

## INTRODUCTION TO NURSING RESEARCH AND STATISTICS

Unit No. & Hrs.	Objectives	Contents						
		Must know 60%			Desirable to know 30%	Nice to know 10%		
I (4hrs.)	<p>At the end of unit students are able to:</p> <p><b>Knowledge:</b> Discuss meaning, purpose and importance, need and areas of research in nursing. Discuss the characteristics and scope of nursing research and compare the nursing process with research process. Explain the steps of research process.</p> <p><b>Skill:</b> Use appropriate terminologies and the problem solving approach in nursing practice.</p> <p><b>Attitude:</b> Contribute in ongoing research activities while working. Develops positive attitude towards use of scientific approach in nursing practice.</p>	<p><b>Research and research process</b></p> <ul style="list-style-type: none"> <li>• Introduction and need for nursing research.</li> <li>• Definition of Research, Nursing research.</li> <li>• Steps of Research process-overview</li> <li>• <b>Scope of nursing research</b></li> <li>• <b>Ethics in research – Purpose, principles, rights of study participants, Informed consent.</b> (3 Hour)</li> </ul>			<ul style="list-style-type: none"> <li>• Steps of scientific method</li> <li>• Characteristics of good Research</li> <li>• <b>Problem solving process</b></li> <li>• <b>Terminologies</b> (1hrs)</li> </ul>			
<b>Unit I Research and research process</b>								
Course outcome		Program outcome						
		Clinician/Nurse educator	Professional	Communicator	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 the terms and concept of Research, Nursing research		3	3	1	2	1	2	1

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CO-2: Identify needs and scope of nursing research.	3	3	3	3	3	3	3
CO-3: Define and describe quantitative and qualitative Research process	3	3	3	2	2	2	3
CO-4: Explain the concept of ethics in nursing research and recognize the importance and purpose of ethics in nursing.	3	3	2	2	2	2	3
CO-5: Develop a format of informed consent for research proposal.	3	3	3	2	2	3	3
CO-6: Discuss the concept, characteristics, purposes ,steps, and limitation of scientific methods.	3	3	3	3	2	2	3
CO-7: Identify Characteristics of good Research	3	3	2	2	1	3	2
CO-8: Describe and compare the Problem solving process with nursing process.	3	3	2	2	2	3	1
CO-9: Define basic research terms.	3	3	2	2	2	2	1
<i>Unit No. &amp; Hrs.</i>	<i>Objectives</i>	<i>Contents</i>					
		<i>Must know 60%</i>			<i>Desirable to know 30%</i>		<i>Nice to know 10%</i>
II	At the end of unit students are able to <b>Knowledge:</b> Understand and discuss the problem statement and criteria of good research problem. <b>Skill:</b> state the research problem and objectives <b>Attitude:</b> Identify the problem area.	<b>Research Problem/Question</b> <ul style="list-style-type: none"> <li>• Identification of problem area</li> <li>• Problem statement</li> <li>• Writing objectives</li> <li>• <b>Hypothesis</b> ( 2 hour)</li> </ul>			<ul style="list-style-type: none"> <li>• Criteria of good research problem (1Hour)</li> </ul>		

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Unit: II Research Problem/Question							
Course outcome	Program outcome						
	Clinician/Nurse educator	Professional	Communicator	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 and identify the research problem or research question	3	3	1	1	2	3	3
CO-2: Determine the sources of the research problem	3	3	3	1	1	3	3
CO-3: Recognize the criteria for selecting a good research problem	3	3	3	1	1	3	3
CO-4: Explain the steps for formulation of research problem CO-5: Demonstrate skills formulating the research problems.	3	3	2	2	2	2	3
CO-6: Explain the concept of variables and classify the different types of variables.	3	3	3	2	3	3	3
CO-7: Describe the meaning, characteristics, needs and types of research objectives.	3	3	3	1	2	3	3
CO-8: Demonstrate the ability to formulate the research objectives.	3	3	2	2	2	3	3
CO-9: Define and explain the hypothesis and assumption.	3	3	2	2	2	3	3
CO-10: Explain the types and examples of hypothesis and assumption	3	3	2	1	1	2	1
CO-11: Differentiate between hypothesis and	3	3	2	1	1	1	2

