

Option 1

Program Level Outcomes Assessment Plan

Program Name/College: MS Chemistry

College Contact for Program Assessment: Joseph Hornak

Program Goals	Student Learning Outcomes	Academic Program Profile	Data Source/Measure Curriculum Mapping	Benchmark	Timeline	Data Analysis Key Findings	Use of Results Action Items and Dissemination
Please List program-level goals	Students will be able to: (task, capability, knowledge, skills, and dispositions) Use measurable verbs.	Alignment to the five RIT essential outcomes - check all that apply	Assessment opportunity (course/experience) method/measures, assignment/rubric)	Standard, target, or achievement level (usually a %) Statement of student Success	Identify when and how data are collected, aggregated, and analyzed	Identify who is responsible and list key findings	Identify how results are used and shared. List any recommendations or action items
1. Demonstrate depth of knowledge in one focus area of chemistry.	a) Understand, analyze, and intelligently discuss topics and concepts in a focus area of chemistry; such as organic, inorganic, physical, analytical, or biochemistry; at a level commensurate with a MS in chemistry.	<input checked="" type="checkbox"/> Critical Thinking <input type="checkbox"/> Ethical Reasoning <input checked="" type="checkbox"/> Integrative Literacies <input type="checkbox"/> Global Interconnectedness <input type="checkbox"/> Creative/Innovative Thinking	a) COS-CHEM-Focus Area Courses	100% of students will meet a score of A or B in focus area courses.	Collection: Each Year Summarized data will be collected by the Graduate Program Director on a yearly basis.	Analysis: Key Findings:	Monitor progress of a class of students. Results shared with graduate committee and program faculty. Recommendations used to refine curricula
	b) Communicate intelligently their depth of knowledge in a focus area.		b) Present a literature seminar in COS-CHEM-771 Final Defense of Thesis	b) 100% of students will meet a score of A or B in the presentation of their literature seminar as a part of COS-CHEM-771. 100% of students will successfully defend their thesis.			
2. Demonstrate breadth of knowledge in all areas of chemistry.	Critically analyze and interpret chemical results from a broad range of chemistry sub disciplines.	<input checked="" type="checkbox"/> Critical Thinking <input type="checkbox"/> Ethical Reasoning <input checked="" type="checkbox"/> Integrative Literacies <input type="checkbox"/> Global Interconnectedness <input checked="" type="checkbox"/> Creative/Innovative Thinking	COS-CHEM-771,772,773,774 Chemistry Seminar I, II, III, IV Instructor	100% of students receive a grade of A or B on their written reviews of seminar.	Collection: Each Year Summarized data will be collected by the faculty teaching the course, and reported to the Graduate Director within one month of course completion	Analysis: Key Findings:	Monitor progress of a class of students. Results shared with graduate committee and program faculty. Recommendations used to refine curricula
3. Apply the scientific method to measure, analyze, interpret and predict chemical phenomena	Develop hypotheses, design and execute experiments to test the hypotheses, and draw conclusions from the results.	<input checked="" type="checkbox"/> Critical Thinking <input checked="" type="checkbox"/> Ethical Reasoning <input checked="" type="checkbox"/> Integrative Literacies <input type="checkbox"/> Global Interconnectedness <input type="checkbox"/> Creative/Innovative Thinking	COS-CHEM-790 Research & Thesis MS Thesis Committee review. Interim Oral Exam Research Notebook	100% of students will meet a score of R on their research thesis defense, interim oral, and notebook maintenance	Collection: Each Year Summarized data will be collected by the student's faculty adviser and reported to the Graduate Director annually.	Analysis: Key Findings:	Monitor progress of a class of students. Results shared with graduate committee and program faculty. Recommendations used to refine curricula

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4. Develop safe laboratory practices.	Demonstrate knowledge of safe laboratory practices, proper waste disposal and the use of safety equipment.	<input type="checkbox"/> Critical Thinking <input checked="" type="checkbox"/> Ethical Reasoning <input checked="" type="checkbox"/> Integrative Literacies <input type="checkbox"/> Global <input type="checkbox"/> Interconnectedness <input type="checkbox"/> Creative/Innovative Thinking	Required annual environmental health and safety quiz administered through EH&S.	100% of students will score 100% on quiz (a requirement of all RIT students working in a lab)	Collection: Each Year Summarized data will be collected by chemistry stockroom manager	Analysis: Key Findings:	Monitor progress of a class of students. Results shared with graduate committee and program faculty. Recommendations used to refine curricula
5. Demonstrate proficiency in communicating technical information in written and oral forms	Demonstrate the ability to effectively communicate technical material in written and oral forms.	<input checked="" type="checkbox"/> Critical Thinking <input checked="" type="checkbox"/> Ethical Reasoning <input checked="" type="checkbox"/> Integrative Literacies <input checked="" type="checkbox"/> Global <input type="checkbox"/> Interconnectedness <input checked="" type="checkbox"/> Creative/Innovative Thinking	COS-CHEM-670 Chemistry Writing instructor Introduction chapter to a research Project/Thesis.	100% of students receive a grade of A or B on the Thesis/Project Introduction writing assignment	Collection: Each Year Summarized data will be collected by the faculty teaching the courses, and reported to the Graduate Director within one month of course completion	Analysis: Key Findings:	Monitor progress of a class of students. Results shared with graduate committee and program faculty. Action: Recommendations used to refine curricula
			COS-CHEM-701,2,3,4 Chemistry Seminar I, II, III, IV Instructor. Written Seminar Reviews	100% of students receive a grade of A or B on seminar written reviews.			
			COS-CHEM-790 Research & Thesis MS Thesis Committee review.	100% of thesis students will meet a score of R on written thesis			
			COS-CHEM-790 Research & Thesis MS Thesis Committee review.	100% of students will meet a score of R on the oral presentation of their thesis			
			COS-CHEM-701 Chemistry Seminar I Instructor. Seminar Presentation	100% of students will meet a score of A or B on this presentation.			
			COS-CHEM-790 Research & Thesis MS Thesis Defense Thesis Committee review.	100% of students will meet a score of R on written thesis			
			COS-CHEM-773, Chemistry Seminar III Instructor Seminar Speaker Introduction	100% of students will meet a score of A or B on the ability to invite and host a seminar speaker			
6. Develop the capacity to apply chemical principles and practice to the discovery, interpretation and application of new knowledge.	Conduct original research leading to a graduate thesis	<input checked="" type="checkbox"/> Critical Thinking <input checked="" type="checkbox"/> Ethical Reasoning <input checked="" type="checkbox"/> Integrative Literacies <input type="checkbox"/> Global <input type="checkbox"/> Interconnectedness <input checked="" type="checkbox"/> Creative/Innovative Thinking	COS-CHEM-790 Research & Thesis MS Thesis Committee review.	100% of students will meet a score of R on written thesis	Each Year Summarized data will be collected by the faculty teaching the course, and reported to the Graduate Director within one month of course completion	Analysis: Key Findings:	Monitor progress of a class of students. Results shared with graduate committee and program faculty. Recommendations used to refine curricula