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**University of Florida**  
**College of Public Health & Health Professions**  
**Syllabus PHC 6711: Measurement in Epidemiology and Outcomes Research (3 credit hours)**  
**Fall 2023**  
**Delivery Format: Online and On-Campus, Thursdays 12:50 pm to 3:50 pm**  
**Room HPNP 1101**  
**Canvas Course Website: <https://elearning.ufl.edu>**

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(Last update 8/4/2023)

***Instructor Information***

Natalie Chichetto, PhD MSW  
Assistant Professor  
Department of Epidemiology  
Office: 2004 Mowry Road, Clinical and Translational Research Building (CTRB) #4213  
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Office hours: By appointment  
Preferred course communications: Email, office hours

***Prerequisites***

PHC 6001 and PHC 6050, or instructor permission.

***Purpose and Outcome***

*Course Overview.* This course describes major designs and principles of measurement for epidemiology and outcomes research.

*Relation to Program Outcomes.* This course meets the following professional competencies: 1) Anticipate bias (i.e., information bias, selection bias, confounding) when planning a study and to minimize its consequences for inferences through optimal study design and data analysis; 2) Calculate and interpret epidemiologic measures of disease occurrence and measures of association and their precision and to explain the importance in various specific decision-making contexts; 3) To establish optimal methods of measurement, ascertainment, and validation of primary study exposures and outcomes of interest, as well as important confounders and effect modifiers.

*Course Objectives.* This course focuses on principles of measurement in epidemiologic/health outcomes research studies. Students will read and review methodological articles from the public health literature, and discuss how the methods presented can be leveraged to improve study design. Special emphases include: exposure dose construction, methods of measurements, measurement errors, including assessment and mitigation, questionnaire design, interview strategies, and use of records and biomarkers. This course also features special topics, for examples, measurement issues in clinical outcomes, substance use and psychiatric outcomes, exposome, gut microbiota, genetics, real-time biomonitoring, qualitative research, and bioinformatics.

*Instructional Methods.* We will meet for 14 sessions. Classes are lecture- and discussion-based, and the goal of each session is to enable each student to understand the merits and limitations of specific methods with respect to primary study design. Prior to each session, reading will be assigned from the epidemiologic literature. It is required that students read the literature and answer the Literature Review Questions before each meeting session. Assignments and Literature Review answers are due the

day before the class. In addition, there are final project presentation and critique of the presentation. See instruction for the final project on Canvas. There are no exams.

### ***Students Requiring Accommodations***

Students with disabilities who experience learning barriers and would like to request academic accommodations should connect with the disability Resource Center by visiting <https://disability.ufl.edu/students/get-started/>. 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.

### ***Course Evaluation***

Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. Guidance on how to give feedback in a professional and respectful manner is available at [gatorevals.aa.ufl.edu/students/](http://gatorevals.aa.ufl.edu/students/). Students will be notified when the evaluation period opens, and can complete evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or via [ufl.bluera.com/ufl/](http://ufl.bluera.com/ufl/). Summaries of course evaluation results are available to students at [gatorevals.aa.ufl.edu/public-results/](http://gatorevals.aa.ufl.edu/public-results/).

### ***University Honesty Policy***

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 Honor Code](#) specifies a number of behaviors that are in violation of this code and the possible sanctions. Furthermore, you are obligated to report any condition that facilitates academic misconduct to appropriate personnel. If you have any questions or concerns, please consult with the instructor of this class.

### ***Student Privacy***

There are federal laws protecting your privacy with regards to grades earned in courses and on individual assignments. For more information, please see the [Notification to Students of FERPA Rights](#).

### ***Campus Resources:***

#### **Health and Wellness**

**U Matter, We Care:**  
If you or a friend is in distress, please contact [umatter@ufl.edu](mailto:umatter@ufl.edu) or 352 392-1575 so that a team member can reach out to the student.

**Counseling and Wellness Center:** [counseling.ufl.edu/cwc](http://counseling.ufl.edu/cwc), and 392-1575; and the University Police Department: 392-1111 or 9-1-1 for emergencies.

**Sexual Assault Recovery Services (SARS)**  
Student Health Care Center, 392-1161.

**University Police Department** at 392-1111 (or 9-1-1 for emergencies), or [police.ufl.edu](http://police.ufl.edu).

#### **Academic Resources**

**E-learning technical support**, 352-392-4357 (select option 2) or e-mail to [Learning-support@ufl.edu](mailto:Learning-support@ufl.edu).

