Introduction to Biostatistics – STAT 4625 – BIST 5625

Spring 2022

This course will start as a remote access course

> This course is developed by Dr. Ofer Harel, Professor of Statistics at the University of Connecticut, and at least the first few weeks will be facilitated completely online using HuskyCT, UConn's learning management system powered by Blackboard Learn. Any content not created by the developer is used with permission of the copyright holder. Later in the semester we may move back to in person set up.
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> For HuskyCT technical support, during regular business hours contact HuskyTech. Excluding materials for purchase, syllabus information is subject to change. The most up-to-date syllabus is located within the course in HuskyCT.

Instructor:	Ofer Harel	<ofer.harel@uconn.edu>
Meeting times:	Mon, Wed 2:00-3:15pm	
Meeting locations:	HuskyCT course website (available through https://learn.uconn.edu/)	
		when in person AUST 340
Office Hours:	HuskyCT;	Tue 8am-9am or by appointment
Grader:	Jung Wun Lee	<jung.w.lee@uconn.edu>

Course Description

Prerequisites: Stat 3025 and Stat 3375; or instructor's consent.

This is a course designed to introduce the basics of a Biostatistics thinking. The students will learn basic tools, theories, processes and way to interpret results.

The statistical aspects of the course include: One-, two- and k-sample problems, regression, elementary factorial and repeated measures designs, covariance, rates and proportions, sensitivity, specificity, two-way tables, odd ratios, relative risk, ordered and non-ordered classifications, trends, case-control studies, elements of regression including logistic and Poisson, additivity and interaction, combination of studies and meta-analysis.

- **Textbook:**

    Statistical Methods for the Analysis of Biomedical Data, 2nd Ed. By Robert Woolson and William Clarke, John Wiley & Sons, Inc. 2002.

- **References:**

  1. *Biostatistics: A Methodology for the Health Sciences*, 2nd Ed, by Gerald Van Belle, Lloyd D. Fisher, Patrick J. Heagerty, and Thomas Lumley, John Wiley & Sons, Inc. 2004.
  2. *The Little SAS Book: A Primer*, 2 Ed, by Delwiche, L. D. and Slaughter, S. J., SAS Publishing.
  3. *SAS System for Regression*, 3rd Ed., by Freund, R. J., and Littell, R. C., SAS Publishing.
  4. *Statistical Methods in Diagnostic Medicine*, by Xiao-Hua Zhou, Nancy A. Obuchowski, and Donna K. McClish, John Wiley & Sons, Inc. 2002.

- **Course Material**:
  Lecture notes, sample code, datasets, information for homework assignments and project, etc., will be posted on the HuskyCT course website (available through `http://lms.uconn.edu`). Please visit this site often to access all the material.

  The lecture notes and corresponding material will be posted on the HuskyCT course website.

- **Hardware** A fully functional computer running on the Windows or the Mac OS is required. Using a computer running on the Linux or the Android OS to complete the coursework is discouraged. A microphone and a webcam are recommended for participating in class, discussion, consultation meetings and virtual office hours.

- **Software**

  – I found that it is most convenient to most students to use Microsoft WORD. If you do not have Microsoft WORD installed on your computer, you can get it (and other software included in the Microsoft Office Suite) here. Assignments can be submitted using WORD or pdf only. Any other file format will not be graded.
  – Most software can found here UConn AnyWare Desktop.
  – If the UConn AnyWare Desktop link does not work for you, connect to the UCONN VPN and try again. If you run into any problem with the UConn AnyWare Desktop, please report it to helpcenter@uconn.edu or call (860)486-4357 during normal business hours. It is extremely important that you determine how you are going to access software well ahead of time.
  – For statistical analyses We will mostly use SAS. SAS is available via UConn AnyWare Desktop or in computing labs at UConn, as well as in the teaching lab in the department of statistics during scheduled hours).
  – NOTE: UCLA's Statistical Computing website offers excellent tutorials/resources for SAS and R (and other languages): `www.ats.ucla.edu/stat/`.

Course Activities & Grading:

- **Homework**

  - Regular homework will be assigned. Homework will consist of both writing and computing exercises. Late homework will not be accepted; however, the lowest HW score will be dropped when computing your grade.

  - All homeworks are to be typed in Word or pdf documents, and submitted through the HuskyCT course website. **Students may submit each assignment only once.**

  - No credit will be given for submitted assignments exhibiting duplication or copying of solutions (from peers or existing solutions). See UConn's Academic Integrity policy below.

- **Participation**: While class is going to be virtual (for the first few weeks), we will have "active learning" in the (virtual) classroom via discussion, Q&A, and problem solving. You must be prepared before coming to class, and participate.

- **Teachable Moment**: This is your opportunity to teach somebody else. Please choose one work from the class which inspires you, think about an audience who you feel really needs to learn about this work and the messages/values it contains. Find a way to teach this work to them. Can be done as a letter, a short essay, a video, a poster project, or some other way that you feel best works for your intended audience.

- You are responsible for the material covered in the text, lectures, and homework. The final grade will be based on class participation (might composed of quizzes, and other types of participation), projects, homework, two in class examinations and final exam. There will be no makeup exams. Each homework assignment is due on the assigned date. All three exams are closed book and closed notes. However, you are allowed to bring in one page (8.5"x11") of your own notes. Students are expected to bring a calculator during classes and exams. Although the exams are the same for students in both classes (Stat 4625 and Bist 5625), the grades are assigned based on different curves.

	Points
Homework	10%
Class participation	10%
Teachable Moment	5%
Project 1	10%
Project 2	10%
Exam 1	15%
Exam 2	15%
Final Exam	25%

In order to obtain a good course grade, students must successfully complete all homework assignments, the course project, attend every lecture; and actively participate in class.

