

*Approved by President George
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Integrated General Education Instruction and Assessment Model

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Introduction

Standard 12 of the Middle States Commission on Higher Education (MSCHE) addresses general education by declaring, early on in its discussion of the subject, that:

“A general education program—developed, owned, and reviewed by the institution’s faculty—should be purposeful, coherent, engaging, and rigorous. General education skills may be taught or developed as part of courses in the major, in separate courses, or through a decentralized distribution. *However, the skills and knowledge derived from general education and the major should be integrated because general education and study in depth, together, comprise a quality undergraduate education [emphasis added]*” (MSCHE, 2006, pp. 47-48).¹

Delaware Tech’s plan for both the instruction and the assessment of general education (“Gen Ed”) reflects these qualities—purposeful, coherent, engaging, and rigorous. This plan incorporates a design through which general education is taught and learned as an *integrated curriculum* of cognitive, affective, and behavioral proficiencies. It is, therefore, the intent to assess this learning in ways that are embedded into everything the College’s students learn.

Guiding Principles

The following principles guided the process of implementing the integrated design for both general education (Gen Ed) instruction and assessment.

1. The existing Core Curriculum Competencies (CCCs) serve as the Gen Ed student learning goals (See Appendix 1). Along with the Program Graduate Competencies (PGCs), they serve as the philosophical and pedagogical foundation of the integrated design.
2. Each CCC is operationalized by a set of measurable intended outcomes. CCCs are introduced and reinforced in the Gen Ed courses and are further reinforced and then applied in the technology programs. Every technology program must reinforce and apply the CCCs within its curriculum with an emphasis on higher-order thinking. CCCs are assessed utilizing summative/capstone learning experiences within each technology.

¹ Middle States Commission on Higher Education. (2006). *Characteristics of excellence* (12th ed.). Philadelphia, PA: Author.

3. Assessment of CCCs 2, 4, and 6 are the responsibility of Technology Programs; assessment of CCCs 1, 3, 5, and 7 are the responsibility of the Technology Programs in collaboration with interdisciplinary General Education Assessment Teams (GEATS).
4. An integrated design for Gen Ed instruction and assessment must proceed from a comprehensive review of every course, including the identification of which CCCs are addressed by each general education and technology course. This review specifies the level of learning involved in each course (e.g., concept introduction, reinforcement, application) and links each CCC with identification of the assessment means currently being used to assess student learning. Technology faculty, working collaboratively with Gen Ed faculty and the librarians, play a central role in identifying how and where their respective curricula incorporate Gen Ed instruction and assessment, and where gaps exist.

Implementation

A. Transitional Steps and Phases

The following were essential transitional steps taken in order to achieve successful implementation of the Integrated Approach to General Education Instruction and Assessment.

1. Based on the review and subsequent revision of the CCCs by designated leadership groups, a corresponding long list of intended outcomes for CCCs 1, 3, 5 and 7 were developed by Gen Ed faculty with technology faculty input. A list of intended outcomes for CCCs 2, 4, and 6 were developed by technology faculty for each technology program.
 - Technology chairs and/or Gen Ed faculty and librarians consulted with assessment coordinators, as needed.
2. For the purposes of identifying which courses addressed each CCC and in what manner (introduce, reinforce and/or apply), course reviews were conducted.
 - The course reviews included if/how the CCCs were being taught and assessed, and the information was assembled into a chart for each department.
3. Utilizing the course review charts, the technology department chairpersons identified gaps in the curricula that indicated insufficient instructional integration and assessment of the CCCs.
4. As needed, technology chairs consulted with the Gen Ed faculty and librarians to implement strategies which integrated all CCCs into their respective curricula,

including application and assessment of the CCCs in technology courses. The assessment coordinators also provided consultation, as requested.

- Technology chairs and/or Gen Ed faculty and librarians consulted with assessment coordinators.
- Program curricula and/or courses were and continue to be modified to achieve integration of the CCCs.
- Summative/capstone learning experiences were and continue to be identified within each technology program curriculum to be used for program summative assessment opportunities of each CCC. (Summative program assessment of the CCCs within technology programs are based on outcomes selected from the long lists.) These capstone learning experiences may also have been and continue to be used for other assessment purposes as well (i.e. PGC assessment, etc.).
- Gen Ed faculty and librarians, with input from technology faculty, developed assessment rubrics for the CCCs, which technology chairs may utilize in the design and subsequent assessment of the summative/capstone learning experiences.

B. Structure of General Education Instruction

As indicated in the “Guiding Principles” section above, the existing Gen Ed courses will continue to serve an essential role in General Education instruction. These courses develop and reinforce student acquisition of the CCCs: communicate effectively, reason clearly, act ethically, locate and retrieve needed information, use scientific and mathematical reasoning, use computer technology, and interact with others respectfully. Technology courses provide student learning opportunities for the reinforcement and application of these competencies.

