

## **DSCI 2710.002: Data Analysis with Spreadsheets – Spring 2021 Syllabus**

**CLASS (DAY/TIME/LOCATION):** NOT APPLICABLE (ONLINE SECTION)

**INSTRUCTOR:** Dr. Hakan Tarakci

**OFFICE:** BLB 358C      **PHONE:** (940) 565-3116

**OFFICE HRS:** All office hours will be held through my [Zoom Personal Meeting Room](#). I will be available during:

- Tuesday 8 – 9.30 PM
- Wednesday 8 – 9.30 PM

**E-MAIL (preferred):** [hakan.tarakci@unt.edu](mailto:hakan.tarakci@unt.edu)

### **REQUIRED SOFTWARE:**

**Canvas:** The lecture notes, Excel case files, Case quizzes, all of the exams and other material will be posted on Canvas so please make sure you keep up and check Canvas often.

**Excel,** installed in the College of Business computer lab.

**Hawkes Learning: Discovering Business Statistics** by Nottingham. Note: This software is **required** to complete the assignments that are equivalent to a portion of one take home exam. Your personal access code to the software is required to obtain the lesson certifications. The software is available online (web access) and available for purchase at [www.hawkeslearning.com](http://www.hawkeslearning.com). **Software access includes the eBook.**

HLS Student Web Platform: <http://www.hawkeslearning.com/>

HLS Web Access: <https://learn.hawkeslearning.com/Portal/>

HLS training video: <http://tv.hawkeslearning.com/Video.htm?PlayerID=2956123671001>

**Minitab 17,** installed in the College of Business computer lab. As UNT students enrolled in a COB class, you have access to the physical COB computer lab, as well as the virtual lab via VMWare.

### **REQUIRED TEXTBOOK (e-book: required; hardbound: optional):**

**Discovering Business Statistics** by Nottingham/Hawkes, Hawkes Learning. Two options are available to you: (1) Hardbound textbook and HLS software bundle: ISBN-13: 978-1-941552-69-8. (2) HLS Software only (includes e-book): ISBN-13: 978-1-941552-85-8. Note that, the textbook is also sold separately (Hardbound textbook only: ISBN-13: 978-1-935782-87-2); However, in this course, only the HLS software and e-book components are required. The *upgrade* to the *hardbound* text, (either by purchasing the software and the hardbound book separately, or by purchasing the hardbound book + HLS software bundle) is optional.



**IMPORTANT:** When you purchase the Hawkes access code for \$85.99, you also get free access to the digital version of the textbook. This is probably cheaper than buying the digital textbook through the bookstore. Unless you want the hard copy of the textbook, I'd recommend simply purchasing the Hawkes code.

## **IF YOU ARE LESS FAMILIAR WITH EXCEL:**

Any Excel Primer – Any Excel reference that covers material similar to our BCIS 2610 course.

**GOALS:** At the end of the course, you should:

1. have an increased appreciation for the use of statistics in business decision making,
2. be better able to select the appropriate statistical tool/methodology to aid in business decision making,
3. be able to use a computer spreadsheet program such as **Excel** to describe and analyze numerical data,
4. be better able to communicate in the language of applied business statistics,
5. have acquired a more positive attitude towards business statistics,
6. be able to manipulate simple statistical formulae to solve non-verbal (numerical) problems,
7. have an enhanced ability to follow directions and instructions,
8. have a much better vision of how analytics are used in analysis and business decisions,
9. understand more about job/career potential of analytics and Decision Sciences.
- 10. Think about becoming a Decision Sciences Major!**

## **TEACHING METHOD:**

1. You are encouraged to pay attention to commercials and news items in printed as well as audio-visual media to become aware of the wide use of statistics in our daily lives. To better assist you in understanding the use of these methodologies in business many of the class problems will be presented as simple business cases.
2. You should **study** the material in the PowerPoint slides. You are strongly encouraged to try to independently solve the problems included in the lecture slides, not simply verify that the provided solutions “make sense”.
3. You should **work** on the homework assignments (HLS lessons and Excel case studies). The case studies and the Hawkes Learning lessons are intended to assist you in better structuring the learning time you spend on mastering the course material. Exam questions will mostly refer to these assigned exercises. The best way to prepare for exams is to go over the practice exams posted on Canvas.

