



New Pharmacy Practice Electives to Improve Student Clinical Application and Professional Identity Formation

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Background

As the field of pharmacy continues to evolve, pharmacy education must adapt to ensure that students are well-prepared to meet these changes. The Daniel K. Inouye College of Pharmacy (DKICP) implemented a new contemporary curriculum in Fall 2023, designed to enhance clinical application and professional identity formation. This innovative curriculum integrates topics across their studies to promote a deeper understanding of clinical knowledge and practice to apply what they learned. The new elective requirement expanded from four to eight credits, offering students more opportunities to tailor their education to emerging areas of pharmacy practice. By introducing these new electives, DKICP aims to provide students with skills and experiences needed to excel in their careers while reinforcing their professional identity as pharmacists.

Students can select from clinically-focused courses, such as *Cardiology Cases* and *Infectious Disease Cases*, which reinforce important pharmacotherapy concepts and simulate real-world scenarios. Students can also explore non-pharmacological options through *Lifestyle Changes for Chronic Diseases*. Additionally, electives such as *Social Media for Pharmacists* examine the role of digital communication in healthcare, while *Prescription to Wellness and Resilience* focuses on enhancing student well-being. Electives also include topics of personal interests, including *Common Animal Diseases I/II* and *Veterinary Toxicology*.

Objectives and Methods

The new elective courses at DKICP provide students with more options that align with the evolving healthcare landscape. These electives reinforce clinical topics, prepare students for rotations, and support professional identity development.

End-of-semester, de-identified evaluations and comments were reviewed from the newly added courses since the start of the contemporary curriculum. This feedback offers valuable insights into student experiences, satisfaction, and their relevance to the overall curriculum. Course coordinators can review this feedback to make improvements to elective courses and ensure they continue to meet students' personal interests and professional development goals.

Discussion

The new elective offerings at DKICP enhance student learning by tailoring education to individual interests and reinforcing clinical knowledge. Early student feedback shows satisfaction, with students appreciating the relevance of the courses. Challenges such as low enrollment and decision fatigue from the wide variety of electives may need attention. To address this, we will assess demand, categorize electives (e.g., clinically-focused, digital communication, wellness courses), and offer courses across different semesters. These changes will be applicable to students' future practice by preparing them for clinical rotations, improve patient-centered care, adapt to emerging pharmacy trends, all while supporting their professional identity.

Legacy vs. Contemporary Curriculum

LEGACY (Prior to Fall 2023)		CONTEMPORARY (Starting Fall 2023)	
P1 Fall Semester		P1 Fall Semester	
IPPE I	1	Cornerstone of Pharmacy & Science	2
Pharmaceutical Immunology	3	Pharmacology/Medical Chemistry I	3
Biochemistry	2	Pharmaceutical Formulations I	2
Pharmaceutics I	3	Pharmaceutical Biochemistry	2
Pharmacy Self Care I	2	Pharmaceutical Immunology	2
Pharmaceutical Calculations	2	TPS Wellness/OTC	2
Drug Action Part I	2	Drug Information	2
Pharmacy Comm & Culture	3	Foundational Calculations	1
		Principles of Pharmacy Readiness I	1
		IPPE I	1
TOTAL CREDITS	18	TOTAL CREDITS	17
P1 Spring Semester		P1 Spring Semester	
IPPE II	1	Pharmacology/Medical Chemistry II	3
Intro to Biostatistics	2	Pharmaceutics Formulations II	2
Applied Pathophysiology	3	Comprehensive Clinical Care I	1
Biochemistry	2	Essential Pharmacist Skills I	2
Pharmaceutics II	3	TPS Wellness/OTC II	4
Pharmacy Self Care II	2	TPS Fluids	4
		Evidence Based Science & Practice I	2
		Foundational Individualized Pharmacotherapy	2
		Topics in Health I	2
		Principles of Pharmacy Readiness II	1
		IPPE I cont.	1
TOTAL CREDITS	15	TOTAL CREDITS	18
P1 Summer		P1 Summer	
IPPE Retail x 4 weeks (160 hours)	1	IPPE II Community x 4 weeks (160 hours)	1

