Subject No. 3 NURSING RESEARCH AND STATISTICS Section 'B' (Paper II) – STATISTICS

Total Hours: 100

AIM:

• This course is designed to assist the students to develop an understanding of the statistical methods and apply them in conducting research studies in nursing.

OBJECTIVES:

At the end of the course the students are able to:-

- Explain the basic concepts related to statistics.
- Describe the scope of statistics in health and nursing.
- Organize tabulate and present data meaningfully.
- Use descriptive and inferential statistics to predict results.
- Draw conclusions of the study and predicts statistical significance of the results.
- Describe vital health statistics and their use in health related research.
- Use statistical packages for data analysis.

COURSE CONTENT:

Unit I -Introduction:

- Concepts, types, significance, and scope of statistics meaning of data, parametric and non parametric data.
- Sample, & calculation of sample size, parameter, Type and levels of data and their measurement.
- Organization and presentation of data.
- Tabulation of data: Frequency distribution, Graphical and tabular presentations.

Unit II -Measures of central tendency:

• Mean, Median, Mode.

Unit III -Measures of variability:

• Range, Percentiles, Average deviation, Quartile deviation, Standard deviation

Unit IV -Normal Distribution:

- Probability, Characteristics and application of normal probability curve; sampling error.
- Cumulative distribution The cumulative frequency graph, Percentiles and percentile ranks, The Cumulative percentage curve.

Unit V -Measures of relationship:

- Correlation- need and meaning, Rank order correlation, Scatter diagram method, Product moment correlation.
- Simple linear regression analysis and Prediction.

Unit VI -Designs and meaning:

• Experimental designs, Comparison in pairs, randomized block design, Latin squares.

Unit VII -Significance of statistic and significance of difference between two Statistics: (testing hypothesis)

- Non parametric test Chi square test, Sign median test, Mann-Whitney test.
- Parametric test 't' test, anova, manova, ancova, Pearson's r

Unit VIII -Use of statistical methods in psychology and education:

• Scaling – Z Score , Z Scaling, Standard Score and T score

Theory Hours: 50 Lab Hours: 50 • Reliability of test Scores: test-retest method, parallel forms, spilt half method.

Unit IX -Application of statistics in health:

• Ratios, Rates, Trends, Vital health statistics – Birth and death rates, Measures related to fertility, morbidity and mortality.

Unit X -Use of computers for data analysis:

- Various statistical packages and its use for analysis.
- SPSS & Graph pad

NURSING RESEARCH AND STATISTICS Section 'B' STATISTICS

Unit No. & total hours	Objectives			Contents and distributed hours						
I (07 hours)	At the end of unit students are able to Knowledge: Understand and describe the sc and meaning of data. Skill: Apply this knowledge in research wor	ope of statistic k.	 Coord Coord Sa Ty Ord 	 Concepts, types, significance, and scope of statistics meaning of data, parametric and non-parametric data (2 hrs) Sample & calculation of sample size, parameter (1 hr) Type and levels of data and their Measurement(2hrs) Organization & presentation of data.(2 Hrs) 						
CO-2: Distingu CO-3: Define si CO-4: Enlist fo CO-5: Enlist le ^v CO-6: Define ta	ish between parametric and non-parametric to ample, population, parametric, statistics. rmula for calculating sample size vels of measurement of data abulation of data, presentation of data and enl	ist various me	thods of	presenta	tion of data and t	abulation of c	lata			
Course outcon	ne			1	Program Ou	tcome				
	Urse outcome Clinician/N urse Educator				Leader and member of the health care team and system	Lifelong learner	Critical thinker	Research er		
		PO1	PO2	PO3	PO4	PO5	PO6	PO7		
CO-1: Describe meaning of Stat	e constrainsts, uses, functions, scope and titics	3	2	2	2	2	3	3		
CO-2: Distingu test	ish between parametric and non-parametric	3	3	3	1	2	3	3		
CO-3: Define s	ample, population, parametric, statistics.	3	3	3	1	2	3	3		
CO-4: Enlist fo	ormula for calculating sample size 3 3 3 1 2 3 3						3			
CO-5: Enlist lev	vels of measurement of data	3	3	3	1	2	3	3		
CO-6: Define	tabulation of data, presentation of data and	3	3	3	1	2	3	3		

