COURSE INFORMATION SHEET

BHS 310- Quantitative Methods for the Behavioural Sciences

Lecture:	Wednesdays and Fridays	11:15 AM – 12:30 PM	A2131
Lab:	Monday	11:15 AM – 12:30 PM	A2131

Calendar Description: (3-3) A

This course is designed to give students a basic understanding of descriptive and inferential statistics. Emphasis is placed on practical application and students will learn to analyze and interpret basic statistical research. They will also learn to use computer software (SPSS) to analyze data. Lecture and laboratory components. Class limit of 30 students.

Prerequisite: BHS 240

Instructor: John Wiest
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Office: L2050

Hours: Monday: 1:00PM-3:00 PM, Friday: 1:00 PM-2:30 PM, or by appointment.

Text: *Essentials of Statistics for the Behavioural Sciences, (8th ed.),*
Gravetter, F. & Wallnau, L.
Wadsworth.

Course Description

This course provides an introduction to descriptive and inferential statistical techniques used in behavioural research. The course content includes the study and application of procedures for analyzing data and for making inferences based on the analysis. Major topics include: tabulation and graphic representation of data, summary statistics, probability, normal curve applications and z-scores, confidence intervals, hypothesis tests (t-tests, ANOVA), and correlation/regression analysis.

The course has lecture and lab components. Lecture time is devoted mainly to explanation and illustration of statistical theory, techniques, and rationale. Lab time is devoted mainly to the demonstration of statistical software applications and to tutorial-style assistance by the instructor during hands-on practice and the completion of assignments by the students.

Attendance:

Students are expected to attend all lectures and tutorials to ensure success on quizzes, exams, and assignments. All quizzes will be administered during tutorial hours. Students not attending lectures may find themselves missing information not covered in the textbook. Any student who is absent for a quiz or exam should speak to the professor and, where possible, provide a doctor's note.

Additional Information

The primary objective of this course is to aid students in the interpretation and evaluation of research findings reported in scientific journals, newspapers, and other forms of media, by helping the students to develop a good understanding of the basic statistical concepts and procedures that are used to analyze behavioural research data.

No statistical software experience is expected. To aid students whose math skills are a bit rusty, the text includes a basic math review (see Appendix A).

Expected Learning Outcomes

A combination of classroom instruction and laboratory practice is designed to provide students with the opportunity to improve critical thinking skills (through the application of statistical procedures and the interpretation of statistical results) and to enhance computer literacy skills (through hands-on use of statistical software – SPSS).

Course Organization

In general, material that is covered in lecture sessions will be followed-up with lab work which covers the same material – but, at the instructor's discretion, portions (or all) of some lab sessions may be used to finish coverage of materials that couldn't be completed in the lecture classroom and some lab sessions may be devoted to the writing of quizzes. The lab sessions are an integral part of the course – attendance at lab sessions is ***not*** to be regarded as optional.

A hand-held electronic calculator with *statistical functions* is required. The calculator must be able to accept the input of raw statistical data and provide the student with at least the following output: Σ_x, Σ_x^2, mean, variance, and standard deviation. Students will find that using such a tool will considerably reduce time spent in calculations. This is especially valuable when handling complex assignments and writing quizzes/examinations. Students who do not already possess an appropriate calculator may wish to obtain information from the instructor during the first week of classes before deciding on the make and model to acquire. Note that the course instructor will endeavor to assist students with calculator applications, and can provide considerable assistance with the above-named calculator but, because of the wide variety of calculators in use, each student is ultimately responsible for knowing how to use the calculator that he/she brings to the course.

The text includes instructions/examples of SPSS applications, and the course instructor will provide some handout readings and examples in hardcopy (or as pdf files which can be accessed via MOODLE) as the course progresses. The SPSS software has been installed by Ambrose IT staff on campus computers which are usually accessible to students in the Commons area or in the Lab. Students should not need to possess their own copies of the software (which could be installed on their own PCs), but it may be possible that copies of a student version (18.0) could be ordered through the campus bookstore for purchase by students.

Course Schedule

The following is a Broad Course Schedule.

TOPIC	TEXT REFERENCE
Introduction to Statistics	Chapter 1
Frequency Distributions	Chapter 2
Central Tendency	Chapter 3
Variability	Chapter 4
Standardized Distributions	Chapter 5
Probability	Chapter 6
Distribution of Sample Means	Chapter 7

Introduction to Hypothesis Testing	Chapter 8
Introduction to the t Statistic	Chapter 9
The t-Test for Two Independent Samples	Chapter 10
The t-Test for Two Dependent Samples	Chapter 11
Confidence Intervals	Chapter 12
Analysis of Variance (ANOVA)	Chapter 13
Correlation and Regression	Chapter 15

We will not be covering all of the content of all of the above chapters – the pages that are required reading will be contained in a Readings List that will be handed out as the course progresses. Students should consult this list regularly to ensure that they do not spend time reading pages which are not required-reading. There will be **no** (or very little) coverage of the material in chapters 14 and 16. Note also that some information that is not included in the text will be covered in the lecture/lab sessions and can be included in assignments, quizzes, and examinations.

Course Requirements and Grading

Student performance will be evaluated in a combination of classroom participation and graded assignments, quizzes, mid-term examination, and final examination. Mark allocation is as follows:

Three Assignments	20%
Three Quizzes	25%
Mid-Term Exam	20%
Final Exam	35%
	100%

Students need not receive a passing grade on all components of term work and examinations in order to pass the course. However, failure to submit an assignment or write a quiz/examination, without the prior approval of the instructor, may result in an F grade for the course.

Assignments/Quizzes

The assignments will be take-home exercises. One of the quizzes may be a take-home exercise. Deadlines for completion and submission of these will be clearly indicated in advance.