**Career Resource Center**, Reitz Union, 392-1601. Career assistance and counseling.

[Library Support](#), Various ways to receive assistance with respect to using the libraries or finding resources.

[Teaching Center](#), Broward Hall, 392-2010 or 392-6420. General study skills and tutoring.

[Writing Studio](#), 302 Tigert Hall, 846-1138. Help brainstorming, formatting, and writing papers.

**Course Schedule:**

Week/ Date / Topic (text reading)	Literature Discussion
1. 8/24/23– <b>Group formation, Introduction of measurement</b>	None
<b>Turn in Literature Review answers for Doll article Due 8/30/23 by 11:59pm</b>	
2. 8/31/23– <b>Dose and timing of exposure</b> (Reading: White, Armstrong & Saracci Ch. 1)	Doll et al. Mortality in relation to smoking: 50 years’ observations on male British doctors. BMJ 2004.
<b>Assignment 1 Due on 9/6/23 by 11:59pm</b>	
3. 9/7/23 – <b>Methods of measurement</b> (Ch. 2)	Banack et al. Is BMI a valid measure of obesity in the postmenopausal woman. Menopause 2019, 25: 307-313.
<b>Turn in Literature Review answers for Patterson article. Due on 9/13/23 by 11:59pm</b>	
4. 9/14/23 – <b>Measurement error &amp; its effect: continuous exposures</b> (Ch. 3, skip p.83-91)	Patterson et al. Measurement characteristics of the Women’s Health Initiative Food Frequency Questionnaire. Ann Epidemiol 1999; 9:178-187.
<b>Assignment 2 Due on 9/20/23 by 11:59pm</b>	
5. 9/21/23 – <b>Validity and reliability studies</b> (Ch. 4, skip p.128-137)	Barnard et al. Inter-pathologist and pathology report agreement for ovarian tumor characteristics in the Nurses’ Health Studies. Gynecologic Oncology. 2019
<b>Assignment 3 Due on 9/27/23 by 11:59pm</b>	
6. 9/28/23 – <b>Measurement error &amp; its effect: Categorical exposures</b> (p.83-91 & 128-133); <b>Reducing measurement error and its effects</b> (Ch. 5 skip p.158-170).	<b>ON ZOOM.</b> Prentice et al. Biomarker-calibrated energy and protein consumption and increased cancer risk among postmenopausal women. AJE 2009; 169:977-989.
<b>Assignment 4 Due on 10/4/23 by 11:59pm</b>	
7. 10/5/23 – <b>Questionnaire design and recall strategies</b> (Ch 6)	Sun et al. Item bank development, calibration and validation for patient-reported outcomes in female urinary incontinence. Qual Life Res 2016; 25: 1645-1654.
<b>Turn in Literature Review answers for Andersen &amp; Olsen Due on 10/11/23 by 11:59pm</b>	
8. 10/12/23 – <b>Quality control procedures- General and personal interview</b> (p. 158-170 & Ch.7)	Andersen and Olsen. Do interviewers’ health beliefs and habits modify responses to sensitive questions? A study using data collected from pregnant women by means of computer-assisted telephone interviews. AJE 2002;155:95-100.
<b>Turn in Literature Review answers for Filipp article. Due 10/18/23 by 11:59pm</b>	
9. 10/19/23 – <b>Use of records, diaries, and proxy respondents</b> (Ch. 8)	Filipp SL, et al. Characterization of adult obesity in Florida using the OneFlorida clinical research consortium. Obes Sci Pract. 2018 Jun 15;4(4):308-317.

<b>Assignment 5 Due on 10/25/23 by 11:59pm</b>	
10. 10/26/23- <b>Biomarkers</b> (Ch. 9)	Hankinson et al. Reproducibility of plasma hormone levels in postmenopausal women over a 2-3-year period. <i>Cancer Epidemiology, Biomarkers &amp; Prevention</i> 1995, 4:649-654.
11. 11/2/23- <b>Special lecture: Dr. Yan Wang. Real-time assessment of substance use</b>	<b>ON ZOOM.</b> Student presentation
12. 11/9/23 – <b>Special lecture: Dr. Thomas Pearson. Cardiovascular outcomes measurement</b>	<b>ON ZOOM.</b> Student presentation
13. 11/16/23 <b>Special lecture: Dr. Deepthi Varma. Qualitative research and mixed methods research</b>	<b>ON ZOOM.</b> Student presentation
14. 11/23/23 <b>No Class (Thanksgiving holiday)</b>	
15. 11/30/23 <b>Special lecture: Dr. Drew Westmoreland. TBA</b>	<b>ON ZOOM.</b> Student presentation and class evaluations

### ***Course Materials and Technology***

#### Technology:

PC to connect to [elearning.ufl.edu](http://elearning.ufl.edu) Canvas course site

Zoom for occasional online course sessions

#### Textbook:

White E, Armstrong BK, Saracci R. Principles of exposure measurement in epidemiology: Collecting, evaluating and improving measures of disease risk factors.

