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PROGRAM ASSESSMENT MANUAL

Revised **8**/**19**/202**4**

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PROGAM ASSESSMENT

Overview

Program assessment at Essex County College is a collaborative process engaged in by academic program coordinators, faculty, and the Office of Institutional Effectiveness, Planning, and Assessment (IEPA). Academic programs are provided with a systematic process for measuring student learning outcomes, monitoring curricular alignment between course-level and program-level outcomes, and for using assessment results in a systematic and sustained process of continual quality improvement. The process is available to all programs at the College along with ongoing guidance and support from the Office of IEPA. Programs without accreditation by a professional organization in their discipline should utilize this process as per our accreditation agreement with the Middle States Commission on Higher Education. Programs with professional accreditation are encouraged to meet with IEPA to discuss how this process might support their accreditation efforts.

ECC's program assessment model is characterized by the following characteristics:

- The process is designed for assessment at the **program level** and does not cover assessment of learning at the course level.
- The process is designed for **summative assessment** and measures how well students are able to demonstrate achievement of learning outcomes ***upon completion of the program***.
- This process utilizes **direct measures** of student learning by assessing actual samples of student work. Examples include: exams/tests, papers, projects, presentations, performances, field/clinical evaluations, etc.

  Because direct measures capture what students can actually do, they are the foundational for assessing student learning. Only once programs have successfully implemented a process using direct measures will they be encouraged to incorporate indirect measures to complement their direct measures and build a more holistic view of learning and achievement. Indirect measures, include perception data such as graduate and alumni surveys.

Implementation of program assessment will be undertaken in a series of four steps. Each step will begin with a meeting that takes place between the assessment coordinator(s) and the Office of IEPA. Each meeting will each have clearly outlined objectives and will end with a short but important list of action-items that will need to be completed before moving on to the next step in the process. Each step will end with the completion of pages in the Annual Assessment Template. The pages in the Annual Assessment Template not only serve as essential building blocks in the assessment process, they also serve as demonstrable evidence to accreditors and stakeholders that the program is engaged in an effective and sustainable process for gauging program effectiveness. The four steps of the program assessment implementation process are as follows:

Step 1: Creating the Curriculum Map
Step 2: Curricular Alignment
Step 3: Data Collection
Step 4: The Action-Planning Process

PROGAM ASSESSMENT

Step 1: The Curriculum Map

Meeting Objectives:

- IEPA will give the assessment coordinator(s) a broad overview of the program assessment process.
- IEPA will give guidance and instruction on completing the first 4 pages of the Annual Assessment Template

Follow-up Actions:

After this meeting, the Program Coordinator will complete the first 4 pages of their Annual Assessment Template before advancing to step 2 of the implementation process. Any program wishing to make changes to their program's mission and goals, curriculum, or make substantive changes to their program's learning outcomes must receive approval through Academic Affairs governance procedures before proceeding beyond this step.

- Complete Page 1 – General Tab

  Enter the program's general information including the program's Mission Statement

Sample screen shot of a completed page 1 - General

General Program Information

Program Name:	Geology
STEM or Non-STEM	STEM
Dean:	Dean XYZ
Division:	Division of Earth Sciences
Chairperson:	Dr. XYZ
Program Assessment Coordinator:	Dr. XYZ
Degree (AA, AS, AAS, Certificate)	A.A.S
Program Mission and Goals	The mission of the Geology A.A.S. program at Essex County College is to provide a broad yet rigorous geologic education that allows students to develop scientific thinking skills with particular emphasis on field-based research and active geologic processes. Geology education at Essex County College will focus on developing students ability to recognize and describe geologic features, interpret underlying geologic processes, and have a scientifically-based understanding of the interactions between human activities and geologic processes. In addition to demonstrated achievement of the program's learning outcomes by graduates upon completion of the program, the program aims to: • Provide a solid foundation that provides multiple opportunities for further education and within the field Geology. • Serve as a resource to the local scientific community for applied research in the field of geology and in environmental impact reasearch. • Provide faculty with the support to pursue research projects that will benefit the community and provide valuable experiential research opportunities for students in the program.