Any take-home assignment/quiz submitted by a student after the due date will be penalized by 50%, but if submitted after answer keys have been posted, or after any graded materials have been returned to any students, a grade of 0% will be awarded.

All assignment and quiz papers must include the student's name (printed clearly).

Mid-Term Examination

The mid-term examination will be 1 1/4 hours (75 minutes) in length. It will be written during regular class (or lab) time and can cover all materials included in the course up to the date of the exam.

Final Examination

The final examination will be comprehensive (i.e., can cover any materials included in the course during the semester, but emphasis will be on the material covered in the last half of the course). The final examination will have a maximum writing time of three hours (180 minutes).

Grading Scheme

A+	96-100%		
A	90-95%	C	63-66%
A-	85-89%	C-	60-62%
B+	80-84%	D+	54-59%
B	76-79%	D	50-53%
B-	70-75%	F	Below 50%
C+	67-69%		

Allowed aids in all in-class quizzes include:

- a hand-held, non-programmable, statistical calculator
- statistical tables (provided by the instructor, as needed)
- one sheet of notes (8.5 by 11-inch paper, both sides) containing formulae and notes **generated by the student**. Photocopied pages not permitted.

Allowed aids in the mid-term and final exams include:

- a hand-held, non-programmable, statistical calculator
- statistical tables (provided by the instructor, as needed)
- two sheets of notes (8.5 by 11-inch paper, both sides) containing formulae and notes **generated by the student**. Photocopied pages not permitted.

It is the responsibility of all students to become familiar with and adhere to academic policies as stated in the Student Handbook and Academic Calendar. Personal information, that is information about an individual that may be used to identify that individual, may be collected as a requirement as part of taking this class. Any information collected will only be used and disclosed for the purpose for which the collection was intended. For further information contact the Privacy Compliance Officer at privacy@ambrose.edu.

Although extensions to coursework in the semester are at the discretion of the instructor, students may not turn in coursework for evaluation after the last day of the scheduled final examination period unless they have received permission for a "Course Extension" from the Registrar's Office. Requests for course extensions or alternative examination time must be submitted to the Registrar's Office by the appropriate deadline (as listed in the Academic Calendar http://www.ambrose.edu/publications/academiccalendar). Course extensions are only granted for serious issues that arise "due to circumstances beyond the student's control."

We are committed to fostering personal integrity and will not overlook breaches of integrity such as plagiarism and cheating. Academic dishonesty is taken seriously at Ambrose University College as it undermines our academic standards and affects the integrity of each member of our learning community. Any attempt to obtain credit for academic work through fraudulent, deceptive, or dishonest means is academic dishonesty. Plagiarism involves presenting someone else's ideas, words, or work as one's own. Plagiarism is fraud and theft, but plagiarism can also occur by accident when a student fails or forgets to give credit to another person's ideas or words. Plagiarism and cheating can result in a failing grade for an assignment, for the course, or immediate dismissal from Ambrose University College. Students are expected to be familiar with the policy statements in the current academic calendar and the student handbook that deal with plagiarism, cheating, and the penalties and procedures for dealing with these matters. All cases of academic dishonesty are reported to the Academic Dean and become part of the student's permanent record.

Course changes, including adding or dropping a course, may be made during the Registration Revision period, as outlined in the Calendar of Events. All course changes must be recorded on a Registration form, available from the Office of the Registrar. Due to circumstances such as class size, prerequisites or academic policy, the submission of a Registration form does not guarantee that a course will be added or removed from a student's registration. Students may change the designation of any class from credit to audit up to the date specified in the Calendar of Events, although students are not entitled to a tuition adjustment or refund after the Registration Revision period.

Withdrawal from courses after the Registration Revision period will not be eligible for tuition refund. Students intending to withdraw from some or all of their courses must submit a completed Registration form to the

Registrar's office. The dates by which students may voluntarily withdraw from a course without penalty are listed in the Calendar of Events. A grade of 'W' will be recorded on the student's transcript for any withdrawals from courses made after the end of the Registration Revision period and before the Withdrawal Deadline (also listed in the Calendar of Events). 'W' grades are not included in grade point average calculations. A limit on the number of courses from which a student is permitted to withdraw may be imposed. Students wishing to withdraw from a course, but who fail to do so by the applicable date, will receive the grade earned in accordance with the course syllabus. A student obliged to withdraw from a course after the Withdrawal Deadline because of health or other reasons may apply to the Registrar for special consideration.

An appeal for change of grade on any course work must be made to the course instructor within one week of receiving notification of the grade. An appeal for change of final grade must be submitted to the Office of the Registrar in writing within 30 days of receiving notification of the final grade, providing the basis for appeal. A review fee of $50.00 must accompany the appeal to review final grades. If the appeal is sustained, the fee will be refunded. Note that the review could justify an increase, no change, or a decrease in the final grade.

Students are advised to retain this syllabus for their records.

The following is a list of important dates for this course.

Date

Jan. 09	First Lecture
Jan. 20	*Last day to enter course without permission, withdraw from a course; change to audit and receive tuition refund*
Jan. 31	Community Day
Feb 12-13	Downey Lectureship
Feb. 18	Family Day (No Tutorial)
Feb. 19-23	Mid-Semester Break (No Classes)
Feb. 26	*Returning Scholarship Deadline*
Feb. 27	Deans' List Reception
Mar. 04	*Last day to request revised time for a final examination*
Mar. 06	Global Impact Day
Mar. 15-17	Youth Legacy Conference
Mar. 22	*Last day to withdraw from courses without academic penalty*
Mar. 25	Ambrose Research Conference
Mar. 29	Good Friday (no classes)
Apr. 01	*Last day to apply for a time extension for coursework*
Apr. 08	Last class.

Final Exam: Friday, April 12th, 1:00PM – 4:00PM, A2131