

Course Number: HIM 4100

Course Title: Data Analysis with Excel

Course Description:

This course is designed to provide students with practical experience in health data analytics using Microsoft(r) Excel(r). Hands-on exposure to converting data into information using Excel functions and structures to aggregate, summarize, and graphically display information. Attention is given to improving data integrity by minimizing duplication and applying data validation. An introduction to streamlining and automating repetitive tasks is also included.

Prerequisites: MIS1300 with a grade of C or better.

Credit hours: 3

Learning Outcomes:

Upon the successful completion of this course, students will be able to:

1. Conduct basic data summaries of numeric and categorical data using aggregate functions.
2. Process large sets of structured data & apply data extraction methodologies
3. Create data summaries and aggregations using PivotTables.
4. Organize data within a spreadsheet to minimize duplication.
5. Apply knowledge of the database querying & data exploration & mining techniques to facilitate information retrieval. (3)
6. Analyze clinical data & depict trends graphically that demonstrates quality, safety, & effectiveness of healthcare. (4)
7. Record and manage macros to automate & streamline repetitive tasks.
8. Analyze statistical data for decision making (4).
9. Perform cost-benefit analysis for resource planning & allocation (4).
10. Plan adherence to Institutional Review Board (IRB) process and policies (3).

Indiana Tech
College of Professional Studies
HIM 4100 Data Analysis with Excel
Online Syllabus Course Content

Instructor Information

Please see Professor Profile at the Blackboard instructional site.

Course Schedule

Please see Course Schedule in the Course Syllabus area of the Blackboard instructional site.

Online Course Policies

All of the online courses taken by students are required to follow the policies posted online at <http://online.indianatech.edu/tech-policies/policies/>. Please review the posted policies carefully. If you are unable to abide by the policies listed, please contact the Warrior Information Network (WIN) at 888.832.4742 and request to withdraw from this course.

Course Description

This course is designed to provide students with practical experience in health data analytics using Microsoft® Excel®. Hands-on exposure to converting data into information using Excel functions and structures to aggregate, summarize, and graphically display information. Attention is given to improving data integrity by minimizing duplication and applying data validation. An introduction to streamlining and automating repetitive tasks is also included. (3 Credit Hours)

Course Prerequisite(s)

MIS 1300 with a grade of C or better

Textbook

Poatsy, Mary Anne, et al. (2017.) *Exploring: Microsoft® excel 2016, comprehensive*.
New Jersey: Prentice Hall.

Primary Learning Objectives

Upon successful completion of this course, a student will be able to:

1. Conduct basic data summaries of numeric & categorical data using aggregate functions
2. Process large sets of structured data & apply data extraction methodologies
3. Create data summaries & aggregations using PivotTables
4. Organize data within a spreadsheet to minimize duplication.

5. Apply knowledge of database querying & data exploration & mining techniques to facilitate information retrieval (3)
6. Analyze clinical data & depict trends graphically that demonstrate quality, safety, & effectiveness of healthcare (4)
7. Record and manage macros to automate & streamline repetitive tasks.
8. Analyze statistical data for decision making (4)
9. Perform cost-benefit analysis for resource planning & allocation (4)
10. Plan adherence to Institutional Review Board (IRB) process and policies (3)

Grading Events & Grading Criteria

Unless otherwise specified, all assignments must be submitted via Blackboard.

Grading Events					Grading Scale							
Assessment	Qty	Pt.	Tot.	%	A	100%	-	93%	C+	79%	-	77%
Course Preparation Quiz	1	25	25	2%	A-	92%	-	90%	C	76%	-	73%
Discussion Board	5	20	100	9%	B+	89%	-	87%	C-	72%	-	70%
Lecture Review Assignment	5	20	100	9%	B	86%	-	83%	D	69%	-	60%
Hands-On Exercises	5	80	400	34%	B-	82%	-	80%	F	>60%	-	0
Application Exercises	5	100	500	42%								
Quizzes	5	10	50	4%								
Total			1175	100%								

Student Learning Objectives and Curriculum Competencies Explained

This table links the Student Learning Objectives (SLO) above to the Curriculum Competencies (CC) to be met in the course. The CCs are based on Employer Expectations of program graduates. The CCs are organized within the six AHIMA Knowledge Domains with Subdomains. Students are tested on these Domains on the [RHIT](#) and [RHIA](#) Exams. Use this course to master the SLOs/CCs/Domains listed below. The SLO link to each CC is located in the left-most column. The column *Found in Chapter/Module* describes the module where the student will find resource materials on CC to be mastered. The column *Assignment Exercising Proficiency* lists the assessments where the student builds proficiency in that CC. The number in parentheses following the CC describes the [Blooms Taxonomy](#) Level to be acquired.

Curriculum Competencies to be met in this course.

