

Graduate School of Public Health  
Educational Policies and Curriculum Committee  
Agenda for February 2, 2017

1:30-3:30pm  
A521 Crabtree Hall

A. New Business:

1. Course Modification EPIDEM 2610 *Molecular epidemiology – tools and techniques*, Jennifer Adibi
2. Schedule for BIOST Core Course for Next Year, Eleanor Feingold
3. Writing Course for Next Year, Eleanor Feingold
4. Updates from the Associate Dean for Education, Eleanor Feingold
5. Review of Fall 2016 Semester Core Course Evaluations
6. Approval of January Meeting Minutes

B. Old Business:

1. GRE vs. EPIDEM Grades from Fall 2016 Semester, Eleanor Feingold
2. Next steps and research from GRE requirement discussion, Eleanor Feingold and Robin Leaf
3. Template for Bulk Changes of Minor Course Descriptions, Robin Leaf

C. Closed Session:

1. Student Record Review (Fall 2016 Semester), Mary Derkach

Next meeting: March 2, 1:30-3:30pm, A521 Crabtree Hall

**Educational Policies and Curriculum Committee**  
**Graduate School of Public Health**  
**University of Pittsburgh**  
**(Revised: 9/22/2015)**

**REQUEST FOR APPROVAL OF NEW COURSES AND COURSE CHANGES**

**1. General Instructions:**

- a. Faculty should submit this form and the associated syllabus following the Pitt Public Health Syllabus Guidelines and the Syllabus Checklist (on pages 4 and 5) **by e-mail** to Patricia Documet, Chair ([pdocumet@pitt.edu](mailto:pdocumet@pitt.edu)) and Robin Leaf, EPCC Staff Liaison ([ral9@pitt.edu](mailto:ral9@pitt.edu)). If you choose not to include all the information detailed on the Syllabus Guidelines in your course syllabus for distribution to students, please attach this information to the proposal.
- b. The initiating Department is asked to submit one hard copy of this completed form with the proper signatures, syllabus and other materials (if any) to Robin Leaf in Student Affairs **at least one week prior** to the EPCC meeting. If this target date is not met, the proposal will be deferred for consideration at the next meeting scheduled.
- c. You will be contacted by the EPCC Chair or the EPCC Staff Liaison to schedule a presentation and discussion of your program/course proposal with the Committee, if possible at the next scheduled EPCC meeting.

**2. Review based on the following (check all which apply):**

- |  |   |
|--|---|
| <input type="checkbox"/> New course, not previously approved | <input checked="" type="checkbox"/> Course modification (major) |
| <input type="checkbox"/> Course title change                 | <input type="checkbox"/> Special topics course content          |
| <input type="checkbox"/> Cross-listing only                  | <input type="checkbox"/> Pitt Public Health Core Course         |
| (Specify academic unit & course number): _____               | <input type="checkbox"/> Practicum, internship, field placement |

**3. Course designation:**

Course Number EPID2601 Title Molecular Epidemiology – tools and techniques Credits 3

**4. Cross-listing:**

If you want to cross-list this course in any other Pitt Public Health department or any other school of the University, specify which department(s) and School(s) and provide brief justification.

No cross-listing requested.

**5. Course Instructors:**

(Indicate type of Pitt Public Health faculty appointment,\* and percentage of total course time/effort anticipated. For any instructor who does not hold a Pitt Public Health faculty appointment, indicate her/his title and affiliation.)

- a. Principal instructor: Jennifer J. Adibi, 67%

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\* The principal instructor for any Pitt Public Health course must have a primary, secondary or adjunct appointment in the school.

b. Co-instructors (if any): Allison Kuipers, 33%

6. **Statement of the course for *Course Inventory*.** Include purpose of course; summary of prerequisites, if any; general course content; and method of conducting course (e.g., lecture, laboratory, field work, etc.).

This course is designed for students who have a basic understanding of the central dogma theory (DNA > RNA>protein>function), but who may not have any prior experience in the laboratory. This course is intended to follow the lecture-based Molecular Epidemiology course. Students will learn how to design studies and be exposed to methods used to measure biologic molecules in human tissues in the context of epidemiologic investigation. This course contains both lectures and an emphasis on practical learning and application in wet and computer lab settings.

Prerequisites: EPID 2600, EPID 2180, and EPID 2185

7. **Student enrollment criteria/restrictions:**

- a. Indicate any maximum or minimum number of students and provide justification for this limitation.

We want to limit to 8 students given the expense and logistics of doing assays in pairs in the lab.

- b. If admission is by permission of instructor, state criteria to be applied.

If the student does not fulfill the above prerequisites, but has a strong reason to take the course or feels that they are qualified, they can send an email to the instructor, who will determine if they are eligible.

- c. Provide a brief description of any prerequisite skills or knowledge areas that are necessary for students entering this course, including any specific course prerequisites or equivalents.

We request that students have already taken 3 GSPH courses: EPID 2600, EPID 2180, and EPID 2185. This will ensure that they have basic knowledge in molecular biology and epidemiology, epidemiologic methods and study design, and data analysis using SAS software. All of these knowledge bases will be assumed in our course design.

8. **Course schedule and allocation of hours:**

- a. Number of course hours per session   3   Sessions per week   1   Weeks per academic term   15

- b. Approximate allocation of class time (hours or %) among instructional activities:

Lectures   25   Seminars        Recitations        Field work        Laboratory   75    
Other (specify): \_\_\_\_\_

- c. Term(s) course will be offered: Fall   X   Spring        Summer Term        Summer Session

9. **Grading of student performance:**

Indicate the grading system to be used (A, B, C, etc.; H, S, U); provide statement justifying use of system other than letter grade.

We will use the A, B, C, with +/- F grading system.

10. **On-line course delivery:**

Indicate the extent to which you will be using on-line instructional methods in teaching this course by checking all of the options below which apply:

I plan to use the course management aspects of CourseWeb/ Blackboard (or equivalent), e.g., grade book, announcements.

I plan to use the interactive features of CourseWeb/Blackboard (or equivalent), e.g., discussion board, etc.

I have designed the course for remote (off-site) learning with little/no classroom attendance required.

I do not plan to use on-line instruction methods for this course (briefly explain)

11. **Relevance of course to academic programs and curricula:**

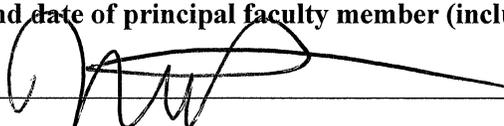
- a. Describe how this course contributes to learning objectives specified for the curriculum of one or more Pitt Public Health degree or certificate programs. Indicate whether course is required for any specified degree or certificate.

This course will prepare students to comprehend molecular epidemiology methods in their research which contributes to many of the Epidemiology PhD learning objectives including: to identify and locate key sources of data for epidemiologic purposes, to describe epidemiologic and biologic models of disease etiology, to conduct data collection and create data files appropriate for data analysis, to apply quantitative and critical thinking skills to analyze data, and to interpret epidemiologic results in a causal framework. This class will be useful for students in the Epidemiology PhD program within the molecular and genetic area of emphasis, but would also be useful to any PhD student.

- b. Describe how this course addresses public health issues involving diversity (gender, race, ethnicity, culture, disability, or family status).

In all of the units, we will offer examples of how these biomarkers can be used to understand mechanisms that may underlie health disparities, differential responses to exposures, higher risk of disease, etc. We will also give students an appreciation of the small variability in biomarkers that can be attributed to genetic differences (genotype that we are born with) versus the large variability that can be attributed to the environment (stress, nutrition, chemicals, infections).

12. **Signature and date of principal faculty member (include department/program) making request:**

Name/Title:  \_\_\_\_\_

Date: 1/26/17

13. **Signature and date of endorsement of department chairperson:**

Name/Title:  \_\_\_\_\_

Date: 1/26/17

14. (For cross-listing only)

**Signature and date of endorsement of department chairperson:**

Name/Title: \_\_\_\_\_

Date: \_\_\_\_\_

**Educational Policies and Curriculum Committee**  
**Graduate School of Public Health**  
**University of Pittsburgh**  
**(11/19/2013)**

**SYLLABUS CHECKLIST FOR NEW AND REVISED COURSES**

**Addendum to REQUEST FOR APPROVAL OF NEW COURSES AND COURSE CHANGES FORM**

*Objective to assist faculty to ensure syllabus contains the required and necessary elements  
to provide students with clear expectations of the course.*

NOTE: \* indicates a required element of the syllabus. If N/A is checked or this element is not included  
complete the information detailed on page two for all instances.

Syllabus Area	Recommended Detail * Required	Included in Your Syllabus?					
<b><i>Heading</i></b>	Course Number*	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>	N/A	<input type="checkbox"/>
	Course Title*	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>	N/A	<input type="checkbox"/>
	Course Meeting Time/Day of Week*	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>	N/A	<input type="checkbox"/>
	Classroom Location*	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>	N/A	<input type="checkbox"/>
<b><i>Faculty Information</i></b>	Office Location*	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>	N/A	<input type="checkbox"/>
	Office Hours*	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>	N/A	<input type="checkbox"/>
	Phone Number*	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>	N/A	<input type="checkbox"/>
	Email Address*	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>	N/A	<input type="checkbox"/>
	Teaching Philosophy	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>	N/A	<input type="checkbox"/>
	Teaching Assistant Contact	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>	N/A	<input type="checkbox"/>
<b><i>Student Expectations in Classroom</i></b>	Behavior/ Ground Rules (cell phones off, laptops off, etc.)	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>	N/A	<input type="checkbox"/>
	Recording of Lectures	Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>	N/A	<input type="checkbox"/>
<b><i>Course Summary</i></b>	Course Description*	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>	N/A	<input type="checkbox"/>
	Learning Objectives*	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>	N/A	<input type="checkbox"/>
<b><i>Materials</i></b>	Required Textbooks/ Articles/Readings	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>	N/A	<input type="checkbox"/>
	Required Software	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>	N/A	<input type="checkbox"/>
	Required Equipment (including use of CourseWeb/Blackboard)	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>	N/A	<input type="checkbox"/>
	Recommended Material	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>	N/A	<input type="checkbox"/>
	Availability of Software for Purchase and/or Use	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>	N/A	<input type="checkbox"/>

<i>Evaluation</i>	Grading Scale*	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>	N/A	<input type="checkbox"/>
	Grading Criteria/Rubric	Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>	N/A	<input type="checkbox"/>
	Late Assignment Policy	Yes	<input type="checkbox"/>	No	<input type="checkbox"/>	N/A	<input checked="" type="checkbox"/>
<i>Accommodation of Students with Disabilities</i>	Pitt Public Health Statement*	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>	N/A	<input type="checkbox"/>
<i>Academic Integrity Policy</i>	Pitt Public Health Statement*	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>	N/A	<input type="checkbox"/>
<i>Schedule</i>	Topics by Session*	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>	N/A	<input type="checkbox"/>
	Reading and Written Assignments by Session*	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>	N/A	<input type="checkbox"/>
	Learning Objectives by Session	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>	N/A	<input type="checkbox"/>
	Test Dates	Yes	<input type="checkbox"/>	No	<input type="checkbox"/>	N/A	<input checked="" type="checkbox"/>
<i>Additional Resources</i>	Health Sciences Library Liaison Contact Information	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>	N/A	<input type="checkbox"/>
	Writing Center Contact (if course is writing intensive)	Yes	<input type="checkbox"/>	No	<input type="checkbox"/>	N/A	<input checked="" type="checkbox"/>

**Required Information Not Included**

<b>List the Required Detail Not Included</b>	<b>Reason for Not Including</b>
<b>Guest lectures for lectures 9-13</b>	We are still working on this.
Class details (readings, in-class projects) for classes 9-13	We are still working on this.

Course Meeting Day(s) and Time(s) **TBD**

Class Locations

**Lectures: TBD**

**Lab-based classes: Crabtree A720 and Parran Annex 3001**

**Computer lab classes: TBD**

Credit Hours **3**

Term/Academic Year **Fall 2017**

**Principal Instructor:** Dr. Jennifer J. Adibi MPH, ScD

Department of Epidemiology

**Office Location:** Parran Hall 5132, 130 Desoto Street, Pittsburgh, PA 15261

Tel. 412-624-1913, [adibij@pitt.edu](mailto:adibij@pitt.edu)

**Office Hours: By appointment**

**Co-Instructor:** Dr. Allison L. Kuipers, PhD

Department of Epidemiology

**Office Location:** Crabtree Hall A543, 130 DeSoto Street, Pittsburgh PA 15261

Tel. 412-624-2781, [kuipers@pitt.edu](mailto:kuipers@pitt.edu)

**Office Hours:** By appointment

**Laboratory Assistant:** Yaqi Zhao, Parran Annex 3001, 130 Desoto Street, Pittsburgh, PA 15261, Tel. 412-383-7083, [yaz64@pitt.edu](mailto:yaz64@pitt.edu)

**Office Hours: TBD**

### **Course Description**

There is a steady stream of new methods and technologies entering the biomedical sciences that can be used to generate high-quality, quantitative data on the molecular and biochemical aspects of health and disease. There is tremendous value in applying these methods in epidemiologic studies to interrogate the molecular underpinnings of associations within populations, generate hypotheses on the mechanisms involved, to monitor the effects of interventions and to increase confidence in causal inferences. This course will be an opportunity for students to be exposed to methods for measuring the biologic processes that are relevant to DNA variation in populations, and to exposure effects that impact RNA and protein (and other molecule) expression. This course will go beyond the standard level of awareness of how to receive and analyze data from a laboratory. We will engage students in rigorous thought on how to pose questions on the underlying biology, conduct biomarker selection, design assays, and analyze and interpret data. We will spend ~50% of the time exposing students to hands-on experimentation at the laboratory bench. While, we will discuss 'omics' and high-dimensional methods in lectures, the hands-on work will be limited to single molecule analyses.

### **Course Prerequisites**

Prerequisites include Molecular Epidemiology (EPID 2600), Epidemiology Methods I (EPID 2180), and Introduction to SAS (EPID 2185), or instructor permission.

### **Learning Objectives**

- 1) to understand DNA, RNA and protein biology in the context of methods used in epidemiology research;
- 2) to understand aspects of DNA, RNA, and protein measurements, including: technology (DNA and RNA sequencing, quantitative and non-quantitative polymerase chain reaction, western blotting, immunostaining, HPLC, GC, ELISA), sample handling and storage, setting up an assay, pipetting,

reading and modifying protocols, inspecting raw data, QC measures and troubleshooting. Actual assays will include protein, DNA and RNA extraction from tissue, different types of polymerase chain reactions, nucleic acid and protein visualization and quantitation. We will learn different ways to quantitate protein expression, and visualize protein localization within a tissue.

3) to gain practical experience and exposure to analyzing data on DNA variation, and RNA and protein expression. Using different types of software, we will learn data processing and cleaning steps, quality assessment, outlier evaluation, normalization of biomarkers by internal controls, data merging, analysis of biomarkers in relation to exposures and endpoints, and data visualization.

**Teaching Philosophy**

We have come to these topics through our own research experience in identifying pathways by which exposures and genetics can contribute to chronic disease risk in human populations. We seek to provide an engaging and practice-oriented experience for students of epidemiology, who may or may not have ever stepped into a lab. We want Epidemiology students to understand how biomarker data are generated, what they are indicators of, how to analyze them, and how to correctly interpret them in the larger context of human health. We will teach based on our experience and using protocols that we have developed, with some reference to the published literature and examples of how others have rigorously and effectively tested hypotheses related to the molecular underpinnings of disease and health. For some students, we expect this experience may be their only one in the lab and they will walk away with a richer understanding and appreciation of future datasets that they will design and receive from collaborating labs. For other students, we may spark interest in going deeper into developing their own skills in laboratory-based research.

**Required Textbooks/Articles/Readings**

There are no required texts. Required reading (journal articles, protocols) will be posted on the CourseWeb site by the beginning of the semester.

**CourseWeb/BlackBoard Instruction**

Revisions to this document, schedules, readings, and assignments will be posted to CourseWeb (Blackboard). All students are required to log on weekly and check CourseWeb.

**Required or Recommended Software**

We will use SAS and R for teaching and for assignments in this class. SAS is available to students (<http://technology.pitt.edu/software/for-students-software.html>) and R can be downloaded at no cost (<https://www.r-project.org/>). Students should also have Microsoft Excel on their personal computers.

**Class Expectations/ Behavior and Ground Rules**

We expect students to turn off cell phones while in class. Class attendance and participation are required. A single missed lecture class is allowed. Missed lab classes cannot be made up.

**Grading Scale**

97.0-100%	A+	93.0-96.9%	A	90.0-92.9%	A-
87.0-89.9%	B+	83.0-86.9%	B	80.0-82.9%	B-
77.0-79.9%	C+	73.0-76.9%	C	70.0-72.9%	C-
< 70.0%	F				

**Student Performance Evaluation**

Final grades will be based on: 75% attendance and active participation; 25% final project. Attendance and participation are critical to success in this course. You may only miss one class (please let us know in advance). Any other absences must be excused by an instructor. Participation must include active engagement in lecture and class discussions, hands-on manipulation of wet lab experiments and individual work on computer lab assignments. You will be expected to maintain a lab notebook. We

understand that experiments do not always work on the first try and will not use success of any in class wet-lab assay to determine your participation grade.

### Assignments and Descriptions

Students will be required to do course readings weekly, review protocols, maintain a lab notebook, and watch assigned videos. Class attendance and participation are the most critical assignment and, accordingly, make up 75% of the final grade, combined.

For a final project, we will ask students to develop a Methods section of a grant that will measure one or more types of biomarker (DNA, RNA, protein, or epigenetic). The biomarkers can be proposed as exposures, mediators, or endpoints to test a hypothesis. It is important that students think of ways to either confirm or refute their associations using complementary, but independently measured biomarkers. For example, they might measure in the same sample set a related biologic molecule such as a protein encoded by an RNA to see how it correlates with the primary biomarker and also with exposure and/or outcome. Students will write 5-7 pages giving:

- 2-4 Specific Aims;
- Rationale for biomarker selection in relation to an exposure, a health outcome, or both;
- Preliminary data: students can download raw data from PubMed or request assistance from instructors in obtaining a dataset;
- Detailed research methods (biomarkers only): how samples will be processed and stored, how the biomarkers will be measured, QC steps, internal controls, normalization quantitation, minimize batch-to-batch variability;
- Statistical methods: analysis of the biomarker data to test the proposed Aims;
- Sample size calculations: given estimates of effect size and variability in their measures, how many subjects are needed to refute the null hypothesis;
- A detailed section on potential problems with the assays that you have chosen and alternative approaches to solve them.

**Schedule of Sessions and Assignments**

N	Topic	Format	Teacher
1.	<p><b>1) Introduction: Navigating the molecular biomarkers available to epidemiologists: DNA, RNA, protein, epigenetic markers, metabolites</b></p> <p><b>2) DNA sequence and Genetic epidemiology</b></p> <p><u>Learning Objectives:</u></p> <ul style="list-style-type: none"> <li>• Understand in a broad context how measures of DNA variation and RNA and protein expression are used in epidemiologic research;</li> <li>• Learn about examples where application of these types of measures have increased our knowledge of causes and prevention of disease risk in the population;</li> <li>• Understand differences between family vs. unrelated; and cohort vs. case-control study designs;</li> <li>• Become familiar with factors important for biospecimen sample collection and storage;</li> <li>• Introduction to the lab space(s)</li> </ul> <p><u>In-Class:</u> Become comfortable with pipetting</p> <p><u>Readings:</u> Am J Hum Genet. 2015 Aug 6;97(2):199-215. Toxicol Appl Pharmacol. 2005 Aug 7;206(2):261-8.</p> <p><u>Optional Videos:</u> <a href="https://www.youtube.com/watch?v=bVk0twJYL6Y">https://www.youtube.com/watch?v=bVk0twJYL6Y</a> (Genetic Intro) <a href="https://www.youtube.com/watch?v=YUlcSPkLNB8">https://www.youtube.com/watch?v=YUlcSPkLNB8</a> (Genetics in Health)</p>	Lecture	J. Adibi, A. Kuipers
2	<p><b>DNA Analysis I: Human DNA Extraction</b></p> <p><u>Learning Objectives:</u></p> <ul style="list-style-type: none"> <li>• Understand the principles of DNA extraction;</li> <li>• Gain proficiency in basic lab techniques of pipetting, elution, centrifugation, decanting, incubation and recording notes;</li> <li>• Understand the principles of assessing DNA quality and quantity using spectrophotometry;</li> <li>• Understand aspects of Restriction Fragment Length Polymorphism (RFLP) assay design.</li> </ul> <p><u>In-class:</u> Extract your own DNA from saliva and check the quality and quantity using spectrophotometry.</p> <p><u>Readings:</u> Review Laboratory Protocol for DNA extraction Cancer Epidemiol Biomarkers Prev. 2006 Sep;15(9):1585-7.</p> <p><u>Optional Videos:</u> <a href="https://www.youtube.com/watch?v=LzvdoVVUUDI">https://www.youtube.com/watch?v=LzvdoVVUUDI</a> (DNA Extraction) <a href="https://www.youtube.com/watch?v=xHQM4BbR040&amp;feature=iv&amp;src_vid=pxC6F7bK8CU&amp;annotation_id=annotation_360342">https://www.youtube.com/watch?v=xHQM4BbR040&amp;feature=iv&amp;src_vid=pxC6F7bK8CU&amp;annotation_id=annotation_360342</a> (DNA</p>	Wet lab	A. Kuipers

	Spec)		
3	<p><b>DNA Analysis II: Human DNA Genotyping and Sequencing</b></p> <p><u>Learning Objectives:</u></p> <ul style="list-style-type: none"> <li>• Be able to differentiate RFLP and TaqMan methodology and be aware of other modern genotyping methods;</li> <li>• Become familiar with Polymerase Chain Reaction techniques for DNA amplification;</li> <li>• Understand the theory behind sequencing and current platform options;</li> <li>• Discuss the strengths and limitations of big genomic data collection and understand the theory behind imputation;</li> <li>• Be able to differentiate when to collect genotyping vs. sequencing data based on study question</li> </ul> <p><u>In-class:</u> Run RFLP and TaqMan Genotyping with class DNA</p> <p><u>Readings:</u> Review Laboratory Protocols for RFLP and TaqMan Nature. 2015 Oct 1;526(7571):68-74.</p> <p><u>Optional Videos:</u>  <a href="https://www.youtube.com/watch?v=RSVenfEUiol">https://www.youtube.com/watch?v=RSVenfEUiol</a> (PCR first 4min)  <a href="https://www.youtube.com/watch?v=sjGj7OkRpQA">https://www.youtube.com/watch?v=sjGj7OkRpQA</a> (TaqMan genotype)  <a href="https://www.youtube.com/watch?v=sjGj7OkRpQA">https://www.youtube.com/watch?v=sjGj7OkRpQA</a> (TaqMan genotype)  <a href="https://www.youtube.com/watch?v=IVG04dAAyvY">https://www.youtube.com/watch?v=IVG04dAAyvY</a> (Chip arrays)  <a href="https://www.youtube.com/watch?v=jFCD8Q6qSTM">https://www.youtube.com/watch?v=jFCD8Q6qSTM</a> (Sanger seq)  <a href="https://www.youtube.com/watch?v=MvuYATh7Y74">https://www.youtube.com/watch?v=MvuYATh7Y74</a> (Next gen seq)</p>	Wet lab	A. Kuipers
4	<p><b>DNA Data Analysis: Analysis of DNA genotype data and application to an epidemiologic question</b></p> <p><u>Learning Objectives:</u></p> <ul style="list-style-type: none"> <li>• Be able to calculate MAF, genotype frequencies and test for violations from HWE;</li> <li>• Understand the concepts of implementing thresholds for genetic data analysis and interpreting diagnostic statistics;</li> <li>• Use SAS to calculate genotype statistics and to test for association between genotypes and trait of interest</li> </ul> <p><u>In-class:</u> Work through a worksheet related to genotype data analysis including calculating genotype frequencies, HWE and SAS analysis of genetic data.</p> <p><u>Homework:</u> Complete the worksheet if not completed during class time and prepare for next week’s lecture.</p> <p><u>Readings:</u>  <a href="http://www.nature.com/scitable/definition/hardy-weinberg-equilibrium-122">http://www.nature.com/scitable/definition/hardy-weinberg-equilibrium-122</a>            Cold Spring Harb Protoc. 2012 Mar 1;2012(3):297-306.</p>	Computer lab	A. Kuipers

	<p><u>Optional Videos:</u>  <a href="https://www.youtube.com/watch?v=-QfLyy4-VIM">https://www.youtube.com/watch?v=-QfLyy4-VIM</a> (Stat gen)  <a href="https://www.youtube.com/watch?v=LBn_zsd7-4">https://www.youtube.com/watch?v=LBn_zsd7-4</a> (1000 genomes)</p>		
5	<p><b>Coding and non-coding RNAs, and their applications in epidemiology</b></p> <p><u>Learning Objectives:</u></p> <ul style="list-style-type: none"> <li>• Understand the basics of gene regulation and RNA synthesis;</li> <li>• Understand key distinctions between the different categories of coding and non-coding RNAs;</li> <li>• Discuss examples of how RNA biomarkers have been studied in relation to exposures and to health outcomes.</li> </ul> <p><u>Readings (Hand-outs):</u></p> <ol style="list-style-type: none"> <li>1. Chapter 1. Overview: What is Gene Expression. In Mechanisms of Gene Regulation. Eds. Carlberg and Molnar. Springer : New York. 2014. Pp. 5-24.</li> <li>2. Chapter 1. Introduction. In <u>Non-coding RNAs and Cancer</u>. Ed. Fabbri. Springer: New York. 2014. Pp. 3-15.</li> <li>3. Exposure and mRNA: Danitsja et al. 2008. EHP PMID: 19057705</li> <li>4. Outcome and miRNA: Nair et al. 2014 AJE PMID: 24966218</li> </ol> <p><u>Optional videos:</u>  <a href="https://youtu.be/tMr9XH64rtM">https://youtu.be/tMr9XH64rtM</a> (Eric Lander on transcription 8 min)</p>	Lecture	J. Adibi
6	<p><b>RNA quantitation I: mRNA analysis</b></p> <p><u>Learning Objectives:</u></p> <ul style="list-style-type: none"> <li>• Discuss single RNA analysis methods vs. transcriptome analysis;</li> <li>• Appreciate and discuss design issues related to selection of biomarker, assay, validity, primer design, internal controls, quantitation, sources of and ways to assess technical and biologic variability, normalization.</li> <li>• Learn how to isolate RNA from human tissue.</li> </ul> <p><u>In-class assignment.</u> Homogenize placental tissue sample and isolate RNA.</p> <p><u>Readings (Hand-outs):</u></p> <ol style="list-style-type: none"> <li>1. Chapter 3. Detecting Noncoding RNA Expression: From Arrays to Next Generation Sequencing In <u>Non-coding RNAs and Cancer</u>. Ed. Fabbri. Springer : New York. 2014. Pp. 25-44.</li> <li>2. Chapters 3, 5. In <u>Molecular Epidemiology: Principles and Practices</u>. Ed. Schulte and Perera. Academic Press: New York. 1993. Pp.79-107; 109-135.</li> <li>3. mRNA Biomarker validation: Adibi et al. 2009 Environmental Health. PMID: 19389254; Santiago and Postashkin 2015 PNAS PMID: 26566043</li> <li>4. Qiagen RNeasy Protocol:  <a href="https://www.qiagen.com/us/resources/resourcedetail?id=14e7cf6e-521a-4cf7-8cbc-bf9f6fa33e24&amp;lang=en">https://www.qiagen.com/us/resources/resourcedetail?id=14e7cf6e-521a-4cf7-8cbc-bf9f6fa33e24&amp;lang=en</a></li> </ol>	Wet lab	J. Adibi

	<p>Optional videos:  <a href="https://www.youtube.com/watch?v=fkUDu042xic">https://www.youtube.com/watch?v=fkUDu042xic</a> (Taqman)  <a href="https://youtu.be/2c3t3tDEmsU">https://youtu.be/2c3t3tDEmsU</a> (microarray vs. sequencing, 7 min)</p>		
7	<p><b>RNAs quantitation II. mRNA analysis by qPCR</b></p> <p><u>Learning Objectives:</u></p> <ul style="list-style-type: none"> <li>• Learn how to assess quality and quantity of total RNA;</li> <li>• Learn how to reverse transcribe RNA to cDNA;</li> <li>• Learn how to set up a qPCR reaction;</li> <li>• Learn how to interpret the raw data from a qPCR experiment.</li> </ul> <p><u>In-class assignment:</u> Set up reverse transcription reaction, set up a qPCR experiment, retrieve data at the end of the experiment.</p> <p><u>Readings (Hand-outs):</u></p> <ol style="list-style-type: none"> <li>1. Chapters 3, 6. Protocol for QuantStudio  <a href="https://www.thermofisher.com/content/dam/LifeTech/migration/files/pcr/pdfs.par.36605.file.dat/4470935b.pdf">https://www.thermofisher.com/content/dam/LifeTech/migration/files/pcr/pdfs.par.36605.file.dat/4470935b.pdf</a></li> </ol> <p><u>Optional videos:</u>  <a href="https://youtu.be/kvQWKcMdyS4">https://youtu.be/kvQWKcMdyS4</a> (real-time quantitative PCR, 6 min)  <a href="https://www.thermofisher.com/us/en/home/life-science/pcr/real-time-pcr/real-time-pcr-instruments/quantstudio-12k-flex-real-time-pcr-system.html">https://www.thermofisher.com/us/en/home/life-science/pcr/real-time-pcr/real-time-pcr-instruments/quantstudio-12k-flex-real-time-pcr-system.html</a> (QuantStudio instrument, 4min)</p>	Wet lab	J. Adibi
8	<p><b>RNA data analysis. Analysis of RNA data, application in epidemiologic research</b></p> <p><u>Learning Objectives:</u></p> <ul style="list-style-type: none"> <li>• Understand the difference between absolute quantitation, relative quantitation and the delta-delta ct method.</li> <li>• Understand the pre-modeling steps of qPCR data analysis: quantitation, sources of and ways to assess technical and biologic variability, normalization.</li> <li>• Write a basic program in SAS to analyze a qPCR data set.</li> <li>• Understand the steps the pre-processing and analysis of a microarray data set.</li> </ul> <p><u>In-class assignment:</u> Import raw qPCR data into SAS, write a program to evaluate and analyze the data. Using a qPCR data set, estimate the association of placental gene expression with gestational age and fetal sex. Plot the raw data and the modeled data.</p> <p><u>Readings (Hand-outs):</u></p> <ol style="list-style-type: none"> <li>1. Johnson et al. 2014. Methods Mol Biol PMID 24740217</li> <li>2. Chapter 5. Data analysis. In Gene Expression Studies: Using Affymetrix Microarrays. Ed. Gohlmann and Talloen. CRC Press: New York Pp 113-233.</li> </ol>	Computer lab	J. Adibi
9	<p><b>Protein biomarkers as products of synthesis and predictors of cellular function</b></p>		Adibi and/or guest lecture

	<p><u>Learning Objectives:</u></p> <ul style="list-style-type: none"> <li>• Overview of protein synthesis and protein function;</li> <li>• Understand different levels of protein regulation (translation, post-translational modifications, metabolism, degradation);</li> <li>• Give overview of the different methods used to measure proteins (circulating, tissue level, single molecule, proteome);</li> <li>• Give examples of how protein biomarkers are used effectively in epidemiology.</li> </ul> <p><u>Readings (Hand-outs):</u></p> <ul style="list-style-type: none"> <li>• TBD</li> </ul> <p><u>Optional videos:</u> -video on protein synthesis, protein regulation</p>		
10	<p><b>Protein analysis I. measurement of circulating proteins and protein products</b></p> <p><u>Learning Objectives:</u></p> <ul style="list-style-type: none"> <li>• Understand the why and how of measuring a circulating molecule;</li> <li>• Be exposed to protein quantification methods including ELISA;</li> <li>• Give background on multiplexing methods (Luminex, MSD platform).</li> </ul> <p><u>In-class:</u> work in groups to do an ELISA assay. Receive an introduction to the HPLC and GC/MS instruments.</p> <p><u>Readings (Hand-outs):</u> -protocols; TBD</p> <p><u>Optional videos:</u> -<a href="https://www.youtube.com/watch?v=RRbuz3VQ100">https://www.youtube.com/watch?v=RRbuz3VQ100</a> (ELISA, 2 minutes) <a href="http://www.youtube.com/watch?v=kz_eqMtdnL4">http://www.youtube.com/watch?v=kz_eqMtdnL4</a> (HPLC, 5 minutes)</p>	Wet lab	Adibi
11	<p><b>Protein analysis II. Measurement of tissue level proteins</b></p> <p><u>Learning Objectives:</u></p> <ul style="list-style-type: none"> <li>• Understand the why and how of measuring a protein within tissue;</li> <li>• Gain experience in techniques: quantitative western blot, immunostaining and imaging.</li> <li>•</li> </ul> <p><u>In-class:</u> work in groups to load a gel for a western blot experiment, transfer proteins to a membrane, set up for overnight antibody incubation. While waiting for the above, we will learn about immunostaining of tissue to localize and visualize proteins. We will try phase contrast and fluorescent microscopy with already</p>	Wet lab	Adibi

	<p>prepared samples.</p> <p><u>Readings (Hand-outs):</u> -protocols; TBD.</p> <p><u>Optional videos:</u> TBD</p>		
12	<p><b>A survey of epigenetic biomarkers</b></p> <p><u>Learning Objectives:</u></p> <ul style="list-style-type: none"> <li>• To understand different types of epigenetic regulation (methylation, non-coding RNA, chromatin modification);</li> <li>• To gain an overview of sample analysis methods to accommodate large sample size data;</li> <li>• Be able to critique epigenetic application in an epidemiologic study.</li> </ul> <p><u>Readings (Hand-outs):</u> TBD</p> <p><u>Optional videos:</u> -TBD</p>	Lecture	Someone from core facility?
13	<p><b>Quantitation of methylation, and application to an epidemiologic question</b></p> <p><u>Learning Objectives:</u></p> <ul style="list-style-type: none"> <li>• Understand how to manipulate raw data and normalize for use in statistical analyses;</li> <li>• Learn specialized analysis techniques for methylation data;</li> <li>• Understand how epigenetic data can be combined with other molecular measures to improve interpretation of genetic regulation.</li> </ul> <p><u>Readings (Hand-outs):</u> TBD</p> <p><u>Optional videos:</u> -TBD</p>	Computer lab	Someone from George Tseng's group?
14	<p><b>Bringing it all together: the analysis of an exposure, a biomarker of effect, and an outcome</b></p> <p><u>Learning Objectives:</u></p> <ul style="list-style-type: none"> <li>• Review course concepts including key points of DNA, RNA and protein regulation and molecular analysis;</li> <li>• Gain insight into new technologies and the future of the field;</li> <li>• Provide feedback on the course.</li> </ul> <p><u>Readings (Hand-outs):</u> -protocols; TBD</p>	Lecture	Adibi, Kuipers
15	Final class: group presentations	Lecture	Adibi, Kuipers

**Accommodation for Students with Disabilities**

If you have any disability for which you may require accommodation, you are encouraged to notify both your instructor and the Office of Disability Resources and Services, 140 William Pitt Union (Voice or TTD 412-648-7890) as early as possible in the term.

