

Utah State University
Nursing Program
Testing Procedure Guidelines

Overall Planning

1. Determine the number of items on each exam. Tests should be as long as possible to increase the validity of the exam.
 - a. Iggy's recommendation:
 - i. 40-50 items for unit exams
 - ii. 80-100 items for final exam
 - iii. Students should be given 1.5 minutes per test items if administering a timed exam.
2. Each course will have a cumulative final exam that is 20-25% of course grade.
3. Each course will include four (4) interval/unit exams with the exception of courses that are not held over an entire semester. In this case, the instructor has discretion over deciding upon a reasonable number of unit exams given the timeframe for the course.
4. When writing an exam, determine the content that will be considered mastery information for each test. For each test, determine which items mastery items (no more than 10%) are reflecting that content. This is determined BEFORE the test is administered.
5. Determine the percent of questions for each course/level of the program that are written at the following Bloom's Taxonomy levels.
 - a. By end of first semester: 75% remembering/understanding; 25% applying/analyzing
 - b. By end of second semester: 50% remembering/understanding; 50% applying/analyzing
 - c. By end of third semester: 25% remembering/understanding; 75% applying/analyzing
 - d. By end of fourth semester: 100% applying/analyzing
6. Address each of the categories of the NCLEX in each course (this is to ensure that all categories are tested throughout the program). Students will download and/or print the candidate version of the current NCLEX Detailed Test Plan for use throughout the program. Faculty will download and/or print the educator version of the current NCLEX Detailed Test Plan. Categories and subcategories include:

	PN	RN
• Safe and Effective Care Environment		
○ Management of Care	18-24%	17-23%
○ Safety and Infection Control	10-16%	9-15%
• Health Promotion and Maintenance	6-12%	6-12%
• Psychosocial Integrity	9-15%	6-12%
• Physiological Integrity		
○ Basic Care and Comfort	7-13%	6-12%
○ Pharmacological Therapies	10-16%	12-18%
○ Reduction of Risk Potential	9-15%	9-15%
○ Physiological Adaptation	7-13%	11-17%

Also address each of the NCLEX Integrated Processes in each course:

- Nursing Process
 - Caring
 - Communication and Documentation
 - Teaching/Learning
 - Culture and Spirituality
7. Test results will be returned to students no later than one week from the date the test closes.
 8. Students must maintain at least a 79.5% average in course exams not including quizzes and ATI exams. Refer to Policy 14.4.3 in the Nursing Student Handbook.

Writing Test Items

1. All theory class exams will be comprised of NCLEX style questions including multiple choice with four options, multiple response, fill-in-the-blank calculation and ordered response.
2. Write applying/analyzing items using the four criteria for a critical thinking test item.
 - a. Provides a situation/scenario; requires students to recall principles, rules or facts in a real-life context.
 - b. Requires students to use what they have learned to provide the correct answer.
 - c. Tests student ability to think critically and solve problems.
 - d. Tests nursing decisions.
3. All items are reviewed to eliminate test-wise items.
 - a. Teaching in the item
 - b. An option that has more variability and least specific facts
 - c. An option that is significantly longer than the other options
 - d. Options with extremes
 - e. Two options that meant the same thing
 - f. Options that are opposites
4. Terminology
 - a. Client
 - b. "Client reports" or "client presents" (not "client complains of...")
 - c. Primary health care provider (not physician, NP, etc.)
 - d. Prescribe/prescription (not order/orders) for meds and treatments
 - e. Do not use "you"
 - f. Use "The nurse will..." (not "The nurse should...")
 - g. Do not use "all of the above" or "none of the above"
 - h. Be culturally competent
5. Important words in the stem only will be bolded such as: **most important, priority, best.**
6. Select all that apply (SATA) questions should be included in each exam.
 - a. Included 5-6 choices for an effective question.
 - b. Correct can be 1 to all responses.
 - c. In early semesters of program, give partial credit for SATA questions.

