**Middle Georgia State University**

School of Computing
Department of Information Technology

## SECTION 1 - GENERAL COURSE INFORMATION

*Expected Characteristics of a Doctoral Student:* *The ability to work and think independently is one of the fundamental requirements for studying in the DSc IT degree program. Being independent means that you are confident and highly motivated. You take initiatives and have the ability to take responsibility. You are committed to the program, have good time management and organizational skills. Other vital requirements are curiosity, creativity, discipline, and productivity.*

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| **Course Title:** | Advanced Statistical analysis for decision-making |
| **Course Prefix and Number:** | ITEC 7130 |
| **Course CRN#:** | 83639 |
| **Semester & Session:** | Fall 2023, Term I, Section 2 |
| **Campus Location:** | Online |
| **Meeting Days:** | This course will be conducted completely online |
| **Meeting Time:** | This is a doctoral-level course and will be conducted completely online in an asynchronous format. Access via D2L Course Shell |

## INSTRUCTOR'S INFORMATION

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| **Name:** | Dr. Kevin Floyd, Professor & Associate Dean of the School of Computing |
| **E-mail Address:** | Kevin.floyd@mga.edu |
| **Office:** | PSC 316 |
| **Office Phone Number:** | 478-471-2801 |
| **Office Hours:** | Available by Appointment |

## COVID-19 STATEMENT

The University System of Georgia recognizes COVID-19 vaccines offer safe, effective protection and urges all students, faculty, staff and visitors to be vaccinated; however, it is an individual decision to receive the vaccine and will not be required to be a part of our campuses. Everyone is encouraged to wear a mask or face covering while inside campus facilities. Unvaccinated individuals are strongly encouraged to get a vaccine, to continue wearing a face covering, and to continue socially distancing from others when possible. Updated protocols for isolation and quarantine will be in effect this semester in order to mitigate further spread of the coronavirus on our campuses. USG guidance is subject to change based on recommendations from GA DPH. MGA will remain flexible in their planning and be prepared to change course as necessary. MGA will continue to provide updated information at this website: https://www.mga.edu/coronavirus/

Carefully review your syllabus, D2L announcements, or email for details

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| **Course Prerequisite:** | Admission to DSc in IT program |
| **Credit Hours:** | 3 |
| **Course Description:** | This course covers advanced multivariate and non-parametric statistics for decision-making.  Topics include multivariate analysis of variance, principal components, and factor analysis, among others.  Research design and method are emphasized. |
| **Course Philosophy:** | The ultimate goal in this course must be "learning quantitative analyses to interpret results for decision-making". While quantitative analysis will be used on weekly basis, the major emphasis should be on how to interpret results to make sound decisions for your organizations. |

**Student learning outcomes:**

*Upon completion of this course, students will be able to -*
- Identify appropriate research design and methods for decision-making.
- Understand fundamental concepts of multivariate analysis.
- Construct proper multivariate analysis models.
- Apply exploratory and confirmatory multivariate methods properly.
- Use statistical and analytical software correctly

**Topics:**

*We will examine the following areas including, but not limited to:*
- Survey Design and Development
- Data Collection and Handling
- Research Reliability & Validity
- Exploratory Factor Analysis
- MANOVA
- Multiple Regression

**Required course materials:**

SPSS Version 28 Statistical Analysis Software - https://tinyurl.com/spss7130
Intermediate Statistics Using SPSS, Herschel Knapp ISBN: 978-1-5053-7743-8

**Technology Requirement:**

*The following will be used in this course:*
- Students are required to have access to a computer and the Internet. All assignments, the course schedule, announcements, course syllabus, course content, rubrics, and supplemental course materials are posted on the D2L Course Shell.
- We may use a computer webcam with a built-in microphone to participate in possible virtual meetings with the instructor and group members.
- Microsoft Office (Word, Excel, & PowerPoint)

**Library/Learning Resources:**

As a Middle Georgia State University student, you have complete access to GALILEO (Georgia Library Learning Online), a virtual library of licensed commercial databases. It provides access to over 100 databases indexing thousands of periodicals and scholarly journals. There are over 10,000 journal titles available in full text. Additional GALILEO resources include e-books, government documents, reference collections, and video databases. The Middle Georgia State University library also has a core collection with locally purchased resources to support this graduate course. Currently, the exclusive e-

holdings for the M.S. in Information Technology graduate courses are as follows: e-Journals = 1,661 and e-books = 4,325.  The following are examples of online databases that support this undergraduate course. They are available to you through GALILEO and/or institutionally funded subscriptions:

- ACM Digital Library
- Computer Source
- Computing (ProQuest)
- Academic Search Complete
- Research Library (ProQuest)
- Wilson Omnifile: Full-Text Mega Edition
- Google Scholar

## SECTION 3 - COURSE ASSESSMENT INFORMATION

### Overview of Grading

**Excellent**. The quality of work meets the doctoral requirements in both originality and mastery of the material. This is equivalent to an A grade.

