## PART ONE:

<table>
<thead>
<tr>
<th>What are the learning objectives?</th>
<th>How, where and when are they assessed? Committee/person responsible?</th>
<th>What are the expectations?</th>
<th>What are the results?</th>
<th>How will/have the results be used? Committee/person responsible?</th>
</tr>
</thead>
</table>
| 1. Students will learn fundamental principles at an advanced level in selected areas in chemistry | a) Test given when student enters and completes program; b) oral examination/thesis defense at end of student’s program; c) literature seminar given in CHM 5001; d) item on exit survey  
   a) Graduate Committee; b) Graduate Coordinator, student’s thesis committee; c) course instructors, department faculty; d) Graduate Committee | a) Improvement in two or more areas; b) 100% of students pass on first try; c) average rating for content items on evaluation instrument = or > 2; d) average response = or > 3 on 5-point scale where 5=strongly agree, 1=strongly disagree | a) Data collection will begin in AY05-06; b) 100% of students examined in AY04-05 met expectation; c) 100% of AY04-05 students met expectations d) data collection instrument under development | a)-d) Courses and/or program requirements will be revised as appropriate. A two-tiered program is being developed to assist students who lack sufficient chemical background  
   a),b),d) Graduate Committee; c) Graduate Committee, course instructors |
| 2. Students will be able to conduct original research | a) Thesis based on research; b) oral exam/thesis defense; c) item on exit survey  
   a) Student’s research director & thesis committee; Graduate Coordinator; b) Graduate Coordinator, student’s thesis committee; Graduate Committee; c) Graduate Committee | a) 100% of students satisfactorily complete thesis; b) 100% of students pass on first try; c) average response = or > 3 on 5-point scale where 5=strongly agree, 1=strongly disagree | a) 100% of students graduating in AY04-05 met expectation; b) 100% of students examined in AY04-05 met expectation; c) data collection instrument under development | a)-c) Courses and/or program requirements will be revised as appropriate.  
   a)-c) Graduate Committee, graduate faculty |
| **3. Students will be able to communicate technical material effectively in speaking and writing** | a) Student seminars in CHM 5001; b) thesis research seminar; c) thesis; d) student research presentations at conferences; e) items on exit survey  
   a) Course instructors, department faculty; b) Graduate Coordinator, department faculty; c),d) Graduate Coordinator, student’s thesis advisor; e) Graduate Committee | a),b) Average rating for presentation items on evaluation instrument $\geq 2$; c) satisfactory completion of thesis; d) 75% or more of students give a conference presentation by graduation; e) average response $\geq 3$ on 5-point scale where 5=strongly agree, 1=strongly disagree  
   a) 67% of AY04-05 students met expectation b) Data collection will begin in AY05-06; c) 100% of students graduating in AY04-05 met expectation; d) 67% AY04-05 graduates gave conference presentation e) data collection instrument under development | a)-e) Courses and/or program requirements will be revised as appropriate  
   a) Course instructors, Graduate Committee; b)-d) Graduate Committee, graduate faculty; e) Graduate Committee |
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| **4. Students will be able to properly utilize chemical information sources** | a) Student seminars in CHM 5001; b) thesis; c) assignments in CHM 5002 (electronic search, reference material search); d) items on exit survey  
   a) Course instructors, department faculty; b) Graduate Coordinator, student’s research director, thesis committee; c) course instructors, Graduate Committee; d) Graduate Committee | a) 100% of students with scores $\geq 2$ on literature item; b) satisfactory completion of thesis; c) 100% of students successfully complete both assignments; d) average response $\geq 3$ on 5-point scale where 5=strongly agree, 1=strongly disagree  
   a) 100% of AY04-05 students met expectation b) 100% of students graduating in AY04-05 met expectation; c) 100% of AY04-05 students met expectations; d) data collection instrument under development | a)-e) Courses and/or program requirements will be revised as appropriate  
   a),c) Course instructors, Graduate Committee; b) Graduate Committee, graduate faculty; d) Graduate Committee |

**PART TWO**: Summarize changes and improvements in curriculum, instruction, and learning that have resulted from the implementation of your assessment program. While this section should focus on the current academic year, some departments may find it useful to discuss trends in longitudinal data.

1. In recognition that MS students are not receiving systematic instruction in searching the chemical literature, a new course, CHM 5002 (Introduction to Graduate Research), was developed and approved and offered in FA03. The course will also cover safety and professional ethics.
2. Guidelines and expectations for student presentations in CHM 5001 have been clarified and the evaluation instrument has been revised.
3. An exit survey which is closely tied to the learning objectives is being developed.
4. Consideration is being given to offering special recognition to students whose performance on the oral examination/thesis defense is well above the minimum expectation.
5. A two tiered graduate program is under consideration to allow better graduate student training and preparation.