

Status: PENDING

PROGRAM REQUEST
Pharmaceutical Sciences

Last Updated: Myers, Dena Elizabeth
04/05/2011

Fiscal Unit/Academic Org	Pharmacy - D1800
Administering College/Academic Group	Pharmacy
Co-administering College/Academic Group	
Semester Conversion Designation	Converted with minimal changes to program goals and/or curricular requirements (e.g., sub-plan/specialization name changes, changes in electives and/or prerequisites, minimal changes in overall structure of program, minimal or no changes in program goals or content)
Current Program/Plan Name	Pharmacy
Proposed Program/Plan Name	Pharmaceutical Sciences
Program/Plan Code Abbreviation	PHARM-PH
Current Degree Title	Doctor of Philosophy

Credit Hour Explanation

Program credit hour requirements		A) Number of credit hours in current program (Quarter credit hours)	B) Calculated result for 2/3rds of current (Semester credit hours)	C) Number of credit hours required for proposed program (Semester credit hours)	D) Change in credit hours
Total minimum credit hours required for completion of program		120	80.0	80	0.0
Required credit hours offered by the unit	Minimum	16	10.7	12	1.3
	Maximum	114	76.0	75.5	0.5
Required credit hours offered outside of the unit	Minimum	6	4.0	4.5	0.5
	Maximum	75	50.0	50	0.0
Required prerequisite credit hours not included above	Minimum	0	0.0	0	0.0
	Maximum	0	0.0	0	0.0

Program Learning Goals

Note: these are required for all undergraduate degree programs and majors now, and will be required for all graduate and professional degree programs in 2012. Nonetheless, all programs are encouraged to complete these now.

- Program Learning Goals**
- 1. Identify research questions to address a problem
 - 2. Identify/ interpret/ critique literature/ assess state of knowledge regarding problem.
 - 3. Design and write experimental protocol, including study Methods/Design/ Implementation
 - 4. Conduct and complete research project contributing new information to the field.
 - 5. Communicate research results, both verbally and through writing.
 - 6. Conduct Ethically Responsible Research.
 - 7. Demonstrate preparation for careers in academia, industry, government agencies, or other related fields.

Assessment

Assessment plan includes student learning goals, how those goals are evaluated, and how the information collected is used to improve student learning. An assessment plan is required for undergraduate majors and degrees. Graduate and professional degree programs are encouraged to complete this now, but will not be required to do so until 2012.

Is this a degree program (undergraduate, graduate, or professional) or major proposal? Yes

Does the degree program or major have an assessment plan on file with the university Office of Academic Affairs? No

DIRECT MEASURES (means of assessment that measure performance directly, are authentic and minimize mitigating or intervening factors)

Standardized tests

- Local comprehensive or proficiency examinations

Classroom assignments

- Embedded testing (i.e. specific questions in homework or exams that allow faculty to assess students' attainments of a specific learning goal)

Evaluation of a body of work produced by the student

- Practicum, internship or research evaluation of student work
- Senior thesis or major project

Direct assessment methods specifically applicable to graduate programs

- Candidacy exams
- Research proposals written and grants awarded
- Thesis/dissertation oral defense and/or other oral presentation
- Thesis/dissertation (written document)
- Publications

INDIRECT MEASURES (means of assessment that are related to direct measures but are steps removed from those measures)

Surveys and Interviews

- Student survey
- Alumni survey
- Student evaluation of instruction
- Student interviews or focus groups

Additional types of indirect evidence

- Job or post-baccalaureate education placement
- Student or alumni honors/recognition achieved
- Comparison or benchmarking

USE OF DATA (how the program uses or will use the evaluation data to make evidence-based improvements to the program periodically)

- Meet with students directly to discuss their performance
- Analyze and discuss trends with the unit's faculty
- Analyze and report to accrediting organization
- Make improvements in course content
- Periodically confirm that current curriculum and courses are facilitating student attainment of program goals

Program Specializations/Sub-Plans

If you do not specify a program specialization/sub-plan it will be assumed you are submitting this program for all program specializations/sub-plans.