LEGACY		CONTEMPORARY	
P2 Fall Semester		P2 Fall Semester	
IPPE III	1	TPS Endo	6
IPPE Retail	1	TPS Cardio I	2
Evidence-Based Medicine	3	TPS Cardio II	2
Integrated Therapeutics I	7	Comprehensive Clinical Care II	2
Pharmacokinetics	3	Essential Pharmacist Skills II	2
Drug Information	2	Evidence Based Science & Practice II	2
		Principles of Pharmacy Readiness III	1
		IPPE III	1
		Elective I	1
		Elective II	1
TOTAL CREDITS	17	TOTAL CREDITS	15
P2 Spring Semester		P2 Spring Semester	
IPPE IV	1	TPS ID	6
Pharmacy Law and Ethics	3	TPS Pulm/Gout Arthr	2
Wellness & Disease Prevention	2	TPS GI/GU/Nutri	2
Integrated Therapeutics II	7	Comprehensive Clinical Care III	2
Health Care Systems	2	Essential Pharmacist Skills III	2
		Topics in Healthcare II	3
		Principles of Pharmacy Readiness IV	1
		IPPE III cont. (1 credit awarded for Spring semester only)	1
		Elective III	1
		Elective IV	1
TOTAL CREDITS	17	TOTAL CREDITS	17
P2 Summer		P2 Summer	
IPPE Hospital x 2 weeks (80 hours)	1	IPPE IV Hospital x 3 weeks (120 hours)	1

LEGACY		CONTEMPORARY	
P3 Fall Semester		P3 Fall Semester	
IPPE V	1	TPS Onc/Heme	6
IPPE VII	1	TPS Psych/Neuro	2
Pharm Practice Mgmt & Mktng	2	TPS Pain/Derm/Oph	2
Integrated Therapeutics III	7	Comprehensive Clinical Care IV	2
Complementary Medicine	3	Essential Pharmacist Skills IV	2
		Pharmacy Informatics & Technology	2
		Principles of Pharmacy Readiness V	1
		IPPE V	1
		Elective V	1
		Elective VI	1
TOTAL CREDITS	16	TOTAL CREDITS	15
P3 Spring Semester		P3 Spring Semester	
IPPE VIII	1	TPS Special Pop.	6
Pharmacogenomics	2	TPS Women's/ Men's Health	2
Integrated Therapeutics IV	7	TPS Advanced Dx	2
Applied Pharmaceutical Care	3	Comprehensive Clinical Care V	2
Basic & Applied Toxicology	2	Essential Pharmacist Skills V	2
Pharmacogenomics	2	Topics in Healthcare III	3
		Principles of Pharmacy Readiness VI	1
		IPPE V cont. (1 credit awarded for Spring semester only)	1
		Elective VII	1
		Elective VIII	1
TOTAL CREDITS	17	TOTAL CREDITS	17

LEGACY P4 APPE Year		CONTEMPORARY P4 APPE Year	
Ambulatory Care	6	Ambulatory Care	6
Community	6	Community	6
Medicine	6	Medicine	6
Hospital	6	Hospital	6
Elective I	6	Elective I (Patient Care)	6
Elective II	6	Elective II (General II)	6
		Elective III (General III)	6
		NAPLEX/MPJE Preparation	1
TOTAL CREDITS	37	TOTAL CREDITS	43
TOTAL CREDIT HOURS IN DKICP PHARM CURRICULUM	137	TOTAL CREDIT HOURS IN DKICP PHARM CURRICULUM	143
TOTAL APPE CONTACT HOURS	1440	TOTAL APPE CONTACT HOURS	1680
TOTAL ELECTIVE CREDITS	4	TOTAL ELECTIVE CREDITS	8

Existing Elective Options	New Elective Additions
Advances in New Drug Approvals	Advanced Diabetes Management
Basic Research Methods	Cardiology Cases
Blockbuster Drugs	Common Animal Diseases I
Business Administration Overview	Common Animal Diseases II
Drugs from the Ocean	Infectious Disease Cases
Herbal Medicine	Lifestyle Changes for Chronic Diseases
Intro to Post-Graduate Residency Applications	Social Media for Pharmacists
Overview of Veterinary Medicine	Prescription to Wellness and Resilience
Pediatric Pharmacotherapy	Veterinary Toxicology
Personal Finance	
Special Topics in Pharmaceutical Sciences Research/Lab	
Story-Telling in Healing	
Survey Research, Epidemiology, and Qualitative Methods	
Zoonotic Diseases	
Elective(s) Required for Certificate:	
Healthcare Leadership	Intro to Rural Health Science
Strategic Management	Pharmacy Research