Core Course Performance Objectives and Measureable Performance Objectives ensure teaching/learning of the CCCs, and course syllabi are revised as needed.

C. Structure of General Education Assessment

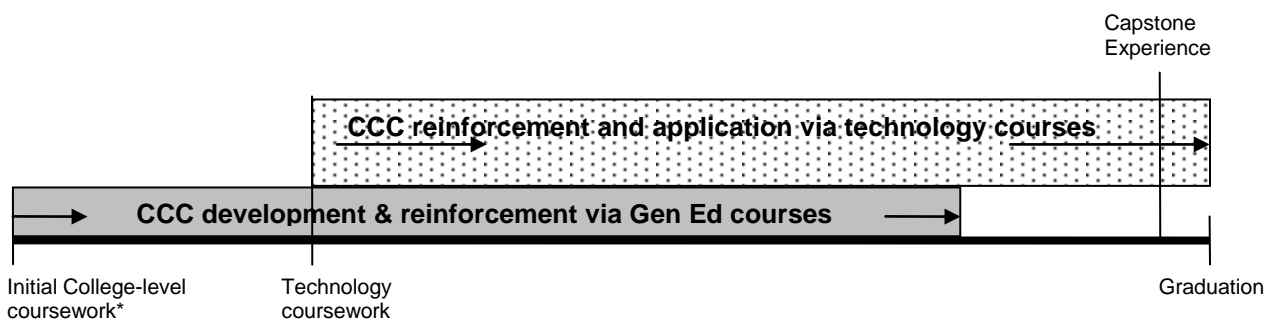
Capstone Learning Experiences:

Gen Ed program-level assessment hinges on the use of summative capstone learning experiences within technology curricula.

- Course level Gen Ed assessment plays a *formative* role in program-level assessment (although it may be used summatively for *course-level* assessment).

- End-of-program summative/*capstone* experiences typically occur within technology courses in the final year. The assessments of the capstone experiences are *summative*—both in terms of their technology content and general education content.
- Figure 1 below illustrates, along a continuum starting with first enrollment and culminating in graduation, how the integrated model works.

Figure 1
Programmatic Continuum of General Education



*Following any necessary developmental coursework.

The General Education Assessment Teams:

To accomplish Gen Ed learning outcomes assessments using the technology capstone artifacts, interdisciplinary General Education Assessment Teams (GEATs) are designated yearly at each campus.

- Individual GEATs for each of the CCC student learning goals 1, 3, 5, and 7 are composed of representatives of the specified Gen Ed subject areas and cluster technology programs designated for Gen Ed assessment of the specific CCC each year. The chairperson of the Gen Ed subject area leads the team.
- Representatives of these teams collaborate with technology programs to implement Gen Ed assessments of CCCs, utilizing collegewide intended outcomes that are selected by technology programs.
- Individual GEATs for each of the CCCs provide oversight and approval of assessment plans, instruments, and reports prior to the approval of the campus assessment committees.

The Assessment Process:

- The summative/capstone learning experiences are constructed and embedded in technology programs so as to produce student “artifacts” which are then assessed by the designated general education assessment teams. These artifacts may be dually utilized in the assessment of program graduate competencies.
- Capstone learning experiences assessed for the purpose of course grading may also be used for technology program assessment of one or more PGCs and for Gen Ed assessment of one or more CCCs.
- Assessment of each of the CCCs 1, 3, 5, and 7 is conducted annually by technology programs scheduled on a rotating basis (see Appendix 2).
- Assessment of CCCs 2, 4, and/or 6 is conducted at least once every other year by technology programs.
- Gen Ed assessment follows the same assessment calendar as SLOA of technology programs.
- Gen Ed assessment plans are developed and implemented at the campus and are documented on campus assessment forms and reviewed/approved by the campus assessment committee.

Appendix 1 CORE CURRICULUM COMPETENCIES

(Approved by President George and President's Council 8/25/98; Rev. 4/27/06)

The graduate will be able to:

1. Communicate clearly and effectively both orally and in writing.
2. Demonstrate effective problem solving and reasoning skills.
3. Work effectively in groups of people from diverse backgrounds.
4. Demonstrate ethical and professional understanding and conduct.
5. Apply appropriate information literacy skills to locate, evaluate and use information effectively.
6. Use computer technology appropriate to the field.
7. Use scientific and mathematical reasoning appropriate to the technology.

The Core Curriculum Competencies apply to all Associate Degree programs at the College. These are incorporated into each curriculum through general education and technology courses.