- d. In later semesters, questions should be scored as “all or nothing” indicating that students must choose all of the correct answers and none of the incorrect answers to receive credit for the question. No partial credit will be awarded.

Study Guides

A course instructor has discretion in providing or not providing a study guide before unit/interval and final examinations in a course. Nursing faculty are not required or responsible for providing study guides before exams. The “study guide” is the syllabus, class objectives, student learning outcomes, class, class activities, and readings.

If faculty choose to provide a study guide, they will follow these guidelines:

1. Be brief. The study guide should be considered as an outline only. It should not be comprehensive. A brief, non-comprehensive study guide helps students think for themselves.
2. The study guide does not have to include everything that is on an exam. Faculty can include questions on an exam that may not be included in a study guide.
3. The study guide should **never** be a list of topics that correlate directly with exam questions; for example, the exam question is:
*The client receiving a unit of PRBCs begins to chill and develop hives. Which action should be the nurse’s **first** response?*
The study guide lists: “First response when a patient has a reaction to a blood transfusion”.
Instead, the study guide could state, “Nursing care of the patient undergoing a blood transfusion.”
4. Consider having the students make up their own study guides.
5. Consider the purpose for providing a study guide. The purpose is not to make it easier for students to get a good grade. It is not meant to communicate to students what parts of the class they can skip, which is not good preparation for the NCLEX.

To quote from an anonymous nursing student:

“After all, life or a job does not hand us a cheat sheet that lets us know what we can ignore and what to ‘really study and pay attention to.’ Life or a nursing job are too complex for that. A nursing program is also for learning how to make our own ‘study guides’ as preparation for passing the NCLEX and working as nurses.”

How to Determine if a Nursing Test Item is Written at the Applying Level or Above

Read the test item.

Does the question involve both a nurse and a patient/staff?

NO.



Revise question.

YES.

The question MAY be written at the application level or higher.



Does the question ask the nurse to make a clinical/nursing decision?

NO.

YES.

Does the question ask the nurse to apply two or more concepts or principles?

NO.

YES.

The question is likely written at the application level or above.

Adapted from Donna Ignatavicius, 2016.

Administering Exams

1. Individual Course Exams

- a. Students who arrive late for a test will be allowed to take the course exam but no additional time will be allotted.
- b. The students must give prior notice if they will miss a test. If a student is absent from any course exam, it will be the responsibility of the student to contact the faculty member who is administering the exam about an exception. The course exam must be taken in a timeframe at the discretion of the instructor. Any exception may result in an automatic reduction of points.
- c. Acceptable causes for missing an exam will include illness, sanctioned school activity and/or family emergency. It is the student's responsibility to make arrangements with the instructor to take the exam.
- d. Course exams may be given in a testing center, classroom, or by proctorial.
- e. If course exams are given in a testing center, it is preferred and recommended that they should be open for one day only.
- f. Take home course exams: The educational rationale for the take home test should be clear. Expectations for taking and returning the test should be clearly stated. It should also be clearly identified, in writing, if collaboration will be allowed or the tests is to be taken independently. Students may be required to sign a statement that they have completed the test independently.
- g. Course exams must comprise at least 55% of the entire course grade in the BSN program and 65% in the PN and ADN programs. Pre-tests, quizzes, and ATI exams will not be included in calculating the minimum course grade due to exams.

2. Collaborative Tests

- a. When time permits, students may work in groups to take a collaborative test. Group members will be randomly assigned. Collaborative tests may be administered in all courses of the program.
- b. The timing of a collaborative test in relation to the students' individual testing is at the discretion of the course instructor. However, it is recommended that students take the individual test followed immediately by the collaborative test.

- c. Students earning “A” on the group test will have three (3) percentage points added to their individual grade; those earning “B” on the group test will have two (2) percentage points added to their individual grade; those earning “C” on the group test will earn one (1) percentage point. A grade less than “C” (76%) on the group test will earn no points.
- d. Students who miss the original individual exam date will be ineligible for group points.
- e. Students scoring less than 76% on the individual exam will not be awarded extra points but may participate in the collaborative test.