enlist various me of data	thods of presentation of data and tabulation	l							
II (04 hours)	At the end of unit students are able to Knowledge: Explain the tabulation of da measures of central tendency. Skill: Present the data in various forms ar central tendency. Attitude: Apply this knowledge in resear professional work.	Frequency distributiondata andGraphical and tabular presentations(2 hrs)Measures of central tendency :and calculate• Mean• Median• Mode (2 hrs)							
Unit II – Measu	res of Central Tendency								
CO-1: Enlist vari	ous rules for tabulation of data								
CO-2: List variou	is methods of presentation for quantitative a	and qualitat	ive data						
CO-3: Describe v	various methods of presentation for quantita	tive data							
CO-4: Describe v	various methods of presentation for qualitation	ive data		C					
CO-5: Define measures of central tendency and what are the good requisites of measures of central tendency,									
CO-6: Describe v	various methods of measures of central tend	lency with f	ormulas						
	('ourse ()utcome	Program Outcome							
	Course Outcome		<u> </u>	ł	Program Outcom	e	T	1	
		Clinician/ Nurse Educator	Professi onal	E Communi cator	Program Outcom Leader and member of the health care tean and system	e Lifelong learner	Critical thinker	Research er	
		Clinician/ Nurse Educator PO1	Professi onal PO2	Communi cator PO3	Program Outcom Leader and member of the health care tear and system PO4	e Lifelong learner PO5	Critical thinker PO6	Research er PO7	
CO-1: Enlist vari	ous rules for tabulation of data	Clinician/ Nurse Educator PO1 3	Professi onal PO2 3	Communi cator PO3 3	Program Outcom Leader and member of the health care tear and system PO4 1	e Lifelong learner PO5 2	Critical thinker PO6 3	Research er PO7 3	
CO-1: Enlist vari CO-2: List variou and qualitative da	ous rules for tabulation of data us methods of presentation for quantitative ata	Clinician/ Nurse Educator PO1 3 3	Professi onal PO2 3 3	CommunicatorPO333	Program Outcom Leader and member of the health care tear and system PO4 1 1	e Lifelong learner PO5 2 2 2	Critical thinker PO6 3 3	Research erPO733	
CO-1: Enlist vari CO-2: List variou and qualitative data CO-3: Describe v quantitative data	ous rules for tabulation of data us methods of presentation for quantitative ata various methods of presentation for	Clinician/ Nurse Educator PO1 3 3 3	Professi onal PO2 3 3 3	CommunicatorPO33333	Program Outcom Leader and member of the health care tear and system PO4 1 1 1	e Lifelong learner PO5 2 2 2 2 2 2	Critical thinker PO6 3 3 3 3	Research er PO7 3 3 3 3	
CO-1: Enlist vari CO-2: List variou and qualitative da CO-3: Describe v quantitative data CO-4: Describe v qualitative data	ous rules for tabulation of data us methods of presentation for quantitative ata various methods of presentation for various methods of presentation for	Clinician/ Nurse Educator PO1 3 3 3 3 3	Professi onal PO2 3 3 3 3 3	CommunicatorPO3333333	Program Outcom Leader and member of the health care tean and system PO4 1 1 1 1	e Lifelong learner PO5 2 2 2 2 2 2 2 2	Critical thinkerPO6333333	Research er PO7 3 3 3 3 3 3	

CO-6: Describe tendency with f	various methods of measure Formulas	es of central	3	3	3	1		2	3	3
III (04 hours) Unit III – M	At the end of unit studer Knowledge: Understand variability. Skill: Calculate the mea Attitude: Incorporate & Ieasures of Variability	nts are able to d and describe th sures of variabil relate with rese	he measures o lity. earch work.	• R • Po • A • Q • St	ange ercentiles verage De uartile De tandard De	eviation viation (2 hrs) eviation (2 hrs)				
CO-2: Enlist va CO-3:Write use	rious types of measures of di s of Standard Deviation	ispersion	uisites							
Co	ourse Outcome	Program Outcome								
		Clinician/Nur se Educator	Professional	Comm r	unicato I n h t s	Leader and nember of the nealth care eam and ystem	Lifelon; learner	g Cr thi	itical nker	Researche r
		PO1	PO2	PO3	F	PO4	PO5	PC)6	PO7
CO-1: Define describe its goo	measures of central and od requisites	3	3		3	1	2		3	3
CO-2: Enlist va dispersion	rious types of measures of	3	3		3	1	2		3	3
CO-3:Write use	es of Standard Deviation	3	3		3	1	2		3	2
IV (03 hours)	At the end of unit students Knowledge: Understand a normal distribution and cur distribution. Skill: Calculate probability prepare cumulative frequer	are able to und describe mulative 7 and ncy graphs.	 Normal Dis Probability Characteristic (2 hrs) Sampling e Cumulative percentile r The Cumulative percentile r 	Distribution: y stics and application of normal probability curve. g error. ve distribution: The cumulative frequency graph Percentiles and e ranks.						and
Unit IV – No	ormal Distribution	I		1	U		,			
CO-1: Define an CO-2: Define p	nd enlist important propertie probability write its uses	s of normal dist	ribution							