Appendix 2 CAMPUS GENERAL EDUCATION ASSESSMENT TEAMS (GEAT's)

- **CCC 1 Team – Communication**
- **CCC 3 Team – Group Work & Diversity**
- **CCC 5 Team – Information Literacy**
- **CCC 7 Team – Science/Math**

Technology Clusters for Gen Ed Assessment*

- **Cluster A** – Health & Science: Allied Health, Nursing, Biotechnology, SPO: EMT
- **Cluster B** – Public Service: Human Services, Criminal Justice, Early Childhood, Education, SPO: ESM
- **Cluster C** – Business & Computing: Agriculture, Business, Computer Information Systems, Entrepreneurship, Industrial Engineering
- **Cluster D** - Engineering & Industrial: Architectural, Civil, Construction Management, Electrical/Electronic

Rotating Schedule for Technology Cluster Participation in Gen Ed Assessment

Team	FY 2008	FY 2009	FY 2010	FY 2011
CCC 1	Cluster A	Cluster B	Cluster C	Cluster D
CCC 3	Cluster B	Cluster C	Cluster D	Cluster A
CCC 5	Cluster C	Cluster D	Cluster A	Cluster B
CCC 7	Cluster D	Cluster A	Cluster B	Cluster C

*The assignment of individual technology programs to Technology Clusters will be reviewed and updated annually.

Appendix 3

GLOSSARY OF GENERAL EDUCATION ASSESSMENT TERMS

Assessment Rubric – An assessment instrument used for evaluating student work, in which specific criteria or aspects of the work being assessed are listed along one dimension, and a scale (with graduated scores or qualities) listed along the other dimension. Individual entries in the instrument that are being assessed (e.g., aspects of a student’s project or paper) reflect the specific criteria and the degree of proficiency that has been demonstrated in each case. The entry—usually a score or rating—can be either quantitative or qualitative (i.e., either a score or a description).

Cognitive/Affective/Behavioral Domains – The three major areas (domains) according to which skills or abilities can be assessed, derived originally from Bloom’s Taxonomy. The *cognitive* domain concerns thinking and reasoning skills (knowing); the *affective* domain concerns attitudes and dispositions (feeling); and the *behavioral* domain concerns psychomotor skills (doing).

Comprehensive Course Review – A procedure for analyzing the content of a course. For general education assessment purposes, courses are analyzed for the presence of general education concepts—either their introduction, reinforcement, or application, as well as for the presence of assessment of general education concepts. The results of these analyses are placed on matrix-like forms for each technology program or general education department.

Concept Introduction/Reinforcement/Application – The three phases of general education learning. Concept *introduction* generally occurs within general education courses (e.g., English, social science, mathematics, or science courses). *Reinforcement*—the repetition and deepening of concept learning—occurs both in general education and core technology courses. *Application*—making use of the concept within a core technology course—demonstrates concept mastery.

Core Curriculum – The collection of general education courses identified as essential to student mastery of the Core Curriculum Competencies and preparation for technical courses.

Core Curriculum Competency (CCC) – A general education *learning goal*, the mastery of which is expected of students regardless of their technology program or the campus at which they are studying.

General Education – Subjects that are considered to be of vital importance to student literacy (of the written or spoken word, of information retrieval, or of computer use), math and science reasoning, moral/ethical reasoning, problem-solving, and the ability to work effectively with others. The learning of these subjects is expected of students regardless of their technology program or the campus at which they are studying; this learning is organized into learning goals through the CCC’s.

General Education Assessment Team (GEAT) – A campus-based team consisting of representatives of general education subject areas, technology programs, and the Campus Assessment Committee, appointed by the campus dean of instruction to participate in the conduct of general education assessments. A GEAT is organized around one of four general education student learning goals (i.e., CCC's #1, 3, 5, and 7).

Long List of General Education Learning Outcomes – The list of measurable intended outcomes that, in its entirety, incorporates all relevant student learning outcomes for a given core curriculum student learning goal (i.e., CCC). The length of the list will vary depending on the learning goal and how it needs to be *operationalized* in order to adequately address the needs of the technology programs to which it applies.

Measurable Intended Outcome – A specific statement of a result, proof or evidence (within the cognitive, affective, or behavioral domain) of student learning that will be assessed. It is measured by one or more *means of assessment*.

Operationalize – To make a concept or learning outcome measurable by stating, in specific terms, which evidence (e.g., scores, observations, etc.) can be furnished.

Potential Graduate – A student who is in the final semester of his/her course of study in a technology program.

Program Graduate Competency (PGC) – A technology curriculum *learning goal*, the mastery of which is expected of students in their chosen technology program, regardless of the campus at which they are studying.

