



Program Assessment Report (PAR)

Pharmacology + Toxicology (PHTX) Masters Degree

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ACADEMIC YEAR COVERED BY THIS REPORT: 2021-2022

I. PROGRAM LEARNING OUTCOMES

Learning Objective #1 - Review, write, and critically evaluate academic manuscripts
Learning Objective #2 - Master's level of expertise in courses related to Pharmacology and Toxicology
Learning Objective #3 - Communication skills, communicate at a master's level in science-related topics, both orally and on paper, in group environments.

II. PROCEDURES USED FOR ASSESSMENT

A. Direct Assessment

PROGRAM MS Pharmacology & Toxicology (all tracks) Learning Objective #1 - Review, write, and critically evaluate academic manuscripts
1. Outcome Assessment Measures Direct – (Assessment of Student Artifacts or Assessment of Student Success on Marker Test Items)
2. Collection and analysis are done every semester in several courses, as well as laboratory research training meetings and department meetings. The artifacts from this objective include academic papers, theses, laboratory notebooks, and presentations of data. Courses that include this as a learning objective
PTX8004 CBRN Chem (Inc. Discussion Board Writing Rubric);
PTX8005 CBRN Bio (Inc. Discussion Board Writing Rubric);
PTX8006 CBRN Case Studies (Inc. Discussion Board Writing Rubric);
PTX7002 Journal clubs, (literature review and evaluate, presenting in group, Rubric);
PTX7002 Thesis Journal club, (literature review and evaluate, develop thesis projects, presenting in group, with group evaluating);
PTX7020 Laboratory Management (Writing assignments, career focus and enhancement, Rubric);
PTX9000 Graduate Research (Laboratory Notebook, reports, and thesis);
PTX9002 Clinical Research (Laboratory Notebook, reports, and thesis);
PTX7000 Research Techniques (Laboratory Notebook/Rubric);
PTX7003 Biokinetics, (Graded report);
PTX7001 Cell Tox, (Graded writing assignments/Rubric, they are required to do two problem-based case studies, which they develop learning objectives and write a

summary of their research into the topic); PTX7021 Effective Science Writing Part 1 (Learn to use keywords to identify top researchers, gaps in literature and foundation papers needed to write an academic paper, oral presentations); PTX7022 Effective Science Writing Part 2 (Write a review paper on a specific scientific topic, and how to present it to an audience); PTX8140 Human Studies (CITI Training, writing a Human Studies Petition) Learning Objective #2 - Master's level of expertise in courses related to Pharmacology and Toxicology 1. Outcome Assessment Measures Direct – (Assessment of Student Artifacts or Assessment of Student Success on Marker Test Items) 2. Collection and analysis are done every semester in several courses. Collection and grade assignment are collected in the following courses Courses that include this as a learning objective PTX7003 Biokinetics, (pre/post tests); PTX7001 Cell Tox, (pre/post tests, Rubric); PTX8004 CBRN Chem (graded MC/Short Answer and Essay); PTX8005 CBRN Bio (graded MC/Short Answer and Essay); PTX8006 CBRN Case Studies (Inc. Discussion Board Writing Rubric); Learning Objective #3 - Communication skills, communicate at a master's level in science-related topics, both orally and on paper, in group environments. 1. Outcome Assessment Measures Direct – Assessment of Student Artifacts or Assessment of Student Success on Marker Test Items) 2. Collection and analysis are done every semester in several courses. Collection is done by rubrics and graded oral and written presentations Courses that include this as a learning objective PTX7002 Journal clubs, (literature review and evaluate, presenting in group); PTX7002 Thesis Journal club, (literature review and evaluate, develop thesis projects, presenting in group, with group evaluating); PTX7021 Effective Science Writing Part 1 (Learn to use keywords to identify top researchers, gaps in literature and foundation papers needed to write an academic paper, oral presentations); PTX7022 Effective Science Writing Part 2 (Write a review paper on a specific scientific topic, and how to present it to an audience); PTX8013 Communications in Science (Oral presentations and critical evaluations of others writing/oral presentations); PTX8000 Leadership Application and Theory (Oral assignments);