CO-3: Describe multiplication law of probability with formula.

CO-4: Describe addition law of probability with formula

CO-5: Define sample and sampling errors

CO-6: Define and describe cumulative frequency distribution

CO-7: Define and describe quartile, decile and percentile and write its formula for quantitative and qualitative data.

CO-8: Define and describe Cumulative frequency curve or O-give curve

	ourse Outcome	Program Outcome							
		Clinician/ Nurse Educator	Profession al	Communi cator	Leader and member of the health care team and system	Lifelong learner	Critical thinker	Researche r	
		PO1	PO2	PO3	PO4	PO5	PO6	PO7	
CO-1: Define and e normal distribution	nlist important properties of	3	3	3	1	2	3	3	
CO-2: Define proba	bility write its uses	3	3	3	1	2	3	3	
CO-3: Describe mu with formula.	ltiplication law of probability	3	3	3	1	2	3	3	
CO-4: Describe add formula	lition law of probability with	3	3	3	1	2	3	3	
CO-5: Define samp	le and sampling errors	3	3	3	1	2	3	3	
CO-6: Define and d distribution	escribe cumulative frequency	3	3	3	1	2	3	3	
CO-7: Define and d percentile and write qualitative data.	escribe quartile, decile and its formula for quantitative and	3	3	3	1	2	3	3	
CO-8: Define and d curve or O-give cur	escribe Cumulative frequency ve	3	3	3	1	2	3	3	
V (06 hours)	At the end of unit students are at Knowledge: Understand and exprelationship. Skill: Calculate measures of relation studies.	ple to plain measure tionship and	es of apply it	 Correlation – need and meaning Rank order correlation (2 hrs) Scatter diagram method.(2 hrs) Product moment correlation. (1 hr) Simple linear regression analysis and Prediction. (1hr) 					

CO-1: Define Correlation and write it's uses

CO-2: Describe scatter diagram method of correlation coefficient and write it's properties

CO-3: Define and describe Pearson's Correlation Coefficient

CO-4: Define and describe Spearman's Rank Order Correlation Coefficient

CO-5: Define Regression and write it's properties

CO-6: Enlist two lines of regression

	Course Outcome				Program Outcon	ne			
		Clinician/ Nurse Educator	Professi onal	Communi cator	Leader and member of the health care team and system	Lifelong learner	Critical thinker	Researche r	
		PO1	PO2	PO3	PO4	PO5	PO6	PO7	
CO-1: Define Corre	elation and write it's uses	3	3	3	1	2	3	3	
CO-2: Describe sca coefficient and writ	tter diagram method of correlation e it's properties	3	3	3	1	2	3	3	
CO-3: Define and describe Pearson's Correlation Coefficient		3	3	3	1	2	3	3	
CO-4: Define and d Correlation Coeffic	escribe Spearman's Rank Order ient	3	3	3	1	2	3	3	
CO-5: Define Regro	ession and write it's properties	3	3	3	1	2	3	3	
CO-6: Enlist two lin	nes of regression	3	3	3	1	2	3	3	
VI (5 hours)	At the end of unit students are able Knowledge: Understand and descr different types of research design. Skill: Analyze and use research design. accurately.	to • ibe • isigns • i	 Experimental designs Latin squares. (1 hrs) Comparison in pairs, (3 hrs) Randomized block design. (1 hrs) 						
Unit VI – Designs	of Experiment and its meaning								