Program Specialization/Sub-Plan Name	Medicinal Chemistry (Existing)
Program Specialization/Sub-Plan Goals	•
Program Specialization/Sub-Plan Name	Translational Sciences (Existing)
Program Specialization/Sub-Plan Goals	•
Program Specialization/Sub-Plan Name	Pharmaceutical Administration (Existing)
Program Specialization/Sub-Plan Goals	•
Program Specialization/Sub-Plan Name	Pharmaceutics (Existing)
Program Specialization/Sub-Plan Goals	•

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Program Specialization/Sub-Plan Name Pharmacology (Existing)
Program Specialization/Sub-Plan Goals •

Pre-Major

Does this Program have a Pre-Major? No

Attachments

- PhD_Submission.pdf: Letter, rationale, specialization detailed plans
(Letter from the College to OAA. Owner: Kelley,Katherine Ann)

Comments

Workflow Information

Status	User(s)	Date/Time	Step
Submitted	Kelley,Katherine Ann	03/31/2011 09:11 AM	Submitted for Approval
Approved	Kelley,Katherine Ann	03/31/2011 09:12 AM	Unit Approval
Approved	Brueggemeier,Robert Wayne	03/31/2011 10:53 AM	College Approval
Approved	Myers,Dena Elizabeth	04/05/2011 02:50 PM	GradSchool Approval
Pending Approval	Soave,Melissa A	04/05/2011 02:50 PM	CAA Approval



College of Pharmacy

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March 31, 2011

Office of Academic Affairs
203 Bricker Hall
190 North Oval Mall
Columbus, OH 43210-1358

Dear Office of Academic Affairs:

On behalf of the College of Pharmacy, I am pleased to recommend for approval the Program Plan for our Doctor of Philosophy in Pharmaceutical Sciences degree. This submission contains the details of our PhD program conversion only. The Master's program is submitted separately. The professional program was approved in August 2010, and our Bachelor of Science in Pharmaceutical Sciences was approved in February 2011.

Please note that we are requesting a name change for this program from PhD in Pharmacy to PhD in Pharmaceutical Sciences. Historically, our PhD program in Pharmacy followed a Bachelor of Science in Pharmacy. Since the conversion of our professional program from a Bachelor of Science in Pharmacy to a Doctor of Pharmacy, there has been confusion between the graduate and the graduate professional programs – particularly for those outside our university. This name change will provide for better understanding of our degree programs and allow for differentiation between the professional program (Doctor of Pharmacy) and the graduate programs. In this proposed scheme we would have a Bachelor's, Master's and PhD in Pharmaceutical Sciences and a professional program - Doctor of Pharmacy.

The Graduate Studies Committee (a curriculum and assessment committee) led the process of conversion for the graduate degrees. This committee coordinated and approved the course and program changes. Input was gathered widely from course directors, students, division members and finally the faculty as a whole. The proposed curriculum was presented formally to the entire faculty on February 4, 2011 and unanimously approved by the faculty on March 4, 2011. Data entry of the new program was handled by the Office of Assessment and approved by me.

Should you have any questions or concerns, please feel free to contact me directly.

Sincerely,

Robert W. Brueggemeier, Ph.D.
Dean, College of Pharmacy
Professor, Medicinal Chemistry

Program Rationale
College of Pharmacy
Doctor of Philosophy Degree Program

There are 5 specializations of the Doctor of Philosophy in Pharmaceutical Sciences granted by the College of Pharmacy (Medicinal Chemistry, Pharmaceutical Administration, Pharmaceutics, Pharmacology, and Translational Sciences). Each specialization focuses on a specific discipline of the pharmaceutical sciences. The program conversion designation is listed as converted with minimal changes. Each of these specializations was carefully reviewed and courses were combined and updated as listed on each of the detailed specialization sheets included in this submission.