B. Scoring of Student Work

Learning Objective #1 - Review, write, and critically evaluate academic manuscripts 1. Outcome Assessment Measures Direct – (Assessment of Student Artifacts or Assessment of Student Success on Marker Test Items) 2. Collection and analysis are done every semester in several courses, as well as laboratory research training meetings and department meetings. The artifacts from this objective include academic papers, theses, laboratory notebooks, and presentations of data. Courses that include this as a learning objective PTX8004 CBRN Chem (Inc. Discussion Board Writing Rubric); PTX8005 CBRN Bio (Inc. Discussion Board Writing Rubric); PTX8006 CBRN Case Studies (Inc. Discussion Board Writing Rubric); PTX7002 Journal clubs, (literature review and evaluate, presenting in group, Rubric); PTX7002 Thesis Journal club, (literature review and evaluate, develop thesis projects, presenting in group, with group evaluating); PTX7020 Laboratory Management (Writing assignments, career focus and enhancement, Rubric); PTX9000 Graduate Research (Laboratory Notebook,

reports, and thesis); PTX9002 Clinical Research (Laboratory Notebook, reports, and thesis); PTX7000 Research Techniques (Laboratory Notebook/Rubric); PTX7003 Biokinetics, (Graded report); PTX7001 Cell Tox, (Graded writing assignments/Rubric, they are required to do two problem-based case studies, which they develop learning objectives and write a summary of their research into the topic); PTX7021 Effective Science Writing Part 1 (Learn to use keywords to identify top researchers, gaps in literature and foundation papers needed to write an academic paper, oral presentations); PTX7022 Effective Science Writing Part 2 ((Write a review paper on a specific scientific topic, and how to present it to an audience); PTX8140 Human Studies (CITI Training, writing a Human Studies Petition) Learning Objective #2 - Master's level of expertise in courses related to Pharmacology and Toxicology 1. Outcome Assessment Measures Direct – (Assessment of Student Artifacts or Assessment of Student Success on Marker Test Items) 2. Collection and analysis are done every semester in several courses. Collection and grade assignment are collected in the following courses Courses that include this as a learning objective PTX7003 Biokinetics, (pre/post tests); PTX7001 Cell Tox, (pre/post tests, Rubric); PTX8004 CBRN Chem (graded MC/Short Answer and Essay); PTX8005 CBRN Bio (graded MC/Short Answer and Essay); PTX8006 CBRN Case Studies (Inc. Discussion Board Writing Rubric); Learning Objective #3 - Communication skills, communicate at a master's level in science-related topics, both orally and on paper, in group environments. 1. Outcome Assessment Measures Direct – Assessment of Student Artifacts or Assessment of Student Success on Marker Test Items) 2. Collection and analysis are done every semester in several courses. Collection is done by rubrics and graded oral and written presentations Courses that include this as a learning objective PTX7002 Journal clubs, (literature review and evaluate, presenting in group); PTX7002 Thesis Journal club, (literature review and evaluate, develop thesis projects, presenting in group, with group evaluating); PTX7021 Effective Science Writing Part 1 (Learn to use keywords to identify top researchers, gaps in literature and foundation papers needed to write an academic paper, oral presentations); PTX7022 Effective Science Writing Part 2 (Write a review paper on a specific scientific topic, and how to present it to an audience); PTX8013 Communications in Science (Oral presentations and critical evaluations of others writing/oral presentations); PTX8000 Leadership Application and Theory (Oral assignments);

C. Indirect Assessment

Learning Objective #1 - Review, write, and critically evaluate academic manuscripts course evaluations, exit interview, alumni survey Learning Objective #2 - Master's level of expertise in courses related to Pharmacology and Toxicology course evaluations, exit interview, alumni survey Learning Objective #3 - Communication skills, communicate at a master's level in science-related topics, both orally and on paper, in group environments. course evaluations, exit interview, alumni survey

III. ASSESSMENT RESULTS/INFORMATION:

[AssessmentResult]

Assessments are done by course instructors and the results are the grades. We are in the process of an external review of our program.

[Analysis]

IV. ACTIONS TO IMPROVE STUDENT LEARNING

We hope to learn more from the external review happening now, and we have scheduled a Spring retreat to review outcomes and actions for improvement with the faculty at the retreat. Actions will include Changes to the learning outcomes or assessment procedures Changes in course content Course offerings, to include materials, resources, assignments Policies Funding Advising Training

V. SUPPORTING DOCUMENTS

Additional documentation, when provided, is stored in the internal Academic Program Assessment of Student Learning SharePoint site.