**Academic Integrity Statement**

All students are expected to adhere to the school's standards of academic honesty. Any work submitted by a student for evaluation must represent his/her own intellectual contribution and efforts. The Graduate School of Public Health's policy on academic integrity, approved by EPCC on 10/14/08, which is based on the University policy, is available online in the Pitt Public Health Academic Handbook ([www.publichealth.pitt.edu/home/academics/academic-requirements](http://www.publichealth.pitt.edu/home/academics/academic-requirements)). The policy includes obligations for faculty and students, procedures for adjudicating violations, and other critical information. Please take the time to read this policy.

Students committing acts of academic dishonesty, including plagiarism, unauthorized collaboration on assignments, cheating on exams, misrepresentation of data, and facilitating dishonesty by others, will receive sanctions appropriate to the violation(s) committed. Sanctions include, but are not limited to, reduction of a grade for an assignment or a course, failure of a course, and dismissal from the school.

All student violations of academic integrity must be documented by the appropriate faculty member; this documentation will be kept in a confidential student file maintained by the Office of Student Affairs. If a sanction for a violation is agreed upon by the student and instructor, the record of this agreement will be expunged from the student file upon the student's graduation. If the case is referred to the Pitt Public Health Academic Integrity Hearing Board, a record will remain in the student's permanent file.

**Diversity Statement**

Graduate School of Public Health supports learning environments that are inclusive and respectful of all individuals. Every member of our community is expected to be respectful of the individual perspectives, experiences, behaviors, worldviews, and backgrounds of others.

**Copyright Notice**

Course material may be protected by copyright. United States copyright law, 14 USC section 101, et sec., in addition to University policy and procedures, prohibit unauthorized duplication or retransmission of course materials. See [Library of Congress Copyright Office](#) and the [University Copyright Policy](#).

**Health Sciences Library and Pitt Public Health Librarian**

We encourage students to access the HSLs Molecular Biology online resource for more in-depth information on molecular biology methods, <http://www.hslls.pitt.edu/molbio/>. They offer regular workshops and tutorials on technologies and data analysis methods.



## Copy of Instructor Report for Thistle Elias

### BCHS 2509 - SOCL BEHVRL SCI & PUBLIC HLTH - 1200 - Lecture

#### 2171 - Teaching Survey

Total Enrollment 34  
Responses Received 28  
Response Rate 82.35%

#### Subject Details

<b>Name</b>	BCHS 2509 - SOCL BEHVRL SCI & PUBLIC HLTH - 1200 - Lecture
<b>CAMPUS_CD</b>	PIT
<b>SCHOOL_CD</b>	PUBHL
<b>DEPARTMENT_CD</b>	BCHS
<b>CLASS_NBR</b>	26209
<b>COURSE_NUMBER</b>	2509
<b>SECTION_NUMBER</b>	1200
<b>TERM_NUMBER</b>	2171
<b>COURSE_TYPE</b>	Lecture
<b>CLASS_ATTRIBUTE</b>	
<b>ENROLLED_STUDENTS</b>	36
<b>First Name</b>	Thistle
<b>Last Name</b>	Elias
<b>RANK_DESCR</b>	Assistant Professor
<b>FIRST_GRAD_TERM_START_DATE</b>	
<b>DEPARTMENT</b>	
<b>TENURE</b>	NT

#### Report Comments

Table of Contents:

Instructor and Course Evaluation

- Overall Summary of Results
- Detailed Results

Student Self Report (if applicable)

**Creation Date** Mon, Jan 30, 2017

# University Questions

## Instructor Summary of Results

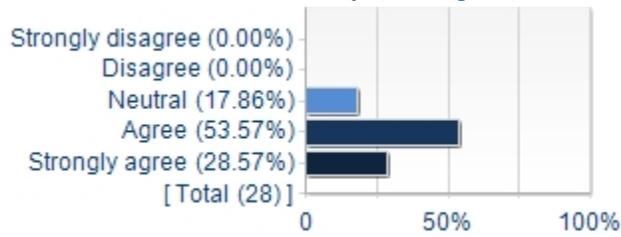
Question	Results		
	Mean	Response Count	Standard Deviation
The instructor stimulated my thinking.	4.11	28	0.69
The instructor was enthusiastic about teaching the course.	4.79	28	0.42
The instructor presented the course in an organized manner.	3.93	28	0.90
The instructor maintained an environment where students felt comfortable participating.	4.36	28	0.87
The instructor maintained an environment where students felt comfortable seeking assistance.	4.50	28	0.69
The instructor provided helpful feedback.	4.36	28	0.73
Assignments contributed to my understanding of the subject.	4.14	28	0.80

## Instructor's overall teaching effectiveness

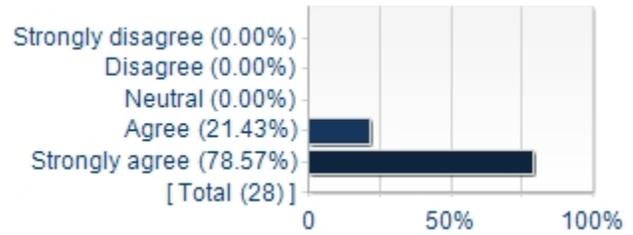
Question	Results		
	Mean	Response Count	Standard Deviation
Express your judgment of the instructor's overall teaching effectiveness.	4.11	28	0.79

## Instructor Evaluation: Detailed Results

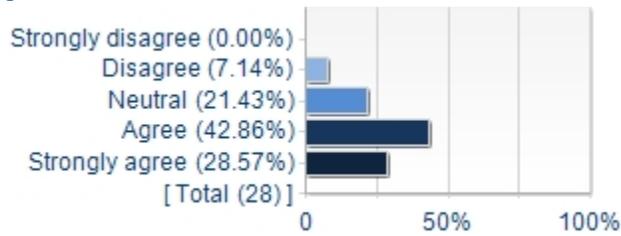
1. The instructor stimulated my thinking.



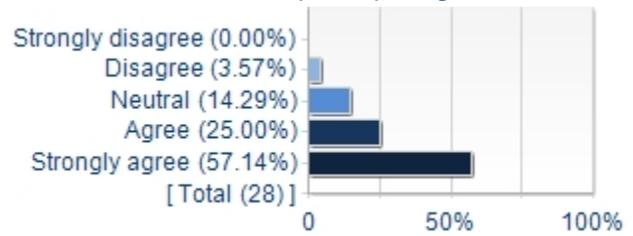
2. The instructor was enthusiastic about teaching the course.



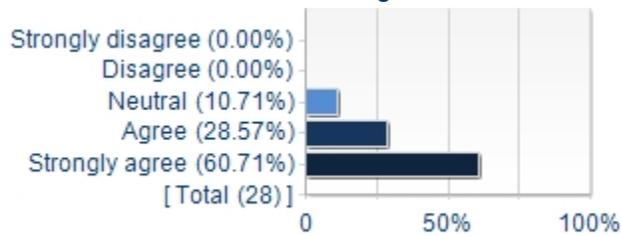
3. The instructor presented the course in an organized manner.



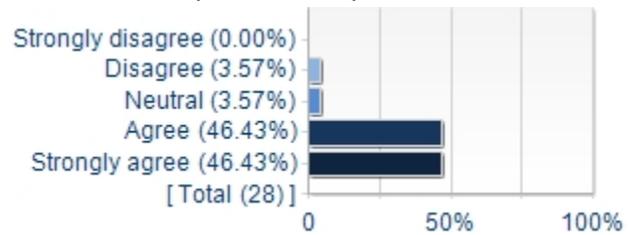
4. The instructor maintained an environment where students felt comfortable participating.



5. The instructor maintained an environment where students felt comfortable seeking assistance.

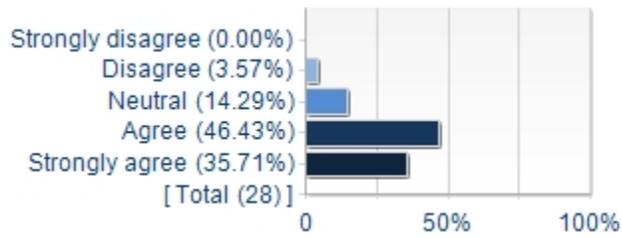


6. The instructor provided helpful feedback.

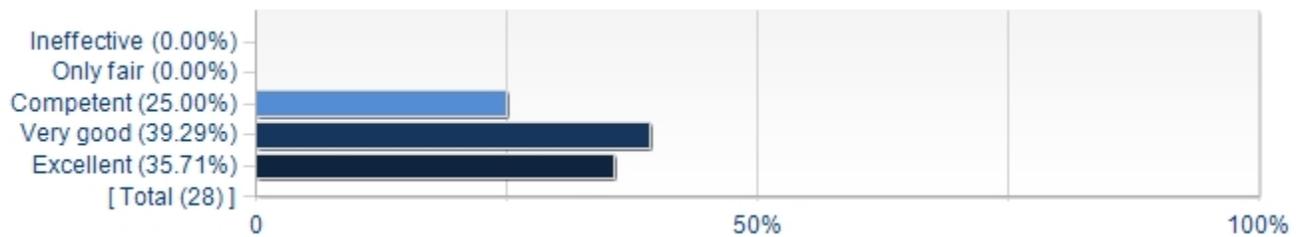


## Instructor Evaluation: Detailed Results (continued)

7. Assignments contributed to my understanding of the subject.



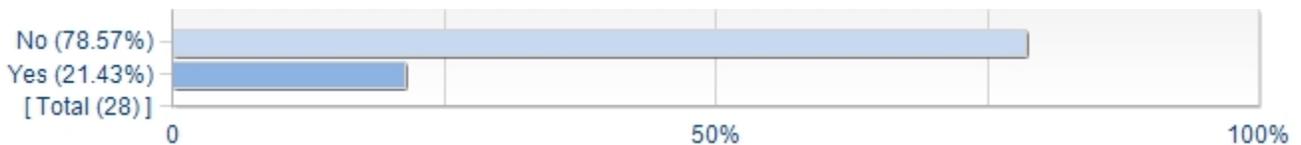
## Instructor's overall teaching effectiveness:



## Course Summary of Results

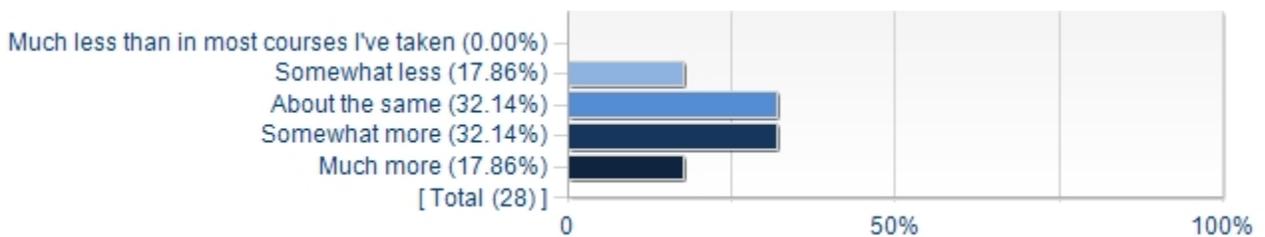
Question	Results		
	Mean	Response Count	Standard Deviation
Course objectives were presented.	4.25	28	0.75
Stated objectives agreed with what was taught.	4.43	28	0.69
Course made a worthwhile contribution to my professional development.	4.07	28	0.72
Assigned work was appropriate to credits.	4.25	28	0.65
Course content reflected recent developments in the field.	4.21	28	0.79
Course content duplicated that of other courses I have taken.	2.46	28	1.26
Would you recommend this course to other students?	3.68	28	0.98

### I am taking this course as an elective.



Options	Score	Count	Percentage
No	1	22	78.57%
Yes	2	6	21.43%

### Amount I learned in this course.

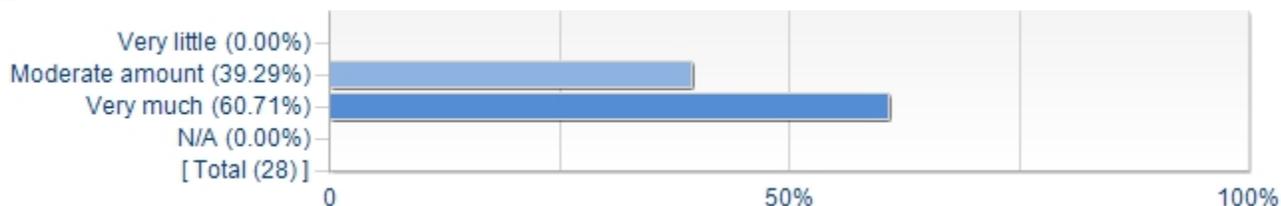


Options	Score	Count	Percentage
Much less than in most courses I've taken	1	0	0.00%
Somewhat less	2	5	17.86%
About the same	3	9	32.14%
Somewhat more	4	9	32.14%
Much more	5	5	17.86%

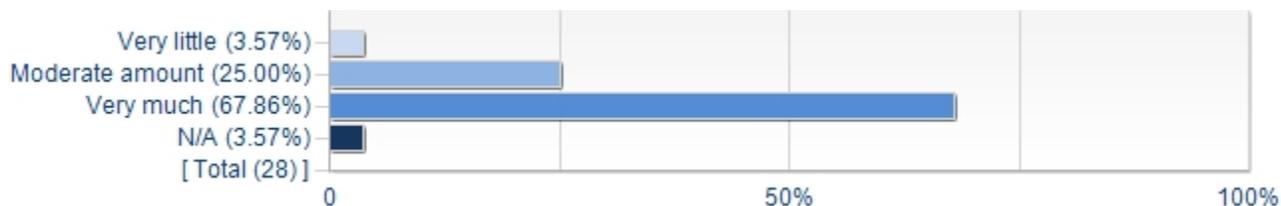
**Rate each of the following according to how much it contributed to your attainment of the course objectives.**

Competency Statistics	Value
Mean	2.72
Median	3.00
Mode	3
Standard Deviation	0.77
Standard Error (base on SD)	0.06
Population Standard Deviation	0.76
Standard Error (base on PSD)	0.05

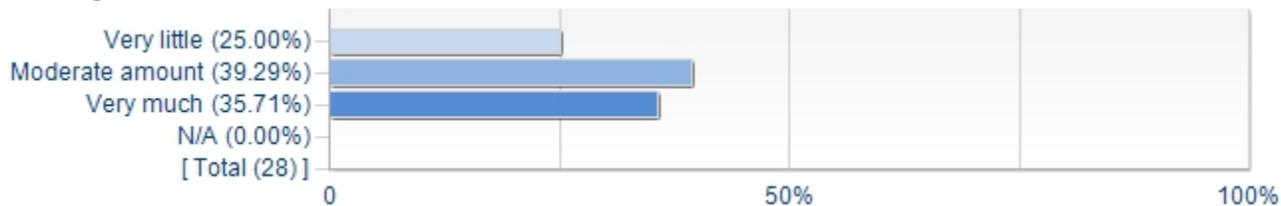
**1. Lectures**



**2. Discussions**

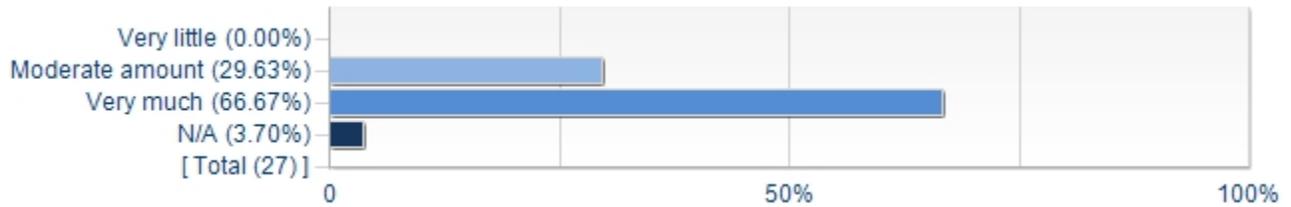


**3. Readings**

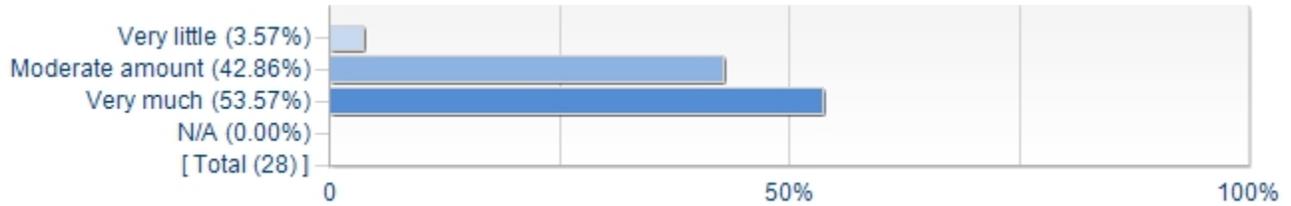


**Rate each of the following according to how much it contributed to your attainment of the course objectives. (continued)**

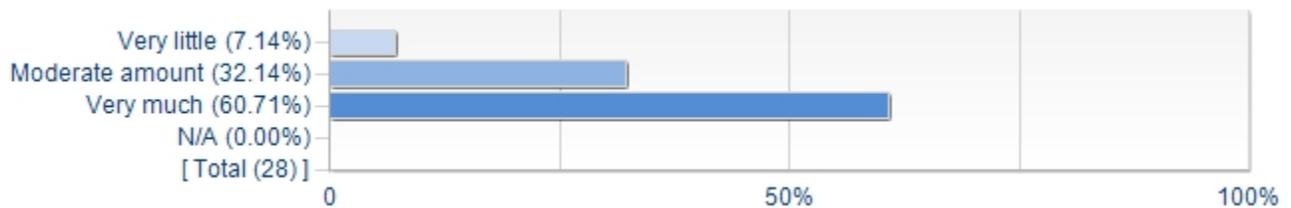
4. Audio-visuals



5. Assignments (exams, projects, and written papers)

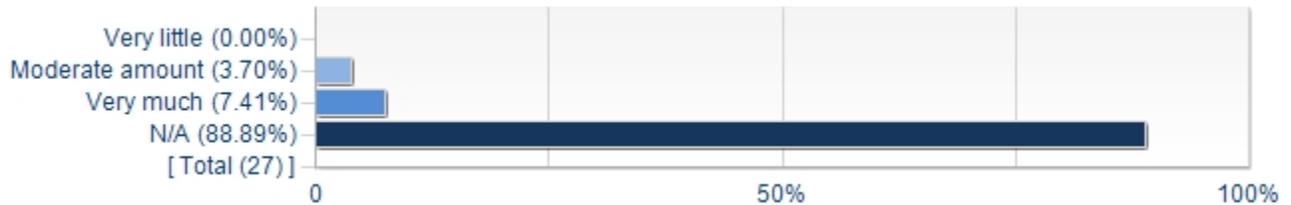


6. Classroom activities

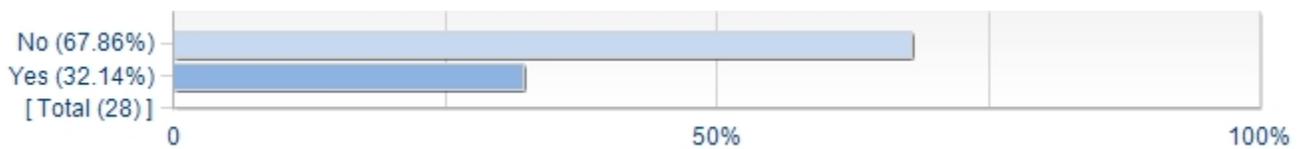


**Rate each of the following according to how much it contributed to your attainment of the course objectives. (continued)**

**7. Lab / Recitation**

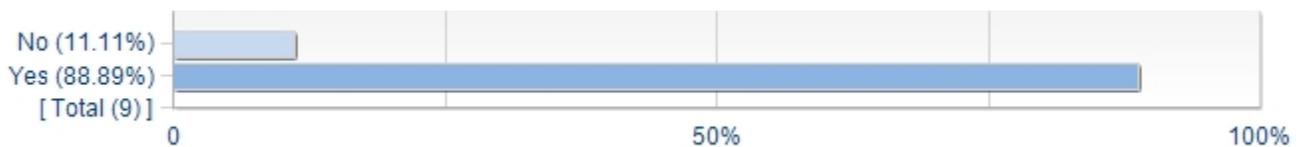


**Were there guest lecturers and/or multiple instructors in this course?**



Options	Score	Count	Percentage
No	1	19	67.86%
Yes	2	9	32.14%

**Were the guest lecturers and/or multiple instructors used effectively?**



Options	Score	Count	Percentage
No	1	1	11.11%
Yes	2	8	88.89%



## Copy of Instructor Report for John Wilson

### BIOST 2041 - INTRO TO STATISTICAL METHODS 1 - 1030 - Lecture

#### 2171 - Teaching Survey

Total Enrollment 126  
Responses Received 82  
Response Rate 65.08%

#### Subject Details

Name	BIOST 2041 - INTRO TO STATISTICAL METHODS 1 - 1030 - Lecture
CAMPUS_CD	PIT
SCHOOL_CD	PUBHL
DEPARTMENT_CD	BIOST
CLASS_NBR	14428
COURSE_NUMBER	2041
SECTION_NUMBER	1030
TERM_NUMBER	2171
COURSE_TYPE	Lecture
CLASS_ATTRIBUTE	
ENROLLED_STUDENTS	131
First Name	John
Last Name	Wilson
RANK_DESCR	
FIRST_GRAD_TERM_START_DATE	
DEPARTMENT	
TENURE	NT

#### Report Comments

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**Creation Date** Mon, Jan 30, 2017

# University Questions

## Instructor Summary of Results

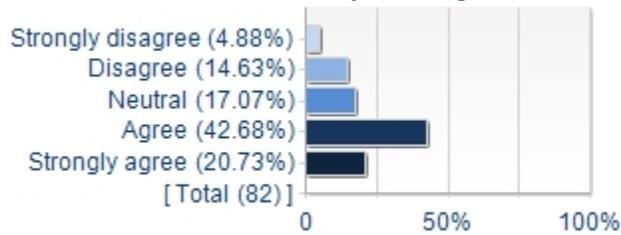
Question	Results		
	Mean	Response Count	Standard Deviation
The instructor stimulated my thinking.	3.60	82	1.12
The instructor was enthusiastic about teaching the course.	4.39	82	0.72
The instructor presented the course in an organized manner.	3.74	82	1.18
The instructor maintained an environment where students felt comfortable participating.	4.16	82	0.97
The instructor maintained an environment where students felt comfortable seeking assistance.	4.29	82	0.87
The instructor provided helpful feedback.	3.74	82	1.15
Assignments contributed to my understanding of the subject.	3.95	82	1.08

## Instructor's overall teaching effectiveness

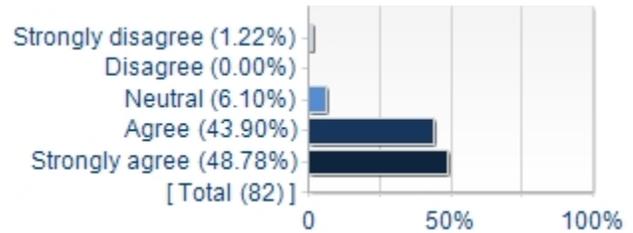
Question	Results		
	Mean	Response Count	Standard Deviation
Express your judgment of the instructor's overall teaching effectiveness.	3.55	82	1.13

## Instructor Evaluation: Detailed Results

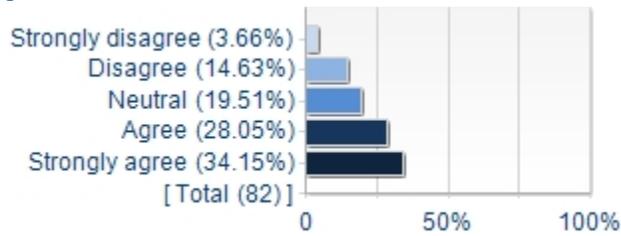
1. The instructor stimulated my thinking.



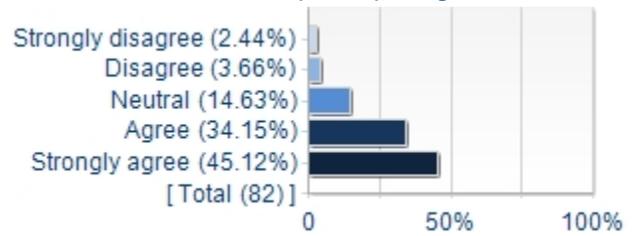
2. The instructor was enthusiastic about teaching the course.



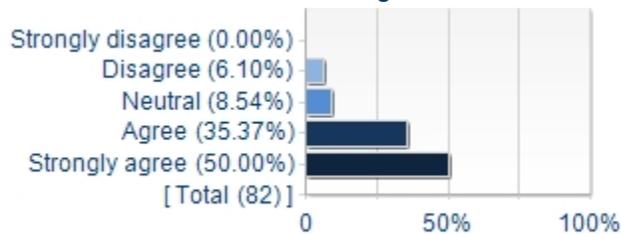
3. The instructor presented the course in an organized manner.



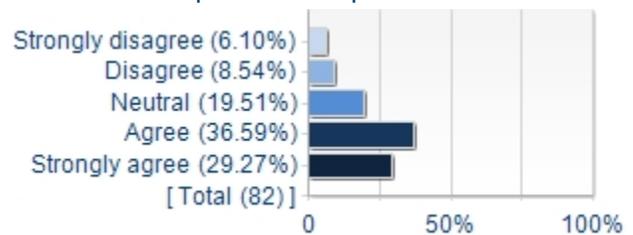
4. The instructor maintained an environment where students felt comfortable participating.



