Module 4 Required Readings- continued	• **Clinical Workflow Analysis:** Dec.12th @11:59 PM MT
December 13th	*Semester Ends*		

Evaluation

I. Basis for Final Grade

Assignment:	Possible Points:	Percent of Final Grade:
Module 1: Research Articles	100	10%
Module 1: Individual Position Statement	100	20%
Module 2: Structured vs. Non-Structured Documentation Discussion	100	10%
Module 2: Team Paper	90	15%
Self/Team Evaluation	10	5%
Module 3: E-health Evaluation Checklist/Tool	100	5%

Module 3: Clinical Note	100	20%
Module 4: Privacy, Confidentiality, Security Discussion	100	5%
Module 4: Clinical Workflow Analysis	100	10%

I.   Grading Scale

Letter Grade:	Points:	Percent:
A		94 – 100%
A-		90 – 93%
B+		87 – 89%
B		84 – 86%
B-		80 – 83%
C+		77 – 79%
C		74 – 76%
C-		70 – 73%
D+		67 – 69%
D		64 – 66%
D-		60 – 63%
F		0 – 59%

XIII.   Grade Dissemination

Grades section in Canvas. Final grades will be posted in the UCD portal. Each student will only see their individual grade.

Policies

Please refer to the University of Colorado, College of Nursing student handbook for detailed information about college policies and expectations.

Handbooks are located at: https://nursing.cuanschutz.edu/student-life/student-handbooks

Course Procedures

I.   **Course Policies: Grades**
   a. *Rounding of Final Course Grades*
      i. Final Course letter grades are calculated and submitted to the registrar based on whole numbers. A minimum standard of rounding in all courses is necessary to provide consistency and transparency to students. Only the final course grade that represents the completion of all coursework will be used for

rounding purposes. The calculated final course grade will be rounded using the number in the tenth position after the decimal of the final grade calculations. Final course grades of 0.5 and higher will be rounded up to the next whole number. When the number at the tenth decimal place is less than 0.5 the grade is rounded down to the next whole number. For example, a final course grade of 87.52% will be rounded up to 88%. A final course grade of 87.49% will result in a final grade of 87%.

b. **Attendance Policy:**
   i. Class attendance and participation is a professional expectation.
      1. Take responsibility for keeping up with the readings and assignments for each scheduled class or content area.
      2. Class participation and completion of all learning activities is required for successful completion of this course.
      3. Participate in discussions (in class or online) to define, interpret, summarize, give examples, make conclusions, etc. about the concepts discussed and about what your classmates have discussed.

   UC Denver Student Attendance and Absences Policy:
   https://www.ucdenver.edu/docs/librariesprovider284/default-document-library/7000-student-affairs/7030---student-attendance-and-absences.pdf?sfvrsn=beaffdba_4

c. **Late Work Policy:**
   i. Due dates for assignments are clearly posted on the syllabus. It is your responsibility to submit these assignments on time and according to their defined critical elements. Late assignments turned in 24 hours after a posted deadline will not be graded and the student will receive a zero for that assignment unless previous arrangements have been made with the instructor.

d. **Late work is defined as:**
   i. An assignment turned in after the due date and time posted in the syllabus or, an assignment turned in after a due date and time that has been updated through previous arrangements made with the instructor.

e. **The consequence for late assignments is:**
   i. Late assignments turned in after a posted deadline will be subjected to 10% point deduction for each day the assignment is

late unless previous arrangements have been made with the instructor.

f. *Make-up Exam Policy: N/A*

g. *Extra Credit Policy:*
  i. There will be no opportunity for extra credit in this course

h. *Grades of Incomplete Policy:*
  i. The current university policy concerning incomplete grades will be followed in this course. Incomplete grades are given only in situations where unexpected emergencies prevent a student from completing the course and the remaining work can be completed the next semester. Your instructor is the final authority on whether you qualify for an incomplete. Incomplete work must be finished by the end of the subsequent semester or the "I" will automatically be recorded as an "F" on your transcript.

i. *Rewrite/Resubmit Policy:*
  i. It is up to the faculty to determine if your paper does not meet standards in the course. They may ask you to resubmit the paper.

j. *Group Work Policy:*
  i. All members of the work should equally participate in the activity. Those with limited participation may receive a lower grade for the assignment.

