

PHARMACY, DOCTOR OF (PHARM.D.)/AGING STUDIES, CERTIFICATE IN (GRADUATE CERTIFICATE) [DUAL DEGREE AND CERTIFICATE]

Advanced study in pharmacy and aging studies is available through a dual degree and certificate program co-sponsored by the School of Pharmacy and the Department of Gerontology in the College of Health Professions.

The program allows students to earn a Doctor of Pharmacy and a Certificate in Aging Studies with a minimum of 167 credits rather than the 170 credits necessary if the two degrees were pursued separately. This efficiency lowers the overall cost of tuition while also reducing time to earning both degrees.

Program goals

The objectives of this dual degree and certificate program are to:

- Prepare graduates to address the complex needs of a diverse aging population using holistic knowledge of the biopsychosocial aging process
- Provide graduates with an understanding of empirically and theoretically based components contributing to optimal aging using evidence-based, best-practice approaches
- Prepare graduates to develop skills in comprehensive geriatric care to promote well-being among older adults
- Prepare graduates with an understanding of the interrelationship between pharmacology and social issues and aging (e.g., family, cultural, community, housing, access to care, policy issues)

Among the many benefits offered by participation in the dual degree and certificate program is the following:

- Students holding these degrees will be more competitive in obtaining a pharmacy residency or employment caring for older adults in the community, ambulatory care or hospital settings.

The diplomas for this dual degree and certificate program may be awarded simultaneously. Students must complete a separate graduation check out for each program.

Student learning outcomes

See the individual program pages for student learning outcomes.

Advising

The student is assigned an adviser from each program to develop a plan of study. Advisers from each program will provide guidance on course requirements for their respective programs.

Admission requirements

Students must meet the admission requirements for each program. Admission into one program does not guarantee admission into the other.

The Certificate in Aging Studies program is open to qualified students who have earned a baccalaureate degree from an accredited college or university or the equivalent and who have met all **general admission requirements of the VCU Graduate School**.

The admission requirements for the Pharm.D. (<http://bulletin.vcu.edu/professional-studies/pharmacy/pharmacy-pharmd/#admissionrequirements>) can be found on the program page.

Application procedure

Applicants may apply after completion of their first or second professional year. Applications are made through the Graduate School and are due by May 15.

Students do not need to take any additional tests as part of the application process. There is a fee associated with applying to the VCU Graduate School.

Dual degree and certificate requirements

As standalone programs, the Pharm.D. comprises 155 credits while the certificate requires 15 credits. The dual degree and certificate program allows students to share three credits, therefore decreasing total credits to completion from 170 to 167.

Students are advised that based on the equivalent knowledge acquired by successfully completing PHAR 670 and PHAR 691 (with appropriate topic) as electives in the Pharm.D. program, the elective requirement is satisfied in the certificate curriculum.

Curriculum requirements

Course	Title	Hours
Pharm.D. requirements		
IPEC 501	Foundations of Interprofessional Practice	1
IPEC 502	Interprofessional Quality Improvement and Patient Safety	1
IPEC 561	IPE Virtual Geriatric Case	2
MEDC 527	Basic Pharmaceutical Principles for the Practicing Pharmacist	3
MEDC 533	Pharmacognosy	2
MEDC 542	Biotechnology-derived Therapeutic Agents	1
MEDC 543	Clinical Chemistry for the Pharmacist	1
MEDC 553	Concepts in the Medicinal Chemistry of Therapeutics Agents	1
PCEU 507	Pharmaceutics and Biopharmaceutics I	3
PCEU 508	Pharmacokinetics	3
PCEU 509	Pharmaceutics and Biopharmaceutics II	3
PCEU 615	Applied Pharmacokinetics	2.5
PHAR 501	Pharmaceutical Calculations	1
PHAR 509	Evidence-Based Pharmacy I: Introduction to Pharmacy Information Skills	1.5
PHAR 513	Contemporary Pharmacy Practice	2
PHAR 515	Continuous Professional Development I	1
PHAR 523	Foundations I	1.5
PHAR 524	Foundations II	1.5

