



# Pharmacy Curriculum Outcomes Assessment<sup>®</sup> (PCOA<sup>®</sup>) School/College of Pharmacy Report

The following tables summarize your students' performance on the PCOA. The first table, School Score Means, includes the mean scores for the Total examination as well as the mean scores for each of the four major content areas. In this table, shaded rows indicate the mean scores for all students in this national exam administration sample and can be used as a reference point of comparison for your school. Nationally, in 2009 there were a total of 1,627 students, with 387 students in their first year, 318 students in their second year, 842 students in their third year, and 80 students in their fourth year.

The second table, School Subtopic Means, reports the percent of items answered correctly on the subtopics from each major content area by program year. Subtopics have too few items to report scale scores reliably. The mean Percent Correct is reported for your school by program year. The mean National Percent Correct (shaded columns) indicates the mean percent correct for students in this national exam administration sample by program year and can be used as a reference point of comparison for your school. The last two pages of this document include a sample Individual Score Report and a School-Level Score Report. Scale scores, percent-correct indices, and percentiles per program year are presented. Each of these measurement indices are explained below.

**Scale Scores:** The scale scores are informative in that they take into account the difficulty of the items in the major content areas. Scale scores generally range from 0 (lowest ability) to 700 (highest ability) and can be compared across administrations. Scale scores can also be compared between the major content areas, such that a student scoring 200 on Pharmaceutical Sciences and 250 on Basic Sciences is more knowledgeable in Basic Sciences than Pharmaceutical Sciences. In the following tables, the Scale Score is the mean scale score for your school (by program year) and the National Scale Score is the mean scale score for all examinees (by program year) in this test administration.

**% Correct:** Percent correct scores report the mean percentage of items answered correctly. The % Correct is the mean percent correct score for your school (by program year) and the National % Correct is the mean percent correct for all examinees (by program year) in this test administration.

**Percentile For Program Year:** Mean percentiles for the program year are reported for your school by program year. These percentiles were computed using only students in the specific program year. This percentile gives performance information in relation to other students **within** the same program year. For example, if a first-year student's Percentile for Program Year score was 60, this implies that the student performed equally or better than 60% of all other first-year students that completed the assessment this year.

## School Score Means – Spring 2009

### University

		Year 1	Year 2	Year 3	Year 4
<b>Total Score</b>	Scale Score	306	350	406	395
	National Scale Score	313	354	366	394
	% Correct	53	61	72	70
	National % Correct	54	62	65	70
	Percentile for Program Year	44	48	74	49
<b>Basic Biomedical Sciences</b>	Scale Score	341	363	395	361
	National Scale Score	345	363	358	375
	% Correct	60	64	70	64
	National % Correct	60	64	63	66
	Percentile for Program Year	47	51	66	44
<b>Pharmaceutical Sciences</b>	Scale Score	279	360	392	377
	National Scale Score	303	356	364	381
	% Correct	41	58	65	62
	National % Correct	46	58	59	63
	Percentile for Program Year	35	53	67	47
<b>Social/Behavioral/Administrative Pharmacy Sciences</b>	Scale Score	363	366	441	421
	National Scale Score	332	360	366	404
	% Correct	72	74	84	82
	National % Correct	68	73	73	79
	Percentile for Program Year	58	52	77	58
<b>Clinical Sciences</b>	Scale Score	289	332	421	429
	National Scale Score	298	349	378	422
	% Correct	48	57	73	75
	National % Correct	50	60	66	73
	Percentile for Program Year	45	39	71	51
<b>NUMBER OF STUDENTS</b>		387	318	842	80

