Spring 2018

EPID 9233 A Cancer Epidemiology CRN 19258

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**Georgia Southern University**  
**Jiann-Ping Hsu College of Public Health**  
**EPID 9233 A CRN 19258**  
**Cancer Epidemiology (Spring 2018)**

<table>
<thead>
<tr>
<th><strong>Instructor:</strong></th>
<th>Yelena N. Tarasenko, DrPH, CPH, MPH, MPA</th>
</tr>
</thead>
</table>
| **Office Address:** | Jiann-Ping Hsu College of Public Health  
501 Forest Drive, Hendricks Hall  
Building 303, Office 2012  
Statesboro, GA 30458 |
| **Office Phone:** | 912.478.5057 |
| **E-Mail Address:** | ytarasenko@georgiasouthern.edu |
| **Office Hours:** | email to request an appointment |
| **In-Class Meetings:** | 6:30 pm – 9:30 pm every Thursday (01/08/18 – 05/04/18)  
CITT 3212 |

**Course Prerequisite**
Enrollment into the DrPH Epidemiology Program or permission of the instructor

**Catalog Description**
This course uses a combination of lecture, student discussion and independent research to review the fundamentals of cancer epidemiology including classic descriptive cancer epidemiology, basic cancer biology, etiology of common and uncommon human cancers, major and minor risk factors for cancer, screening techniques for early detection, cancer biomarkers, and current research in cancer epidemiology. Epidemiologic surveillance techniques including cancer registries and databases, international studies and intervention trials will also be covered. Study designs and epidemiologic methodology used in cancer research will be discussed throughout the course.

**Required Texts**
Journal articles.

Other Recommended (reference) epidemiology books:  


**Doctor of Public Health—Core**
1. Demonstrate their readiness to work with communities to address public health problems.
2. Select and apply theoretically based interventions to address public health problems.
3. Apply appropriate research methods to address community health problems, particularly among rural and underserved populations.

Cross-Cutting Competencies for the DrPH Degree
1. Apply evidence-based practice, generation of practice-based evidence, and leadership positions that apply and synthesize translational and implementation science findings in governmental, non-profit, and private-sector settings as well as teaching, research, and service in academic roles at the undergraduate or graduate level.
2. Demonstrate the ability to generate products that discover, apply, and synthesize evidence from a broad range of disciplines and health-related data sources, in order to advance programs, policies, or systems addressing population health. Learning products may be created in a range of formats.
3. Demonstrate leadership in increasingly interdisciplinary, inter-professional and cross-sectoral roles and settings.
4. Develop innovative, current, and proactive approaches to adapt to the ever-changing public health systems and health care landscape.
5. Explain a core, interdisciplinary orientation toward evidence-based public health practice, leadership, policy analysis and development, evaluation methods, and translational and implementation research to generate practice-based evidence.
6. Demonstrate an ability to work in a global context, recognizing the relationships among domestic and global issues.

Epidemiology Core Competencies:
1. Evaluate the existence of public health problems in rural and urban settings, both locally and internationally.
2. Analyze data from epidemiologic investigations, studies, and surveillance, with special emphasis on the identification of health disparities and promotion of health equity.
3. Evaluate causal inferences from epidemiologic data.
4. Evaluate the validity and reliability of public health screening programs.
5. Evaluate the importance of epidemiology for informing scientific, ethical, economic and political discussion of health issues.
6. Synthesize principles of good ethical and legal practice pertaining to the collection, maintenance, use and dissemination of data.
7. Apply current knowledge of disease etiology for use in guiding public health practice.
8. Evaluate the effects of determinants of health on public health practice.
9. Design investigations of acute and chronic health conditions or other adverse outcomes using languages and approaches tailored to the targeted population or community.
10. Evaluate public health programs at the global, national, regional, state, local, or tribal level.
11. Recommend use of laboratory resources to support epidemiologic activities.
12. Apply principles of informatics, including data collection, processing, and analysis, in support of public health practice.
13. Communicate epidemiologic information to lay and professional audiences.
14. Evaluate the strengths and limitations of epidemiologic research findings.
15. Recommend evidence-based interventions and control measures in response to epidemiologic findings.
Course Objectives (Linked to the Concentration Competencies 3, 7, and 8):
At the conclusion of satisfactory participation in this course, the student will be able to accomplish the following:
1. Understand each of the major types of cancer for which a proven form of cancer control is available.
2. Describe behavioral, environmental, occupational, and host related risk factors and the cancers associated with each
3. Design, conduct, interpret, and clearly communicate the result of an epidemiological investigation focusing on a specific cancer.