College of Pharmacy
PhD Pharmaceutical Sciences
Specialization: Medicinal Chemistry

SEMESTERS

QUARTERS

Courses offered in the College of Pharmacy	
Core courses (a minimum of 16 hours required)	Core courses (a minimum of 27 hours required)
PHR 8520 (1)	PHR 852 (2)
PHR 6010 (2)*	PHR 601/994 (4)
PHR 6020 (2)*	PHR 462/832 (4)
PHR 7350 (2)	PHR 735 (3)
PHR 7370 (2), Maymester	PHR 737 (5)
PHR 7890 (3)	PHR 789 (5)
PHR 8000 (3) 7 week	PHR 800 (3)
PHR 8380 (2) 7-week	PHR 835 (3)
PHR 8350 (2) 7-week	PHR 836 (3)-Fuchs
PHR 8360 (2) 7-week	PHR 836 (3)-LI/Tjarks
PHR 8370 (2) 7-week	PHR 837 (3)
PHR 8390 (2) 7-week	PHR 839 (3)
PHR 8510 (2) 7-week	PHR 851 (3)
Individual Studies (to a total of 80 hours beyond bachelors or 50 hours beyond masters) PHR 9993 Individual Study PHR 9998 Research PHR 9999 Dissertation Research	Individual Studies (to a total of 120 credits beyond bachelors or 75 credit hours beyond masters) PHR 999 PHR 993
8880.01 (1) Seminar presentation/College or 8880.02 (1) Seminar participation/College or 8881.01 (1) Seminar presentation /Division or 8881.02 (1) Seminar participation /Division (one enrollment per semester while on campus; overall three 8880.01 or 8881.01 enrollments until graduation)	PHR 850.01 (1) Seminar presentation or PHR 850.02 (1) Seminar participation (one enrollment per quarter while on campus; overall three 850.01 enrollments until graduation)
Minimum Semester Hours TOTAL: 75.5 without masters and 45.5 with masters based on the minimum required hours from courses offered outside the College of Pharmacy	Minimum Quarter Hours TOTAL: 114 without masters and 69 with masters based on the minimum required hours from courses offered outside the College of Pharmacy
Courses offered outside the College of Pharmacy	
Chemistry, Biochemistry, Molecular Biology, Computational Chemistry, Natural Products	Chemistry, Biochemistry, Molecular Biology, Computational Chemistry, Natural Products
Minimum Required Semester Hours TOTAL: 4.5	Minimum Required Quarter Hours TOTAL: 6

* Pharm.D. course; needs to change prerequisite to include graduate students.

Transition Policy

Individual advisors will assist students enrolled during the transition from quarters to semesters to plan their course of study according to the requirements above.

PhD Courses in Medicinal Chemistry

Course # (credit hours)	Course Title
PHR 8520 (1)	Introduction to Pharmaceutical Sciences
PHR 6010 (2)	Biopharmacy I
PHR 6020 (2)	Biopharmacy II
PHR 7350 (2)	Drug Discovery and Drug Design
PHR 7370 (2), maymester	Advanced Pharmaceutical Analysis
PHR 7890 (3)	Isolation Techniques in Research
PHR 8000	Principles of Radioisotope Tracer Techniques
PHR 8350 (2) 7-week	Advanced Medicinal Chemistry
PHR 8360 (2) 7-week	Advanced Medicinal Chemistry
PHR 8370 (2) 7-week	Chemotherapy of Infectious Diseases
PHR 8380 (2) 7-week	Structure-based Computer-aided Molecular Design
PHR 8390 (2) 7-week	Recent Advances in Pharmacognosy
PHR 8510 (2) 7-week	Advanced Pharmacognosy
8881.01 (1)	Medicinal Chemistry: Seminar Presentation
8881.02 (1)	Medicinal Chemistry: Seminar Participation

