

**Department of Health Outcomes and Biomedical Informatics  
College of Medicine  
University of Florida**

***GMS 6802: Health Outcomes Research for Chronic Diseases  
Fall 2024***

Instructor: Rahma Mkuu, PhD, MPH  
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Classroom: Malachowsky Hall for Data Science & Information Technology, 7126  
Time: Thursdays, 12:30 pm – 4:00 pm  
Credits: 3  
Office Hours: Tuesday 11:00 am -12:00 pm and Thursday 10:00 am -11:00 am

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**Be considerate of others by showing up on time and placing all electronic devices on silent upon entry into the classroom.**

### **COURSE DESCRIPTION**

This course provides an in-depth analysis of chronic disease risk factors and health outcomes across the life course, from pre-birth to death. Students will learn about the leading chronic diseases in the United States, current knowledge and gaps, chronic disease research methods, and evidence-based interventions that have been shown to improve chronic disease outcomes.

### **COURSE OBJECTIVES**

Students who successfully complete this course will be able to:

1. Identify the risk factors associated with major chronic diseases;
2. Demonstrate familiarity with different data sources and research methods used in conducting health outcomes assessment for chronic diseases;
3. Critically evaluate study designs and methods used in health outcomes assessment for chronic diseases;
4. Describe approaches for measuring health disparities among major chronic conditions and evaluate the strengths and limitations of those methods;
5. Explain the implications for childhood chronic conditions for adult health;
6. Evaluate different models of transitioning from child-centered care to adult-oriented care for chronic disease management and health outcomes.

## **COURSE FORMAT**

Lectures will be used to provide foundational knowledge for each major topic covered. Lectures will be followed by class discussions of current articles in the peer-reviewed literature. Each student will lead at least one article Discussion. Students will also be required to work on a group project resulting in a draft manuscript to be submitted for publication.

### **Student Requirements:**

## **EVALUATION AND GRADING**

### **Course Reading Presentation (50 points)**

Each student will present one of the listed articles in the course readings. Each presentation should be no more than 30 minutes and provide a summary of the article. The student presenting should also pose at least 3 discussion questions to the class. Fifteen additional minutes will be allotted to the discussion questions.

### **Critical Evaluation of Article (50 points)**

Students will prepare critical evaluations of one assigned article from the peer-reviewed literature. This evaluation should include a summary of the study objective, study design, data sources, measures, analytic methods, and major findings. The student should critically evaluate the strengths and limitations of the study design, data sources, measures, and analytic approach for addressing the main study objective. The student should also evaluate whether the conclusions made by the authors are appropriate given the limitations identified.

### **Quizzes (50 points – 10 quizzes scored at 5 points each)**

Students will complete ten quizzes throughout the semester to assess comprehension of course content. The 9 highest quiz grades will be calculated in the student's final grade in the course (i.e. the lowest quiz grade will be "dropped"). Quizzes will cover assigned readings and content covered since the previous quiz and/or exam. No specific quiz dates will be given; students should expect to complete a quiz at each class meeting. Quizzes may not be "made up" due to an unexcused absence.

### **Exams (200 points - Two exams at 100 points each)**

Exams will be used to assess your understanding of assigned readings and instructional activities. Each exam will evaluate your knowledge through a multitude of question types including, multiple choice, true or false, or short answer. Multiple choice and true or false items will be graded on an item-correct/not-correct basis. Short answer and essay questions may be graded using partial credit. All exams will be administered on the scheduled date provided on the syllabus during class. There will be a mid-term and a final exam.

### **Review Article (100 points)**

Students will research a specific topic related to chronic disease and critically review and synthesize research within the specific topic published within the last five years. Students should produce a comprehensive article that provides a well-organized overview of the current state of research in their selected topic. The review should summarize key themes, debates, literature gaps, and opportunities for future research.

