

**PROPOSAL SUMMARY AND ROUTING FORM**

**Proposal Title:** Change in PharmD Program Entrance Requirements

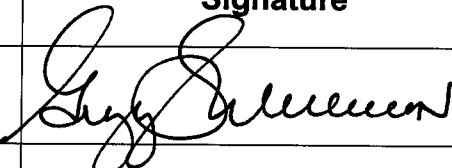



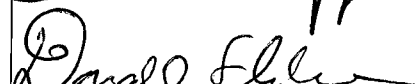
**Initiating Unit or Individual:** College of Pharmacy

**Contact Person's Name:** Greg Wellman, Chair, College of Pharmacy Curriculum Committee

**e-mail:** wellmang@ferris.edu **phone:** 591-2239

**Date or Semester of Proposal Implementation:** Fall 2009

- Group I - A – New degree/major or major, or redirection of a current offering
- Group I - B – New minors or concentrations
- Group II - A – Minor curriculum clean-up and course changes
- Group II - B – New Course
- Group III - Certificates
- Group IV – Off-Campus Programs

Group/Individual	Signature	Date	Vote/Action *
College Curriculum Committee		12/14/06 Meeting	6 Support Support with Concerns 0 Not Support 1-Abstain
College Faculty	FACULTY MEETING	12/18/06	17 Support Support with Concerns 10 Not Support 4 Abstain
Dean		2/22/07	✓ Support Support with Concerns Not Support
University Curriculum Committee		3/22/07	✓ Support 9-0 Support with Concerns Not Support
Senate		3/22/07	✓ Support Support with Concerns Not Support
Academic Affairs		9/13/07	✓ Support Support with Concerns Not Support

\* Support with Concerns or Not Support must include a list of concerns.

**To be completed by Academic Affairs**

\_\_\_\_\_  
 President (Date Approved)      Board of Trustees (Date Approved)      President's Council (Date Approved)

*Concerns centered on a desire to be allowed to expand the number of total hours to accommodate microbiology in pre-pharm.*

REC'D SEP 12 2007

**1. Proposal Summary**

The College of Pharmacy is currently in the process of revising the Pharm.D. curriculum as a result of a new set of accreditation standards issued by the American College of Pharmaceutical Education. Because of the shift in the role of the pharmacist in many practice settings to greater disease state management; and to support the coursework within the professional degree program, it has been recommended that we add 6 credits of pathophysiology to the pharmacy curriculum. Because this is being added to the first professional year, anatomy and physiology is being moved into pre-pharmacy (from the first professional year). To help accommodate this change in hours in pre-pharmacy, statistics is being deleted. In surveying regional pharmacy programs, we estimate that approximately half of programs have anatomy and physiology in their pre-pharmacy component. This change will also better prepare students for the professional degree program by exposing them to more human physiology in pre-pharmacy.

In addition, it has been proposed that the microbiology pre-pharmacy requirement for FSU be dropped to maintain as close to a "zero-sum" gain in hours for the combined pharmacy/pre-pharmacy curriculum. Plans are underway to change the microbiology in the pharmacy curriculum to accommodate this change.

**2. Summary of All Course Action Required\***

a. Newly Created Courses to FSU:  
Prefix          Number          Title

b. Courses to be Deleted From FSU Catalog:  
Prefix          Number          Title

c. Existing Course(s) to be Modified:  
Prefix          Number          Title

**d. Addition of existing FSU courses to program**  
**Prefix            Number            Title**

**e. Removal of existing FSU courses from program**  
**Prefix            Number            Title**

\*Contact Senate Secretary or UCC Chair if spaces for additional courses are needed.