Important Dates

Tue, Jan 18	Spring semester begins
Mon, Jan 24	Last day to file petitions for course credit by examination (Undergraduate students only)
Mon, Jan 31	Courses dropped after this date will have a "W" for withdrawal recorded on the academic record. Last day to add or drop courses without additional signatures (see Adding and Dropping Courses).
Mon, Feb 7	Last day for students to make up Incomplete or Absence grades (Undergraduate students only)
Tue, Feb 15	Dean's signature required to add courses
Sun, Mar 13	Spring Recess begins
Sat, Mar 19	Spring Recess ends
Sat, Mar 26	Emergency closing class makeup date
Mon, Apr 11	Last day to withdraw from a course Last day to place courses on or remove from Pass/Fail grading (Undergraduate students only)
Fri, Apr 29	Last day of spring semester classes
Sat, Apr 30	Reading Days begins
Sun, May 1	Reading Days ends
Mon, May 2	Final examinations begins
Sat, May 7	Final examinations ends

For the complete spring semester schedule, see `https://registrar.uconn.edu/academic-calendar/#spring` recorded on the academic record.

How to Succeed in this Course: All students can succeed in this course and we are here to help you along the way. Please do not hesitate to ask questions or attend office hours. All questions are important here. Success in this course program depends heavily on your personal health and well-being. Recognize that stress is an expected part of the college experience, and it often can be compounded by unexpected setbacks or life changes outside the classroom. Your teaching assistants and I strongly encourage you to reframe challenges as an unavoidable pathway to success. Reflect on your role in taking care of yourself throughout the semester, before the demands of exams and projects reach their peak. Please feel free to reach out to me about any difficulty you may be having that may impact your performance in your courses or campus life as soon as it occurs and before it becomes too overwhelming. In addition to your academic advisor, I strongly encourage you to contact the many other support services on campus that stand ready to assist you. Consider the following support systems:

- Dean of Students Office,
- Academic Achievement Center,
- Writing Center,
- Quantitative Learning Center,
- Center for Students with Disabilities,
- Title IX Office,
- Student Health and Wellness – Mental Health, etc.

The **Center for Students with Disabilities (CSD)** at UConn provides accommodations and services for qualified students with disabilities. If you have a documented disability for which you wish to request academic accommodations and have not contacted the CSD, please do so as soon as possible. The CSD is located in Wilbur Cross, Room 204 and can be reached at (860) 486-2020 or at `csd@uconn.edu`. Detailed information regarding the accommodations process is also available on their website at `www.csd.uconn.edu`.

Resources for Students Experiencing Distress: The University of Connecticut is committed to supporting students in their mental health, their psychological and social well-being, and their connection to their academic experience and overall wellness. The university believes that academic, personal, and professional development can flourish only when each member of our community is assured equitable access to mental health services. The university aims to make access to mental health attainable while fostering a community reflecting equity and diversity and understands that good mental health may lead to personal and professional growth, greater self-awareness, increased social engagement, enhanced academic success, and campus and community involvement.

Students who feel they may benefit from speaking with a mental health professional can find support and resources through the Student Health and Wellness-Mental Health `https://counseling.uconn.edu/` (SHaW-MH) office. Through SHaW-MH, students can make an appointment with a mental health professional and engage in confidential conversations or seek recommendations or referrals for any mental health or psychological concern.

Mental health services are included as part of the university's student health insurance plan and also partially funded through university fees. If you do not have UConn's student health insurance plan, most major insurance plans are also accepted. Students can visit the Student Health and Wellness-Mental Health located in Storrs on the main campus in the Arjona Building, 4th Floor, or contact the office at (860) 486-4705, or `https://studenthealth.uconn.edu/` for services or questions.

Accommodations for Illness or Extended Absences: Please stay home if you are feeling ill. If illness prevents you from attending class, it is your responsibility to notify your instructor as soon as possible. You do not need to disclose the nature of your illness, however, you will need to work with your instructor to determine how you will complete coursework during your absence. If life circumstances are affecting your ability to focus on courses and your UConn experience, students can email the Dean of Students at `dos@uconn.edu` to request support.

COVID-19 Specific Information: People with COVID-19 have had a wide range of symptoms reported – ranging from mild symptoms to severe illness. These symptoms may appear 2-14 days after exposure to the virus and can include: Fever, Cough, Shortness of breath or difficulty breathing, Chills, Repeated shaking with chills, Muscle pain, Headache, Sore throat, New loss of taste or smell.

Additional information including what to do if you test positive or you are informed through contract tracing that you were in contact with someone who tested positive, and answers to other important questions can be found here: `https://studenthealth.uconn.edu/updates-events/coronavirus/`

Academic Integrity: A fundamental tenet of all educational institutions is academic honesty; academic work depends upon respect for and acknowledgment of the research and ideas of others. Misrepresenting someone else's work as one's own is a serious offense in any academic setting and it will not be condoned. Academic misconduct includes, but is not limited to, providing or receiving assistance in a manner not authorized by the instructor in the creation of work to be submitted for academic evaluation (e.g. papers, projects, and examinations); any attempt to influence improperly (e.g., bribery, threats) any member of the faculty, staff, or administration of the University in any matter pertaining to academics or research; presenting, as one's own, the ideas or words of another for academic evaluation; doing unauthorized academic work for which another person will receive credit or be evaluated; and presenting the same or substantially the same papers or projects in two or more courses without the explicit permission of the instructors involved. A student who knowingly assists another student in committing an act of academic misconduct shall be equally accountable for the violation, and shall be subject to the sanctions and other remedies described in The Student Code.