Grades will be assigned as follows:

Letter Grade	Grade Points	Grade Percentage
A	4.0	95-100
A-	3.67	90-94
B+	3.33	87-89
B	3.0	83-86
B-	2.67	80-82
C+	2.33	77-79
C	2.0	73-76
C-	1.67	70-72
D+	1.33	67-69
D	1.0	63-66
D-	.67	60-62
E	0	59 and below

For additional grading policy information, you may visit the graduate catalog web page at [Graduate Catalog < University of Florida \(ufl.edu\)](https://ufl.edu/graduate-catalog) or the HOBI Student Handbook [Student Handbook » Health Outcomes & Biomedical Informatics » College of Medicine » University of Florida \(ufl.edu\)](https://ufl.edu/student-handbook)

## TEXTBOOKS AND READINGS

There is no assigned textbook.

The following readings will be used. Supplemental readings may be requested.

Date	Topic	Reading /Assignment
Aug 22	Introduction to the course	Syllabus Quiz and Self-Introduction on <a href="#">CANVAS</a>
Aug 29	Defining Chronic Disease	<p><a href="#">(ZOOM Lecture)</a></p> <ul style="list-style-type: none"> <li>• Goodman, R. A., Posner, S. F., Huang, E. S., Parekh, A. K., &amp; Koh, H. K. (2013). Defining and measuring chronic conditions: imperatives for research, policy, program, and practice. <i>Preventing chronic disease</i>, 10. <a href="https://pubmed.ncbi.nlm.nih.gov/23618546/">https://pubmed.ncbi.nlm.nih.gov/23618546/</a></li> <li>• Hacker, K. (2024). The burden of chronic disease. <i>Mayo Clinic Proceedings: Innovations, Quality &amp; Outcomes</i>, 8(1), 112-119. <a href="https://doi.org/10.1016/j.mayocpiqo.2023.08.005">https://doi.org/10.1016/j.mayocpiqo.2023.08.005</a></li> <li>• Van Der Lee, J. H., Mokkink, L. B., Grootenhuis, M. A., Heymans, H. S., &amp; Offringa, M. (2007). Definitions and measurement of chronic health conditions in childhood: a systematic review. <i>Journal of American Medical Association</i>, 297(24), 2741-2751. <a href="https://doi.org/10.1001/jama.297.24.2741">https://doi.org/10.1001/jama.297.24.2741</a></li> </ul>
Sept 5	Multimorbidity	<ul style="list-style-type: none"> <li>• Skou, S. T., Mair, F. S., Fortin, M., Guthrie, B., Nunes, B. P., Miranda, J. J., ... &amp; Smith, S. M. (2022). Multimorbidity. <i>Nature Reviews Disease Primers</i>, 8(1), 48. <a href="https://doi.org/10.1038/s41572-022-00376-4">https://doi.org/10.1038/s41572-022-00376-4</a></li> </ul>