Instructional Methods:
This doctoral course is offered in a face-to-face format: it will meet weekly throughout the semester. Students are expected to set up an appointment with instructor and make use of the instructor’s time during such meetings in addition to in-class meetings to discuss concepts or difficulties they may have.

Overview of the Content to be Covered During the Semester:

<table>
<thead>
<tr>
<th>Date</th>
<th>Topic Assignment</th>
<th>Reading Assignments</th>
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<tbody>
<tr>
<td>1/11</td>
<td>Introduction to Cancer Epidemiology; Introduction to Stata</td>
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<tr>
<td></td>
<td>Pick your Cancer for Presentations/Project</td>
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<tr>
<td></td>
<td>Project 1 Assigned</td>
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<tr>
<td>1/18</td>
<td>Cancer Surveillance</td>
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<tr>
<td></td>
<td>Cancer Clusters &amp; Geospatial Analysis*</td>
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<tr>
<td></td>
<td>Goodman et al. 2012</td>
<td>Emperor pp. 11-31</td>
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<tr>
<td></td>
<td>Kuldorff et al. 1998</td>
<td>Emperor pp. 32-54</td>
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<tr>
<td>1/25</td>
<td>Origins of Cancer (Cancer Biology)*</td>
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<tr>
<td></td>
<td>Schottenfeld et al. 2004</td>
<td>Emperor pp. 107-127</td>
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<tr>
<td></td>
<td>Klausner 2002</td>
<td>Emperor pp. 128-150</td>
</tr>
<tr>
<td></td>
<td>Stata: Copy datasets to thumb drives</td>
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<tr>
<td>2/01</td>
<td>Genetic Epidemiology of Cancer/Biomarkers</td>
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<td></td>
<td>Project 1 presentations</td>
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<tr>
<td></td>
<td>Stata: Datasets and Directories</td>
<td>Emperor pp. 55-79</td>
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<td>Emperor pp. 80-104</td>
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<tr>
<td>2/08</td>
<td>Cancer Screening &amp; Evaluation; overdiagnosis, PSA and mammography case studies</td>
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<td></td>
<td>Puliti et al. 2012</td>
<td>Emperor pp. 107-127</td>
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<tr>
<td></td>
<td>Kalager et al. 2012.</td>
<td>Emperor pp. 128-150</td>
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<tr>
<td></td>
<td>Hayes et al. 2014</td>
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<td></td>
<td>Stata: Sorting and merging datasets</td>
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<tr>
<td>2/15</td>
<td>Tobacco &amp; Cancer; Lung, Esophageal and Pancreatic cancer</td>
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<tr>
<td></td>
<td>Lee et al. 2012</td>
<td>Emperor pp. 151-170</td>
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<tr>
<td></td>
<td>Lynch et al. 2009</td>
<td>Emperor pp. 171-190</td>
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<tr>
<td></td>
<td>Kuong et al. 2016</td>
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<td></td>
<td>Stata: Creating Categorical variables</td>
<td></td>
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<tr>
<td>2/22</td>
<td>Hormones &amp; Cancer, breast, ovarian &amp; endometrial cancers</td>
<td>Emperor pp. 193-217</td>
</tr>
<tr>
<td>Date</td>
<td>Topic Assignment</td>
<td>Reading Assignments</td>
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<td></td>
<td><strong>Anderson et al. 2014</strong>&lt;br&gt;Collaborative Group on Epidemiological Studies of Ovarian Cancer 2015&lt;br&gt;<strong>Stata: Univariate Analysis, Table 1</strong></td>
<td>Emperor pp. 218-234</td>
</tr>
<tr>
<td>3/01</td>
<td>Midterm Examination</td>
<td></td>
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<tr>
<td>3/08</td>
<td>Occupational &amp; Environmental Risk Factors, Radiation &amp; Cancer; *&lt;br&gt;<strong>Darby et al. 2004</strong>&lt;br&gt;<strong>Reid et al. 2011</strong>&lt;br&gt;<strong>Stata: Bivariate Analyses</strong></td>
<td>Emperor pp. 237-257&lt;br&gt;Emperor pp. 258-285</td>
</tr>
<tr>
<td>3/15</td>
<td><strong>SPRING BREAK</strong></td>
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<tr>
<td>3/22</td>
<td>Diet and Cancer&lt;br&gt;<strong>Chen et al. 2015</strong>&lt;br&gt;<strong>Klein et al. 2011</strong>&lt;br&gt;<strong>Lippi et al. 2016</strong>&lt;br&gt;<strong>Stata: Multivariable Analyses (Logistic Regression)</strong></td>
<td>Emperor pp. 286-304&lt;br&gt;Emperor pp. 305-333</td>
</tr>
<tr>
<td>3/29</td>
<td>Orientation to Survivorship: conducting survival analyses&lt;br&gt;(Stata), COX regression, datasets*&lt;br&gt;<strong>Stata: Cox Regression</strong></td>
<td>Emperor pp. 337-356&lt;br&gt;Emperor pp. 357-369</td>
</tr>
<tr>
<td>4/05</td>
<td>Alcohol &amp; Cancer&lt;br&gt;<strong>De Menezes et al. 2013</strong>&lt;br&gt;<strong>Cao et al. 2015</strong>&lt;br&gt;<strong>Bagnardi 2014</strong></td>
<td>Emperor pp. 370-383&lt;br&gt;Emperor pp. 384-404</td>
</tr>
<tr>
<td>4/12</td>
<td>Infectious Agents &amp; Cancer; HPV &amp; Cervical Cancer Case study&lt;br&gt;<strong>Burnett-Hartman et al. 2008.</strong>&lt;br&gt;<strong>Gonzalez  et al.  2012</strong></td>
<td>Emperor pp. 405-422&lt;br&gt;Emperor pp. 423-440</td>
</tr>
<tr>
<td>4/19</td>
<td>Cancer Prevention &amp; Control Research, Comorbidities and Cancer&lt;br&gt;Cancer Disparities&lt;br&gt;<strong>Shikata et al. 2014</strong>&lt;br&gt;<strong>Daly and Olufunmilayo 2015</strong>&lt;br&gt;<em>Draft survival analysis reports due if faculty feedback is desired before final submission</em></td>
<td>Emperor pp. 441-459&lt;br&gt;Emperor pp. 460-470</td>
</tr>
</tbody>
</table>

