

<b>Course Name: Statistical Inference II</b>		
<b>Course Code:</b> STAT 202	<b>Course Type :</b> Elective	<b>Course Credits:</b> 3
<b>Class Timings:</b> 02:00 – 02:50 p.m.	<b>Section:</b> A	<b>Online Office Hours:</b> 10:00 A.M-12:00 NOON.
<b>Instructor Name:</b> Samia Ayub Email: <a href="mailto:samiaayub@fccollege.edu.pk">samiaayub@fccollege.edu.pk</a> Office# S-415 Office Hours: 12:00pm-12:00pm Tue,Thr		
<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 accomplished on Moodle during Class time. Dates will be announced in-class and on Moodle</li> <li>• Assignments will be posted on Moodle and submissions are also executed through Moodle.</li> <li>• Feedbacks will be uploaded on Moodle.</li> </ul>		
<b>Course Description:</b> Pre-requisites if any: STAT-201 Mode of Instruction: Asynchronous/ Synchronous Mode of peer-to-peer Contact Among Students: online discussion forums		
<b>Main Mode of Instruction:</b> In-Person <b>Technology Requirements:</b> <ul style="list-style-type: none"> <li>• Students need to have a computer/ laptop/ smartphone/ calculator</li> </ul> <b>Technology Etiquettes</b> <ul style="list-style-type: none"> <li>• In scheduled classes Students are recommended to log in at least 10 minutes before the start of the session to do the necessary checks, specifically for students</li> <li>• Be sure to name yourself for your slot on the screen. It will make it easy to get a report of the students' attendance. If your slot carries a different name, to rename: click 3 dots near your video window OR in the participants' list, hover over your name, and click "rename" to make the change</li> <li>• Please stay muted when not speaking.</li> <li>• Please turn off your video during class.</li> <li>• Be respectful of others' opinion</li> <li>• If the session is recorded do not post isolated comments that may be taken out of context.</li> </ul> <b>Considerations for Students with Limited Internet/Technology Access:</b> <ul style="list-style-type: none"> <li>• Student with limited internet connections may send an email to instructor with their concern.</li> </ul>		

**Course Objectives:**

This course is intended to provide the student with an understanding of basic Statistical terminology and techniques. Upon 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. Conceptual introduction to the Statistical Inference
2. Introduction to sampling distributions
3. Introduction Chi-Squared variable
4. Introduction Chi-Squared Distribution and its application
5. Introduction to basic ANOVA methods and their application
6. Introduction Nonparametric techniques and their application

### Course Content, Learning Material & Activities Schedule

Week	Topic/ Title	Instructional Material	Assessment	
1	Introduction to Statistical Inference	PowerPoint Slides, worksheets, activities and Reading Material		
	Branches and usage in various fields			
2	Introduction to Chi-Square variable,			
	its probability distribution and statistic.			
3	Statistical inference regarding population variance			Quiz 1
	Estimation, Testing			
4	Chi-Square test for goodness of fit,			Assignment 1
	Cont.			
5	Yates correction for continuity			
	Chi-Square test for independence of attributes			
6	Chi-Square test as a test of Homogeneity			
	Cont.			

7	Introduction to Analysis of Variance			
	Its classification, importance and application.		Assignment 2	
8	One-way and two way classification			
	Partitioning sum of squares			
<b>MIDTERM</b>				
9	Partitioning of degree of freedom		PowerPoint Slides, worksheets, activities and Reading Material	
	Multiple comparison tests and their usage			Quiz 2
10	Introduction to Parametric and Nonparametric Tests			
	Their usage and importance with respect to statistics			
11	The Sign Test. The Wilcoxon Signed Rank Tests,			
	Application of these tests	Assignment 3		
12	The Mann-Whitney U Test and its application.			
	The Median Test and its application.			
13	The Kolmogrov-Smirnov Test, its importance and application	Quiz 3		
	The Kruskal-Wallis H Test, its usefulness and application			
14	Practice			
15	<b>PROJECT</b>			
16	<b>FINAL EXAM</b>			

**'Out-of-class' Study Required (across all 3 categories of students -- those attending in-person, online, or asynchronously)**

1. Quizzes will be online at the time of class
2. Students are expected to study 3 hours a week

3. If you have any questions please join online office hours

4. Assignment submissions will be on Moodle

### Textbooks, Materials, Supplies and other Resources

1. Rudolf J. Freund & William J. Wilson (2003): Statistical Methods, Academic Press Elsevier Science (USA).
2. Sher Muhammad Chaudhry & Shahid Kamal (2010): Introduction To Statistical Theory (Part-II), Ilmi Kitab Khana, Lahore.
3. Paul G. Hoel (1966): Introduction To Mathematical Statistics, John Wiley & Sons inc. New York.
4. Gopal K. (2006): 100 Statistical Tests, Sage Publications, New Delhi.

### Course Requirements:

➤ **Class Participation**

Attendance and participation in discussions

➤ **Quizzes**

**Quiz 1 : (marks 10)**

Topic: Chi-Square and its Applications

**Quiz 2 : (marks 10)**

Topic: Analysis of Variance

**Quiz 3 : (marks 10)**

Topic: Non-Parametric Tests

➤ **Assignments**

**Assignment 1: (marks 10)**

Topic: Covered before Mid Term

**Assignment 2 : (marks 10)**

Topic: Covered After Mid Term

**Assignment 3 : (marks 10)**

Topic: Covered After Mid Term

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

### Assigned Readings

Practice worksheets/ Questions

The breakup is as follows:

<b>Class Participation</b>	2%	
<b>Assignments:</b>		10%
<b>Quizzes:</b>	08%	
<b>Midterm exam:</b>		25%
<b>Final term exam:</b>	35%	
<b>Project</b>		20%
<b>TOTAL</b>	<b>100%</b>	

### [OPTIONAL] Missed Assignments/ Make-Ups/ Extra Credit

- No delayed assignments.

-No Make-up class and exam

-No retake 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 classroom for class activities and may ask questions related to lesson taught.

**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 and applies for Fall as well

Grade	Point Value	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

**Student Conduct & Other Issues:**

- Consider including ground rules for appropriate classroom interactions, as well as a clear statement of expectations that classroom interactions will remain civil, respectful, and supportive.
- If any student faces any issues or has any concerns regarding the classroom climate and interactions, please feel free to contact VR office [gloriacalib@fccollege.edu.pk](mailto:gloriacalib@fccollege.edu.pk)

**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**

[Student Counseling Services](#)

[Writing Center](#)

[Mercy Health Center](#)

**Other Useful Policy Documents:**

[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*

**Developed by CLT (2020) from:**

[FCC Policy for Fall Semester 2020](#)

<https://www.aascu.org/>

<https://blended.online.ucf.edu/>

**Note:**

PI see <https://unitguides.mq.edu.au/> for additional options. Macquarie University has their syllabus online (called Unit Guides and are publicly viewable)

See additional information for [Syllabus Checklist](#) and for [How to Create a Syllabus](#)

Please also consider [High Impact Practices](#) for your classes