II. Course Policies: Technology
a. *E-Mail Policy:*

Students and faculty must use University of Colorado assigned email addresses or Canvas for all email correspondence. The College of Nursing has the right to send communications to students via e-mail and the right to expect that those communications will be received and read in a timely fashion. Not reading e-mail does not absolve a student from the responsibilities associated with communication sent to his or her official e-mail address.

CU CON Online Communication Policy:
https://nursing.cuanschutz.edu/student-life/student-handbooks/section-iv-policies-responsibilities#ac-student-email-6

b. *Canvas Policy:*

    i. Canvas will be the primary tool used to access class notes, announcements and track your grade for this course. It is your responsibility to access Canvas frequently for announcements and class materials, as well as information about your clinical assignments. Any questions about access or utilities on Canvas should first be directed to Canvas help site.

c. *Laptop and Mobile Device Usage Policy:*

    i. Laptops are allowed in class during all class lectures, but must be turned off and stored during exams. Turn off or mute cell phones and pagers during class time. NO cell phone conversations or text messaging is permitted during class or exam time.

d. *Classroom Devices Policy:*

    i. A basic calculator for medication calculation exercises is allowed in class and during examinations. Please ask the specific lecturers regarding recording of their lectures.

e. *Classroom Response Clickers:*

    i. Responseware technology will be used throughout the course for interactive participation in class.

f. *Classroom Devices Policy:*

    i. A basic calculator for medication calculation exercises is allowed in class and during examinations. Please ask the specific lecturers regarding recording of their lectures.

g. *Classroom Response Clickers:*

    ii. Responseware technology will be used throughout the course for interactive participation in class.

III.   Course Policies: Student Expectations

Students are expected to attend all class sessions and are responsible for all content and class work assigned and/or covered in class or online.

CU CON Policy Statement Professional Role Behaviors:
https://nursing.cuanschutz.edu/student-life/student-handbooks/section-vii-conduct-focused-policies#ac-professional-role-behaviors-prb-1

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a. ***Professional Role Behavior and Honor Code:***

    i. Students are expected to engage in conduct that a) is consistent with designated policies and procedures of the course and college and b) demonstrates professional behaviors. Students are expected to have read and abide by the ***CU-CON Policy Statement for Professional Role Behaviors and the Student Honor and Conduct code***: "*The health professions are based on a high degree of trust by the individuals they serve. Students entering the health professions have a particular obligation, therefore, to conduct themselves at all times in a manner that reflects honesty, integrity and respect for others*" (Student Handbook).

b. ***Graduate Program Policies and Procedures:***

    i. Please refer to the Student Handbook, which can be found online at the main College of Nursing webpage: https://nursing.cuanschutz.edu/student-life/student-handbooks

c. ***Students Called for Military Duty:***

    i. Please contact the course coordinator if you are called for military duty. Plans will be made according to the length of military service and class or clinical time missed.

d. ***Course Ethics:***

    i. Merriam-Webster online dictionary defines plagiarizing as: *To steal and pass off (the ideas or words of another) as one's own: use (another's production) without crediting the source…to commit literary theft: present as new and original an idea or product derived from an existing source*. (**p.**org. (2017, May 18). *What is plagiarism?* Turnitin LLC.) https://www.plagiarism.org/article/what-is-plagiarism).

    ii. Utilizing ChatGPT or other generative language models is not necessarily a form of plagiarism; it depends on how these are used. In line with JAMA's new policy on generative AI models (https://jamanetwork.com/journals/jama/fullarticle/2807956), you must:

        1. disclose any way in which these models or tools were used to create content or assist with writing or paper preparation, including the name of the tool, version number, and a description of how the tool was used (e.g., for initial idea generation, as part of an Internet reference search, as a

style editor), and also,

2. take responsibility for the integrity of the content generated by these tools, including the accuracy of any references cited.