PhD Pharmaceutical Sciences
Specialization: Pharmaceutics and Pharmaceutical Chemistry

SEMESTERS

QUARTERS

Courses offered in College of Pharmacy	
Core courses (5 of the following Pharmacy courses required): 8010 (2) 8020 (3) 8030 (2) 8040 (2) 8050 (2) 8060 (2) 8070 (2) 8080 (2) 8090 (2)	Core courses (5 of the following Pharmacy courses required): 801 (3) 802 (4) 803 (3) 804 (3) 805 (3) 806 (3) 807 (3) 808 (3) 809 (3)
Seminar enroll every semester with 1 presentation per year 8880.01 (1) Seminar presentation/College or 8880.02 (1) Seminar participation/College or 8882.01 (1) presentation 8882.02 (1) participation (one enrollment per semester while on campus; overall three 8880.01 or 8881.01 enrollments until graduation) Individual studies (to a total of 80 hours beyond bachelors or 50 hours beyond masters) PHR 9993 Ind Study PHR 9998 Research PHR 9999 Dissertation Research	Seminar enroll every quarter with 1 presentation per year PHR 850.01 (1) presentation PHR 850.02 (1) participation Individual studies (to a total of 120 hours beyond bachelors or 75 hours beyond masters) PHR 999 PHR 993
Semester Hours TOTAL: 30 with masters or 60 without	Quarter Hours TOTAL: 42 with masters or 87 without
Courses offered outside the College of Pharmacy	
Required courses: Statistics, multiple listings (3) Chem 4200 (3) or Chem 4300 (3)	Required courses: Statistics, multiple listings (5) Chem 531, 532 (3 ea) or Biochem 721.01, 721.03 (3 ea)
A minimum of 14 semester hrs from the following elective courses: Biochemistry 615 (4) Biochemistry 702 (3) Biochemistry 710 (5) Biochemistry 721.02 (3) Biochemistry 761 (3) Biochemistry 762 (3) Biochemistry 763 (2)	A minimum of 25 quarter hrs from the following elective courses: Chemistry 882 (3) Mat. Sci. Engn. 732 (4) Mathematics 512 (3) Microbiology 649 (3) Microbiology 655 (3) Microbiology 723.01 (3) Microbiology 723.02 (3)

Biochemistry 765 (3) Biochemistry 766 (3) Biomedical Engn. 721 (3) Biomed Info 730 (3) Biomed Infor 731 (3) Chemistry 632 (3) Chemistry 731 (3) Chemistry 875 (3) Chemistry 876 (3) Chemistry 881 (3)	Molecular Genetics 701 (3) Molecular Genetics 705 (3) Pathology 640 (4) Pharmacology 600 (3) Pharmacy 789 (5) Pharmacy 835 (3) Pharmacy 870 (3) Physiology and Cell Bio 601 (5) Physiology and Cell Bio 602 (5) Vet Bio 610 (3)
Semester Hours TOTAL: 20	Quarter Hours TOTAL: 33

Transition Policy

Students will be required to take a minimum of 5 Pharmacy courses that may be split in both the quarter and semester years. The credits for any elective course that was taken during the quarter year will be divided by 1.5 to convert to semester hours. The requirement for 30 semester hours minimum will take effect Fall quarter, 2012.

