Introduction to Epidemiology

Class code: PUHE-UE9306

Instructor Details
Eduardo Perez
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Mobile: 1554818533
Office hours: by appointment

Class Details
Introduction to Epidemiology
Monday 17.15 – Wednesday 18.45
Location to be confirmed.

Prerequisites

Class Description
Epidemiology is the science that studies the distribution and determinants of health and illness in human populations. It is intimately related to public health and policy making, as it provides elemental “information for action”. This course is designed to introduce students to the history, basic principles and methods of epidemiology.

Topics covered in this course are history, background and different perspectives of epidemiology, measures of disease frequency; measures of association; epidemiologic study designs; public health surveillance; outbreak investigations; assessment of causality; and relationship between epidemiology and public health policies. In addition, students are expected to develop skills to critically read, interpret and evaluate health information from published epidemiological studies and mass media sources.

Desired Outcomes

1. Understand the evolution and current role of epidemiology as an approach to assessing public health problems.

2. Describe epidemiological approaches to defining and measuring health problems in defined populations.

3. Understand how epidemiologic studies are designed, implemented and analyzed.

4. Understand and apply epidemiological criteria needed to establish cause and effect relationships.
5. Discuss the relationship between epidemiology and public health.

<table>
<thead>
<tr>
<th>Assessment Components</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Homework assignments (4 x 10% each)</td>
<td>40%</td>
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<tr>
<td>Midterm:</td>
<td>25%</td>
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<tr>
<td>Final:</td>
<td>25%</td>
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<tr>
<td>Attendance &amp; Participation:</td>
<td>10%</td>
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- Students are **expected** to attend and actively participate in all lectures and discussion sessions.
- Students are expected to come to class **on time** to prevent disrupting the lecture and classroom activities.
- Complete all reading assignments **prior** to class.
- **Complete all homework assignments (4):** Homework assignments are due on the dates when discussion sessions take place, noted on the course schedule. They are to be handed in on NYU Classes before discussion session starts.
- All assignments **must** be typed (1” margins, Times New Roman 12pt or Arial 11pt font - no smaller and no larger - no exceptions!). Line spacing must be 1.5 lines. Length will vary from 3 to 5 pages long, depending on the assignment. Calculations may be neatly handwritten. Your name must be on the top of each page that you hand in.
- **Discussion sessions** will focus on key concepts from home assignments handed in that day. Doubts will be cleared and content discussed.
- Late assignments will lose points; NYU Classes will timestamp your assignments. Late assignments will not be accepted.
- You can rely on your class notes or other supplemental materials to complete your assignment, but it is an individual effort so **do not work with or share answers with other classmates!**
- **Midterm Exam:** A multiple choice and short answer exam covering materials presented in weeks 1 - 6.
- **Final Exam:** A multiple choice and short answer exam covering materials presented in weeks 8 - 15.

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<tr>
<th>Assessment Expectations</th>
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<tr>
<td><strong>Grade A:</strong> The student makes excellent use of empirical and theoretical material and offers well structured arguments in his/her work. The student writes comprehensive essays / exam questions and his/her work shows strong evidence of critical thought and extensive reading.</td>
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<td><strong>Grade B:</strong> The candidate shows a good understanding of the problem and has demonstrated the ability to formulate and execute a coherent research strategy.</td>
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<td><strong>Grade C:</strong> Work is acceptable and shows a basic grasp of the research problem. However, the work fails to organize findings coherently and is in need of improvement.</td>
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<td><strong>Grade D:</strong> The work passes because some relevant points are made. However, there may be</td>
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a problem of poor definition, lack of critical awareness, poor research.

**Grade F:** The work shows that the research problem is not understood; there is little or no critical awareness and the research is clearly negligible.

