

Course ID:	Course Title:	Fall 2018
BHS 410	Basic Multivariate Statistics	Prerequisite: BHS 240, BHS 310
		Credits: 3

Class Information		Instructor Information		Important Dates	
Days:	Wednesday/Friday	Instructor:	David Mayers, PhD	First day of classes:	Wed., Sept 5
Time:	9:45am-11:00am	Email:	david.mayers@ambrose.edu	Last day to add/drop, or change to audit:	Sun, Sept 16
Room:	A1081-1	Phone:	(587) 893-5531	Last day to request revised exam:	Mon, Oct 22
Lab/ Tutorial:	Friday	Office:	L2091	Last day to withdraw from course:	Mon, Nov 12
	8:15 am-9:30 am	Office Hours:	Friday, 11:00 am – 1:00 pm.	Last day to apply for coursework extension:	Mon, Nov 19
Final Exam:	TBA			Last day of classes:	Tue, Dec 11

Course Description

Multivariate analysis as applied to behavioural science. Correlation, simple and multiple regression, discriminant function analysis, canonical correlation, factor analysis, theories and applications of behavioural measurement, reliability, and validity will be presented. Lecture and laboratory components.

Expected Learning Outcomes

Through classes and directed readings, students will:

1. Gain a general understanding of univariate and multivariate analytical approaches.
2. Identify factors that bolster and undermine the validity and reliability of employing multivariate analyses.
3. Develop a rationale for when and how to incorporate multivariate techniques into research methods.
4. Examine statistical theory and thought that underpins the field of applied statistics.
5. Perform sophisticated analyses within the IBM SPSS statistical package.
6. Participate in a simulated scale construction and validation research project.

Textbooks

Field, A., (2018). *Discovering statistics using IBM SPSS statistics* (5th Ed.). Thousand Oaks, CA: Sage Publications Inc.

Course Schedule

Week	Date	Topic	Readings	Important dates
1	Sept 5 th	Course Outline	Syllabus	
	Sept 7 th	Review		
2	Sept 12 th	Null Hypothesis and Significance Testing (NHST)	3	
	Sept 14 th	Alternatives to NHST		
3	Sept 19 th	How to Use SPSS	4	
	Sept 21 st	How to Use SPSS		
4	Sept 26 th	Understanding your data	6	
5	Oct 3 rd	No Classes		
	Oct 5 th	Correlation	8	
6	Oct 10 th	Linear regression	9	
	Oct 12 th	Descriptive Statistics Lab		Assignment #1
7	Oct 17 th	Moderation & Mediation	11	
	Oct 19 th	Regression Lab		Assignment #2
8	Oct 24 th	<i>Exam 1 Review</i>		
	Oct 26 th		3, 4, 6, 8, 9, 11	<i>Exam 1</i>
9	Oct 31 st	Multivariate Analysis of Variance (MANOVA)	17	
10	Nov 7 th	No Classes		
	Nov 9 th	No Classes		
11	Nov 14 th	Discriminant Function Analysis		
	Nov 16 th	MANOVA Lab		Assignment #3
12	Nov 21 st	Exploratory Factor Analysis	18	
	Nov 23 rd	EFA Lab		Assignment #4
13	Nov 28 th	Chi-Square	19	
	Nov 30 th	Chi-Square Lab		Assignment #5
14	Dec 5 th	Multilevel Linear Models (MLM)	21	
	Dec 7 th			Exam Review

Requirements:

Exam 1: 30% of final grade

Final Exam: 45% of final grade

Assignments 25% of final grade

Assignments

Throughout the semester, students will work independently to complete applied problems associated with assigned readings, lectures, and laboratory. Students will submit completed responses to the instructor by email before 11:59pm MST on the assigned due date. Submitted responses should be in APA 6th Edition. No cover page is required for these submissions. These assignments will be combined to make up 25% mark once all have been submitted.

Exams

There will be two exams in this course. The first exam covers all material covered from the beginning of the semester (Chapters 3, 4, 6, 8, 9, & 11). This exam will include a mix of short answer and multiple-choice. The second exam is cumulative, and will cover all material throughout the semester. The final exam will include a mix of short answer and multiple-choice.