5. The instructor maintained an environment where students felt comfortable seeking assistance.

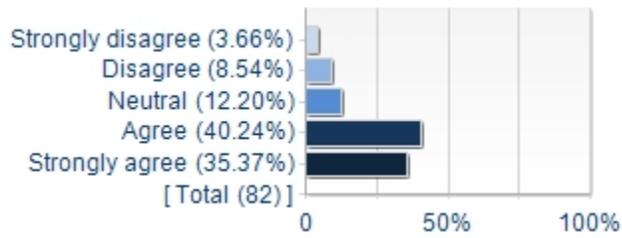


6. The instructor provided helpful feedback.

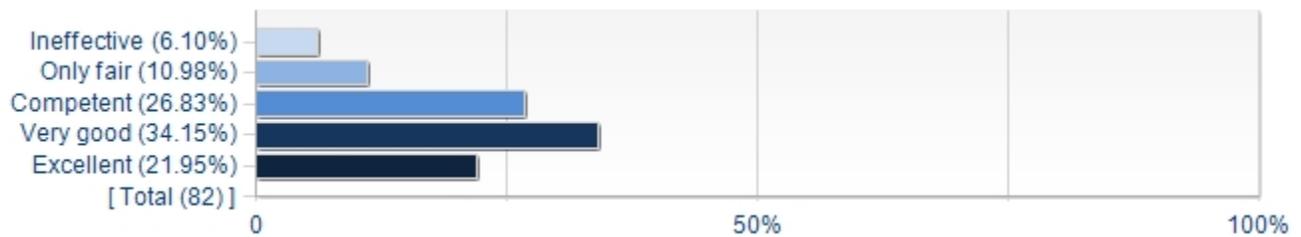


## Instructor Evaluation: Detailed Results (continued)

7. Assignments contributed to my understanding of the subject.



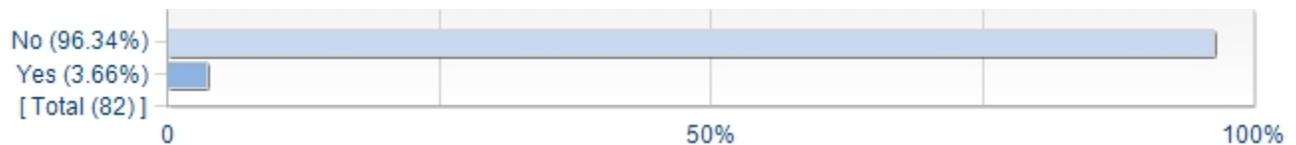
## Instructor's overall teaching effectiveness:



## Course Summary of Results

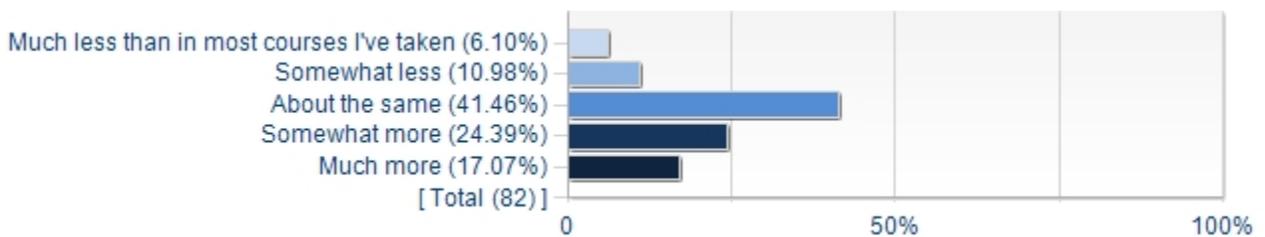
Question	Results		
	Mean	Response Count	Standard Deviation
Course objectives were presented.	4.07	82	0.89
Stated objectives agreed with what was taught.	4.15	82	0.93
Course made a worthwhile contribution to my professional development.	3.80	82	1.19
Assigned work was appropriate to credits.	4.20	82	0.96
Course content reflected recent developments in the field.	3.45	82	1.11
Course content duplicated that of other courses I have taken.	2.79	82	1.29
Would you recommend this course to other students?	3.46	81	1.31

### I am taking this course as an elective.



Options	Score	Count	Percentage
No	1	79	96.34%
Yes	2	3	3.66%

### Amount I learned in this course.

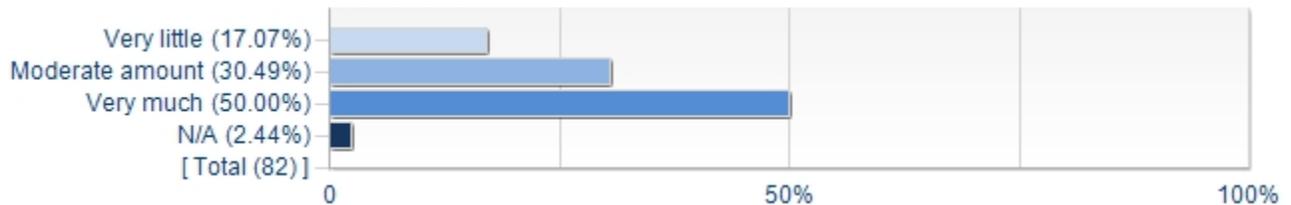


Options	Score	Count	Percentage
Much less than in most courses I've taken	1	5	6.10%
Somewhat less	2	9	10.98%
About the same	3	34	41.46%
Somewhat more	4	20	24.39%
Much more	5	14	17.07%

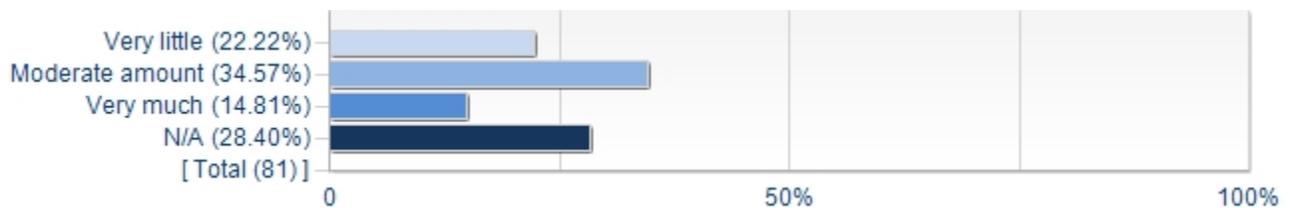
**Rate each of the following according to how much it contributed to your attainment of the course objectives.**

Competency Statistics	Value
Mean	2.45
Median	2.00
Mode	2
Standard Deviation	1.05
Standard Error (base on SD)	0.04
Population Standard Deviation	1.04
Standard Error (base on PSD)	0.04

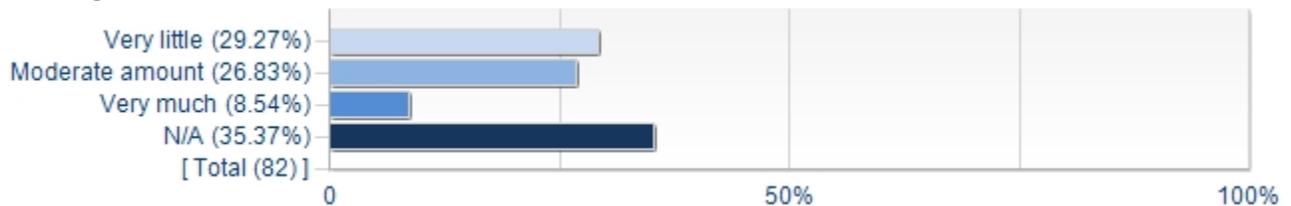
**1. Lectures**



**2. Discussions**

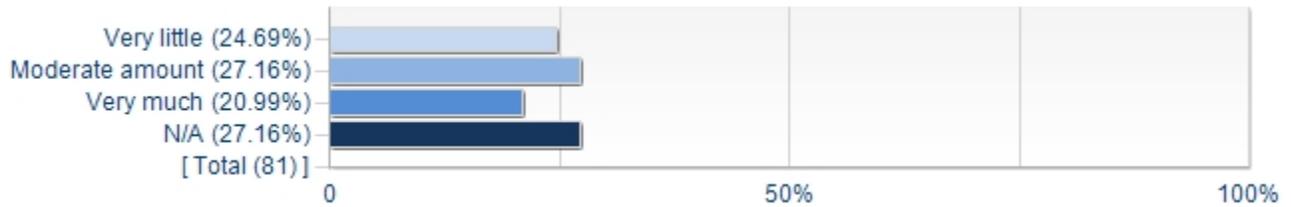


**3. Readings**

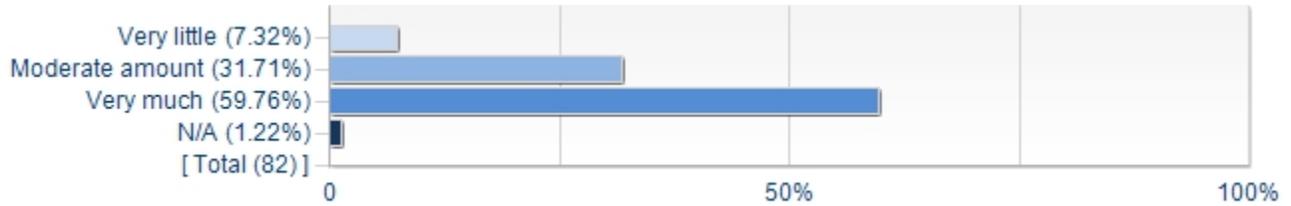


**Rate each of the following according to how much it contributed to your attainment of the course objectives. (continued)**

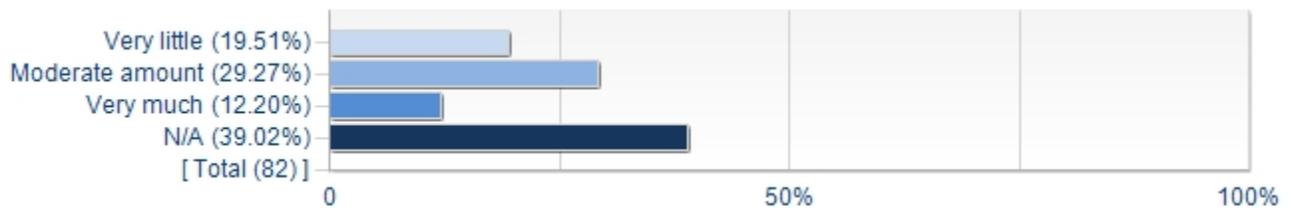
4. Audio-visuals



5. Assignments (exams, projects, and written papers)

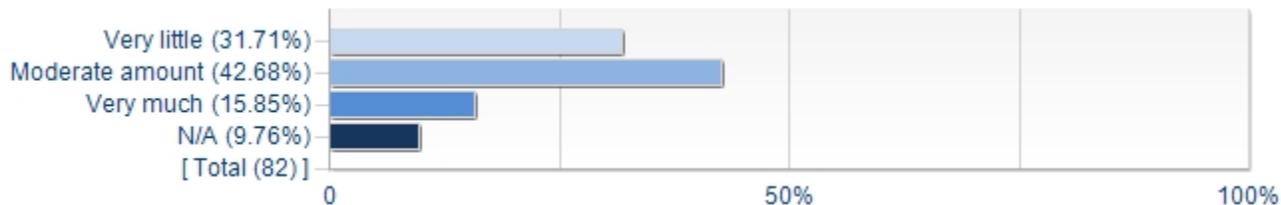


6. Classroom activities

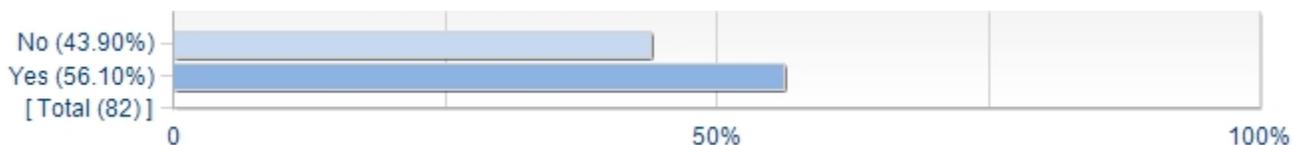


**Rate each of the following according to how much it contributed to your attainment of the course objectives. (continued)**

**7. Lab / Recitation**

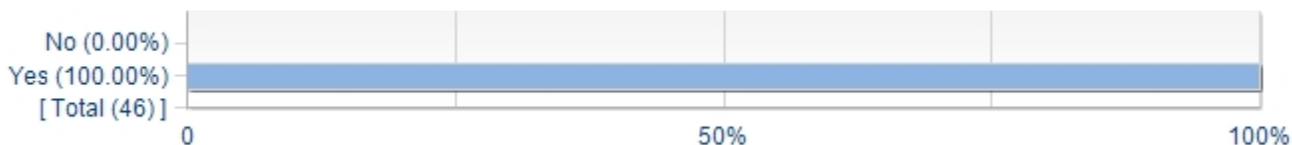


**Were there guest lecturers and/or multiple instructors in this course?**



Options	Score	Count	Percentage
No	1	36	43.90%
Yes	2	46	56.10%

**Were the guest lecturers and/or multiple instructors used effectively?**



Options	Score	Count	Percentage
No	1	0	0.00%
Yes	2	46	100.00%



## Copy of Instructor Report for John Wilson

### BIOST 2041 - INTRO TO STATISTICAL METHODS 1 - 1035 - Recitation

#### 2171 - Teaching Survey

Total Enrollment 126  
Responses Received 60  
Response Rate 47.62%

#### Subject Details

Name	BIOST 2041 - INTRO TO STATISTICAL METHODS 1 - 1035 - Recitation
CAMPUS_CD	PIT
SCHOOL_CD	PUBHL
DEPARTMENT_CD	BIOST
CLASS_NBR	27493
COURSE_NUMBER	2041
SECTION_NUMBER	1035
TERM_NUMBER	2171
COURSE_TYPE	Recitation
CLASS_ATTRIBUTE	
ENROLLED_STUDENTS	131
First Name	John
Last Name	Wilson
RANK_DESCR	
FIRST_GRAD_TERM_START_DATE	
DEPARTMENT	
TENURE	NT

#### Report Comments

Table of Contents:

Instructor and Course Evaluation

- Overall Summary of Results
- Detailed Results

Student Self Report (if applicable)

**Creation Date** Mon, Jan 30, 2017

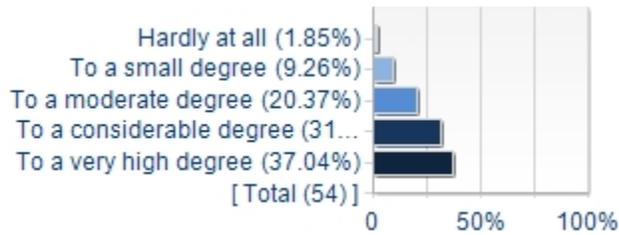
# University Questions

## Instructor Summary of Results

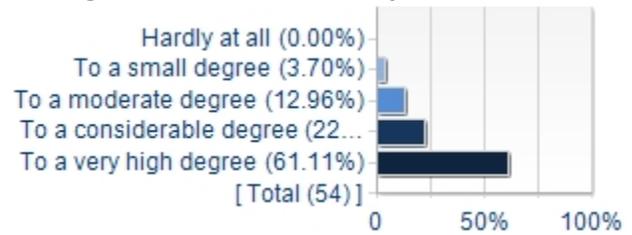
Question	Results		
	Mean	Response Count	Standard Deviation
The recitation instructor was well-prepared for the recitations.	3.93	54	1.06
The recitation instructor appeared knowledgeable about course subject matter.	4.41	54	0.86
The recitation instructor clarified material covered in course lectures.	3.93	54	1.23
The recitation instructor showed interest in helping students understand the material.	4.42	55	0.83
The recitation instructor returned assignments within a reasonable amount of time.	4.13	52	1.03
The recitation instructor was concerned about students' progress in the course.	4.14	51	0.96
The recitation instructor provided helpful answers to students' questions.	4.15	54	0.96
The recitation instructor treated students with respect.	4.73	55	0.59
The recitation instructor provided constructive feedback on assignments.	3.78	54	1.21
The recitation instructor maintained an environment in which students felt comfortable asking questions.	4.47	55	0.79
The recitation instructor was available for help outside of the labs. <i>Mark (NA) if you did not seek outside help.</i>	4.43	35	0.81
The recitation instructor communicates effectively.	4.15	55	0.91
The recitation instructor comprehends students' communication.	4.27	55	0.78
The recitation instructor led this recitation effectively.	3.87	54	1.13
The material covered in recitation is well connected to the lectures.	3.93	42	0.87

## Instructor Evaluation: Detailed Results

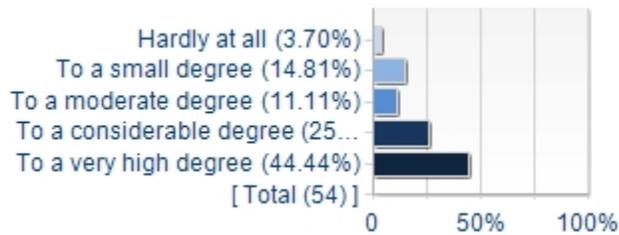
1. The recitation instructor was well-prepared for the recitations.



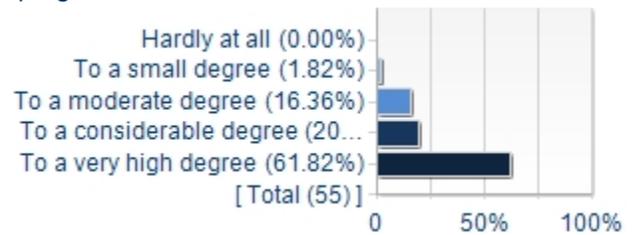
2. The recitation instructor appeared knowledgeable about course subject matter.



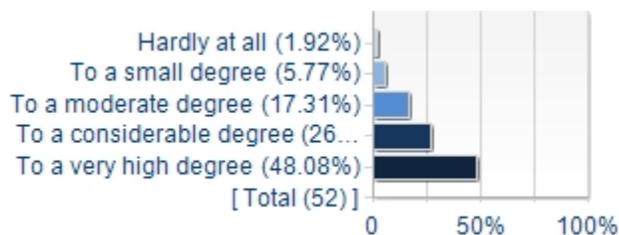
3. The recitation instructor clarified material covered in course lectures.



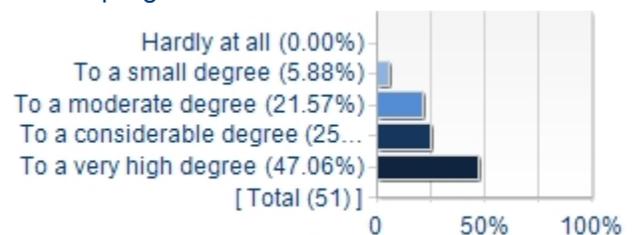
4. The recitation instructor showed interest in helping students understand the material.



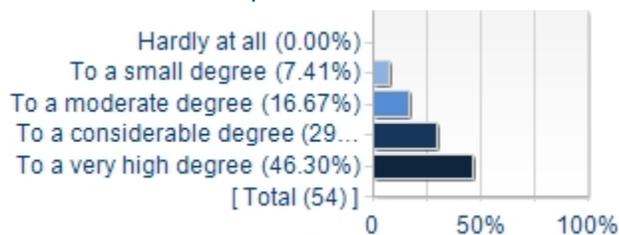
5. The recitation instructor returned assignments within a reasonable amount of time.



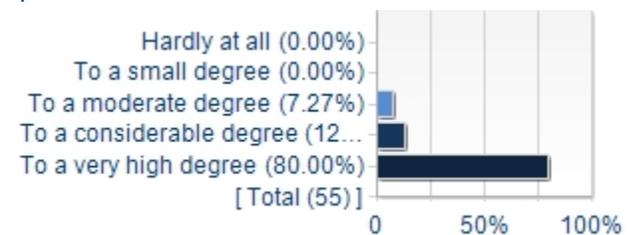
6. The recitation instructor was concerned about students' progress in the course.



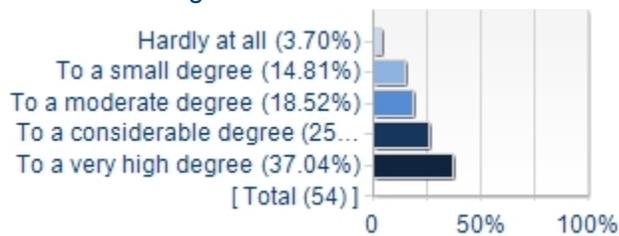
7. The recitation instructor provided helpful answers to students' questions.



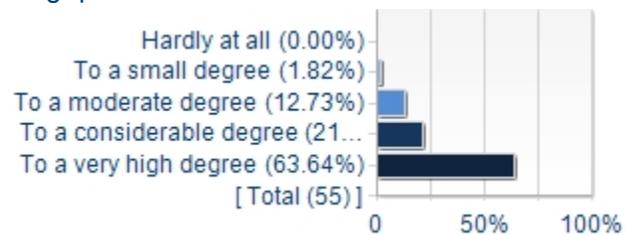
8. The recitation instructor treated students with respect.



9. The recitation instructor provided constructive feedback on assignments.

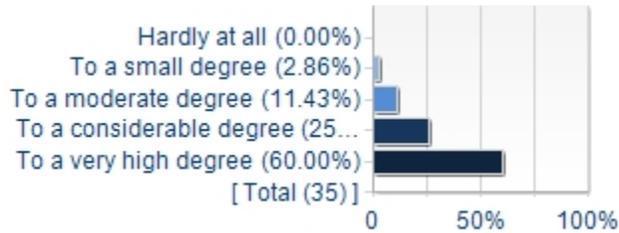


10. The recitation instructor maintained an environment in which students felt comfortable asking questions.

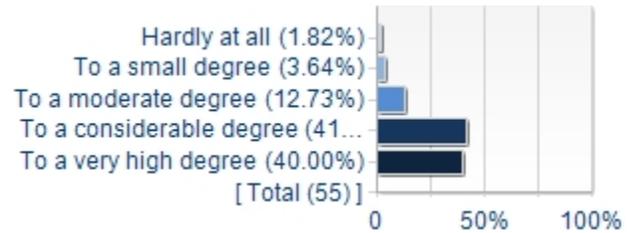


## Instructor Evaluation: Detailed Results (continued)

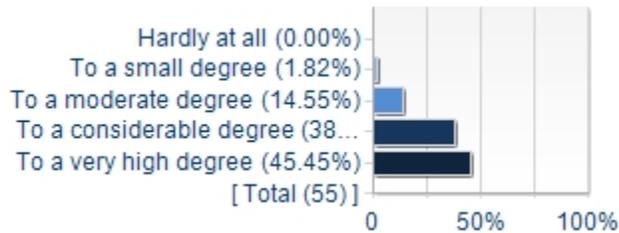
11. The recitation instructor was available for help outside of the labs. *Mark (NA) if you did not seek outside help.*



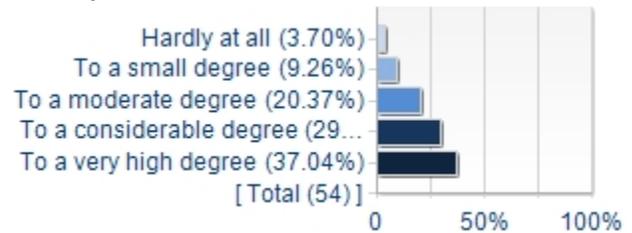
12. The recitation instructor communicates effectively.



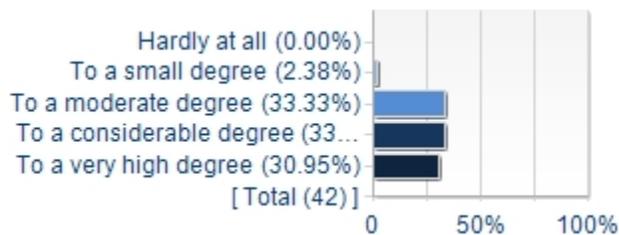
13. The recitation instructor comprehends students' communication.



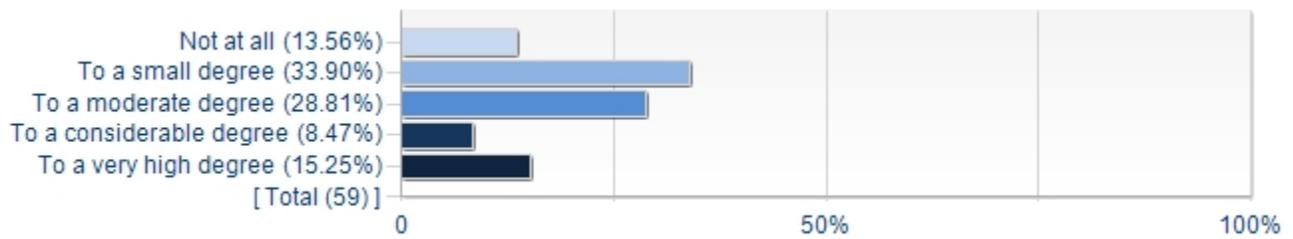
14. The recitation instructor led this recitation effectively.



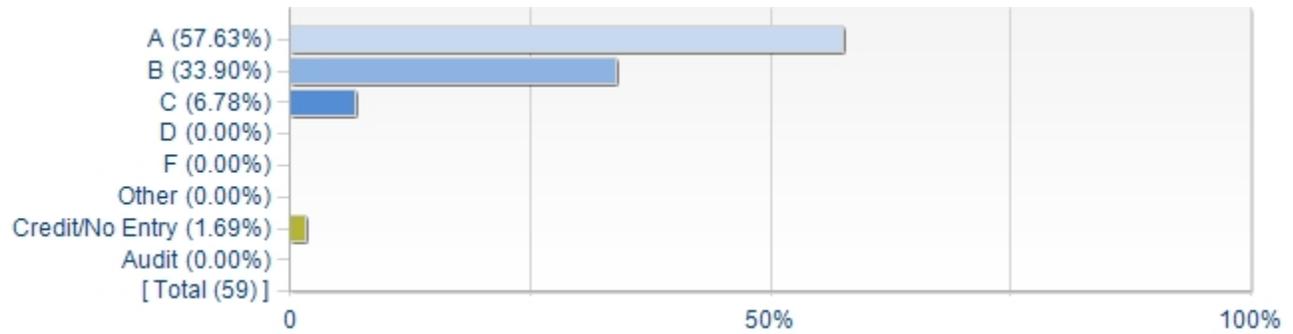
15. The material covered in recitation is well connected to the lectures.



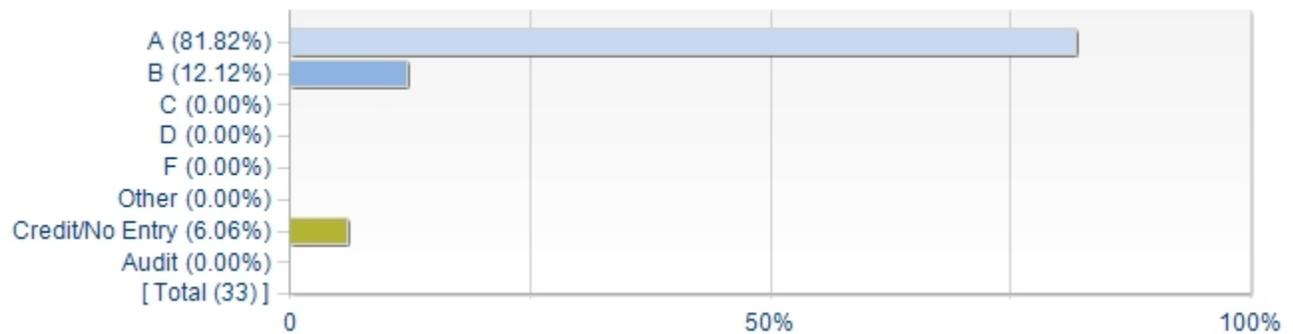
### Did the recitations contribute to your learning in this course?



### What grade do you expect in the course?



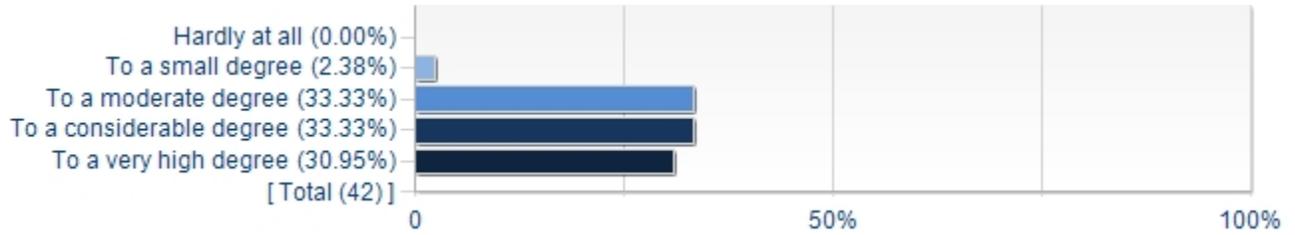
### What grade do you expect in this recitation?



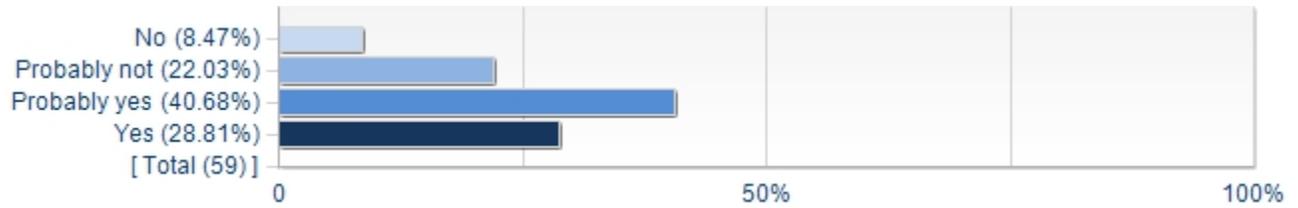
### What percent of the recitations did you attend?



The material covered in recitation is well connected to the lectures.



Would you recommend this recitation instructor to other students who are going to take this course?





## Copy of Instructor Report for Thomas Songer

### EPIDEM 2110 - PRINCIPLES OF EPIDEMIOLOGY - 1030 - Lecture

#### 2171 - Teaching Survey

Total Enrollment 160  
Responses Received 85  
Response Rate 53.12%

#### Subject Details

<b>Name</b>	EPIDEM 2110 - PRINCIPLES OF EPIDEMIOLOGY - 1030 - Lecture
<b>CAMPUS_CD</b>	PIT
<b>SCHOOL_CD</b>	PUBHL
<b>DEPARTMENT_CD</b>	EPIDEM
<b>CLASS_NBR</b>	14477
<b>COURSE_NUMBER</b>	2110
<b>SECTION_NUMBER</b>	1030
<b>TERM_NUMBER</b>	2171
<b>COURSE_TYPE</b>	Lecture
<b>CLASS_ATTRIBUTE</b>	
<b>ENROLLED_STUDENTS</b>	161
<b>First Name</b>	Thomas
<b>Last Name</b>	Songer
<b>RANK_DESCR</b>	Assistant Professor
<b>FIRST_GRAD_TERM_START_DATE</b>	
<b>DEPARTMENT</b>	
<b>TENURE</b>	NT

#### Report Comments

Table of Contents:

Instructor and Course Evaluation

- Overall Summary of Results
- Detailed Results

Student Self Report (if applicable)

**Creation Date** Mon, Jan 30, 2017

# University Questions

## Instructor Summary of Results

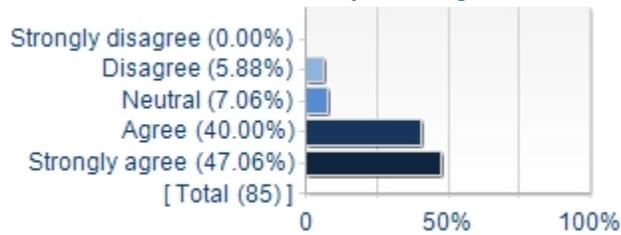
Question	Results		
	Mean	Response Count	Standard Deviation
The instructor stimulated my thinking.	4.28	85	0.84
The instructor was enthusiastic about teaching the course.	4.57	84	0.61
The instructor presented the course in an organized manner.	4.41	85	0.78
The instructor maintained an environment where students felt comfortable participating.	4.14	84	0.88
The instructor maintained an environment where students felt comfortable seeking assistance.	4.17	84	0.95
The instructor provided helpful feedback.	3.75	83	1.06
Assignments contributed to my understanding of the subject.	4.22	85	0.90

## Instructor's overall teaching effectiveness

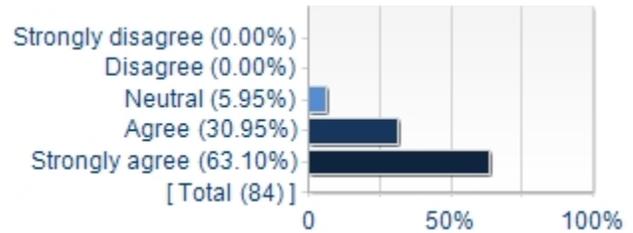
Question	Results		
	Mean	Response Count	Standard Deviation
Express your judgment of the instructor's overall teaching effectiveness.	4.04	85	0.98

## Instructor Evaluation: Detailed Results

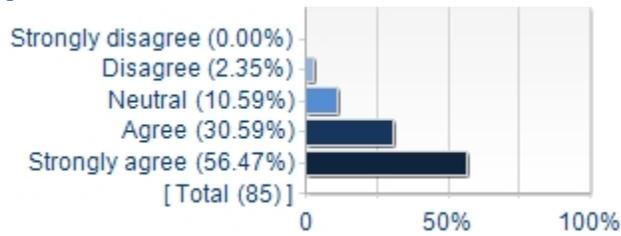
1. The instructor stimulated my thinking.



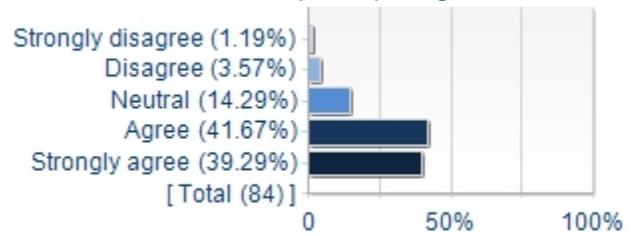
2. The instructor was enthusiastic about teaching the course.



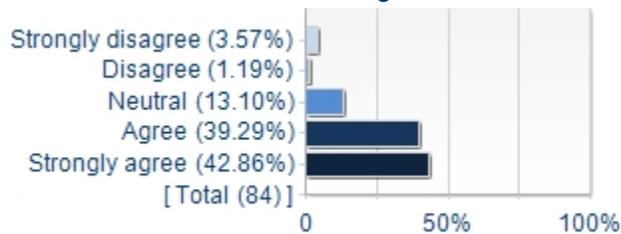
3. The instructor presented the course in an organized manner.



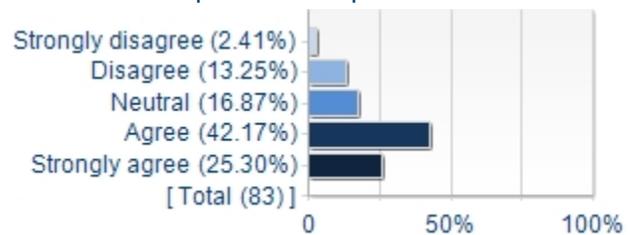
4. The instructor maintained an environment where students felt comfortable participating.