<table>
<thead>
<tr>
<th>Grade conversion</th>
<th>100-93</th>
<th>A</th>
<th>76-73</th>
<th>C</th>
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<tbody>
<tr>
<td>92-90</td>
<td>A-</td>
<td>72-70</td>
<td>C-</td>
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<tr>
<td>89-87</td>
<td>B+</td>
<td>69-67</td>
<td>D+</td>
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<tr>
<td>86-83</td>
<td>B</td>
<td>66-60</td>
<td>D</td>
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<tr>
<td>82-80</td>
<td>B-</td>
<td>59-0</td>
<td>F</td>
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<tr>
<td>79-77</td>
<td>C+</td>
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Final Exam dates cannot be changed under any circumstance.

Mid term exam dates will be scheduled with each professor and it must be before the break. Unexcused absences from exams are not permitted and will result in failure of the exam. If you are granted an excused absence from examination (with authorization, as above), your lecturer will decide how you will make-up the assessment component, if at all (by make-up examination, extra coursework, or an increased weighting on an alternate assessment component, etc.).

Written work due in class must be submitted during the class time to the professor.

**Attendance Policy**
- NYU Buenos Aires has a **strict policy about course attendance.**
- Students should contact their class teachers to catch up on missed work but should NOT approach them for excused absences.
- Absences due to illness must be discussed with the Assistant Director for Academics Affairs, María Pirovano Peña **within one week** of your return to class.
- A doctor note excusing your absence is mandatory.
- **The date on the doctor’s note must be the date of the missed class or exam**
- Absence requests for non-illness purposes must be discussed with the Assistant Director for Academics Affairs, María Pirovano Peña prior to the date(s) in question.
- If students have more than two unexcused absences they will be penalized by deducting 50% of the class participation grade. Please be aware that in most of the courses the class participation grade is 20% of the final grade. So the 50% of the class participation grade would mean 10% of the final grade. If students have more than four unexcused absences they will fail the course.
- The date on the doctor’s note must be the date of the missed class or exam
- Intensive Languages Courses: students who have more than three unexcused absences will be penalized by deducting 50% of the class participation grade. Please be aware that in most of the courses the class participation grade is 20% of the final grade. So the 50% of the class participation grade would mean 10% of the final grade. Those students who have more than five unexcused absences will fail the course.
- Each class has a duration of one hour and half or two hours. **Missing one class represents one absence. For those courses that meet once a week (three hours block), missing one class represents two absences.**
- Students are responsible for making up any work missed due to absence.
- NYU BA also expects students to arrive to class promptly (both at the beginning and
after any breaks) and to remain for the duration of the class. Three late arrivals or earlier departures (10 minutes after the starting time or before the ending time) will be considered one absence.

• Please note that for classes involving a **field trip or other external visit**, transportation difficulties are never grounds for an excused absence. It is the student’s responsibility to arrive at an agreed meeting point in a punctual and timely fashion.

• Holidays’ make up classes are mandatory as regular scheduled classes.

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**Late Submission of Work**

Late work should be submitted **in person** to the Assistant Director for Academics Affairs **during office hours** (Mon – Fri, 9.30 am to 5 pm), who will write on the essay or other work the date and time of submission, in the presence of the student. Another member of the administrative staff can accept the work, in person, in the absence of the Assistant Director for Academics Affairs and will write the date and time of submission on the work, as above.

Work submitted within 5 weekdays after the submission time without an agreed extension receives a penalty of 10 points on the 100 point scale.

Written work submitted after 5 weekdays after the submission date without an agreed extension fails and is given a zero.

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**Plagiarism Policy**

The presentation of another person’s words, ideas, judgment, images or data as though they were your own, whether intentionally or unintentionally, constitutes an act of plagiarism.

All your written work must be submitted as a hard copy AND in electronic form to the instructor.

It is expected that the student follows the rules on academic honesty and intellectual integrity established by NYU University.