* Guest speaker (TBA)

The lecture schedule is subject to change depending on the schedules of the faculty, as well as perceived need to make the most out of the few in-class meetings. Students will be given notice in the event that a change needs to be made to the schedule.

**IMPORTANT DATES**

Last Day to Drop Course (without academic penalty): March 5, 2018

Project 1: Descriptive Epidemiology of Selected Cancer: Due Thursday, February 1, 2018
E-mailed to me by class time = 6:30 pm and presentation in class

Midterm Examination: March 01, 2018

Final Cancer Survivorship Paper and presentations due: Thursday, April 26, 2018, emailed to me by class time

Summary Outline by Week
Below is a listing of the class topics by week. Please see the section in the syllabus with readings and case studies for the weekly assignments and case studies for each of the topics below.

<table>
<thead>
<tr>
<th>Date</th>
<th>Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>January 11, 2018</td>
<td>Introduction to Cancer Epidemiology &amp; Stata</td>
</tr>
<tr>
<td>January 18, 2018</td>
<td>Cancer Surveillance/ Cancer Clusters</td>
</tr>
<tr>
<td>January 25, 2018</td>
<td>Origins of Cancer</td>
</tr>
<tr>
<td>February 1, 2018</td>
<td>Genetic Epidemiology of Cancer &amp; Biomarkers</td>
</tr>
<tr>
<td>February 8, 2018</td>
<td>Cancer Screening &amp; Evaluation</td>
</tr>
<tr>
<td>February 15, 2018</td>
<td>Tobacco &amp; Cancer</td>
</tr>
<tr>
<td>February 22, 2018</td>
<td>Hormones &amp; Cancer</td>
</tr>
<tr>
<td>March 1, 2018</td>
<td>Midterm Examination</td>
</tr>
<tr>
<td>March 8, 2018</td>
<td>Occupational &amp; Environmental Risk Factors</td>
</tr>
<tr>
<td>March 15, 2018</td>
<td>No Class: Spring Break</td>
</tr>
<tr>
<td>March 22, 2018</td>
<td>Diet &amp; Cancer</td>
</tr>
<tr>
<td>March 29, 2018</td>
<td>Survivorship &amp; Survival Analysis</td>
</tr>
<tr>
<td>April 5, 2018</td>
<td>Alcohol &amp; Cancer</td>
</tr>
<tr>
<td>April 12, 2018</td>
<td>Infectious Agents &amp; Cancer</td>
</tr>
<tr>
<td>April 19, 2018</td>
<td>Cancer Prevention &amp; Control, Comorbidities &amp; Cancer</td>
</tr>
<tr>
<td>April 26, 2018</td>
<td>Class Presentations</td>
</tr>
</tbody>
</table>

Course requirements and learner evaluation
Course grades will be based upon evaluation of the following activities:

- Descriptive Epidemiology e-poster: 20%
- Midterm Examination: 35%
- Final Project: 35%
- Class participation (includes articles and Emperor of All Maladies discussions): 10%

Final grades will be assigned as follows: A = 100-90; B = 89-80; C = 79-70; E/Fail = 70% and below.