The curricula competencies were developed by the Council for Excellence in Education (CEE) to reflect changes in the workforce. The competencies demonstrate the base educational requirements. Programs are encouraged to meet and exceed the taxonomic levels associated with each competency.

	Entry Level Competency Student Learning Outcomes	Found in Chap/Module	Assignment exercising Proficiency
L.O.	Domain III. Informatics, Analytics and Data Use		
	<i>Definition: Creation and use of Business health intelligence; select, implement, use and manage technology solutions; system and data architecture; interface considerations; information management planning; data modeling; system testing; technology benefit realization; analytics and decision support; data visualization techniques; trend analysis; administrative reports; descriptive, inferential and advanced statistical protocols and analysis; IRB; research; patient-centered health information technologies; health information exchange; data quality</i>		
	Subdomain III.A. Health Information Technologies		
	Subdomain III.C. Analytics and Decision Support		
1	1 Utilize technology for data collection, storage, analysis, and reporting of information (3)	M2	M2A3
	6. Create the electronic structure of health data to meet a variety of end user needs (6)	M2	M2A3
	Subdomain III.C. Analytics and Decision Support		
8	1. Apply analytical results to facilitate decision-making (3)	M6	M6A3
2	2. Apply data extraction methodologies (3)	M5	M5A3
5	3. Recommend organization. Action based on knowledge obtained from data exploration and mining (5)	M2, M5	M2A3, M5A3
4	4. Analyze clinical data to identify trends that demonstrate quality, safety, and effectiveness of healthcare (4)	M3, M6	M3A3, M6A3
5	5. Apply knowledge of database querying and data exploration and mining techniques to facilitate information retrieval (3)	M2, M5	M2A3, M5A3
	Subdomain III.D. Health Care Statistics		
2	2. Analyze statistical data for decision making (4)	M5	M5A3

	Subdomain III.E. Research Methods		
10	2. Plan adherence to Institutional Review Board (IRB) process and policies (3)	M2, M3, M4, M5, M6	M2D1, M3D1, M4D1, M5D1, M6D1
	Domain VI. Leadership		
	<i>Definition: Leadership models, theories, and skills; critical thinking; change management; workflow analysis, design, tools and techniques; human resource management; training and development theory and process; strategic planning; financial management; ethics and project management</i>		
	Subdomain VI.G. Financial Management		
9	2. Perform cost-benefit analysis for resource planning and allocation (4)	M3, M4	M3A3, M4A3

Late Assignments

All assignments and required online activities are due according to the deadline listed in the course schedule. Granting deadline extension is the course instructor's autonomy.

Incompletes

If you are unable to complete the requirements for this course due to extenuating circumstances, an Incomplete grade (I) may be granted if you meet the general guidelines stated below.

General Guidelines for submitting a course incomplete request:

- More than 50% of the course session has elapsed.
- The student has encountered an unexpected situation that is beyond his or her control.
- The student is
 - in good academic standing -- up-to-date on all of the course assignments and has at least an overall passing grade,
 - able to complete all of the remaining coursework within a session (5 weeks for a undergraduate course and 6 weeks for a graduate course) that immediately follows the session the student is currently enrolled, and
 - able to provide support documentations to substantiate the need for extra time should a session is not enough to complete the course requirements.

If an Incomplete is granted, the instructor will set a deadline for all work to be completed. **The deadline cannot go past one (1) session.** All incomplete grades and deadlines are subject to approval by the designated University authority.

Course Related Communication

Online courses are conducted in an accelerated format. Timely communication is very important. When receiving emails from your classmates or instructor, please respond as soon as you can.

Students are REQUIRED to use their Indiana Tech email account for all course related communication. The most direct, and effective, way to email your course instructor and classmates, is by using the Send Email function within the Blackboard course site. When you use the Send Email function, you automatically receive a carbon copy of the email you sent. In the event when you need to substantiate your claim that you did email your classmates or instructor, you can show that carbon copy to the person(s) who requested it.

Please note that Blackboard only permits you to send email, it does not provide you with the check email function. All of the emails your classmates and instructor send to you will be delivered to your Indiana Tech email account. You are strongly encouraged to check your Indiana Tech email account regularly, preferably several times a week, to minimize the likelihood of miscommunication.

The University policy requires each online course instructor to respond to a student's email within 24 hours. Unless there is an extraneous situation that prevents the instructor from following this rule, you can expect to hear from the instructor within 24 hours. If you don't receive a reply within 24 hours, please do not hesitate to follow up with another email or forward the carbon copy of the email you sent to OnlineSupport@IndianaTech.edu with a note "Please help. It's been 24 hours and I have not heard from my instructor" and the University support staff will act on your behalf to contact your course instructor.