You can meet this disclosure requirement by adding an addendum to your paper about the use of the technology; the statement about using AI tools does not count toward the page limit within the paper itself. OR you put the tool as a reference in your reference page. Example:

OpenAI. (2024). ChatGPT 3.5 ([add month day] version) [Large language model].
https://chat.openai.com/chat. Used as a grammar tool and to check sentence structure

.Note, this guidance includes the use of all writing assistive tools (e.g., Grammarly) which include generative AI components. If you are in doubt whether your use of a writing tool is allowable, err on the side of full disclosure.

iii. The CU College of Nursing Student Honor and Conduct Code policy requires that course professors and fellow students who suspect plagiarism or other violations of the honor code must immediately report the incident to the Student Honor and Conduct Committee. This committee evaluates the situation and determines the appropriate consequences. Potential consequences include termination of the student's enrollment in the College of Nursing. If you are caught violating the honor code, faculty will recommend your dismissal to this committee and to the Dean.

iv. Your personal integrity is something that takes you a lifetime to build, but only seconds to destroy. Faculty will expect that all work submitted by you is authentic; and that all online testing answers are your individual work, without any assistance from any other person, the Internet, or any other sources, unless I have stipulated that you may use a specific source to complete the assignment.

e. Professional Behavior:
   i. The expected outcomes of the student's ability to conduct oneself in a professional manner, and to lead and to engage in effective group interaction will be demonstrated by the student's professional behaviors in the classroom and to their peers. Successful achievement of these outcomes is based on the following critical elements: The student will:

1. Adhere to the CON Guidelines for Professional Role Behaviors and the UCD Student Honor and Conduct Code.
2. Be considerate of your classmates and faculty and help promote an effective learning atmosphere.

University of Colorado, College of Nursing
Graduate Course Syllabus

3. Communicate to faculty and peers in a professional and respectful manner at all times.

4. Email: Professional communication is expected in all emails sent to faculty or other students. Use of professional titles, appropriate subject lines, and proper written communication structure.

5. Turn off or mute pagers and cell phones during class time. NO cell phone conversations or text messaging is permitted during class or exam time.

6. Take responsibility for keeping up with the readings and assignments for each scheduled class or content area.

7. Class participation and completion of all learning activities is required for successful completion of this course. Participate in discussions (in class or online) to define, interpret, summarize, give examples, make conclusions, etc. about the concepts discussed and about what your other classmates have discussed.

8. Children are not allowed in classrooms. Students must find alternative childcare during class time.

- **Professional Behavior:** refer to the CU CON Policy Statement Professional Role Behaviors: https://nursing.cuanschutz.edu/student-life/student-handbooks/section-vii-conduct-focused-policies#ac-professional-role-behaviors-prb-1

- CU CON Children in the Workplace and/or Classroom Policy: https://nursing.cuanschutz.edu/student-life/student-handbooks/section-iv-policies-responsibilities#ac-learning-environmentphysical-space-8

f. *Civility:*
   i. Our commitment is to create a climate for learning characterized by respect for each other and the contributions each person makes to class. We ask that you make a similar commitment.

g. *Inclement Weather Policy:*
   https://ucdenver.edu/emergencymanagement#ac-natural-disasters-and-severe-weather-conditions-1

   UC Denver Emergency Weather: (877) 463-6070 or https://www.cuanschutz.edu/police/cu-alerts/anschutz-alerts

CU CON Inclement Weather Policy (refer to the policy for Anschutz, AMC and Legacy) https://nursing.cuanschutz.edu/student-life/student-handbooks/section-iv-policies-responsibilities#ac-inclement-weatherfacility-closure-9

h. *Campus Assessment, Response & Evaluation (CARE):*

    i. The purpose of the team is to assess whether individuals pose a risk to themselves or others and to intervene when necessary and, more generally, to identify and provide assistance to those in need. The team takes a preventive approach to risk assessment by offering resources, referrals, and support to both the concerning individual and those impacted by their behavior. Additional information regarding this resource may be found at: http://www.ucdenver.edu/life/services/CARE/Pages/default.aspx

i. *Writing Center:*

    i. Writing assistance is available through the Writing Center. Additional information regarding this resource may be accessed at: https://clas.ucdenver.edu/writing-center/locations/writing-center-cu-anschutz

j. *Religious Observances:*

    i. The University of Colorado Denver, Anschutz Medical Campus has a legal obligation to accommodate students who must be absent from an educational activity in order to observe religious holidays or other observances. Students should speak to the faculty member to request accommodations for religious observances in advance during the first week of class. Requests received by faculty must be kept confidential and should be considered unless they create an undue hardship. If the student and faculty member cannot agree on an accommodation, the matter should be referred to the Assistant Dean for Graduate Programs for resolution.

