

# UNIVERSITY OF ROCHESTER: Arts, Sciences and Engineering (AS&E)

## Executive Summary Assessment Plan

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### Introduction

One of the core missions in the Schools of Arts, Sciences and Engineering (AS&E) is to ensure a coordinated and effective educational experience for students. Existing committees, processes, and infrastructure, bolstered by targeted initiatives and activities, support continual improvement of courses, programs, and the overall educational experience for learners in AS&E, aligning with the university motto, “Meliora – ever better”.

### Educational Effectiveness in AS&E (EEASE)

The Educational Effectiveness in AS&E (EEASE) Advisory Committee plays a pivotal role in supporting the assessment plan across AS&E and provides a forum for the exchange of ideas, information and expertise in AS&E. The EEASE Advisory Committee is led by the Director for Educational Effectiveness in the College in Arts, Sciences and Engineering (the College), the Associate Dean for Education and New Initiatives in Hajim School of Engineering and Applied Sciences (HSEAS), and the Assistant Dean for Graduate Education and Post-doctoral Affairs (GEPA). Recognizing that synergistic relationships exist across educational and assessment initiatives, departmental and program representatives for academic, academic support, and co-curricular are all included as members of the EEASE Advisory Committee. Continuing collaborations across departments and programs provide the cornerstone for interdepartmental conversations, sharing of best practices, community building, and promoting the scholarship of teaching, learning and assessment.

### Curriculum and Assessment Connections

Ongoing partnerships and open channels of communication between undergraduate and graduate leadership serve to simultaneously inform curriculum and assessment initiatives. The Director of Educational Effectiveness reports to the Associate Dean for the College in AS&E who is a standing member of both the College Curriculum Committee and the EEASE Advisory Committee. Both work closely with the Associate Dean for Education and New Initiatives Education in HSEAS and the Assistant Dean for GEPA. Together they form the curriculum and assessment leadership team for AS&E.

The Director of Educational Effectiveness provides leadership, guidance, resources and feedback for assessment in AS&E and support for regional and discipline-specific accreditation. The Director of Educational Effectiveness also ensures assessment of processes occurs periodically to inform continual improvement in infrastructure and protocols.

### Student Learning Outcomes Assessment

A comprehensive student learning assessment plan that uses both direct and indirect assessment evidence to inform continual improvement in teaching and learning exists for the Schools of Arts, Sciences and Engineering. The assessment plan encompasses overall undergraduate and graduate educational learning outcomes achievement including both

curricular and co-curricular learning experiences. The student learning assessment plan is an evergreen plan and is coordinated by the Director of Educational Effectiveness for the College, the Associate Dean for the College, the Associate Dean of HSEAS, the Assistant Dean of GEPA, and the EEASE Advisory Committee.

The assessment cycle in AS&E is leveraged to support student learning and success. Learning outcomes are identified, assessment metrics are designed and implemented, and assessment data is used to inform continual improvement of programs.

The Director of Educational Effectiveness provides input and assistance for the design and implementation of direct and indirect assessment strategies that are both formative and summative in nature. The design of assessment plans and pre/post surveys for administrators, faculty and staff to measure outcomes achievement across curricular and co-curricular educational programs and learning experiences is organized and managed by the Director of Educational Effectiveness.

Degree major programs routinely review and assess program learning outcomes and prepare assessment action forms using student assessment and achievement data gathered through targeted assessment strategies. An annual assessment review form is completed by academic degree programs to “close the loop”.

#### School Learning Outcomes for AS&E

The School Learning Outcomes for AS&E include both the MSCHE core learning outcomes and the College Competencies. This combination of core curricular learning outcomes and co-curricular learning outcomes serves to underpin all programs and learning experiences for students in AS&E. At this time, all undergraduate degree major program learning outcomes and cluster program learning outcomes have been aligned with the MSCHE core learning outcomes. AS&E departments and units are in the process of aligning academic support and co-curricular program learning outcomes with the College Competencies. Next steps will include aligning degree major, minor, and co-curricular learning outcomes with both MSCHE core learning outcomes and the College Competencies.

#### Assessment Processes for MSCHE Core LOs and College Competencies

Direct assessment of MSCHE core curriculum learning outcomes is incorporated as part of undergraduate degree program learning outcomes assessment with the alignment of PLOs with MSCHE core LOs.