General | Curriculum | PLOs | Curriculum Map | Results | Action Plan

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Note: The goals listed on this page are goals of the program, not student learning goals.

- Complete Page 2 – Curriculum Tab

  Enter the program's required courses in the major curriculum.

  ✓ *General Education courses should not be included in this list except for in the rare instance that a major requires a specific General Education course be taken because it introduces or reinforces one or more of the program's learning outcomes.*

  ✓ *Courses should be listed in as close to chronological order as possible, based on pre-requisites.*

Sample screen shot of a completed page 2 - Curriculum

Curriculum
Geology

Course Number	Course Name
GEO1010	Introuduction to Geology
GEO1020	Foundations of Environmental Geology
GEO2000	Minerals and Compounds I.
GEO2040	Minerals and Compounds II.
GEO3010	Organic Chemistry I.
GEO3300	Organic Chemistry II.
GEO3700	Plate Tectonics and Earth's Evolution
GEO4010	Geologic Field Research I.
GEO4020	Geologic Field Research II.
GEO4060	Field Research Practicum

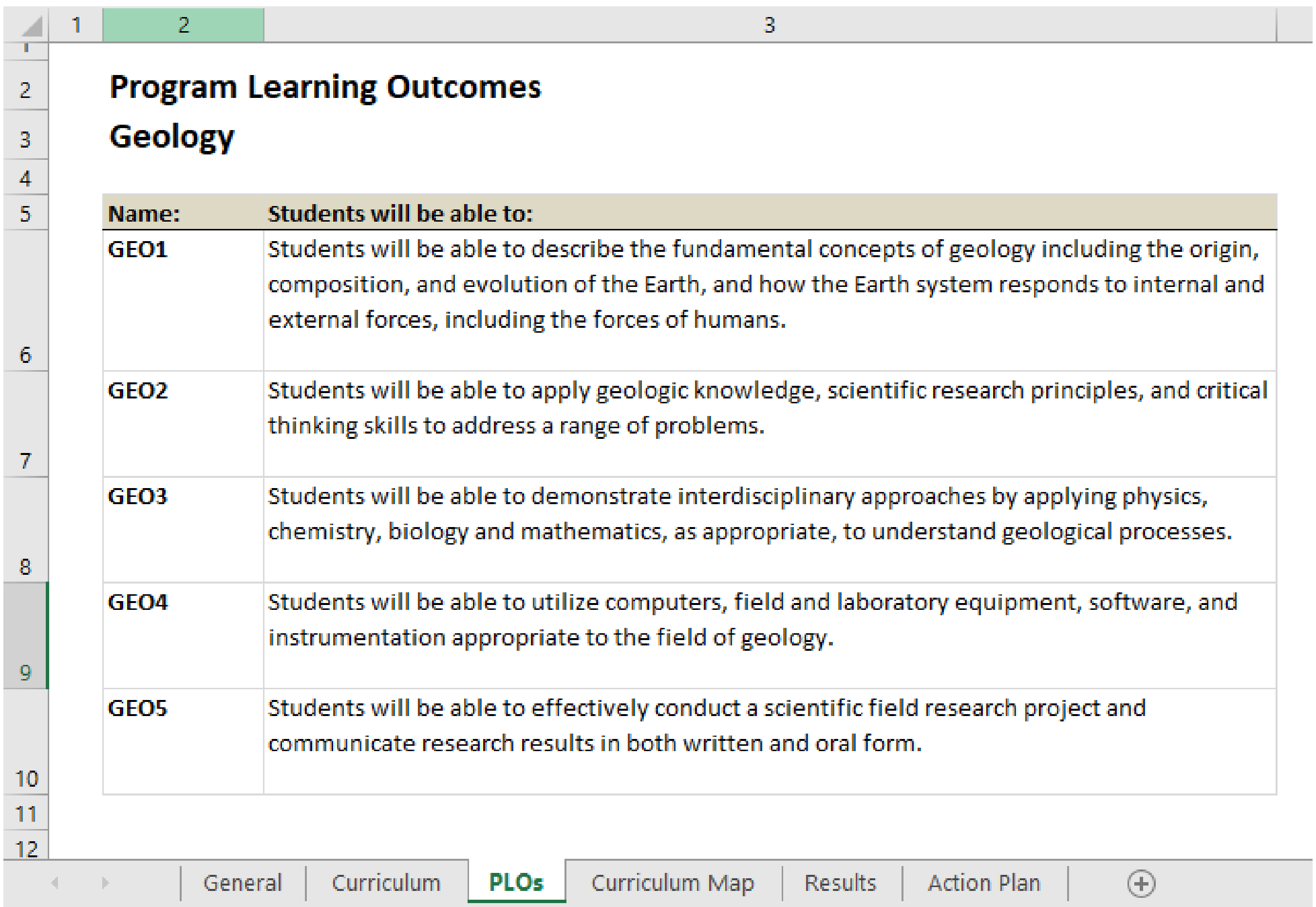
General | **Curriculum** | PLOs | Curriculum Map | Results | Action Plan