## School Subtopic Means – Spring 2009

Subtopics	Yr 1 %	Yr 2 %	Yr 3 %	Yr 4 %	Nat. Yr 1 %	Nat. Yr 2 %	Nat. Yr 3 %	Nat. Yr 4 %
<b>Basic Biomedical Sciences</b>								
Anatomy & Physiology	67	69	73	61	70	71	65	67
Pathology/Pathophysiology	59	63	66	65	55	59	63	65
Microbiology	40	53	70	67	46	56	59	67
Immunology	56	59	84	65	66	66	65	63
Biochemistry/Biotechnology	71	72	68	66	67	66	63	68
Biostatistics	53	58	60	60	52	63	62	66
<b>Pharmaceutical Sciences</b>								
Medicinal Chemistry	43	62	65	58	45	58	55	56
Pharmacology	28	61	69	70	41	58	62	67
Pharmacognosy and Alternative and Complementary TX	25	66	71	71	31	60	67	77
Toxicology	22	60	61	83	38	63	66	86
Bioanalysis/Clinical Chemistry	44	52	95	88	49	67	70	75
Pharmaceutics/Biopharmaceutics	54	52	58	46	49	49	49	51
Pharmacokinetics/Clinical Pharmacokinetics	47	54	61	56	52	61	64	64
Pharmacogenomics/Genetics	56	76	92	96	74	89	91	96
Extemporaneous Compounding/Parenteral/Enteral	46	53	60	69	52	53	55	64
<b>Social/Behavioral/Administrative Pharmacy Sciences</b>								
Healthcare Delivery Systems	64	72	89	68	54	61	57	66
Economics/Pharmacoeconomics	70	59	67	79	56	63	67	74
Practice Management	60	76	86	83	66	73	74	79
Pharmacoepidemiology	69	59	74	46	51	53	55	60
Pharmacy Law and Regulatory Affairs	81	73	75	80	76	73	72	72
History of Pharmacy	100	97	100	88	63	70	78	85
Ethics	73	71	91	86	77	84	83	89
Professional Communications	75	79	85	87	72	78	80	86
Social and Behavioral Aspects of Practice	81	83	91	99	84	88	85	95
<b>Clinical Sciences</b>								
Pharmacy Practice and Pharmacist-Provided Care	54	62	79	79	52	61	70	78
Medication Dispensing and Distribution Systems	53	68	85	86	60	69	71	84
Pharmacotherapy - Practice Guidelines and Clinical Trials	43	47	57	65	45	53	56	64
Pharmacotherapy - Health Promotion/Disease Prevention	45	68	82	75	52	68	75	76
Pharmacotherapy - Pharmaceutical Care	36	49	66	68	41	53	60	67
Pharmacist-provided care for Special Populations	54	40	60	58	36	46	50	60
Drug Information	77	63	80	85	65	70	77	82
Medication Safety	84	93	97	100	86	89	88	96
Literature Evaluation and Research Design	47	50	67	63	48	56	56	64
Patient Assessment Laboratory	53	69	95	92	63	79	83	90



# Pharmacy Curriculum Outcomes Assessment<sup>®</sup> (PCOA<sup>®</sup>)

## Individual Score Report

*Student Name*

*School/College of Pharmacy*

*Program Year*

*Test Date: Spring 2009*

Major Content Areas	Scale Score	National Percentile for Your Program Year
Basic Biomedical Sciences	386	69
Pharmaceutical Sciences	455	96
Social/Behavioral/Administrative Pharmacy Sciences	461	93
Clinical Sciences	360	61
<b>TOTAL EXAM</b>	<b>404</b>	<b>91</b>

*Scale Score:* Scale scores range from 0 to 700.

*National Percentiles:* National Percentiles are reported in relation to the examinees in the program year (National Percentile for Your Program Year). For example, a score of 68 under the National Percentile for Your Program Year means that you scored at or higher than 68% of the examinees in your program year that took the PCOA this year.