University Policies

I.   Access

    I.   **Disability Access:** the University of Colorado Anschutz Medical Campus is committed to providing equitable access to our programs for students with disabilities (e.g., psychological, attentional, learning, chronic health, sensory, and physical).

II.   To engage in a confidential conversation about the process for requesting reasonable accommodations in the classroom and clinical settings please contact **The Office of Disability, Access, and Inclusion** at: disabilityaccess@cuanschutz.edu or begin the process via the website: https://www.cuanschutz.edu/offices/office-of-disability-access-and-inclusion.

Accommodations are not provided retroactively, therefore, students are encouraged to begin this process early.

II.   Nondiscrimination and Sexual Misconduct:

I.   The University of Colorado Denver is committed to maintaining a positive learning, working and living environment. University policy and Title IX prohibit discrimination on the basis of race, color, national origin, sex, age, disability, pregnancy, creed, religion, sexual orientation, veteran status, gender identity, gender expression, political philosophy or political affiliation in admission and access to, and treatment and employment in, its educational programs and activities. University policy prohibits sexual misconduct, including harassment, domestic and dating violence, sexual assault, stalking, or related retaliation.

Title IX requires the university to designate a Title IX Coordinator to monitor and oversee overall Title IX compliance. The University Title IX Coordinator is available to explain and discuss: your right to file a criminal complaint; the university's complaint process, including the investigation process; how confidentiality is handled; available resources, both on and off campus; and other related matters. Students may report allegations of discrimination or harassment through the Office of Equity: https://www.ucdenver.edu/offices/equity.

III.   Academic Honesty
I.   *Student Code of Conduct*:
   a. Students are expected to know, understand, and comply with the ethical standards of the university, including rules against plagiarism, cheating, fabrication and falsification, multiple submissions, misuse of academic materials, and complicity in academic dishonesty.
   b. For suggestions on ways to avoid academic dishonesty, please see the Academic Honesty Handbook at https://clas.ucdenver.edu/writing-center/students/plagiarismturnitin

II.   *Plagiarism*
   a. is the use of another person's ideas or words without acknowledgement. The incorporation of another person's work into yours requires appropriate

identification and acknowledgement. Examples of plagiarism when the source is not noted include: word- for-word copying of another person's ideas or words; the "mosaic" (interspersing your own words here and there while, in essence, copying another's work); the paraphrase (the rewriting of another's work, while still using their basic ideas or theories); fabrication (inventing or counterfeiting sources); submission of another's work as your own; and neglecting quotation marks when including direct quotes, even on material that is otherwise acknowledge.

III. *Cheating*
   a. involves the possession, communication or use of information, materials, notes, study aids, or other devices and rubrics not specifically authorized by the course instructor in any academic exercise, or unauthorized communication with any other person during an academic exercise. Examples of cheating include: copying from another's work or receiving unauthorized assistance from another; using a calculator, computer, or the internet when its use has been precluded; collaborating with another or others without the consent of the instructor; submitting another's work as one's own.

IV. *Fabrication*
   a. involves inventing or counterfeiting information - creating results not properly obtained through study or laboratory experiment. Falsification involves deliberate alteration or changing of results to suit one's needs in an experiment or academic exercise.

V. *Multiple submissions*
   a. involves submitting academic work in a current course when academic credit for the work was previously earned in another course, when such submission is made without the current course instructor's authorization.

VI. *Misuse of academic materials*
   a. includes: theft/destruction of library or reference materials or computer programs; theft/destruction of another student's notes or materials; unauthorized possession of another student's notes or materials; theft/destruction of examinations, papers, or assignments; unauthorized assistance in locating/using sources of information when forbidden or not authorized by the instructor; unauthorized possession, disposition, or use of examinations or answer keys; unauthorized alteration, forgery, fabrication, or falsification of academic records; unauthorized sale or purchase of examinations, papers, or assignments.

VII. *Complicity in academic dishonesty*
   a. involves knowingly contributing to or cooperating with another's act(s) of academic dishonesty.

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Important Dates to Remember

The College of Nursing academic calendar is available at
https://nursing.cuanschutz.edu/student-life/academic-calendar-and-resources