Assigned Readings: All readings will be posted on Canvas course site.

#### Week 1:

READ SYLLABUS

#### Week 2:

Doll R, Peto R, Boreham J, Sutherland I. Mortality in relation to smoking: 50 years' observations on male British doctors. *BMJ* (2004).

#### Week 3:

Banack HR, Wactawski-Wende J, Hovey KM, Stokes A. Is BMI a valid measure of obesity in post-menopausal women? *Menopause* (2018).

Al-Shaar, et al. Reproducibility and validity of a semiquantitative food frequency questionnaire in men assessed by multiple methods. *Am J Epi* (2021).

Willett WC, et al. Reproducibility and validity of a semiquantitative food frequency questionnaire. *Am J Epi*. (1985).

Subar AF, Kushi LH, Lerman JL, Freedman LS. Invited commentary: The contribution to the field of nutritional epidemiology of the landmark 1985 publication by Willett et al. *Am J Epi* (2017).

Week 4:

Patterson RE et al., Measurement characteristics of the women's health initiative food frequency questionnaire. *Ann Epidemiol* (1999).

White E. Design and interpretation of studies of differential exposure measurement error. *Am J Epi* (2002).

Week 5:

Barnard ME, et al. Inter-pathologist and pathology report agreement for ovarian tumor characteristics in the Nurses' Health Studies. *Gynecol Oncol*. (2018).

Week 6:

Prentice RL, et al. Biomarker-calibrated energy and protein consumption and increased cancer risk among postmenopausal women. *Am J Epi*. (2009).

Week 7:

Boynton, PM. Hands-on guide to questionnaire research: Administering, analysing, and reporting your questionnaire. *BMJ*. (2004)

Boynton, PM & Greenhalgh, T. Hands-on guide to questionnaire research: Selecting, designing, and developing your questionnaire. *BMJ*. (2004)

Sung et al. Item bank development, calibration and validation for patient-reported outcomes in female urinary incontinence. *Qual Life Res*. (2016).

Week 8:

Vable AM, Diehl SF, Glymour MM. Code review as a simple trick to enhance reproducibility, accelerate learning, and improve the quality of your team's research. *Am J Epi*. (2021).

Andersen AMN & Olsen J. Do interviewers' health beliefs and habits modify responses to sensitive questions? A study using data collected from pregnant women by means of computer-assisted telephone interviews. *Am J Epi*. (2002).

Week 9:

Spratt SE, et al. Assessing electronic health record phenotypes against gold-standard diagnostic criteria for diabetes mellitus. *J Am Med Inform Assoc* (2017).

Chavarro, JE et al. Validity of maternal recall of preschool diet after 43 years. *Am J Epi*. (2009).

Filipp SL, et al. Characterization of adult obesity in Florida using the OneFlorida clinical research consortium. *Obesity Sci Prac*. (2018).

Week 10:

Hernan MA & Cole SR. Invited Commentary: Causal diagrams and measurement bias. *Am J Epi*. (2009).

Twooroger SS & Hankinson SE. Use of biomarkers in epidemiologic studies: minimizing the influence of measurement error in the study design and analysis. *Cancer Causes Control* (2006).

Week 11 – 15: Guest lecturers will provide necessary readings, TBA

For technical support for this class, please contact the UF Help Desk at:

[helpdesk@ufl.edu](mailto:helpdesk@ufl.edu)

(352) 392-HELP - select option 2

<https://helpdesk.ufl.edu/>

### **Additional Academic Resources**

[Career Connections Center](#): Reitz Union Suite 1300, 352-392-1601. Career assistance and counseling services.

[Library Support](#): Various ways to receive assistance with respect to using the libraries or finding resources.

[Teaching Center](#): Broward Hall, 352-392-2010 or to make an appointment 352- 392-6420. General study skills and tutoring.

[Writing Studio](#): 2215 Turlington Hall, 352-846-1138. Help brainstorming, formatting, and writing papers.