## **EVALUATION:**

To demonstrate your ability to use quantitative techniques in business, you will be evaluated on a number of homework assignments, Excel case studies, and exam questions. Rather than being purely numerical, exam and case problems will be presented in word format. Many Hawkes Learning (HLS) lesson assignments will also be presented in word format. You will work on Excel case studies that require you to use an Excel spreadsheet to analyze and describe real-world business data. By simulating real business problems and using the language of statistics, these evaluation instruments will reinforce the course objectives.

## **GENERAL COMMENTS**

1. Doing the assignments is essential for success in this course. In fact, the assignments constitute a large portion of your grade in this course. You are encouraged to keep up with the homework and meet the submission deadlines.
2. You should not hesitate to ask questions to me, (the professor, Dr. Tarakci) or the teaching

assistant. I will try to keep a FAQ section on Canvas for commonly asked questions. Usually someone else has the same question, so, when you ask a question, others can benefit from the question. Since we do not meet in person in class, such questions become even more important for an online class.

3. Regular monitoring of the course material posted on Canvas is expected. There will be no make-up if you miss any of the mid-term exams, unless you have a University-approved excuse. Whenever applicable, such an excuse is to be provided to the instructor in writing, as early as possible.
4. You have the final responsibility for seeing that you properly withdraw before the scheduled last drop day, in case you wish to withdraw from/ drop the course. If you stop attending class, you should execute the drop procedure since failure to do so will result in a grade of "F" which cannot be changed.

### **DSCI 2710 COURSE- SPECIFIC POLICIES:**

1. **HLS Lessons:** Homework using the **Hawkes Learning: Discovering Business Statistics** is assigned. The due dates for the **HLS lessons** are listed on this syllabus. These form a significant part of the course grade and **must be registered onto the HLS Web database by the due date** to receive full credit as well as bonus points (two extra credit points per module). Late tutorial submissions still receive full credit, provided they are registered by **the end of day on May 1, 2021**; however, no bonus points are earned. No credit is awarded for any tutorial exercise completed after this date.
2. **Excel/Minitab Case Quizzes:** Projects involving the use of **Excel** to analyze business data are assigned. These are an important part of the course grade. For each case assignment, a data set will be provided. These case assignments will use Excel; however, for some, using Minitab will also be an option. I will post instructions on Canvas on how to use Minitab, if necessary. I will use an online quiz on Canvas for each case to verify your Excel/Minitab case comprehension and apply your score on that quiz as your case score.
3. **Exams:** There will be three exams plus a comprehensive final exam. All exams will be available on Canvas. The lowest grade of Exams 1, 2, and 3, will be dropped. For each exam you will be given a short period of time (typically about 40 hours), in which you will need to find a 75 minute period to take the timed exam. More details on the online exams will be posted on Canvas.
4. **Grading:** The 20 HLS lessons are worth a total of 400 points (@ 20 points each); The 4 Excel case assignments are worth a total of 100 points (@25 pts. each); The three mid-term exams are worth a total of 300 points (@150 each, with the lowest grade of the three dropped), and the comprehensive final is worth 200 points.

#### **Course Point Allocation:**

Exam #1	150
Exam #2	150
Exam #3	150
(Lowest of exams #1, #2, #3, will be dropped)	-150
Final exam (cumulative)	200
HLS Lessons (Hawkes Learning)	400 (20 points each)
Excel/Minitab case Quizzes	<u>100</u> (25 points each)
<b>TOTAL</b>	<b>1,000</b>

5. **Letter Grades:** If you achieve the following thresholds, you are **guaranteed** to receive the letter grade listed next to them:
- ≥ 900 points (or ≥ 90%) → A
  - ≥ 800 points (or ≥ 80%) → B
  - ≥ 700 points (or ≥ 70%) → C
  - ≥ 600 points (or ≥ 60%) → D
  - < 600 points (or below 60%) → F
6. **Extra Credit:** Each HLS Tutorial that you finish on time earns you 2 extra credit points. That means a student who finishes all tutorials on time will receive 40 points in addition to the 400 points for homework. These extra credit points are added to your total but the maximum score is still out of 1,000 points.