Subtopics	% correct
<b>Basic Biomedical Sciences</b>	
Anatomy and Physiology	100
Pathology/Pathophysiology	63
Microbiology	33
Immunology	100
Biochemistry/Biotechnology	67
Biostatistics	40
<b>Pharmaceutical Sciences</b>	
Medicinal Chemistry	91
Pharmacology	87
Pharmacognosy and Alternative and Complimentary TX	100
Toxicology	50
Bioanalysis/Clinical Chemistry	100
Pharmaceutics/Biopharmaceutic	58
Pharmacokinetics/Clinical Pharmacokinetics	67
Pharmacogenomics/Genetics	100
Extemporaneous Compounding/Parenteral/Enteral	67

Subtopics	% correct
<b>Social/Behavioral/Administrative Pharmacy Sciences</b>	
Healthcare Delivery Systems	100
Economics/Pharmacoeconomics	75
Practice Management	100
Pharmacoepidemiology	100
Pharmacy Law and Regulatory Affairs	50
History of Pharmacy	100
Ethics	100
Professional Communications	80
Social and Behavioral Aspects of Practice	100
<b>Clinical Sciences</b>	
Pharmacy Practice and Pharmacist-Provided Care	64
Medication Dispensing and Distribution Systems	100
Pharmacotherapy - Practice Guidelines and Clinical Trials	63
Pharmacotherapy - Health Promotion/Disease Prevention	60
Pharmacotherapy - Pharmaceutical Care	50
Pharmacist-provided care for Special Populations	0
Drug Information	75
Medication Safety	100
Literature Evaluation and Research Design	75
Patient Assessment Laboratory	75

*Subtopics:* Each major content area has multiple subtopic areas. Subtopics have too few items to report scale scores reliably, so the percent correct in the subtopics are only listed. Subtopics should not be compared and the percent of items correct are reported only as a rough indicator of strengths and weaknesses.

SAMPLE



## 2009 National Means by Program Year

Major Content Areas - Scale Scores	Yr 1	Yr 2	Yr 3	Yr 4
Basic Biomedical Sciences	345	363	358	375
Pharmaceutical Sciences	303	356	364	381
Social/Behavioral/Administrative Pharmacy Sciences	332	360	366	404
Clinical Sciences	298	349	378	422
<b>TOTAL EXAM</b>	<b>313</b>	<b>354</b>	<b>366</b>	<b>394</b>

Subtopics - % Correct	Yr 1 %	Yr 2 %	Yr 3 %	Yr 4 %
<b>Basic Biomedical Sciences</b>				
Anatomy & Physiology	70	71	65	67
Pathology/Pathophysiology	55	59	63	65
Microbiology	46	56	59	67
Immunology	66	66	65	63
Biochemistry/Biotechnology	67	66	63	68
Biostatistics	52	63	62	66
<b>Pharmaceutical Sciences</b>				
Medicinal Chemistry	45	58	55	56
Pharmacology	41	58	62	67
Pharmacognosy and Alternative and Complimentary TX	31	60	67	77
Toxicology	38	63	66	86
Bioanalysis/Clinical Chemistry	49	67	70	75
Pharmaceutics/Biopharmaceutics	49	49	49	51
Pharmacokinetics/Clinical Pharmacokinetics	52	61	64	64
Pharmacogenomics/Genetics	74	89	91	96
Extemporaneous Compounding/Parenteral/Enteral	52	53	55	64
<b>Social/Behavioral/Administrative Pharmacy Sciences</b>				
Healthcare Delivery Systems	54	61	57	66
Economics/Pharmacoeconomics	56	63	67	74
Practice Management	66	73	74	79
Pharmacoepidemiology	51	53	55	60
Pharmacy Law and Regulatory Affairs	76	73	72	72
History of Pharmacy	63	70	78	85
Ethics	77	84	83	89
Professional Communications	72	78	80	86
Social and Behavioral Aspects of Practice	84	88	85	95
<b>Clinical Sciences</b>				
Pharmacy Practice and Pharmacist-Provided Care	52	61	70	78
Medication Dispensing and Distribution Systems	60	69	71	84
Pharmacotherapy - Practice Guidelines and Clinical Trials	45	53	56	64
Pharmacotherapy - Health Promotion/Disease Prevention	52	68	75	76
Pharmacotherapy - Pharmaceutical Care	41	53	60	67
Pharmacist-provided care for Special Populations	36	46	50	60
Drug Information	65	70	77	82
Medication Safety	86	89	88	96
Literature Evaluation and Research Design	48	56	56	64
Patient Assessment Laboratory	63	79	83	90

SAMPLE