FERRIS STATE UNIVERSITY  
 COLLEGE OF PHARMACY  
 PROPOSED CHANGES IN PRE-PHARMACY REQUIREMENTS

Proposed to be effective for class entering in Fall, 2009

**CURRENT PRE-PHARMACY REQUIREMENTS**

<b>Pre-Pharmacy</b>	
General Chemistry	8
Organic Chemistry	8
General Biology	8
Microbiology	3
Statistics	3
Calculus for the Life Sciences	3
English Composition (GEN ED)	6
Interpersonal Communication (GEN ED)	3
Intro to Psych or Sociology (GEN ED)	3
Principles of Economics (Macro)	3
Cultural Enrichment (GEN ED)	9
<b>Total</b>	<b>57</b>

**PROPOSED PRE-PHARMACY REQUIREMENTS**

<b>Pre-Pharmacy</b>	
General Chemistry	8
Organic Chemistry	8
General Biology	8
Microbiology (Delete)	
Statistics (Delete)	
Anatomy and Physiology (Added)	7
Calculus for the Life Sciences	3
English Composition (GEN ED)	6
Interpersonal Communication (GEN ED)	3
Intro to Psych or Sociology (GEN ED)	3
Principles of Economics (Macro)	3
Cultural Enrichment (GEN ED)	9
<b>Total</b>	<b>58</b>

**FERRIS STATE UNIVERSITY – COLLEGE OF PHARMACY – DOCTOR OF PHARMACY CURRICULUM**

**Curriculum - Standard Program**

Professional Year 1 – Fall Semester

4	BIOL331	Clinical Anatomy & Physiology 1
3	PHAD310	The Profession of Pharmacy
3	PHAR325	Pharmaceutics 1
5	PHCH320	Medical Biochemistry
2	PHPR303	Integrated Lab*
17		

\* Note: Areas designated with an asterisk in the curriculum contain early experiential training.

Professional Year 1 – Winter Semester

3	BIOL332	Clinical Anatomy & Physiology 2
3	ENGL321/421	Advanced Composition
4	PHAR326	Pharmaceutics 2
4	PHCH330	Introduction to Drug Action/Diagnostics
2	PHPR304	Integrated Lab*
16		

Professional Year 2 – Fall Semester

4	BIOL387	Clinical Microbiology & Immunology
3	PHAR440	Pharmacokinetics
3	PHCH427	Medicinal Chemistry 1
3	PHCL423	Pharmacology 1
1	PHPR411	Integrated Lab*
2		Pharmacy Elective
16		

Professional Year 2 – Winter Semester

3	PHAD436	Pharmacy Practice Management
3	PHCH428	Medicinal Chemistry 2
4	PHCH430	Chemotherapeutic Agents
4	PHCL424	Pharmacology 2
1	PHPR412	Integrated Lab*
2		Pharmacy Elective
17		

Professional Year 3 – Summer Session (off campus)

2	PHPR592	Institutional Early Pharmacy Practice Experience (Summer before or after this academic year)**
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Professional Year 3 – Fall Semester (off campus)

3	PHAD502	Sociopharmacy
1	PHPR501	Integrated Lab*
2	PHPR514	Clinical Communication
4	PHPR521	Pharmacotherapeutics – Toxicology/Nutrition/Nervous System
3	PHPR522	Pharmacotherapeutics – Cardiovascular/Renal
3	PHPR550	Drug Literature Evaluation/Study Design
2	PHPR591	Community Early Pharmacy Practice Experience**
18		

Professional Year 3 – Winter Semester

3	PHAD550	Pharmacy Law and Ethics
2	PHAD540	Pharmacoeconomics
1	PHPR502	Integrated Lab*
4	PHPR523	Pharmacotherapeutics – Infectious Diseases/Immunology/Oncology
4	PHPR524	Pharmacotherapeutics – Respiratory/Endocrine/ Gastrointestinal
2	PHPR591	Community Early Pharmacy Practice Experience**
2		Pharmacy Elective
18		

\*\* Students complete the community (PHPR591) experience by attending their site one day per week for one semester. The institutional experience (PHPR592) is conducted in 3 week blocks during summer or break. Infrequently, it may be during the alternate semester in the one day per week format.

Professional Year 4

1	PHPR680	Clinical Seminar
32		Clinical Clerkships (see list on back)
33		

Students would start clerkship at the beginning of August. They will complete 8 calendar month clerkships with the month of December off. Students would end in April just before University graduation.