PHAR 526	Community Pharmacy Practice	2	PHAR 715	Continuous Professional Development III	1
PHAR 529	Clinical Therapeutics Module: Introduction to Special Populations	2	PHAR 724	Pharmacy Law	2.5
PHAR 530	Introductory Pharmacy Practice Experience: Community Practice	4	PHAR 730	Continuous Professional Development IV	.5
PHAR 532	Introductory Pharmacy Practice Experience: Hospital Practice	3	PHAR 760	Acute Care Pharmacy Practice I	5
PHAR 533	Introductory Pharmacy Practice Experience: Patient Care	.5	PHAR 761	Advanced Hospital Pharmacy Practice	5
PHAR 534	Foundations III	1.5	PHAR 763	Ambulatory Care Pharmacy Practice	5
PHAR 535	Foundations IV	1.5	PHAR 765	Elective I	5
PHAR 540	Self-Care and Alternative and Complementary Treatments	2.5	PHAR 766	Elective II	5
PHAR 541	Patient Assessment in Pharmacy Practice	2	PHAR 767	Clinical Selective I	5
PHAR 544	Clinical Therapeutics Module: Cardiovascular	4.5	PHAR 768	Advanced Community Pharmacy Practice	5
PHAR 545	The U.S. Health Care System	2	PHAR 773	Acute Care Pharmacy Practice II	5
PHAR 546	Pharmacy-based Immunization Delivery	1.5	PHTX 606	Introduction to Pharmacology of Therapeutic Agents	1
PHAR 549	Personalized Medicine	1	Electives (three credits will satisfy certificate electives)		5
PHAR 555	Clinical Therapeutics Module: Endocrinology	2.5	Certificate requirements		
PHAR 556	Clinical Therapeutics Module: Neurology	4	GRTY 601	Biological and Physiological Aging	3
PHAR 565	Evidence-based Pharmacy II: Research Methods and Statistics	2.5	GRTY 602	Psychology of Aging	3
PHAR 566	Evidence-based Pharmacy III: Drug Literature Evaluation	2	GRTY 603	Social Gerontology	3
PHAR 602	Clinical Therapeutics Module: Psychiatry	3	GRTY 606	Aging and Human Values	3
PHAR 603	Clinical Therapeutics Module: Respiratory/Immunology	2.5	Restricted elective (satisfied by three credits of Pharm.D. electives)		3
PHAR 604	Clinical Therapeutics Module: Infectious Diseases	4.5	Total Hours		167
PHAR 605	Clinical Therapeutics Module: Hematology/Oncology	2.5	The minimum number of credit hours required for this dual program is 167.		
PHAR 606	Clinical Therapeutics Module: Nephrology/Urology	2	Sample plan of study		
PHAR 607	Clinical Therapeutics Module: Dermatology/EENT	2	P1 year		
PHAR 615	Continuous Professional Development II	1	Fall		
PHAR 618	Clinical Therapeutics Module: Gastrointestinal/Nutrition	2.5	IPEC 501	Foundations of Interprofessional Practice	1
PHAR 619	Clinical Therapeutics Module: Women's Health/Bone	2	MEDC 527	Basic Pharmaceutical Principles for the Practicing Pharmacist	3
PHAR 620	Clinical Therapeutics Module: Critical Care/Toxicology and Complex Patients	2.5	MEDC 533	Pharmacognosy	2
PHAR 621	Pharmacoeconomics	2	PCEU 507	Pharmaceutics and Biopharmaceutics I	3
PHAR 640	Foundations V	1.5	PHAR 501	Pharmaceutical Calculations	1
PHAR 645	Foundations VI	1.5	PHAR 509	Evidence-Based Pharmacy I: Introduction to Pharmacy Information Skills	1.5
PHAR 652	Health Promotion and Communication in Pharmacy Practice	2.5	PHAR 515	Continuous Professional Development I (continues)	1
PHAR 660	Community Pharmacy Practice Management II	2	PHAR 523	Foundations I	1.5
			PHAR 545	The U.S. Health Care System	2
			PHAR 652	Health Promotion and Communication in Pharmacy Practice	2.5
			Term Hours:		17.5
			Spring		
			MEDC 553	Concepts in the Medicinal Chemistry of Therapeutics Agents ¹	1
			PCEU 508	Pharmacokinetics	3
			PCEU 509	Pharmaceutics and Biopharmaceutics II	3
			PHAR 513	Contemporary Pharmacy Practice	2
			PHAR 515	Continuous Professional Development I	1