5. The instructor maintained an environment where students felt comfortable seeking assistance.

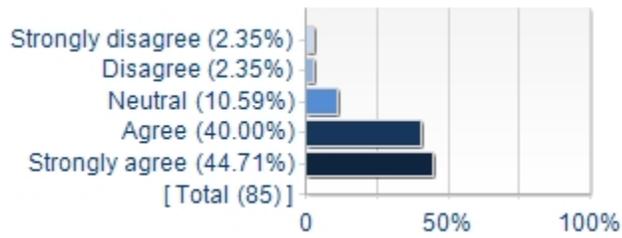


6. The instructor provided helpful feedback.

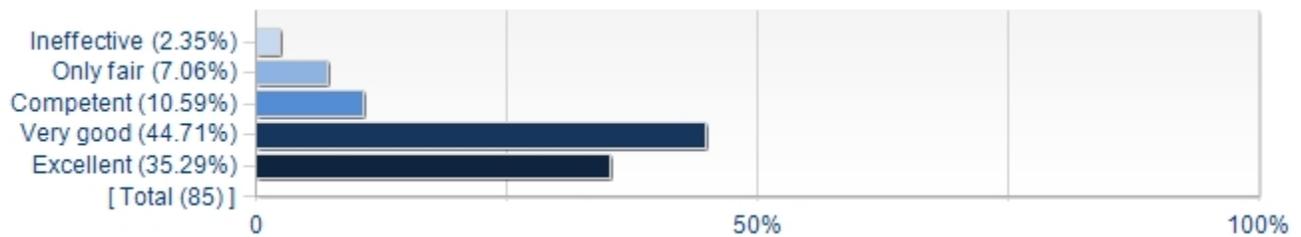


## Instructor Evaluation: Detailed Results (continued)

7. Assignments contributed to my understanding of the subject.



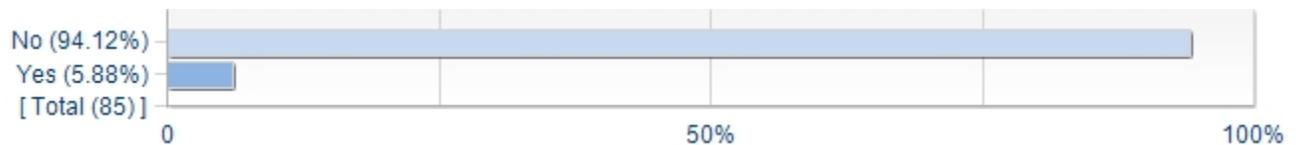
## Instructor's overall teaching effectiveness:



## Course Summary of Results

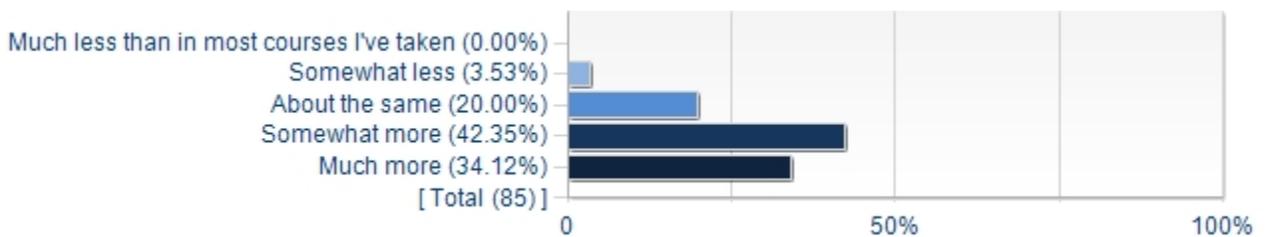
Question	Results		
	Mean	Response Count	Standard Deviation
Course objectives were presented.	4.61	84	0.60
Stated objectives agreed with what was taught.	4.55	83	0.69
Course made a worthwhile contribution to my professional development.	4.17	84	0.98
Assigned work was appropriate to credits.	4.12	84	0.91
Course content reflected recent developments in the field.	4.30	84	0.85
Course content duplicated that of other courses I have taken.	2.60	82	1.46
Would you recommend this course to other students?	3.94	83	1.15

### I am taking this course as an elective.



Options	Score	Count	Percentage
No	1	80	94.12%
Yes	2	5	5.88%

### Amount I learned in this course.

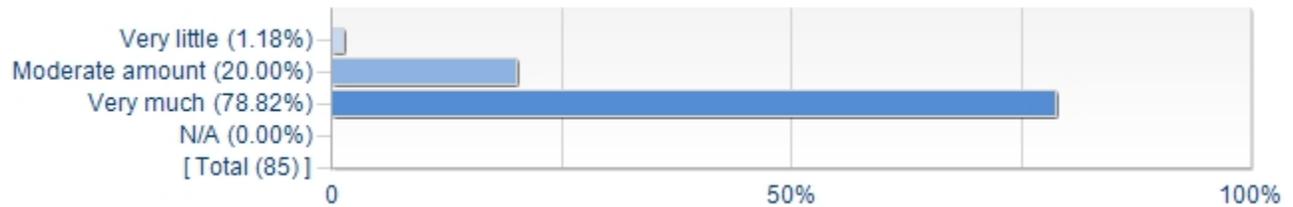


Options	Score	Count	Percentage
Much less than in most courses I've taken	1	0	0.00%
Somewhat less	2	3	3.53%
About the same	3	17	20.00%
Somewhat more	4	36	42.35%
Much more	5	29	34.12%

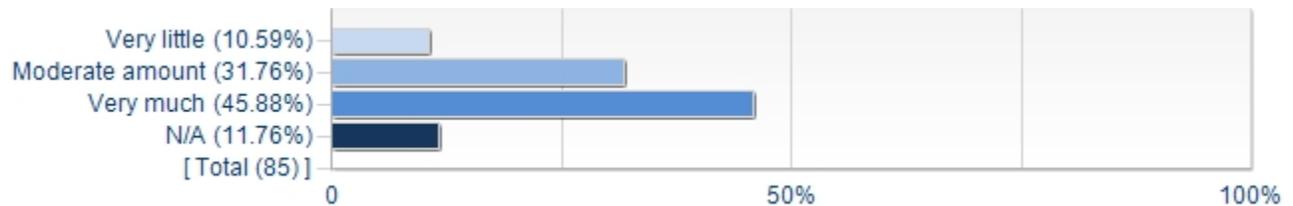
**Rate each of the following according to how much it contributed to your attainment of the course objectives.**

Competency Statistics	Value
Mean	2.74
Median	3.00
Mode	3
Standard Deviation	0.86
Standard Error (base on SD)	0.04
Population Standard Deviation	0.86
Standard Error (base on PSD)	0.04

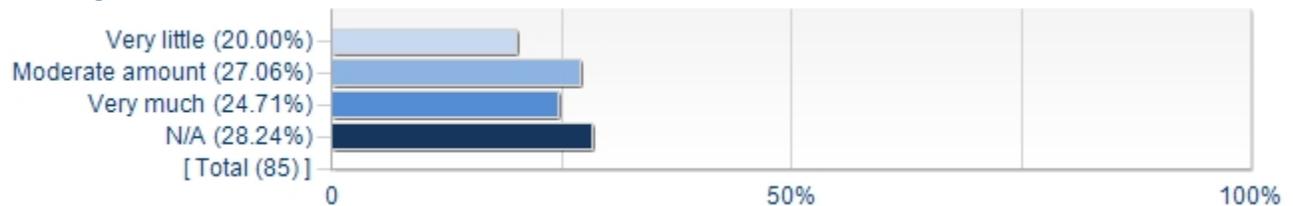
**1. Lectures**



**2. Discussions**

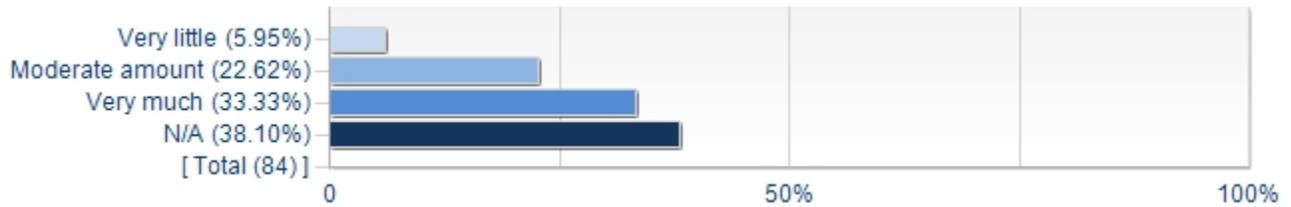


**3. Readings**

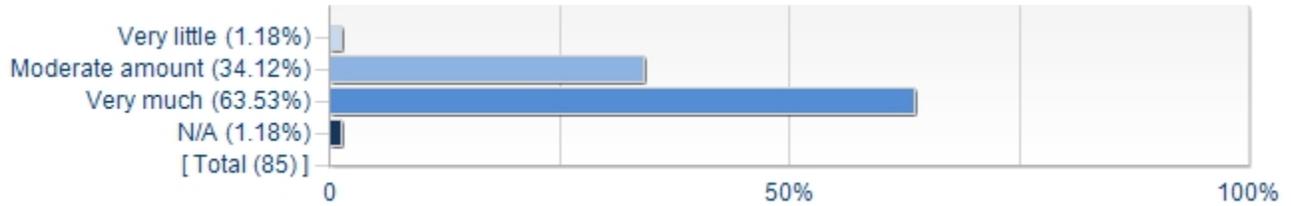


**Rate each of the following according to how much it contributed to your attainment of the course objectives. (continued)**

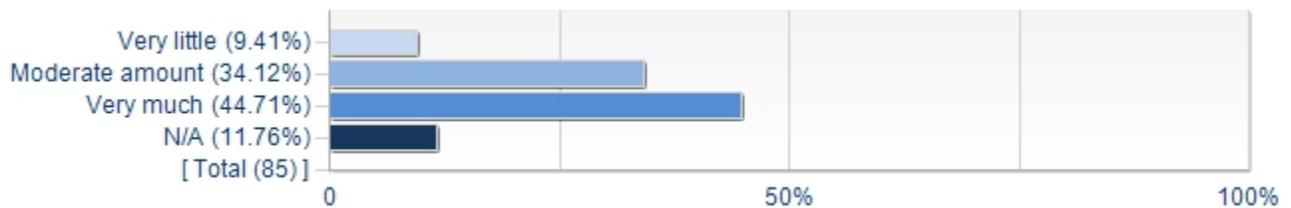
4. Audio-visuals



5. Assignments (exams, projects, and written papers)

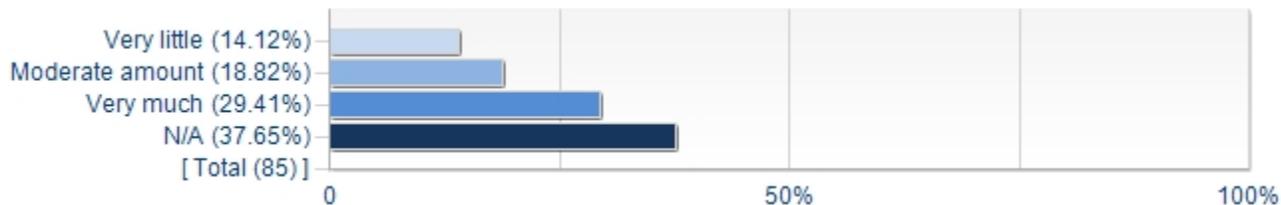


6. Classroom activities

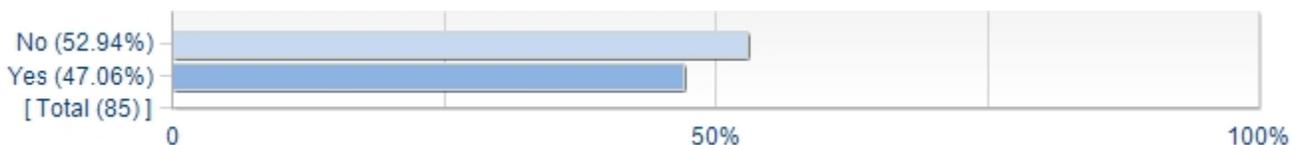


**Rate each of the following according to how much it contributed to your attainment of the course objectives. (continued)**

**7. Lab / Recitation**

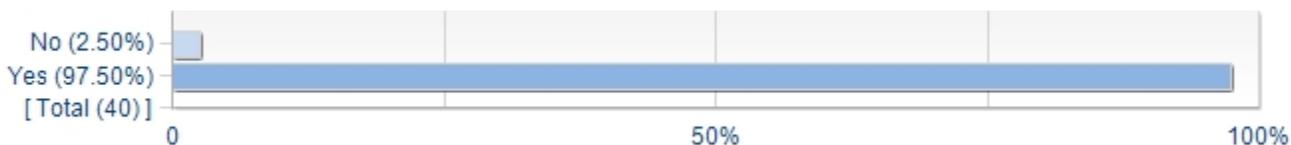


**Were there guest lecturers and/or multiple instructors in this course?**



Options	Score	Count	Percentage
No	1	45	52.94%
Yes	2	40	47.06%

**Were the guest lecturers and/or multiple instructors used effectively?**



Options	Score	Count	Percentage
No	1	1	2.50%
Yes	2	39	97.50%



## Instructor Report for Alton James

### HPM 2001 - HLTH POLC & MGT IN PUBLIC HLTH - 1100 - Lecture

#### 2171 - Teaching Survey

Total Enrollment 64  
Responses Received 42  
Response Rate 65.62%

#### Subject Details

<b>Name</b>	HPM 2001 - HLTH POLC & MGT IN PUBLIC HLTH - 1100 - Lecture
<b>CAMPUS_CD</b>	PIT
<b>SCHOOL_CD</b>	PUBHL
<b>DEPARTMENT_CD</b>	HPM
<b>CLASS_NBR</b>	25543
<b>COURSE_NUMBER</b>	2001
<b>SECTION_NUMBER</b>	1100
<b>TERM_NUMBER</b>	2171
<b>COURSE_TYPE</b>	Lecture
<b>CLASS_ATTRIBUTE</b>	
<b>ENROLLED_STUDENTS</b>	65
<b>First Name</b>	Alton
<b>Last Name</b>	James
<b>RANK_DESCR</b>	Professor
<b>FIRST_GRAD_TERM_START_DATE</b>	
<b>DEPARTMENT</b>	
<b>TENURE</b>	T

#### Report Comments

Table of Contents:

Instructor and Course Evaluation

- Overall Summary of Results
- Detailed Results

Student Self Report (if applicable)

**Creation Date** Wed, Jan 04, 2017

# University Questions

## Instructor Summary of Results

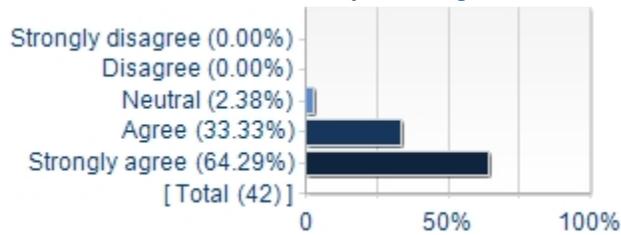
Question	Results		
	Mean	Response Count	Standard Deviation
The instructor stimulated my thinking.	4.62	42	0.54
The instructor was enthusiastic about teaching the course.	4.69	42	0.64
The instructor presented the course in an organized manner.	4.69	42	0.47
The instructor maintained an environment where students felt comfortable participating.	4.60	42	0.66
The instructor maintained an environment where students felt comfortable seeking assistance.	4.60	42	0.70
The instructor provided helpful feedback.	4.05	42	0.94
Assignments contributed to my understanding of the subject.	4.60	42	0.59

## Instructor's overall teaching effectiveness

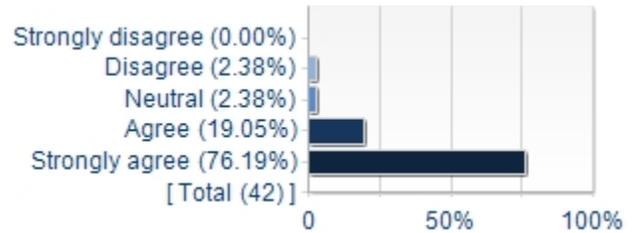
Question	Results		
	Mean	Response Count	Standard Deviation
Express your judgment of the instructor's overall teaching effectiveness.	4.57	42	0.59

## Instructor Evaluation: Detailed Results

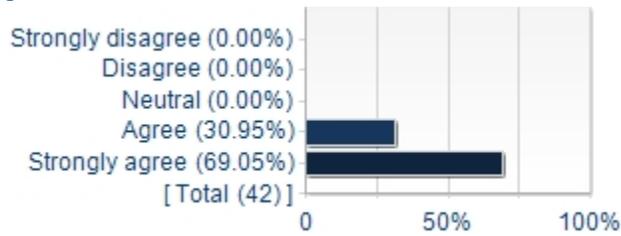
1. The instructor stimulated my thinking.



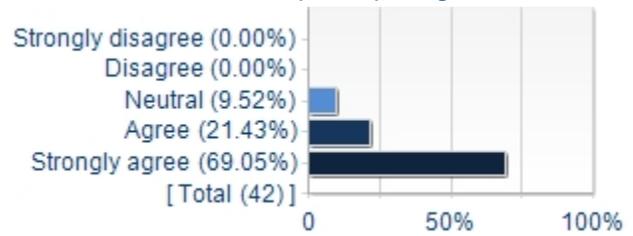
2. The instructor was enthusiastic about teaching the course.



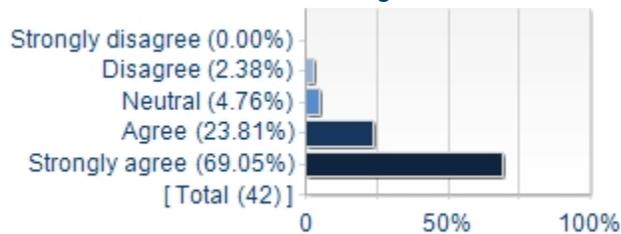
3. The instructor presented the course in an organized manner.



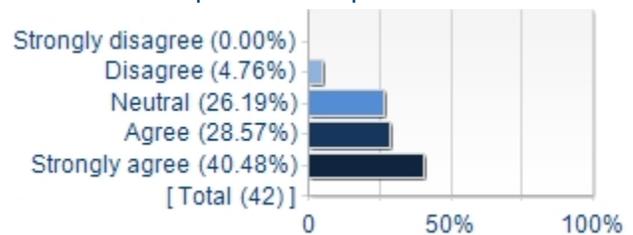
4. The instructor maintained an environment where students felt comfortable participating.



5. The instructor maintained an environment where students felt comfortable seeking assistance.

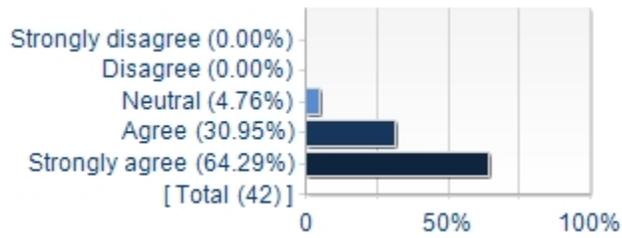


6. The instructor provided helpful feedback.

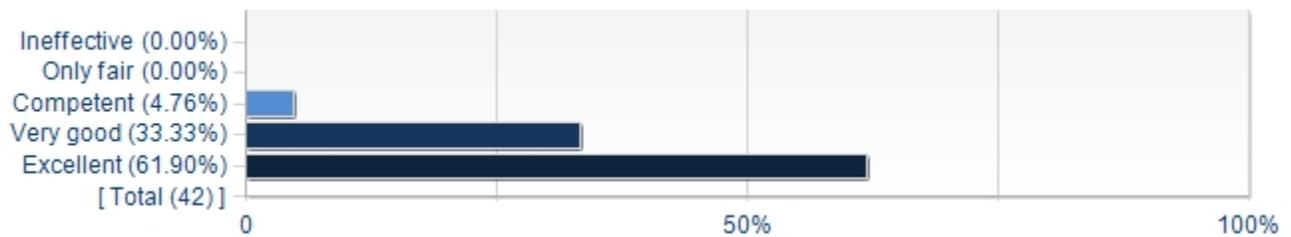


## Instructor Evaluation: Detailed Results (continued)

7. Assignments contributed to my understanding of the subject.



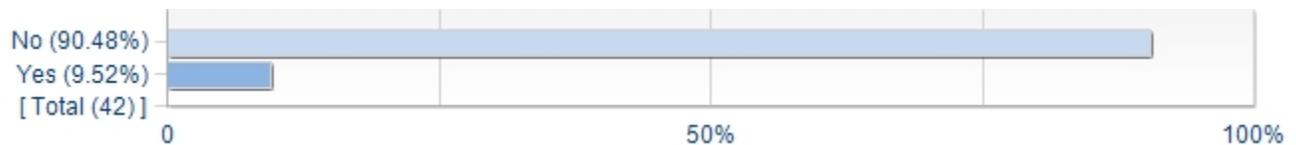
## Instructor's overall teaching effectiveness:



## Course Summary of Results

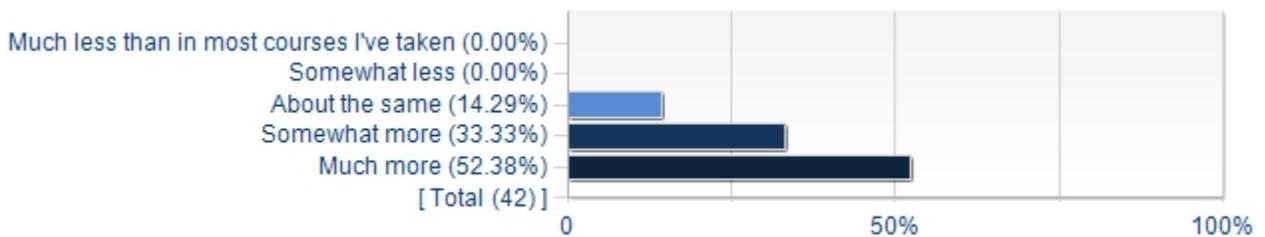
Question	Results		
	Mean	Response Count	Standard Deviation
Course objectives were presented.	4.66	41	0.53
Stated objectives agreed with what was taught.	4.68	41	0.52
Course made a worthwhile contribution to my professional development.	4.59	41	0.71
Assigned work was appropriate to credits.	4.65	40	0.58
Course content reflected recent developments in the field.	4.80	40	0.41
Course content duplicated that of other courses I have taken.	2.75	40	1.71
Would you recommend this course to other students?	4.55	38	0.69

### I am taking this course as an elective.



Options	Score	Count	Percentage
No	1	38	90.48%
Yes	2	4	9.52%

### Amount I learned in this course.



Options	Score	Count	Percentage
Much less than in most courses I've taken	1	0	0.00%
Somewhat less	2	0	0.00%
About the same	3	6	14.29%
Somewhat more	4	14	33.33%
Much more	5	22	52.38%

**Rate each of the following according to how much it contributed to your attainment of the course objectives.**

Competency Statistics	Value
Mean	2.93
Median	3.00
Mode	3
Standard Deviation	0.85
Standard Error (base on SD)	0.05
Population Standard Deviation	0.85
Standard Error (base on PSD)	0.05

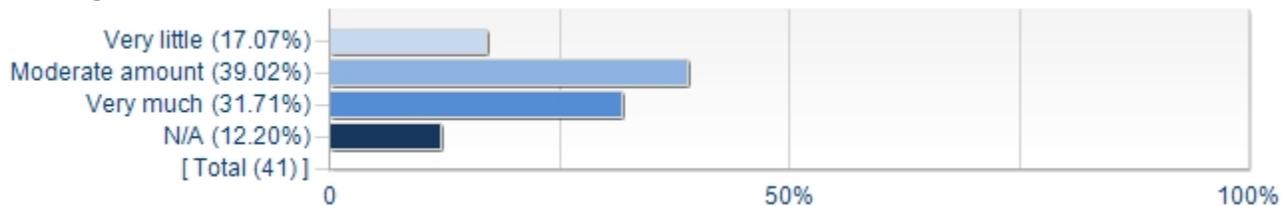
**1. Lectures**



**2. Discussions**

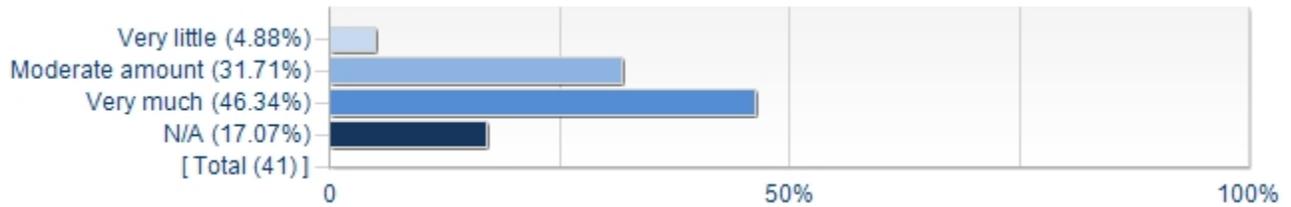


**3. Readings**

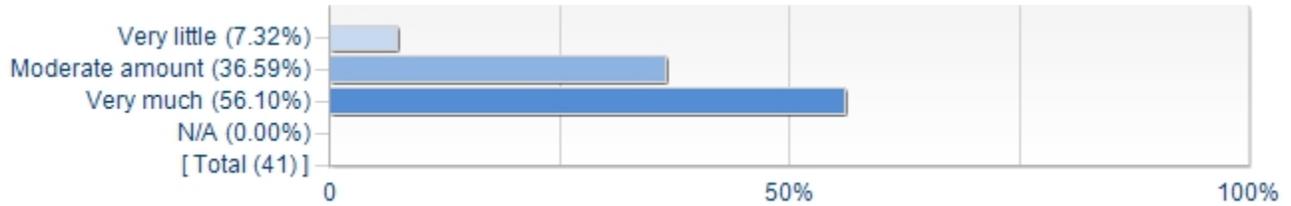


**Rate each of the following according to how much it contributed to your attainment of the course objectives. (continued)**

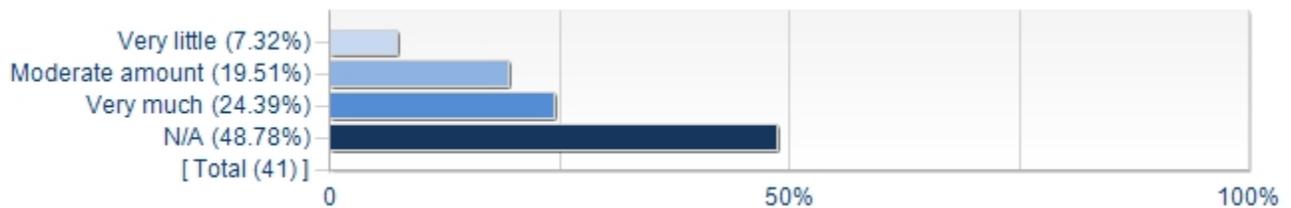
**4. Audio-visuals**



**5. Assignments (exams, projects, and written papers)**

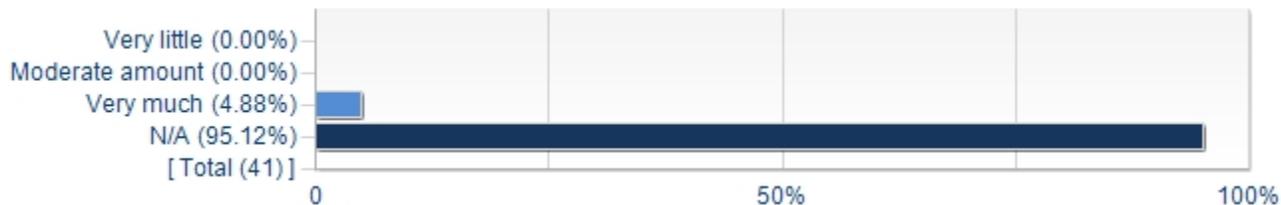


**6. Classroom activities**

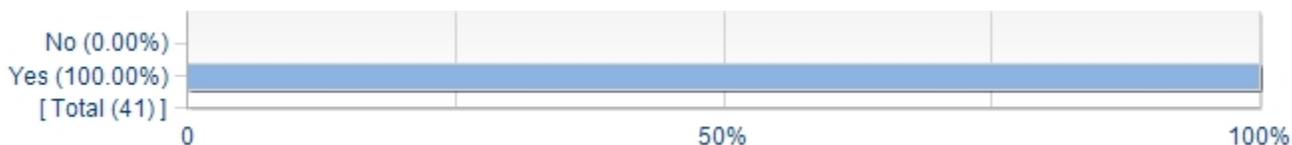


**Rate each of the following according to how much it contributed to your attainment of the course objectives. (continued)**

**7. Lab / Recitation**

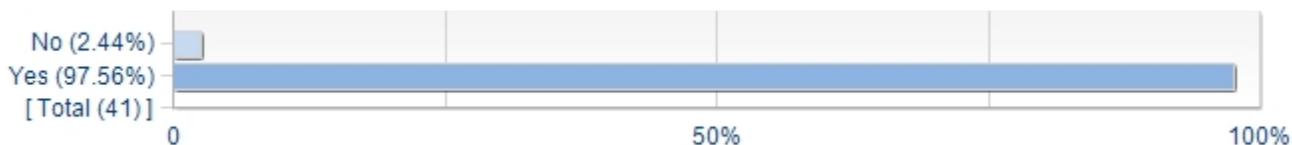


**Were there guest lecturers and/or multiple instructors in this course?**



Options	Score	Count	Percentage
No	1	0	0.00%
Yes	2	41	100.00%

**Were the guest lecturers and/or multiple instructors used effectively?**



Options	Score	Count	Percentage
No	1	1	2.44%
Yes	2	40	97.56%



## Copy of Instructor Report for Candace Kammerer

### PUBHLT 2016 - CAPSTONE:PROBLEM SOLVING IN PH - 1010 - Lecture

#### 2171 - Teaching Survey

Total Enrollment 12  
Responses Received 10  
Response Rate 83.33%

#### Subject Details

<b>Name</b>	PUBHLT 2016 - CAPSTONE:PROBLEM SOLVING IN PH - 1010 - Lecture
<b>CAMPUS_CD</b>	PIT
<b>SCHOOL_CD</b>	PUBHL
<b>DEPARTMENT_CD</b>	GSPH-DEAN
<b>CLASS_NBR</b>	25619
<b>COURSE_NUMBER</b>	2016
<b>SECTION_NUMBER</b>	1010
<b>TERM_NUMBER</b>	2171
<b>COURSE_TYPE</b>	Lecture
<b>CLASS_ATTRIBUTE</b>	
<b>ENROLLED_STUDENTS</b>	15
<b>First Name</b>	Candace
<b>Last Name</b>	Kammerer
<b>RANK_DESCR</b>	Associate Professor
<b>FIRST_GRAD_TERM_START_DATE</b>	
<b>DEPARTMENT</b>	
<b>TENURE</b>	T

#### Report Comments

Table of Contents:

Instructor and Course Evaluation

- Overall Summary of Results
- Detailed Results

Student Self Report (if applicable)

**Creation Date** Mon, Jan 30, 2017

# University Questions

## Instructor Summary of Results

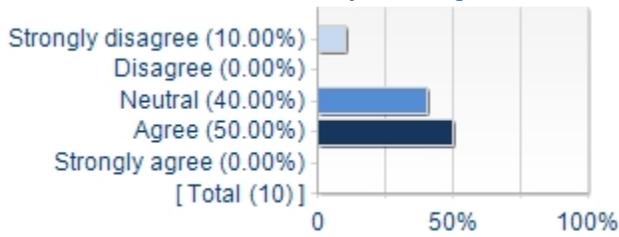
Question	Results		
	Mean	Response Count	Standard Deviation
The instructor stimulated my thinking.	3.30	10	0.95
The instructor was enthusiastic about teaching the course.	3.60	10	1.51
The instructor presented the course in an organized manner.	3.40	10	1.35
The instructor maintained an environment where students felt comfortable participating.	3.90	10	1.29
The instructor maintained an environment where students felt comfortable seeking assistance.	3.80	10	1.14
The instructor provided helpful feedback.	3.20	10	1.23
Assignments contributed to my understanding of the subject.	3.30	10	1.16

## Instructor's overall teaching effectiveness

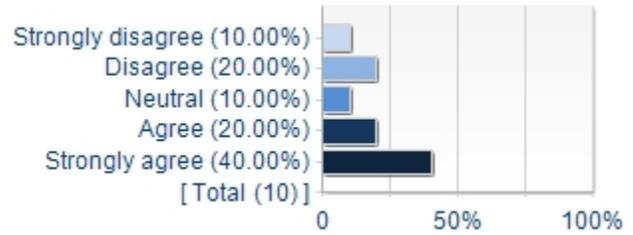
Question	Results		
	Mean	Response Count	Standard Deviation
Express your judgment of the instructor's overall teaching effectiveness.	3.10	10	1.20

## Instructor Evaluation: Detailed Results

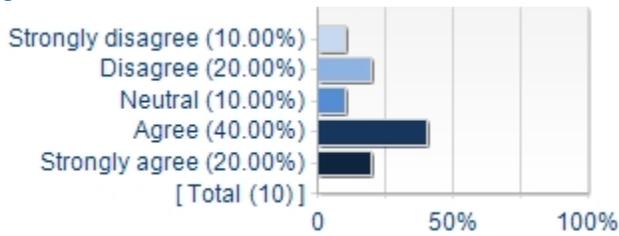
1. The instructor stimulated my thinking.



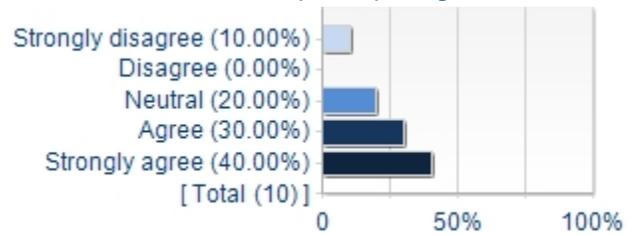
2. The instructor was enthusiastic about teaching the course.



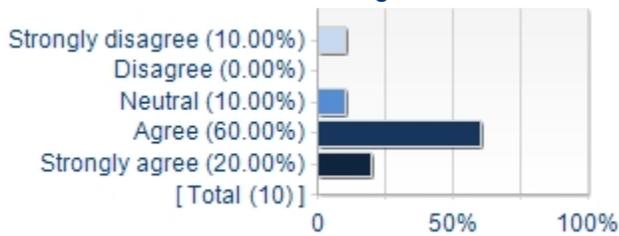
3. The instructor presented the course in an organized manner.