Results

Elective Course	Student Comments/Feedback
Veterinary Toxicology Overall Quality 4.9/5	"The course was insightful on how a pharmacist can counsel a patient on current treatment guidelines for various toxins in the scope of veterinarians." "The information given in this lecture is extremely valuable when it comes to treating animals and can even extend to our own pets. It also gives valuable insight on topics relating to toxicology in animals." "It helped facilitate my learning and interest in veterinary (pharmacy)."
Social Media for Pharmacists Overall Quality 5/5	"This course provides a really good insight into the effect of social media on healthcare education. This course was different from the traditional and typical pharmacy courses." "The structure of the course was thought out very well in relation to our other courses. The course is very engaging given the small class size." "I enjoyed how the class divided into issues within pharmacy/healthcare in the digital space and how social media can be used as a tool for our careers." "I used to see social media as a distraction, but now I see it as a professional asset as a future pharmacist."
Cardiology Cases Overall Quality 5/5	"I was always interested in cardiology and this class has helped me think more critically and apply my knowledge throughout different cases each time. Having more case-based classes would tremendously help me grow as a pharmacy student!" "I feel this course really helped to understand and retain the material from patient cases. I believe as a student, I have developed better clinical thinking skills that can be applied for future use." "I learned a lot from this class and it was good to build on what I learned from lecture." "I thought that being able to go through the different cases as a class and talking it out gave me a clear understanding and further strengthening how to SOAP a case."
Infectious Disease Cases Overall Quality 4.82/5	"I thought that it was incredibly beneficial to closing some gaps in knowledge." "We were encouraged to work through cases from guidelines and research on our own and ask questions at any time which is an effective way of learning for me." "Provided a space that enhances interactive learning and strengthens skills such as SOAP-ing, navigating through guidelines, and highlighting important guideline factors that are pertinent to initiating, monitoring, recommending, and discontinuing therapy."
Prescription to Wellness and Resilience Overall Quality 5/5	"This class brought me opportunities to reflect my wellness routinely through weekly engagement as well as monthly self-reflection video, which helped me to understand what, when and how my well-being could not be achieved." "I enjoyed doing the well-being index each month. I liked seeing my progress each month." "It made me take time to focus on my mental health and go out of my way to partake in resilience activities." "This course had a lot of helpful information on burnout and ways to mediate it, whether a big thing or little small changes you can do every day or once a week."
Lifestyle Changes for Chronic Diseases Overall Quality 4.9/5	"This course helped to add more information to non-pharmacological counseling points that we can do with patients. It was not only beneficial academically, but also helped me personally make changes to my own lifestyle." "Great course to learn all the nonpharm treatment for chronic conditions. Many patients are going to benefit from what we learned here." "I think that all students would get a good experience and come out with more knowledge that will help them in the pharmacist career." "This course lines up really well with the course content of TPS. The course was lined up in a really organized way where we built upon the content after every course."

Conclusion

The new, innovative contemporary curriculum requiring more electives, with the newly expanded elective course offerings, enhances the student learning experience by catering to individual interests, reinforcing clinical knowledge, and better preparing students for future pharmacy practice.

In the future, feedback from students who take these new electives will be compared with evaluations of existing electives to assess improvements in student satisfaction and learning outcomes.