## DEPARTMENT, COLLEGE, and OTHER POLICIES

1. **COMPLAINTS:** If you wish to register a complaint, you should first discuss your complaint with your instructor. If you wish to carry it further, contact Dr. Arunchalam Narayanan (the course coordinator) and then the ITDS Department Chair Dr. Leon Kappelman, but **only after first discussing it with your instructor**.
2. **EXAMS:** You are required to take all exams, unless a written medical or other UNT-approved excuse is provided. In that case, you should discuss the alternative arrangements with your instructor. As a general rule, the course format does not allow **make-up exams**.
3. **ACADEMIC INTEGRITY:** This course adheres to the UNT policy on academic integrity. The policy can be found at <https://vpaa.unt.edu/fs/resources/academic/integrity>. If you engage in academic dishonesty you will receive a failing grade on the test or assignment, or a failing grade in the course. In addition, the case may be reported to the UNT Dean of Students/Academic Integrity Office, which maintains a database of related violations.
4. **STUDENTS WITH DISABILITIES:** The College of Business complies with the **Americans with Disabilities Act** in making reasonable accommodations for qualified students with disability. If you have an established disability you should register with the Office for Disability Accommodation and receive further instructions. Please see your instructor as soon as possible if you have any questions.
5. **DEADLINES:** Dates of drop deadlines, final exams, etc., are published in the university catalog and the schedule of classes. Please be sure you keep informed about these dates.
6. **SPOT:** The Student Perceptions of Teaching (SPOT) is a requirement for all organized classes at UNT. This short Web-based survey will be made available to you at the end of the semester/session, providing you a chance to comment on how this class is taught. I am very interested in the feedback I get from students, as I work to continually improve my teaching. I consider SPOT to be an important part of your participation in this class.
7. **INCOMPLETE GRADE (I):** The grade of "I" is not given except for rare and very unusual emergencies, as per University guidelines. An "I" grade cannot be used to substitute your poor performance in class. If you won't be able to pass, please drop the course.
9. **CAMPUS CLOSING:** In the event of an official campus closing, please check your UNT e-mail for instructions on how to turn in assignments, how the due dates are modified, etc.

## **DSCI 2710 – 002 Online Section Schedule: Spring 2021**

The schedule below is a tentative outline for the semester. It is meant to be a guide and several items are subject to change. Exams may be moved in time & will be announced on Blackboard. This being an online class, you are free to study the topics at your own pace; however, I STRONGLY recommend that you adhere to the schedule below. This way, you should progress at a reasonable, sustainable pace – similar to the traditional in-class sections. You will also be able to keep up with the Homework deadlines and Quiz and Exam dates. I assume each week starts on Monday so Week 1, for example, refers to Jan 11<sup>th</sup>, Mon – Jan 17<sup>th</sup>, Sun.

<b><u>Week</u></b>	<b><u>Topics &amp; Section in Text</u></b>	<b><u>HLS Lesson</u></b>
<b><u>Week 1</u></b>	Course syllabus Introduction to Statistics: Ch. 1.1 thru 1.4 <b>L0. Hawkes: Obtain access code</b>	
	L1. Levels of measurement: Ch. 2.5 <b>Levels of Measurement</b>	<b>2.5-2.6</b>
<b><u>Week 2</u></b>	L2. Organizing, Displaying & Interpreting Data: Ch.3.1 thru 3.7 Frequency Distributions: Ch. 3.1 <b>Graphical displays; pie charts &amp; bar charts</b> <b>Graphical displays; histograms, polygons, Stem &amp; leaf</b>	<b>3.3</b> <b>3.5-3.9</b>
<b><u>Week 3</u></b>	L3. Descriptive Measures: Ch. 4.1 <b>Measures of Location</b>	<b>4.1</b>
	L4. Descriptive Measures cont.: Ch.4.2 -4.3, 4.5 <b>Measures of Dispersion</b>	<b>4.2a</b>
<b><u>Week 4</u></b>	L5. Constructing Samples	<b>4.2b</b>
<b>Case 1 Quiz is Due on Feb 7<sup>th</sup>, Sun</b>		
<b>** TAKE ONLINE EXAM #1 FEB 6<sup>TH</sup> (SAT) THROUGH FEB 7<sup>TH</sup> (SUN)**</b>		
<b><u>Week 5</u></b>	L6. Probability, Randomness & Uncertainty: Ch. 5.1 thru 5.6 (See Summary pp. 275 – 277) <b>Classical Probability</b>	<b>5.1-5.2</b>
<b><u>Week 6</u></b>	L7. The Discrete Prob. Distribution: Ch. 6.1 thru 6.3 <b>Discrete Random Variables</b>	<b>6.1-6.3</b>
	L8. The Binomial Distribution: Chap. 6.5 <b>The Binomial Distribution</b>	<b>6.5</b>
<b><u>Week 7</u></b>	L9. The Poisson Distribution: Ch. 6.6 <b>The Poisson Distribution</b>	<b>6.6</b>
	L10. Continuous Random Variables: Ch.7.2 – 7.3 <b>Reading the Normal Curve</b>	<b>7.3a</b>

