



University of Maryland School of Public Health

HLTH 653 – Quantitative Method II

Semester: Spring 2020
Classroom and Time: PLS1172 / Monday 4-6:45PM (meet at SPH 1242)

Instructor: Professor Min Qi Wang, Ph.D.
Office: SPH 1234c
Phone: 301-405-6652
Email: mqw@umd.edu

Office Hours:
Tuesday – 2-4pm
Wednesday – 2-4pm
Thursday – 2-4pm

Course Description: The course covers advanced statistics and procedures in health-related research for doctoral students with the focus on applications of these statistical methodological methods to public health research.

Course Pre- and Co-requisites: HLTH 652

Required: Previous courses in introductory statistics and immediate statistics

Recommended: Comfortable with SPSS statistical package

Course Learning Objectives:

Upon completing this course, the student will be able to:

1. Statistical models to clustered data
2. Statistical models to longitudinal data
3. Statistical models to multistage data

Program Competencies Addressed in this Course:

The following competencies for the [program title] are addressed in this course:

1. Conduct statistical analysis of longitudinal data and assess change over times and interpret findings
2. Conduct multilevel data analysis and interpret findings
3. Conduct survival data analysis and interpret findings

Required Texts and Other Readings:

Required:

Discovering Statistics using SPSS for Windows by Field, A. Sage Publication

Recommended:

Fundamentals of Biostatistics, 2000 5th edition; Rosner, B. Duxbury

Website on statistics: <http://www.statsoftinc.com/textbook/stathome.html>;

SPSS Statistical Algorithms, 2nd edition, SPSS Inc. 1991.

Additional Materials Required:

SPSS version 20 or higher

Course Requirements:

At the conclusion of this course, the student will be able to understand and apply advanced statistical model including:

- 1)Statistical models to clustered data
- 2)Statistical models to longitudinal data
- 3)Statistical models to multistage data
- 4)Multilevel data analysis
- 5)Survival analysis

In addition, the statistical assumptions associated with these models will be examined; and the data management skills and programming syntax will be applied.

Notes:

Be sure that course requirements (papers, exams, etc.) “match” your course objectives and mastery of identified program competencies above.

University policy prohibits mandating course attendance. As attendance is critical to learning and successful attainment of the course objectives and curriculum competencies, be sure to state the importance of attendance to a student performing well in your course. Specify the nature of in-class participation expected and the effects of the lack of participation – and thereby absences – on the student’s grade.]

Major Graded Assignments: *Please specify the assignment, due date and any specific instructions.*

Exam I: 30% - the 8th week of the semester

Exam II: 30% - - the 16th week of the semester

Assignment (4): (each 10%)

Throughout the semester 5 assignments will be made requiring a critique of published articles pertaining to various statistical models. Students will develop syntax to run assumption test and data analysis, and will write the results and interpretations.

Course Policies: [*Policies regarding late work and missed exams or assignments, lab safety, academic integrity, and grading specifications/rubric.*]

Email – The Official University Correspondence:

Verify your email address by going to www.my.umd.edu.

All enrolled students are provided access to the University's email system and an email account. *All official University email communication will be sent to this email address* (or an alternate address if provided by the student). Email has been adopted as the primary means for sending official communications to students, so email must be checked on a regular basis. Academic advisors, faculty, and campus administrative offices use email to communicate important and time-sensitive notices.

Students are responsible for keeping their email address up to date or for redirecting or forwarding email to another address. Failure to check email, errors in forwarding email, and returned email (from "full mailbox" or "unknown user" errors for example), will not excuse a student from missing University announcement, messages, deadlines, etc. Email addresses can be quickly and easily updated at www.my.umd.edu or in-person at the Student Service Counter on the first floor of the Mitchell Building.

For technical support for University email: www.helpdesk.umd.edu or call 301-405-1400.

Absence Policy:

In accordance with University policy if you are absent for a single (1) lecture due to illness or some form of personal or family emergency, this absence will be considered "excused" and the instructor will accept a note from you attesting to the date of the illness/incident, along with an acknowledgement that the information is true. Whenever feasible, you should try to contact the instructor in advance.

Multiple or prolonged absences, and absences that prevent attendance at a major scheduled grading event (like an exam or test) will require written documentation from an appropriate health care provider/organization.

A link to pull information on the new policy covering absences from class can be found at <http://www.president.umd.edu/policies/v100q.html>

Late work and Missed Exams / Assignments:

Late work and/or missed exams may not be made up except when the university is closed

Classroom etiquette (optional)

Course Evaluations

The University, the School of Public Health, and the Department of BCH are committed to the use of student course evaluations for improving the student experience, course and curriculum

delivery, and faculty instruction. Your evaluations help instructors improve their courses; help deans and department chairs decide on merit pay for faculty, renewal of contracts, and support tenure and promotion decisions; and help current and future students decide on classes. **The system (www.CourseEvalUM.umd.edu) will open and close onfor course evaluations.**

Available Support Services: *[Information regarding any additional support services available to students that may be useful during the course. Examples include Learning Assistance Service programs and short courses, the Writing Center, library facilities/tools, computer facilities and helpdesk at OIT, etc. Some faculty have included a bibliography of sorts, including major peer-reviewed journals in the field that students may wish to reference, key websites with which students should be familiar, and notable books, articles or other cornerstone publications with historical significance and/or which contributed to a revolutionary or profound change in the thinking or practice of a particular field.]*

