Virginia Military Institute (VMI)

Competency [Year(s) Assessed]	Definition	Standards	Description of Methodology
Written Communication [2010-2013]	1. Analyze the audience, occasion, and purpose of a rhetorical situation in order to formulate a response to an idea or problem. 2. Generate ideas through both discovery and consultation of a variety of sources. 3. Develop ideas fully, offering compelling support and evidence for assertions or conclusions. 4. Organize ideas coherently, integrating sources effectively and documenting them appropriately. 5. Edit writing for clarity, precision, and stylistic effectiveness. 6. Proofread writing to ensure grammatical and mechanical correctness.	Using a standard 6-point scale, a rating of 4 reflects the set of standards by which a first-year composition student may demonstrate competence in written communication. Annually, 50% of the students in the rating sample should achieve this standard.	All WR 102 students submit portfolios with a common reflective essay. The portfolio essays are randomly sampled and rated independently by two faculty members who have been trained in the holistic assessment of writing.

Competency [Year(s) Assessed]	Definition	Standards	Description of Methodology
Scientific Reasoning [2010-2013]	1. Design scientific experiments employing the principles of the scientific method. 2. Conduct a literature search using appropriate information technology databases. 3. Employ appropriate technology to conduct the experiment. 4. Collect and organize (categorize) data. 5. Statistically analyze and present data. 6. Interpret and draw conclusions from experimental results. 7. Use appropriate scientific models/techniques for real-world problems. 8. Understand the role an impact of science on society.	Standard for Success Methodology 1: For an individual cadet, proficiency in the learning outcome is achieved by answering correctly the question testing comprehension of the respective learning outcome. Correct items are summed to form a single score for each LO. Success is defined at the level of individual student and for all students completing the sequence that academic year. Individual proficiency is defined as answering a simple majority of the items correctly on the post-test for each LO (i.e., 2 of 3, 3 of 4, etc.). For all students in a course Biology and Physics set the standard for success at 60% students achieving proficiency on all LOs, Chemistry's standard is 70% of all students are proficient on all LOs. Standard of Success Methodology 2: At this time only the Biology Dept. is implementing methodology 2. Proficiency levels are set for multiple aspects of the Biology lab report as	Methodology 1: All cadets must complete an introductory two-course sequence in one of three sciences (Biology, Chemistry, or Physics). All three departments, Biology (BI 101-102), Chemistry (CH 131/111-132/112), and Physics (PY 207/217-208/218), utilize a multiple-choice knowledge test that is administered at the beginning and end of the academic year in each core curriculum science course. There are three versions of the test, all measuring the same learning outcomes. Test length varies slightly between the sciences (24 items Chemistry, 29 items Biology, 31 items Physics). Items were written and reviewed by the respective departmental faculty. Faculty reviewed and rated each item on the extent to which it is a measure of the learning outcome with which it is associated. All items achieved an

		defined in the rubric. A score of 2 or higher on each respective component is considered minimally proficient. Student proficiency is based upon 65% of the students scoring a 2 or higher on the components being stressed that year and previous years.	acceptable rating. Pre-test is administered as stand-alone instrument and described to students as a means for obtaining information on current level of knowledge. At end of year items are embedded in the final exam. Comparisons are made pre-post each year, and post tests are compared over multiple years. Each LO is represented by multiple items (typically 3-4). LO scores are created by summing the number correct for each LO. Methodology 2: This academic year (AY2010-11) the Biology Department has begun implementing an end of year lab report in BI 102 as an additional assessment instrument for the scientific inquiry learning outcomes. Class activities, exercises, homework assignments, and laboratory exercises have been embedded in the course to instruct and reinforce the scientific reasoning learning outcomes

			during both BI 101 and BI 102. Lab reports constitute 10% of the final grade. Assessment of the learning outcomes is done using a rubric in which each of the learning outcomes is broken down into its component parts. For example, LO 1 contains the following components: hypothesis generation, presentation of methods, experimental design, and error analysis. Each of these components is assessed as an indicator of a student's proficiency for a specific learning outcome. During the 2009-2010 academic year, the lab report was assigned to the students and they were given minimal guidance on writing the report. These data serve as our base-line data for the course. For the 2010-2011 academic year, four of the components from the rubric: hypothesis generation, data analysis, data presentation, and literature searching were selected as focal items for the course.

			Exercises, assignments, and discussions were designed to provide the students with detailed information on each. These class activities were embedded in the lecture or laboratory portions of the course with assessment occurring during the semester to monitor the progress of the students. At the end of the year, it is expected that students will show improvement in these areas. During the 2011-2012 academic year, a different set of components will be added to the course, so that by the end of 2012 students should show improvement in these new components as well as the components that were added during the previous year. It is anticipated that by 2015 all of the components listed in the rubric will be embedded into the course material and that the students' lab reports will show improvement over the base-line year. Lab reports are submitted at the end of the semester and are

			assessed using the rubric in an assessment exercise that is separate from the grading process. Lab reports are sampled for assessment purposes and scored by three raters. Scoring of the reports is based on a four point scale: 3 = highly proficient; 2 = proficient; 1 = acceptable but needs improvement; 0 = not acceptable. Raters are trained and normed prior to each rating session.