- Complete Page 3 – PLOs

  Enter the program's learning outcomes (PLOs)

  ✓ *PLOs are summative, meaning that they describe the knowledge, skills, and abilities that students will obtain upon completion of the program.*

Sample screen shot of a completed page 3 - PLOs



Program Learning Outcomes

Geology

Name:	Students will be able to:
GEO1	Students will be able to describe the fundamental concepts of geology including the origin, composition, and evolution of the Earth, and how the Earth system responds to internal and external forces, including the forces of humans.
GEO2	Students will be able to apply geologic knowledge, scientific research principles, and critical thinking skills to address a range of problems.
GEO3	Students will be able to demonstrate interdisciplinary approaches by applying physics, chemistry, biology and mathematics, as appropriate, to understand geological processes.
GEO4	Students will be able to utilize computers, field and laboratory equipment, software, and instrumentation appropriate to the field of geology.
GEO5	Students will be able to effectively conduct a scientific field research project and communicate research results in both written and oral form.

General | Curriculum | PLOs | Curriculum Map | Results | Action Plan

- Complete Page 4 – Curriculum Map

  Once pages 2 and 3 are completed, the spreadsheet will automatically create the curriculum map on page 4. The Curriculum Map contains the courses entered on page 2 across the top of the map as the column headers and the PLOs entered on page 3 across the left hand side as the row headers.

  ✓ *To complete the Curriculum Map, Program Coordinators should fill out one row (PLO) at a time. For each PLO, the coordinator should indicate which courses Introduce that outcome and enter an "I", which courses Reinforce that outcome and enter an "R", and which courses there is an expectation that students can Demonstrate Mastery and enter an "M".*

Sample screen shot of a completed page 4 – Curriculum Map

Curriculum Map

Geology

I= Introduced

R= Reinforced

M= Demonstration of Mastery

		GEO 1010	GEO 1020	GEO 2000	GEO 2040	GEO 3010	GEO 3300	GEO 3700	GEO 4010	GEO 4020	GEO 4060
PLO 1	Students will be able to describe the fundamental concepts of geology including the origin, composition, and evolution of the Earth, and how the Earth system responds to internal and external forces, including the forces of humans.	I	R	R		R	R		R	M	
PLO 2	Students will be able to apply geologic knowledge, scientific research principles, and critical thinking skills to address a range of problems.		I		R	R		R			M
PLO 3	Students will be able to demonstrate interdisciplinary approaches by applying physics, chemistry, biology and mathematics, as appropriate, to understand geological processes.		I		R				R	M	M
PLO 4	Students will be able to utilize computers, field and laboratory equipment, software, and instrumentation appropriate to the field of geology.			I		R		R			M
PLO 5	Students will be able to effectively conduct a scientific field research project and communicate research results in both written and oral form.	I	R	R		R		R		M	M

General | Curriculum | PLOs | **Curriculum Map** | Results | Action Plan

Next Steps:

Once these follow-actions are completed, the program is ready to advance to Step 2 of implementation.

Step 2: Curricular Alignment

Meeting Objectives:

- IEPA will walk the Program Coordinator through the process of ensuring curricular alignment between course-level outcomes and program-level outcomes. Program coordinators will be asked to bring a sampling of a few departmental course outlines from courses in their program.
  - ✓ Using the Curriculum Map, each course (column) in the map will be evaluated for alignment. For each relationship signified by an I, R, or M, the Program Coordinator will check to ensure there is a corresponding course-level outcome on the course outline. See screen shot below.