<b><u>Week 8</u></b>	L11. Continuous Random Variables <b>The Normal Distribution</b>	<b>7.3b</b>
	<b>Case 2 Quiz is Due on Mar 7<sup>th</sup>, Sun</b>	
	<b>**TAKE ONLINE EXAM #2 MAR 6<sup>TH</sup>(SAT) THROUGH MAR 7<sup>TH</sup> (SUN)**</b>	
<b><u>Week 9</u></b>	L12. Continuous Random Variables <b>Finding the value of z</b>	<b>7.3c</b>
	L13. Samples & Sampling Distributions: Ch. 8.1 – 8.3 <b>The Distribution of the Sample Mean</b>	<b>8.3</b>
<b><u>Week 10</u></b>	L14. Estimating Means: Single Samples: ( $\sigma$ Known): Ch. 9.1 – 9.3 <b>Interval Estimation of Pop. Mean, <math>\sigma</math> Known</b>	<b>9.1-9.3</b>
	L15. Estimating Means: Single Samples ( $\sigma$ Unknown): Ch. 9.4 <b>Interval Estimation of Pop. Mean, <math>\sigma</math> Unknown</b>	<b>9.4b</b>
<b><u>Week 11</u></b>	<b>Case 3 Quiz is Due on Mar 28<sup>th</sup></b>	
	<b>**TAKE ONLINE EXAM #3 MAR 27<sup>TH</sup> (SAT) THROUGH MAR 28<sup>TH</sup> (SUN)**</b>	
<b><u>Week 12</u></b>	Statistical Process Control: Ch. 17.1-17.2 L16&L.17. Monitoring with an x-Bar & R Charts: Ch. 17.3 <b>Monitoring with an R Chart</b> <b>Monitoring with an x-Bar Chart</b>	<b>17.3b</b> <b>17.3a</b>
<b><u>Week 13</u></b>	L18. Monitoring with a p-Chart: Ch. 17.4 <b>Monitoring with a p Chart</b>	<b>17.4</b>
	L19. Monitoring with a c-Chart: Ch. A.14 <b>C – Charts</b>	<b>A.14</b>
<b><u>Week 14</u></b>	<b>Case 4 Quiz is Due on Apr 18<sup>TH</sup>, Sun</b>	
<b><u>Week 15</u></b>	Catch-up and prepare for the finals.	
<b><u>FINALS WEEK (Week 16)</u></b>		
	<b>**TAKE ONLINE FINAL EXAM APR 28<sup>TH</sup> (WED) THROUGH APR 30<sup>TH</sup> (FRI)**</b>	

**HLS Lesson Due dates:** Lesson registration due by 11:59pm CT on the WEB registration system. Late submissions forego the 2 points extra credit. No submissions are accepted after May 9<sup>th</sup>.

<u>No.</u>		<u>HLS Lesson</u>	<u>Due Date</u>
1	2.5	Levels of measurement	2/7
2	3.3	Graphical displays: pie charts, bar graphs	2/7
3	3.5	Graphical displays: line graphs, histograms, stem-and-leaf	2/7
4	4.1	Measures of location	2/7
5	4.2a	Measures of dispersion	2/7
6	4.2b	Constructing samples	2/7
7	5.1	Classical probability	3/7
8	6.1	Discrete random variables	3/7
9	6.5	The Binomial distribution (word problems)	3/7
10	6.6	The Poisson distribution	3/7
11	7.3a	Reading a normal curve (z) table	3/7
12	7.3b	The normal distribution	3/7
13	7.3c	Finding the value of z	3/28
14	8.3	Sampling distributions: means	3/28
15	9.1	Estimating means: sigma known	3/28
16	9.4b	Estimating means: sigma unknown	3/28
17	17.3b	Statistical quality control: R charts	4/18
18	17.3a	Mean charts using range	4/18
19	17.4	p-charts	4/18
20	A.14	c-charts	4/18

**Case Assignments:**

<u>No</u>	<u>Topic</u>	<u>Due Date</u>
CASE 1	Simple Data Analysis	2/7
CASE 2	Discrete Distribution Probabilities	3/7
CASE 3	Estimating Means	3/28
CASE 4	Quality Control	4/18

**Exams:**

Exam 1 ONLINE ON CANVAS	2/7
Exam 2 ONLINE ON CANVAS	3/7
Exam 3 ONLINE ON CANVAS	3/28
Final Exam ONLINE ON CANVAS	4/30