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assumption								
CO-12:Determine the sources of hypothesis.	3	2	2	3	3	2	2	
CO-13:Demonstrate skills in formulation of hypothesis.	3	3	2	2	3	3	1	
<i>Unit No. &amp; Hrs.</i>	<i>Objectives</i>	<i>Contents</i>						
		<i>Must know 60%</i>			<i>Desirable to know 30%</i>	<i>Nice to know 10%</i>		
III (3hrs.)	At the end of unit students are able to: <b>Knowledge:</b> Discuss meaning, location, sources, purpose and method of review of literature. <b>Skill:</b> Find and read appropriate literature for research. <b>Attitude:</b> Understand the online searches for reviewed the related literature.	<b>Review of Literature</b> <ul style="list-style-type: none"> <li>• Location</li> <li>• Sources</li> <li>• Purposes</li> <li>• Method of Review</li> <li>• <b>Evidence based practice – Definition, characteristics, process, objectives, and evidence hierarchy.</b> ( 2Hours)</li> </ul>			<ul style="list-style-type: none"> <li>• Online Search: CINHAL, COCHRANE, etc.</li> <li>• <b>Research critique</b> (1 Hour)</li> </ul>			
<b>Unit:III Review of Literature</b>								
Course outcome		Program outcome						
		Clinician/Nurse educator	Professional	Communicator	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 the concept of literature review	3	3	1	2	2	3	2	
CO-2: Recognize the importance of literature review	3	3	3	3	3	3	2	

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CO-3: Discuss the purposes of literature review	3	3	3	3	3	3	3
CO-4: Mention and explain the methods and types of literature review	3	3	2	2	2	2	3
CO-5: Explain the sources of literature review with examples.	3	3	3	2	3	3	3
CO-6: Identify the steps for conducting literature review.	3	3	3	3	3	3	3
CO-7: Explain the essential points to be considered while writing a literature review.	3	3	2	2	1	3	3
CO-8: Differentiate between good and poor written literature review	3	3	2	2	3	3	3
CO-9: Define the concept of Evidence based practice in nursing.	3	3	2	2	2	3	3
CO-10: Explain the purposes and barriers of Evidence based practice in nursing.	2	1	2	2	2	2	1
CO-11: Determine the steps for process of Evidence based practice in nursing.	2	2	2	2	3	2	2
CO-12: Determine the levels of evidence hierarchy.	3	3	2	3	3	1	2
CO-13: Illustrate the electronic sources from where literature can be searched .	2	1	2	2	1	2	1
CO-14: Define and explain research critique.	2	2		2	2	2	2
<b>Unit No. &amp; Hrs.</b>	<b>Objectives</b>	<b>Contents</b>					
		<b>Must know 60%</b>			<b>Desirable to know 30%</b>		<b>Nice to know 10%</b>

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IV (4hrs)	At the end of unit students are able to <b>Knowledge:</b> describe the research approaches and various research designs. <b>Skill:</b> Choose correct research design for any research study. <b>Attitude:</b> Understand the limitations of each research design.	<b>Research Approaches &amp; Designs</b> <ul style="list-style-type: none"> <li>• Survey</li> <li>• Experimental</li> <li>• Quantitative Designs</li> <li>• <b>Observational studies</b></li> <li>• <b>Characteristics of qualitative and quantitative research</b></li> <li>• <b>Difference between qualitative and quantitative research</b></li> </ul> ( 5 Hour)	<ul style="list-style-type: none"> <li>• Qualitative research designs.</li> <li>• Historical</li> <li>• <b>Phenomenological and Ethnographic research.</b></li> </ul> (2 Hours)					
<b>Unit: IV Research Approaches &amp; Designs</b>								
Course outcome		Program outcome						
		Clinician/Nurse educator	Professional	Communicator	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 the concept of research design and approaches.		3	3	1	2	2	3	3
CO-2: Describe different research approaches.		3	3	3	3	3	3	3
CO-3: Discuss the elements of research design and factors influencing the selection of designs.		3	3	3	3	3	3	3
CO-4: Classify types of quantitative and qualitative research designs.		3	3	2	2	2	2	3
CO-5: Recognize the internal and external validity of research design.		3	3	3	2	3	3	3