**Curriculum - Accelerated Program**

Professional Year 1 – Fall Semester

4	BIOL331	Clinical Anatomy & Physiology 1
3	PHAD310	The Profession of Pharmacy
3	PHAR325	Pharmaceutics 1
5	PHCH320	Medical Biochemistry
2	PHPR303	Integrated Lab*
17		

\* Note: Areas designated with an asterisk in the curriculum contain early experiential training.

Professional Year 1 – Winter Semester

3	BIOL332	Clinical Anatomy & Physiology 2
3	ENGL321/421	Advanced Composition
4	PHAR326	Pharmaceutics 2
4	PHCH330	Introduction to Drug Action/Diagnostics
2	PHPR304	Integrated Lab*
16		

Professional Year 2 – Summer Semester

4	BIOL387	Clinical Microbiology and Immunology
3	PHAD436	Pharmacy Practice Management
3	PHCH427	Medicinal Chemistry 1
3	PHCL423	Pharmacology 1
1	PHPR411	Integrated Lab*
2		Pharmacy Elective
16		

Professional Year 2 – Fall Semester

3	PHAR440	Pharmacokinetics
3	PHCH428	Medicinal Chemistry 2
4	PHCH430	Chemotherapeutic Agents
4	PHCL424	Pharmacology 2
1	PHPR412	Integrated Lab*
2		Pharmacy Elective
17		

Professional Year 3 – Winter Semester (off campus)

3	PHAD550	Pharmacy Law and Ethics
2	PHAD540	Pharmacoeconomics
1	PHPR502	Integrated Lab*
4	PHPR523	Pharmacotherapeutics – Infectious Diseases/Immunology/Oncology
4	PHPR524	Pharmacotherapeutics – Respiratory/Endocrine/Gastrointestinal
2	PHPR591	Community Early Pharmacy Practice Experience**
2		Pharmacy Elective
18		

Professional Year 3 – Summer Session (off campus)

2	PHPR592	Institutional Early Pharmacy Practice Experience (Summer before or after this academic year)**
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Professional Year 3 – Fall Semester

3	PHAD502	Sociopharmacy
1	PHPR501	Integrated Lab*
2	PHPR514	Clinical Communication
4	PHPR521	Pharmacotherapeutics – Toxicology/Nutrition/Nervous System
3	PHPR522	Pharmacotherapeutics – Cardiovascular/Renal
3	PHPR550	Drug Literature Evaluation/Study Design
2	PHPR591	Community Early Pharmacy Practice Experience**
18		

\*\* Students complete the community (PHPR591) experience by attending their site one day per week for one semester. The institutional experience (PHPR592) is conducted in 3 week blocks during summer or break. Infrequently, it may be during the alternate semester in the one day per week format.

Professional Year 4

1	PHPR680	Clinical Seminar
32		Clinical Clerkships (see list on back)
33		

Students would start clerkship in January. They will complete 8 calendar month clerkships. Students would end in August or September.

## FERRIS STATE UNIVERSITY – COLLEGE OF PHARMACY – DOCTOR OF PHARMACY CURRICULUM

### Pharmacy Electives

2	PHAD350	Community Pharmacy Management
2	PHAD360	Institutional Pharmacy
2	PHAD450	Advanced Community Pharmacy Management
2	PHAD460	Advanced Institutional Pharmacy
2	PHAD470	Pharmaceutical Marketing
2	PHAD480	Health Care Systems
2	PHAD482	Pharm Care/Public Health
2	PHAD484	Introduction to Pharmacy Law and Ethics
2	PHAR444	Non-Prescription Drugs and DME
2	PHAR446	Novel Drug Delivery
2	PHAR452	Manufacturing Pharmacy
2	PHAR456	Product Development
2	PHAR458	Chem. Kinetics/Product Stability
2	PHAR460	Advanced Pharmacokinetics
2	PHAR462	Pharmaceutics Seminar
2	PHAR472	Computer Applications in Pharmacy
2	PHCG352	Introduction to Plant Cell Culture
2	PHCG432	Herbal Remedies and Alternative Therapies
2	PHCG452	Natural Product Toxins
2	PHCG462	Adv. in Natural Product Research
2	PHCG490	Special Topics in PHCG
2	PHCH352	Instrumental Analysis
2	PHCH362	Selected Topics in Biochemistry
2	PHCH452	Special Topics in Medicinal Chemistry
2	PHCH462	Chemical Carcinogenesis
2	PHCH472	Pharmacy and Geriatric Health
2	PHCL352	Selected Topics in Pathophysiology
2	PHCL452	Toxicology
2	PHCL462	Selected Topics in Pharmacology
2	PHPR552	Introduction to Pharmacotherapy Clinics
2	PHPR554	Managed Care Pharmacy Practice
2	PHPR556	Advanced Topics in Infectious Diseases
2	PHPR558	Palliative Care
2	PHPR560	Complementary & Alternative Medicine
2	PHPR564	Evaluating Internet Drug Information Resources
2	PHPR566	Application of Pharmaceutical Care in Comm Practice
2	PHPR568	Advanced Presentations and Teaching Skills
2	PHPR570	Medical Research: Methods and Design
2	PHPR574	Interdisciplinary Comm-based Participatory Research
2	PHPR576	Advance Cardiac Life Support
1	PHPR420	Professional Development Seminar