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**Required Text(s)**

CDC. Principles of Epidemiology in Public Health Practice. Third Edition. CDC: 2006. (see required and supplemental chapters below)

ERIC Notebook. URL: [http://cphp.sph.unc.edu/trainingpackages/ERIC/index.htm](http://cphp.sph.unc.edu/trainingpackages/ERIC/index.htm) (see required and supplemental chapters below)


Supplemental Texts(s)


Internet Research Guidelines

Additional Required Equipment

Week 1

13, 15 February

Introduction and course overview. Historical overview and foundations of epidemiology

Required reading:

• Gordis, chapter 1


Optional:

• Susser, M. Eras in Epidemiology ,The Evolution of Ideas. Chapter 8.

Week 2

18, 20 February


Proportionate mortality. Differences between Mortality rates and proportionate mortality.

Required reading:

• Gordis, chapter 3, “Measures of morbidity”

• Gordis, chapter 4

Optional:

• ERIC Notebook: Incidence vs. Prevalence

• ERIC Notebook: Common Statistical Tests and Applications in Epidemiological
Measuring Epidemiological indicators. Person, Place & Time. Variables: types and definitions. Summarizing data: measures of central location and measures of spread.

Required readings:
- ERIC Notebook: Common Measures and Statistics in Epidemiological Literature

Due date for home assignment №1

Displaying epidemiologic data and information. 2x2 tables. Absolute risk. Relative risk, odds ratio.

Required reading:
- Gordis, chapter 11


Required reading:
- Gordis, chapter 12
- Gordis, chapter 2, not “Outbreak”
- Gordis, chapter 3, “Surveillance”

Optional:

Midterm review and Discussion session
Midterm exam

Due date for home assignment №2

Outbreak investigation. Design Strategies in epidemiologic research. Introduction to
3, 5 April

epidemiologic study designs. Ecologic studies.

Required reading:

- Gordis, chapter 2, “Outbreak”; and chapter 14, p. 228
- ERIC Notebook: Ecologic Studies

Optional:


Week 8

Cross-sectional studies. Case Control Studies. Odds and Odds ratio calculation (review)

8, 10 April

Required reading:

- Gordis, Chapter 10
- ERIC Notebook: Case control studies
- ERIC Notebook: Cross Sectional Studies

Week 9


15, 17 April

Required reading:

- Gordis, chapter 9
- ERIC Notebook: Cohort studies

Discussion session.

Due date for home assignment №3

Week 10

Experimental Studies. Ethical issues in epidemiologic research

22, 24, 26 April

Required reading:

- Gordis, chapter 7, 8 and 20
- ERIC Notebook: Randomized trials

Optional:

- Declaration of Helsinki
**Week 11**
The basics of bias: selection bias, information bias and confounding.

29 April

Required reading:
- Gordis, chapter 15
- ERIC Notebook: Selection bias
- ERIC Notebook: Information bias
- ERIC Notebook: Confounding part 1
- ERIC Notebook: Confounding part 2

**Week 12**
Assessing Causality. Concept of “cause”.

6, 8 May

Required reading:
- Gordis, chapter 14
- ERIC Notebook: Causality

Discussion session

*Due date for home assignment Nº4*

**Week 13**
Epidemiology applied to health system evaluation. Health information systems. Epidemiology and Health policies. Generating local information.

13, 15 May

Required reading:
- Gordis, chapter 17 and 19

**Week 14**
Closing discussion session

20, 22 May

Final review

**Week 15**
Final exam

27 May

**Classroom**
The use of Blackberrys, phones and IPods in class are forbidden
## Etiquette

### Required Co-curricular Activities
[Click here and enter information about required activities, whether organised by NYU or not.]

### Suggested Co-curricular Activities
[Click here and enter information about suggested activities, societies, lectures, etc.]

## Your Instructor

As a physician, I have specialized in internal medicine. Besides, I’ve been working in the field of epidemiology for several years, whether as a professor, researcher or advisor in different universities and Government agencies. I have won several research grants as main researcher and also participated as a fellow in several works in the field of clinical and social epidemiology. My primary field of research is Social Inequalities in Health and its impact in mortality characteristics in Argentina. I strongly believe that epidemiology is the basic science of Public Health, providing “information for action”.