PhD Courses in Pharmaceutics

Course # (credit hours)	Course Title
8010 (2)	Mass Spectrometry-Based Proteomics
8020 (3)	Advanced Pharmacokinetics
8030 (2)	Biopharmaceutics – Study design and analysis
8040 (2)	Drug Transport
8050 (2)	Pharmaceutical Biotechnology
8060 (2)	Advanced Bioanalysis
8070 (2)	Advanced Drug Delivery Systems
8080 (2)	Pharmacokinetic – Pharmacodynamic Models
8090 (2)	Design and Evaluation of Drug Delivery Systems
8882.01 (1)	Pharmaceutics: Seminar Presentation
8882.02 (1)	Pharmaceutics: Seminar Participation

PhD Pharmaceutical Sciences
Specialization: Pharmacology

SEMESTERS

QUARTERS

Core courses offered in College of Pharmacy	
Semester hours : 28	Quarter hours: 41
Pharmacy 8520 (2)	Pharmacy 852 (2)
Pharmacy 8700 (4)	Pharmacy 870 (3) Pharmacy 871 (4)
Pharmacy 8710 (3)	Pharmacy 747, 748 (half) 750 (half), 751 (half) ^a
Pharmacy 8720 (3)	Pharmacy 748 (half), 749, Pharmacy 751 (half) Pharmacy 752
Pharmacy 8730 (1), minimum 6 credits	Pharmacy 873, offered quarterly (repeatable)
8880.01 (1) Seminar presentation/College or 8880.02 (1) Seminar participation/College or Pharmacy 8885.01 (Seminar presentation) Pharmacy 8885.02 (seminar participation) One presentation per year; repeated each semester (Fall/Spring) in residence; Minimum 6 credits	Pharmacy 850.01 (Seminar Presentation) Pharmacy 850.02 (Seminar Participation) One presentation per year; repeated each quarter (Au/Wi/Sp) in residence; Minimum 9 credits
Pharmacy 6010 (2) ^b Pharmacy 6020 (2)	Pharmacy 601 (3) Pharmacy 602 (3)
Individual Studies (to a total of 80 hours beyond bachelors or 50 hours beyond masters) PHR 9993 Ind Study PHR 9998 Research PHR 9999 Dissertation Research	Individual Studies (to a total of 120 credits beyond bachelors or 75 credit hours beyond masters) PHR 999 PHR 993
Semester Hours TOTAL: 32 (with masters) 62 without	Quarter Hours TOTAL: 48 with masters - 93 without
Required courses offered outside the College of Pharmacy	
Biochemistry XXX ^c (3)	Biochemistry 613 (4)
Biochemistry XXX (3)	Biochemistry 614 (4)
Biochemistry XXX (3)	Biochemistry 615 (4)
Molecular Genetics 6500 (3)	Molecular Genetics 650 (5)
PHYSIOCB 6101 (3)	PHYSIOCB 601 (5)
PHYSIOCB 6102 (3)	PHYSIOCB 602 (5)
Semester Hours TOTAL: 18	Quarter Hours TOTAL: 27

^a Currently students take four courses from Pharmacy 747, 748, 749, 750, 751, 752

^b May substitute for Quarter Sequence of Biochemistry 613-614-615

^c May Substitute for quarter sequence of Pharmacy 6010 and 6020 equivalent

Transition Policy

1. Students admitted in 2010-2011 or earlier should complete core requirements before the conversion to semesters.

2. Students admitted in 2011-2012 on the quarter system will take in the first year:

PHYSIOLOGY AND CELL BIOLOGY 601 and 602

BIOCHEMISTRY 613, 614, and 615

PHARMACY 850

PHARMACY 852

PHARMACY 873

PHARMACY 993

For 2012-2013, after semester conversion and for their second year, students will continue with:

Autumn

PHARMACY 8700, Theoretical and Experimental Pharmacology, 4 credits

This is equivalent to the previous requirement for PHARMACY 870 plus 871

PHARMACY 8710, Graduate Pharmacology I, 3 credits

This is equivalent to a requirement for PHARMACY 747 and 750, and part of PHARMACY 748 and 751

PHARMACY 8730, Contemporary Pharmacology, 1 credit

This is equivalent to PHARMACY 873

PHARMACY 8886 or 8887, Seminar, 1 credit

This is equivalent to the previous requirement for PHARMACY 850

MOLECULAR GENETICS 6500, Analysis and interpretation of biological data, 3 credits