CO-1: Define designs of experiment,

CO-2: Describe various terms and concepts used in designs of experiment

CO-3: Define and describe latin square design

CO-4: : Define and describe latin square design

CO-5: Describe a Simple one factor experiment

CO-6: Describe two level factorial design

CO-7: Write in detail two group factorial degign CO-8: Discuss in detail important characteristics of experimental design

CO-9: Write in detail merits and demerits of experimental design

CO-10: Write in detail important characteristics of Completely Randomized Design CO-11: Write in detail important characteristics of Split Plot Design

CO-12: Write in detail merits, demerits and demerits of Split Plot Design

CO-13: Write in detail important characteristics of Lattice Design

CO-14: Write in detail important characteristics of Augmented Design

CO-15: Write in detail merits and demerits of Augmented Design

CO-16: Write in detail important characteristics of Randomized Block Design

Course Outcome			Prog	gram Outcom	e		
	Clinician/ Nurse Educator	Professional	Communi cator	Leader and member of the health care team and system	Lifelong learner	Critical thinker	Researcher
	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO-1: Define designs of experiment,	3	3	3	1	2	3	3
CO-2: Describe various terms and concepts used in designs of experiment	3	3	3	1	2	3	3
CO-3: Define and describe latin square design	3	3	3	1	2	3	3
CO-4: : Define and describe latin square design	3	3	3	1	2	3	3
CO-5: Describe a Simple one factor experiment	3	3	3	1	2	3	3
CO-6: Describe two level factorial design	3	3	3	1	2	3	3
CO-7: Write in detail two group factorial degign	3	3	3	1	2	3	3
CO-8: Discuss in detail important characteristics of experimental design	3	3	3	1	2	3	3
CO-9: Write in detail merits and demerits of experimental design	3	3	3	1	2	3	3
CO-10: Write in detail important characteristics of	3	3	3	1	2	3	3

Completely Ran	domized Design							
CO-11: Write in Plot Design	detail important characteristics of Split	3	3	3	1	2	3	3
CO-12: Write in Split Plot Desigr	detail merits, demerits and demerits of	3	3	3	1	2	3	3
CO-13: Write in Lattice Design	detail important characteristics of	3	3	3	1	2	3	3
CO-14: Write in Augmented Desi	detail important characteristics of ign	3	3	3	1	2	3	3
CO-15: Write in Augmented Desi	detail merits and demerits of ign	3	3 3 3 1 2 3					3
CO-16: Write in Randomized Blo	6: Write in detail important characteristics of lomized Block Design333123					3	3	
 VII At the end of unit students are able to (08 hours) Knowledge: Understand and describe the significance of statistics and difference between two statistics. Skill: Test hypothesis. Attitude: Recognize and correlate hypothesis with statistical differences. Unit VII – Significance of statistic and significance of difference between two Statistics: (testing hypothesis) Unit VII – Significance of statistics and significance of difference between two Statistics: (testing hypothesis) 								
CO-1: Define hy CO-2: Describe CO-3: Describe CO-4: : Define a CO-5: Define de CO-6: Define a CO-7: Describe CO-8: Define an CO-9: Define an CO-9: Define an CO-10: Describe CO-11: Describe CO-12: Describe CO-13: Describe CO-14: Describe CO-15: Describe CO-16: Describe CO-17: Describe	characteristics of hypothesis in statistics basic concepts of hypothesis in statistics and describe level of significance ecision rule in statistics and describe in detail one-tail and two-ta procedure for hypothesis testing d describe power of hypothesis test d describe parametric and non-parametric e in detail importance of parametric test in detail hypothesis testing for single n e in detail hypothesis testing for differen e Student's Paired t test e in detail tests of significant for single p e in detail tests of significant for differen e tests of significance for variance of hypothesis tests of significance for variance of hypothesis e in detail tests of significant for difference e tests of significance for variance of two nor e in detail Student's t-test for testing significant e in detail Student's t-test for testing significant	il test ic method o in research nean ce between proportion nce between pothesis pop mal populat nificance of	of hypothesis tes methodology. two means two proportion oulation tion	sting				

