

Syllabus/ Course Outline Stat-207

This template has been made in keeping with the HEC and FCCU policies

Course Name: Business Analytics		
Course Code: Stat-207	Course Type: Elective	Course Credits: 3
Class Timings: 2:00-3:15am T Th Room: S-420	Section: A	Student Meeting Hours/ Office Hours: 10:00-11:00 MWF
Instructor Name: Dr. Muhammad Anwar Mughal		
<p>A Note from the Instructor:</p> <p>Students are required to apply themselves diligently to the course of study and to prepare class and homework assignments as given. Lecture slides/Reading Material will be uploaded on Moodle. Class tests and quizzes will be announced in the class. The assignments and Project will have to be completed on time. Regularity and punctuality in the class is essential. All deadlines will be announced in classes.</p>		
<p>Course Description:</p> <p><i>Pre-requisites if any: None</i> <i>Mode of Instruction (Asynchronous/Synchronous): Face to Face</i> <i>Mode of peer-to-peer contact among students: WhatsApp Discussion Groups</i></p>		
<p>Technology Requirements:</p> <p><i>Technology Usage in the classroom.</i></p> <ul style="list-style-type: none"> • Students are required to have a computer/laptop and calculator. • During exams scientific calculator is mandatory and smartphones are not allowed. <p><i>Main Mode of Instruction:</i> Lecture slides, reading material, assignment questions will be uploaded on Moodle</p>		

Course Objectives/By the end of the course students will be able to:

This course is intended to provide the student with an understanding of Statistical tools and techniques in business processes. Upon the successful completion of the course the student will be able to apply business analytical techniques appropriately in a specific problem-solving scenario and will be able to create reports based statistical analysis for necessary action and decision making in businesses.

Student Learning Outcomes:

At the end of the course the student will:

- 1) apply descriptive analysis, correlation and regression in appropriate situations
- 2) apply decision analysis techniques in operations
- 3) compute the reliability of a system with series, parallel and complex components connectivity
- 4) apply work measurements and work sampling in different operations
- 5) apply basic forecasting data smoothing techniques
- 6) use MS Excel and Power BI for data visualization and analysis
basic techniques in process control

Course contents, Learning Material & Activities Schedule

Week #	Topic/ Title	Instructional Material	Assessment
1.	Descriptive Analysis of Data:	PowerPoint Slides, worksheets, activities and Reading Material	
2.	Data summarizing by Tabular, Graphic and Measures (Central Tendency and Spread), Use of MS Excel in descriptive analysis		
3.	Correlation and Regression Analysis:		Quiz #1
4.	Studying trends between variables by scatter pots and correlation, Fitting of simple linear trend, application of MS Excel & Minitab software		Assignment #1
5.	Business Data Visualization:		
6.	Application of Power BI software for data visualizations.		Quiz #2:
7.			

8.	<p>Reliability Analysis:</p> <p>Reliability analysis of a system in different component settings situation. Comparison of cost of multiple system alternatives. Computing availability of a system and comparison</p>	PowerPoint Slides, worksheets, activities and Reading Material	Assignment #2
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9.	<p>Decision Analysis</p> <p>Application of decision trees and different decision- making criteria in decision scenarios. Problem solving using excel commands.</p>	PowerPoint Slides, worksheets, activities and Reading Material	
10.	<p>Forecasting:</p> <p>Application of different forecasting and smoothing methods in time related data.</p>		Quiz #3
11.	<p>Work Measurements:</p> <p>Time studies and Work sampling</p>		Assignment #3
12.			
13.	<p>Introduction to Statistical Process Control:</p>		
14.	<p>Concept and terms of quality, Rolled throughput yield, Process capability analysis, Process Sigma</p> <p>Level and Basic DMAIC, Shewhart Charts.</p>		<p>Quiz #4</p> <p>Assignment #4</p>
15.	<p>Culminating Project</p>		

Note:

- Assessments can be divided into formative and summative:
 - Formative:
 - Students will learn through readings material, lesson notes, group discussions, and lecture slides, etc.
 - Students will practice through worksheets, practice questions and activities etc.
 - Summative:
 - Performance will be assessed through quiz, case study, projects, etc.

