NOTE to prospective students: This syllabus is intended to provide students who are considering taking this course an idea of what they will be learning. A more detailed syllabus will be available on the course Canvas site for enrolled students and may be more current than this sample syllabus.

Course Name: Introduction to Biostatistics  
Course Number: H 524  
Credits: 4  
Instructor name: Dr. Adam Branscum  
Instructor email: adam.branscum@oregonstate.edu  
Instructor phone: 541-737-2665  
Link to instructor website: http://health.oregonstate.edu/people/branscum-adam

Course Description  
Quantitative analysis and interpretation of health data including probability distributions, estimation of associations, and significance tests such as chi-squared, one-way ANOVA, and linear regression.

Prerequisites  
H 524 assumes basic knowledge of statistical concepts and procedures equivalent to that of an undergraduate statistics course, and MTH 105 (Introduction to Contemporary Mathematics) or MTH 111 (College Algebra) or a higher mathematics course.

Communication  
Please post all course-related questions in the General Discussion Forum so that the whole class may benefit from our conversation. Please email your instructor for matters of a personal nature. The instructor will reply to course-related questions and email within 24-48 hours. I will strive to return your assignments and grades for course activities to you within one week of the due date.

Technical Assistance  
If you experience computer difficulties, need help downloading a browser or plug-in, assistance logging into the course, or if you experience any errors or problems while in your online course, contact the OSU Help Desk for assistance. You can call (541) 737-3474, email osuhelpdesk@oregonstate.edu or visit the OSU Computer Helpdesk online.
Learning Resources
- Narrated lecture notes
- Detailed (non-narrated) lecture notes
- Reading assignments – These are from the required text and other sources provided.
- Web-links and applets
- Stata Tutorials – These documents contain screen shots that walk you through various aspects of using Stata software for analysis.
- Interactive discussion forum – Students will engage in discussion on important course issues, including asking questions on problems or questions about using Stata. The discussion board will be monitored by the instructor and I will jump in as needed.
- Problem sets – Assessments will be posted with each unit and solutions are to be submitted through Canvas.


Note to prospective students: Please check with the OSU Bookstore for up-to-date information for the term you enroll (OSU Bookstore Website or 800-595-0357). If you purchase course materials from other sources, be very careful to obtain the correct ISBN.

Canvas
This course will be delivered via Canvas where you will interact with your classmates and with your instructor. Within the course site you will access the learning materials, such as the syllabus, lecture notes, labs, class discussions, assignments, and final exam. To preview how an online course works, visit the Ecampus Course Demo. For technical assistance, please visit Ecampus Technical Help.

Measurable Student Learning Outcomes
1) Select and generate graphical and numerical summaries of data.
2) Use principles of statistical inference to make conclusions about populations from samples.
3) Communicate statistical findings to others.
4) Use computer software to conduct statistical analysis.

Evaluation of Student Performance
70% Problem sets
30% Final examination
### Course Content

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<tr>
<th>Week</th>
<th>Topic</th>
<th>Notes and Chapters</th>
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<td>Week 1</td>
<td>Introduction, types of data, sampling, the inference problem</td>
<td>Unit 1 Lecture Notes Chapters 1, 2, 3 (omit section 3.4), 22 (Ch 22 covers sampling) Stata tutorial 1</td>
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<td>Data presentation</td>
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<td>Numerical summary measures</td>
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<td>Week 2</td>
<td>Probability</td>
<td>Unit 2 Lecture Notes Chapter 6 (6.1, 6.2, 6.5, 6.6) Chapter 7 (omit section 7.3) Stata tutorial 2</td>
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<td>Theoretical probability distributions</td>
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<td>Week 3</td>
<td>Sampling distributions</td>
<td>Unit 3 Lecture Notes Chapter 8 and Sections 14.1-14.2 Chapter 9 and Section 14.3 Stata tutorial 3</td>
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<td>Single population inference: confidence intervals</td>
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<tr>
<td>Week 4</td>
<td>Single population inference: hypothesis tests</td>
<td>Unit 4 Lecture Notes Sections 10.1-10.4 and Section 14.4 Stata tutorial 4</td>
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<td>Week 5</td>
<td>Comparing 2 means</td>
<td>Unit 5 Lecture Notes Chapter 11 Stata tutorial 5</td>
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<td>Week 6</td>
<td>Comparing 3 or more means: ANOVA</td>
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<tr>
<td>Week 7</td>
<td>Comparing 2 proportions</td>
<td>Unit 7 Lecture Notes Section 14.6 Stata tutorial 7</td>
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<td>Week 8</td>
<td>Contingency tables</td>
<td>Unit 8 Lecture Notes Chapters 15 &amp; 16 Stata tutorial 8</td>
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<td>Multiple 2x2 tables</td>
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<td>Week 9</td>
<td>Correlation</td>
<td>Unit 9 Lecture Notes Chapters 17 &amp; 18 Stata tutorial 9</td>
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<td></td>
<td>Simple linear regression</td>
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<td>Week 10</td>
<td>Sample size and power</td>
<td>Unit 10 Lecture Notes Sections 10.5, 10.6, 14.5 Stata tutorial 10</td>
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**Comprehensive Final Examination**
Course Policies

Incompletes
Incomplete (I) grades will be granted only in emergency cases (usually only for a death in the family, major illness or injury, or birth of your child), and if the student has turned in 80% of the points possible (in other words, usually everything but the final exam). If you are having any difficulty that might prevent you completing the coursework, please don’t wait until the end of the term; let me know right away.