Student Complaints On-Campus: [Visit the Student Honor Code and Student Conduct Code webpage for more information.](#)

On-Line Students Complaints: [View the Distance Learning Student Complaint Process.](#)

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## **ACADEMIC REQUIREMENTS AND GRADING**

### **Assignments**

### **Grading**

<b>Assignments</b>	<b>Due date</b>	<b>Points</b>
Week 2 Literature Review Questions	8/30	5
Assignment 1	9/6	10
Week 4 Literature Review Questions	9/13	5
Assignment 2	9/20	10
Assignment 3	9/27	10
Assignment 4	10/4	10
Week 8 Literature Review Questions	10/11	5
Week 9 Literature Review Questions	10/18	5
Assignment 5	10/25	10

Final Project Presentation	11/2-11/30	25
In Class Participation	N/A	5

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### ***Grading Policy***

<b><i>Percent</i></b>	<b><i>Grade</i></b>	<b><i>Grade Points</i></b>
90.0 - 100.0	A	4.00
87.0 - 89.9	A-	3.67
84.0 - 86.9	B+	3.33
81.0 - 83.9	B	3.00
78.0 - 80.9	B-	2.67
75.0 - 79.9	C+	2.33
72.0 - 74.9	C	2.00
69.0 - 71.9	C-	1.67
66.0 - 68.9	D+	1.33
63.0 - 65.9	D	1.00
60.0 - 62.9	D-	0.67
0 - 59.9	E	0.00

More information on UF grading policy may be found at:

<http://gradcatalog.ufl.edu/content.php?catoid=10&navoid=2020#grades>  
<https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx>

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### ***STUDENT EXPECTATIONS, ROLES, AND OPPORTUNITIES FOR INPUT***

#### ***Expectations Regarding Course Behavior***

Students are expected to refrain from excessive cell phone use and/or surfing the web on cell phones or personal computers/tablets etc.

Students are expected to participate in class discussions with respect for the instructor and fellow students.

#### ***Communication Guidelines***

Students can reach the instructor via email through CANVAS to schedule an appointment during office hours. Please be mindful that everyone can see messages on the discussion boards and use respectful and non-stigmatizing or otherwise inappropriate language in all posts.

Inquiries regarding individual grades, grading of assignments, etc. should be discussed on a one-to-one basis during scheduled office hours/appointment with the instructor and not during class time.

#### ***Academic Integrity***

Students are expected to act in accordance with the University of Florida policy on academic integrity. As a student at the University of Florida, you have committed yourself to uphold the Honor Code, which includes the following pledge:

**“We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honesty and integrity.”**

You are expected to exhibit behavior consistent with this commitment to the UF academic community, and on all work submitted for credit 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.”**

It is your individual responsibility to know and comply with all university policies and procedures regarding academic integrity and the Student Honor Code. Violations of the Honor Code at the University of Florida will not be tolerated. Violations will be reported to the Dean of Students Office for consideration of disciplinary action. For additional information regarding Academic Integrity, please see Student Conduct and Honor Code or the Graduate Student Website for additional details:

<https://www.dso.ufl.edu/sccr/process/student-conduct-honor-code/>

<http://gradschool.ufl.edu/students/introduction.html>

Please remember cheating, lying, misrepresentation, or plagiarism in any form is unacceptable and inexcusable behavior.

### **Recording Within the Course:**

Students are allowed to record video or audio of class lectures. However, the purposes for which these recordings may be used are strictly controlled. The only allowable purposes are (1) for personal educational use, (2) in connection with a complaint to the university, or (3) as evidence in, or in preparation for, a criminal or civil proceeding. All other purposes are prohibited. Specifically, students may not publish recorded lectures without the written consent of the instructor.

A “class lecture” is an educational presentation intended to inform or teach enrolled students about a particular subject, including any instructor-led discussions that form part of the presentation, and delivered by any instructor hired or appointed by the University, or by a guest instructor, as part of a University of Florida course. A class lecture does not include lab sessions, student presentations, clinical presentations such as patient history, academic exercises involving solely student participation, assessments (quizzes, tests, exams), field trips, private conversations between students in the class or between a student and the faculty or lecturer during a class session.

Publication without permission of the instructor is prohibited. To “publish” means to share, transmit, circulate, distribute, or provide access to a recording, regardless of format or medium, to another person (or persons), including but not limited to another student within the same class section. Additionally, a recording, or transcript of a recording, is considered published if it is posted on or uploaded to, in whole or in part, any media platform, including but not limited to social media, book, magazine, newspaper, leaflet, or third party note/tutoring services. A student who publishes a recording without written consent may be subject to a civil cause of action instituted by a person injured by the publication and/or discipline under UF Regulation 4.040 Student Honor Code and Student Conduct Code.