There will be no assignments to earn extra points. Samples of your work may be reproduced including, but not limited to, inclusion in the professor’s teaching portfolio. You have the right to review anything selected for use, and subsequently ask for its removal.
Grade Appeals and Questions: Questions about grades, including requests to revise a grade, will only be considered if submitted in writing in a form of a Memo addressed to me. Such memos will be reviewed only if submitted within 72 hours after the grade in question has been posted. See examples of Memos at https://owl.english.purdue.edu/owl/resource/590/04/. Each Memo should have To, From, Date, Subject fields completed. It should clearly state the questions and supporting arguments.

Late Submissions: Late submissions will not be graded.

Descriptive Epidemiology E-poster
Select a cancer in which you have an interest. I recommend a solid tumor (not a lymphoma or leukemia) and a more common cancer (examples breast, colorectal, prostate, ovarian, brain, endometrial, pancreas). Using data from existing cancer registries describe this cancer in terms of (1) public health impact (using our measures of impact: incidence, mortality, prevalence rates), (2) distribution by person (age, gender, race, insurance), place (nation, state, county within a state), and rates over time, and (3) risk or etiologic factors. Comment on what these data tell you about possible etiology factors and this cancer. Examples of posters will be shared in class.

Final Project
You will be provided a dataset from the Cancer Registry (e.g., Georgia or another state of your interest). Among the six different cancers available (breast, colorectal, lung, uterine, pancreatic, ovarian), pick one cancer on which you would like to focus. You will generate at least one specific hypothesis regarding survival of the cancer patients, e.g., patients in rural Georgia with this cancer have poorer survival than those in urban Georgia. You will analyze the data using univariate, bivariate, logistic regression, and survival analyses (Cox regression) and write a 15 page doubled spaced report summarizing your findings. You will support your report with proper references.

In Class Readings
8. Daly B & Olufunmilayo. A perfect storm: how tumor biology, genomics, and health care delivery patterns collide to create a racial survival disparity in breast cancer and proposed interventions for change. CA Cancer J Clin 65(3): 221-238.


**Instructor Expectations**

1. I expect you to attend every class session. The components are highly interrelated; missing a class will detract from the learning potential of subsequent sessions, as well as your evaluation of in-class discussion.

2. I expect you to be in the classroom and prepared to begin work at the scheduled starting time for each session.

3. I expect you to actively participate in the discussions. This is not the type of class where you can “sit back and listen.”

4. I expect you to submit written assignments using proper English grammar, syntax, and spelling. You are encouraged to use spell check and grammar check prior to submitting your written work. The University Writing Center is available to anyone who may need assistance (http://class.georgiasouthern.edu/writingc/). Grammar, syntax, and spelling will account for 30% of the grade for each assignment.

5. I expect (and encourage) you to provide honest and timely feedback regarding the content and process of this course throughout the semester.

6. I expect (and encourage) you to share the responsibility for making this course an enjoyable and beneficial learning experience.

7. Wikipedia cannot be used as a cited reference as noted by a co-founder of Wikipedia! You may use Wikipedia to identify appropriate source material. Remember Wikipedia is not peer reviewed!

8. I require that each learner will be consistent in his/her usage of referencing/citation, formatting style, etc. as a guide for writing papers for this course and the grading rubric will be based on its precepts.

**Academic Misconduct:**

As a student registered at this University, it is expected that you will adhere to only the strictest standards of conduct. It is recommended that you review the latest edition of the Student Conduct Code book, as well as the latest Undergraduate & Graduate Catalog to familiarize yourself with the University’s policies in this regard. Your continued enrollment in this course is an implied contract between you and the instructor on this issue; from this point forward, it is assumed that you will conduct yourself appropriately.

Academic integrity relates to the appropriate use of intellectual property. The syllabus, lecture notes, and all materials presented and/or distributed during this course are protected by copyright law. Students are authorized to take notes in class, but that authorization extends only to making one set of notes for personal (and no other) use. As such, students are not authorized to sell, license, commercially publish, distribute, transmit, display, or record notes in or from class without the express written permission of the instructor.
The Fine Print:
"According to the Academic Dishonesty Policy of GSU, Plagiarism includes (but is not limited to):
A. Directly quoting the words of others without using quotation marks or indented format to identify them.
B. Using published or unpublished sources of information without identifying them.
C. Paraphrasing material or ideas without identifying the source.
D. Unacknowledged use of materials prepared by another person or agency engaged in the selling of term papers or other academic material.