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CO-6: Define and explain advantages and disadvantages of the survey.	3	3	3	3	3	3	3
CO-7: Define and explain types , advantages and disadvantages of Experimental research design.	3	3	2	2	3	3	3
CO-8: Identify the characteristics of qualitative and quantitative research design	3	3	3	3	3	3	3
CO-9: Define, explain and classify qualitative research design.	3	3	2	2	2	2	3
CO-10: Define, explain and classify quantitative research design	3	3	3	3	3	3	3
CO-11: Define, explain and classify experimental research design.	3	3	2	2	2	2	3
CO-12 Define, explain and classify Non-experimental research design	3	3	3	3	3	3	3
CO-13: Define, explain Historical research design	3	3	2	2	2	2	3
CO-14: Define, explain Phenomenological research design	3	3	3	3	3	3	3
CO-15: Define, explain Ethnographic research design	3	3	2	2	2	2	3
CO-16: Define, explain Grounded theory	3	3	2	2	3	3	3
<i>Unit No. &amp; Hrs.</i>	<i>Objectives</i>	<i>Contents</i>					
		<i>Must know 60%</i>			<i>Desirable to know 30%</i>	<i>Nice to know 10%</i>	
V (8hrs.)	At the end of unit students are able to <b>Knowledge:</b> Understand and explain the sampling process and	<b>Sampling &amp; data Collection</b> <ul style="list-style-type: none"> <li>• Definition – Population, sample, sampling criteria</li> <li>• Sampling techniques</li> <li>• Data Collection Methods and instruments</li> </ul>			<ul style="list-style-type: none"> <li>• Record analysis &amp; instruments.</li> <li>• Validity and reliability of the</li> </ul>		<ul style="list-style-type: none"> <li>• Data - Why, what, from whom, when and where to</li> </ul>

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	describe the methods of data collection. <b>Skill:</b> Collect the research data effectively. Analyze and develop research tools correctly <b>Attitude:</b> Develop research attitude for improving the quality of nursing care.	<ul style="list-style-type: none"> <li>• Methods of data collection- Questioning, interviewing, observations</li> <li>• Pilot study</li> <li>• Data collection Procedure (5 Hours)</li> </ul>	instruments <ul style="list-style-type: none"> <li>• Factors influencing sampling process ( 2Hours)</li> </ul>	collect. <ul style="list-style-type: none"> <li>• Types of Instruments (1Hours)</li> </ul>
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### Unit:V Sampling & data Collection

Course outcome	Program outcome						
	Clinician/Nurse educator	Professional	Communicator	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 the basic terms related to Population, sample, sampling.	3	3	1	2	2	2	2
CO-2: Define, classify and explain Sampling techniques	3	3	3	3	3	2	2
CO-3: Determine the purposes and process of sampling.	3	3	3	3	3	2	2
CO-4: Discuss the elements and factors influencing sampling process.	3	3	2	2	2	2	2
CO-5: Describe the different types of probability and non-probability sampling techniques.	3	3	3	2	3	2	2
CO-6: Differentiate between probability and non-probability sampling techniques	3	3	3	3	3	2	2

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CO-7: Identify the concept of data collection and factors influencing the selection of data collection methods.	3	3	2	2	3	3	3
CO-8: Describe the interview, questionnaire, observation as method of data collection.	3	3	2	2	3	3	3
CO-9: Define, explain the pilot study.	3	2	2	2	3	3	2
CO-10: Explain Data collection Procedure	3	2	2	2	3	3	2
CO-11: Define, explain validity and reliability of research instrument.	3	3	2	2	3	3	2
CO-12 Define concept of data and classify data.	3	3	2	2	3	3	2
CO-13: Describe types of instruments.	3	3	2	2	3	3	2
CO-14: Explain record analysis	3	3	2		3	3	2
<i>Unit No. &amp; Hrs.</i>	<i>Objectives</i>	<i>Contents</i>					
		<i>Must know 60%</i>			<i>Desirable to know 30%</i>	<i>Nice to know 10%</i>	
VI (4hrs.)	At the end of unit students are able to <b>Knowledge:</b> Understand compilation, tabulation, classification, and summarization of research data. <b>Skill:</b> Present and interpret the research data effectively. <b>Attitude:</b> Conduct research studies and/or contribute effectively in other's research studies.	<b>Analysis of Data</b> • Compilation, tabulation, classification, summarization (2 Hours)			• Interpretation of data (1hr)	• Data presentation (1 hr)	