### **Policy Related to Guests Attending Class:**



Only registered students are permitted to attend class. However, we recognize that students who are caretakers may face occasional unexpected challenges creating attendance barriers. Therefore, by exception, a department chair or his or her designee (e.g., instructors) may grant a student permission to bring a guest(s) for a total of two class sessions per semester. This is two sessions total across all courses. No further extensions will be granted. Please note that guests are **not** permitted to attend either cadaver or wet labs. Students are responsible for course material regardless of attendance. For additional information, please review the Classroom Guests of Students policy in its entirety. Link to full policy: <https://phhp.ufl.edu/policy-classroom-guests-of-students/>

### ***Online Faculty Course Evaluation Process***

Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. Guidance on how to give feedback in a professional and respectful manner is available at <https://gatorevals.aa.ufl.edu/students/>. Students will be notified when the evaluation period opens, and can complete evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or via <https://ufl.bluera.com/ufl/>. Summaries of course evaluation results are available to students at <https://gatorevals.aa.ufl.edu/public-results/>.

### ***SUPPORT SERVICES***

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

If you require classroom accommodation because of a disability, it is strongly recommended you register with the Dean of Students Office <http://www.dso.ufl.edu> within the first week of class or as soon as you believe you might be eligible for accommodations. The Dean of Students Office will provide documentation of accommodations to you, which you must then give to me as the instructor of the course to receive accommodations. Please do this as soon as possible after you receive the letter. Students with disabilities should follow this procedure as early as possible in the semester. The College is committed to providing reasonable accommodations to assist students in their coursework.

#### ***Counseling and Student Health***

Students sometimes experience stress from academic expectations and/or personal and interpersonal issues that may interfere with their academic performance. If you find yourself facing issues that have the potential to or are already negatively affecting your coursework, you are encouraged to talk with an instructor and/or seek help through University resources available to you.

- The **Counseling and Wellness Center** 352-392-1575 offers a variety of support services such as psychological assessment and intervention and assistance for math and test anxiety. Visit their web site for more information: <http://www.counseling.ufl.edu>. On line and in person assistance is available.
- **U Matter We Care** website: <http://www.umatter.ufl.edu/>. If you are feeling overwhelmed or stressed, you can reach out for help through the You Matter We Care website, which is staffed by Dean of Students and Counseling Center personnel.
- The **Student Health Care Center** at Shands is a satellite clinic of the main Student Health Care Center located on Fletcher Drive on campus. Student Health at Shands offers a variety of clinical services. The clinic is located on the second floor of the Dental Tower in the Health Science Center. For more information, contact the clinic at 392-0627 or check out the web site at: <https://shcc.ufl.edu/>

- Crisis intervention is always available 24/7 from: Alachua County Crisis Center: (352) 264-6789 <http://www.alachuacounty.us/DEPTS/CSS/CRISISCENTER/Pages/CrisisCenter.aspx>
- **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](#).

Do not wait until you reach a crisis to come in and talk with us. We have helped many students through stressful situations impacting their academic performance. You are not alone so do not be afraid to ask for assistance.

### **Inclusive Learning Environment**

Public health and health professions are based on the belief in human dignity and on respect for the individual. As we share our personal beliefs inside or outside of the classroom, it is always with the understanding that we value and respect diversity of background, experience, and opinion, where every individual feels valued. We believe in, and promote, openness and tolerance of differences in ethnicity and culture, and we respect differing personal, spiritual, religious and political values. We further believe that celebrating such diversity enriches the quality of the educational experiences we provide our students and enhances our own personal and professional relationships. We embrace The University of Florida's Non-Discrimination Policy, which reads, "The University shall actively promote equal opportunity policies and practices conforming to laws against discrimination. The University is committed to non-discrimination with respect to race, creed, color, religion, age, disability, sex, sexual orientation, gender identity and expression, marital status, national origin, political opinions or affiliations, genetic information and veteran status as protected under the Vietnam Era Veterans' Readjustment Assistance Act." If you have questions or concerns about your rights and responsibilities for inclusive learning environment, please see your instructor or refer to the Office of Multicultural & Diversity Affairs website: [www.multicultural.ufl.edu](http://www.multicultural.ufl.edu)

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