4	PHPR648	Infectious Disease
4	PHPR652	Oncologic Disease
4	PHPR660	Neonatology
4	PHPR664	Geriatrics Medicine
4	PHPR666	International Advanced Pharmacy Practice Experience
4	PHPR670	Clinical Research

**TOTAL HOURS FOR DEGREE 196**

### Tuition

Semester tuition for the 2006 – 07 academic year has been established as follows for full-time enrollment:

- ◆ Doctoral - Resident - \$7,080.00 (\$590.00 per credit hour)
- ◆ Doctoral - Non-Resident - \$11,976.00 (\$998.00 per credit hour)

### Curricular Highlights

The pharmacy curriculum at Ferris State University is an 8-semester curriculum. Currently, there are two options: a regular four-year track, and an accelerated track that lasts three years plus one semester. In either track, the first four semesters (first two professional years) are taken on the Big Rapids campus. The fifth and sixth semesters (3rd professional year) will be in Grand Rapids or Kalamazoo. The 3rd professional year consists of a combination of classroom and practice experience. Roughly half of the class will be in either location for the 3rd professional year. Due to the split nature of the class, some of the instruction in each site will employ distance-learning techniques to deliver the educational content. The 7th and 8th semesters of the program (the 4th professional year) consists entirely of various practice experiences, and utilizes sites throughout the state of Michigan. The main metropolitan centers that are utilized include Grand Rapids, Kalamazoo, and the Lansing/Flint/Saginaw area.

### Professional Year 4 – Required & Elective Clerkships

#### Required Clerkships

4	PHPR600	Internal Medicine 1
4	PHPR601	Internal Medicine 2
4	PHPR602	Ambulatory Care 1
4	PHPR603	Ambulatory Care 2
4	PHPR611	Community Pharmacy

#### Elective Clerkships – Choose 3

4	PHPR604	Clinical Pharmacokinetic
4	PHPR605	Academic Pharmacy Experience
4	PHPR606	Drug Information
4	PHPR607	Drug Use Policy
4	PHPR608	Pediatric Medicine
4	PHPR609	Professional Organization Management
4	PHPR610	Institutional Practice
4	PHPR612	Rural Health
4	PHPR613	Community Pharmacy Management
4	PHPR614	Consult/Long-Term Care
4	PHPR615	Hospice Care
4	PHPR616	Homecare
4	PHPR617	Pharmacy Administration Clerkship
4	PHPR618	Managed Care
4	PHPR619	Pain Management
4	PHPR620	Cardiology
4	PHPR621	HIV/AIDS
4	PHPR622	Pulmonary Medicine
4	PHPR623	Trauma Care
4	PHPR624	Critical Care
4	PHPR626	Veterinary Pharmacy
4	PHPR628	Nuclear Pharmacy
4	PHPR630	Emergency Medicine
4	PHPR632	Surgical Care
4	PHPR636	Nutrition
4	PHPR640	Psychiatry
4	PHPR642	Addiction Medicine

The information that is provided in this publication is not to be construed either as a contract or as an offer to contract. The College reserves the right to change at any time and without prior notice any provision or requirement including curriculum.