		GEO 1010	GEO 1020	GEO 2000
PLO 1	Students will be able to describe the fundamental concepts of geology including the origin, composition, and evolution of the Earth, and how the Earth system responds to internal and external forces, including the forces of humans.	I	R	R
PLO 2	Students will be able to apply geologic knowledge, scientific research principles, and critical thinking skills to address a range of problems.		I	
PLO 3	Students will be able to demonstrate interdisciplinary approaches by applying physics, chemistry, biology and mathematics, as appropriate, to understand geological processes.		I	
PLO 4	Students will be able to utilize computers, field and laboratory equipment, software, and instrumentation appropriate to the field of geology.			I
PLO 5	Students will be able to effectively conduct a scientific field research project and communicate research results in both written and oral form.	I	R	R

For GEO 2000

There needs to be a course level outcome on the GEO 2000 course outline indicating that the content of **PLO1** will be *reinforced*.

There needs to be a course level outcome on the GEO 2000 course outline indicating that the content of **PLO4** will be *introduced*.

There needs to be a course level outcome on the GEO 2000 course outline indicating that the content of **PLO5** will be *reinforced*.

Note: There can be additional course-level outcomes for GEO 2000, But the course outline must contain the three outcomes at a minimum.

Follow-up Actions:

After this meeting, the program coordinator will complete this curricular alignment exercise for courses in the curriculum map. The program coordinator will be made aware that going forward, if there are any changes made to the program's curriculum map, this alignment exercise will need to be repeated for the affected courses (columns).

Step 3: Data Collection

Meeting Objectives:

- IEPA will give the program coordinator an overview of how IEPA will collect summative (mastery level) assessment data from faculty in their program.
- All faculty teaching one or more sections of a course where expectation of master is expected for a PLO will receive an electronic form from IEPA for the collection of assessment data (see screenshot below).

Follow-up Actions:

- The assessment coordinator will not have to do anything during this step other than encouraging their faculty to submit the assessment data requested by IEPA.

Illustration using the curriculum map showing which instructors will be asked to submit assessment data to IEPA.

Note: Since we are conducting summative assessment, only courses with an "M" in the curriculum map will be asked to submit assessment data.

All instructors teaching one or more sections of GEO 4020 will receive an electronic form to submit their assessment data for **PLO1**, **PLO3**, and **PLO5**

All instructors teaching one or more sections of GEO 4060 will receive an electronic form to submit their assessment data for **PLO2**, **PLO3**, **PLO4**, and **PLO5**

		GEO 1010	GEO 1020	GEO 2000	GEO 2040	GEO 3010	GEO 3300	GEO 3700	GEO 4010	GEO 4020	GEO 4060
PLO 1	Students will be able to describe the fundamental concepts of geology including the origin, composition, and evolution of the Earth, and how the Earth system responds to internal and external forces, including the forces of humans.	I	R	R		R	R		R	M	
PLO 2	Students will be able to apply geologic knowledge, scientific research principles, and critical thinking skills to address a range of problems.		I		R	R		R			M
PLO 3	Students will be able to demonstrate interdisciplinary approaches by applying physics, chemistry, biology and mathematics, as appropriate, to understand geological processes.		I		R				R	M	M
PLO 4	Students will be able to utilize computers, field and laboratory equipment, software, and instrumentation appropriate to the field of geology.			I		R		R			M
PLO 5	Students will be able to effectively conduct a scientific field research project and communicate research results in both written and oral form.	I	R	R		R		R		M	M

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The electronic forms sent to instructors teaching GEO4020 and GEO4060 can be found in the following 5 pages.

- Data will be collected each semester, and will be aggregated by IEPA each year after the conclusion of the Spring semester.
- The aggregated data will be compiled in page 5 (Results) of the Annual Assessment template by IEPA.
- The Annual Assessment Template with the assessment results compiled on page 5 (Results) will be distributed back to the Program Coordinators.
- In addition to the aggregate analysis in the Results tab of the Annual Assessment Template, the Program Coordinators will also receive the disaggregated individual section results in a separate file.