CO-19: Enlist limitations of hypothesis testing

CO-19: Enlist limitations of hypothesis testing CO-20: Define and describe Chisquare test CO-21: Describe non-parametric equivalent of chisquare test CO-22: Describe the conditions for applying chisquare test CO-23: Describe Yate's correction in chisquare test CO-24: Describe various characteristics of chisquare test CO-25: Define and describe Student's unpaired t test for difference between two means CO-26: Define and describe One way ANOVA

CO-27: Define and describe Sign Test

CO-28: Define and describe Median Test

CO-29: Define and describe Mann Whitney U test CO-30: Define and describe Multivariate Analysis of Variance(MANCOVA) CO-31: Define and describe general uses of analysis of Covariance(ANCOVA)

Course Outcome			P	rogram Outco	me		
	Clinician/N urse Educator	Professi onal	Commu nicator	Leader and member of the health care team and system	Lifelong learner	Critical thinker	Researcher
	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO-1: Define hypothesis in statistics	3	3	3	1	2	3	3
CO-2: Describe characteristics of hypothesis in statistics	3	3	3	1	2	3	3
CO-3: Describe basic concepts of hypothesis in statistics	3	3	3	1	2	3	3
CO-4: : Define and describe level of significance	3	3	3	1	2	3	3
CO-5: Define decision rule in statistics	3	3	3	1	2	3	3
CO-6: Define and describe in detail one-tail and two-tail test	3	3	3	1	2	3	3
CO-7: Describe procedure for hypothesis testing	3	3	3	1	2	3	3
CO-8: Define and describe power of hypothesis test	3	3	3	1	2	3	3
CO-9: Define and describe parametric and non-parametric method of hypothesis testing	3	3	3	1	2	3	3
CO-10: Describe in detail importance of parametric test in research methodology.	3	3	3	1	2	3	3
CO-11: Describe in detail hypothesis testing for single mean	3	3	3	1	2	3	3
CO-12: Describe in detail hypothesis testing for difference between two means	3	3	3	1	2	3	3
CO-13: Describe Student's Paired t test	3	3	3	1	2	3	3

CO-14: Describe in detail tests of significant for single proportion	3	3	3	1	2	3	3
CO-15: Describe in detail tests of significant for difference between two proportions	3	3	3	1	2	3	3
CO-16: Describe tests of significance for variance of hypothesis population	3	3	3	1	2	3	3
CO-17: Describe tests of equality of variance of two normal population	3	3	3	1	2	3	3
CO-18: Describe in detail Student's t-test for testing significance of correlation	3	3	3	1	2	3	3
CO-19: Enlist limitations of hypothesis testing	3	3	3	1	2	3	3
CO-20: Define and describe Chisquare test	3	3	3	1	2	3	3
CO-21: Describe non-parametric equivalent of chisquare test	3	3	3	1	2	3	3
CO-22: Describe the conditions for applying chisquare test	3	3	3	1	2	3	3
CO-23: Describe Yate's correction in chisquare test	3	3	3	1	2	3	3
CO-24: Describe various characteristics of chisquare test	3	3	3	1	2	3	3
CO-25: Define and describe Student's unpaired t test for difference between two means	3	3	3	1	2	3	3
CO-26: Define and describe One way ANOVA	3	3	3	1	2	3	3
CO-27: Define and describe Sign Test	3	3	3	1	2	3	3
CO-28: Define and describe Median Test	3	3	3	1	2	3	3
CO-29: Define and describe Mann Whitney U test	3	3	3	1	2	3	3
CO-30: Define and describe Multivariate Analysis of Variance(MANCOVA)	3	3	3	1	2	3	3
CO-31: Define and describe general uses of analysis of Covariance(ANCOVA)	3	3	3	1	2	3	3
VIII	At the end of	unit stude	nts are	• Reliability	y of test Scor	res: test-r	etest method,
(5 hours)	able to			parallel fo	orms, spilt ha	lf metho	d. (3 hrs)
	Knowledge:	Understan	d and	• Scaling –	Z Score, Z S	Scaling.(l hr)
	describe the u	uses of stat	tistical	Standard S	Score and T	score.(11	nr)
	methods in p	sychology	and				
	education.						
	Skill: Develo	p skill for	using				
	statistical me	thods in ps	sychology				
	and education	n.					