## CURRICULUM CONSULTATION FORM

For proposals affecting graduate and professional curricula

1. This form, with the first six blanks filled in, should be forwarded with the proposal to the chair of the Graduate and Professional Council.
2. The Graduate and Professional Council must respond within 20 calendar days of receipt of this form to insure inclusion in the final proposal. The completed form is returned to the initiator and inserted into the proposal. Failure to respond is interpreted as support for the proposal.
3. The Proposing Department must respond to any concerns by the Council. This response will be in writing and be included in the proposal following the consultation form.

**RE: Proposal Title** Change in PharmD Program Entrance Requirements

**Initiator(s):** College of Pharmacy (Greg Wellman, Chair, College of Pharmacy Curriculum Committee)

**Proposal Contact:** Greg Wellman, 591-2239 **Date Sent:** 3/1/07

**Department:** Pharmacy **Campus Address:** 220 Ferris Drive, Big Rapids, Michigan 49307  
(Please print)

**Response from:** Graduate and Professional Council

**Chair:** Dr. Nancy Hogan

*N Hogan*  
**Date Returned:** 3/13/07

Based upon Graduate and Professional Council review on \_\_\_\_\_(date), we

- Support the above proposal.
- Support the above proposal with the modifications and concerns listed below.
- Do not support the proposal for the reasons listed below.

Comment regarding the impact this proposal has on graduate and professional program issues at the university. Use additional pages, if necessary.

## CURRICULUM CONSULTATION FORM

To be completed by each department affected by the proposed change, new degree, new program, new minor, or new course. Potential duplication of coursework is reason for consultation.

1. This form, with the first six blanks filled in, should be forwarded with the proposal to the chair/head of the affected department.
2. The affected department must respond within 20 calendar days of receipt of this form to insure inclusion in the final proposal. The completed form is returned to the initiator and inserted into the proposal. Failure to respond is interpreted as support for the proposal.
3. The Proposing Department must respond to any concerns by the affected department. This response will be in writing and be included in the proposal following the consultation form.

**RE: Proposal Title** Change in PharmD Program Entrance Requirements

**Initiator(s):** College of Pharmacy (Greg Wellman, Chair, College of Pharmacy Curriculum Committee)

**Proposal Contact:** Greg Wellman, 591-2239 **Date Sent:** 3/2/07

**Department:** Pharmacy **Campus Address:** 220 Ferris Drive, Big Rapids, Michigan 49307  
(Please print)

**Responding Department :** Biological Sciences: Regarding changes in anatomy and physiology, as well as microbiology.

**Chair/Head/Coordinator:** Dr. Karen Strasser **Date Returned:** March 22, 2007

Based upon department faculty review on March 12-21 (date), we

- Support the above proposal.
- Support the above proposal with the modifications and concerns listed below.
- Do not support the proposal for the reasons listed below.

Comment regarding the impact this proposal has on scheduling, room assignments, faculty load, and prerequisites for your department. Use additional pages, if necessary.

We would like to note that the Department of Biology has been consulted regularly during their curriculum revision process and that we greatly appreciate being involved. While we support the revision, we do have concerns with the current form of the curriculum proposal.

From what we understand, the move in Anatomy and Physiology from the P1 to Pre-pharmacy is to make room for a new Pathophysiology course sequence (perhaps team-taught with Biology) that will include some of the areas pharmacy students are deficient in. Our Physiologists have reviewed a sample syllabus for their new Pathophysiology class(es) and suggest that a solid foundation in Anatomy and Physiology (equivalent to our BIOL 321-322 sequence) would be necessary as a prerequisite. The proposed requirement of 7 unspecified

credits in Anatomy and Physiology in Pre-pharmacy will not assure that students have a solid background.

To promote the success of students entering the revised Pharmacy program, we recommend that the level of the Pre-pharmacy Anatomy and Physiology requirement be specified at the level of Ferris BIOL 321-322. We plan to provide Ferris students with a single option for completing their Anatomy and Physiology requirement, and we believe BIOL 321-322 will be the best sequence to prepare them.