This is equivalent to the previous requirement for MOLECULAR GENETICS 650

PHARMACY 9993, Individual Studies in the Pharmaceutical Sciences, variable credits

This is equivalent to the previous requirement for PHARMACY 993

Spring

PHARMACY 8720, Graduate Pharmacology II, 3 credits

This is equivalent to a requirement for part of PHARMACY 748 and 751, and PHARMACY 749, and 752

PHARMACY 8730, Contemporary Pharmacology, 1 credit

This is equivalent to PHARMACY 873

PHARMACY 8886 or 8887, Seminar, 1 credit

This is equivalent to the previous requirement for PHARMACY 850

PHARMACY 9993, Individual Studies in the Pharmaceutical Sciences, variable credits

This is equivalent to the previous requirement

PhD Courses in Pharmacology

Course # (credit hours)	Course Title
Pharmacy 8520 (2)	Research Ethics
Pharmacy 8700 (4)	Theoretical and Experimental Pharmacology
Pharmacy 8710 (3)	Graduate Pharmacology I
Pharmacy 8720 (3)	Graduate Pharmacology II
Pharmacy 8730 (1), minimum 6 credits	Contemporary Pharmacology
Pharmacy 8885.01	Pharmacology Seminar: Presentation
Pharmacy 8885.02	Pharmacology Seminary: Participation
Pharmacy 6010 (2) ^b	Biopharmacy 1
Pharmacy 6020 (2)	Biopharmacy 2

PhD Pharmaceutical Sciences
Specialization: Pharmaceutical Administration

SEMESTERS	QUARTERS
Required courses offered in College of Pharmacy	
Core courses (12 hours required)	Core courses (16 hours required)
PHR 8160 (4) PHR 8170 (4)	PHR 816 (4) PHR 817 (4) PHR 825 (4)
PHR 8180 (3) plus PHR 8260 (covering research methods and or pharmacoeconomics topics)	PHR 821 (4) PHR 824 (4)
PHR 8260 (1) every semester prior to candidacy	PHR 826 (2) every quarter prior to candidacy
Individual Studies PHR 9993 Ind Study PHR 9998 Research PHR 9999 Dissertation Research	Individual Studies PHR 999 PHR 993
Seminar enroll every semester with at least 1 presentation per year PHR 8880.01 (1) Seminar presentation/College or PHR8880.02 (1) Seminar participation/College or PHR 8883.01 (1) presentation PHR 8883.02 (1) participation	Seminar enroll every quarter with at least 1 presentation quarter per year PHR 850.01 (1) presentation PHR 850.02 (1) participation
Semester Hours TOTAL: 16 with masters 30 without	Quarter Hours TOTAL: 20 with masters 25 without
Required courses offered outside the College of Pharmacy	
Foundation Field (18 hours required) to add breadth to program students take courses in areas such as HSMP, Econ, Marketing	Foundation Field (27 hours required)
Research Methods and Stats (22 hours required) tools for design analysis and interpretation of research data examples include Ag Ed and Psych sequences	Research Methods and Stats (33 hours required)
Second Field of Specialization (10 hours required) to allow the development of a specialization outside of pharmaceutical administration examples include Psychology and Epidemiology	Second Field of Specialization (15 hours required)
Semester Hours TOTAL: 50	Quarter Hours TOTAL: 75

Seminar Enrollment in seminar every semester while on campus.

PhD Courses in Pharmaceutical Administration

Course # (credit hours)	Course Title
PHR 8160 (4)	Medication Use System Management
PHR 8170 (4)	Issues in Health-System Pharmacy
PHR 8180 (3)	Economic Evaluation of Health System Pharmacy Services
PHR 8260 (1)	Special Topics in Pharmaceutical Administration
PHR 8883.01 (1)	Pharmaceutical Administration: Seminar Presentation
PHR 8883.02 (1)	Pharmaceutical Administration: Seminar Participation

Transition Policy

The quarter courses 816, 817 and 825 are currently a one year sequence of 3 classes. These will be combined into the 2 semester sequence 8160 and 8170. Any student not completing all three quarter courses will be required to complete both 8160 and 8170. PHR 821 and 824 will be combined into a 1 semester course PHR 8180. Any student not completing 821 and 824 will be required to complete 8180. Individual advisors will assist students enrolled during the transition from quarters to semesters to plan their course of study according to the requirements above.