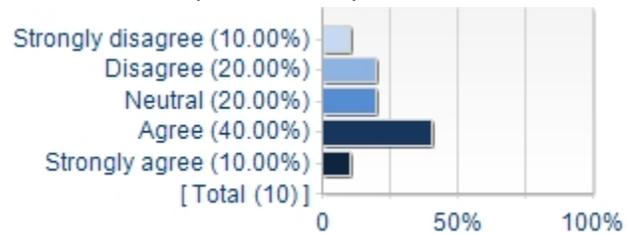
4. The instructor maintained an environment where students felt comfortable participating.



5. The instructor maintained an environment where students felt comfortable seeking assistance.

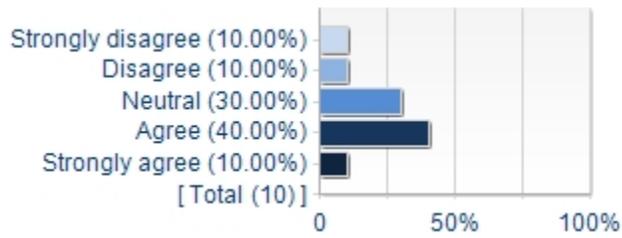


6. The instructor provided helpful feedback.

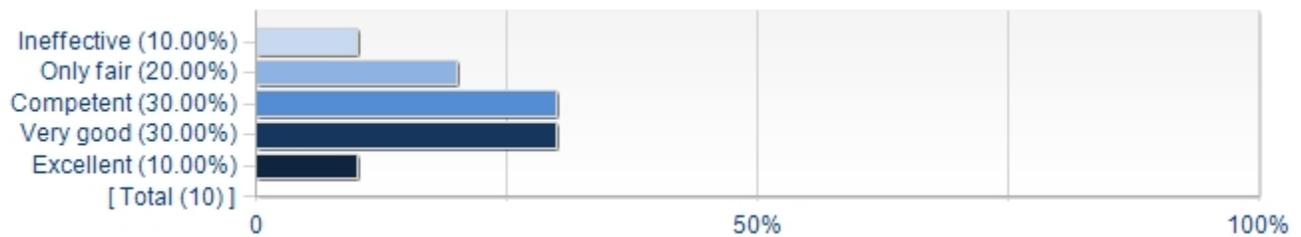


## Instructor Evaluation: Detailed Results (continued)

7. Assignments contributed to my understanding of the subject.



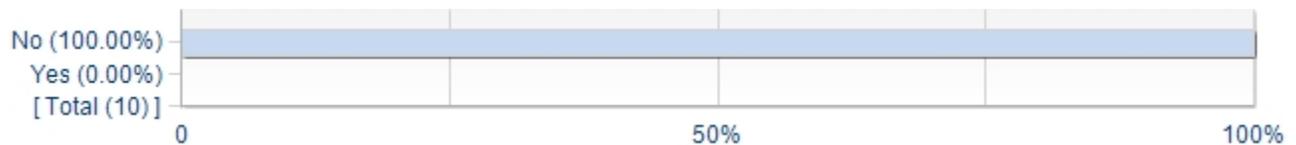
## Instructor's overall teaching effectiveness:



## Course Summary of Results

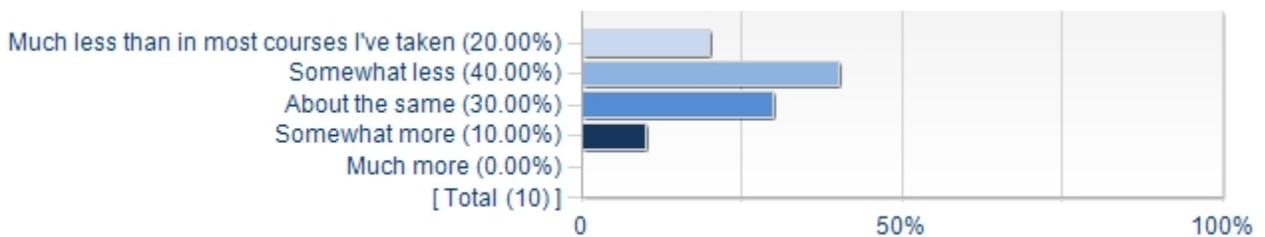
Question	Results		
	Mean	Response Count	Standard Deviation
Course objectives were presented.	3.30	10	1.16
Stated objectives agreed with what was taught.	3.50	10	1.08
Course made a worthwhile contribution to my professional development.	3.00	10	1.15
Assigned work was appropriate to credits.	3.60	10	1.17
Course content reflected recent developments in the field.	3.40	10	1.26
Course content duplicated that of other courses I have taken.	3.50	10	1.18
Would you recommend this course to other students?	2.60	10	1.35

### I am taking this course as an elective.



Options	Score	Count	Percentage
No	1	10	100.00%
Yes	2	0	0.00%

### Amount I learned in this course.

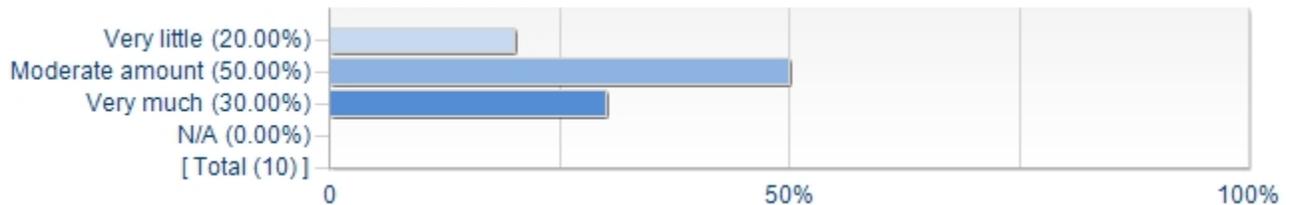


Options	Score	Count	Percentage
Much less than in most courses I've taken	1	2	20.00%
Somewhat less	2	4	40.00%
About the same	3	3	30.00%
Somewhat more	4	1	10.00%
Much more	5	0	0.00%

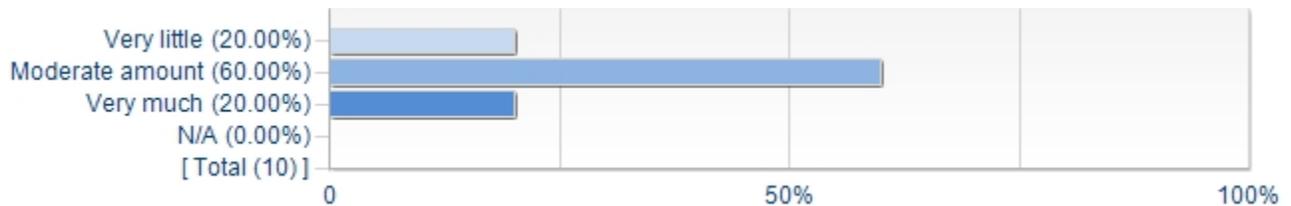
**Rate each of the following according to how much it contributed to your attainment of the course objectives.**

Competency Statistics	Value
Mean	2.37
Median	2.00
Mode	2
Standard Deviation	0.94
Standard Error (base on SD)	0.11
Population Standard Deviation	0.93
Standard Error (base on PSD)	0.11

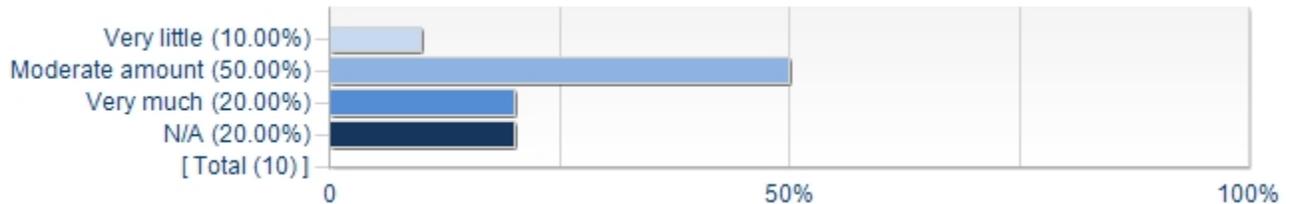
**1. Lectures**



**2. Discussions**

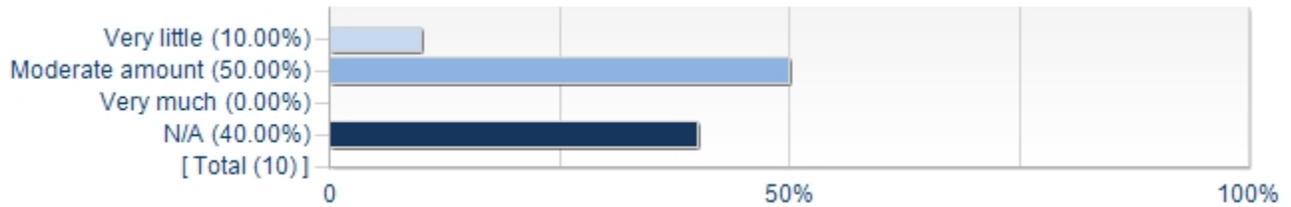


**3. Readings**

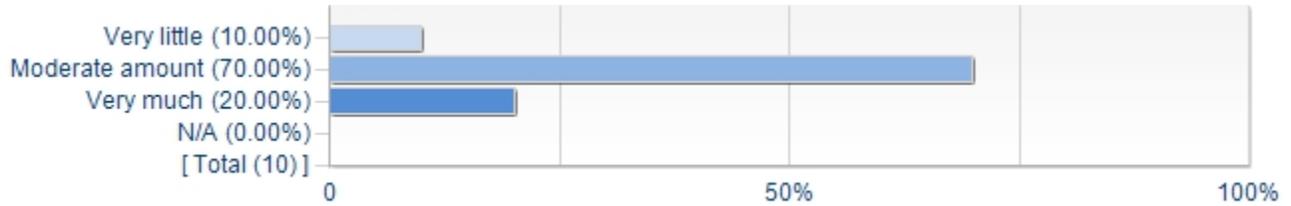


**Rate each of the following according to how much it contributed to your attainment of the course objectives. (continued)**

4. Audio-visuals



5. Assignments (exams, projects, and written papers)



6. Classroom activities

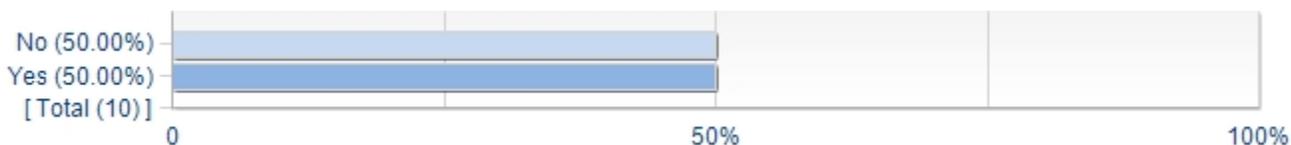


**Rate each of the following according to how much it contributed to your attainment of the course objectives. (continued)**

**7. Lab / Recitation**

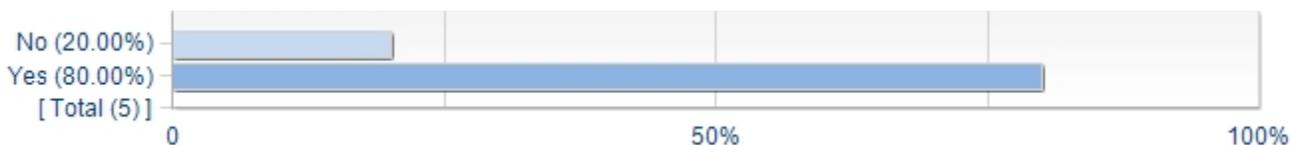


**Were there guest lecturers and/or multiple instructors in this course?**



Options	Score	Count	Percentage
No	1	5	50.00%
Yes	2	5	50.00%

**Were the guest lecturers and/or multiple instructors used effectively?**



Options	Score	Count	Percentage
No	1	1	20.00%
Yes	2	4	80.00%



## Copy of Instructor Report for Candace Kammerer

### PUBHLT 2016 - CAPSTONE:PROBLEM SOLVING IN PH - 1020 - Lecture

#### 2171 - Teaching Survey

Total Enrollment 25  
Responses Received 13  
Response Rate 52.00%

#### Subject Details

<b>Name</b>	PUBHLT 2016 - CAPSTONE:PROBLEM SOLVING IN PH - 1020 - Lecture
<b>CAMPUS_CD</b>	PIT
<b>SCHOOL_CD</b>	PUBHL
<b>DEPARTMENT_CD</b>	GSPH-DEAN
<b>CLASS_NBR</b>	14499
<b>COURSE_NUMBER</b>	2016
<b>SECTION_NUMBER</b>	1020
<b>TERM_NUMBER</b>	2171
<b>COURSE_TYPE</b>	Lecture
<b>CLASS_ATTRIBUTE</b>	
<b>ENROLLED_STUDENTS</b>	40
<b>First Name</b>	Candace
<b>Last Name</b>	Kammerer
<b>RANK_DESCR</b>	Associate Professor
<b>FIRST_GRAD_TERM_START_DATE</b>	
<b>DEPARTMENT</b>	
<b>TENURE</b>	T

#### Report Comments

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Instructor and Course Evaluation

- Overall Summary of Results
- Detailed Results

Student Self Report (if applicable)

**Creation Date** Mon, Jan 30, 2017

# University Questions

## Instructor Summary of Results

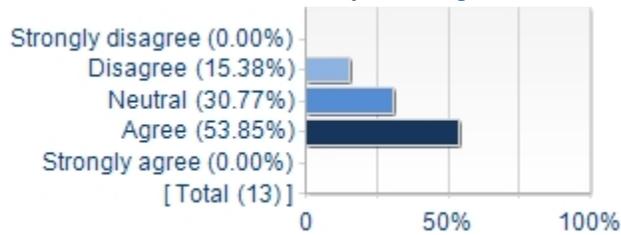
Question	Results		
	Mean	Response Count	Standard Deviation
The instructor stimulated my thinking.	3.38	13	0.77
The instructor was enthusiastic about teaching the course.	4.38	13	0.65
The instructor presented the course in an organized manner.	3.62	13	0.87
The instructor maintained an environment where students felt comfortable participating.	4.38	13	0.65
The instructor maintained an environment where students felt comfortable seeking assistance.	4.38	13	0.51
The instructor provided helpful feedback.	3.85	13	0.99
Assignments contributed to my understanding of the subject.	3.54	13	1.20

## Instructor's overall teaching effectiveness

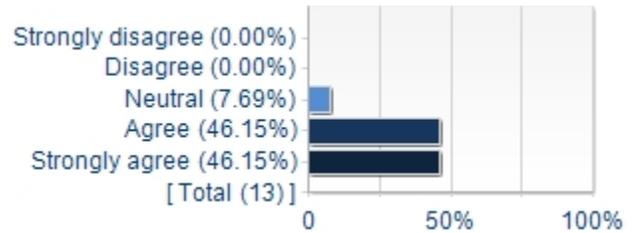
Question	Results		
	Mean	Response Count	Standard Deviation
Express your judgment of the instructor's overall teaching effectiveness.	3.62	13	0.87

## Instructor Evaluation: Detailed Results

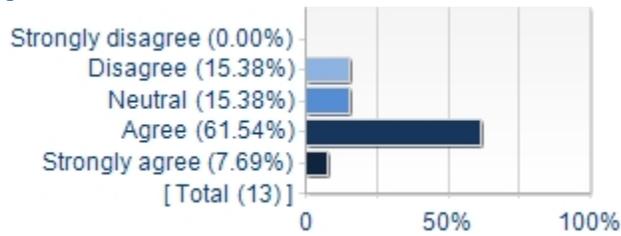
1. The instructor stimulated my thinking.



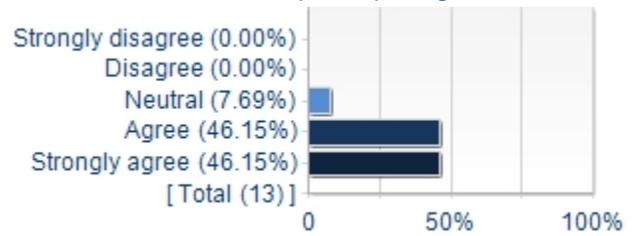
2. The instructor was enthusiastic about teaching the course.



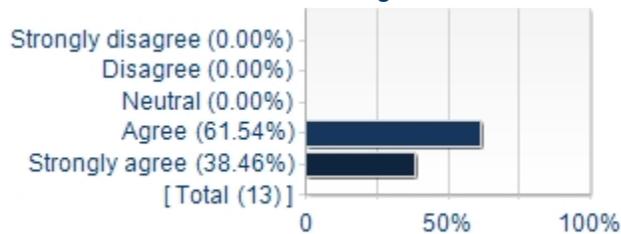
3. The instructor presented the course in an organized manner.



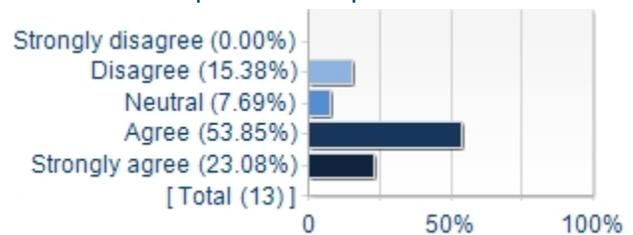
4. The instructor maintained an environment where students felt comfortable participating.



5. The instructor maintained an environment where students felt comfortable seeking assistance.

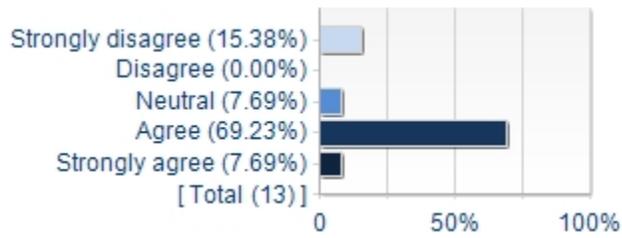


6. The instructor provided helpful feedback.

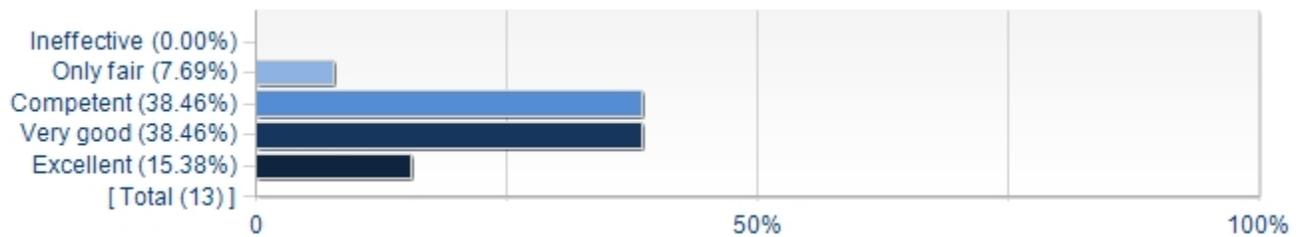


## Instructor Evaluation: Detailed Results (continued)

7. Assignments contributed to my understanding of the subject.



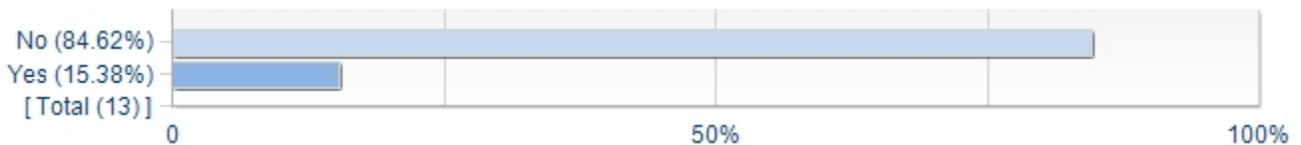
## Instructor's overall teaching effectiveness:



## Course Summary of Results

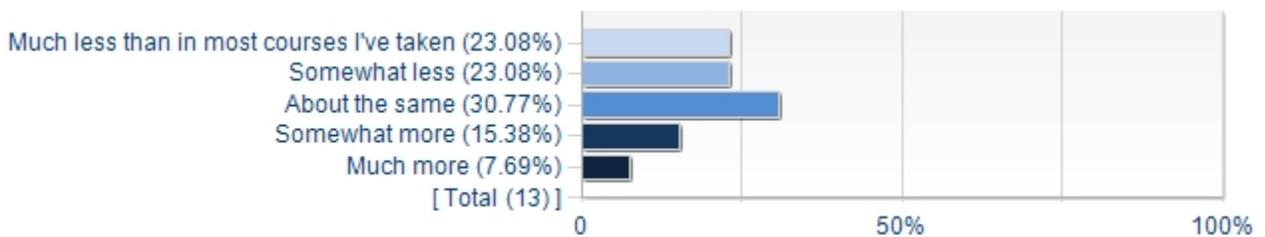
Question	Results		
	Mean	Response Count	Standard Deviation
Course objectives were presented.	3.69	13	0.95
Stated objectives agreed with what was taught.	3.77	13	0.60
Course made a worthwhile contribution to my professional development.	2.85	13	1.41
Assigned work was appropriate to credits.	3.31	13	1.44
Course content reflected recent developments in the field.	3.38	13	1.12
Course content duplicated that of other courses I have taken.	3.77	13	1.24
Would you recommend this course to other students?	2.92	13	1.66

### I am taking this course as an elective.



Options	Score	Count	Percentage
No	1	11	84.62%
Yes	2	2	15.38%

### Amount I learned in this course.

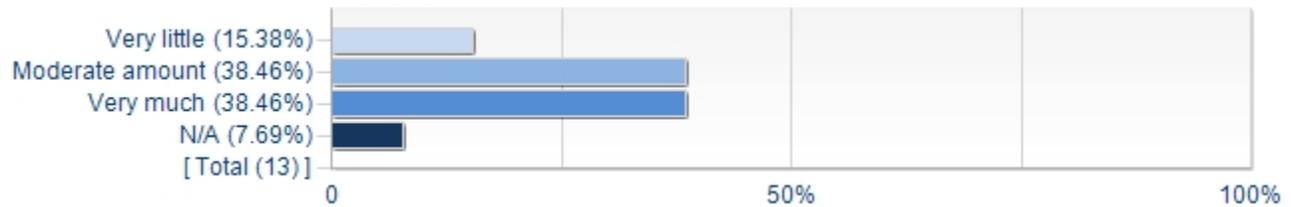


Options	Score	Count	Percentage
Much less than in most courses I've taken	1	3	23.08%
Somewhat less	2	3	23.08%
About the same	3	4	30.77%
Somewhat more	4	2	15.38%
Much more	5	1	7.69%

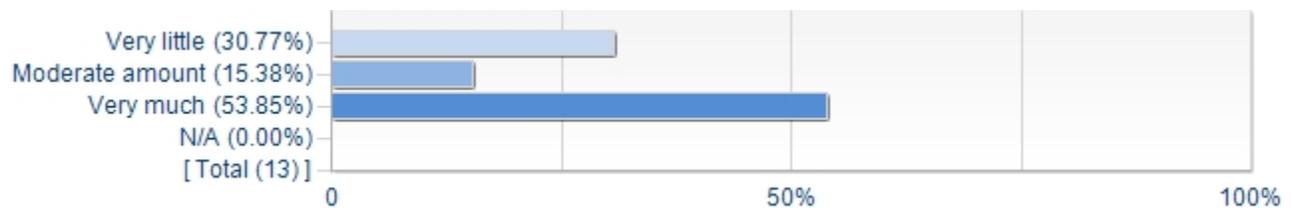
**Rate each of the following according to how much it contributed to your attainment of the course objectives.**

Competency Statistics	Value
Mean	2.48
Median	2.00
Mode	2
Standard Deviation	0.98
Standard Error (base on SD)	0.10
Population Standard Deviation	0.98
Standard Error (base on PSD)	0.10

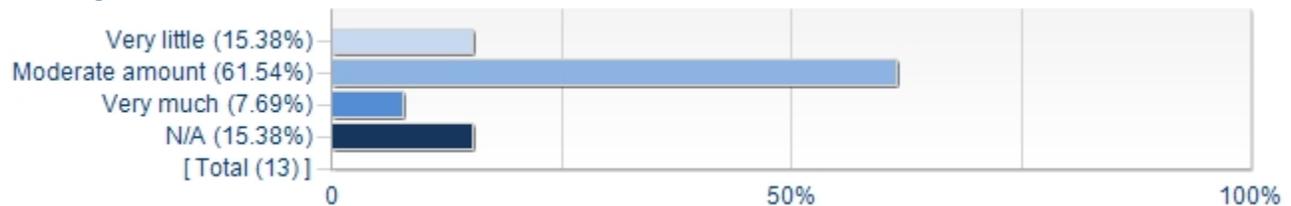
**1. Lectures**



**2. Discussions**

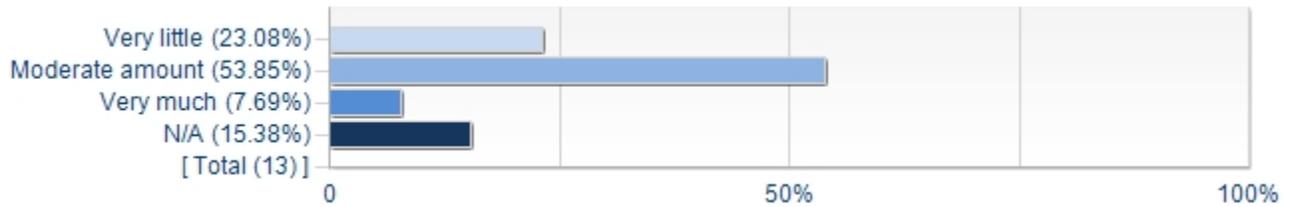


**3. Readings**

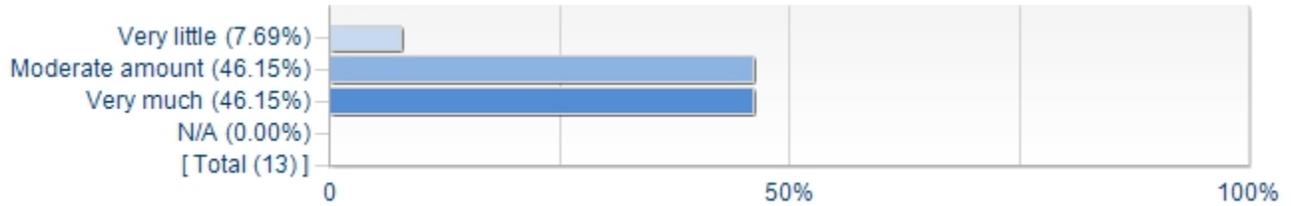


**Rate each of the following according to how much it contributed to your attainment of the course objectives. (continued)**

4. Audio-visuals



5. Assignments (exams, projects, and written papers)



6. Classroom activities

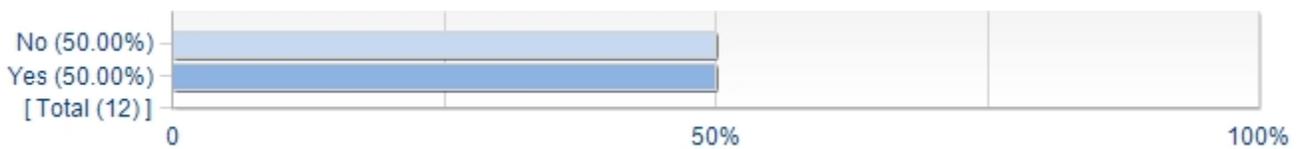


**Rate each of the following according to how much it contributed to your attainment of the course objectives. (continued)**

**7. Lab / Recitation**

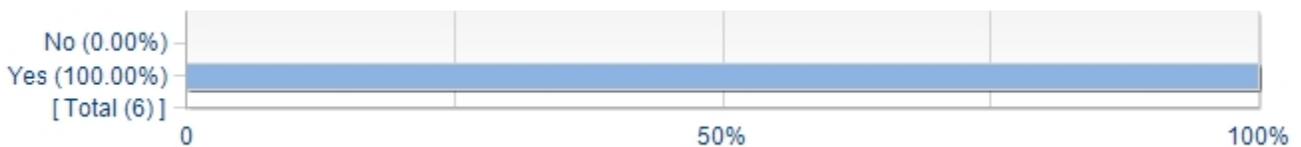


**Were there guest lecturers and/or multiple instructors in this course?**



Options	Score	Count	Percentage
No	1	6	50.00%
Yes	2	6	50.00%

**Were the guest lecturers and/or multiple instructors used effectively?**



Options	Score	Count	Percentage
No	1	0	0.00%
Yes	2	6	100.00%



## Copy of Instructor Report for Jeremy Martinson

### PUBHLT 2015 - PUBLIC HEALTH BIOLOGY - 1030 - Lecture

#### 2171 - Teaching Survey

Total Enrollment 67  
Responses Received 40  
Response Rate 59.70%

#### Subject Details

<b>Name</b>	PUBHLT 2015 - PUBLIC HEALTH BIOLOGY - 1030 - Lecture
<b>CAMPUS_CD</b>	PIT
<b>SCHOOL_CD</b>	PUBHL
<b>DEPARTMENT_CD</b>	GSPH-DEAN
<b>CLASS_NBR</b>	14496
<b>COURSE_NUMBER</b>	2015
<b>SECTION_NUMBER</b>	1030
<b>TERM_NUMBER</b>	2171
<b>COURSE_TYPE</b>	Lecture
<b>CLASS_ATTRIBUTE</b>	
<b>ENROLLED_STUDENTS</b>	68
<b>First Name</b>	Jeremy
<b>Last Name</b>	Martinson
<b>RANK_DESCR</b>	Assistant Professor
<b>FIRST_GRAD_TERM_START_DATE</b>	
<b>DEPARTMENT</b>	
<b>TENURE</b>	NT

#### Report Comments

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Instructor and Course Evaluation

- Overall Summary of Results
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Student Self Report (if applicable)

**Creation Date** Mon, Jan 30, 2017

# University Questions

## Instructor Summary of Results

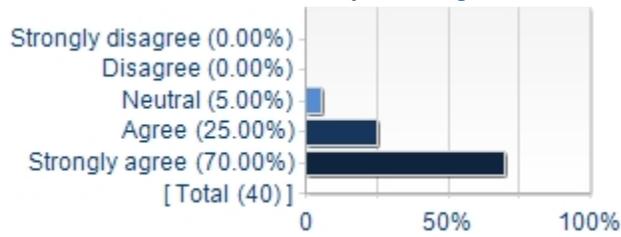
Question	Results		
	Mean	Response Count	Standard Deviation
The instructor stimulated my thinking.	4.65	40	0.58
The instructor was enthusiastic about teaching the course.	4.85	40	0.36
The instructor presented the course in an organized manner.	4.85	40	0.36
The instructor maintained an environment where students felt comfortable participating.	4.65	40	0.62
The instructor maintained an environment where students felt comfortable seeking assistance.	4.63	40	0.63
The instructor provided helpful feedback.	4.35	40	0.77
Assignments contributed to my understanding of the subject.	4.48	40	0.68

## Instructor's overall teaching effectiveness

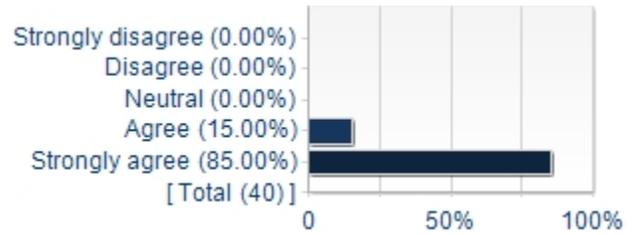
Question	Results		
	Mean	Response Count	Standard Deviation
Express your judgment of the instructor's overall teaching effectiveness.	4.65	40	0.53

## Instructor Evaluation: Detailed Results

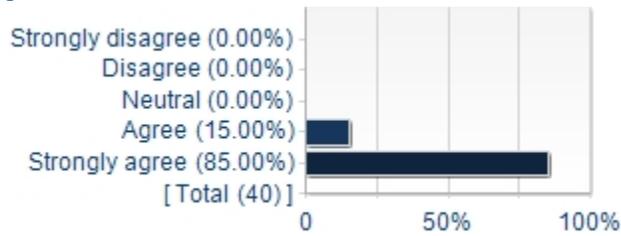
1. The instructor stimulated my thinking.



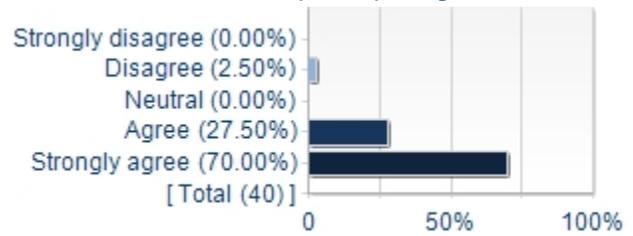
2. The instructor was enthusiastic about teaching the course.