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Health Professions Education Conference 2025

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Background

- DKICP implemented a new **contemporary curriculum** in Fall 2023
- Prior (legacy) curriculum required **4 elective credits**
- Contemporary curriculum requires **8 elective credits**

LEGACY		CONTEMPORARY			
P2 Fall Semester		P2 Fall Semester			
IPPE III	1	TPS Endo	TPS Cardio I	TPS Cardio II	6
IPPE Retail	1	Comprehensive Clinical Care II			2
Evidence-Based Medicine	3	Essential Pharmacist Skills II			2
Integrated Therapeutics I	7	Evidence Based Science & Practice II			2
Pharmacokinetics	3	Principles of Pharmacy Readiness III			1
Drug Information	2	IPPE III			
		Elective I			1
		Elective II			1
TOTAL CREDITS	17	TOTAL CREDITS			15
P2 Spring Semester		P2 Spring Semester			
IPPE IV	1	TPS ID	TPS Pulm/Gout Arthr	TPS GI/GU/Nutri	6
Pharmacy Law and Ethics	3	Comprehensive Clinical Care III			2
Wellness & Disease Prevention	2	Essential Pharmacist Skills III			2
Integrated Therapeutics II	7	Topics in Healthcare II			3
Health Care Systems	2	Principles of Pharmacy Readiness IV			1
Elective(s)	2	IPPE III cont. (1 credit awarded for Spring semester only)			1
		Elective III			1
		Elective IV			1
TOTAL CREDITS	17	TOTAL CREDITS			17
P2 Summer		P2 Summer			
IPPE Hospital x 2 weeks (80 hours)	1	IPPE IV Hospital x 3 weeks (120 hours)			1

LEGACY		CONTEMPORARY			
P3 Fall Semester		P3 Fall Semester			
IPPE V	1	TPS Onc/Heme	TPS Psych/Neuro	TPS Pain/Derm/Opth	6
IPPE VII	1	Comprehensive Clinical Care IV			2
Pharm Practice Mgmt & Mktng	2	Essential Pharmacist Skills IV			2
Integrated Therapeutics III	7	Pharmacy Informatics & Technology			2
Complementary Medicine	3	Principles of Pharmacy Readiness V			1
Elective(s)	2	IPPE V			
		Elective V			1
		Elective VI			1
TOTAL CREDITS	16	TOTAL CREDITS			15
P3 Spring Semester		P3 Spring Semester			
IPPE VIII	1	TPS Special Pop.	TPS Women's/Men's Health	TPS Advanced Dx	6
Pharmacogenomics	2	Comprehensive Clinical Care V			2
Integrated Therapeutics IV	7	Essential Pharmacist Skills V			2
Applied Pharmaceutical Care	3	Topics in Healthcare III			3
Basic & Applied Toxicology	2	Principles of Pharmacy Readiness VI			1
Pharmacogenomics	2	IPPE V cont. (1 credit awarded for Spring semester only)			1
		Elective VII			1
		Elective VIII			1
TOTAL CREDITS	17	TOTAL CREDITS			17

LEGACY		CONTEMPORARY	
P4 APPE Year		P4 APPE Year	
Ambulatory Care	6	Ambulatory Care	6
Community	6	Community	6
Medicine	6	Medicine	6
Hospital	6	Hospital	6
Elective I	6	Elective I (Patient Care)	6
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Purpose of Expanding Electives

- Broader range of choices
- Align with evolving healthcare landscape
- Reinforce clinical topics
- Preparation for clinical rotations
- Personal interests, professional identity development

Existing Elective Options	New Elective Additions
Advances in New Drug Approvals	Advanced Diabetes Management
Basic Research Methods	Cardiology Cases
Blockbuster Drugs	
Business Administration Overview	Common Animal Diseases I Common Animal Diseases II
Drugs from the Ocean	
Herbal Medicine	Infectious Disease Cases
Intro to Post-Graduate Residency Applications	
Overview of Veterinary Medicine	Lifestyle Changes for Chronic Diseases
Pediatric Pharmacotherapy	
Personal Finance	Social Media for Pharmacists
Special Topics in Pharmaceutical Sciences Research/Lab	
Story-Telling in Healing	Prescription to Wellness and Resilience
Survey Research, Epidemiology, and Qualitative Methods	
Zoonotic Diseases	Veterinary Toxicology
<i>Elective(s) Required for Certificate:</i>	
<i>Healthcare Leadership</i>	<i>Intro to Rural Health Science</i>
<i>Strategic Management</i>	<i>Pharmacy Research</i>



Methods

- End-of-semester, de-identified student evaluations and comments
- Currently reviewing evaluations on **newly added courses** since the start of the contemporary curriculum
- Assessing student satisfaction and relevance to coursework



Results

Student Feedback



Veterinary Toxicology

Overall Quality 4.9/5

- “The course was insightful on **how a pharmacist can counsel a patient** on current treatment guidelines for various toxins in the scope of veterinarians.”
- “The **information given in this lecture is extremely valuable** when it comes to treating animals and can even extend to our own pets. It also gives valuable insight on topics relating to toxicology in animals.”
- “It helped **facilitate my learning and interest** in veterinary (pharmacy).”