Grading Procedures: *[This should include a complete listing of all graded assignments, the point/percentage value of each in the overall grade calculation, and the grading scale/rubric for the course (e.g. the point range associated with each letter grade).]*

Grading

96-100 points	A+
91-95 points	A
86-90 points	A-
81-85 points	B+
76-80 points	B
71-75 points	B-
66-70 points	C+
61-65 points	C
56-60 points	C-
51-55 points	D+
46-50 points	D
41-45 points	D-
40 & below	F

Course Outline / Course Calendar: *[Schedule of topics to be covered by week or class meeting, dates for exams, quizzes and any other means of assessment listed above, due dates for assignments and readings, any required special events.]*

Notes: If the course is a 100- or 200-level course, you are encouraged to have graded work available for your review by the submission dates for Early Warning Grades.]

Course Schedule Summary			
Session	Date	Topic	Assignments
# 1		Introduction of the topics and overview of the advanced statistical models and applications	
# 2		Moderate analysis	
# 3		Mediation analysis	Assignment 1
# 4		Multistage data analysis – general linear models	
# 5		Multistage data analysis – logistic models	Assignment 2
# 6		Longitudinal data analysis I	
# 7		Longitudinal data analysis II	
# 8		Midterm exam I	Assignment 3
# 9		Multivariate analysis of variance	
# 10		Repeated analysis of variance with mixed model	
# 11		Mixed model – conditional model with level I predictors	
# 12		Mixed model – conditional model with level II predictors	Assignment 4
# 13		Mixed model – conditional model with both level I & II predictors	
# 14		Survival analysis I	Assignment 5
# 15		Survival analysis II	
# 16		Final exam	

[Faculty Instructions – Session Outline: For the date of each class meeting, specify: the subject matter/topics to be covered (e.g., lectures, field trips, guest lecturers, etc.) and the pre-class readings and other non-graded assignments due; Graded assignments due dates, preferably highlighted in bold or capitalized (e.g., homework, quizzes, papers, projects); exam dates, preferably highlighted]

Note: Numbers in brackets after learning objectives show linkage between material covered in each session and the numbered program competencies shown on page 1 of this syllabus.

Optional table on course assignments, quizzes and exams, learning objectives and program competencies-the purpose is to explicitly link the competencies, objectives and assessment activities

<i>Assessment activity (quiz, exam, paper, etc.)</i>	<i>Specific learning objective assessed with the activity</i>	<i>Relevant program competency</i>

Additional Literature, Websites and Other Resources: [Some faculty have included a bibliography of sorts, including major peer-reviewed journals in the field that students may wish to reference, key websites with which students should be familiar, and notable books, articles or other seminal

publications with historical significance and/or which contributed to a revolutionary or profound change in the thinking or practice of a particular field.]

Critical university policies:

Religious Observances:

The University System of Maryland policy provides that students should not be penalized because of observances of their religious beliefs; students shall be given an opportunity, whenever feasible, to make up within a reasonable time any academic assignment that is missed due to individual participation in religious observances. **It is the student's responsibility to inform the instructor in advance of any intended absences for religious observance.**

Special Accommodations / Disability Support Services:

If you have a documented disability and wish to discuss academic accommodations for test taking or other needs, you will need documentation from Disability Support Service (301-314-7682). If you are ill or encountering personal difficulties, please let the instructor know as soon as possible. You can also contact Learning Assistance Services (301-314-7693) and/or the Counseling Center (301-314-7651) for assistance.

Academic Integrity:

The University's code of academic integrity is designed to ensure that the principle of academic honesty is upheld. Any of the following acts, when committed by a student, constitutes academic dishonesty:

- CHEATING: intentionally using or attempting to use unauthorized materials, information, or study aids in an academic exercise.
- FABRICATION: intentional and unauthorized falsification or invention of any information or citation in an academic exercise.
- FACILITATING ACADEMIC DISHONESTY: intentionally or knowingly helping or attempting to help another to violate any provision of this code.
- PLAGIARISM: intentionally or knowingly representing the words or ideas of another as one's own in any academic exercise.

For more information see: <http://www.shc.umd.edu/code.html>.

The Honor Pledge is a statement undergraduate and graduate students should be asked to write by hand and sign on examinations, papers, or other academic assignments. The Pledge reads:

I pledge on my honor that I have not given or received any unauthorized assistance on this assignment/examination.

The University of Maryland, College Park has a nationally recognized Code of Academic Integrity, administered by the Student Honor Council. This Code sets standards for academic integrity at Maryland for all undergraduate and graduate students. As a student you are responsible for upholding these standards for this course. It is very important for you to be aware of the consequences of cheating, fabrication, facilitation, and plagiarism. For more information on the Code of Academic Integrity or the Student Honor Council, please visit <http://www.shc.umd.edu>.

Inclement Weather / University Closings:

In the event that the University is closed for an emergency or extended period of time, the instructor will communicate to students regarding schedule adjustments, including rescheduling of examinations and assignments due to inclement weather and campus emergencies. Official closures and delays are announced on the campus website (<http://www.umd.edu>) and snow phone line (301-405-SNOW), as well as local radio and TV stations.