**Satisfactory**. The work meets the minimum requirements. The work is short of excellence, originality, and does not fully demonstrate mastery of the material. This is equivalent to a B grade.

**Unsatisfactory**: The work is deficient as the minimum requirements have not been. This is equivalent to an F grade. (Anything below a Satisfactory (B-level) is deemed to be a failing grade.)

Your grade for the semester will be determined by the following assessment of completed assignments. The letter grade for this course is based on the total points earned on all assignments.

| Assignment | Weight |
|---|---|
| Data Analysis/Report/Application (Individual) | 5 @ 10% each = 50% |
| Survey Development and Coding Sheet | 10% |
| Final Project (Data Analysis) | 40% |
| **Total Achievable Grade Points =** | **100%** |

The following point scale will be used to calculate the final course grade. NOTE: A grade of B or higher is required to successfully complete this course:

- A: 90% - 100% – Excellent Work
- B: 80% - 89% – Satisfactory Work
- Below 80% – Unsatisfactory Work

### Overview of Course Assignments

### Data Analysis/Report/Findings/Application

For Week 2 – Week 7
Resources provided for each week include instructional video(s), and dataset. The graded activity for each week includes analysis of data, a report of the results in APA format.

### Survey Development & Code Sheet

Each student will develop a short survey using best practices presented in class. The survey will include a corresponding code sheet/code book that describes the contents, structure, and layout of the survey.

**Final Project**

Students will be provided with a real-world dataset and will use SPSS to run the appropriate statistics to answer provided research questions.

## SECTION 4 - COURSE EXPECTATIONS

### EXPECTATIONS

Online courses are not self-paced and regular participation in online courses is required and will be recorded by your instructor. Students are expected to complete all course assessments using D2L.

Online learning assumes a high level of maturity and professionalism. It is designed to make learning more convenient but no less rigorous. The lack of a formal meeting schedule in an online course can be liberating. It can also be demanding because you must determine when to make time for class. Self-discipline and good time management skills are necessary when taking an online course.

Please remember that you will spend as much or more time completing an online course as you would taking it in a traditional face-to-face/classroom format. The special circumstances of taking an online course demand regular and consistent participation. Be sure to pace yourself throughout the semester making sure your responses to communications and assignments are timely. If you are not able to participate in any assigned class activities, you must contact your instructor immediately.

The instructor is required to report "no-shows" or students who do not show up on the first day of class. Therefore, all students enrolled in the course must verify their enrollment. This can affect financial aid and you may be dropped from the class. Your instructor will notify you as to how to verify your enrollment before the beginning of the term to ensure that you are not reported as a "no-show".

### ATTENDANCE POLICY

Students whose number of absences is more than twice the number of class meetings per week may be assigned a failing grade for the course. Students who have more absences than the number of class meetings per week but less than twice the number of class meetings per week will be penalized on the participation portion of the grade. Students who have absences that are less than or equal to the number of class meetings per week will not be penalized. This policy holds for face-to-face and hybrid courses.

Students that do not submit any work for more than 14 consecutive days in an online course or partially online course may be assigned a failing grade for the course.

The MGA policy on attendance is found in Section 5.04.05 of the Faculty Handbook and in the Academic Catalog (https://mga.smartcatalogiq.com/2020-2021/Undergraduate-Catalog/Academic-Policy-and-Information/Course-Policies/Attendance-Policy).

### CLASS BEHAVIOR EXPECTATIONS AND CONSEQUENCES FOR VIOLATIONS

Middle Georgia State University students are responsible for reading, understanding, and abiding by the MGA Student Code of Conduct." Student Code of Conduct, Responsibilities, Procedures, and Rights are found at

http://www.mga.edu/student-affairs/docs/MGA_Student_Handbook.pdf#page=45.

### STUDENT WITHDRAWAL POLICY

Students are encouraged to read the withdrawal policy found at https://www.mga.edu/registrar/registration/drop-add.php before dropping/withdrawing from the class.

Students who wish to withdraw from the University must complete the Withdrawal Form, obtaining the required signature from the advisor, and submitting it to the Office of the Registrar at the Macon campus or the administrative offices at other campuses. Withdrawal is not complete until all withdrawal procedures have been properly executed. https://www.mga.edu/registrar/ Students may withdraw from the course and earn a grade of "W" up to and including the midterm date, which occurs on **SEPT 1, 2023.** After this date, students who withdraw will receive a grade of "WF." https://www.mga.edu/academics/calendars/index.php

## POLICY ON ACADEMIC MISCONDUCT

As a Middle Georgia State student and as a student in this class, you are responsible for reading, understanding, and abiding by **Middle Georgia State's Student Code of Conduct.**

Quoted directly from the Student Handbook, I believe it is important that you recognize and understand the following about plagiarism and cheating:

*Individuals will fulfill their academic responsibilities in an honest and forthright manner.*
Examples of prohibited behavior include but are not limited to: plagiarizing another's work (such as using another's phrasing, concepts or line of reasoning as your own without giving proper credit to the author or creator); submitting course assignments that are not your own; submitting the same paper in different classes without prior approval from both instructors; cheating (the use of any unauthorized means to gain academic advantage on assignments, laboratory reports or examinations); acquiring or using test materials without faculty knowledge; accessing any information, resource, and/or means of communication during an exam or assignment without specific authorization from the professor; failing to follow class policy; obtaining academic benefits through computer fraud or unauthorized access; engaging in academic fraud alone or with others; using material downloaded off Internet without proper citation; illicitly attempting to influence grading; failing to abide by test-taking procedures. The MGA Withdrawal Form, is available online or in the Office of the Registrar. The entire Student Code of Conduct is included in Middle Georgia State's Student Handbook and is available online at https://www.mga.edu/student-conduct/

The penalty for academic misconduct is a grade of zero for the work involved and will be referred to the Dean of Students. Subsequent academic misconduct results in a failing grade for the course.

## PLAGIARISM POLICY
A plagiarism prevention service is used in the evaluation of written work submitted for this course. As directed by the instructor, students are expected to submit or have their assignments submitted through the service to meet the requirements for this course. The papers will be retained by the service for the sole purpose of checking for plagiarized content in future student submissions.

## POLICY ON DISABILITY ACCOMMODATIONS
Students seeking academic accommodations for a special need must contact the Middle Georgia State University Office of Disability Services in Macon at (478) 471-2985 or in Cochran at (478) 934-3023. Students may also visit the Disability Services Office in room 266 of the Student Life Center on the Macon campus or in Georgia Hall Lower Level on the Cochran campus. https://www.mga.edu/accessibility-services/index.php

## DELAYED OPENING OR CLOSING OF THE UNIVERSITY
If class is unable to occur for an opening or closing of the university, go to the online webpage of the course for additional instructions. If there are no additional instructions provided on the course homepage news section, then just plan to meet at the normal next regularly scheduled meeting for the course.

**END OF COURSE EVALUATIONS**
Student evaluations of faculty are administered online at the end of each term/session for all courses with five or more students. Students will receive an email containing a unique link to a survey for each course in which they are enrolled. All responses are anonymous and completion of evaluations is voluntary.
*Students are responsible for reading, understanding, and adhering to all Middle Georgia State University student policies, including those linked on the Syllabus Policy page.*

## SECTION 5 - INSTRUCTOR-SPECIFIC POLICIES

**General Guidance.**
This syllabus is provided for general guidance on course activities and expectations. The instructor reserves the right to modify the syllabus in response to changing student needs or pedagogical circumstances. Changes are announced in class and posted in D2L/Brightspace.

## SECTION 6 - TENTATIVE COURSE SCHEDULE AND OUTLINE

| Assignments | Reading/Activities |
|---|---|
| **Week 1 (8/9 – 8/15)**<br><br>**Assignment 1 –** Develop Survey and Code Sheet<br>Due 8/15 | **Topics**<br><br>Survey Design and Development<br><br>See D2L Course Content → Week 1 → Videos |
| **Week 2 (8/16 – 8/22)**<br><br>**Assignment 2 –** Data Analysis Assignment - Testing Assumptions<br>Due 8/22 | **Topics**<br><br>Testing Assumptions of Parametric Data<br><br>See D2L Course Content → Week 2 → Videos |
| **Week 3 (8/23 – 8/29)**<br><br>**Assignment 3 –** Data Analysis Assignment – Validity and Exploratory Factor Analysis<br>Due 8/29 | **Topics**<br><br>Validity<br>Exploratory Factor Analysis<br><br>See D2L Course Content → Week 3 → Videos |
| **Week 4 (8/30-9/5)**<br><br>**Assignment 4 –** Data Analysis Assignment – Reliability and Cronbach's Alpha<br>Due 9/5 | **Topics**<br><br>Reliability<br>Cronbach's Alpha<br><br>See D2L Course Content → Week 4 → Videos |

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| **Week 5 (9/6 – 9/12)**<br><br>**Assignment 5 –** Data Analysis Assignment  - Multivariate Analysis with MANOVA<br>Due 9/12 | **Topics**<br><br>MANOVA<br><br>**Readings**<br><br>Chapter 7 MANOVA<br><br>See D2L Course Content → Week 5 → Videos |
| **Week 6 (9/13 – 9/19)**<br><br>**Assignment 6 –** Data Analysis Assignment – Multivariate Analysis with Multiple Regression<br>Due 9/19 | **Topics**<br><br>Multiple Regression<br><br>**Readings**<br><br>Chapter 12 Multiple Regression<br><br>See D2L Course Content → Week 6 → Videos |
| **Week 7 (9/20 – 9/26)**<br><br>**Assignment 7 –**Final Project | |
| **Week 8 (9/27 – 10/3)**<br><br>**Final Project due 9/29 by noon** | |