PhD Pharmaceutical Sciences

Specialization: Translational Science: NOTE BOLD classes are dual-degree PharmD and PhD

SEMESTERS	QUARTERS
Core courses offered in College of Pharmacy	
Pharmacy 8520 (1-2)	Pharmacy 852 (2)
Pharmacy 7320 (3)	Pharmacy 733 (3)
Pharmacy 7470 (7)	Pharmacy 778 (4)
Pharmacy 7480 (8)	Pharmacy 779 (4)
Pharmacy 7490 (7)	Pharmacy 780 (4)
Pharmacy 7500 (8)	Pharmacy 781 (4)
NOTE: Any two of these are selected in consultation with the adviser	Pharmacy 782 (5)
Pharmacy 7240 (2)	Pharmacy 724 (3)
8880.01 (1) Seminar presentation/College or 8880.02 (1) Seminar participation/College or Pharmacy 8886.01 (Seminar presentation) Pharmacy 8886.02 (seminar participation) One presentation per year; repeated each semester (Fall/Spring) in residence; Minimum 4 credits	Pharmacy 850.01 (Seminar Presentation) Pharmacy 850.02 (Seminar Participation) One presentation per year; repeated each quarter (Au/Wi/Sp) in residence; Minimum 6 credits
Semester Hours TOTAL: 24-27	Quarter Hours TOTAL: 39
Individual Studies (to a total of 80 hours beyond bachelors or 50 hours beyond masters) PHR 9993 Ind Study PHR 9998 Research PHR 9999 Dissertation Research	Individual Studies (to a total of 120 credits beyond bachelors or 75 credit hours beyond masters) PHR 999 PHR 993
Required courses currently offered outside the College of Pharmacy	
PUBHBIO 6210 (3)	PUBHBIO 701 (4)
PUBHBIO 6211 (3)	PUBHBIO 702 (4)
IBS XXXX – hours pending	IBS 707 (2)
IBS XXXX – hours pending (guessing 3 hours)	IBS 708 (2)
	IBS 709 (1)
Vision Science (2)	Vision Science 706 (2)
Pharmacy 6080 (3)	PHYSIOCB 601 (5)
Pharmacy 6090 (3)	PHYSIOCB 602 (5)
NOTE: the replacements for PHYSIOCB 601 and 602 may be substituted	
Semester Hours TOTAL: 17	Quarter Hours TOTAL: 25
Electives: minimum of 6 hours	Electives: 10 hours

TRANSITION PLAN

Students currently enrolled in the PharmD portion of the study would meet with their adviser to work out an individualized plan for completion of the didactic courses. In no case would additional course credits be required for pharmacy courses beyond the existing or post-transition requirements.

PhD Courses in Translational Sciences

Course # (credit hours)	Course Title
Pharmacy 8520 (1-2)	Research Ethics
Pharmacy 7320 (3)	Clinical Pharmacokinetics 2
Pharmacy 7470 (7)	Pharmacology and Therapeutics 1
Pharmacy 7480 (8)	Pharmacology and Therapeutics 2
Pharmacy 7490 (7)	Pharmacology and Therapeutics 3
Pharmacy 7500 (8)	Pharmacology and Therapeutics 4
Pharmacy 7240 (2)	Clinical Pharmacogenomics
Pharmacy 8886.01 (1)	Translational Science Seminar: Presentation
Pharmacy 8886.02 (1)	Translational Science Seminar: Participation