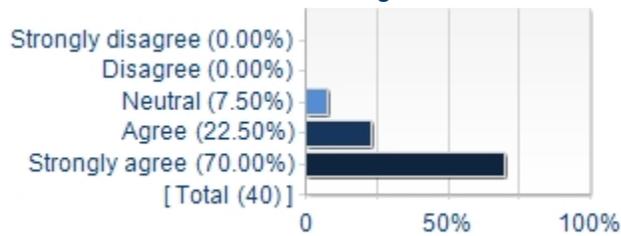
3. The instructor presented the course in an organized manner.



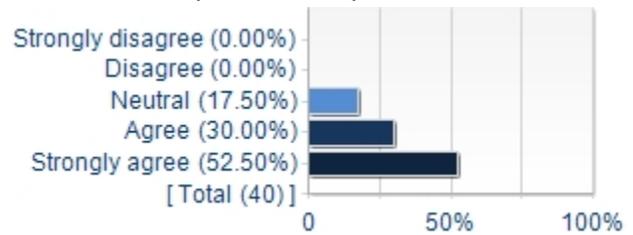
4. The instructor maintained an environment where students felt comfortable participating.



5. The instructor maintained an environment where students felt comfortable seeking assistance.

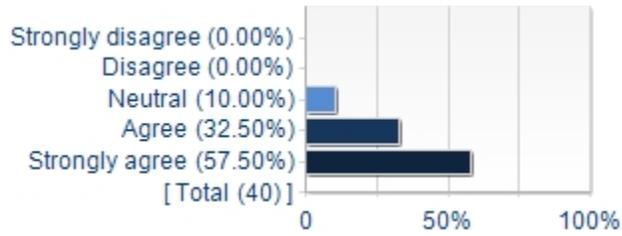


6. The instructor provided helpful feedback.

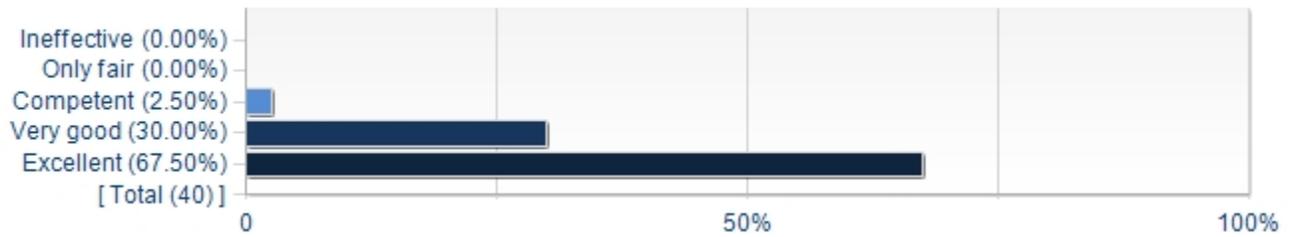


## Instructor Evaluation: Detailed Results (continued)

7. Assignments contributed to my understanding of the subject.



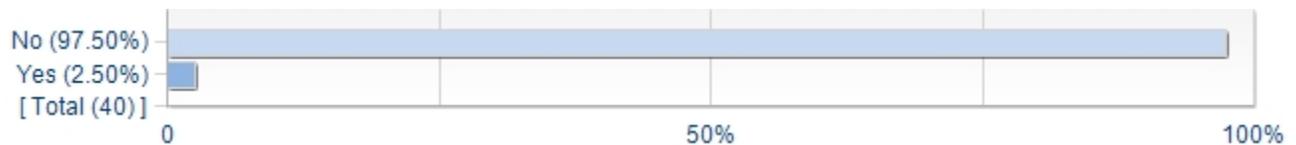
## Instructor's overall teaching effectiveness:



## Course Summary of Results

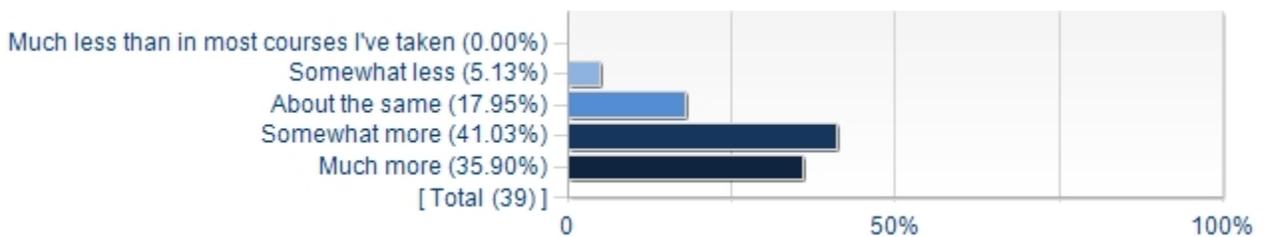
Question	Results		
	Mean	Response Count	Standard Deviation
Course objectives were presented.	4.48	40	0.72
Stated objectives agreed with what was taught.	4.58	40	0.59
Course made a worthwhile contribution to my professional development.	4.40	40	0.71
Assigned work was appropriate to credits.	4.63	40	0.54
Course content reflected recent developments in the field.	4.73	40	0.45
Course content duplicated that of other courses I have taken.	3.05	39	1.52
Would you recommend this course to other students?	4.53	40	0.72

### I am taking this course as an elective.



Options	Score	Count	Percentage
No	1	39	97.50%
Yes	2	1	2.50%

### Amount I learned in this course.



Options	Score	Count	Percentage
Much less than in most courses I've taken	1	0	0.00%
Somewhat less	2	2	5.13%
About the same	3	7	17.95%
Somewhat more	4	16	41.03%
Much more	5	14	35.90%

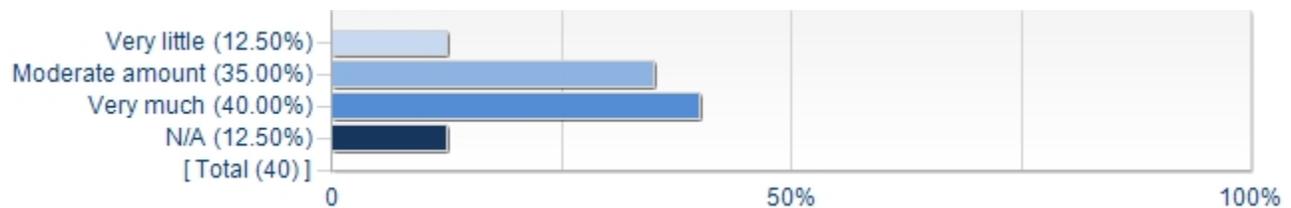
**Rate each of the following according to how much it contributed to your attainment of the course objectives.**

Competency Statistics	Value
Mean	2.92
Median	3.00
Mode	3
Standard Deviation	0.87
Standard Error (base on SD)	0.05
Population Standard Deviation	0.87
Standard Error (base on PSD)	0.05

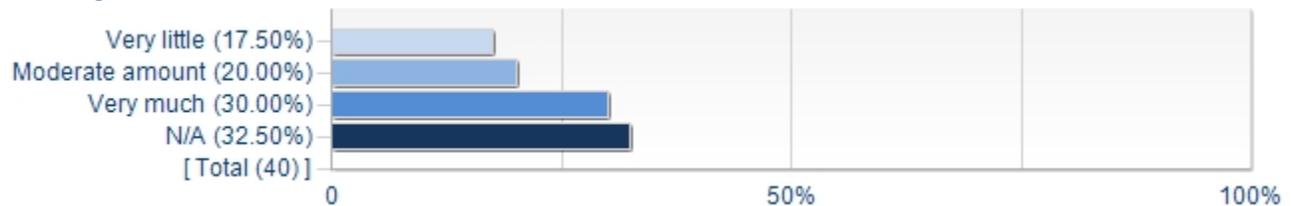
**1. Lectures**



**2. Discussions**

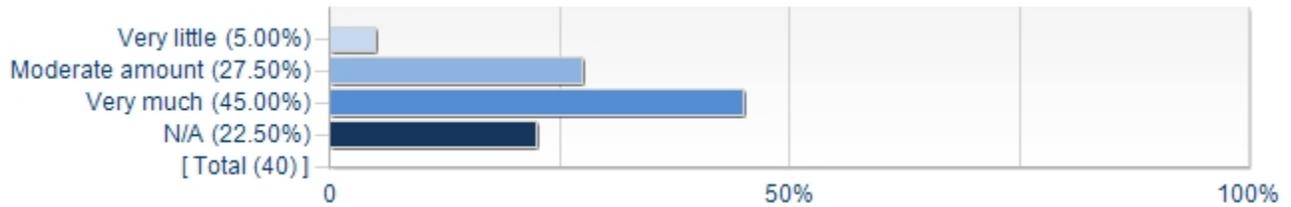


**3. Readings**

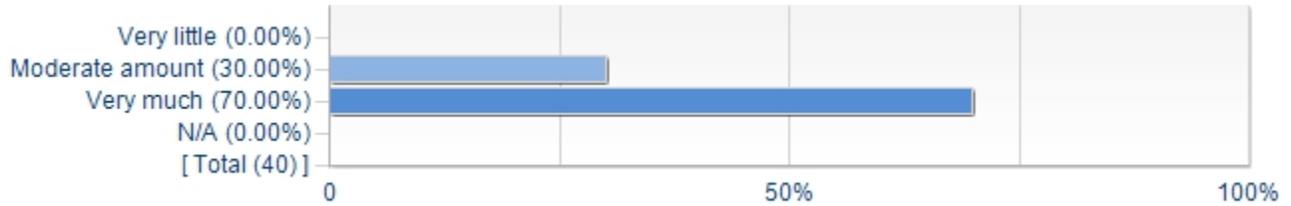


**Rate each of the following according to how much it contributed to your attainment of the course objectives. (continued)**

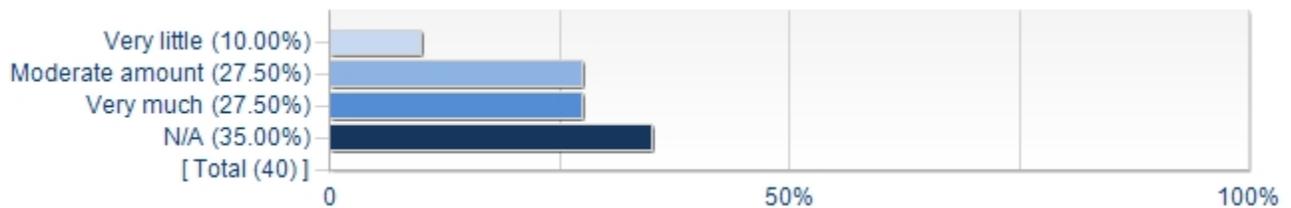
**4. Audio-visuals**



**5. Assignments (exams, projects, and written papers)**

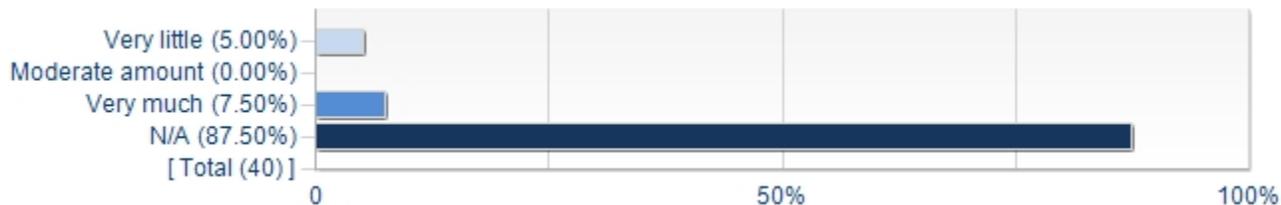


**6. Classroom activities**

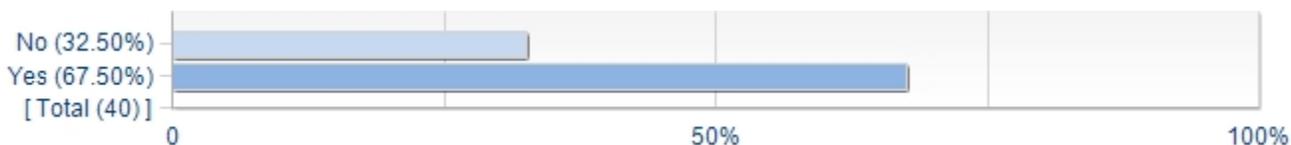


**Rate each of the following according to how much it contributed to your attainment of the course objectives. (continued)**

**7. Lab / Recitation**

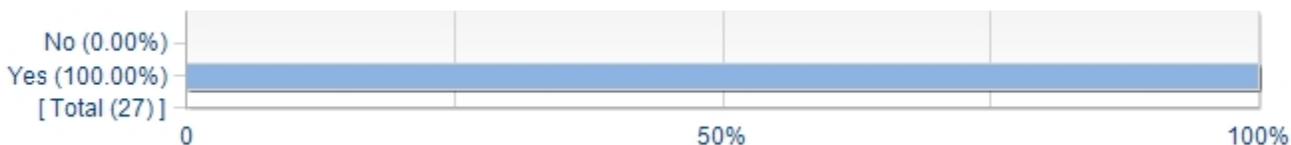


**Were there guest lecturers and/or multiple instructors in this course?**



Options	Score	Count	Percentage
No	1	13	32.50%
Yes	2	27	67.50%

**Were the guest lecturers and/or multiple instructors used effectively?**



Options	Score	Count	Percentage
No	1	0	0.00%
Yes	2	27	100.00%



## Copy of Instructor Report for Ryan Minster

### PUBHLT 2015 - PUBLIC HEALTH BIOLOGY - 1030 - Lecture

#### 2171 - Teaching Survey

Total Enrollment 67  
Responses Received 40  
Response Rate 59.70%

#### Subject Details

<b>Name</b>	PUBHLT 2015 - PUBLIC HEALTH BIOLOGY - 1030 - Lecture
<b>CAMPUS_CD</b>	PIT
<b>SCHOOL_CD</b>	PUBHL
<b>DEPARTMENT_CD</b>	GSPH-DEAN
<b>CLASS_NBR</b>	14496
<b>COURSE_NUMBER</b>	2015
<b>SECTION_NUMBER</b>	1030
<b>TERM_NUMBER</b>	2171
<b>COURSE_TYPE</b>	Lecture
<b>CLASS_ATTRIBUTE</b>	
<b>ENROLLED_STUDENTS</b>	68
<b>First Name</b>	Ryan
<b>Last Name</b>	Minster
<b>RANK_DESCR</b>	Assistant Professor
<b>FIRST_GRAD_TERM_START_DATE</b>	
<b>DEPARTMENT</b>	
<b>TENURE</b>	NT

#### Report Comments

Table of Contents:

Instructor and Course Evaluation

- Overall Summary of Results
- Detailed Results

Student Self Report (if applicable)

**Creation Date** Mon, Jan 30, 2017

# University Questions

## Instructor Summary of Results

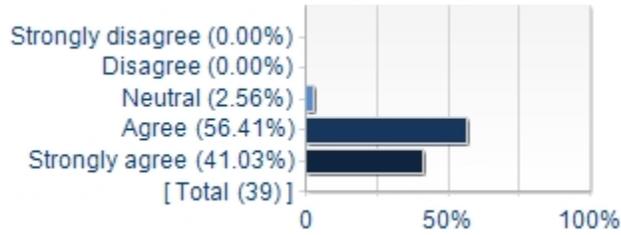
Question	Results		
	Mean	Response Count	Standard Deviation
The instructor stimulated my thinking.	4.38	39	0.54
The instructor was enthusiastic about teaching the course.	4.62	39	0.54
The instructor presented the course in an organized manner.	4.53	38	0.60
The instructor maintained an environment where students felt comfortable participating.	4.41	39	0.68
The instructor maintained an environment where students felt comfortable seeking assistance.	4.38	39	0.71
The instructor provided helpful feedback.	3.85	39	0.99
Assignments contributed to my understanding of the subject.	4.28	39	0.72

## Instructor's overall teaching effectiveness

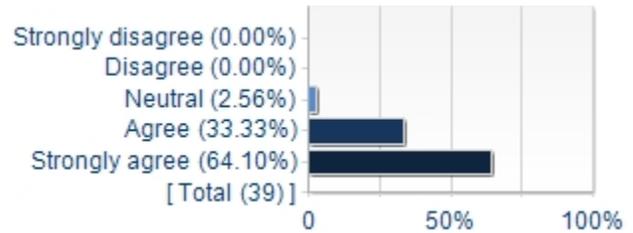
Question	Results		
	Mean	Response Count	Standard Deviation
Express your judgment of the instructor's overall teaching effectiveness.	4.29	38	0.65

## Instructor Evaluation: Detailed Results

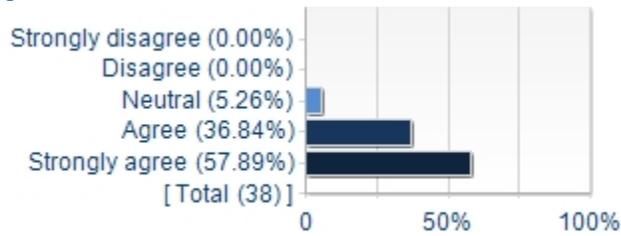
1. The instructor stimulated my thinking.



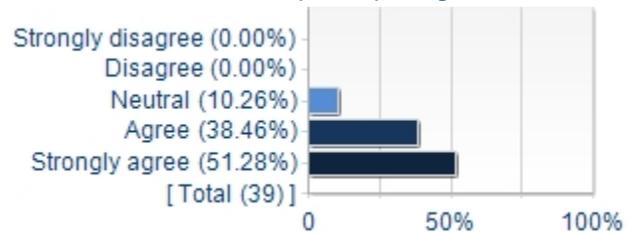
2. The instructor was enthusiastic about teaching the course.



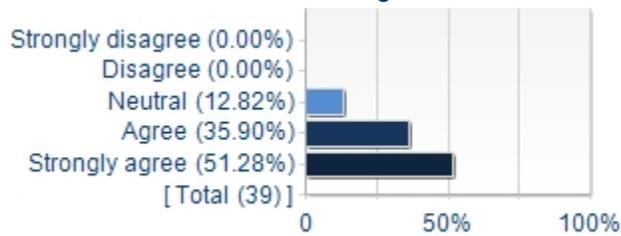
3. The instructor presented the course in an organized manner.



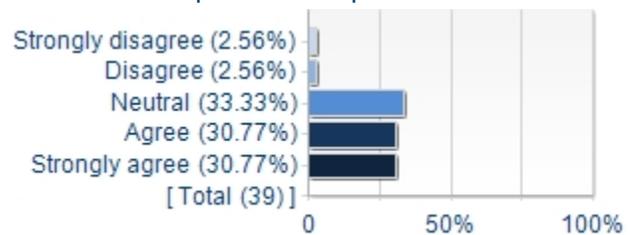
4. The instructor maintained an environment where students felt comfortable participating.



5. The instructor maintained an environment where students felt comfortable seeking assistance.

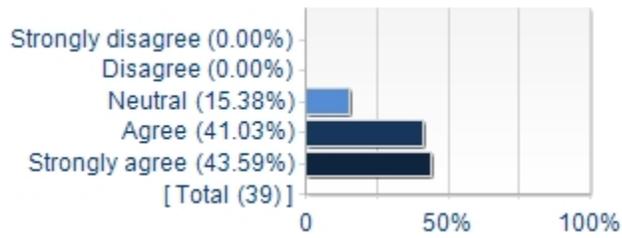


6. The instructor provided helpful feedback.

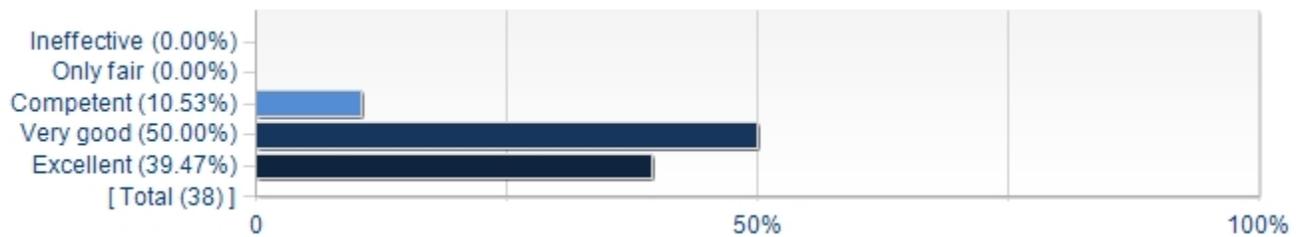


## Instructor Evaluation: Detailed Results (continued)

7. Assignments contributed to my understanding of the subject.



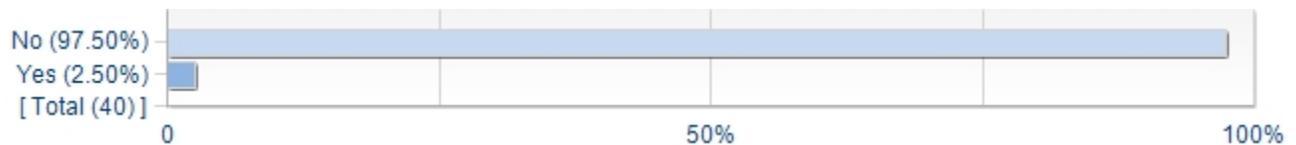
## Instructor's overall teaching effectiveness:



## Course Summary of Results

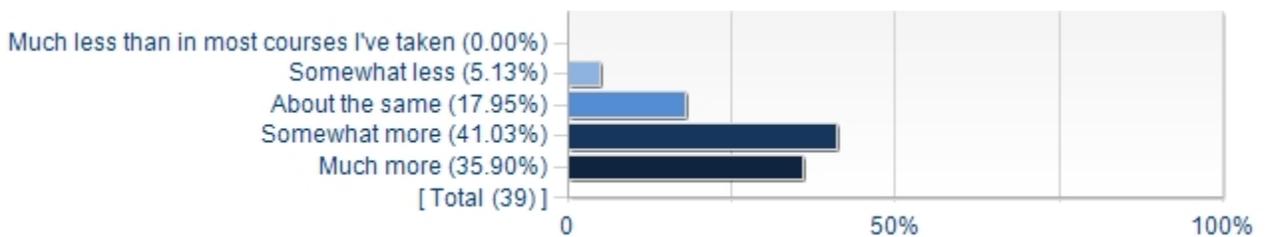
Question	Results		
	Mean	Response Count	Standard Deviation
Course objectives were presented.	4.48	40	0.72
Stated objectives agreed with what was taught.	4.58	40	0.59
Course made a worthwhile contribution to my professional development.	4.40	40	0.71
Assigned work was appropriate to credits.	4.63	40	0.54
Course content reflected recent developments in the field.	4.73	40	0.45
Course content duplicated that of other courses I have taken.	3.05	39	1.52
Would you recommend this course to other students?	4.53	40	0.72

### I am taking this course as an elective.



Options	Score	Count	Percentage
No	1	39	97.50%
Yes	2	1	2.50%

### Amount I learned in this course.



Options	Score	Count	Percentage
Much less than in most courses I've taken	1	0	0.00%
Somewhat less	2	2	5.13%
About the same	3	7	17.95%
Somewhat more	4	16	41.03%
Much more	5	14	35.90%

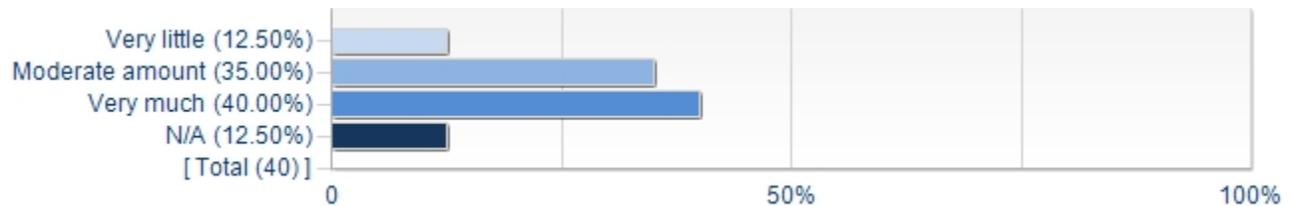
**Rate each of the following according to how much it contributed to your attainment of the course objectives.**

Competency Statistics	Value
Mean	2.92
Median	3.00
Mode	3
Standard Deviation	0.87
Standard Error (base on SD)	0.05
Population Standard Deviation	0.87
Standard Error (base on PSD)	0.05

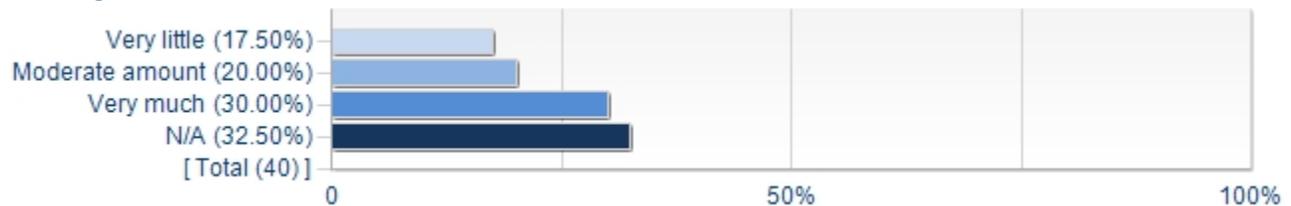
**1. Lectures**



**2. Discussions**

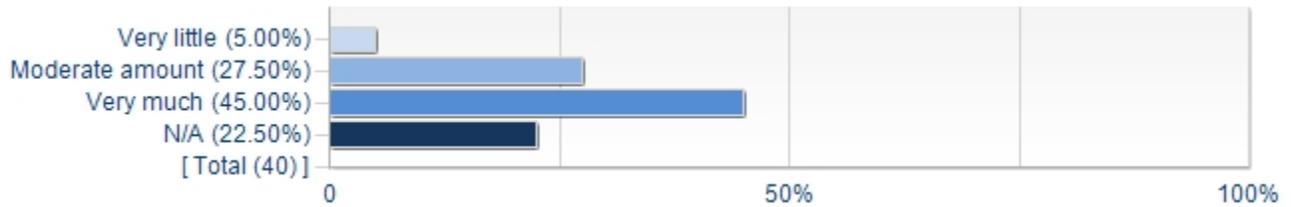


**3. Readings**

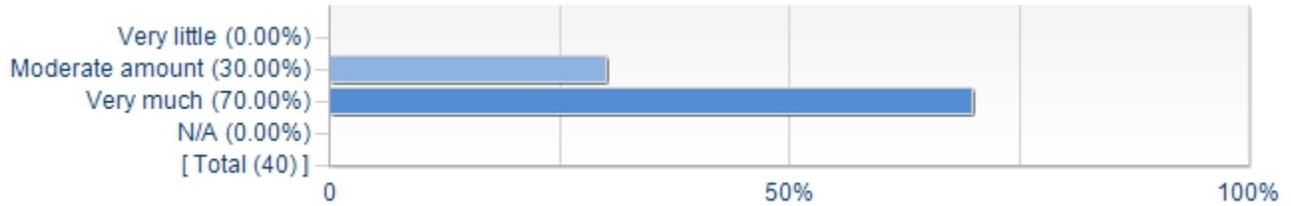


**Rate each of the following according to how much it contributed to your attainment of the course objectives. (continued)**

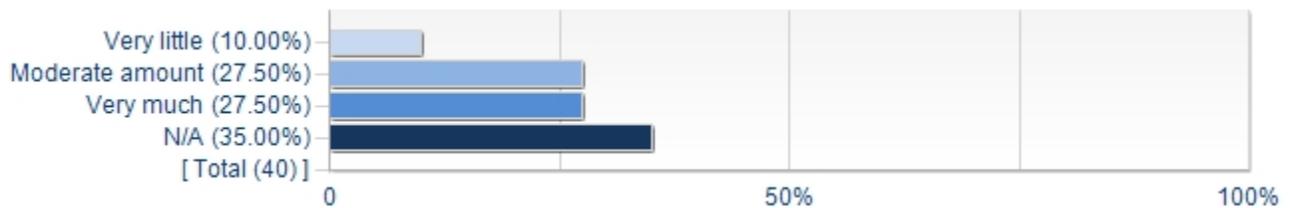
4. Audio-visuals



5. Assignments (exams, projects, and written papers)

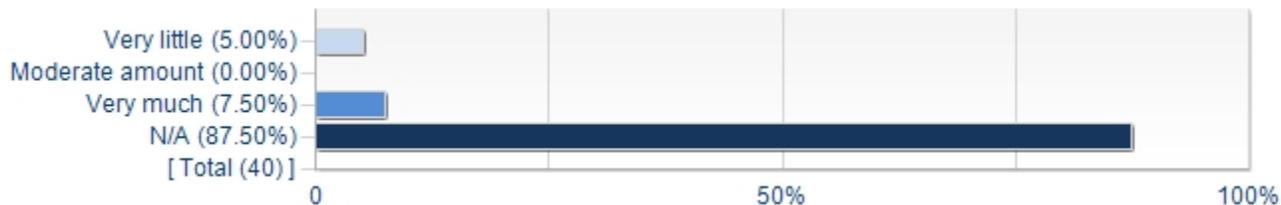


6. Classroom activities

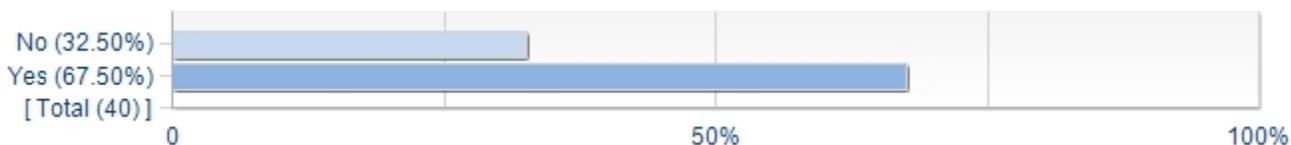


**Rate each of the following according to how much it contributed to your attainment of the course objectives. (continued)**

**7. Lab / Recitation**



**Were there guest lecturers and/or multiple instructors in this course?**



Options	Score	Count	Percentage
No	1	13	32.50%
Yes	2	27	67.50%

**Were the guest lecturers and/or multiple instructors used effectively?**



Options	Score	Count	Percentage
No	1	0	0.00%
Yes	2	27	100.00%



## Copy of Instructor Report for Steven Fine

### PUBHLT 2031 - TECHNQS FOR PROF WRITING - 1010 - Lecture

#### 2171 - Teaching Survey

Total Enrollment 10  
Responses Received 3  
Response Rate 30.0%

#### Subject Details

<b>Name</b>	PUBHLT 2031 - TECHNQS FOR PROF WRITING - 1010 - Lecture
<b>CAMPUS_CD</b>	PIT
<b>SCHOOL_CD</b>	PUBHL
<b>DEPARTMENT_CD</b>	GSPH-DEAN
<b>CLASS_NBR</b>	30376
<b>COURSE_NUMBER</b>	2031
<b>SECTION_NUMBER</b>	1010
<b>TERM_NUMBER</b>	2171
<b>COURSE_TYPE</b>	Lecture
<b>CLASS_ATTRIBUTE</b>	
<b>ENROLLED_STUDENTS</b>	11
<b>First Name</b>	Steven
<b>Last Name</b>	Fine
<b>RANK_DESCR</b>	Instructor
<b>FIRST_GRAD_TERM_START_DATE</b>	
<b>DEPARTMENT</b>	
<b>TENURE</b>	NT

#### Report Comments

Table of Contents:

Instructor and Course Evaluation

- Overall Summary of Results
- Detailed Results

Student Self Report (if applicable)

**Creation Date** Mon, Jan 30, 2017

# University Questions

## Instructor Summary of Results

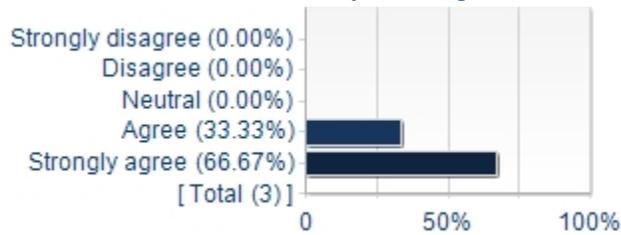
Question	Results		
	Mean	Response Count	Standard Deviation
The instructor stimulated my thinking.	4.67	3	0.58
The instructor was enthusiastic about teaching the course.	5.00	3	0.00
The instructor presented the course in an organized manner.	3.67	3	0.58
The instructor maintained an environment where students felt comfortable participating.	4.67	3	0.58
The instructor maintained an environment where students felt comfortable seeking assistance.	5.00	3	0.00
The instructor provided helpful feedback.	4.33	3	0.58
Assignments contributed to my understanding of the subject.	4.00	3	1.00

## Instructor's overall teaching effectiveness

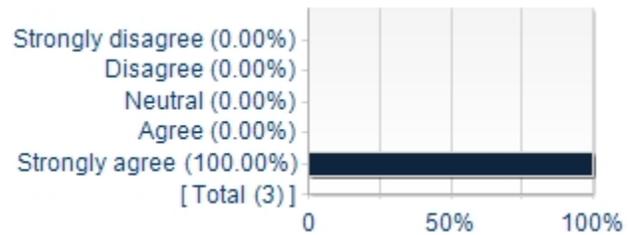
Question	Results		
	Mean	Response Count	Standard Deviation
Express your judgment of the instructor's overall teaching effectiveness.	4.00	3	0.00

## Instructor Evaluation: Detailed Results

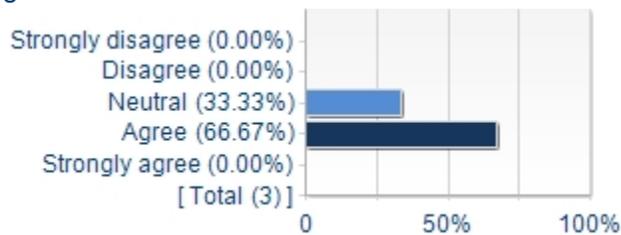
1. The instructor stimulated my thinking.