Assignments

	Assignment topic	Due Date
Lab Exercise # 1	Descriptive Statistics	October 19th
Lab Exercise # 2	Regression	November 7 th
Lab Exercise # 3	MANOVA	November 23 rd
Lab Exercise # 4	Exploratory Factor Analysis	November 30 th
Lab Exercise # 5	Chi-Square	December 7 th

In class examinations: Applied Psychology

Attendance:

Students are expected to regularly attend lectures. Missing class regularly without adequate rationale will not only impact your ability to successfully complete the course, in extreme cases the instructor reserves the right to ask the student to withdraw from the course. You are not required to inform the instructor if you miss a class, but you should coordinate with a friend in the class to obtain any notes and instructions missed. Failure to communicate with the instructor regarding multiple absences or extenuating circumstances severely limits your ability to receive any accommodations.

Grade Summary:

Letter Grade	GPA	Percentage	Descriptor
A+	4.00	96-100	
A	4.00	90-95	Excellent
A-	3.70	85-89	
B+	3.30	80-84	
B	3.00	75-79	Good
B-	2.70	70-74	
C+	2.30	65-69	
C	2.00	60-64	Satisfactory
C-	1.70	55-59	
D+	1.30	50-54	
D	1.00	45-49	Minimal Pass
F	0.00	< 45	Failure

Because of the nature of the Alpha 4.00 system, there can be no uniform University-wide conversion scale. The relationship between raw scores (e.g. percentages) and the resultant letter grade will depend on the nature of the course and the instructor's assessment of the level of each class, compared to similar classes taught previously.

Please note that final grades will be available on student registration system. Printed grade sheets are not mailed out.

Ambrose University Academic Policies:

Communication

All students have received an Ambrose e-mail account upon registration. It is the student's responsibility to check this account regularly as the Ambrose email system will be the professor's instrument for notifying students of important matters (cancelled class sessions, extensions, requested appointments, etc.) between class sessions. If students do not wish to use their Ambrose accounts, they will need to forward all messages from the Ambrose account to another personal account.

Registration

During the **Registration Revision Period** students may enter a course without permission, change the designation of any class from credit to audit and /or voluntary withdraw from a course without financial or academic penalty or record. Courses should be added or dropped on the student portal by the deadline date; please consult the List of Important Dates. After that date, the original status remains and the student is responsible for related fees.

Students intending to withdraw from a course after the Registration Revision Period must apply to the Office of the Registrar by submitting a "Request to Withdraw from a Course" form or by sending an email to the Registrar's Office by the **Withdrawal Deadline**; please consult the List of Important Dates on the my.ambrose.edu website. Students will not receive a tuition refund for courses from which they withdraw after the Registration Revision period. A grade of "W" will appear on their transcript.

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.

Exam Scheduling

Students, who find a conflict in their exam schedule must submit a Revised Examination Request form to the Registrar's Office by the deadline date; please consult the List of Important Dates. Requests will be considered for the following reasons only: 1) the scheduled final examination slot conflicts with another exam; 2) the student has three final exams within three consecutive exam time blocks; 3) the scheduled final exam slot conflicts with an exam at another institution; 4) extenuating circumstances. Travel is not considered a valid excuse for re-scheduling or missing a final exam.

Electronic Etiquette

Students are expected to treat their instructor, guest speakers, and fellow students with respect. It is disruptive to the learning goals of a course or seminar and disrespectful to fellow students and the instructor to use electronics for purposes unrelated to the course during a class session. Turn off all cell phones and other electronic devices during class. Laptops should be used for class-related purposes only. Do not use iPods, MP3 players, or headphones. Do not text, read, or send personal emails, go on Facebook or other social networks, search the internet, or play computer games during class. Some professors will not allow the use of any electronic devices in

class. The professor has the right to disallow the student to use a laptop in future lectures and/or to ask a student to withdraw from the session if s/he does not comply with this policy. Repeat offenders will be directed to the Dean. If you are expecting communication due to an emergency, please speak with the professor before the class begins.

Academic Policies

It is the responsibility of all students to become familiar with and adhere to academic policies as stated in the Academic Calendar. Personal information (information about an individual that may be used to identify that individual) may be required 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.

Extensions

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 deadline date; please consult the List of Important Dates. Course extensions are only granted for serious issues that arise "due to circumstances beyond the student's control."

Appeal of Grade

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 Registrar's Office in writing and providing the basis for appeal 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. If the appeal is sustained, the fee will be refunded.

Academic Integrity

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 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 acknowledge 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 the university. Students are expected to be familiar with the policies in the current Academic Calendar 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.

Note: Students are strongly advised to retain this syllabus for their records.