Annual Results Summary
Geology

		AY 2020-2021	Fall 2020		Spring 2021		AY 2019-2020
		Target	**GEO 4020**	**GEO 4060**	**GEO 4020**	**GEO 4060**	**Final Results**
PLO 1	Students will be able to describe the fundamental concepts of geology including the origin, composition, and evolution of the Earth, and how the Earth system responds to internal and external forces, including the forces of humans.	**XX% of students will achieve a score of 75 or higher**	N Assessed = N Met Target = % Met Target =		N Assessed = N Met Target = % Met Target =		**N Assessed = N Met Target = % Met Target = Target Met (Y/N) =**
PLO 2	Students will be able to apply geologic knowledge, scientific research principles, and critical thinking skills to address a range of problems.	**XX% of students will achieve a score of 75 or higher**		N Assessed = N Met Target = % Met Target =		N Assessed = N Met Target = % Met Target =	**N Assessed = N Met Target = % Met Target = Target Met (Y/N) =**
PLO 3	Students will be able to demonstrate interdisciplinary approaches by applying physics, chemistry, biology and mathematics, as appropriate, to understand geological processes.	**XX% of students will achieve a score of 75 or higher**	N Assessed = N Met Target = % Met Target =	N Assessed = N Met Target = % Met Target =	N Assessed = N Met Target = % Met Target =	N Assessed = N Met Target = % Met Target =	**N Assessed = N Met Target = % Met Target = Target Met (Y/N) =**
PLO 4	Students will be able to utilize computers, field and laboratory equipment, software, and instrumentation appropriate to the field of geology.	**XX% of students will achieve a score of 75 or higher**		N Assessed = N Met Target = % Met Target =		N Assessed = N Met Target = % Met Target =	**N Assessed = N Met Target = % Met Target = Target Met (Y/N) =**

General | Curriculum | PLOs | Curriculum Map | **Results** | Action Plan

Sample screen shot of page 5 – Results

Step 4: Action Planning

While Program Assessment data is collected at the end of each Fall and Spring semester, the Action Planning process occurs annually between the end of the Spring semester and prior to the start of the Fall semester. Once the data collection process for the academic year is complete, the next step is to organize this data to be critically analyzed by faculty in order to develop some actionable plans for continual improvement.

This document walks Program Coordinators through the Action Planning process which aims to improve student outcomes based on assessment data. All documents you will need are in SharePoint.

Logging in to SharePoint

The first step of Action Planning is to log in to SharePoint. SharePoint is included in Microsoft Office and is a cloud-style drive that can be accessed by logging in to your Microsoft account (your ECC email):

1. Use this link to access ECC's Program Assessment SharePoint site: https://essexcountycollege390.sharepoint.com/sites/ProgramAssessment
2. Sign in with your ECC username and password.
3. Once you are on the Program Assessment page, click where it says **"Programs"** on the left-hand side menu.
4. Select your program. If your program is not listed, please reach out to the IEPA office as soon as possible.
5. There are individual folders for each academic year we have assessment data for. Click on the most recent year.
6. In this folder, you will find all the documents needed to conduct your annual action planning:
    a. Your Program Assessment Template
    b. Individual Course Reports
    c. Graduate Survey Results (Data Collection began with the Spring 2024 graduating class. Not every program will have this data yet.)
7. Start by opening your Program Assessment Template for the current academic year then proceed to the Action Planning instructions which begin on the next page.

The Action Planning Process in 8 Simple Steps

Step 1 – When Program Coordinators receive their annual assessment results, they should form a small assessment committee which they will coordinate and lead. Assessment committees should consist of the Program Coordinator and at least two additional full-time or adjunct faculty that teach within the program (for larger programs). The assessment committees are charged with the following tasks:

Step 2 – Review and Discuss – Review and discuss the aggregate assessment results found in the "Results" tab of the current academic year's Program Assessment Template. In addition to the "Results" tab of your assessment template, use both the program's curriculum map (found in the Curriculum Map tab of the template) as a reference document as well as the accompanying course reports and graduate survey results provided in SharePoint.