Out-of-Class Study Required:

After completion of a topic exercise questions will be provided to the class to prepare for class and/or complete weekly homework. The “best practices” for maximizing their learning is to take notes and review whole work done at the weekend. At least two hours daily study required to pass this course.

Textbooks, Materials, Supplies, and other Resources

1. S. Christian Albright and Wayne L. Winston, “Business Analytics: Data Analysis and Decision Making” 6e CENGAGE LEARNING
2. Anderson, Sweeney and Williams, “Statistics for Business and Economics” 9e Thomson South-Western
3. Mason, Lind, and Marchal, “Statistical Techniques in Business and Economics” McGraw Hill, New York
4. Mark L. Berenson and David M. Levine, “Business Statistics: A First Course” Prentice-Hall International Inc.
5. Andrew F. Siegel, “Business Statistics” McGraw Hill

Course Requirements:**Quiz 1 : (marks 10)**

Topic: Descriptive Analysis, Correlation and Regression

Quiz 2 : (marks 10)

Topic: MS Power BI-Prep of Dashboard

Quiz 3 :(marks 10)

Topic: Reliability and Decision Analysis

Quiz 4: (marks 10)

Topic: Work Measurements and Statistical Process Control

Assignment 1: (marks 10)

Topic: Descriptive Analysis, Regression

Assignment 2 : (marks 10)

Topic: Application of Power BI on provided data

Assignment 3 : (marks 10)

Topic: Reliability and Decision Analysis

Assignment 4: (marks 10)

Topic: Application of Shewhart Charts

Note: The topics and numbers of (Assignments and quiz) are tentatively suggested above it may vary according to situation.

Assigned Readings

Practice Worksheets/ questions and reading documents

Grading Legend

Below is the grading legend of FCCU (published in all catalogues and available on the FCCU website) as approved by the Academic Council

Grades	Quality Points	Numerical Value	Meaning
A	4.00	93-100	Superior
A-	3.70	90-92	
B+	3.30	87-89	Good
B	3.00	83-86	
B-	2.70	80-82	
C+	2.30	77-79	Satisfactory
C	2.00	73-76	
C-	1.70	70-72	
D+	1.30	67-69	Passing
D	1.00	60-66	
F	0.00	59 or below	Failing
NS	0.00	0.00	Did not show up in class
W	-	-	Officially Withdrawn
AW	-	-	Administrative Withdrawal/Dismissal
AU	-	-	Audit/Listener Status
I	-	-	Incomplete
T	-	-	Transferred credit

The entire course is worth 100%, the breakup is as follows (for example):

Class Participation	5%
Assignments:	10%
Quizzes:	10%
Midterm exam:	25%
Final term exam:	40%
Final Project	10%
TOTAL	100%

Missed Assignments/Make-Ups/Extra Credit

- *NO delayed assignments. There will be 50% deduction of marks for late submission after due date.*
- *NO Make-up mid/final exam*
- *NO retake mid/final exam*

Attendance Policy:

If a student does not attend a minimum of 70% of total classes, he/she will not be permitted to take the final examination in the course.

Classroom Participation:

Students must participate in the classroom for class activities and may ask questions related to the lesson taught. Class participation is also included in your grade

Changes to the Syllabus:

This syllabus was designed to convey course information and requirements as accurately as possible. It is important to note however that it **may** be subject to change during the course depending on the needs of the class and other situational factors. Such changes would be for your benefit and you will be notified of them as soon as possible.

Student Support Services

- Students can contact the [Campus Counseling Center](#) at 0331-444-1518 or ccc@fccollege.edu.pk.
- [Writing Center](#)
- [Mercy Health Center](#)

Other Useful Links:

- [Sexual Harassment Policy](#)
- [Anti-Corruption Policy](#)
- [Academic integrity](#)
- [Plagiarism Policy](#)
- [Academic Calendar](#)

I expect that you will strictly follow the core values of FCCU and put your entire efforts to learn as per the course requirements, attend classes, read the textbook(s)/other assigned reading material and do the assignments in the stipulated time period