If the level of the 7 credits of Anatomy and Physiology remain unspecified, then we request that Ferris students get a concession for taking a more advanced level course sequence in the Pharmacy admissions formula. If students can get higher grades by taking a lower level version of Anatomy and Physiology at a community college then they may be less inclined to attend Ferris. We have over 500 Pre-Pharmacy students enrolled and the majority of these students may move on to other 4-year programs at Ferris.

# University Curriculum Committee

## SENATE REPORT

April 3, 2007

**UCC actions since the last Senate meeting follow:**

	<b>TYPE</b>	<b>TITLE</b>	<b>UCC ACTION</b>	<b>COMMENTS</b>
<b>A. FOR SENATE ACTION:</b>				
1.	New Minor	Integrated Marketing Techniques Minor	Approved, 8-0.	
<b>B. FOR SENATE INFORMATION:</b>				
	<b>Type</b>	<b>Title</b>	<b>UCC Action</b>	<b>Concerns/Reasons</b>
1.	M.C.C.	ECE Associate Degree – Credit Reduction	Approved, 8-0.	
2.	Course changes	SPAN 331	Approved, 8-0.	
3.	Course changes	SPAN 332	Approved, 8-0.	
4.	Course changes	SPAN 333	Approved, 8-0.	
5.	M.C.C.	Operations Research Concentration in BS Applied Mathematics degree	Approved, 8-0.	
6.	M.C.C.	Social Work Program Pre- & Co-Requisite Changes	Approved, 8-0.	
7.	M.C.C.	Change in PharmD Program Entrance Requirements	Approved, 9-0.	
8.	New Course	BIOL 280: Applied Fermentation	Approved, 9-0.	
9.	M.C.C.	Automotive Eng. Tech.	Approved, 9-0.	
10.	M.C.C.	New Media Printing & Publishing	Approved, 9-0.	
11.	M.C.C.	Printing and Digital Graphic Imaging Technology	Approved, 9-0.	

# University Curriculum Committee

TYPE	TITLE	UCC ACTION	COMMENTS
12. M.C.C.	Printing Management	Approved, 9-0.	
13 M.C.C.	Construction Program Minor Cleanup 2007	Approved, 9-0.	
14. M.C.C	Update to MBA	Approved, 9-0.	
15. New Courses	NURS 316 & NURS 318	Approved, 8-0.	
16. M.C.C.	BS Nursing: Modify Grading	Approved, 8-0.	
17. M.C.C.	EDCD 291: Eliminate Variable Credit Option	Approved, 8-0.	
18. Program Redirection	Small Business & Entrepreneurship	Sent back.	Submit proposal for certificate separately first.
19. Program Redirection	Business Administration Minor	Sent back.	Submit proposal for certificate separately first.
20. New Course	PDET 122: Parametric Modeling	Approved, 8-0, pending.	Make effective Spring semester and address concerns

## Proposal Submitting Procedure

Originals plus 2 copies of each proposal leaving a college should be forwarded to Senate Secretary, Paula Hadley-Kennedy, CSS 208A. Proposals should be in her office by 4 PM on Mondays to allow time for recording, distribution, and consideration at the next committee meeting (Thursdays).

## Membership for 2006-2007

Name	Mail	Phone	College	E-mail
Sandy Alspach	JOH-119	2779	Arts & Sciences	alspachs@ferris.edu
Maude Bigford	HFE-131	2803	University College	bigfordm@ferris.edu
Chuck Drake	SWN 405	2788	Technology	drakec@ferris.edu
Leonard Johnson, Chair	BIS 412	2134	Education & Human Services	johnsole@ferris.edu
Roy McLean	BUS-200	2766	Business	mcleanr@ferris.edu
Andrew Purvis			Professional & Technical Studies (GR)	purvisa@ferris.edu
Barbara Ross	VFS-303	2317	Allied Health	rossb@ferris.edu
Michael Shansky* *resigned 2/28/07	PEN-306	2192	Optometry	shanskym@ferris.edu
Maureen Watson	PEN-225	2124	Librarians/Counselors	
Greg Wellman	PHR 105	2329	Pharmacy	wellmang@ferris.edu
Joanne Gerst	CSS 201	2794	Ex-Officio, Records	gerstj@ferris.edu