The College Competencies (<https://www.rochester.edu/college/academics/competencies.html>) form the framework for a comprehensive set of learning outcomes to guide direct assessment for co-curricular learning experiences across AS&E. A working group continues to develop and implement plans with the departments and units in the College for both tracking student participation and assessing student learning achievement with respect to the College Competencies. With the support of the Director of Educational Effectiveness, the College co-curricular units/departments design and implement student surveys and pre/post assessments for programs and initiatives, to evaluate the extent to which students and programs achieve the intended outcomes.

## Data Collection Tools and Approaches

AS&E's assessment plan for the degree majors, minors, and the cluster system within the Rochester Curriculum is based on both direct and indirect measures of learning outcomes achievement.

- Direct assessment of program learning achievement supports continual improvement of programs. Degree programs are asked to assess all program learning outcomes with findings, evaluations, recommendations and actions documented for review and follow-up.
- Department/program faculty/staff members review and revise learning experiences, courses, and programs based on assessment data findings, evaluations, and recommendations.
- Direct assessment of core learning outcomes is both embedded in program learning outcomes assessment and included as part of targeted assessment initiatives. For example, faculty teaching specific courses (e.g., senior level, part of degree requirements, and/or part of a cluster) are asked to choose an assessment (e.g., final exam question, project, presentation, etc.) that best represents student achievement of the intended learning outcomes. Both quantitative and qualitative data can be used in analyses.
- AEFIS, a cloud-based integrated assessment management platform, is used to facilitate assessment and accreditation processes. AEFIS modules feature: course evaluations, curriculum mapping for programs, collection and archiving of student learning assessment data, reporting to support programmatic reviews, and self-study preparation for accreditation needs. Over time, AS&E will be able to leverage the integrated AEFIS system to analyze, report, and benchmark achievements at the student, course, program, and school level. The use of AEFIS will afford cross-sectional and longitudinal reporting of assessment data and trend analyses for programs. This aggregate data will be useful in assessing program capacity to achieve its intended learning outcomes, will inform teaching and learning, and will support continual improvement of programs.
- Indirect assessment data is collected via COFHE (SNS, ESS, and SENIOR) Surveys, and through the AS&E Senior Survey and AS&E Graduate Student Surveys wherein students self-assess learning. The surveys allow the AS&E team to gain a student-centered sense of potential areas of strengths and challenges in achievement of intended learning outcomes. Our plan includes mapping question items across the surveys for the purposes of grouping feedback related to similar outcomes across survey instruments. This is an iterative process with the goal of supporting more comprehensive and/or historical review of data, interpretation of data trends, and the potential to inform needed follow up action.
- Alumni surveys that include the COFHE Alumni Survey and the Simpson-Scarborough Alumni Survey have also been implemented to gather additional (indirect) assessment data.

## Use of the Evidence

All School of Arts & Sciences programs develop a three-year assessment plan with direct and indirect measures, routinely complete a data collection and analysis process, identify areas for specific improvements, and prepare an annual learning outcomes assessment report. The annual program report documents the cycles of continuous improvement wherein assessment data are reviewed, areas of success and concern identified, and curricular improvements

identified and recommended. Program faculty/staff then discuss and implement recommendations to “close the loop”.

The HSEAS undergraduate engineering programs that are ABET-accredited complete a self-study every 6 years ensuring continuous accreditation status. Assessment processes incorporate some of the same strategies as are used in the School of Arts & Sciences along with the additional departmental/program processes to support and address ABET requirements for accreditation.

### AS&E Assessment Reporting

In consultation with the EEASE Advisory Committee, the Associate Dean of the College, the Associate Dean for Education and New Initiatives in HSEAS, and the Assistant Dean of GEPA, the Director of Educational Effectiveness prepares an annual assessment report reviewing and analyzing all assessment data against program learning objectives. The reports identify key assessment initiatives, findings and action plans developed to support achievement of learning goals. These data are often combined with demographic data and/or retention/graduation data to provide greater insight into how best to support learning outcomes achievement and continual improvement of programs. Once the data are reviewed with the Deans’ Office in AS&E, the assessment leadership team consults with faculty and staff in developing and implementing educational initiatives to address areas of need to “close the loop” and support continual improvement of programs at all levels.