		<ul style="list-style-type: none"> <li>• Bjur, K. A., Wi, C. I., Ryu, E., Crow, S. S., King, K. S., &amp; Juhn, Y. J. (2019). Epidemiology of children with multiple complex chronic conditions in a mixed urban-rural US community. <i>Hospital Pediatrics</i>, 9(4), 281-290. <a href="https://doi.org/10.1542/hpeds.2018-0091">https://doi.org/10.1542/hpeds.2018-0091</a>.</li> <li>• Ho, I. S. S., Azcoaga-Lorenzo, A., Akbari, A., Black, C., Davies, J., Hodgins, P., ... &amp; Guthrie, B. (2021). Examining variation in the measurement of multimorbidity in research: a systematic review of 566 studies. <i>The Lancet Public Health</i>, 6(8), e587-e597. <a href="https://doi.org/10.1016/S2468-2667(21)00107-9">https://doi.org/10.1016/S2468-2667(21)00107-9</a></li> </ul>
Sept 12	Chronic disease across the life course	<ul style="list-style-type: none"> <li>• Lynch, J., &amp; Smith, G. D. (2005). A life course approach to chronic disease epidemiology. <i>Annual Review of Public Health</i>, 26(1), 1-35. <a href="https://doi.org/10.1146/annurev.publhealth.26.021304.144505">https://doi.org/10.1146/annurev.publhealth.26.021304.144505</a></li> <li>• Braveman, P., &amp; Barclay, C. (2009). Health disparities beginning in childhood: a life-course perspective. <i>Pediatrics</i>, 124(Supplement_3), S163-S175. <a href="https://doi.org/10.1542/peds.2009-1100D">https://doi.org/10.1542/peds.2009-1100D</a></li> <li>• Ben-Shlomo, Y., &amp; Kuh, D. (2002). A life course approach to chronic disease epidemiology: conceptual models, empirical challenges and interdisciplinary perspectives. <i>International journal of epidemiology</i>, 31(2), 285-293. <a href="https://doi.org/10.1093/ije/31.2.285">https://doi.org/10.1093/ije/31.2.285</a></li> </ul>
Sept 19	Chronic Disease Risk Factors	<ul style="list-style-type: none"> <li>• Benavidez, G. A., Zahnd, W. E., Hung, P., &amp; Eberth, J. M. (2024). Chronic Disease Prevalence in the US: Sociodemographic and Geographic Variations by Zip Code Tabulation Area. <i>Preventing chronic disease</i>, 21. <a href="http://dx.doi.org/10.5888/pcd21.230267">http://dx.doi.org/10.5888/pcd21.230267</a>.</li> <li>• Brochier, A., Messmer, E., Wexler, M. G., Rogers, S., Cottrell, E., Tripodis, Y., &amp; Garg, A. (2023). A cross-sectional study of relationships between social risks and prevalence and severity of pediatric chronic conditions. <i>BMC pediatrics</i>, 23(1), 115. <a href="https://doi.org/10.1186/s12887-023-03894-6">https://doi.org/10.1186/s12887-023-03894-6</a></li> <li>• Himmelgreen, D., Romero-Daza, N., Heuer, J., Lucas, W., Salinas-Miranda, A. A., &amp; Stoddard, T. (2022). Using syndemic theory to understand food insecurity and diet-related chronic diseases. <i>Social Science &amp; Medicine</i>, 295, 113124. <a href="https://doi.org/10.1016/j.socscimed.2020.113124">https://doi.org/10.1016/j.socscimed.2020.113124</a></li> </ul>

Sept 26	Chronic Diseases Models of Care	<ul style="list-style-type: none"> <li>• Saxby, N., Beggs, S., Kariyawasam, N., Battersby, M., &amp; Lawn, S. (2020). Do guidelines provide evidence-based guidance to health professionals on promoting developmentally appropriate chronic condition self-management in children? A systematic review. <i>Chronic Illness</i>, 16(4), 239-252. <a href="https://doi.org/10.1177/1742395318799844">https://doi.org/10.1177/1742395318799844</a></li> <li>• Grover, A., &amp; Joshi, A. (2015). An overview of chronic disease models: a systematic literature review. <i>Global journal of health science</i>, 7(2), 210. <a href="https://doi.org/10.1177/1742395318799844">https://doi.org/10.1177/1742395318799844</a></li> </ul>
Oct 3	<b>REVIEW OF MID-TERM</b>	
Oct 10	<b>MID-TERM EXAM</b>	
Oct 17	Lifestyle Medicine Research	<ul style="list-style-type: none"> <li>• Ng, R., Sutradhar, R., Yao, Z., Wodchis, W. P., &amp; Rosella, L. C. (2020). Smoking, drinking, diet and physical activity—modifiable lifestyle risk factors and their associations with age to first chronic disease. <i>International journal of epidemiology</i>, 49(1), 113-130. <a href="https://doi.org/10.1093/ije/dyz078">https://doi.org/10.1093/ije/dyz078</a></li> <li>• Vodovotz, Y., Barnard, N., Hu, F. B., Jakicic, J., Lianov, L., Loveland, D., ... &amp; Parkinson, M. D. (2020). Prioritized research for the prevention, treatment, and reversal of chronic disease: recommendations from the lifestyle medicine research summit. <i>Frontiers in medicine</i>, 7, 585744. <a href="https://doi.org/10.3389/fmed.2020.585744">https://doi.org/10.3389/fmed.2020.585744</a></li> </ul>
Oct 24	Quality of Life	<ul style="list-style-type: none"> <li>• Firkins, J., Hansen, L., Driessnack, M., &amp; Dieckmann, N. (2020). Quality of life in “chronic” cancer survivors: a meta-analysis. <i>Journal of Cancer Survivorship</i>, 14, 504-517. <a href="https://doi.org/10.1007/s11764-020-00869-9">https://doi.org/10.1007/s11764-020-00869-9</a></li> <li>• Eiser, C., &amp; Morse, R. (2001). A review of measures of quality of life for children with chronic illness. <i>Archives of disease in childhood</i>, 84(3), 205-211. <a href="https://doi.org/10.1136%2Fadc.84.3.205">https://doi.org/10.1136%2Fadc.84.3.205</a></li> </ul>
Oct 31	Transition of Care	<ul style="list-style-type: none"> <li>• Huang, J. S., Gottschalk, M., Pian, M., Dillon, L., Barajas, D., &amp; Bartholomew, L. K. (2011). Transition to adult care: systematic assessment of adolescents with chronic illnesses and their medical teams. <i>The Journal of Pediatrics</i>, 159(6), 994-998. <a href="https://doi.org/10.1016/j.jpeds.2011.05.038">https://doi.org/10.1016/j.jpeds.2011.05.038</a></li> <li>• Shavit, S., Aminawung, J. A., Birnbaum, N., Greenberg, S., Berthold, T., Fishman, A., ... &amp; Wang, E. A. (2017). Transitions clinic network: challenges and lessons in primary care for people released from prison. <i>Health Affairs</i>, 36(6), 1006-1015. <a href="https://doi.org/10.1377/hlthaff.2017.0089">https://doi.org/10.1377/hlthaff.2017.0089</a></li> </ul>

