

## Course Outline (Spring 2023)

<b>Course Name:</b> Statistical Methods		
<b>Course Code:</b> Stat 101/ Math 107	<b>Course Type:</b> Elective	<b>Course Credits:</b> 3
<b>Class Timings:</b> T,R 02:00-03:15 PM Room#S-421	<b>Section:</b> G	<b>Student Meeting Hours/ Office Hours:</b> MW: 11:00 AM to 12:00 PM TR: 10:00-11:00 AM
<b>Instructor Name:</b> Ms. Aqsa Sarwar, Lecturer Department of Statistics FCCU		
<b>A Note from the Instructor:</b> <ul style="list-style-type: none"> <li>• Lectures will be delivered in class face to face</li> <li>• Lecture and reading Material will be uploaded on Moodle</li> <li>• Quizzes will be performed during class time.</li> <li>• Assignment documents will be uploaded on Moodle and their submissions will be considered as in hard copy during class timings</li> <li>• For all assessments, dates will be announced in classes.</li> </ul>		
<b>Instructor Contact Details</b> Email: <a href="mailto:aqsasarwar@fccollege.edu.pk">aqsasarwar@fccollege.edu.pk</a> Office: S-422 Office Hours: MW: 11:00-12:00 PM & TR: 10:00-11:00 AM Guidelines for contacting instructor: Students can contact me during office hours or make an appointment via email during weekdays and wait until I respond.		
<b>Course Description:</b> Pre-requisites if any: N/A Mode of Instruction: In-class Lecture Mode of peer-to-peer contact among students: online discussion forums		
<b>Technology Requirements:</b> <ul style="list-style-type: none"> <li>• Students are required to have a computer/laptop/smartphone with scientific calculator installed in it/calculator.</li> <li>• During exams scientific calculator is mandatory and smartphones are not allowed.</li> </ul> <i>Main Mode of Instruction:</i> In-class lectures, reading material, assignment documents will be uploaded on Moodle		

**Course Objectives:**

This course is intended to provide the student with an understanding of basic Statistical terminology and techniques. It will help students find statistics in real life and how effortlessly they can learn to handle statistical data, its types, graphs, use of statistical formulas and bringing out the clear solution and its interpretation for the layman. After the successful completion of the course the student should be able to translate information into data and learn how to summarize and present data and use them to solve every day statistical problems.

**Student Learning Outcomes:**

At the end of the course the student will:

- 1) Identify the types of data and use appropriate methods to collect and summarize data.
- 2) Be able to make a frequency distribution and draw its graphs,
- 3) Distinguish between different scales of measurements.
- 4) Be able to calculate different measures of central tendency and dispersion.
- 5) Analyze data to find moments, skewness and kurtosis and interpret the results.
- 6) Be able to understand basics of probability.

**Course contents, Learning Material & Activities Schedule**

<b>Week #</b>	<b>Topic/ Title</b>	<b>Instructional Material</b>	<b>Assessment</b>
1.	Introduction to basic concepts and terminology. Scales of Measurement	worksheet, activities and Reading Material	
2.	Data collection, Frequency distribution (Qualitative and discrete data).		Quiz #1 (introduction)
3.	Frequency distribution for Continuous data		
4.	Graphical Presentation		Assignment #1 (Data, frequency distribution and graphical presentation)
5.	Introduction to Measures of Central tendency (Arithmetic mean and mode)		
6.	Median and quantiles with graphical presentation		Quiz #2: (Graphical presentation,

		worksheet, activities, and Reading Material	arithmetic mean, and mode)
7.	Geometric mean and Harmonic mean		
8.	Introduction to measures of dispersion Absolute and relative measures of dispersion.  (Range, Quartile Deviation, and their coefficients)		Assignment # 2 (measures of central tendency)
<b>MID TERM</b>			
9.	Mean deviation and its coefficient (with mean and median)	worksheet, activities, and Reading Material	
10.	Standard deviation /variance and coefficient of variation		Quiz #3  (Measures of dispersion)
11.	Moments: raw moments, moments about mean		
12.	Measures of skewness and Kurtosis		Assignment # 3  (Measures of dispersion and moments)
13.	Rules of Counting		
14.	Introduction to probability, classical approach.		Quiz #4  (Rules of counting)
15.	Probability Practice		
16.	Final Project		
<b>Final Exam</b>			

Textbooks, Materials, Supplies, and Other Resources

1. Lind, D. A., Marchal, W. G., & Wathen, S. A. (2012). *Statistical techniques in business & economics*. New York, NY: McGraw-Hill/Irwin,
2. Anderson, D. R., Sweeney, D. J., Williams, T. A., Camm, J. D., & Cochran, J. J. (2016). *Statistics for business & economics*. Nelson Education
3. Prof. Sher Muhammad Ch. And Prof. Dr. Shahid Kamal, Introduction to Statistical Theory Part 1, Ilmi Kitab Khana.
4. Mann, P. S. (2007). *Introductory statistics*. John Wiley & Sons. R.S.N. Pillai and Bavanthi, Statistics theory and Practice, 8<sup>th</sup> Edition.

**Course Requirements:**

**Class Participation:** Class attendance; participation in-class activities and discussions

**Assignment 1:** Data, frequency distribution, Graphical presentation

**Assignment 2:** Measures of central tendency

**Assignment 2:** Measures of dispersion and moments

**Quiz 1 (marks 10):** Data collection and frequency distribution

**Quiz 2 (marks 10):** Graphical presentation, arithmetic mean, and mode

**Quiz 3 (marks 10):** Measures of dispersion

**Quiz 4 (marks 10):** Rules of counting

**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):

<b>Class Participation</b>	5%
<b>Assignments:</b>	10%
<b>Quizzes:</b>	15%
<b>Midterm exam:</b>	20%
<b>Final term exam:</b>	40%
<b>Final Project</b>	10%
<b>TOTAL</b>	<b>100%</b>

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](mailto: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,