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Unit:VI Analysis of data:								
Course outcome		Program outcome						
		Clinician/Nurse educator	Professional	Communicator	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 the data analysis and other related terminologies.		3	3	1	2	2	3	3
CO-2: Discuss the steps of quantitative data		3	3	3	3	3	3	3
CO-3: Discuss the steps of process of data analysis.		3	3	3	3	3	3	3
CO-4: Classify parametric tests and nonparametric tests. CO-5: Choose the relevant statistical methods and test the quantitative data analysis.		3	3	2	2	2	2	3
CO-6: Interpret the data analysis and conclude data analysis.		3	3	3	2	3	3	3
CO-7: Identify the strategies for effective interpretation of data		3	3	3	3	3	3	3
CO-8: Describe data presentation.		3	3	2	2	3	3	3
Unit No. & Hrs.	Objectives	Contents						
		Must know 60%			Desirable to know 30%	Nice to know 10%		
VII (15hrs.)	At the end of the unit the students are able to : <b>Knowledge:</b> Define statistics. Explain the uses of statistics in	<b>Introduction to statistics</b> • Definition, use of statistics • Frequency distribution • Graphical presentation of data			• Coefficient of correlation • Scales of measurements.	• Statistical packages and its application (2 Hour)		



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CO-7: Explain the basic terms related to Mean, median, Mode, Standard Deviation	3	3	2	2	3	3	3
CO-8: Describe concept, properties and importance of normal probability curve. CO-9: Discuss the concept, types and methods of computing correlation coefficient	3	3	2	2	3	3	3
CO-10: Define and explain scales of measurements with examples.	3	3	2	2	3	3	3
CO-11: Define, explain test of significance.	3	3	2	2	3	3	3
CO-12 Understand the basic concept and uses of vital health statistics.	3	3	3	2	3	3	3
CO-13: Use and apply statistical packages for data analysis and statistical computations.	3	3	3	2	3	3	3
<i>Unit No. &amp; Hrs.</i>	<i>Objectives</i>	<i>Contents</i>					
		<i>Must know 60%</i>			<i>Desirable to know 30%</i>	<i>Nice to know 10%</i>	
VIII (4hrs.)	At the end of unit students are able to: <b>Knowledge:</b> understand the utilization of research findings. <b>Skill:</b> Communicate and utilize the research finding i.e Writing research report and verbal report. <b>Attitude:</b> Does and accepts critique on research work which contributes in enhancing quality.	<b>Communication &amp; Utilization of Research</b> <ul style="list-style-type: none"> <li>• Communication of research findings</li> <li>• Critical review of published research</li> <li>• Utilization of research findings (2 Hours)</li> </ul>			<ul style="list-style-type: none"> <li>• Writing research report</li> <li>• Writing scientific article/paper (1 Hour)</li> </ul>	<ul style="list-style-type: none"> <li>• Verbal reports (1 Hour)</li> </ul>	
<b>Unit VIII : Communication &amp; Utilization of Research</b>							
Program outcome							

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	Clinician/Nurse educator	Professional	Communicator	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 criteria and methods of communicating the research reports.	3	3	1	2	2	3	3
CO-2: Discuss the format and characteristics of good research report including thesis/dissertation.	3	3	3	3	3	3	3
CO-3: Discuss the elements and guidelines for Critical review of published research	3	3	3	3	3	3	3
CO-4: Prepare correct citations and references for research reports.	3	3	2	2	2	2	3
CO-5: Determine the barriers in utilization of nursing research and strategies to overcome them.	3	3	3	2	3	3	3
CO-6: Define and explain advantages and disadvantages of the survey.	3	3	3	3	3	3	3
CO-7: Describe the process of development and presentation of research proposal.	3	3	3	2	3	3	3
CO-8: Develop and present a research proposal.	3	3	3	2	3	3	3
CO-9: Prepare research article for publication.	3	3	3	3	2	3	3
CO-10: Define, explain verbal report	3	3	3	3	2	3	3
CO-11: Define, explain written report	3	3	3	3	3	3	3

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CO-12 Define, explain poster presentation.	3	3	3	3	3	3	3
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