Unit VIII – Use of statistical methods in psychology and o	education						
CO-1: Define and describe importance of statistical methods	in psycholog	gy and edu	cation				
CO-2: Describe importance of statistics in psychology							
CO-3: Define and describe the importance of z-score							
CO-4: Enlist steps for interpretation of z-score							
CO-6: Define standard score							
CO-7: Define reliability of test score and write its four assumed to the score assumed to the score and write its four assumed to the score and write its four assumed to the score assumed	options						
CO-8: Define and describe test retest method of reliability							
CO-9: Define and describe parallel forms of reliability							
CO-10: Define and describe Split Hall form of reliability CO-11: Discriminate between reliability and validity							
CO-12: Define and describe in detail validity							
CO-13: Define and describe in detail discriminant validity							
CO-14. Describe in detail process to assess validity CO-15: Describe in detail procedure for validation of question	onnaire surve	v					
CO-16: Describe in detail face validity							
CO-17: Enlist in detail advantages of face validity	T			2			
Course Outcome			Pr	ogram Outco	me		
	Clinician/N	Professi	Commun	Leader and	Lifelong	Critical	Researcher
	urse Educator	onal	icator	member of the health	learner	thinker	
	Educator			care team			
				and system			
	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO-1: Define and describe importance of statistical methods	3	3	3	1	2	3	3
in psychology and education				-			
CO-2: Describe importance of statistics in psychology	3	3	3	1	2	3	3
CO-3: Define and describe the importance of z-score	3	3	3	1	2	3	3
CO-4: : Enlist steps for interpretation of z-score	3	3	3	1	2	3	3
CO-5: Define and describe in detail z-scaling	3	3	3	1	2	3	3
CO-6: Define standard score	3	3	3	1	2	3	3
CO-7: Define reliability of test score and write its four	3	3	3	1	2	3	3
assumptions	3	5	5	1		5	5
CO-8: Define and describe test retest method of reliability	3	3	3	1	2	3	3
CO-9: Define and describe parallel forms of reliability	3	3	3	1	2	3	3
CO-10: Define and describe Split Half form of reliability	3	3	3	1	2	3	3

CO-11: Discrir	ninate between reliability and validity	3	3	3	1	2	3	3
CO-12: Define	and describe in detail validity	3	3	3	1	2	3	3
CO-13: Define	and describe in detail discriminant validity	3	3	3	1	2	3	3
CO-14: Descri	be in detail process to assess validity	3	3	3	1	2	3	3
CO-15: Descri questionnaire s	be in detail procedure for validation of survey	3	3	3	1	2	3	3
CO-16: Descri	be in detail face validity	3	3	3	1	2	3	3
CO-17: Enlist	in detail advantages of face validity	3	3	3	1	2	3	3
(4 hours)	At the end of unit students are able to Knowledge: Understand the importance an meanings of vital health statistics. Skill: Apply this knowledge in professiona work. Attitude: Contributes in collecting and calculating vital statistics correctly.	 Ratios, Rates, Trends (2hours) Vital health statistics – Birth and death rates. (1 hr) Measures related to fertility, morbidity and mortality.(1 hr) 						
Unit IX– App	lication of statistics in health	•						
Unit IX- Application of statistics in health CO-1: Define Census, sample survey , vital statistics, vital rates, methods of collection of vital statistics and it's uses CO-2: Describe methods of collecting primary data CO-3: Describe in detail observation method of data collection CO-4: : Describe in detail controlled and uncontrolled observations CO-5: Describe in detail merits of telephone interview CO-6: Describe uses of medical statistics CO-7: Define and describe Sample Registration System CO-8: Define and describe Sample Registration System CO-9: Define and describe Sample Registration System								
	Course Outcome			Pro	ogram Outcon	ne		
		Clinician/N urse Educator	Professio nal	Communi cator	Leader and member of the health care team and system	Lifelong learner	Critical thinker	Researcher
		PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO-1: Define (rates, methods	Census, sample survey, vital statistics, vital of collection of vital statistics and it's uses	3	3	3	1	2	3	3
CO-2: Describe	e methods of collecting primary data	3	3	3	1	2	3	3