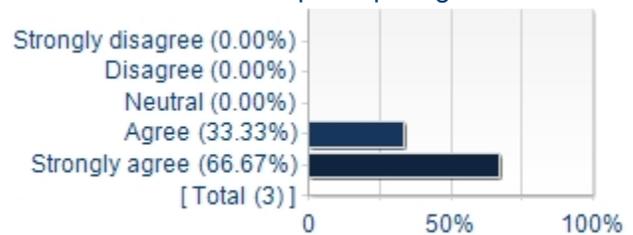
2. The instructor was enthusiastic about teaching the course.



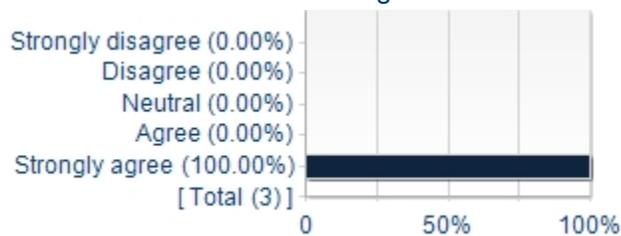
3. The instructor presented the course in an organized manner.



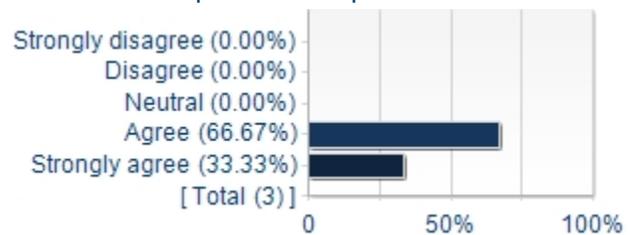
4. The instructor maintained an environment where students felt comfortable participating.



5. The instructor maintained an environment where students felt comfortable seeking assistance.

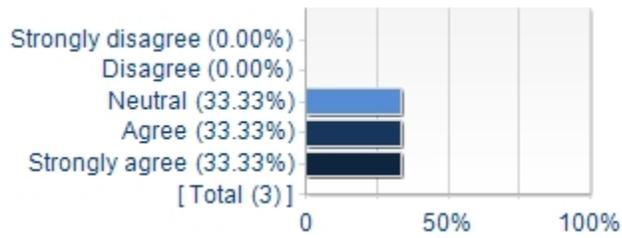


6. The instructor provided helpful feedback.

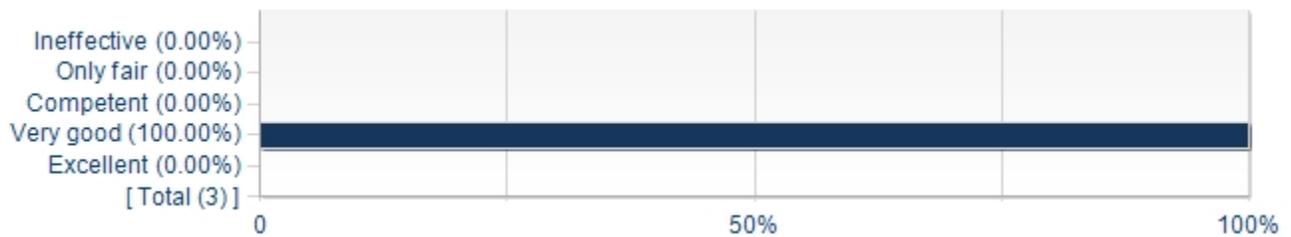


## Instructor Evaluation: Detailed Results (continued)

7. Assignments contributed to my understanding of the subject.



## Instructor's overall teaching effectiveness:



## Course Summary of Results

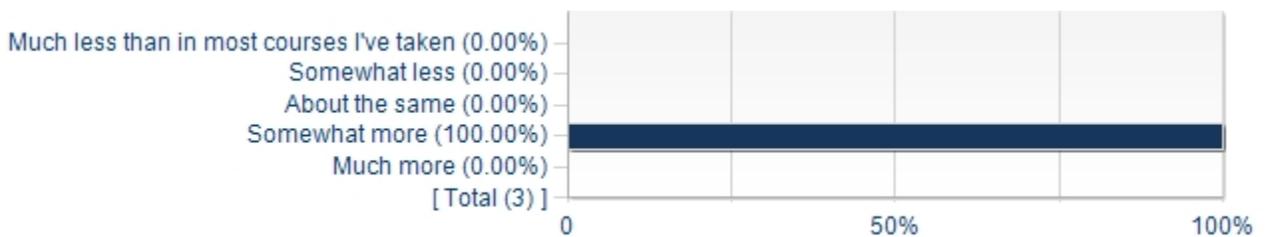
Question	Results		
	Mean	Response Count	Standard Deviation
Course objectives were presented.	4.00	3	0.00
Stated objectives agreed with what was taught.	4.00	3	0.00
Course made a worthwhile contribution to my professional development.	3.67	3	1.53
Assigned work was appropriate to credits.	2.33	3	0.58
Course content reflected recent developments in the field.	3.00	3	1.00
Course content duplicated that of other courses I have taken.	2.33	3	1.53
Would you recommend this course to other students?	3.33	3	1.15

### I am taking this course as an elective.



Options	Score	Count	Percentage
No	1	0	0.00%
Yes	2	3	100.00%

### Amount I learned in this course.

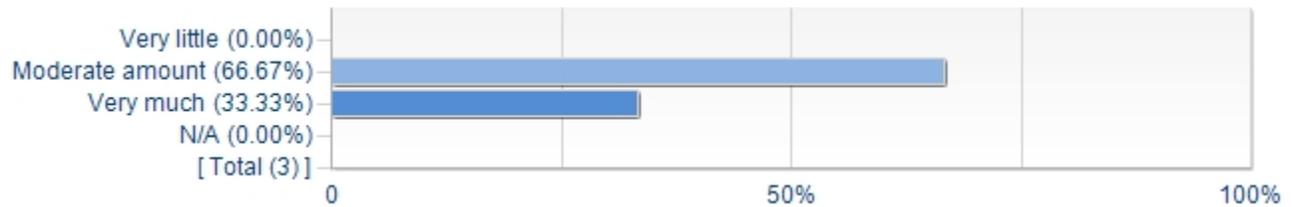


Options	Score	Count	Percentage
Much less than in most courses I've taken	1	0	0.00%
Somewhat less	2	0	0.00%
About the same	3	0	0.00%
Somewhat more	4	3	100.00%
Much more	5	0	0.00%

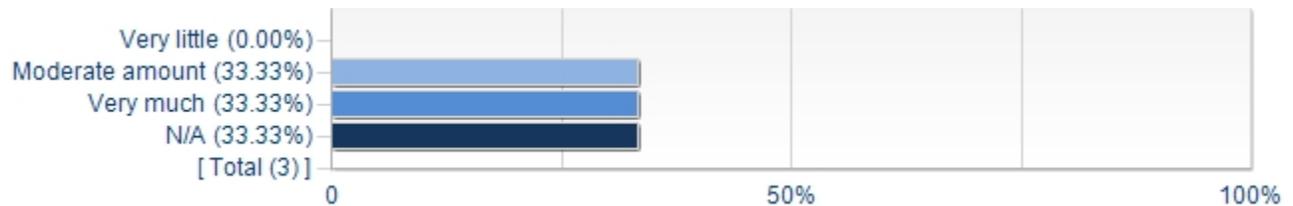
**Rate each of the following according to how much it contributed to your attainment of the course objectives.**

Competency Statistics	Value
Mean	3.14
Median	3.00
Mode	4
Standard Deviation	0.85
Standard Error (base on SD)	0.19
Population Standard Deviation	0.83
Standard Error (base on PSD)	0.18

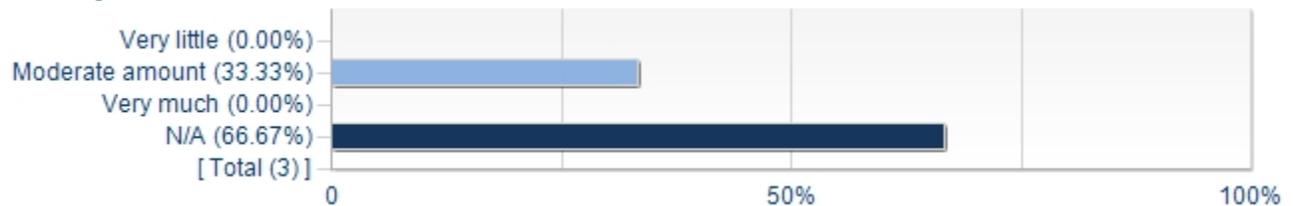
**1. Lectures**



**2. Discussions**

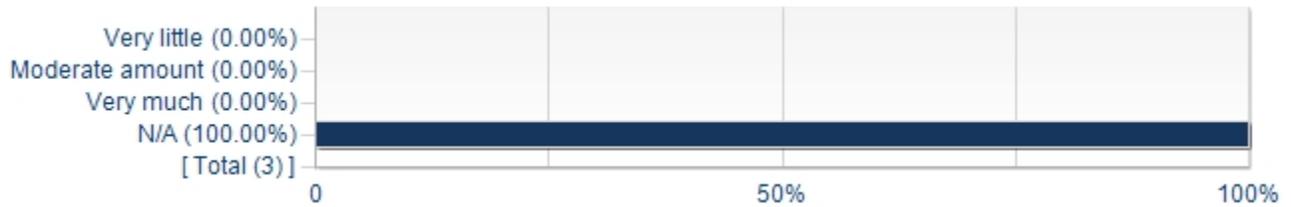


**3. Readings**

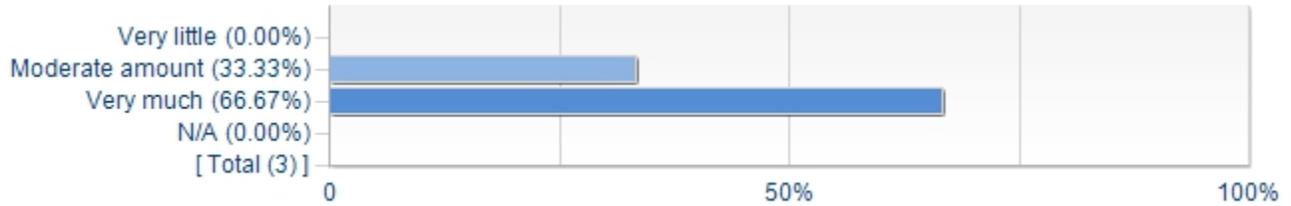


**Rate each of the following according to how much it contributed to your attainment of the course objectives. (continued)**

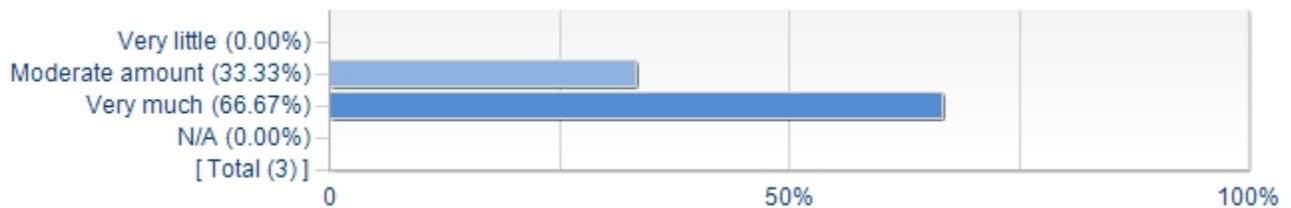
**4. Audio-visuals**



**5. Assignments (exams, projects, and written papers)**

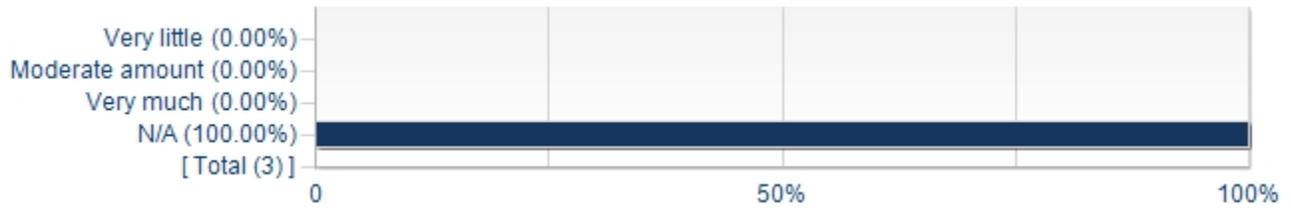


**6. Classroom activities**

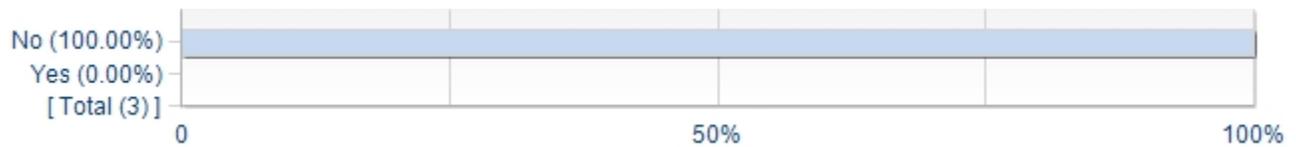


**Rate each of the following according to how much it contributed to your attainment of the course objectives. (continued)**

**7. Lab / Recitation**



**Were there guest lecturers and/or multiple instructors in this course?**



Options	Score	Count	Percentage
No	1	3	100.00%
Yes	2	0	0.00%

**Graduate School of Public Health**  
***Educational Policies and Curriculum Committee***  
**Meeting Minutes | January 5, 2017**

Present: Cindy Bryce, Yue Chen, Patricia Documet, Mary Derkach, Ying Ding, Julia Driessen, Jim Fabisiak, Eleanor Feingold, David Finegold, Nancy Glynn, Robin Leaf, and John Shaffer

Absent: Nicole Grant, Marie Hackshaw, and Sarah Minion

The meeting was called to order at 1:33 pm by Dr. Patricia Documet, Chair.

**Continued Discussion of MPH/MSW policy and GRE school-wide requirement**

Dr. Documet gave a re-cap of what occurred at the December meeting. The conversation continued to include ways that the school could explore to encourage more applicants who may have barriers to taking and being successful on the GRE exam. The committee would like to know what specific barriers (economic, anxiety driven or diversity biases) are impacting the request from the joint degree program. Since the MSW program does not require the GRE, the committee agreed that we need to know the rigor of applicant screening at the school of social work.

Departments can still implement lower or higher standards for GRE or other standardized testing scores. The discussion continued and included an agreement that if the applicants do not take the GRE then the school has no real way to assess the quantitative skills of our future students.

A proposal of allowing the department to provide a GRE waiver, that stipulates that the student must successfully pass EPIDEM 2110 and/ or a BOST core course provided that the student is already enrolled in the MSW program. Another option was proposed to allow the program to bring applicants to the committee on a case-by-case basis for a GRE waiver.

The committee agreed to review further information and data on what other schools have done away with the GRE requirement and how they have fared at ensuring student success, and on testing biases of the GRE.

The discussion will continue and decision will be made at a later date.

**Action** – Eleanor will pull and present the GRE/ BOST data at the next meeting. Robin will research how other SPH or other colleges/ universities review applications without GRE scores and to the extent that such a policy has been successful. Also, Robin will research barriers and biases to standardized tests.

**3+2 Program Discussion**

All departments were requested to alert the school if they wanted to be a part of this program. Cindy has heard back from all of the programs. The school's website is still in need of updating. Some departments have specified additional requirements for admission into this program. All MPH programs, the HUGEN MS, IDM MS, and BOST MS programs will participate.

Cindy notified the committee of some of the frequently asked questions she's received so far about the program.

- The program is only open to Pitt main campus Arts & Sciences students. Not yet any other schools or universities as there needs to be an agreement between the Deans that involves tuition payments.
- Pitt Public Health has meet with in-mass the advisors in Arts & Sciences.
- The program has already started and is a re-named program that began back in the early 2000's.
- The GRE scores are still required for 3+2 applicants.
- Undergraduates can take a course or two whether they are admitted into the 3+2 program yet.
- Please encourage any students you meet to encourage to get more information on the program.

**Action** – All to go back to their departments to ask whether they have any further questions.

### **Process for approving minor course descriptions changes in bulk**

In October the committee reviewed bulk changes to the course descriptions from EPIDEM. Human Genetics is starting to review course descriptions, and requested clarification on this process. The committee will move forward using the same framework that EPIDEM utilized for the HUGEN courses, and any others that come through. A table to include a brief description for the change, the current description, and the proposed updated description is the manner that the committee is asking for this information to review the changes. This document will include a brief policy statement stating that "when the course descriptions are approved by EPCC the department's student services staff will prepare the paperwork and submit to the Office of Student Affairs for submission on a semester by semester basis when the Registrar's Office will accept the changes."

**Action** – Robin will create a template to be utilized in the future.

### **Approve December Meeting Minutes**

One minor change will be made to the list of committee members present/ absent at the meeting, a clarification in the BCHS MPH-MSW policy segment to an undergraduate statistics course and the addition of a bullet under the action item area of the MCHS MPH-MSW segment stating that "the departments already have the capability to decide upon required GRE scores for admission." The committee approved the minutes with the corrections.

The meeting was adjourned at 2:43 pm by Dr. Documet.

Our next meeting will be February 2, 1-30-3:30 pm in room 4128 Parran Hall  
Items for the agenda: fall 2016 semester student record review, continuation of discussion on GRE requirement.

# SUMMARY | GRE Research Completed for EPCC | January 2017

Pages 1-7 Contain list of 99 schools or programs of public health and specifics on whether the school/ program requires the GRE, what other tests are accepted, any waivers or exceptions, future plans for changing these requirement, and a final column for other notes.

The information in this table was compiled December 2016-January 2017 from ASPPH members or Web search of school/ program Web sites.

Page 8 List of schools/ programs that do not require the GRE.  
There are 12 schools/ programs that do not required the GRE for admission.

Pages 9-12 Listing of schools that waive the GRE requirement in lieu of an advanced degree (master's, doctoral, MD, DO, JD, etc.) or have other exemptions.

*Synopsis of waivers/ exemptions granted*

[Earned DOCT/ Earned MASTER/ Earned OTHER/ Case-by-Case [CBC]/ Add'l circumstance(s)]				
DOCT	MASTER	OTHER	CBC	Add'l
39	20	12	5	15

School or Program	GRE Required	Additional Tests Accepted	Waivers/Exceptions	Future Plans	Other
A.T. Still University College of Graduate Health Studies	No				Accredited by the Council on Education for Public Health (CEPH)
Augusta University MPH Program	Yes		The GRE requirement may be waived for applicants holding an earned doctorate from an accredited U.S. university		
Boston University School of Public Health	Yes	GMAT, MCAT			Accredited by the Council on Education for Public Health (CEPH)
Brown University MPH Program	Yes	MCAT; Others tests case-by-case	Applicants who have medical degrees from US medical schools.		
Central New York Master of Public Health Program (SUNY Upstate Medical University/ Syracuse University)	Yes	MCAT, DAT, GMAT, LSAT, OAT, USMLE also accepted but must request waiver and have specific scores for each exam (see Waivers/Exceptions)	GRE waiver is at the discretion of the CNYMPH Admissions Committee after a review of the applicant's full application and substitute exam scores or transcripts. Applicants must be able to supply an official copy of the substitute exam (if applicable). Proof of current licensure must be submitted for all allied health professionals. A formal request for a GRE waiver must be submitted, identifying the rationale for the waiver. Under certain circumstances, a waiver of the GRE requirement will be considered if the applicant has: - Medical College test (MCAT), score of 26 or above is preferred - Dental Admission Test (DAT), score of 17 or above is preferred - Graduate Management Admission Test (GMAT), score of 550 or above is preferred - Law School Admission Test (LSAT), score of 150 or above is preferred - Optometry Admission Test (OAT), score of 70 or above is preferred - United States Medical Licensure Exam (USMLE) step 2 or 3 - Earned a master's degree from a Council for Higher Education (CHEA) regionally accredited college or university and has relevant experience in the public health/health care field - Earned a doctoral or medical degree from a Council for Higher Education (CHEA) regionally accredited college or university		Accredited by the Council on Education for Public Health (CEPH)
Charles R. Drew University of Medicine and Science MPH Program in Urban Public health	Yes	GMAT, MCAT	The GRE requirement may be waived for applicants holding a graduate degree with a graduate GPA of 3.0 or higher and/or applicants who can provide official GMAT or MCAT scores (taken within the last five years of the application date).		Accredited by the Council on Education for Public Health (CEPH)
Claremont Graduate University	Yes	GMAT, MCAT			
Colorado School of Public Health	Yes	MCAT	Applicant has a master's degree or higher from a US institution or completes one of our certificate programs.		
Columbia University Mailman School of Public Health	Yes	MCAT, LSAT, GMAT	GRE waivers are seldom granted.		Accredited by the Council on Education for Public Health (CEPH). Accredited by the Commission on Accreditation of
CUNY	Yes		Applicant already has a master's degree or higher from a US institution		Our faculty feel strongly about the GREs and even though I have been trying to discuss with them benefits of expending that requirement to include other tests such as the GMATs, MCATs, or others, they are stuck on the GREs because they do not know how to interpret other tests. It seems that the GREs are useful only when the scores are either very high or very low. Middle range scores don't seem to matter as much and faculty usually just focus on other parts of the application.
Dartmouth - Geisel School of Medicine MPH Program	Yes	MCAT, GMAT	This requirement is waived for MPH and MS applicants holding an advanced or professional degree. This requirement may be waived based on an MPH or MS applicant's work experience and academic background. To be eligible to apply for the waiver, applicants must meet all of the following criteria: initiated an application to the MPH or MS program; earned a BA or BS from an accredited college or university; achieved a minimum overall GPA of 3.2 on a 4.0 scale from their undergraduate institution; and have at least five years of applicable work experience post-graduation (determined by the TDI Admissions Committee). The GRE is required for all PhD applicants, regardless of any prior advanced or professional degree.		Accredited by the Council on Education for Public Health (CEPH)

Des Moines University	No				Working adults often have career experiences that surpasses the GRE expectations or limitations, giving them
Drexel	Yes	Other standardized test	If the applicant has a terminal degree (MD, DO, PhD, etc.)		
East Tennessee State University College of Public Health	Yes	GMAT	Applicants who have earned a master's degree, medical degree or doctoral degree in the health sciences, or other applicable field from a regionally accredited U.S. institution are not required to submit GRE scores		The ETSU College of Public Health is accredited by the Council on Education for Public Health (CePH).
Eastern Virginia Medical School - Old Dominion University MPH Program	Yes	GMAT, MCAT			Accredited by the Council on Education for Public Health (CEPH)
Emory	Yes	Other standardized test	Applicant has already earned an advanced degree at an accredited university in the US (only two programs allow waivers)		
Florida A&M University Public Health Program	Yes	GMAT			Accredited by the Council on Education for Public Health (CEPH)
Florida International University	No				No GRE scores are required for most students
George Mason University MPH Program	Yes				Accredited by the Council on Education for Public Health (CEPH)
Georgia Southern University	Yes			It has been a topic of discussion as to whether or not to eliminate it as a requirement.	
Georgia State University	Yes	GMAT, MCAT	Applicants with terminal degrees earned from a US accredited institution.		
George Washington University	Yes	MCAT, GMAT, LSAT	Applicant has a master's degree or higher from a US institution		

Hofstra University MPH Program	Yes	MCAT, LSAT and GMAT			Accredited by the Council on Education for Public Health (CEPH)
Icahn School of Medicine at Mount Sinai, Graduate Program in Public Health	Yes	MCAT	"In some cases, other tests may be accepted. In general, standardized test requirements cannot be waived."		
Loma Linda University School of Public Health	Yes	GMAT, MCAT			
Loyola	Yes	MCAT, GMAT (most commonly); others also accepted	Always waive the GRE for those with an MD/DO/DVM/DDS from a North American institution, and on a case by case basis for FMGs. Other applicants may request a waiver, which may be granted for extensive experience in public health or a related field, or if they have another graduate degree.	We have discussed being more generous with our waivers, but have also found that the GRE's specificity is good (students who struggle tended to have low GRE scores).	We suggest students with low scores but adequate GPAs (3.0+) enroll in our non-degree certificate program to test out the waters.
LSUHSC School of Public Health	Yes	MCAT	Applicant has earned a PhD or medical degree at an accredited university in the US		
Mercer University Master of Public Health Program	Yes	MCAT	Applicants holding a Master's degree or higher are exempt from submitting GRE scores.		
New York Medical College, School of Health Sciences and Practice, and Institute of Public Health	No		Are required for Dr. PH		
New York University College of Global Public Health	Yes		Applicants who already hold an advanced graduate or professional degree are not required to submit a GRE score as part of their application <u>unless</u> they are applying to the Epidemiology concentration. Examples of degrees that meet this requirement are MA, MS, MSc, MEd, MD, MBBS, MSW, MPA, MPhil, BDS, DDS, PharmD, EdD, PhD. This list is not exhaustive. If you are unsure if your graduate or professional degree qualifies you for a GRE waiver, please contact us at cgph.admissions@nyu.edu and we will let you know. GRE is waived only for students holding these degrees; they are not waived in any other circumstances.		
Northeastern University Master of Public Health Program in Urban Health	Yes	MCAT	When applicants already have an advanced degree, GRE can be waived-- have to fill out a petition which is reviewed by a board.		
Northwestern University Feinberg School of Medicine Program in Public Health	Yes	MCAT	waived for holders of doctoral degrees		
Ohio State University College of Public Health	Yes	GMAT, MCAT (only some programs)	Certain programs will waive it for students with a prior MPH/MS/PhD/MD		Scores used University wide for "Fellowship Award" requirements as well.
Oregon Health & Science University/Portland State University School of Public Health	Yes	MCAT	Waiver for advanced degrees: Standardized testing is not required for applicants who have an advanced degree beyond the baccalaureate. Waiver for advanced coursework: The standardized testing requirement may be waived for applicants who, prior to submitting the application for admission, have successfully completed the following with a grade of B or better: At least one 3-credit graduate-level course in biostatistics; AND At least one 3-credit graduate-level course in epidemiology; AND At least one 3-credit graduate-level course in the social and behavioral sciences or health services administration core areas of public health. The program will verify the grade of B or better by reviewing the applicant's official transcript.		
Richard M. Fairbanks School of Public Health - Indianapolis	Yes	Other standardized test	Case by case if applicant has earned a cumulative GPA of 3.0 or above		
Saint Louis University	Yes	MCAT, GMAT, PCAT, LSAT, DAT			

St. George's University Department of Public Health and Preventive Medicine	No				
Stony Brook University Graduate Program of Public Health	Yes	MCAT, GMAT, DAT	This requirement is waived for applicants who have been awarded a doctoral degree from an accredited U.S. or Canadian university. Applicants to the MD/MPH program may substitute MCAT scores for the GRE. Applicants to the MBAMPH program may substitute GMAT scores. Applicants to the DDS/MPH may substitute DAT scores. A request to substitute any other standardized test scores for the GRE needs to be submitted in writing to the MPH Academic Coordinator.		
Temple University College of Public Health	Yes		The MPH in Epidemiology does not require official GRE scores provided applicants have taken an undergraduate statistics course in which a B+ or better was received; an undergraduate math course GPA of at least 3.50; and an undergraduate cumulative GPA of at least 3.25. Applicants will be reviewed on a case by case basis and may be required to submit GRE scores if they have not met these minimum requirements.		
Texas A&M University School of Public Health	Yes	GMAT, MCAT, DAT, PCAT, LSAT	Hold an ECFMG Certificate Current US licensed medical physician Previously earned masters or doctoral degree from a United States accredited institution.	Revisit which scores we will continue to accept in lieu of the GRE for future admissions cycles.	
Thomas Jefferson University, College of Population Health - MPH Program	Yes	GMAT, LSAT, MCAT, DAT	You do not need to submit GRE scores if you have already received a graduate degree or have earned at least 9 credits of graduate coursework with a grade of 'B' or higher from an accredited institution.		
Touro University- California MPH Program	No				
Tufts University School of Medicine, Public Health Program	Yes	MCAT or GMAT	Typically, waivers are only granted if candidates have a doctorate or professional degree and/or have several years of professional experience. Your application for a waiver should indicate that your academic and professional background already testifies to your verbal and quantitative abilities, and should cite specific elements of your background which make taking the GRE, or other standardized test, unnecessary.		
UCLA Fielding School of Public Health	Yes	MCAT, LSAT (JD/MD or 3rd-year Med Students Only)	International applicants with MBBS or MD degree as long as they are fully licenced and practicing in the US.		
Uniformed Services University of the Health Sciences Public Health Program	Yes		Occasionally a Program will waive the requirement for GRE scores. A waiver may be granted if an individual already has a PhD, MD or DO. If you would like to request a waiver, please indicate on your online application. Please note that GRE waivers are NOT granted for applicants to the Medical and Clinical Psychology Programs.		Many Programs do not have a minimum score; they are interested in the "whole student," and will compare your other strengths against any testing weakness, and vice versa. Consider contacting the Program or Department directly to inquire about specific GRE score minimums. Each Program is re-evaluating scoring criteria based on the revised GRE scales.
University at Albany SUNY School of Public Health	Yes	MCAT	MPH applicants who have previously completed a graduate degree (MS, PhD, MD, etc) at an accredited US university with a GPA of 3.0 or higher may apply for a GRE waiver. Applicants who have successfully completed Steps 1 & 2 of the USMLE may also submit an official score report and apply for a GRE waiver.		The average GRE scores of students admitted in the MPH program are: Verbal 159; Quantitative 161; Writing 4.0. The average GPA is 3.35.
University at Buffalo School of Public Health and Health Professions	Yes	MCAT or PCAT	You have an MD, PhD or equivalent doctoral degree from an accredited university in the United States. You are an applicant for the combined MPH/JD program and you are approved for a GRE waiver.		
University of Alabama at Birmingham	Yes	GMAT, MCAT (some departments)	A GRE waiver may be considered for MPH or MSPH applicants with any of the following terminal degrees from an accredited U.S. institution (MD, PhD, JD, PharmD, DO, DVM, DDS, DPT, EdD, or DMD). The GRE may be waived for students applying to an MPH degree program, at the discretion of the Department, if the applicant has five years of full-time health care or public health professional/practice experience. Foreign-trained medical graduates can request a GRE waiver if the applicant is enrolled in or has been admitted to a US residency program and has passed steps 1 and 2 of the USMLE.		
University of Alberta School of Public Health	No				
University of Arizona Mel and Enid Zuckerman College of Public Health	Yes	MCAT, PCAT, LSAT	GRE or MCAT test scores are not required for applicants holding a doctoral degree from a U.S. institution or for foreign medical graduates who have ECFMG certification.		
University of Arkansas for Medical Sciences Fay W. Boozman College of Public Health	Yes	MCAT			
University of California, Berkeley School of Public Health	Yes	MCAT, DAT, OAT, GMAT, or LSAT	Applicants who have completed a MD, PhD or equivalent doctoral-level degree at the time of application from an accredited institution are not required to submit GRE scores. Students currently enrolled in or who have completed a degree in medical, dental, optometry, business, or law school can submit their MCAT, DAT, OAT, GMAT, or LSAT scores, respectively, in lieu of the GRE. Other professional school exams will not be eligible as alternatives to the GRE exam.		