Nov 7	Chronic Disease Surveillance	<ul style="list-style-type: none"> <li>• Filipp, S. L., Cardel, M., Hall, J., Essner, R. Z., Lemas, D. J., Janicke, D. M., ... &amp; Gurka, M. J. (2018). Characterization of adult obesity in Florida using the OneFlorida clinical research consortium. <i>Obesity Science &amp; Practice</i>, 4(4), 308-317. <a href="https://doi.org/10.1002/osp4.274">https://doi.org/10.1002/osp4.274</a></li> <li>• Hohman, K. H., Zambarano, B., Klompas, M., Wall, H. K., Kraus, E. M., Carton, T. W., &amp; Jackson, S. L. (2023). Development of a hypertension electronic phenotype for chronic disease surveillance in electronic health records: key analytic decisions and their effects. <i>Preventing Chronic Disease</i>, 20, E80. <a href="http://dx.doi.org/10.5888/pcd20.230026">http://dx.doi.org/10.5888/pcd20.230026</a></li> <li>• Siddiqui, A. H., &amp; Zafar, S. N. (2018). Global availability of cancer registry data. <i>Journal of Global Oncology</i>, 4. <a href="https://doi.org/10.1200%2FJGO.18.00116">https://doi.org/10.1200%2FJGO.18.00116</a></li> </ul>
Nov 14	Implementation Science	<ul style="list-style-type: none"> <li>• McGinty, E. E., Seewald, N. J., Bandara, S., Cerdá, M., Daumit, G. L., Eisenberg, M. D., ... &amp; Stuart, E. A. (2024). Scaling interventions to manage chronic disease: innovative methods at the intersection of health policy research and implementation science. <i>Prevention Science</i>, 25(Suppl 1), 96-108. <a href="https://doi.org/10.1007/s11121-022-01427-8">https://doi.org/10.1007/s11121-022-01427-8</a></li> <li>• Liu, H., Mohammed, A., Shanthosh, J., Laba, T. L., Hackett, M. L., Peiris, D., &amp; Jan, S. (2019). Process evaluations of primary care interventions addressing chronic disease: a systematic review. <i>BMJ open</i>, 9(8), e025127. <a href="https://doi.org/10.1136/bmjopen-2018-025127">https://doi.org/10.1136/bmjopen-2018-025127</a></li> </ul>
Nov 21	Artificial Intelligence and Chronic Disease	<ul style="list-style-type: none"> <li>• Subramanian, M., Wojtusciszyn, A., Favre, L., Boughorbel, S., Shan, J., Letaief, K. B., ... &amp; Chouchane, L. (2020). Precision medicine in the era of artificial intelligence: implications in chronic disease management. <i>Journal of translational medicine</i>, 18, 1-12. <a href="https://doi.org/10.1186/s12967-020-02658-5">https://doi.org/10.1186/s12967-020-02658-5</a></li> <li>• Nusinovici, S., Tham, Y. C., Yan, M. Y. C., Ting, D. S. W., Li, J., Sabanayagam, C., ... &amp; Cheng, C. Y. (2020). Logistic regression was as good as machine learning for predicting major chronic diseases. <i>Journal of Clinical Epidemiology</i>, 122, 56-69. <a href="https://doi.org/10.1016/j.jclinepi.2020.03.002">https://doi.org/10.1016/j.jclinepi.2020.03.002</a></li> </ul>
Nov 28	<b>THANKSGIVING HOLIDAY</b>	
Dec 5	<b>READING DAY</b>	
	<b>REVIEW FINAL EXAM</b>	
Dec 12	<b>FINAL EXAM</b>	