Student Artifacts – Examples of student work, in the form of tests, papers, projects, etc., which are used to assess learning outcomes at the individual student, course, or technology program levels.

Summative/Capstone Learning Experience – A student learning experience which captures a significant breadth of the learning which is expected to occur in a technology program. Such experiences are designed in such a way that they allow assessment at the program level. Examples include clinical experiences or internships, major projects, portfolios, and comprehensive or professional/licensure exams.

Technology Cluster – A group of technology programs which involve preparation for related fields. Clusters include Health and Science, Public Service, Business and Computing, and Engineering and Industrial.

Technology Curriculum – The collection of technical courses identified as essential to student mastery of a technology program's core knowledge and skills. It is through these courses that student achievement of the program's *Program Graduate Competencies* occurs.

Appendix 4 IMPLEMENTATION TIMETABLES

Table 1. Timetable for Implementation: Phase I of the Integrated General Education Plan

Time Period	Who	Implementation Activity
October 2006	Collegewide Assessment Committee (CWAC)	Develop & present a workshop for department chairs and faculty on the Gen Ed assessment model including the course review process and FY07 tasks.
October – December 2006	CW General Education Department Chairpersons/ Faculty Technology Chairperson/Faculty CWAC and Deans of Instruction	Develop Collegewide “long lists” of intended outcomes for each CCC 1, 3, 5, and 7, which can be applied within all technology curricula. Provide feedback to “long lists.” Review and Approve “long lists.”
October – December 2006	CW Technology Department Chairpersons/Faculty	Develop Collegewide “long lists” of intended outcomes for each CCC 2, 4, and 6.
January 15, 2007	CWAC	Publish CCC 1,3,5,7 “long lists.”
January 15 – May 15, 2007	General Ed and Technology Chairperson/Faculty	Review each course under their responsibility to identify which CCC(s) the course addresses and how (concept introduction, reinforcement, application) and the assessment means (if any) that are currently used to assess student learning of the CCC(s).
June 1, 2007	CWAC	Publish course review charts. Introduce Phase II processes at annual Collegewide chairpersons’ workshop.

Note: FY07 was devoted to establishing the infrastructure for Gen Ed assessment. No General Education Assessment was expected in FY07. Technology programs conducted assessment of two (not three) intended outcomes for their Program Graduate Competencies: one Collegewide and one campus.

Table 2. Timetable for Implementation: Phase II of the Integrated General Education Plan

Time Period	Who	Implementation Activity
June – September 2007	Technology Program Chairpersons/Faculty	Identify gaps in the technology program curriculum regarding CCC(s) content and assessment.
June – September 2007	Technology and Gen Ed Chairpersons/Faculty	Implement ongoing process to: Identify where/how CCC content and/or assessment will be strengthened by either: 1) change of required courses or electives*; 2) change in course content**; 3) change in instructional strategies; and/or 4) change in/addition of assessment (including summative/capstone learning experience(s)/assessment(s) in end-of-program technology courses which address the CCCs.
August 2007	Deans of Instruction	Appoint GEATS.
August 2007	GEATS 1, 3, 5, 7	Identify and assign GEAT representatives to each technology program.
June – October 31, 2007	Technology Program Chairpersons/Faculty/GEAT Representatives GEATs Campus SLOA Committee	Develop Gen Ed assessment plan(s) for CCC 1, 3, 5, and 7 and submit for GEAT approval. Develop Gen Ed assessment plans for CCC 2,4, or 6 (if chosen). Review/approve assessment plans. Due by October 1, 2007: submission of GEAT-approved Gen Ed Assessment plan(s) to campus SLOA Committee. Due by October 31, 2007: Gen Ed assessment plan(s) reviewed and approved by campus SLOA Committee.

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Time Period	Who	Implementation Activity
June – December 15, 2007	Technology Program Chairperson/Faculty	Make changes to course syllabi, assignments, and/or other relevant materials for implementing Gen Ed assessment in Spring 2008.
Spring 2008	Technology Program Chairperson/Faculty/GEAT representatives	Implement summative/capstone learning experiences in end-of-program technology courses. Due by May 12, 2008: Collect samples of student artifacts. Due by June 15, 2008: Conduct assessment, analyze results, and identify use of results to guide improvement.
Spring 2008	Technology Chairpersons	Report technology program Gen Ed assessment results and improvement plans to GEAT for approval. Obtain campus SLOA Committee approval.

* Changes to program curricula (change of required courses, electives, CAPP, etc.) will be made effective for fall semester/beginning of each academic year.

**Changes to course CCPOs were submitted by November 15, 2007, to the Deans of Instruction for implementation in spring 2008.