Competency [Year(s) Assessed]	Definition	Standards	Description of Methodology
Leadership and Human Relations [2011-2014]	1. Students shall articulate a philosophy of leadership that includes a statement of his/her personal code of ethics. 2. Students shall identify moral and ethical issues inherent in a task to be completed by a group. 3. Design a plan of action that takes these issues into account and conforms to his/her philosophy of leadership. 4. Students will understand how to motivate the group to complete the assigned task. 5. Evaluate the group's progress and make any necessary moral, ethical, or structural revisions in the plan.	Linked to LO1, students write a one-page essay on leadership philosophy at the beginning and the end of the semester. The standard for success for the one-page essay is a 25% improvement or better on the post-test rubric score for LO1. Linked to LOs 2-5, students complete a VMI Leadership Achievement Test (VLAT) both at the beginning and end of the semester. The standard for success is twofold. First, we strive for a statistically significant pre-post improvement overall for LOs 2-5; second, at the individual level the standard is a score of 60% correct or better on each of the post-test LOs 2-5.	Leadership and Human Relations is emphasized and assessed in Psychology 344, a required course for all 2nd class (junior class) students. The assessment utilizes a pre-post design, assessing learning outcome 1 through a one-page essay articulating a personal philosophy of leadership. Each essay is scored by multiple raters using a rubric. A multiple choice test, VMI Leadership Achievement Test (VLAT), is used to assess learning outcomes 2-5. Each learning outcome has from 5 to 6 items on the VLAT; items are summed to form a single score for each LO. Scores from all students are utilized for analysis.

Competency [Year(s) Assessed]	Definition	Standards	Description of Methodology
Oral Communication [2011-2014]	1. Analyze the audience, occasion, and purpose of a rhetorical situation in order to formulate a response to an idea or problem. 2. Generate ideas through both discovery and consultation of a variety of sources. 3. Develop ideas fully, offering compelling support and evidence for assertions or conclusions. 4. Organize ideas coherently, integrating sources effectively and documenting them appropriately. 5. Edit writing for clarity, precision, and stylistic effectiveness. 6. Proofread writing to ensure grammatical and mechanical correctness. 7. Speak in language that is grammatically correct and appropriate for the particular audience. 8. Speak at an appropriate pace and at sufficient volume, sustain eye contact, and use body language effectively to communicate points. **9.** Employ visual aids that are designed and timed to reinforce points.	Standard for Success: Using a standard 5-point scale on the scoring rubric, a rating of 3 reflects the set of standards by which a student may demonstrate competency in oral communication. Annually, 50% of the students in the rating sample should achieve this standard.	The required argument /persuasion speeches in SE 300 are video-taped biennially in all sections taught in the fall semester. In the spring following the taping, all instructors score these speeches, using a departmentally developed rubric. Baseline data are compared with data gathered biennially thereafter.

Competency [Year(s) Assessed]	Definition	Standards	Description of Methodology
Critical Thinking [2012-2015]	1. Identify main ideas and/or themes. 2. Make comparative judgments and draw conclusions from evidence gathered. 3. Determine the validity/credibility and implications of an assumption/hypothesis. 4. Demonstrate creative problem-solving skills.	The standard for minimal competency is defined as achieving a score of 4 on the 6-point rubric.	LOs are assessed in a capstone course taken by all students, most often in their senior year, in their respective department. Critical thinking is assessed using a Critical and Creative Thinking rubric adapted from Washington State University. Student work used for assessment will be a written research report, project summary, or similar final product. The sample of work used for assessment will consist of two products, drawn at random, from each capstone course. Each product will be reviewed by two trained raters. Inter-rater reliability will be established through training and use of a third scorer to settle disagreements of more than 1 point.

Competency [Year(s) Assessed]	Definition	Standards	Description of Methodology
Quantitative Reasoning [2012-2015]	1. Understand quantitative relationships, make geometric observations, and formulate sound estimations. 2. Work with abstract concepts, mathematical variables, and symbols. 3. Solve mathematical equations. 4. Read, interpret, and create graphical information. 5. Understand the effective, appropriate, and efficient use of mathematical techniques for real-world problems.	Standard of Success: Proficiency levels were defined for an individual student and for all qualified* students in a course. For each student, proficiency was determined by the calculation of the correct answer (proficient) or incorrect answer (not proficient). For all qualified students in a course, the standard of success for the course was set at 60% of the students showing proficiency for that question. *Qualified students is defined as those who passed the two course sequence within one academic year.	All cadets must complete an introductory two-course sequence in one of three math courses (Statistics, Calculus for Business, and Calculus for Engineering / Science). All three courses utilize a faculty developed knowledge test that is administered at the beginning and end of the academic year in each freshman/required math course. The knowledge test is course-embedded consisting of multiple choice questions and problem sets. The pre-test is administered during the first week of classes and is described as a means to gauge students current level of skill; post-test is embedded in final examination. Multiple choice items are scored correct/incorrect; solved problems are scored using a rubric and are rated by two raters. Rater agreement is nearly perfect for every problem set. LO scores are created by summing scores for individual items / problem sets.

Virginia Military Institute Assessment Plan Summary Calendar

2010-2013	Written Communication
2010-2013	Scientific Reasoning
2011-2014	Leadership
2011-2014	Oral Communication
2012-2015	Critical Thinking
2012-2015	Quantitative Reasoning
2016-2017	Submit overall report