PHAR 524	Foundations II	1.5
PHAR 526	Community Pharmacy Practice	2
PHAR 529	Clinical Therapeutics Module: Introduction to Special Populations ¹	2
PHAR 530	Introductory Pharmacy Practice Experience: Community Practice	4
PHTX 606	Introduction to Pharmacology of Therapeutic Agents ¹	1
Term Hours:		20.5

P2 year

Fall

GRTY 602	Psychology of Aging	3
MEDC 543	Clinical Chemistry for the Pharmacist ¹	1
PHAR 534	Foundations III	1.5
PHAR 541	Patient Assessment in Pharmacy Practice	2
PHAR 544	Clinical Therapeutics Module: Cardiovascular ¹	4.5
PHAR 546	Pharmacy-based Immunization Delivery	1.5
PHAR 555	Clinical Therapeutics Module: Endocrinology ¹	2.5
PHAR 565	Evidence-based Pharmacy II: Research Methods and Statistics ¹	2.5
PHAR 603	Clinical Therapeutics Module: Respiratory/Immunology ¹	2.5
PHAR 615	Continuous Professional Development II (continues)	1
Term Hours:		21

Spring

GRTY 601	Biological and Physiological Aging	3
IPEC 502	Interprofessional Quality Improvement and Patient Safety	1
MEDC 542	Biotechnology-derived Therapeutic Agents ¹	1
PCEU 615	Applied Pharmacokinetics	2.5
PHAR 532	Introductory Pharmacy Practice Experience: Hospital Practice	3
PHAR 535	Foundations IV	1.5
PHAR 566	Evidence-based Pharmacy III: Drug Literature Evaluation	2
PHAR 604	Clinical Therapeutics Module: Infectious Diseases ¹	4.5
PHAR 606	Clinical Therapeutics Module: Nephrology/Urology ¹	2
PHAR 615	Continuous Professional Development II	1
Term Hours:		21.5

P3 year

Fall

GRTY 603	Social Gerontology	3
PHAR 540	Self-Care and Alternative and Complementary Treatments	2.5
PHAR 549	Personalized Medicine	1
PHAR 556	Clinical Therapeutics Module: Neurology ¹	4
PHAR 602	Clinical Therapeutics Module: Psychiatry ¹	3

PHAR 605	Clinical Therapeutics Module: Hematology/Oncology ¹	2.5
PHAR 640	Foundations V	1.5
PHAR 660	Community Pharmacy Practice Management II	2
PHAR 715	Continuous Professional Development III (continues)	1
Elective ²		2-3
Term Hours:		21.5

Spring

GRTY 606	Aging and Human Values	3
PHAR 533	Introductory Pharmacy Practice Experience: Patient Care	0.5
PHAR 607	Clinical Therapeutics Module: Dermatology/EENT ¹	2
PHAR 618	Clinical Therapeutics Module: Gastrointestinal/Nutrition ¹	2.5
PHAR 619	Clinical Therapeutics Module: Women's Health/Bone ¹	2
PHAR 620	Clinical Therapeutics Module: Critical Care/Toxicology and Complex Patients ¹	2.5
PHAR 621	Pharmacoeconomics	2
PHAR 645	Foundations VI	1.5
PHAR 715	Continuous Professional Development III	1
PHAR 724	Pharmacy Law	2.5
Electives		2-3
Term Hours:		22.5

P4 year (over 45 weeks)

IPEC 561	IPE Virtual Geriatric Case	2
PHAR 730	Continuous Professional Development IV	0.5
PHAR 760	Acute Care Pharmacy Practice I	5
PHAR 761	Advanced Hospital Pharmacy Practice	5
PHAR 763	Ambulatory Care Pharmacy Practice	5
PHAR 765	Elective I	5
PHAR 766	Elective II	5
PHAR 767	Clinical Selective I	5
PHAR 768	Advanced Community Pharmacy Practice	5
PHAR 773	Acute Care Pharmacy Practice II	5
Term Hours:		42.5

Total Hours: 167

¹

Course will be taught as a module.

²

Students will complete five total credits of electives over the course of the year.

The minimum number of credit hours required for this dual program is 167.

Contact

Jennifer Pryor
Program director, Department of Gerontology

pryorjm@vcu.edu
(804) 828-1565

Additional contact

Krista L. Donohoe, Pharm.D., BCPS, BCGP
Associate professor, Department of Pharmacotherapy and Outcomes
Science
kldonohoe@vcu.edu
(804) 628-4551