If you are accused of plagiarism by a JPHCOPH, the following policy, as per the Judicial Affairs website (http://students.georgiasouthern.edu/judicial/faculty.htm) will be enforced:

PROCEDURES FOR ADJUDICATING ACADEMIC DISHONESTY CASES
First Offense - In Violation Plea
1. If the professor and the Dean of Students agree that the evidence is sufficient to warrant a charge of academic dishonesty, the professor should contact the Office of Judicial Affairs to determine if this is a first violation of academic dishonesty. The incident will be reported via the following website: http://students.georgiasouthern.edu/judicial/faculty.htm
2. If it is a first violation, the professor should talk with the student about the violation. If the student accepts responsibility in writing and the professor decides to adjudicate the case, the following procedures will be followed:
a. The student will be placed on disciplinary probation for a minimum of one semester by the Office of Judicial Affairs.
b. The student will be subject to any academic sanctions imposed by the professor (from receiving a 0 on the assignment to receiving a failing grade in the class).
Scan copy of all the material involved in the case (Academic Dishonesty Report Form and the Request For Instructor to Adjudicate Form) and a brief statement from the professor concerning the facts of the case and the course syllabus should be mailed to the Office of Judicial Affairs for inclusion in the student’s discipline record.

First Offense - Not In Violation Plea (student does not admit the violation)
If the professor and the Dean of Students agree that the evidence is sufficient to warrant a charge of academic dishonesty, the professor should contact the Office of Judicial Affairs to determine if this is the first or second violation of academic dishonesty. The student will be charged with academic dishonesty and the University Judicial Board or a University Hearing Officer would hear the case. If the student is found responsible, the following penalty will normally be imposed:
a. The student will be placed on Disciplinary Probation for a minimum of one semester by the Office of Judicial Affairs.
b. The student will be subject to any academic sanctions imposed by the professor.
Second Violation of Academic Dishonesty
If the professor and the Dean of Students agree that the evidence is sufficient to warrant a charge of academic dishonesty, and if it is determined this is the second violation, the student will be charged with academic dishonesty and the University Judicial Board or a University Hearing Officer would hear the case. If the student is found responsible, the following penalty will normally be imposed:
a. Suspension for a minimum of one semester or expulsion.
b. The student will be subject to any academic sanctions imposed by the professor.

NOT RESPONSIBLE FINDING
When a student is found not responsible of academic dishonesty, the work in question (assignment, paper, test, etc.) would be forwarded to the Department Chair. It is the responsibility of the Department Chair to ensure that the work is evaluated by a faculty member other than the individual who brought the charge and, if necessary, submit a final grade to the Registrar. For the protection of the faculty member and the student, the work in question should not be referred back to the faculty member who charged the student with academic dishonesty.
In the case of a Department Chair bringing charges against a student, an administrator at the Dean’s level will ensure that the student’s work is evaluated in an appropriate manner.

CONFIDENTIALITY
In accordance with provisions of the Family Educational Rights and Privacy Act of 1974 and the Georgia Open Records Act, any information related to a violation of academic dishonesty or the outcome of a judicial hearing regarding academic dishonesty, is prohibited and must be treated as confidential by members of the faculty."
Academic Handbook:
Students are expected to abide by the Academic Handbook, located at
http://students.georgiasouthern.edu/sta/guide/. Your failure to comply with any part of this
Handbook may be a violation and thus, you may receive an F in the course and/or be referred for
disciplinary action.

University Calendar for the Semester:
The University Calendar is located with the semester schedule, and can be found at:
http://calendar.georgiasouthern.edu/

Attendance Policy:
Federal regulations require attendance be verified prior to distribution of financial aid allotments.
Attendance will not be recorded after this initial period.

One Final Note:
The contents of this syllabus are as complete and accurate as possible. The instructor reserves
the right to make any changes necessary to the syllabus and course material. The instructor will
make every effort to inform students of changes as they occur. It is the responsibility of the
student to know what changes have been made in order to successfully complete the
requirements of the course.

Accommodations
If you have a documented disability that requires academic accommodations, please see me as
soon as possible during scheduled office hours. In order to receive accommodations in this
course, submit to me a Letter of Accommodation from the Student Disability Resource Center
(http://students.georgiasouthern.edu/disability/). If you have not already done so, please register
with the Student Disability Resource Center for coordination of campus disability services
available to students with disabilities.