COURSE BEGINS: Sun. x/xx

MODULE ONE

Week	Topics/Readings	Assignments	Due Dates	Points
W	Syllabus & Schedule	Course Preparation Quiz	Wed. xx/xx	25
E	Key Information and Announcements	Post in the Meet Your Classmates discussion (<i>located in Welcome - Start Here menu option</i>)	Wed. xx/xx	0
E	Review IRB materials in preparation for the discussions in Modules 2 - 6	Respond in the Meet Your Classmates discussion (<i>located in Welcome - Start Here menu option</i>)	Sat. xx/xx	
K		Tech Live Session	xx/xx	
1		Online Office Hours	xx/xx	

MODULE TWO

Week	Topics/Readings	Assignments	Due Dates	Points
W E E K 2	Review IRB materials	M2D1 History of Human Subject Research	Wed. xx/xx	20
	Chapter 4: Dataset & Tables	M2D1 Discussion Responses	Sat. xx/xx	
	Module lecture	M2A1 Lecture Review Question	Sat. xx/xx	20
		M2A2 Hands On Ch.4 Exercises: Large datasets, Excel tables, Table manipulation, Table aggregation & conditional formatting	Sat. xx/xx	80
		M2A3 Application Exercise: Discharges dataset	Sat. xx/xx	100
		M2Q1 – Quiz 1	Sat. xx/xx	10
		Tech Live Session	xx/xx	
		Online Office Hours	xx/xx	

MODULE THREE

Week	Topics/Readings	Assignments	Due Dates	Points
W E E K 3	Review IRB materials	M3D1 What is an IRB?	Wed. xx/xx	20
	Chapter 5: Subtotals, PivotTables and Pivot Charts	M3D1 Discussion Responses	Sat. xx/xx	
	Module lecture	M3A1 Lecture Review Questions	Sat. xx/xx	20
		M3A2 Hands On Ch.5 Exercises: Subtotals & Outlines, PivotTable Basics, PivotTable Options, Data Modeling & Pivot Charts	Sat. xx/xx	80
		M3A3 Application Exercise: Hospital Shifts	Sat. xx/xx	100
		M3Q1 – Quiz 2	Sat. xx/xx	10
		Tech Live Session	xx/xx	
		Online Office Hours	xx/xx	

MODULE FOUR

Week	Topics/Readings	Assignments	Due Dates	Points
W E E K 4	Review IRB materials	M4D1 IRB Vulnerable Populations and more	Wed. xx/xx	20
	Chapter 6: What-If Analysis	M4R1 Discussion Responses	Sat. xx/xx	
	Module lecture	M4A1 Lecture Review Questions	Sat. xx/xx	20
		M4A2 Hands-On Ch.6 Exercises: Range names, One & two variable data tables, Goal seek & scenario manager, Solver	Sat. xx/xx	80
		M4A3 Application Exercises Ambulance MinMiles & MRI Analysis	Sat. xx/xx	100
		M4Q1 – Quiz 3	Sat. xx/xx	10
		Tech Live Session	xx/xx	
		Online Office Hours	xx/xx	

MODULE FIVE

Week	Topics/Readings	Assignments	Due Dates	Points
W E E K 5	Review IRB materials	M5D1 Revisions to the IRB under Common Rule	Wed. xx/xx	20
	Chapter 7: Specialized Functions	M5R1 Discussion Responses	Sat. xx/xx	
	Chapter 8: Statistical Functions	M5A1 Lecture Review Questions	Sat. xx/xx	20
	Module lecture	M5A2 Hands On Ch.7 Exercises: Date, logical, & Lookup functions, Database filtering & functions AND Ch.8 Exercises: Math & statistical functions	Sat. xx/xx	80
		M5A3 Application Exercises NY Beds & Surgeries	Sat. xx/xx	100
		M5Q1 – Quiz 4	Sat. xx/xx	10
		Tech Live Session	xx/xx	
		Online Office Hours	xx/xx	

MODULE SIX

Week	Topics/Readings	Assignments	Due Dates	Points
W E E K 6	Review IRB materials	M6D1 Informed Consent in IRB	Wed. xx/xx	
	Chapter 12: Templates, Styles, & Macros	M6R1 Discussion Response	Sat. xx/xx	20
	Module lecture	M6A1 Lecture Review Questions	Sat. xx/xx	20
		M6A2 Hands On Ch.12 Exercises: Templates, themes, & styles, Custom templates & workbook protection, Macros, Visual Basic for Applications	Sat. xx/xx	80
		M6A3 Application Exercises Heart Monitor	Sat. xx/xx	100
		M6Q1 – Quiz 5	Sat. xx/xx	10
		Tech Live Session	xx/xx	
		Online Office Hours	xx/xx	

COURSE ENDS: Sat. x/xx