Social Media for Pharmacists

Overall Quality 5/5

- “This course provides a really **good insight** into the **effect of social media on healthcare education**. This course was **different from the traditional and typical pharmacy courses.**”
- “The structure of the course was thought out very well in relation to our other courses. The course is **very engaging** given the small class size.”
- “I enjoyed how the class divided into issues **within pharmacy/healthcare** in the digital space and **how social media can be used** as a tool for our careers.”
- “I used to see social media as a distraction, but now I see it as a **professional asset as a future pharmacist.**”



Cardiology Cases

Overall Quality 5/5

- “I was always **interested in cardiology** and this class has helped me think more critically and **apply my knowledge** throughout different cases each time. Having more case-based classes would tremendously help me grow as a pharmacy student!”
- “I feel this course really helped to **understand and retain the material from patient cases**. I believe as a student, I have developed better clinical thinking skills that can be applied for future use.”
- “I learned a lot from this class and it was **good to build on what I learned from lecture**.”
- “I thought that being able to go through the different cases as a class and talking it out gave me a clear understanding and **further strengthening how to SOAP a case**.”



Infectious Disease Cases

Overall Quality 4.82/5

- “I thought that it was incredibly beneficial to **closing some gaps in knowledge.**”
- “We were encouraged to work through cases from guidelines and research on our own and ask questions at any time which is an **effective way of learning** for me.”
- “Provided a space that **enhances interactive learning** and strengthens skills such as SOAP-ing, navigating through guidelines, and highlighting important guideline factors that are pertinent to initiating, monitoring, recommending, and discontinuing therapy.”
- “I love that this course **utilized guidelines** for many different ID conditions (CAP, endocarditis, pyelonephritis) as its primary focal point. It put students in the mindset of **how to readily assess and plan for real acute setting situations.**”



Prescription to Wellness and Resilience

Overall Quality 5/5

- “This class brought me opportunities to **reflect** my wellness routinely through weekly engagement as well as monthly self-reflection video, which helped me to understand what, when and how my well-being could not be achieved.”
- “I enjoyed doing the well-being index each month. I liked **seeing my progress** each month.”
- “It made me **take time to focus on my mental health** and go out of my way to partake in resilience activities.”
- “This course had a lot of helpful information on burnout and ways to mediate it, whether a big thing or little small changes you can do every day or once a week.”



Lifestyle Changes for Chronic Diseases

Overall Quality 4.9/5

- “This course helped to add more information to **non-pharmacological counseling points** that we can do with patients. It was not only beneficial academically, but also helped me personally make changes to my own lifestyle.”
- “Great course to learn all the nonpharm treatment for chronic conditions. **Many patients are going to benefit** from what we learned here.”
- “I think that **all students would get a good experience** and come out with more knowledge that will **help them in the pharmacist career.**”
- “This course **lines up really well with the course content of TPS.** The course was lined up in a really organized way where we built upon the content after every course.”



Discussion

- Considerations
 - Low enrollment, small class sizes
 - Decision fatigue
 - Assess demand of electives based on student interest and relevance
 - Offering course categories (e.g. clinically-focused, digital communication, wellness courses)
 - Electives offered in separate semesters



Discussion

- Applicability to Future Practice
 - Reinforcement of clinical topics
 - Preparation for clinical rotations
 - Improve students' ability to provide patient-centered care
 - Adapt to new trends in pharmacy practice
 - Supporting students' personal and professional identity development
- Future Directions
 - Compare prior elective evaluations with the newly added electives to ensure changes are improving learning and student experiences



Conclusion

- New contemporary curriculum requires more electives in addition to newly expanded elective course offerings
- Enhances student learning
- Caters to individual interests
- Reinforces clinical knowledge
- Better prepares students for future pharmacy practice



Mahalo!