## **COURSE POLICIES**

Students are expected to adhere to the following course policies.

### **Class Attendance**

Class attendance is required. Excused absences follow the criteria of the UF Graduate Catalog (e.g., illness, conference attendance, serious family emergency, military obligations, religious holidays), and should be communicated to the instructor prior to the missed class day when possible. University of Florida rules require attendance during the first two course sessions, and students must attend all course sessions of student presentations for this class. Missing more than three scheduled sessions will result in a failure. Regardless of attendance, students are responsible for all material presented in class and meeting the scheduled due dates for class assignments. Finally, students must read the assigned readings *prior to* the class meetings, and be prepared to discuss the material. For more information, please visit: <https://catalog.ufl.edu/UGRD/academic-regulations/attendance-policies/>

### **Class Decorum**

Please: (1) be on time, (2) respect others' points of view, (3) listen quietly when others are speaking, and (4) silence cell phones, alarms, and other such distractions.

### **Canvas**

Course information, readings, and grades are available on Canvas at <http://lss.at.ufl.edu/>. You must have a Gatorlink account to log on. *You are expected to check the web site on a regular basis (i.e., at least one day prior to each class meeting).*

### **Getting Help**

For issues with technical difficulties for E-learning in Canvas, please contact the UF Help Desk at: [learning-support@ufl.edu](mailto:learning-support@ufl.edu) or by calling (352) 392-HELP - select option 2. Additional information is available at: <https://lss.at.ufl.edu/help.shtml>

### **Returned Assignments**

Keep copies of all assignments that you submit and of all grades until you receive official notification of your final course grade.

### **Policy on Make-Up Work**

Students are allowed to make up work only as the result of illness or other unanticipated circumstances. In the event of such emergency, documentation will be required in conformance with university policy. Work missed for any other reason will earn a grade of zero.

### **Accommodations for Students with Disabilities**

Students with disabilities who experience learning barriers and would like to request academic accommodations should connect with the disability Resource Center. [Click here to get started with the Disability Resource Center.](#) It is important for students to share their accommodation letter with their instructor and discuss their access needs, as early as possible in the semester.

## **Campus Resources**

### **Health and Wellness**

U Matter, We Care: If you or someone you know is in distress, please contact [umatter@ufl.edu](mailto:umatter@ufl.edu), 352-392-1575, or visit [U Matter, We Care website](#) to refer or report a concern and a team member will reach out to the student in distress.

Counseling and Wellness Center: Visit the [Counseling and Wellness Center website](#) or call 352-392-1575 for information on crisis services as well as non-crisis services.

Student Health Care Center: Call 352-392-1161 for 24/7 information to help you find the care you need, or visit the [Student Health Care Center website](#).

