



MANIPAL
UNIVERSITY

Global and Public Health

PUBH 300: *Basic Epidemiology*

Please refer to the [faculty page](#) for this semester's instructor.

Course Description

Epidemiology forms the core science of Public Health. The basic epidemiology course is designed to enable students to gain foundational knowledge of methods in epidemiology with a focus on basic models for disease occurrence, study designs and an introduction to the challenges related to causal research including bias. On completion of the course, the student should have obtained sound foundation on the basics of epidemiology and various study design approaches.

Learning Objectives

1. Apply the basic terminology and definitions of epidemiology.
2. Explain the importance of epidemiology for informing scientific discussion of health issues.
3. Understand models of disease occurrence.
4. Calculate and apply basic epidemiological measures.
5. Evaluate the strengths and weaknesses of epidemiological study designs.
6. Draw appropriate inferences from epidemiological data.

Course Schedule

Please note that students concentrating in public health will also be required to attend weekly academic field visits as part of their coursework.

Session 01/16 Introduction

Patterns of disease occurrence; overview of approach to epidemiological research

Readings:

Park, K. (2013). *Park's Textbook of Preventive and Social Medicine*. 22st edition.

Jabalpur: Banarsidas Bhanot Publishers. Chapter: *Principles of Epidemiology and Epidemiologic Methods* (pp. 50-67).

Bonita, R. (2006). *Basic Epidemiology*. 2nd edition. World Health Organisation. Chapter: *What is Epidemiology* (pp. 1-14).
http://whqlibdoc.who.int/publications/2006/9241547073_eng.pdf

Session 02/16 **Causation**

Readings:

Park, K. (2013). *Park's Textbook of Preventive and Social Medicine*. 22st edition. Jabalpur: Banarsidas Bhanot Publishers. Chapter 3: *Principles of Epidemiology and Epidemiologic Methods* (pp.84 - 89).
Bonita, R. (2006). *Basic Epidemiology*. 2nd edition. World Health Organisation. Chapter 5: *Causation in Epidemiology* (pp. 83 - 98).
http://whqlibdoc.who.int/publications/2006/9241547073_eng.pdf

Session 03/16 **Measures of occurrence**

Readings:

Park, K. (2013). *Park's Textbook of Preventive and Social Medicine*. 22st edition. Jabalpur: Banarsidas Bhanot Publishers. Chapter 2: *Concept of Health and Disease* (pp. 52 - 54).
Bonita, R. (2006). *Basic Epidemiology*. 2nd edition. World Health Organisation. Chapter 2: *Measuring Health & Disease* (pp. 23-36).
http://whqlibdoc.who.int/publications/2006/9241547073_eng.pdf

Session 04/16 **Measures of effect and impact**

Readings:

Bonita, R. (2006). *Basic Epidemiology*. 2nd edition. World Health Organisation. Chapter 2: *Measuring Health & Disease* (pp. 23-36).
http://whqlibdoc.who.int/publications/2006/9241547073_eng.pdf

Session 05/16 **Overview of epidemiological study designs**

Readings:

Park, K. (2013). *Park's Textbook of Preventive and Social Medicine*. 22st edition. Jabalpur: Banarsidas Bhanot Publishers. Chapter: *Principles of Epidemiology and Epidemiologic Methods* (pp. 60 - 84).
Bonita, R. (2006). *Basic Epidemiology*. 2nd edition. World Health Organisation. Chapter 3: *Types of studies*. (pp. 39 - 60).
http://whqlibdoc.who.int/publications/2006/9241547073_eng.pdf

Session 06/16 **Tentative first internal examination**

Session 07/16 **Travel Week**

Session 08/16 **Validity**

Readings:

- Park, K. (2013). *Park's Textbook of Preventive and Social Medicine*. 22st edition. Jabalpur: Banarsidas Bhanot Publishers. Chapter 3: *Principles of Epidemiology and Epidemiological Methods* (129 - 132).
- Bonita, R. (2006). *Basic Epidemiology*. 2nd edition. World Health Organisation. Chapter 3: *Types of studies*. (pp. 39 - 60).
http://whqlibdoc.who.int/publications/2006/9241547073_eng.pdf
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Session 09/16 **Error/p-value**

Readings:

- Park, K. (2013). *Park's Textbook of Preventive and Social Medicine*. 22st edition. Jabalpur: Banarsidas Bhanot Publishers. Chapter 3: *Principles of Epidemiology and Epidemiological Methods* (68-72).
- Bonita, R. (2006). *Basic Epidemiology*. 2nd edition. World Health Organisation. Chapter 4: *Basic biostatistics: concepts and tools* (pp. 63 - 82).
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Session 10/16 **Study design: Cross sectional and case control studies**

Readings:

- Park, K. (2013). *Park's Textbook of Preventive and Social Medicine*. 22st edition. Jabalpur: Banarsidas Bhanot Publishers. Chapter: *Principles of Epidemiology and Epidemiologic Methods* (pp. 60 - 84).
- Bonita, R. (2006). *Basic Epidemiology*. 2nd edition. World Health Organisation. Chapter 3: *Types of studies*. (pp. 39 - 60).
http://whqlibdoc.who.int/publications/2006/9241547073_eng.pdf
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Session 11/16 **Study design: Cohort studies**

Readings:

- Park, K. (2013). *Park's Textbook of Preventive and Social Medicine*. 22st edition. Jabalpur: Banarsidas Bhanot Publishers. Chapter: *Principles of Epidemiology and Epidemiologic Methods* (pp. 60 - 84).
- Bonita, R. (2006). *Basic Epidemiology*. 2nd edition. World Health Organisation. Chapter 3: *Types of studies*. (pp. 39 - 60).
http://whqlibdoc.who.int/publications/2006/9241547073_eng.pdf
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Park, K. (2013). *Park's Textbook of Preventative and Social Medicine*. 22st edition. Banarsidas Bhanot Publishers.

Evaluation

Midterm Exam	30%
Final Exam	40%
Field Reports	15%
Attendance	10%
Participation	5%

***At the faculty's discretion, extra assignments may be given to help students improve their overall grades**

Assessment Criteria

Mid-term Exam

- There will be total of 10 questions
- Total of 2 marks per question
- 5 minutes for each question
- Total duration 50 minutes

Final Exam

- There will be total of 10 questions
- Total of 2 marks per question
- 5 minutes for each question
- Total duration 50 minutes
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Sample Question

Each question may be further broken down into sub questions and the marks accordingly allotted. Each correct answer will be awarded 2.5 Marks.



Vaccine Vial Monitor

What is the use of the vaccine vial monitor?

What is cold chain?

$2.5 + 2.5 = 5$ Marks

Answer: Vaccine vial monitors are used to let healthcare workers know whether or not a vaccine is safe to use. The vaccine vial monitor is a label with a heat sensitive material; a change in color of this label indicates possible damage to the vaccine, such as exposure to warm temperatures.

Cold chain is a process by which vaccines are kept at necessary temperature from the point of manufacture up to the point at which they are administered to patients.

Field Reports

Field visits to local health departments and organizations occur every Friday from 9AM to 1 PM. Students are required to attend all field visits to earn credit from this class. Please see the Field Visits Schedule document for a full list of sites visited, the topic focus of each visit, and required readings.

A 500 word (minimum) field report is due to both Aarthy Ramaswamy (aarthu28@gmail.com) the Wednesday following your field visit. Late submissions will result in grade deduction. The report should include your name, the field visit locale and site in the heading, and should briefly address topics and/or questions identified in the field visit information sheet for the particular visit.

Element	Marks
Thoroughly addresses assigned questions	50
Includes specific references to field observation and/or lecture	30
Word count, grammar, spelling and citation	20
Total	100

A note on citation: Not all reports will contain referenced works, but citation is required whenever a work is referenced. Any citation style is acceptable, so long as referenced works are noted in either footnotes or a bibliography.

Field Report Evaluation Structure: NOTE – a 10 point penalty is applied against all late field report submissions

Attendance

A student is allowed 2 excused absences. An excused absence is an absence related to a medical or other emergency about which the student has communicated to the Resident Director and concerned faculty prior to class.

Any additional absence or ANY unexcused absence results in a two point loss to the overall attendance score. Please note attendance requirements through your program as well.

Participation

Faculty give full participation marks to students who are punctual, attentive and engaged in class. Students who are late or inattentive will have points removed from their participation score at the faculty's discretion.

Grading

Alliance programs utilize the follow standard grading policy well accepted by most US institutions.

Excellent	A	93-100%	Good	B+	87-89%	Acceptable	C+	77-79%	
	A-	90-92%		B	83-86%		C	73-76%	
				B-	80-82%		C-	70-72%	
						Unsatisfactory	D+	67-69%	
							D	63-66%	
							D-	60-62%	
							Failing	F	<60%

Course Policies

Exams and Assignments

Students are required to take all regularly scheduled exams in courses for which they are registered, and to submit all assignments on time. Any compelling academic, personal, or medical reason that might justify a rescheduled exam or assignment must be brought up to both the Resident Director and course faculty. Failure to take scheduled exams or submit the requisite assignments for a course will adversely affect your grade as per the stated grading criteria for each course.

Classroom Conduct

Student punctuality is extremely important in India. Please do not be late for classes or other activities, as it is considered impolite to do so. It is improper to eat in class, to engage in other activities such as texting, or to slump or nap. Students are expected to be alert and engaged as a sign of respect for their professors.

Attendance

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