University of California, Davis MPH Program	Yes	MCAT or GMAT	(1) current students in, or recent graduates of, a US or Canadian MD/DO degree program may submit MCAT scores in lieu of the GRE providing these were taken within 10 years of application, and (2) current students or recent graduates of a U.S. MBA program may submit the GMAT scores in lieu of GRE providing these were taken within 7 years of application		
University of California, Irvine Program in Public Health	Yes	MCAT, LSAT, or GMAT			
University of Cincinnati College of Medicine MPH Program	Yes	GMAT or MCAT			Official GRE, GMAT or MCAT scores should be in the 50th percentile or higher
University of Florida College of Public Health and Health Professions	Yes	MCAT	Applicants with M.D., D.V.M., J.D., Pharm.D, D.O., or D.D.S. degrees from regionally-accredited US institutions are exempt from the GRE. Other graduate and doctoral degrees in a health-related discipline from a University in the United States must submit transcripts to assess this exemption status.		
University of Georgia College of Public Health	Yes	GMAT or MCAT			GRE test score of 50th percentile or above on quantitative, qualitative, and analytical sections.
University of Illinois at Chicago School of Public Health	Yes		MPH applicants with a degree at the doctoral level from an accredited U.S. or Canadian school. Physicians who are fully licensed to practice in the United States (through residency).		The MPH program is highly competitive, so successful applicants typically have scores of at least 150 on each the Verbal and Quantitative sections of the test.
University of Iowa College of Public Health	Yes	MCAT, LSAT, PCAT, DAT, GMAT, VCAT			
University of Kansas School of Medicine KU - MPH Program	Yes	MCAT or LSAT	Can be waived for U.S. citizens with doctoral degrees		
University of Kentucky College of Public Health	Yes	GMAT or MCAT			Official GRE, GMAT or MCAT scores are preferred at 50th percentile or better.
University of Louisville School of Public Health and Information Sciences	Yes	GRE, MCAT, DAT, GMAT, or LSAT	The GRE requirement may be waived for applicants to the MPH Program who have 4 or more years of public health related experience		
University of Maryland School of Public Health	Yes				
University of Massachusetts-Amherst School of Public Health and Health Sciences	Yes				
University of Memphis School of Public Health	Yes	MCAT, DAT, GMAT, or LSAT	Applicants who are enrolled in a post-baccalaureate degree program may substitute other standardized test scores (MCAT, DAT, GMAT, or LSAT) for the GRE		

University of Miami Department of Public Health Sciences	Yes	LSAT or GMAT	Applicants to the MPH/MSPH program can submit MCAT scores in lieu of GRE scores. LSAT or GMAT scores are acceptable from joint degree applicants to law or business. Applicants to the MPH/MSPH program who hold advanced degrees (MBBS, MD, JD, PharmD, PhD and other doctoral degrees) are not required to submit exam scores.		
University of Michigan School of Public Health	Yes	MCAT (except HMP and Biostats program)			
University of Minnesota School of Public Health	Yes		Some programs accept other official test scores or may waive the GRE requirement.		
University of Nebraska Medical Center College of Public Health	Yes		Graduate or terminal degree (for example M.S., M.A., M.D., Pharm.D., Ph.D.), from a regionally-accredited U.S. institution of higher education. In addition, applicants possessing any UNMC Public Health Certificate may request a waiver if they have earned a minimum cumulative Grade Point Average of 3.25 and no less than a B in any course.		
University of Nevada, Reno School of Community Health Sciences	Yes		The GRE is not required for applicants who have already obtained a Ph.D., M.D., D.D.S. or Dr.PH from approved institutions.		40th percentile or above but all encouraged to apply
University of New England	No				Accredited by the Council on Education for Public Health (CEPH)
University of New Mexico COPH MPH Program	Yes	GMAT, MCAT, others	If the applicant has a terminal degree (MD, DO, PhD, etc.)		We do not find it predictive of success for mid-career students or international students. For recent undergraduates, it is moderately useful. Those scoring in the upper 60% will do just fine academically and a higher score is not necessarily correlated with higher grades in the MPH. However, those with low scores (lower 25%) are the students who most likely will have academic problems and are not likely to complete their degrees.
University of New Mexico MPH Program	Yes	MCAT, GMAT	Advanced degrees (MD, PhD)	Waivers for PharmD applicants?	We mainly use these scores to identify applicants who might be at risk for having trouble in our courses so we can provide extra support.
University of North Carolina at Charlotte Public Health Programs	Yes	MCAT			The average Verbal GRE percentile score was 46. The average Quantitative GRE percentile score was 38
University of North Carolina Gillings School of Global Public Health	Yes	MCAT			
University of North Texas Health Science Center School of Public Health	Yes	GMAT, MCAT, LSA, PCAT, or DAT	The examination requirement is waived for applicants possessing a professional doctoral degree with a license to practice in the United States		
University of Oklahoma	No				Without the GRE requirement, this school judges applicants based on grades, other scores, letters of recommendation, and other elements to determine eligibility for the MPH program.
University of Oklahoma Health Sciences Center College of Public Health	Yes				
University of Pennsylvania Master of Public Health Program	Yes	MCAT, GMAT, LSAT, DAT	Consideration will be given to waiving the standardized test requirement for applicants with at least a master's degree in a relevant field, that was received from an institution within the United States		
University of Pittsburgh	Yes	Varies by program. MCAT, DAT, PCAT, LSAT	Varies by program. Some programs will waive for applicants with an advanced degree. Some do not waive for any reason		see <a href="http://www.publichealth.pitt.edu/home/admissions-aid/how-to-apply/requirements#gre">www.publichealth.pitt.edu/home/admissions-aid/how-to-apply/requirements#gre</a> for specific program GRE requirements
University of Puerto Rico Graduate School of Public Health	Yes	GRE or EXADEP			
University of San Francisco MPH Program	No				
University of South Carolina Arnold School of Public Health	Yes	MCAT and PCAT (for General MPH), GMAT (for HSPM)	Case by case basis		
University of South Carolina Arnold School of Public Health	Yes	GMAT	Waivers or the submission of unofficial scores are considered on a case-by-case basis and must be approved by the program graduate director and The Graduate School.		
University of South Florida	No				Accredited by the Council on Education for Public Health (CEPH). GRE exams are not required for most students who can provide sufficient information that otherwise demonstrate their eligibility for the MPH program.
University of Southern California MPH Program	Yes	MCAT or GMAT	Applicants with a medical degree from an accredited (LCME) medical school, foreign medical school graduates who have pass all three steps of the U.S. Medical Licensing Exam (USMLE), and those with a post-graduate degree in another health profession or health-related profession may request an exemption of the GRE requirement		

University of Texas Medical Branch at Galveston Graduate Program in Public Health	Yes				
University of Texas School of Public Health	Yes	For GRE exams scored on the former scale (prior to August 2011), a minimum combined score of 1000 for the Masters programs and 1200 for Doctoral programs on the Verbal and Quantitative sections of the General Test is preferred. For GRE exams taken after August 2011, a minimum combined score of 298 for Masters programs and 308 for Doctoral programs on the Verbal and Quantitative sections of the General Test is preferred. For the Analytical Writing section, a score of at least 4.0 on a scale of 6.0 is preferred.	GRE scores may be waived for applicants holding U.S. earned doctoral letter degrees.		
University of Virginia MPH Program	Yes	MCAT, LSAT, or GMAT	Exception: holders of doctoral degrees conferred by an accredited U.S. institution do not need to submit test scores		
University of Washington School of Public Health	Yes		Varies by program. Some programs will waive for applicants with an advanced degree. Some do not waive for any reason		
University of Wisconsin - Milwaukee	Yes		Applicants with a terminal degree (international MD must be supplemented with USMLE or having practiced in the US); if scores are older than five years and preceded a Masters degree (with approval from faculty); or have an alternative test (i.e. MCAT).	Fine-tuning our GRE policy	
University of Wisconsin-Milwaukee Joseph J. Zilber School of Public Health	Yes	GMAT, LSAT, MCAT	Applicants with a JD, MD, DVM, PharmD, or PhD do not need to submit GRE scores.		
Vanderbilt MPH Program	Yes	MCAT	Waived for those with a doctoral degree or the equivalent (MD, PhD, MBBS, MBChB, DVM, etc)		
Virginia Commonwealth University MPH Program	Yes	MCAT only if you were accepted in VCU's medical school	If you have a terminal or first professional US degree (such as a Ph.D. or MD), you may submit a written request for the GRE requirement to be waived.		
Walden University Master of Public Health Program	No				
Washington University in St. Louis - Brown School Public Health Programs	Yes	DAT, GMAT, LSAT, MCAT, PCAT, USMLE			
West Virginia University School of Public Health	Yes		Varies by program. Some programs will waive for applicants with an advanced degree. Some do not waive for any reason		
Wright State University MPH Program	Yes		Applicants with an earned graduate or advanced professional degree from a regionally accredited college or university in the United States or Canada do not need to submit GRE scores		
Yale School of Public Health	Yes	MCAT (depending on program)	The only program that allows MCAT scores in lieu of GRE scores is the MS in Chronic Disease Epidemiology. MCAT scores submitted by those applicants must be able to be verified with MCAT.		

Information compiled December 2016-January 2017 from ASPPH members or Web search of school program Web sites.

*12 Schools/ Programs that do not required the GRE for admission.*

School or Program
A.T. Still University College of Graduate Health Studies
Des Moines University
Florida International University
University of New England
University of Oklahoma
University of South Florida
New York Medical College, School of Health Sciences and Practice, and Institute of Public Health
St. George's University Department of Public Health and Preventive Medicine
Touro University- California MPH Program
University of Alberta School of Public Health
University of San Francisco MPH Program
Walden University

School or Program	[Earned DOCT/ Earned MASTER/ Earned OTHER/ Case-by-Case [CBC]/ Add'l circumstance(s)]					Waivers/Exceptions If...	Additional Tests Accepted
	DOCT	MASTER	OTHER	CBC	Add'l		
Augusta University MPH Program	X					Earned doctorate from an accredited U.S. university	
Brown University MPH Program			X			Earned medical degrees from US medical schools.	MCAT; Others tests case-by-case
Central New York Master of Public Health Program (SUNY Upstate Medical University/ Syracuse University)					X	<p>GRE waiver is at the discretion of the CNYMPH Admissions Committee after a review of the applicant's full application and substitute exam scores or transcripts. Applicants must be able to supply an official copy of the substitute exam (if applicable). Proof of current licensure must be submitted for all allied health professionals. A formal request for a GRE waiver must be submitted, identifying the rationale for the waiver. Under certain circumstances, a waiver of the GRE requirement will be considered if the applicant has:</p> <ul style="list-style-type: none"> <li>- Medical College test (MCAT), score of 26 or above is preferred</li> <li>- Dental Admission Test (DAT), score of 17 or above is preferred</li> <li>- Graduate Management Admission Test (GMAT), score of 550 or above is preferred</li> <li>- Law School Admission Test (LSAT), score of 150 or above is preferred</li> <li>- Optometry Admission Test (OAT), score of 70 or above is preferred</li> <li>- United States Medical Licensure Exam (USMLE) step 2 or 3</li> <li>- Earned a master's degree from a Council for Higher Education (CHEA) regionally accredited college or university and has relevant experience in the public health/health care field</li> <li>- Earned a doctoral or medical degree from a Council for Higher Education (CHEA) regionally accredited college or university</li> </ul>	MCAT, DAT, GMAT, LSAT, OAT, USMLE also accepted but must request waiver and have specific scores for each exam (see <b>Waivers/Exceptions</b> )
Charles R. Drew University of Medicine and Science MPH Program in Urban Public health	X	X				The GRE requirement may be waived for applicants holding a graduate degree with a graduate GPA of 3.0 or higher and/or applicants who can provide official GMAT or MCAT scores (taken within the last five years of the application date).	GMAT, MCAT
Colorado School of Public Health		X				Applicant has a master's degree or higher from a US institution or completes one of our certificate programs.	MCAT
Columbia University Mailman School of Public Health				X		GRE waivers are seldom granted.	MCAT, LSAT, GMAT
CUNY		X				Applicant already has a master's degree or higher from a US institution	
Dartmouth - Geisel School of Medicine MPH Program			X			This requirement is waived for MPH and MS applicants holding an advanced or professional degree. This requirement may be waived based on an MPH or MS applicant's work experience and academic background. To be eligible to apply for the waiver, applicants must meet all of the following criteria: initiated an application to the MPH or MS program; earned a BA or BS from an accredited college or university; achieved a minimum overall GPA of 3.2 on a 4.0 scale from their undergraduate institution; and have at least five years of applicable work experience post-graduation (determined by the TDI Admissions Committee). The GRE is required for all PhD applicants, regardless of any prior advanced or professional degree.	MCAT, GMAT
Drexel	X		X			If the applicant has a terminal degree (MD, DO, PhD, etc.)	Other standardized test
East Tennessee State University College of Public Health	X	X	X			Applicants who have earned a master's degree, medical degree or doctoral degree in the health sciences, or other applicable field from a regionally accredited U.S. institution are not required to submit GRE scores	GMAT
Emory	X	X				Applicant has already earned an advanced degree at an accredited university in the US (only two programs allow waivers)	Other standardized test

Georgia State University		X	X		Applicants with terminal degrees earned from a US accredited institution.	GMAT, MCAT
George Washington University		X	X		Applicant has a master's degree or higher from a US institution	MCAT, GMAT, LSAT
Icahn School of Medicine at Mount Sinai, Graduate Program in Public Health				X	"In some cases, other tests may be accepted. In general, standardized test requirements cannot be waived."	MCAT
Loyola			X	X	Always waive the GRE for those with an MD/DO/DVM/DDS from a North American institution, and on a case by case basis for FMGs. Other applicants may request a waiver, which may be granted for extensive experience in public health or a related field, or if they have another graduate degree.	MCAT, GMAT (most commonly); others also accepted
LSUHSC School of Public Health	X		X		Applicant has earned a PhD or medical degree at an accredited university in the US	MCAT
Mercer University Master of Public Health Program	X	X			Applicants holding a Master's degree or higher are exempt from submitting GRE scores.	MCAT
New York University College of Global Public Health	X	X	X		Applicants who already hold an advanced graduate or professional degree are not required to submit a GRE score as part of their application <u>unless</u> they are applying to the Epidemiology concentration. Examples of degrees that meet this requirement are MA, MS, MSc, MEd, MD, MBBS, MSW, MPA, MPhil, BDS, DDS, PharmD, EdD, PhD. This list is not exhaustive. If you are unsure if your graduate or professional degree qualifies you for a GRE waiver, please contact us at cgph.admissions@nyu.edu and we will let you know. GRE is waived only for students holding these degrees; they are not waived in any other circumstances.	
Northeastern University Master of Public Health Program in Urban Health				X	When applicants already have an advanced degree, GRE can be waived-- have to fill out a petition which is reviewed by a board.	MCAT
Northwestern University Feinberg School of Medicine Program in Public Health	X				waived for holders of doctoral degrees	MCAT
Ohio State University College of Public Health	X	X			Certain programs will waive it for students with a prior MPH/MS/PhD/MD	GMAT, MCAT (only some programs)
Oregon Health & Science University/Portland State University School of Public Health	X	X			Waiver for advanced degrees: Standardized testing is not required for applicants who have an advanced degree beyond the baccalaureate. Waiver for advanced coursework: The standardized testing requirement may be waived for applicants who, prior to submitting the application for admission, have successfully completed the following with a grade of B or better: At least one 3-credit graduate-level course in biostatistics; AND At least one 3-credit graduate-level course in epidemiology; AND At least one 3-credit graduate-level course in the social and behavioral sciences or health services administration core areas of public health. The program will verify the grade of B or better by reviewing the applicant's official transcript.	MCAT
Richard M. Fairbanks School of Public Health - Indianapolis				X	Case by case if applicant has earned a cumulative GPA of 3.0 or above	Other standardized test
Stony Brook University Graduate Program of Public Health	X				This requirement is waived for applicants who have been awarded a doctoral degree from an accredited U.S. or Canadian university. Applicants to the MD/MPH program may substitute MCAT scores for the GRE. Applicants to the MBA/MPH program may substitute GMAT scores. Applicants to the DDS/MPH may substitute DAT scores. A request to substitute any other standardized test scores for the GRE needs to be submitted in writing to the MPH Academic Coordinator.	MCAT, GMAT, DAT
Temple University College of Public Health				X	The MPH in Epidemiology does not require official GRE scores provided applicants have taken an undergraduate statistics course in which a B+ or better was received; an undergraduate math course GPA of at least 3.50; and an undergraduate cumulative GPA of at least 3.25. Applicants will be reviewed on a case by case basis and may be required to submit GRE scores if they have not met these minimum requirements.	
Texas A&M University School of Public Health	X	X		X	Hold an ECFMG Certificate Current US licensed medical physician Previously earned masters or doctoral degree from a United States accredited institution.	GMAT, MCAT, DAT, PCAT, LSAT

Thomas Jefferson University, College of Population Health - MPH Program	X	X			X	You do not need to submit GRE scores if you have already received a graduate degree or have earned at least 9 credits of graduate coursework with a grade of "B" or higher from an accredited institution.	GMAT, LSAT, MCAT, DAT
Tufts University School of Medicine, Public Health Program	X				X	Typically, waivers are only granted if candidates have a doctorate or professional degree and/or have several years of professional experience. Your application for a waiver should indicate that your academic and professional background already testifies to your verbal and quantitative abilities, and should cite specific elements of your background which make taking the GRE, or other standardized test, unnecessary.	MCAT or GMAT
UCLA Fielding School of Public Health					X	International applicants with MBBS or MD degree as long as they are fully licenced and practicing in the US.	MCAT, LSAT (JD/MD or 3rd-year Med Students Only)
Uniformed Services University of the Health Sciences Public Health Program	X		X			Occasionally a Program will waive the requirement for GRE scores. A waiver may be granted if an individual already has a PhD, MD or DO. If you would like to request a waiver, please indicate on your online application. Please note that GRE waivers are NOT granted for applicants to the Medical and Clinical Psychology Programs.	
University at Albany SUNY School of Public Health	X	X				MPH applicants who have previously completed a graduate degree (MS, PhD, MD, etc) at an accredited US university with a GPA of 3.0 or higher may apply for a GRE waiver. Applicants who have successfully completed Steps 1 & 2 of the USMLE may also submit an official score report and apply for a GRE waiver.	MCAT
University at Buffalo School of Public Health and Health Professions	X					You have an MD, PhD or equivalent doctoral degree from an accredited university in the United States. You are an applicant for the combined MPH/JD program and you are approved for a GRE waiver.	MCAT or PCAT
University of Alabama at Birmingham	X				X	A GRE waiver may be considered for MPH or MSPH applicants with any of the following terminal degrees from an accredited U.S. institution (MD, PhD, JD, PharmD, DO, DVM, DDS, DPT, EdD, or DMD). The GRE may be waived for students applying to an MPH degree program, at the discretion of the Department, if the applicant has five years of full-time health care or public health professional/practice experience. Foreign-trained medical graduates can request a GRE waiver if the applicant is enrolled in or has been admitted to a US residency program and has passed steps 1 and 2 of the USMLE.	GMAT, MCAT (some departments)
University of Arizona Mel and Enid Zuckerman College of Public Health	X					GRE or MCAT test scores are not required for applicants holding a doctoral degree from a U.S. institution or for foreign medical graduates who have ECFMG certification.	MCAT, PCAT, LSAT
University of California, Berkeley School of Public Health	X					Applicants who have completed a MD, PhD or equivalent doctoral-level degree at the time of application from an accredited institution are not required to submit GRE scores. Students currently enrolled in or who have completed a degree in medical, dental, optometry, business, or law school can submit their MCAT, DAT, OAT, GMAT, or LSAT scores, respectively, in lieu of the GRE. Other professional school exams will not be eligible as alternatives to the GRE exam.	MCAT, DAT, OAT, GMAT, or LSAT
University of California, Davis MPH Program	X	X				(1) current students in, or recent graduates of, a US or Canadian MD/DO degree program may submit MCAT scores in lieu of the GRE providing these were taken within 10 years of application, and (2) current students or recent graduates of a U.S. MBA program may submit the GMAT scores in lieu of GRE providing these were taken within 7 years of application	MCAT or GMAT
University of Florida College of Public Health and Health Professions	X					Applicants with M.D., D.V.M., J.D., Pharm.D, D.O., or D.D.S. degrees from regionally-accredited US institutions are exempt from the GRE. Other graduate and doctoral degrees in a health-related discipline from a University in the United States must submit transcripts to assess this exemption status.	MCAT
University of Illinois at Chicago School of Public Health	X					MPH applicants with a degree at the doctoral level from an accredited U.S. or Canadian school. Physicians who are fully licensed to practice in the United States (through residency).	
University of Kansas School of Medicine KU - MPH Program	X					Can be waived for U.S. citizens with doctoral degrees	MCAT or LSAT
University of Louisville School of Public Health and Information Sciences					X	The GRE requirement may be waived for applicants to the MPH Program who have 4 or more years of public health related experience	GRE, MCAT, DAT, GMAT, or LSAT

University of Nebraska Medical Center College of Public Health	X	X				Graduate or terminal degree (for example M.S., M.A., M.D., Pharm.D., Ph.D.), from a regionally-accredited U.S. institution of higher education. In addition, applicants possessing any UNMC Public Health Certificate may request a waiver if they have earned a minimum cumulative Grade Point Average of 3.25 and no less than a B in any course.	
University of Nevada, Reno School of Community Health Sciences	X					The GRE is not required for applicants who have already obtained a Ph.D., M.D., D.D.S. or Dr.PH from approved institutions.	
University of New Mexico COPH MPH Program	X					If the applicant has a terminal degree (MD, DO, PhD, etc.)	GMAT, MCAT, others
University of New Mexico MPH Program	X					Advanced degrees (MD, PhD)	MCAT, GMAT
University of North Texas Health Science Center School of Public Health					X	The examination requirement is waived for applicants possessing a professional doctoral degree with a license to practice in the United States	GMAT, MCAT, LSA, PCAT, or DAT
University of Pennsylvania Master of Public Health Program	X	X				Consideration will be given to waiving the standardized test requirement for applicants with at least a master's degree in a relevant field, that was received from an institution within the United States	MCAT, GMAT, LSAT, DAT
University of Pittsburgh					X	Varies by program. Some programs will waive for applicants with an advanced degree. Some do not waive for any reason	Varies by program. MCAT, DAT, PCAT, LSAT
University of South Carolina Arnold School of Public Health					X	Case by case basis	MCAT and PCAT (for General MPH), GMAT (for HSPM)
University of South Carolina Arnold School of Public Health					X	Waivers or the submission of unofficial scores are considered on a case-by-case basis and must be approved by the program graduate director and The Graduate School.	GMAT
University of Southern California MPH Program	X					Applicants with a medical degree from an accredited (LCME) medical school, foreign medical school graduates who have pass all three steps of the U.S. Medical Licensing Exam (USMLE), and those with a post-graduate degree in another health profession or health-related profession may request an exemption of the GRE requirement	MCAT or GMAT
University of Texas School of Public Health	X					GRE scores may be waived for applicants holding U.S. earned doctoral letter degrees.	
University of Virginia MPH Program	X					Exception: holders of doctoral degrees conferred by an accredited U.S. institution do not need to submit test scores	MCAT, LSAT, or GMAT
University of Washington School of Public Health	X	X			X	Varies by program. Some programs will waive for applicants with an advanced degree. Some do not waive for any reason	
University of Wisconsin - Milwaukee	X	X			X	Applicants with a terminal degree (international MD must be supplemented with USMLE or having practiced in the US); if scores are older than five years and preceded a Masters degree (with approval from faculty); or have an alternative test (i.e. MCAT).	
University of Wisconsin-Milwaukee Joseph J. Zilber School of Public Health	X		X			Applicants with a JD, MD, DVM, PharmD, or PhD do not need to submit GRE scores.	GMAT, LSAT, MCAT
Vanderbilt MPH Program	X					Waived for those with a doctoral degree or the equivalent (MD, PhD, MBBS, MBChB, DVM, etc)	MCAT
Virginia Commonwealth University MPH Program	X		X			If you have a terminal or first professional US degree (such as a Ph.D. or MD), you may submit a written request for the GRE requirement to be waived.	MCAT only if you were accepted in VCU's medical school
West Virginia University School of Public Health					X	Varies by program. Some programs will waive for applicants with an advanced degree. Some do not waive for any reason	
Wright State University MPH Program	X	X				Applicants with an earned graduate or advanced professional degree from a regionally accredited college or university in the United States or Canada do not need to submit GRE scores	

[Earned DOCT/ Earned MASTER/ Earned OTHER/ Case-by-Case [CBC]/ Add'l circumstance(s)]				
DOCT	MASTER	OTHER	CBC	Add'l
39	20	12	5	15

## Scholarly Research on GRE Testing Bias

The majority of this research was completed by Robin Leaf, MEd as part of a white paper, *Predicting Student Success Utilizing Admissions Data*, in the fall of 2009 for Graduate School of Public Health Dean Donald Burke under the direction of then Associate Dean for Student Affairs and Education Dr. Sandra Quinn.

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Research was compiled from scholarly journals in addition to reports published by educational-related organizations, such as the Educational Testing Service (ETS), administering body for the GRE test, and the National Center for Fair & Open Testing, proponents of the testing optional movement. Literature was gathered from a variety of sources in order to provide an overall view of the foundational and current research on the use of standardized tests in admissions and graduate program admission practices. Specific factors affecting the performance of minority applicants was also researched. The sources, including search terms, of this literature search are noted as well.

### *Attitudes Towards Standardized Tests*

Alon and Tienda (2007) contend that institutions with high rankings in periodicals such as U.S. News & World Report, do not necessarily need to improve on their admissions, curriculum, or resources and therefore the utilization of standardized tests as part of the admissions process is unnecessary. Institutions with high ranks are periodically those universities and colleges with extremely high admissions criteria, including standardized test scores.

A recent *Science* article from 2007 declares that their review of the literature makes the recommendation that tests such as the GRE and MCAT can predict student performance more adequately than undergraduate GPA. However, the defining purpose of standardized test scores is that they are to be utilized with other admissions data during the application review process and not viewed as a standalone factor in determining admission. The Educational Testing Service's 2009-10 *Guide to the Use of Scores*, for the GRE test, states that GRE tests are "to supplement undergraduate records and other qualifications for graduate study" (p.3). A study by Bowman (1998) of Master of Public Administration Programs concluded that applicants' GPA and GRE scores have some "limited predictive validity" however, the two "are more likely to decrease rather than increase the validity of admission decisions" (p. 873).

### *Testing Biases*

Testing bias is noted in the literature related to an applicant's, age, race, and ethnic/national origin. Studies on applicants with self-reported disabilities have also been conducted.

Age discrimination has been noted in the studies on admissions. As cited in the 1998 report from the National Center for Fair and Open Testing, ETS "concluded that the test under predicts the performance of women 25 years and older" (Rooney, p. 67). Dawes (1975) study on admission data related to student success in one psychology program at a public research university resulted

## Scholarly Research on GRE Testing Bias

in depicting bias for non-traditional students. These students as a cohort had high GRE scores but low undergraduate GPA.

ETS notes in its 2009-10 report on *The Guide to the Use of the GRE Scores* that “special care is required in interpreting the GRE scores of students who may have had educational and cultural experiences somewhat different from those of the traditional majority” (p. 7). They continue in the report to illustrate the care needed when reviewing the scores of international student whose first language is not English. Reviewing the Test of English as a Foreign Language (TOEFL) is encouraged as part of a comprehensive application review. A study by Stricker (2002), as detailed in an ETS report, indicated that “because an ESL [English as a Second Language] test is easier than a verbal ability test and similar verbally loaded admissions tests designed for English-speaking test-takers can discriminate among test-takers at lower levels of verbal ability in English” (p.3). This disadvantage of ELS applicants is noted in the 2007 ETS study of the analytical writing component of the GRE test, whereby they find this section of the test to be more challenging than their counterparts whose first language is English (Stricker, 2002).

In regards to applicants with self-reported disabilities, ETS encourages schools to waive the GRE test component, if required as part of the application package. ETS states that “the examinee’s scores may not fully reflect his or her educational achievement and, because there are so few disabled persons taking the GRE test with varied circumstances” (ETS, 2009, p. 8).

With regards to race, a 1985 study at the University of Florida concluded that “the relationship between GRE scores and graduate GPA is not the same for both black and white students” (Scott and Shaw, p. 21). This is depicted in the results where “a black student who earns a GRE score of 600 will be expected to earn a grade point average of 3.44, while a white student who earns the same GRE score would be expected to earn a grade-point average of 3.34” (Scott and Shaw, p. 22). On the Analytical Writing component of the GRE, the Educational Testing Service in a report cites racial differences where African Americans and Hispanics have decreased scores compared to Caucasians (2007).

### *Application Review Reform*

Guidelines for application review are available from the ETS and list such criteria for application reviewers to use a various measures of achievement including undergraduate GPA, letters of recommendation, samples of academic work, and professional achievement. These guidelines also state that the Verbal, Quantitative, and Analytical Writing scores of the GRE are not to be combined as one GRE score utilized as a cut-off for admission (ETS, 2009).

The literature also recommends that application reviewers must take into consideration the variance of academic rigor, or quality of, undergraduate institutions and range of factors affecting a student’s undergraduate GPA, which includes individual instructor and departmental grading policies (Williams & Johnston, 1963, Houston, 1968, Hansen, 1971, Vecchio and Costin, 1977). A study of economic graduate student performance led Hansen to assert the need for an analysis of the quality of an applicant’s undergraduate institution when applying any admission opinion on

## Scholarly Research on GRE Testing Bias

cumulative undergraduate GPA (1971). Kuncel and Hezlett (2007) state that “the strongest predictors are tests with content specifically linked to the discipline” of the student (p. 1080). A study by Zwick (1993) offered similar results as (1993) the analysis of doctoral business students concluded that the highest level of prediction of successes was the utilization of the GMAT verbal and GMAT quantitative scores with undergraduate GPA. Similarly, in 1967 Stricker and Huber indicated that grades earned in students’ graduate major along with GRE quantitative and subject test scores offer highest correlation to student success, which was defined in the study as passing the doctoral oral exam.

### *Future of Standardized Admissions Testing*

Studies of the connection between standardized test scores and student success have been conducted for the past 80 years (Kuncel and Hezlett, 2007). The standardized testing movement grew in popularity as way of streamlining admissions processes during time of growth in higher education where inefficiencies were lacking. (Alon and Tienda, 2007). Uses of these tests have primarily been to establish a common yard stick among applicants (Rooney, 1998, p. 3). Oldfield and Ritter state that GRE scores show very little association with achievement in an academic program (1996). They also note numerous times in their paper (Oldfield and Ritter, 1996) that there has not been enough study of the validity of the GRE test.

However, there is a movement among undergraduate institutions to waive or eliminate standardized tests as part of the application for admission. This is in response to legislative actions banning racial preferences in admissions, in the states of California and Texas (Rooney, 1998). As of the fall 2009 semester, over 830 undergraduate institutions that have eliminated or altered their mandatory standardized test as an admissions requirement (National Center for Fair and Open Testing, n.d.). Graduate level programs at institutions such as Harvard, Brown, and Columbia have minimized their reliance on admissions test and are completing comprehensive application reviews of the materials such as undergraduate academic performance, interview, admissions essays, and writing samples (National Center for Fair and Open Testing, 2007). A few of the benefits, as related to graduate education, of the test optional movement from the National Center for Fair and Open Testing are as follows: recruitment of stronger academic classes, diversification of student population, and resource savings as institutions for the majority of the time do not need to rank or sort their application pool as other admissions criteria takeover fulfill the need for test scores (Rooney, 1998).

## Scholarly Research on GRE Testing Bias

### *Completed Literature Search*

<b>Journal Abstracting/ Indexing Source</b>	<b>Search Terms</b>	<b>Specific Disciplines/Areas Searched</b>
EBSCOhost	GRE and graduate, GRE and admission, admission and graduate, standardized test and admission, health occupations, public health, minority students, Graduate Record Exam, Educational testing and measures, English language, Test of English as a Foreign Language	Academic Premier and Educational Administration Abstracts
Educational Testing Service (ETS) Reports	GRE and administrators/educators, TOEFL and GRE, TOEFL and administrators/educators	
JSTOR	GRE and graduate, GRE bias, GRE and admission, admission and graduate, standardized test and admission, health occupations, public health, minority students, Graduate Record Exam, Educational testing and measures, English language, Test of English as a Foreign Language	Biological Sciences, Education, General Science, Health Policy, Health Sciences, and Psychology
PubMed	Medical school admissions, admission and performance, GRE and admission, Graduate Record Exam	

# Scholarly Research on GRE Testing Bias

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**DRAFT | Template for Bulk Course Description Submission**

Department: \_\_\_\_\_

Date of Submission: \_\_\_\_\_

Course Number	Course Title	Current Course Description	Proposed New Course Description	Reason for Update	Semester when update will take effect
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NOTE: When the course descriptions are approved by EPCC the department's student services staff will prepare the paperwork and submit to the Office of Student Affairs for submission on a semester by semester basis when the Registrar's Office will accept the changes.