Guidelines for a Productive and Effective Online Classroom

Students are expected to conduct themselves in the course (e.g., on discussion boards, email) in compliance with the university’s regulations regarding civility.

Civility is an essential ingredient for academic discourse. All communications for this course should be conducted constructively, civilly, and respectfully. Differences in beliefs, opinions, and approaches are to be expected. In all you say and do for this course, be professional. Please bring any communications you believe to be in violation of this class policy to the attention of your instructor.

Active interaction with peers and your instructor is essential to success in this online course, paying particular attention to the following:

- Unless indicated otherwise, please complete the readings and view other instructional materials for each week before participating in the discussion board.
- Read your posts carefully before submitting them.
- Be respectful of others and their opinions, valuing diversity in backgrounds, abilities, and experiences.
- Challenging the ideas held by others is an integral aspect of critical thinking and the academic process. Please word your responses carefully, and recognize that others are expected to challenge your ideas. A positive atmosphere of healthy debate is encouraged.

Statement Regarding Students with Disabilities

Accommodations for students with disabilities are determined and approved by Disability Access Services (DAS). If you, as a student, believe you are eligible for accommodations but have not obtained approval please contact DAS immediately at 541-737-4098 or at http://ds.oregonstate.edu. DAS notifies students and faculty members of approved academic accommodations and coordinates implementation of
those accommodations. While not required, students and faculty members are encouraged to discuss details of the implementation of individual accommodations.

Expectations for Student Conduct
Student conduct is governed by the university’s policies, as explained in the Office of Student Conduct: Information and Regulations.

Academic Integrity
Students are expected to comply with all regulations pertaining to academic honesty. For further information, visit Student Conduct and Community Standards, or contact the office of Student Conduct and Mediation at 541-737-3656.

OAR 576-015-0020 (2) Academic or Scholarly Dishonesty:

a) Academic or Scholarly Dishonesty is defined as an act of deception in which a Student seeks to claim credit for the work or effort of another person, or uses unauthorized materials or fabricated information in any academic work or research, either through the Student's own efforts or the efforts of another.

b) It includes:

i) CHEATING - use or attempted use of unauthorized materials, information or study aids, or an act of deceit by which a Student attempts to misrepresent mastery of academic effort or information. This includes but is not limited to unauthorized copying or collaboration on a test or assignment, using prohibited materials and texts, any misuse of an electronic device, or using any deceptive means to gain academic credit.

ii) FABRICATION - falsification or invention of any information including but not limited to falsifying research, inventing or exaggerating data, or listing incorrect or fictitious references.

iii) ASSISTING - helping another commit an act of academic dishonesty. This includes but is not limited to paying or bribing someone to acquire a test or assignment, changing someone’s grades or academic records, taking a test/doing an assignment for someone else by any means, including misuse of an electronic device. It is a violation of Oregon state law to create and offer to sell part or all of an educational assignment to another person (ORS 165.114).

iv) TAMPERING - altering or interfering with evaluation instruments or documents.

v) PLAGIARISM - representing the words or ideas of another person or presenting someone else’s words, ideas, artistry or data as one’s own, or using one’s own previously submitted work. Plagiarism includes but is not limited to copying another person's work (including unpublished material) without appropriate referencing, presenting someone else's opinions and theories as one's own, or working jointly on a project and then submitting it as one's own.

c) Academic Dishonesty cases are handled initially by the academic units, following the process outlined in the University's Academic Dishonesty Report Form, and will also be referred to SCCS for action under these rules.
Conduct in this Online Classroom
Students are expected to conduct themselves in the course (e.g., on discussion boards, email postings) in compliance with the university's regulations regarding civility.

Tutoring
NetTutor is a leading provider of online tutoring and learner support services fully staffed by experienced, trained and monitored tutors. Students connect to live tutors from any computer that has Internet access. NetTutor provides a virtual whiteboard that allows tutors and students to work on problems in a real time environment. They also have an online writing lab where tutors critique and return essays within 24 to 48 hours. Access NetTutor from within your Canvas class by clicking on the Tools button in your course menu.

OSU Student Evaluation of Teaching
Course evaluation results are extremely important and are used to help me improve this course and the learning experience of future students. Results from the 19 multiple choice questions are tabulated anonymously and go directly to instructors and department heads. Student comments on the open-ended questions are compiled and confidentially forwarded to each instructor, per OSU procedures. The online Student Evaluation of Teaching form will be available toward the end of each term, and you will be sent instructions via ONID by the Office of Academic Programs, Assessment, and Accreditation. You will log in to “Student Online Services” to respond to the online questionnaire. The results on the form are anonymous and are not tabulated until after grades are posted.