Expected Outcome 1: Effective Oral Communication Skills

Students in M.S. degree Program will demonstrate ability to give oral presentation of their research thesis and/or current scientific literature in chemistry and biochemistry topics.

Assessment Method 1: Oral seminar presentation

Assessment Method Description

Graduate students present research or literature seminars starting from their second year of residency and once every year thereafter. Their ability to communicate scientific information is evaluated using a standard departmental evaluation form with emphasis on the following topics:

I. Adequate communication of scientific significance of research article or research work
II. Presentation of background material and importance of research article or research work
III. Knowledge of subject matter: Does the speaker exhibit a good grasp of the material presented?
IV. Clarity of presentation: Does the speaker do a good job passing on knowledge to the audience?
V. Quality of presentation (data presentation and rational conclusions)
VI. Timing: Did the speaker plan and use his/her 50 minutes wisely? Was the seminar too long, or too short?
/VII. Quality of visual aids (visibility of PowerPoint slides etc.)
Findings

There were no graduate students in the M.S. degree program for 2012 - 2013 academic year

How did you use findings for improvement?

Additional Comments

Expected Outcome 2: Mastery of Fundamental Laws of Chemistry and Biochemistry

Auburn university students in the chemistry and biochemistry M.S. degree program will have mastery of advanced topics in biochemistry, analytical chemistry, physical chemistry, inorganic chemistry and organic chemistry.

Assessment Method 1: American Chemical Society Entrance Exams and Graduate Level Core Courses

Assessment Method Description

Students in the M.S. degree program take entrance exams in biochemistry, analytical chemistry, physical chemistry, inorganic chemistry and organic chemistry provided by the American Chemical Society (ACS) at the beginning of their program. From the results, they are advised accordingly on what classes they need to take to expand their knowledge in areas they have deficiencies in and they are also encouraged to learn through independent self-study.

There are 5 core graduate level courses (one course per division) that students can take depending on their performance on the entrance exams. Each division-specific core course has learning goals aligned to enable students to broaden their knowledge in those areas. Assessment of students’ mastery of these core topics was accomplished via end of semester grades which were binned under three categories: (a) student exceeds learning goal (≥90%), (b) student meets learning goal (80% - 89%) and (c) student does not meet learning goal (less than 80 %). The table shown below illustrates the core graduate courses offered in the Department of Chemistry and Biochemistry that were used for assessment.
Findings

There were no graduate students in M.S. degree program for 2012 - 2013 academic year

How did you use findings for improvement?

Additional Comments

Assessment Method 2: Cumulative Exams

Assessment Method Description

Students’ progress in mastery of biochemistry, analytical chemistry, physical chemistry, inorganic chemistry and organic chemistry principles was also evaluated via cumulative exams (cumes) which are authored and graded by the graduate faculty in the Department of Chemistry and Biochemistry. Students in the M.S. degree program are expected to pass three cumes within two years of residency; Students who pass these exams within the required timeline are classified as “meets expectation”
while those who don’t are classified as “do not meet expectations”.

**Findings**

There were no graduate students in M.S. degree Program for 2012 - 2013 academic year

**How did you use findings for improvement?**

**Additional Comments**

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**Expected Outcome 3: Practical / Technical Skills**

Graduate students in the M.S. degree program will demonstrate ability to apply basic knowledge and practical theory at the forefront of each specialty area (general chemistry, inorganic chemistry, organic chemistry, physical chemistry, analytical chemistry and biochemistry) for planning and doing scientific research.

**Assessment Method 1: Masters Thesis Defense and Publications**

**Assessment Method Description**

Graduate students in the M.S. degree program are required to defend their research work before graduation. This consists of a written dissertation report and a final oral defense presented to the thesis advisory committee members. Students are assessed on their research quality and knowledge of their Masters Thesis topic. Most often, their research work leads to publications in peer reviewed scientific journals. Ability to conduct independent research and publish this work in peer reviewed scientific journals (technical writing) is one of the criteria that we evaluate our graduate students. It is not only the number of publications that is important but also the impact factor of the journals that they publish their research work in. Those that publish their research work in peer reviewed scientific journals as first authors are classified as “exceeds expectation” while those that are co-authors or don’t publish their research work are classified as “meets expectation”.

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Findings

There were no graduate students in the M.S. degree program for 2012 - 2013 academic year

How did you use findings for improvement?

Additional Comments

Assessment Method 2: Exit Interview

Assessment Method Description

An exit questionnaire is usually given to graduating chemistry and biochemistry students. The purpose of this questionnaire is to obtain input from the students so that the information arising from the interviews/surveys could be useful in future planning / improvement of the program. This exit interview is optional and most students don’t get the opportunity to take this survey due to the need to immediately leave for their new place of employment.

The exit questionnaire consisted of the following 3 questions:

I. How would you rate the department of chemistry on the following:
   (please rank from 1-5 with 5 being the best score)
   - Curriculum
   - Quality of Instruction
   - Faculty Research programs

II. What are the strengths of the graduate program

II. In your opinion, what are some aspects of the graduate program that could be improved?