Test Blueprints

1. A test blueprint will be used for all theory tests. The blueprint will be completed while developing the course exam. The columns referring to item analysis will be completed after administration of the test. (See examples at the end of this document.)
2. Goal for creating test blueprints is as follows:
 - a. Fall 2018: one test blueprint for each course
 - b. Spring 2019: two test blueprints for each course
 - c. Fall 2019: all exams are created using a test blueprint

Analyzing Test Results

1. The faculty who writes the course exam is responsible for analyzing the results.
2. The following will be considered when analyzing exam results:
 - a. Item analysis
 - i. Level of achievement on mastery items; no more than 10% of the test should be mastery items with 100% scoring the question correctly.
 - ii. Difficulty level: attempt to have 50% on non-mastery items
 - Any items with less than 50% correct answers should be reviewed for level of difficulty, syntax errors or other problems with the question.
 - iii. Discrimination level (Point Biserial): the following are used as a guideline:
 - 0.3 and above – excellent item
 - 0.20 – 0.29 – good item
 - 0.15 – 0.19 – acceptable item
 - 0.10 – 0.14 – marginal item
 - 0.09 and below – poor item (should be reviewed and properly edited)

- iv. If it is determined that the statistics of a test question are unacceptable, based on the difficulty level or point biserial, the test item may be nullified, at the instructor's discretion, by giving credit to each student for the test item.
 - v. Cronbach's Alpha (internal reliability): Attempt to have 0.65 or higher.
 - vi. Overall class average on tests should fall between 80-85%.
3. These statistics will be used to determine the reliability of the exam. The test blueprint is used to determine validity of the exam. Items and exams without acceptable statistics will be reviewed and revised before using them in subsequent courses.

Reviewing Tests with Faculty Members

1. Every effort should be made to evaluate each course exam with another faculty member.
 - a. Before the test is administered, review the test for test-wise items, poorly worded questions, grammatical errors, etc.
 - b. After the test, items that have poor discrimination or a low score (less than 50%) may be evaluated with another faculty member to determine if the item should be nullified, revised, or otherwise dealt with.
 - c. An agenda item at each annual faculty retreat will be test review among the faculty. Each faculty will bring one exam given to students in the past academic year, its test blueprint, and its item analysis for review by peers.

Reviewing Tests with Students

1. All course exams will be reviewed with the class. The manner in which the review is conducted will be at faculty discretion.
2. All students earning less than 79.5% on an exam are to make an appointment with the instructor for an individual review of the test. All other individual reviews will be at the request of the faculty or student.
3. Test item inquiry form instructions:
 - a. Students may complete this form (see attachment) when they believe a test item (question) has a correct answer that is different from the instructor's keyed correct answer.
 - b. Students must provide a rationale (with documentation of the reference) from a course textbook or other resource. They should identify the textbook with a page number, or provide the citation of alternate resources, where the rationale was located.

- c. When complete, students submit the form to the course instructor within 24 hours of the end of the exam review.
- d. The instructor will respond to the student within 48 hours whether or not points have been adjusted.

Standardized Testing

Refer to the ATI Comprehensive Plan for utilization across the PN, ADN, and BSN curriculum on page 14.

**Utah State University
Nursing Programs
Test Item Inquiry Form**

Complete this form when you believe a test item (question) has a correct answer that is different from the instructor's keyed correct answer. Provide a rationale with documentation from a course textbook or other resource. Identify the textbook with a page number, or provide the citation of alternate resources, where you found the rationale. When complete, submit the form to the course instructor within 24 hours of the end of the exam review. The instructor will respond to you within 48 hours.