CO-3: Describe in detail observation method of data collection	3	3	3	1	2	3	3	
CO-4: : Describe in detail controlled and uncontrolled observations	3	3	3	1	2	3	3	
CO-5: Describe in detail merits of telephone interview	3	3	3	1	2	3	3	
CO-6: Describe uses of medical statistics	3	3	3	1	2	3	3	
CO-7: Define and describe Sample Registration System	3	3	3	1	2	3	3	
CO-8: Define and describe Sample Registration System	3	3	3	1	2	3	3	
CO-9: Define and describe various fertility indicators	3	3	3	1	2	3	3	
X At the end of unit students are able Knowledge: Know the different av packages.	to ailable statis	tical	 Use of stat SPSS & G 	istical package raph pad (2 hr	. (2 hr))			
Unit X– Use of computers for data analysis								
CO-1: Describe the importance of problem solving in data analysis CO-2: Enlist in detail uses of computers in nursing CO-3: Describe in detail about computer technology CO-4: Describe Central Processing unit of computer system CO-5: Describe various parts of central procession unit of computer system CO-6: Describe various characteristics of computer system CO-7: Describe in detail various uses of computers in research CO-8: Describe applications of computers in statistics CO-9: Define SPSS and write its importance in research and data analysis CO-11: Describe in detail Statistical Analysis Software(SAS) CO-12: Define SPSS and write its importance in research and data analysis								
Course Outcome			Р	rogram Outco	me			
	Clinician Nurse Educator	/ Professi onal	Communi cator	Leader and member of the health care team and system	Lifelong learner	Critical thinker	Researcher	
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	
CO-1: Describe the importance of problem solving in data analysis	3	3	3	1	2	3	3	

CO-2: Enlist in detail uses of computers in nursing	3	3	3	1	2	3	3
CO-3: Describe in detail about computer technology	3	3	3	1	2	3	3
CO-4: : Describe Central Processing unit of computer system	3	3	3	1	2	3	3
CO-5: : Describe various parts of central procession unit of computer system	3	3	3	1	2	3	3
CO-6: : Describe various characteristics of computer system	3	3	3	1	2	3	3
CO-7: : Describe in detail various uses of computers in research	3	3	3	1	2	3	3
CO-8: : Describe applications of computers in statistics	3	3	3	1	2	3	3
CO-9: : Define SPSS and write its importance in research and data analysis	3	3	3	1	2	3	3
CO-10: : Define and describe GraphPad Prism software for data analysis	3	3	3	1	2	3	3
CO-11: : Describe in detail Statistical Analysis Software(SAS)	3	3	3	1	2	3	3
CO-12: : Define SPSS and write its importance in research and data analysis	3	3	3	1	2	3	3

Unit No.	Name of the unit /Activity to performed by the students	Allotted Hours
Ι	Introduction	4
Π	Measures of central tendency	4
III	Measure of variability	5
IV	Normal distribution	2
V	Measures of relationship	8
VI	Designs and meaning	2
VII	Use of statistical & significance of difference between two statistics	10
VIII	Use of statistical methods in psychology & education	5
IX	Application of statistics in health	2
X	Use of computers for data analysis	8
	Total Hours	50

DISTRIBUTION OF LABORATORY HOURS:

TEACHING STRATEGY:

• Total Hours -100

Lecture - 50hrs Lab hours -50hours

TEACHING METHODS:

• Lecture cum discussion, Seminar, Panel discussion, Symposium, Group Discussion Written assignments. A.V.AIDS:

• Over head Projector, L.C.D, Computer Assisted learning, Flip charts, Posters, Black Board ASSIGNMENTS:

Sr. No.	Assignment	No./Quantity	Marks per	Total Marks
			Assignment	
1	Exercises on organization	05	1X5	25
	and tabulation of data,			
2	Graphical and tabular	05	1X5	25
	presentation of data			
				50

LIST OF RECOMMENDED BOOKS:

- Basavanthappa B.T, Nursing Research.
- Garrett H.E, Statistic in psychology & education.
- Mahajan B. K. Methods in Biostatistics.
- Rose Hott & Budin.Notter'sEssentials of Nursing Research 5th edition.
- Practical Nunshall, Nursing Research 3rd edition.
- P.K.Indirani, Research methods for Nurses.
- Polit, D.F. & Beck C.T., Nursing Research principles & methods 7th edition.
- Polit, Beck & P Hungler, Nursing Research methods, Appraisal & Utilization
- Clifford etal, Getting Research in to practice.
- Macnee C.L Understanding Nursing Research: Reading & using Research in Practice.