University Police Department: Visit [UF Police Department website](#) or call 352-392-1111 (or 9-1-1 for emergencies).

UF Health Shands Emergency Room / Trauma Center: For immediate medical care call 352-733-0111 or go to the emergency room at 1515 SW Archer Road, Gainesville, FL 32608; Visit the [UF Health Emergency Room and Trauma Center website](#).

GatorWell Health Promotion Services: For prevention services focused on optimal wellbeing, including Wellness Coaching for Academic Success, visit the [GatorWell website](#) or call 352-273-4450.

### **Academic Resources**

E-learning technical support: Contact the UF Computing Help Desk at 352-392-4357 or via e-mail at [helpdesk@ufl.edu](mailto:helpdesk@ufl.edu).

Career Connections Center: Reitz Union Suite 1300, 352-392-1601. Career assistance and counseling services. <https://career.ufl.edu/>

Library Support: Various ways to receive assistance with respect to using the libraries or finding resources. <https://uflib.ufl.edu/>

Teaching Center: Broward Hall, 352-392-2010 or to make an appointment 352-392-6420. General study skills and tutoring. <https://teachingcenter.ufl.edu/>

Writing Studio: 2215 Turlington Hall, 352-846-1138. Help brainstorming, formatting, and writing papers. <https://writing.ufl.edu/writing-studio/>

Student Complaints: Visit the Student Honor Code and Student Conduct Code webpage for more information. <https://www.sfa.ufl.edu/written-student-complaints/>

## **Academic Honesty**



UF students are bound by The Honor Pledge which states, “We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honor and integrity by abiding by the Honor Code. On all work submitted for credit by students at the University of Florida, the following pledge is either required or implied: “On my honor, I have neither given nor received unauthorized aid in doing this assignment.” The Conduct Code specifies a number of behaviors that are in violation of this code and the possible sanctions. [Click here to read the Conduct Code](#). If you have any questions or concerns, please consult with the instructor or TAs in this class.

### **Policy on Style for Citation and Plagiarism:**

The two key purposes of citation are to (1) give appropriate credit to the authors of information, research findings, and/or ideas (and avoid plagiarism) and (2) facilitate access by your readers to the sources you use in your research.

**Quotations:** When directly quoting an outside source, the borrowed text, regardless of the amount, must be surrounded by quotation marks or block quoted. Quoted text over two lines in length should be single-spaced and indented beyond the normal margins. Every quote must include a source—the author, title, volume, page numbers, etc.—whether an internal reference, footnote, or endnote is used in conjunction with a bibliography page.

**Paraphrasing or Citing an Idea:** When summarizing an outside source in your own words or citing another person’s ideas, quotation marks are not necessary, but the source must be included. This includes, but is not confined to, personal communications from other students, faculty members, experts in the field, summarized ideas from published or unpublished resource, and primary methods derived from published or unpublished sources. Use the general concept of “when in doubt – cite.”

Plagiarism is a serious violation of the academic honesty policy of the College. If a student plagiarizes others’ material or ideas, he or she may receive an “E” in the course. The faculty member may also recommend further sanctions to the Dean, per College disciplinary action policy. Generally speaking, the three keys of acceptable citation practice are: 1) thoroughness, 2) accuracy, and 3) consistency. In other words, be sure to fully cite all sources used (thoroughness), be accurate in the citation information provided, and be consistent in the citation style you adopt. All references should include the following elements: 1) last names along with first and middle initials; 2) full title of reference; 3) name of journal or book; 4) publication city, publisher, volume, and date; and 5) page numbers referenced. When citing information from the Internet, include the WWW address at the end, with the “access date” (i.e., when you obtained the information), just as you would list the document number and date for all public documents. When citing ideas or words from an individual that are not published, you can write “personal communication” along with the person’s name and date of communication.

The use of generative AI tools (e.g., ChatGPT, Dall-e, etc.) is permitted in this course for the following activities: 1) Brainstorming ideas for grant proposals; 2) checking grammar and spelling. The use of generative AI tools is not permitted in this course for writing any portion of your grant proposal.