- **RECOMMENDATION! –** We recommend that you also review last year's data and action plans for your program. *Read-only* copies of Program Assessment templates from prior years can be found in the previous year folders in SharePoint.

Step 3 – Decide where to focus efforts – Based on the assessment data, decide which PLOs should be focused on for improvement in the upcoming year. This will usually be the PLOs where those targets were not met. There is no need to focus on every PLO each year.

Step 4 – Discuss and Develop Action Plans – Discuss and identify action plans to increase the percentage of students who successfully demonstrate mastery of the identified PLOs. Describe these action plans in detail, including a timeline for implementation and any College policies/processes that need to be navigated to in order to implement the plan.

- **Additional note:** In addition to the primary focus of considering improvements to the delivery of content within the program, also assess the quality of your program's assessment process. Are the PLOs appropriate? Is the curriculum appropriate? Are the assessment measures used by faculty (found in the individual course reports) good indicators of mastery for each PLO? Are there any actions you recommend to improve the assessment process for your program?

Step 5 – Document Your Action Plans – Program Coordinators must document their annual action plans in the "Action Plan" tab of their annual assessment template.

Step 6 – Revise Targets for the Upcoming Academic Year – In the right most column in the "Action Planning" tab of the annual assessment template, programs should indicate whether any PLO targets should be updated or revised for the upcoming year. Programs should strive for continual improvement while ensuring targets are realistic and attainable.

Step 7 – Submit your completed Annual Program Assessment Template – Once the Action Planning tab is completed, the finalized template should be emailed to the program's Division Chair for review and IEPA who will archive the finalized template in the Program Assessment SharePoint site.

Step 8 – Implement the Action Plans – Led by the Program Coordinator, faculty in the program should immediately begin implementing their submitted action plans. Remember, without implementing the Action Plans there is no reason to expect continual improvement. The data collection process will begin again in the upcoming Fall and repeats annually.

PROGRAM ASSESSMENT

Helpful tips and illustrations:

Annual Results Summary
Environmental Science

		AY 2023-2024 Targets	AY 2023-2024 Final Results	Action Plan for 2024-2025: *Please describe in d percentage of students who successfully demon*
PLO 1	Students will be able to describe the fundamental concepts of Geology and Environmental Science, including the origin, composition, and evolution of the Earth, and how the Earth system responds to internal and external forces, including the forces of humans.	90% of students will achieve a score of 75 or higher	N Assessed = 20 N Met Target = 20 % Met Target = 100% Target Met (Y/N) = Y	
PLO 2	Students will be able to effectively communicate and critically evaluate scientific observations, analyses and ideas.	90% of students will achieve a score of 75 or higher	N Assessed = 44 N Met Target = 41 % Met Target = 93% Target Met (Y/N) = Y	
PLO 3	Students will be able to scientifically collect, analyze, and interpret Biological, Physical and/or Earth Sciences data.	90% of students will achieve a score of 75 or higher	N Assessed = 5 N Met Target = 5 % Met Target = 100% Target Met (Y/N) = Y	

- **Diagnose –** Based on the data above, the assessment committee will likely decide to focus their efforts on improving PLO 2 (93% met) rather than focus on PLO 1 and 3 which showed had 100% mastery.

AY 2023-2024 Final Results	Action Plan for 2024-2025: *Please describe in detail, what, if any, actions will be taken to increase the percentage of students who successfully demonstrate mastery of this outcome.*	Updated Targets for 2024-2025
N Assessed = 20 N Met Target = 20 % Met Target = 100% Target Met (Y/N) = Y		
N Assessed = 44 N Met Target = 41 % Met Target = 93% Target Met (Y/N) = Y		
N Assessed = 5 N Met Target = 5 % Met Target = 100% Target Met (Y/N) = Y		

- **Plan** – Assessment committees will summarize step-by-step in detail, with timelines, both their programmatic and process-oriented action plans in the column indicated above.

- **Revise Targets** – Upon examination of current results and anticipated impact of ongoing action-plans, assessment committees should update/revise the target for each PLO for the upcoming academic year.

Please contact the Office of Institutional Effectiveness, Planning, and Assessment with any questions regarding this process.
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