Class: _____ Professor: _____

Student: _____ Date: _____

Test #: _____ Item#: _____

Rationale: _____

Source: _____

Example of a Test Blueprint

Question	Course Student Learning Outcome	Step in the Nursing Process	Other Nursing Activity/ Concerns	NCLEX Category/ Subcategory	Cognitive Level	Difficulty Level (after exam)	Item Discrimination (after exam)
1	4	Assessment		2	Applying		
2	3		Delegating	4b	Analyzing		
3	1	Intervention		1a	Knowing		
4	1	Analysis		3	Understanding		
5	5	Analysis		4c	Applying		
6	6	Assessment		4d	Analyzing		
7	2		Ethics	1b	Analyzing		
8	4		Policy	2	Knowing		

Iggy's Example of a Test Blueprint
Nursing 2220
Unit 4 Exam

ITEM #	CO/SLO	CL	IP	CN
1	4	A or >	Ca	Psi
2	3	A or >	TL	HPM
3	2	A or >	C/S	Psi
4	2	A or >	NP (P)	Phi
5	5	A or >	NP (E)	Phi
6	1	A or >	TL	SEC
7	6	A or >	Co	Phi

KEY:

CO/SLO = Class Objective/Student Learning Outcome

CL = Cognitive Level (R: remembering; U: understanding; A or >: applying or higher)

IP = NCLEX Integrated Processes (NP: nursing process; Ca Caring; TL: teaching/learning; Co: communication & documentation; C/S: culture & spirituality)

Can further define NP by A: assessment; AN: analysis; P: plan; I: Implementation; E: evaluation

CN = NCLEX Client Need (SEC: safe & effective care environment; HPM: health promotion & maintenance; Psi: psychosocial integrity; Phi: physiological integrity)

Quick Item Analysis Reference for Canvas Exams

Component	What It Means	Interpretation of Results
Cronbach's alpha score	Reliability (internal consistency of entire exam)	<p>.90 and >: Excellent reliability. At the level of the best standardized tests.</p> <p>.80-.90: Very good for a classroom test.</p> <p>.70-.80: Good for a classroom test. There are probably a few items which could be improved.</p> <p>.60-.70: Somewhat low. This test needs to be supplemented by other measures (e.g. more tests) to determine grades.</p> <p>.50-.60: Suggests need for revision of test, and definitely needs supplementation by other measures for grading.</p> <p>.50 or <: Questionable reliability. This test should not contribute heavily to the course grade, and it needs revision.</p>
p-value or Point Biserial	Difficulty index (how hard it is to answer the question correctly)	<p>0.30 and >: very good item</p> <p>0.20-0.29: reasonably good item</p> <p>0.09-0.19: marginally acceptable item</p> <p>Below 0.09: poor item (should be carefully reviewed and possibly nullified)</p>
Item Discrimination Ratio	Differences in student achievement (how well a single question can tell the difference between students who did well on the whole exam and those who did not)	<p>25% (.25) or higher: acceptable</p> <p>Less than 25% or negative: nullify item</p>

ATI Testing Services
Comprehensive Plan for the Curriculum

Course	ATI Test
PN	
Fall	Fundamentals
Spring	Medical- Surgical Management Nursing Care of Children Mental Health Maternal/Newborn Pharmacology Comprehensive Predictor
AND	
Fall	Fundamentals Community Nutrition Pharmacology Maternal/Newborn
Spring	Leadership Medical Surgical Mental Health Nursing Care of Children Comprehensive Predictor
BSN	
NURS 3010	
NURS 3020 Fundamentals	Critical Thinking Entrance, Self-Assessment
NURS 3030 Nursing Management of Care 1	Fundamentals
NURS 3040 Pharmacology	Pharmacology
NURS 3210 Population Health	Community Health
NURS 3220 Family Health	Maternal-Newborn Nursing Care of Children Nutrition for Nursing
NURS 4010 Leadership & Management	Leadership
NURS 4020 Nursing Management of Care 2	Adult Medical-Surgical Mental Health Pharmacology
NURS 4210 Nursing Capstone	Comprehensive Predictor