



# Design of an Integrated Pharmacy Laboratory Sequence

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## Introduction

- ACPE Accreditation Standards 2016 emphasize the need for content integration and active learning strategies in pharmacy curricula (Standard 10).<sup>1</sup>
- The SDSU College of Pharmacy and Allied Health Professions has taken a two phase approach to addressing these items.
  - Phase I: Interdepartmental teaching projects in didactic courses
  - Phase II: Implementation of an integrated pharmacy laboratory sequence
- These curricular changes are focused on integration of pharmaceutical sciences and pharmacy practice content and utilization of active learning pedagogies in order to build critical thinking and problem solving skills and emphasize application of content to practice.

## Curriculum Design Approach

- Harden's integration ladder was used to guide the curriculum design.<sup>2</sup>
  - This model describes a continuum of integration starting with a disciplinary approach to teaching and moves toward full integration in multidisciplinary and interdisciplinary courses.
  - Baseline curricular integration was identified to be primarily at the levels of harmonization, nesting, and temporal coordination.
  - The design of the new curricular elements focused on correlation, which involves integrated teaching sessions or courses specifically designed to facilitate student understanding of the connections between disciplines.
- In Phase I, groups of faculty were intentionally formed to include faculty from both departments with complementary expertise. The groups were charged with development and implementation of an interdepartmental teaching project.
- Phase II is being implemented as part of a full curriculum revision. A curriculum workgroup evaluated integration models and recommended an integrated pharmacy laboratory sequence.

## Implementation of Curricular Integration

### Phase 1 – Interdepartmental Teaching Projects

- Started Fall 2015
- Activities incorporated into existing courses and laboratories
- Eleven activities total (P1 - 4, P2 - 3, P3 - 4)
- Activities included patient cases, group discussions, and guest speakers
- Horizontal or vertical integration depending on activity

### Phase 2 – Integrated Pharmacy Laboratory Sequence

- Implementation in Spring 2019
- Sequence of 3 – 1 credit laboratory courses focused on content integration
- Semester long courses with weekly labs (P1-P3 years)
- Includes a greater variety of activities including patient cases, simulations, and wet labs
- Mainly focused on horizontal integration with select vertical integration
- Course coordinators from each department

### Teaching Laboratory Remodel

- Two disciplinary teaching laboratory spaces are being remodeled in order to facilitate integration and create dynamic learning environments focused on small group interaction.
  - Pharmacy care laboratory: Movable seating to facilitate small group work; simulated community pharmacy, hospital room, and clinic rooms
  - Compounding laboratory: Sterile and nonsterile compounding; benches for wet lab activities

## Implications

- Through these improvements in instruction, students will be effectively engaged in active, collaborative learning that integrates information into a practice-based experience.
- The laboratory course design allows for flexibility in selection of content for integration and in teaching and learning methods.

## References

1. ACPE. Accreditation standards and key elements for the professional program in pharmacy leading to the doctor of pharmacy degree. [www.acpe-accredit.org](http://www.acpe-accredit.org)
2. Harden RM. The integration ladder: a tool for curriculum planning and evaluation. *Med Educ.* 2000, 34(7), 551-557.